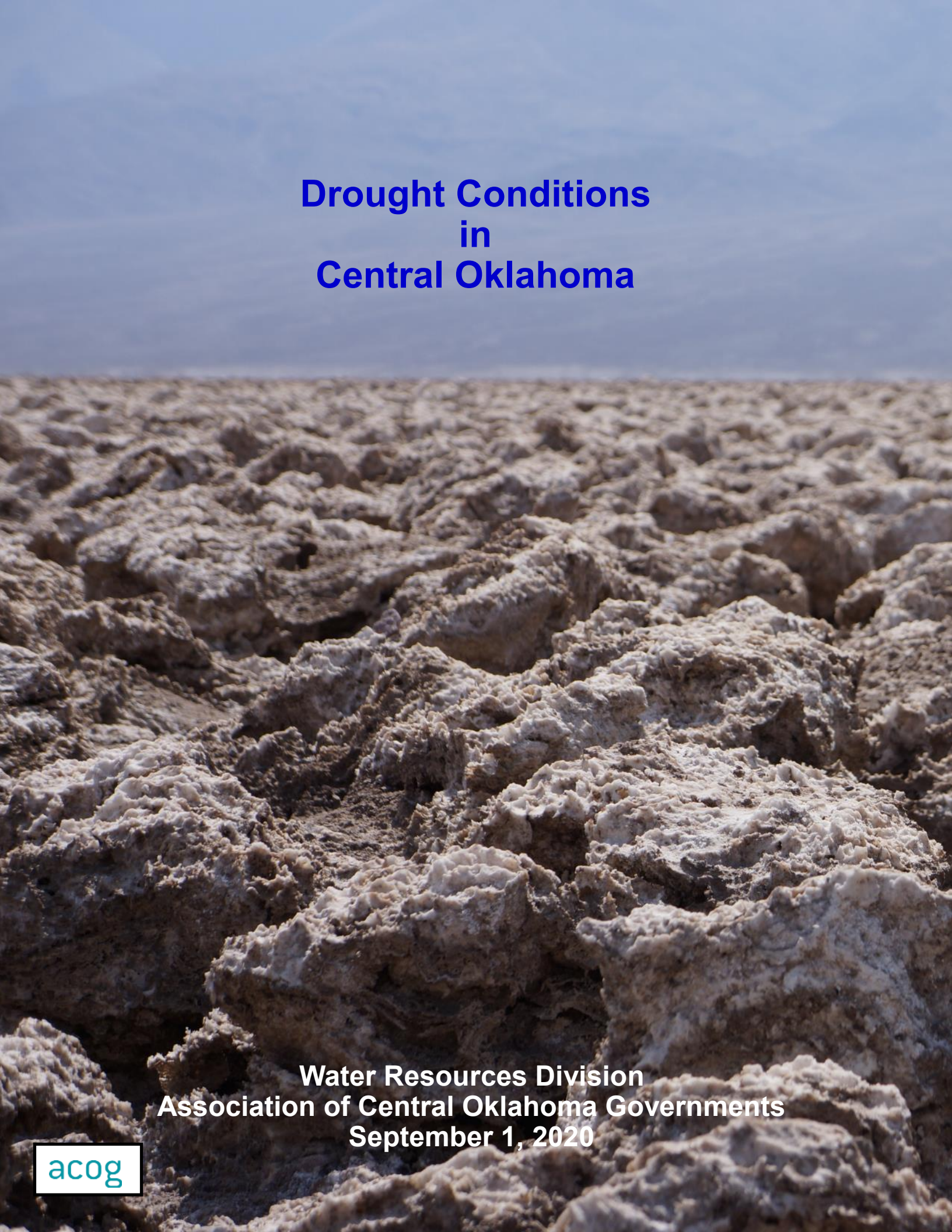
