



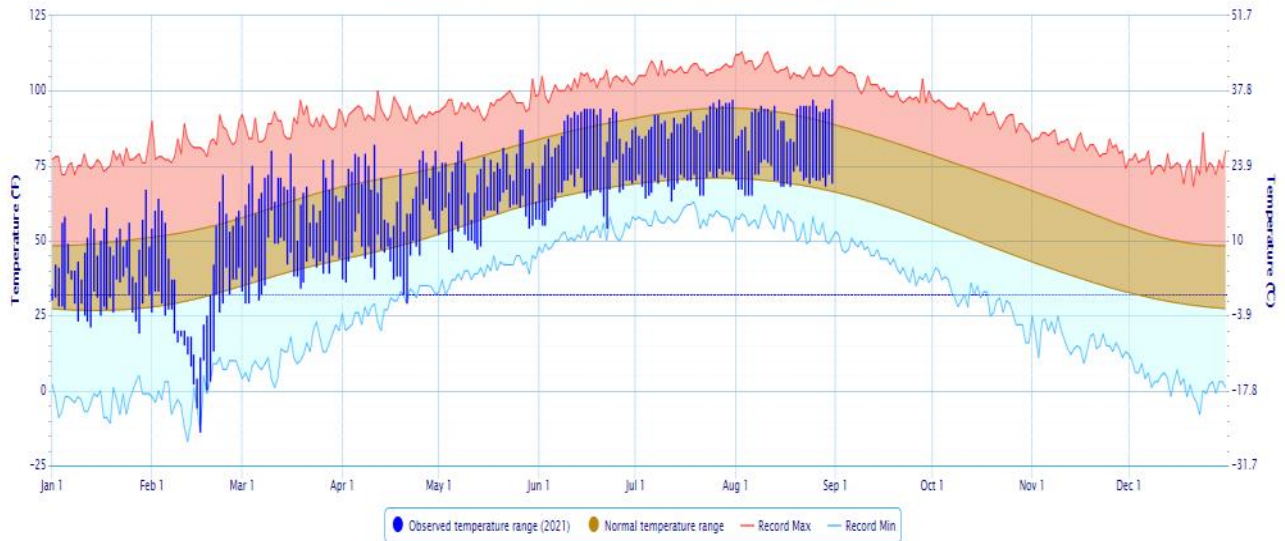
Drought Conditions in Central Oklahoma

**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

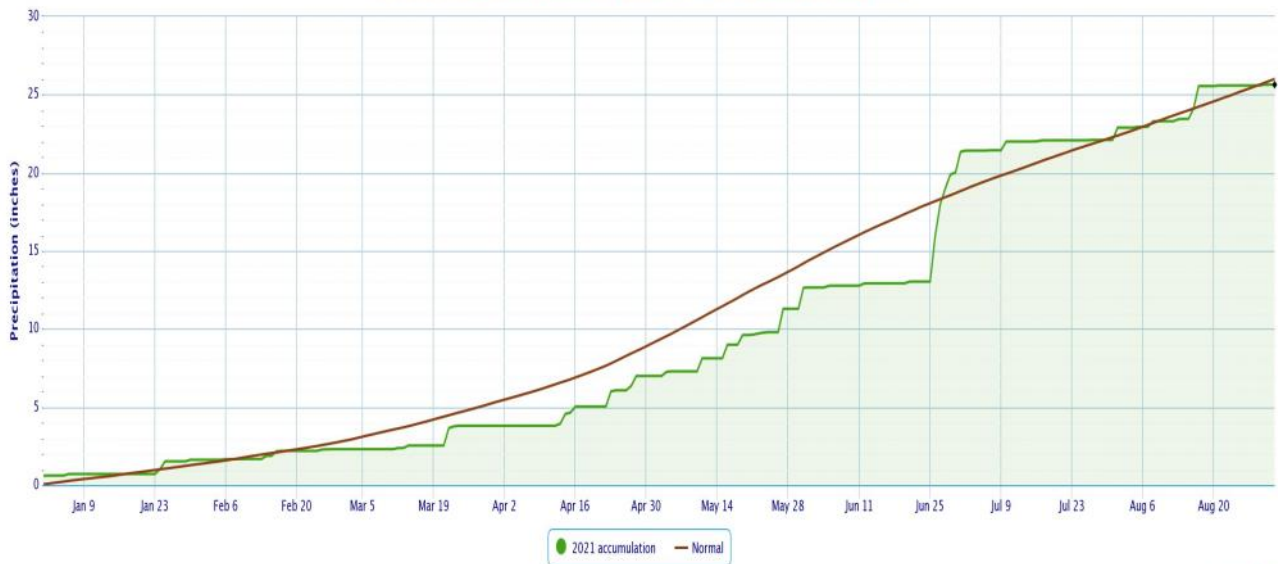
Period of Record – 1890-11-01 to 2021-08-31. Normals period: 1991-2020. Click and drag to zoom chart.



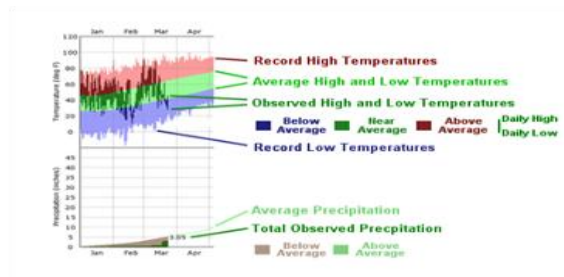
Powered by ACIS

Accumulated Precipitation—Oklahoma City Area, OK

Period of Record – 1890-11-01 to 2021-08-31. Normals period: 1991-2020. Click and drag to zoom chart.



Powered by ACIS



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

Rainfall Summaries by Oklahoma Climate Division

Calendar Year 01-Jan-2021 through

31-Aug-2021

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	22.44"	+2.38"	112%	21st wettest	7.15" (2011)	32.23" (2007)
Central	26.54"	+0.86"	103%	36th wettest	8.59" (1936)	44.44" (2007)
S. Central	28.01"	+0.96"	104%	39th wettest	11.94" (2011)	48.48" (2015)
Statewide	25.80"	+0.95"	104%	37th wettest	9.90" (1936)	36.68" (2015)

Water Year: 01-Oct-2020 through

31-Aug-2021

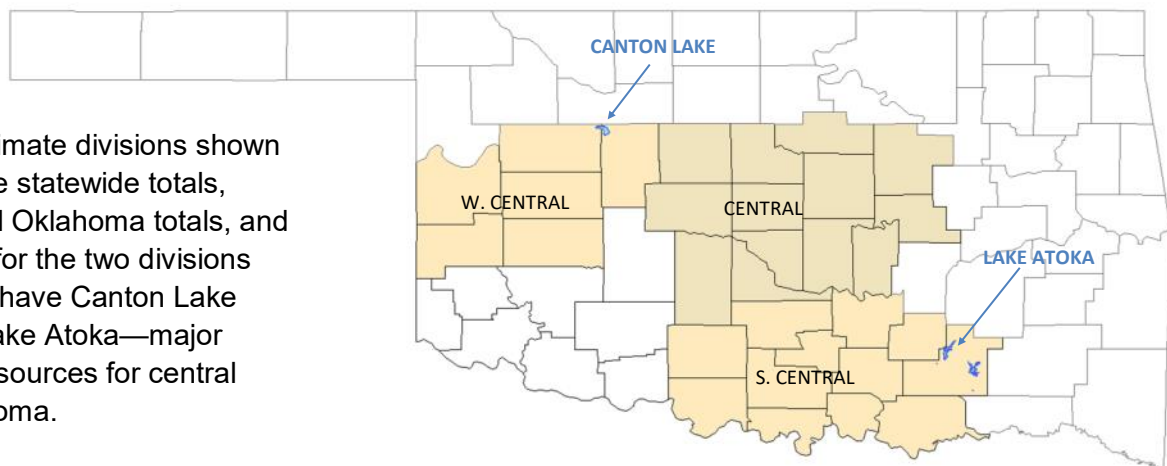
Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	27.25"	+1.65"	106%	25th wettest	11.69" (2010-11)	38.41" (2018-19)
Central	34.65"	+0.86"	103%	31st wettest	15.93" (1935-36)	51.44" (2006-07)
S. Central	34.16"	-2.58"	93%	48th wettest	15.90" (1955-56)	57.30" (2014-15)
Statewide	33.12"	+0.19"	101%	37th wettest	17.81" (1935-36)	44.96" (2018-19)