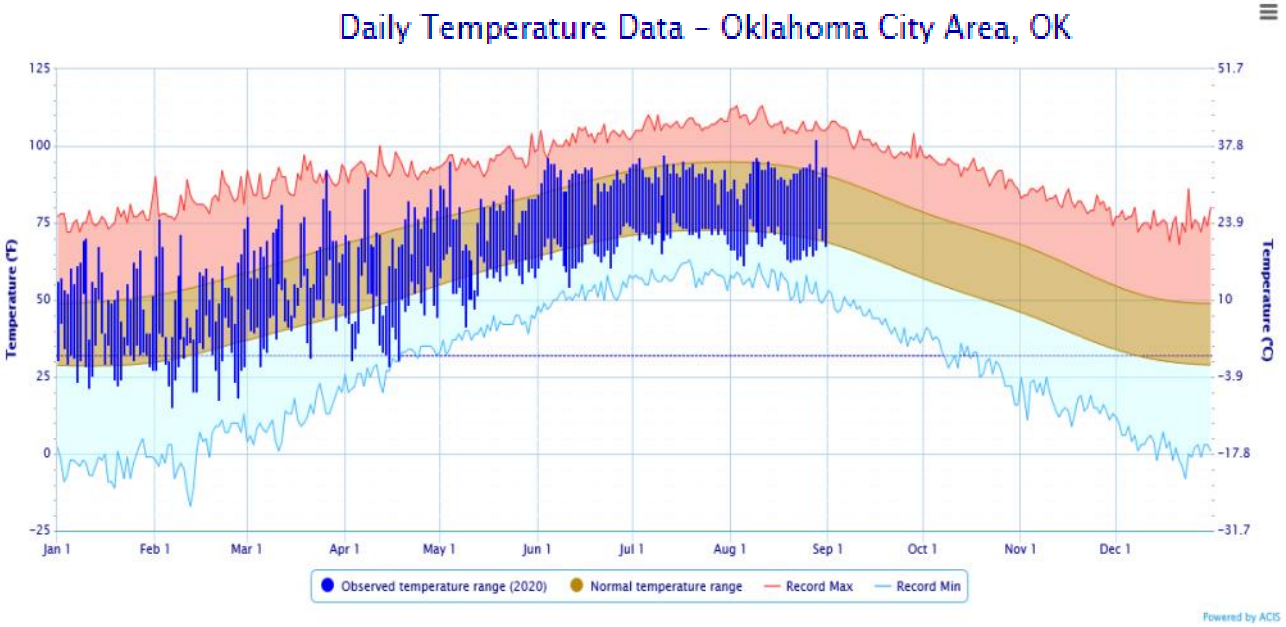