Summer 01-Jun through

31-Aug-2021

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	11.05"	+1.80"	119%	24th wettest	2.59" (1980)	15.95" (1995)
Central	12.05"	+1.18"	111%	31st wettest	2.15" (1936)	24.12" (2007)
S. Central	10.46"	+0.28"	103%	37th wettest	1.69" (2011)	19.00" (1945)
Statewide	10.75"	+0.39"	104%	36th wettest	2.93" (1936)	17.77" (2007)

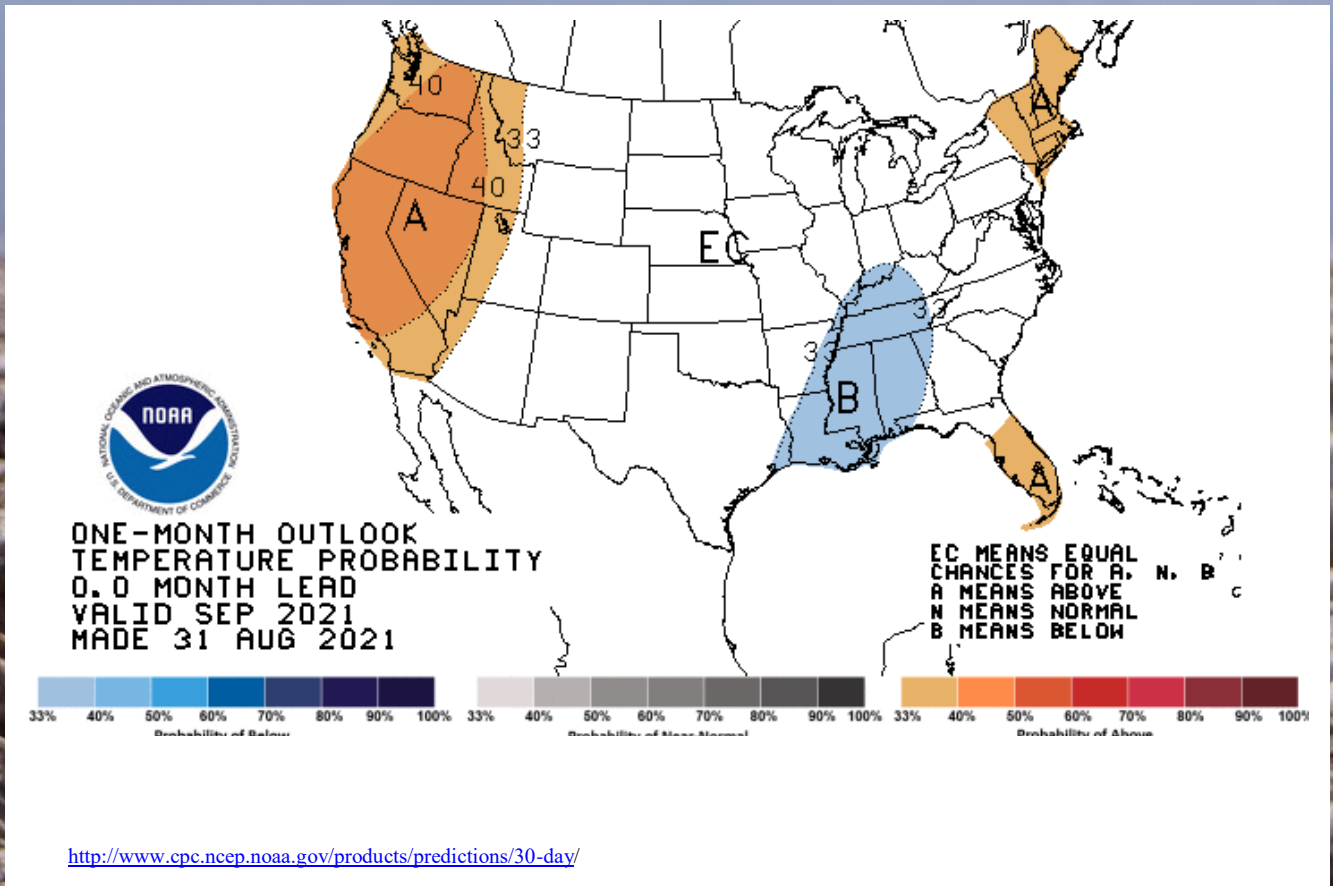
The climate divisions shown include statewide totals, central Oklahoma totals, and totals for the two divisions which have Canton Lake and Lake Atoka—major water sources for central Oklahoma.



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

OKLAHOMA
CLIMATOLOGICAL SURVEY

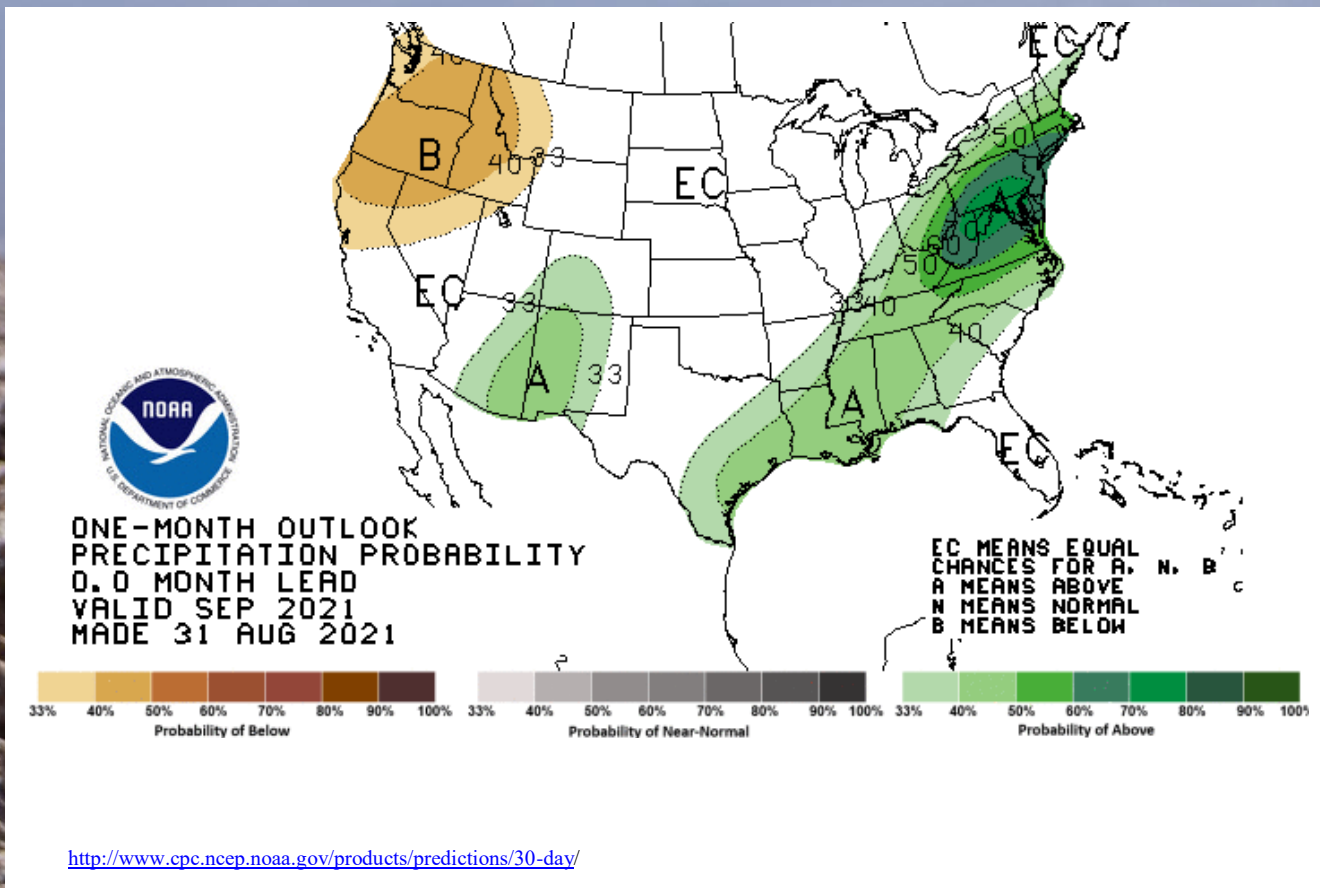
NOAA One-Month Outlook



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.

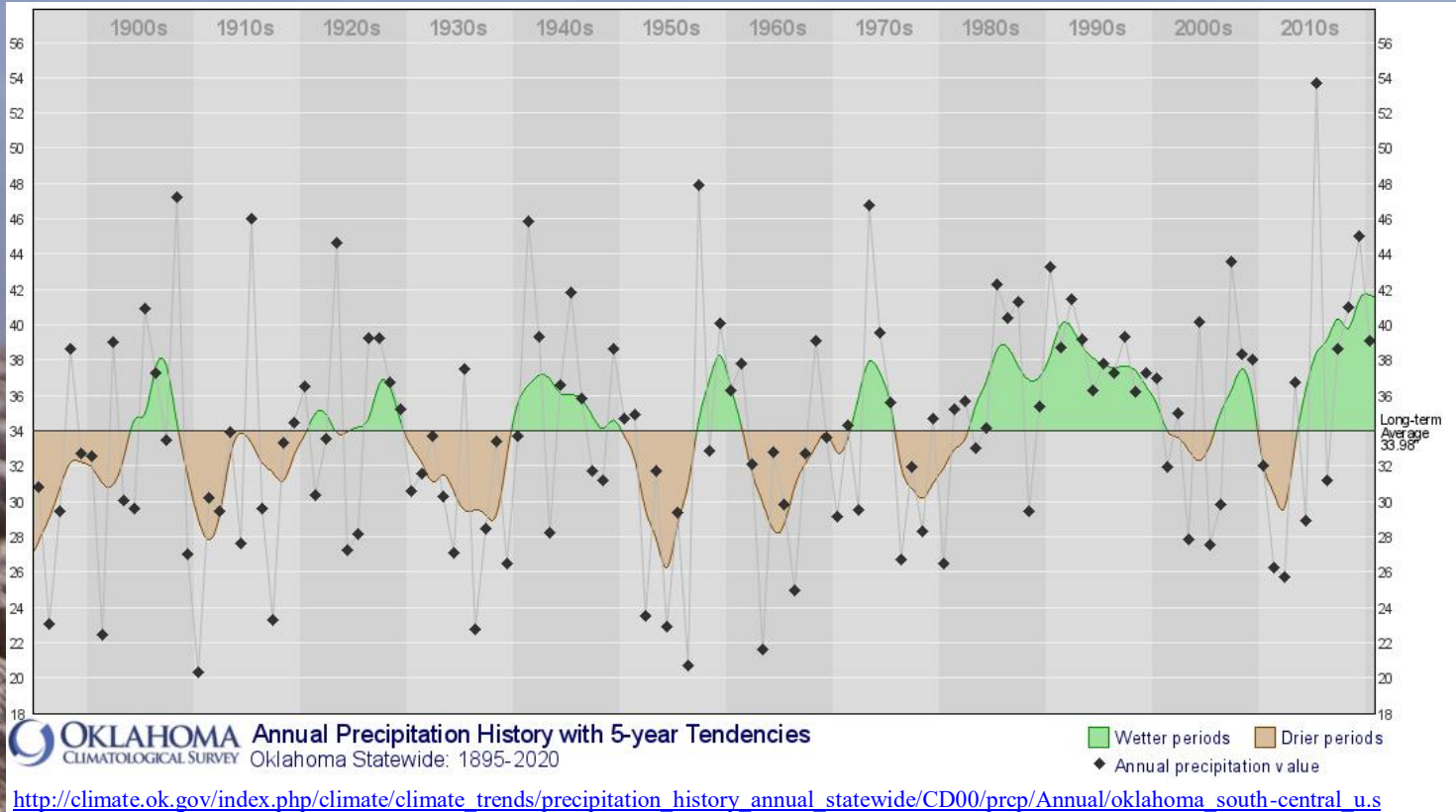
NOAA One-Month Outlook



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



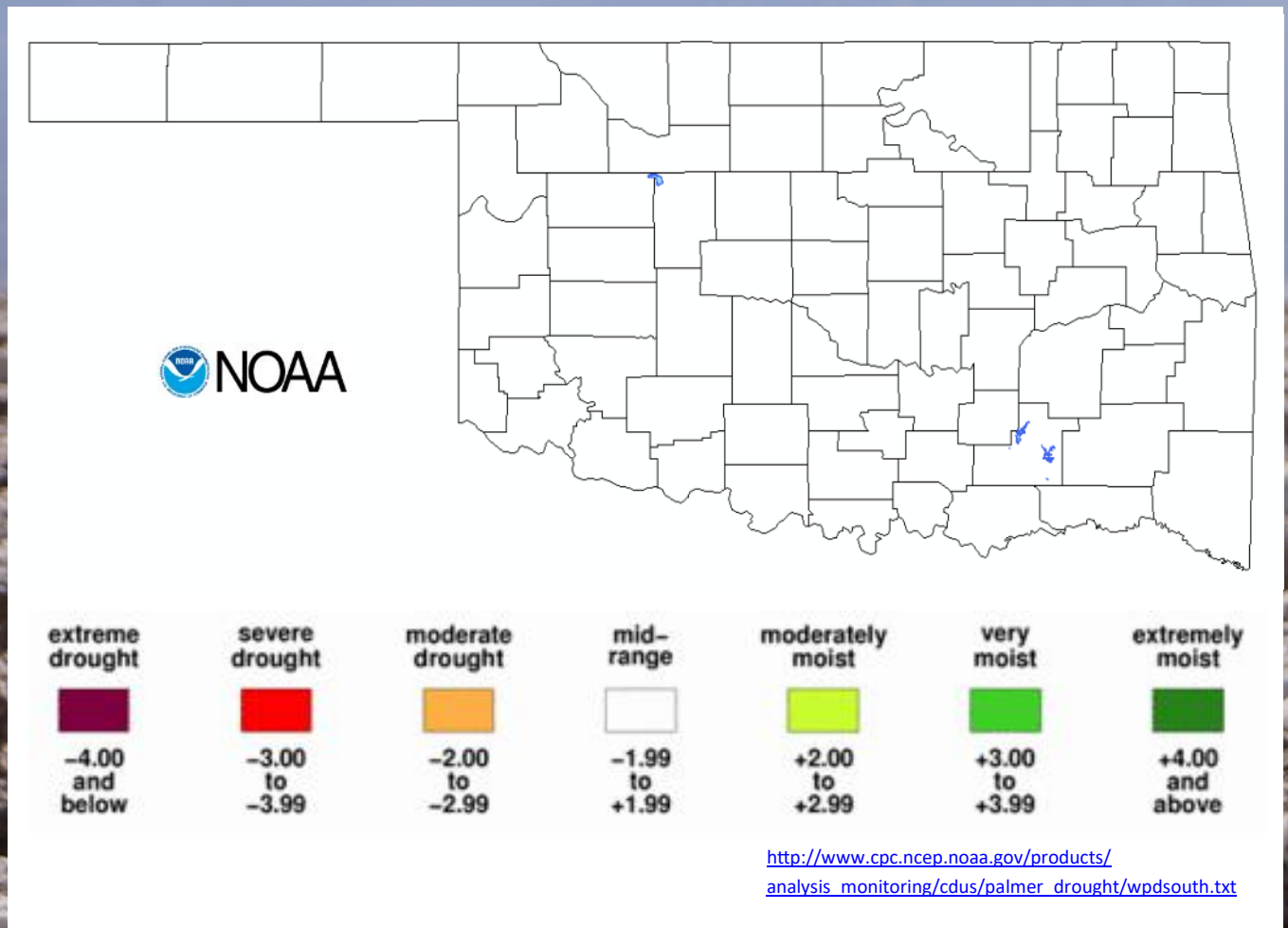
http://climate.ok.gov/index.php/climate/climate_trends/precipitation_history_annual_statewide/CD00/prcp/Annual/oklahoma_south-central_u.s

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 AUG 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.

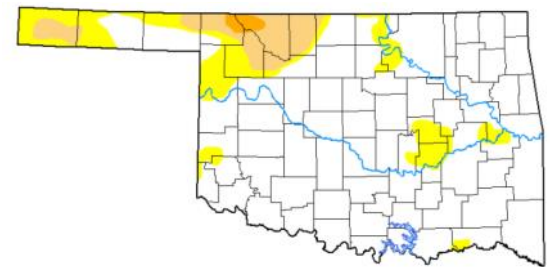
On these maps, the red shading denotes drought conditions while the green shading indicates wet conditions.

U.S. Drought Monitor

Week	Date	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	2021-08-31	81.57	18.43	6.61	0.72	0.00	0.00
Last Week	2021-08-24	88.12	11.88	4.74	0.00	0.00	0.00
3 Months Ago	2021-06-01	84.37	15.63	5.98	1.04	0.00	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	2020-09-01	72.39	27.61	20.56	12.45	1.66	0.00

U.S. Drought Monitor Oklahoma

Abnormal dryness or drought are currently affecting approximately 29,452 people in Oklahoma.



Intensity:

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

■ D3 - Extreme Drought
■ D4 - Exceptional Drought

NATIONAL
INTEGRATED
DROUGHT
INFORMATION
SYSTEM



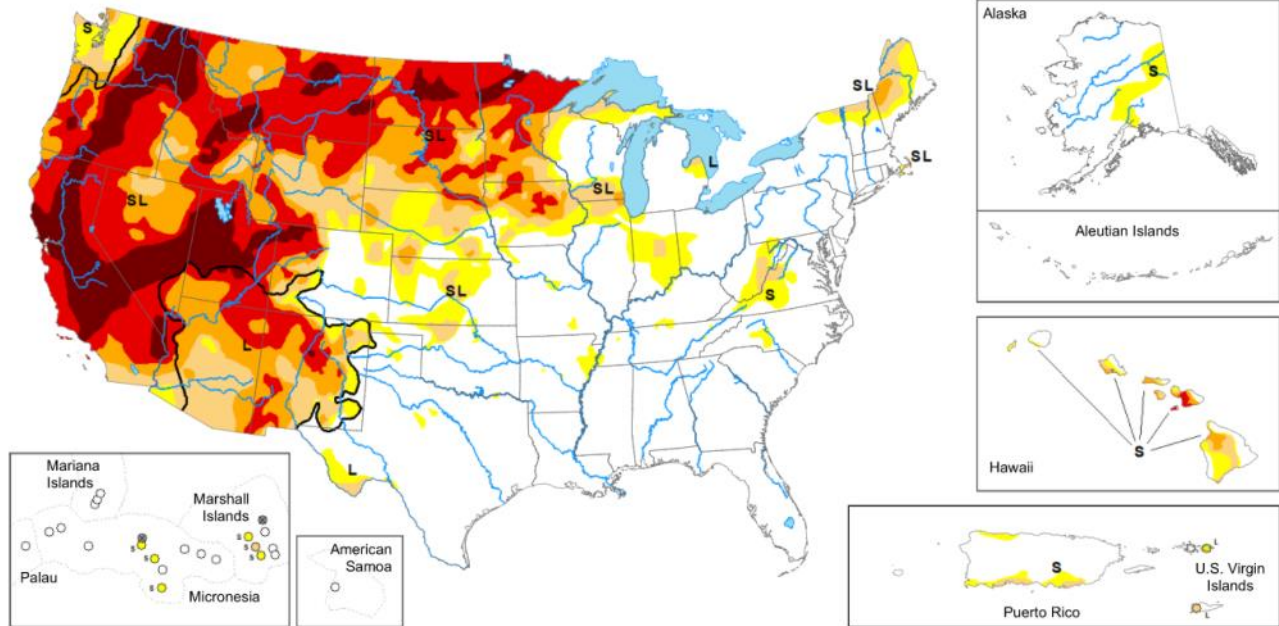
Drought.gov
U.S. Drought Portal

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

U.S. Drought Monitor Nationwide Map

Map released: August 26, 2021

Data valid: August 24, 2021

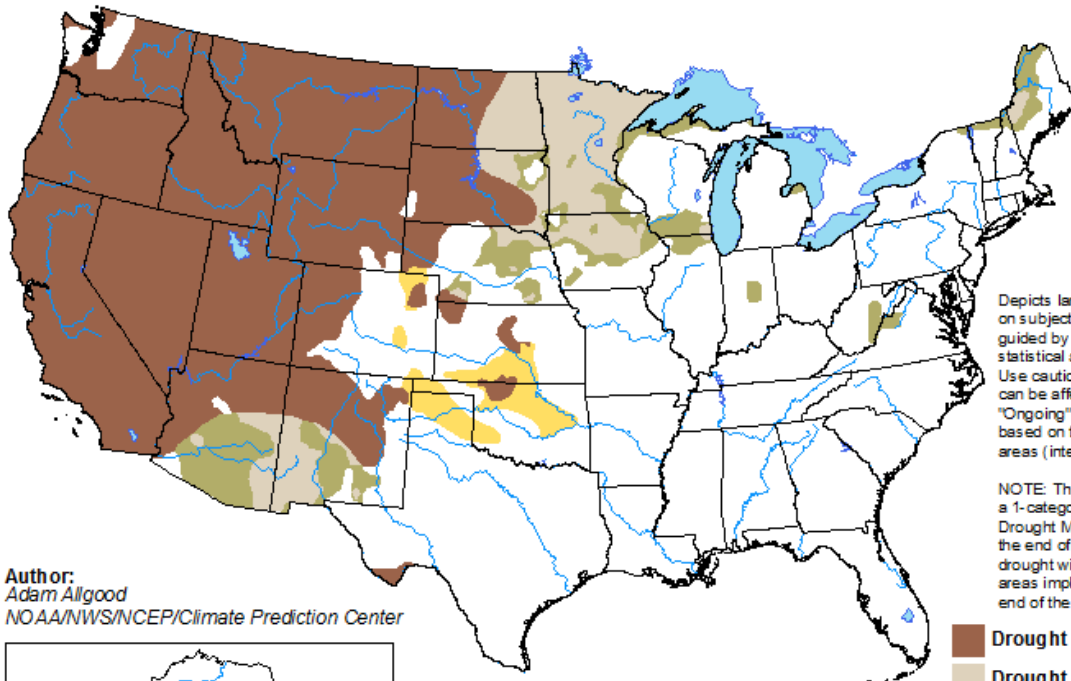


U.S. Drought Monitor

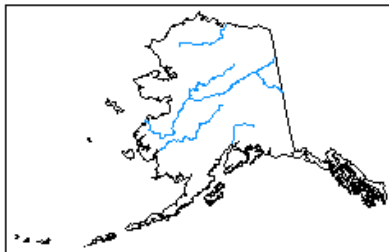
Monthly Drought Outlook Map

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

Valid for September 2021
Released August 31, 2021



Author:
Adam Allgood
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

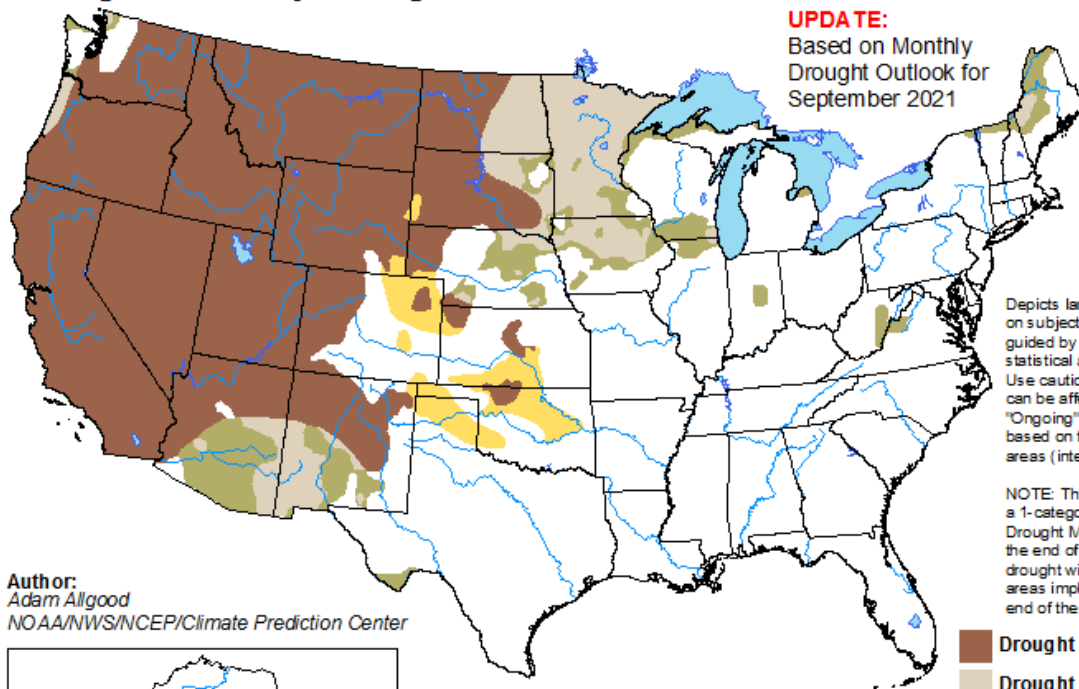
U.S. Drought Monitor

Seasonal Drought Outlook Map

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

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

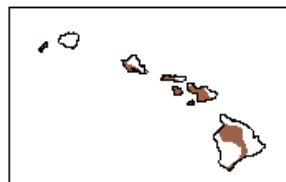
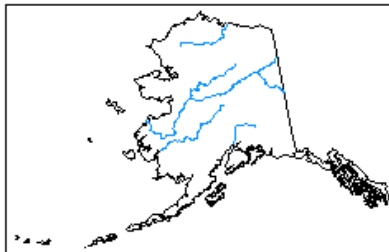
UPDATE:
Based on Monthly
Drought Outlook for
September 2021



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 Allgood
NOAA/NWS/NCEP/Climate Prediction Center



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

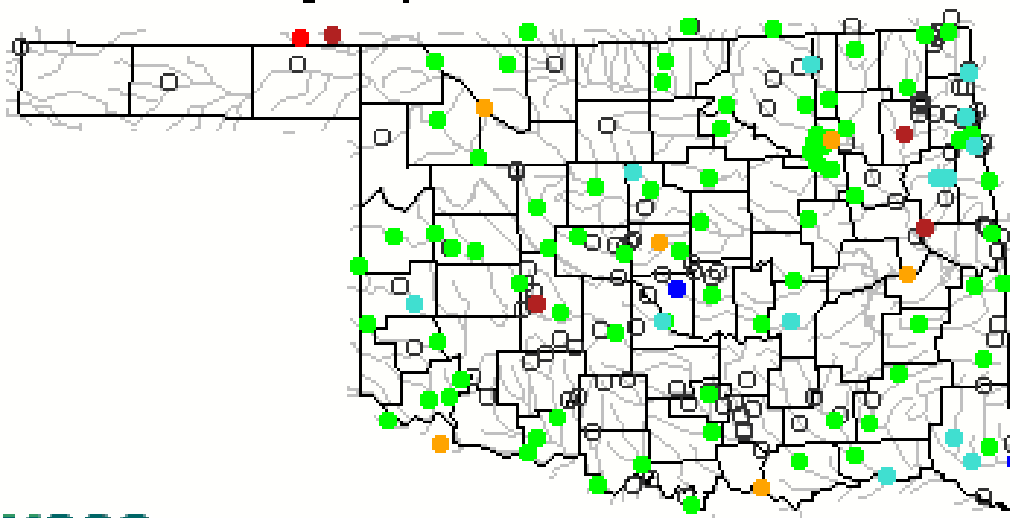


<http://go.usa.gov/3eZ73>

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

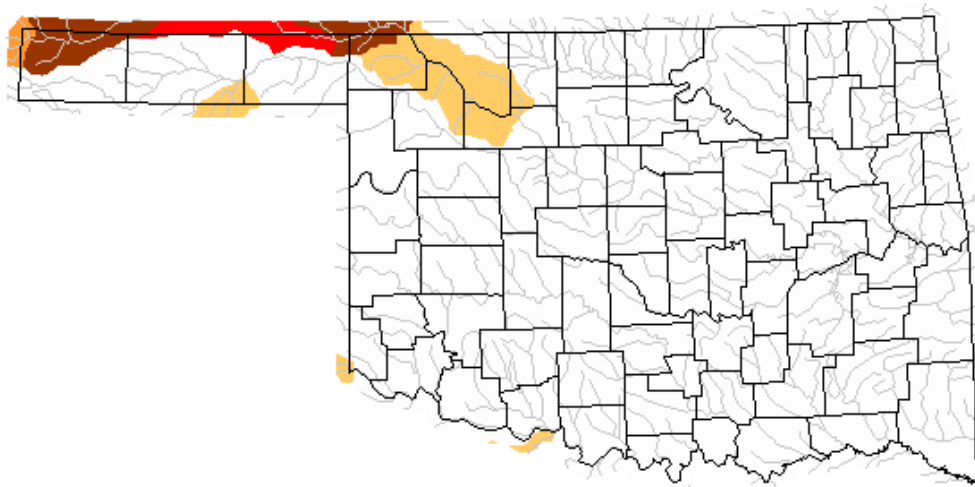
USGS Streamflow Data

Wednesday, September 01, 2021 11:30ET



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

Tuesday, August 31, 2021



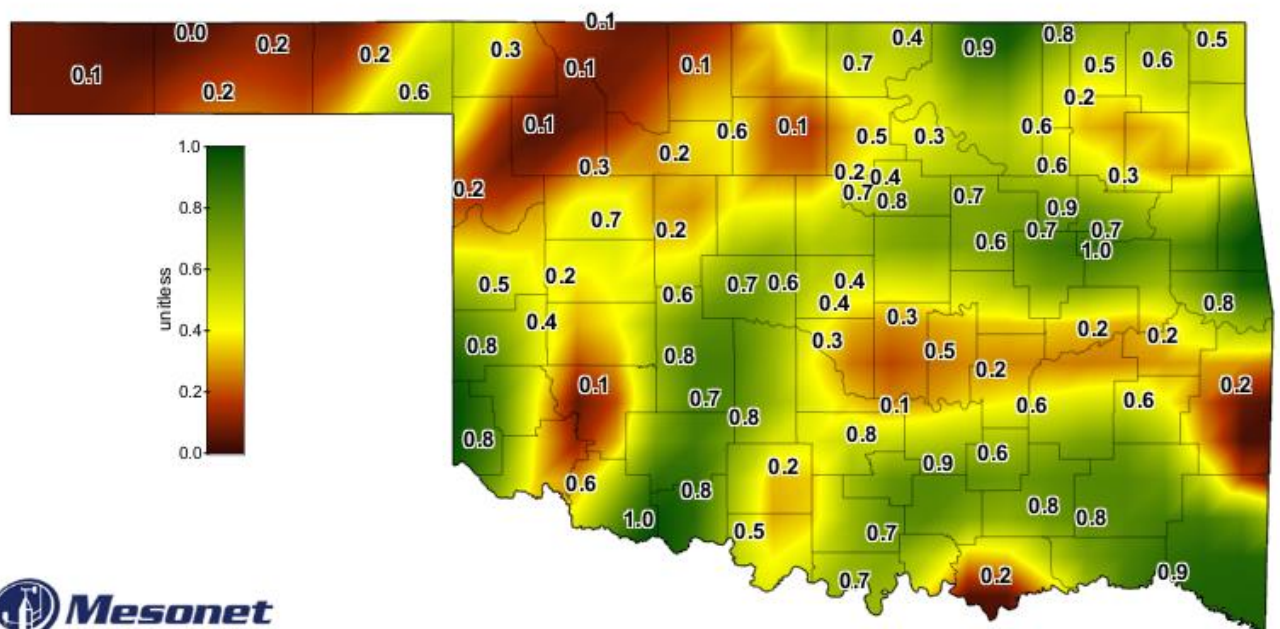
Below normal 28-day average streamflow

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



1-day Average 24-inch Fractional Water Index

August 31, 2021

Created 7:30:20 AM September 1, 2021 CDT. © Copyright 2021

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

Mesonet

Consecutive Days With Less Than 0.25" Rainfall

August 31, 2021
Created 8:15:02 AM September 1, 2021 CDT. © Copyright 2021

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

acog

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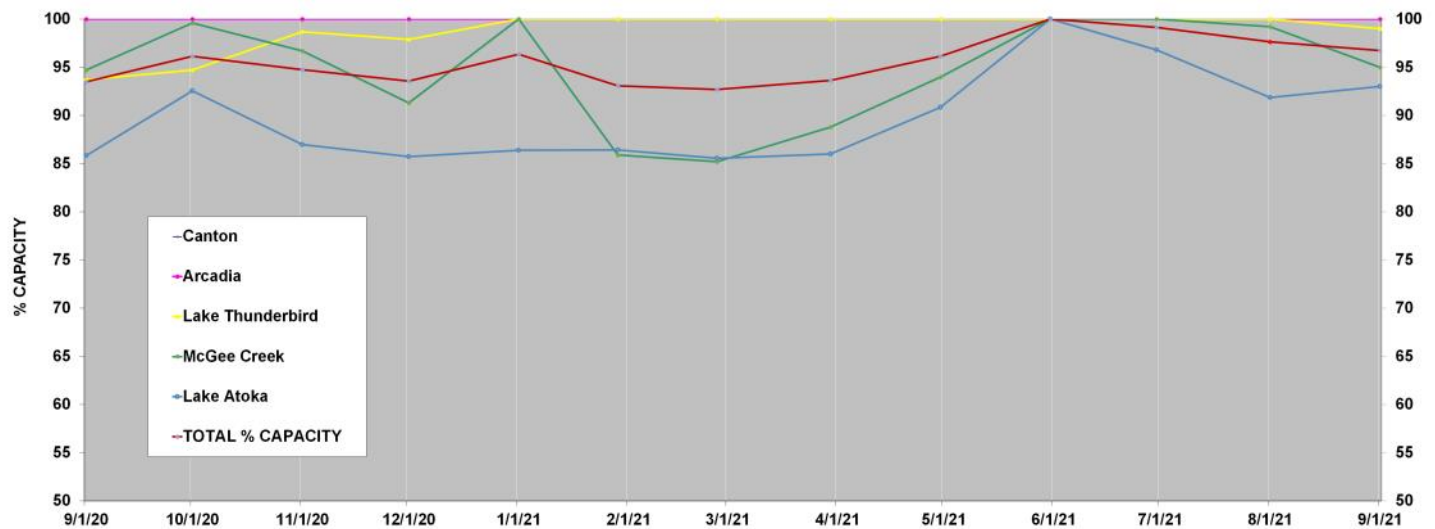


August 31, 2021

Created 8:15:02 AM September 1, 2021 CDT. © Copyright 2021

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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.

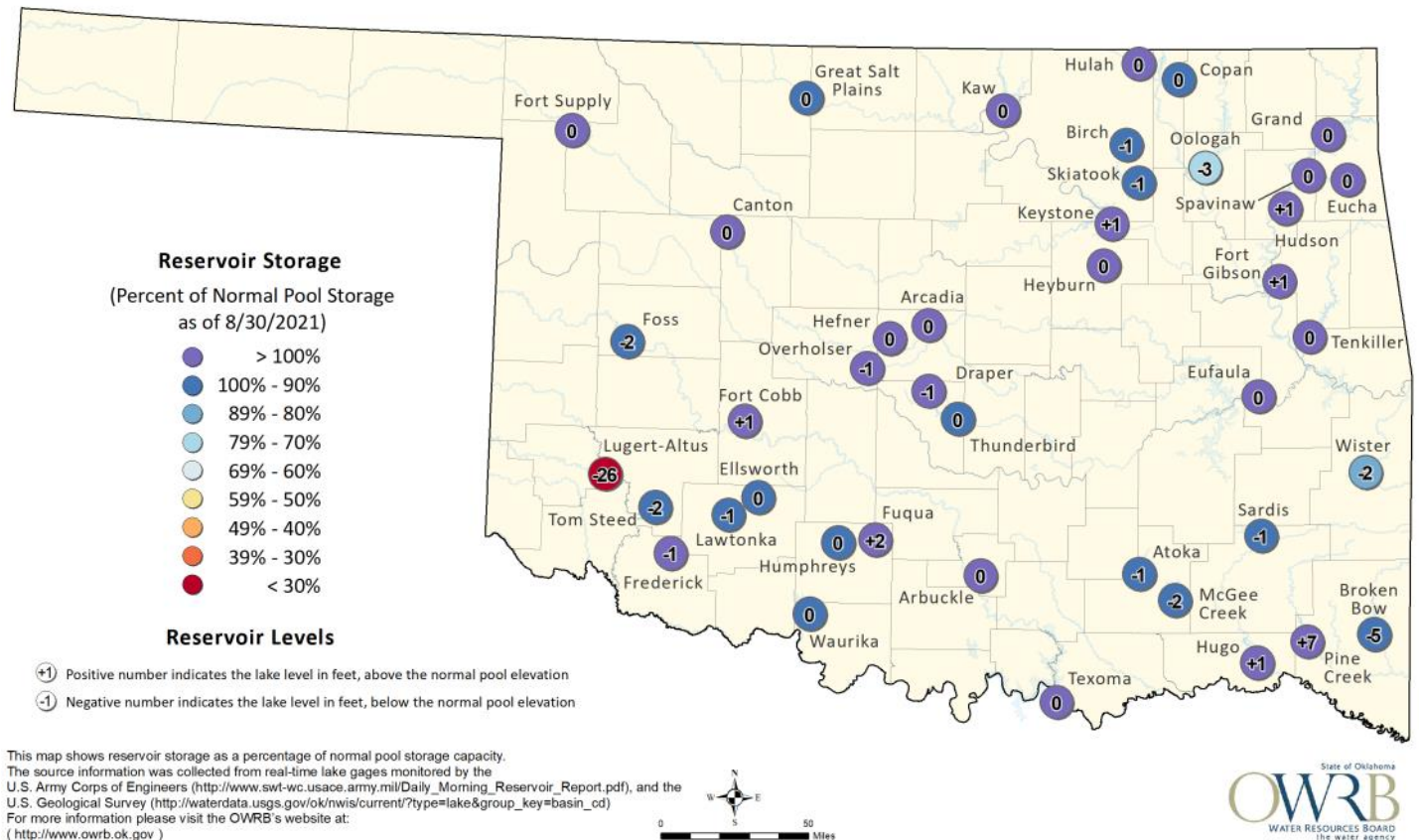
LAKE	% CAPACITY	% CHANGE FROM 8/1/2021
Canton	100.0	0.0
Arcadia	100.0	0.0
Lake Thunderbird	99.0	-1.0
McGee Creek	95.0	-4.2
Lake Atoka	86.4	1.1
TOTAL % CAPACITY	96.7	-0.9

<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.

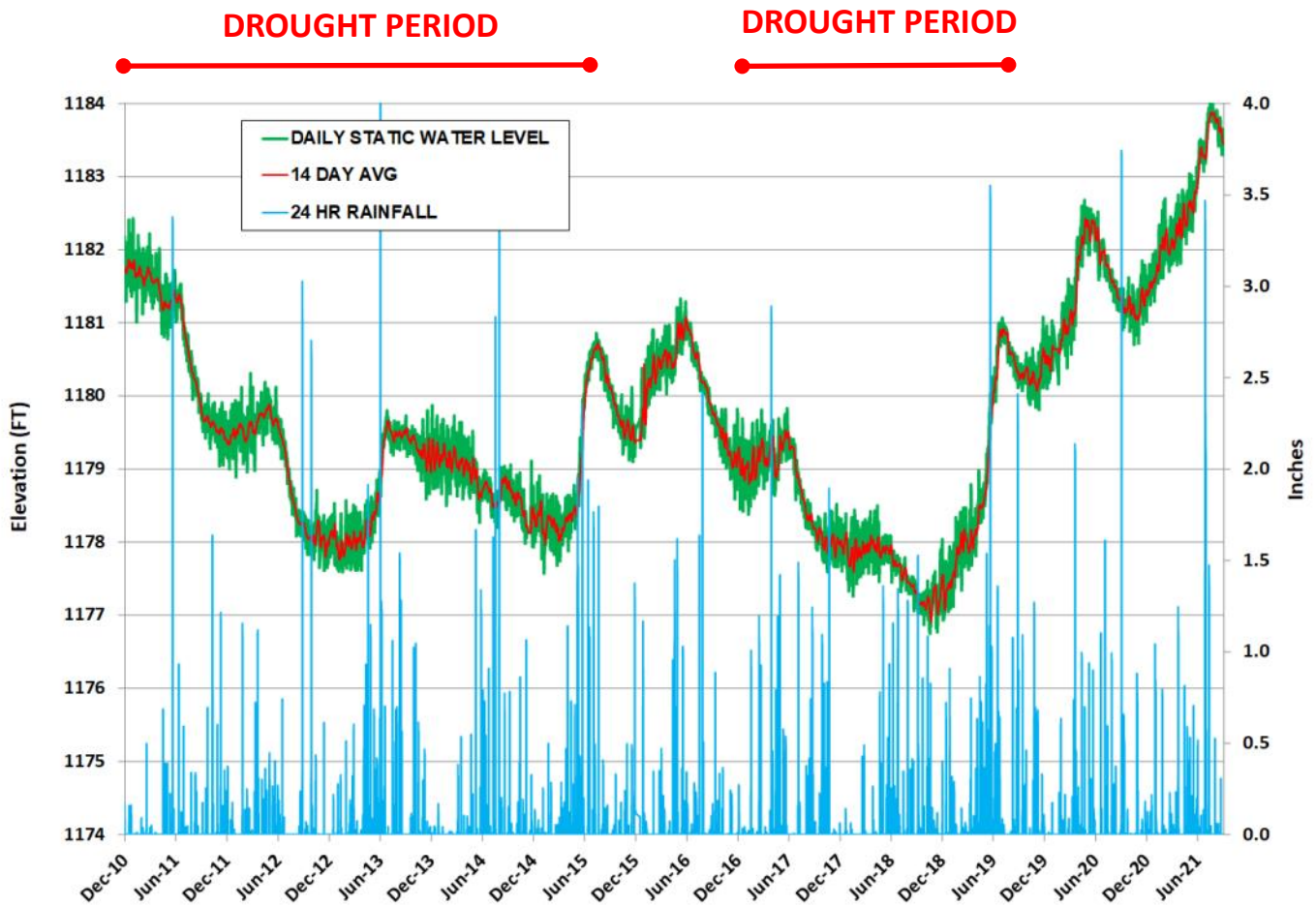
Oklahoma Surface Water Resources

Reservoir Levels and Storage as of 8/30/2021



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

Groundwater Levels Spencer Mesonet Station

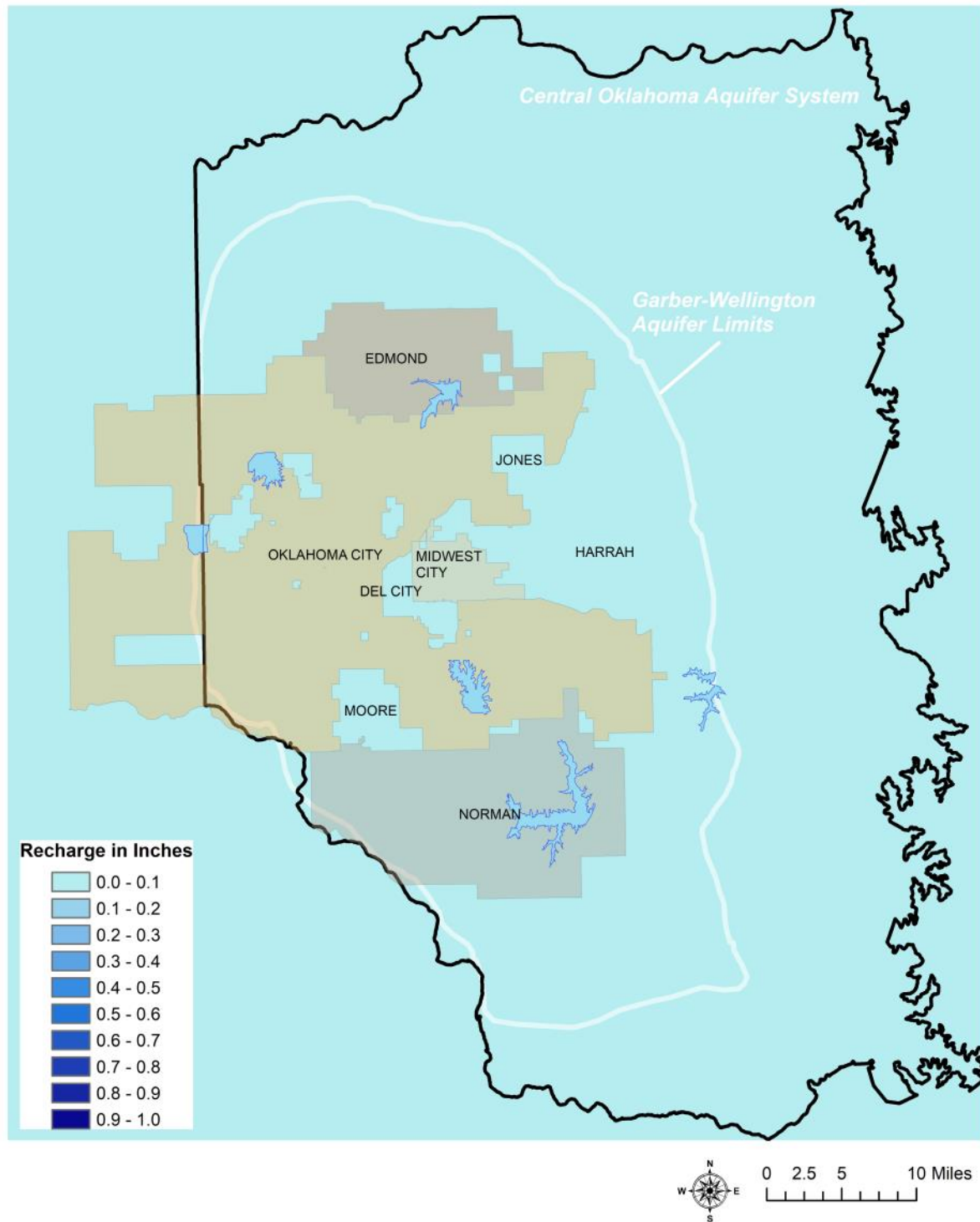


<http://www.mesonet.org/index.php/weather/groundwater>



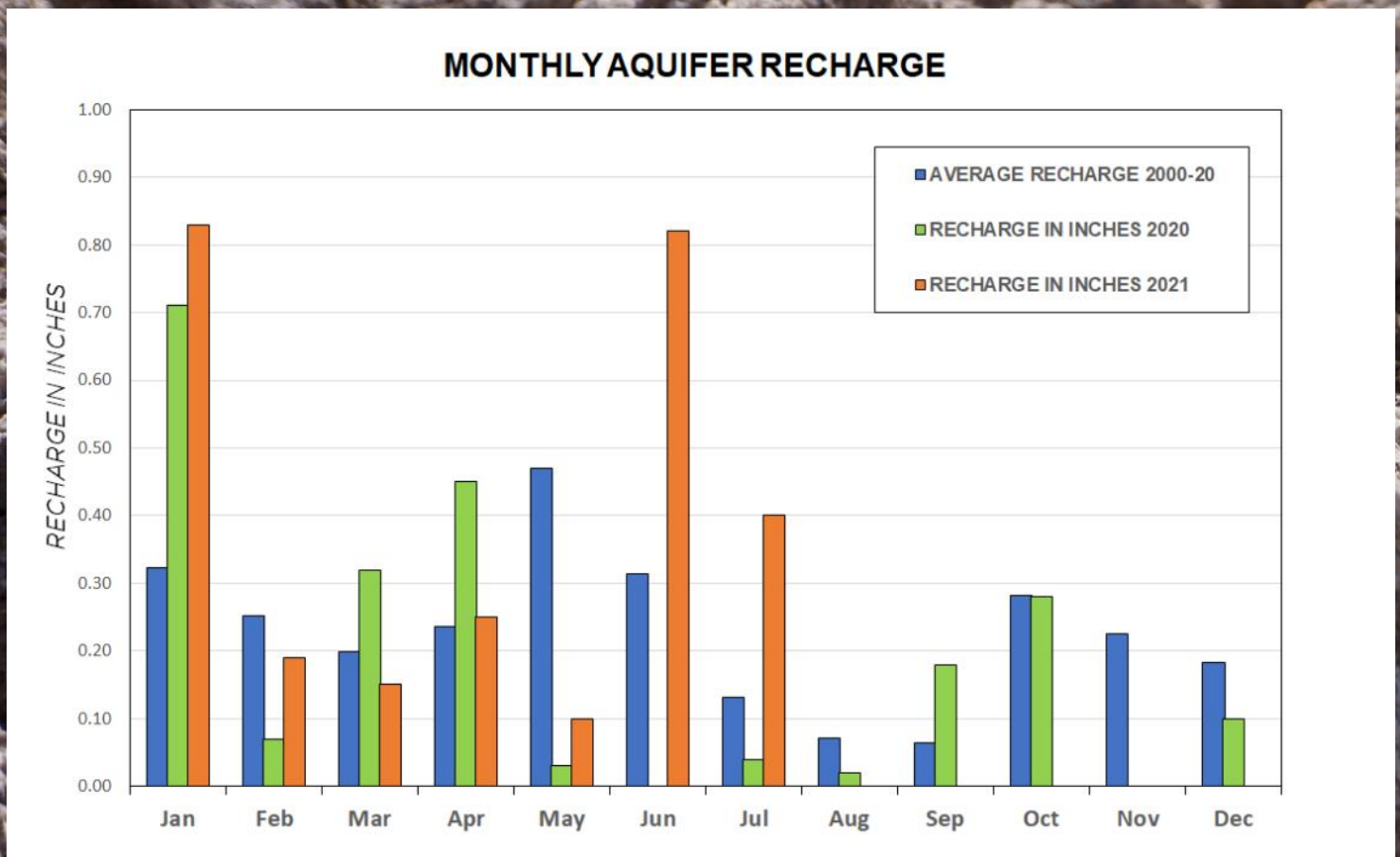
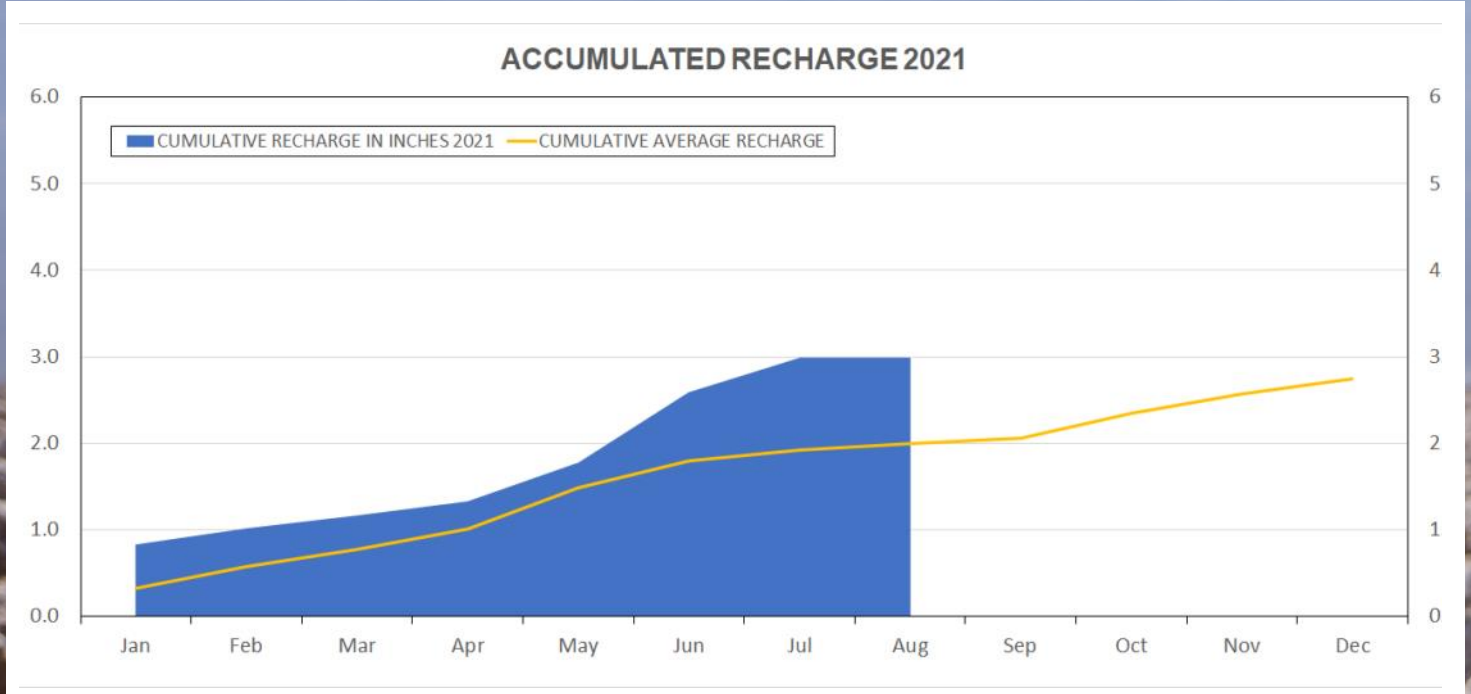
Recharge Map Central Oklahoma Aquifer System

AQUIFER RECHARGE AUG 2021



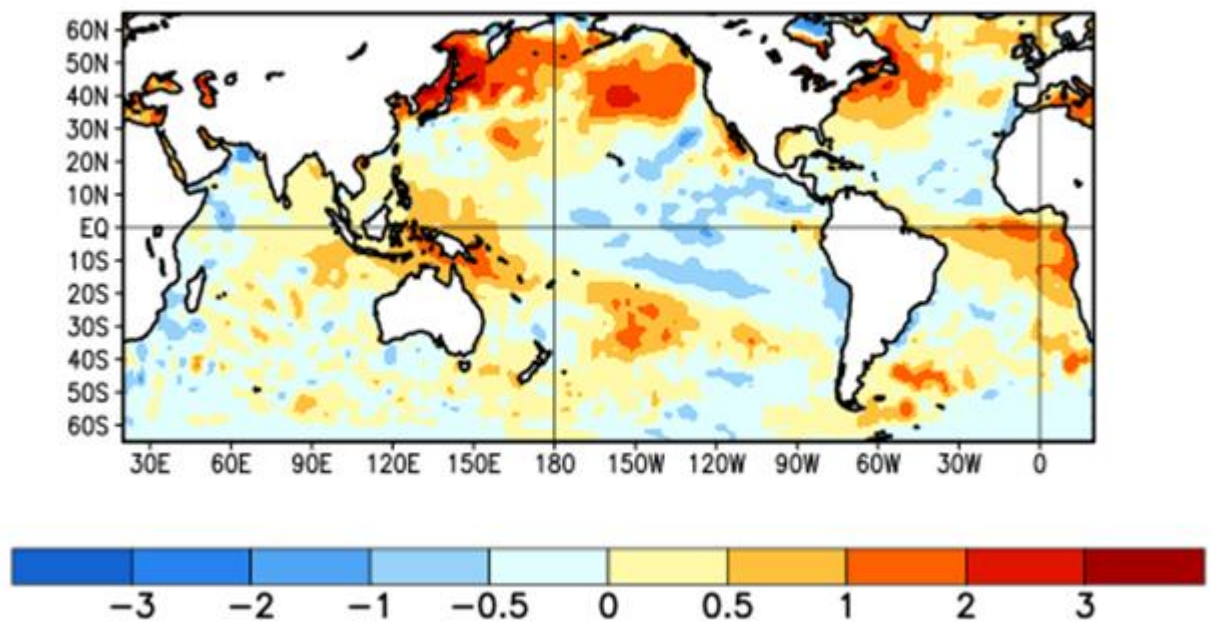
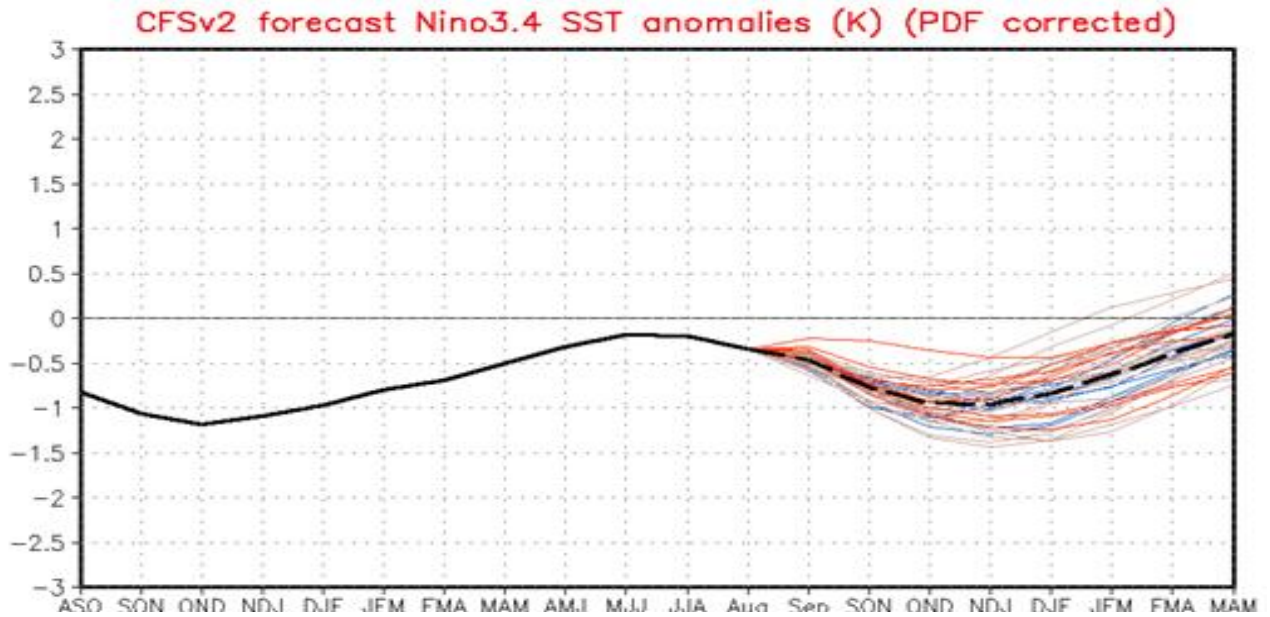
Recharge Charts

Central Oklahoma Aquifer System



ENSO Cycle

Recent Evolution, Current Status and Predictions



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).