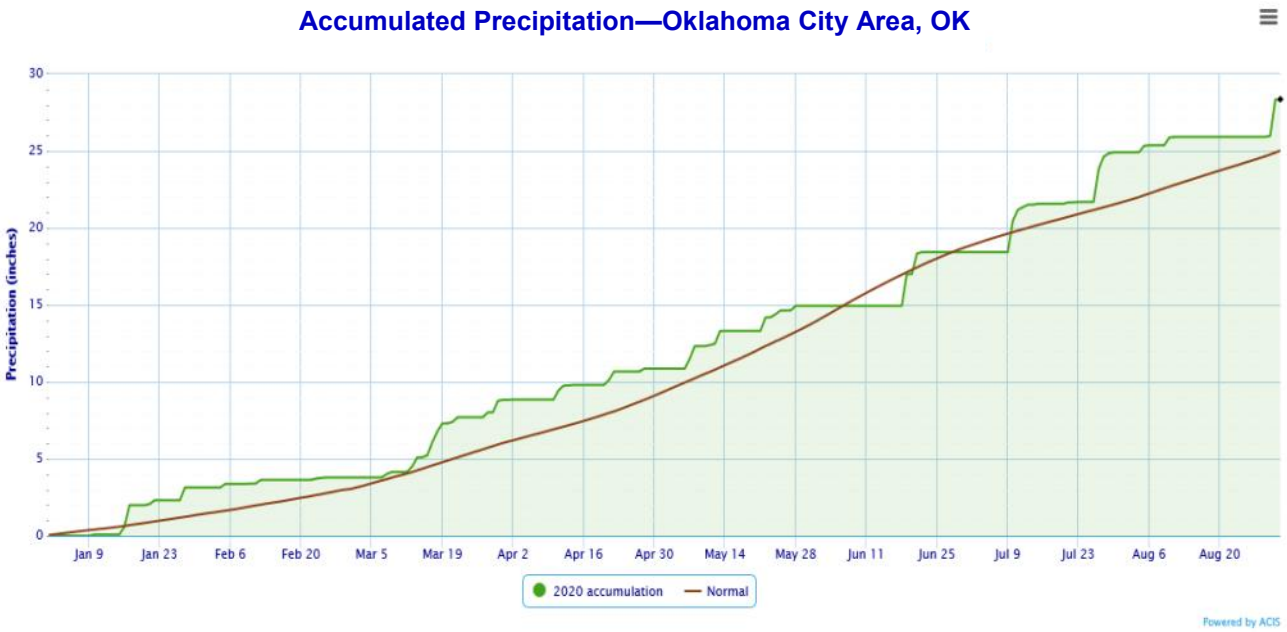
Drought Conditions in Central Oklahoma

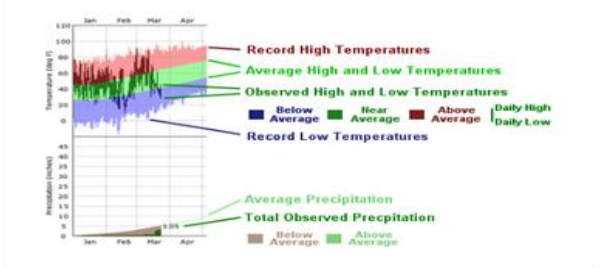
Water Resources Division
Association of Central Oklahoma Governments
September 1, 2020

acog

Temperature and Precipitation Plot for Oklahoma City, Oklahoma for 2020







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

Rainfall Summaries by Oklahoma Climate Division

Calendar Year 01-Jan-2020 though 31-Aug-2020

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	14.70"	-5.36"	73%	19th driest	7.15" (2011)	32.23" (2007)
Central	26.84"	+1.16"	105%	33rd wettest	8.65" (1936)	44.47" (2007)
S. Central	32.20"	+5.15"	119%	15th wettest	11.94" (2011)	48.48" (2015)
Statewide	27.68"	+2.83"	111%	23rd wettest	10.00" (1936)	36.68" (2015)

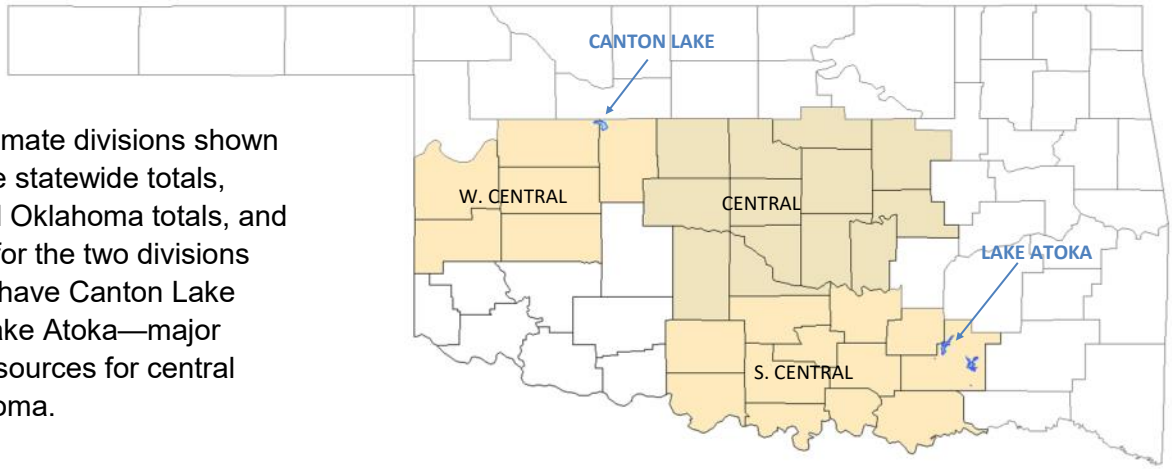
Water Year: 01-Oct-2019 through 31-Aug-2020

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	18.17"	-7.43"	71%	18th driest	11.69" (2010-11)	38.41" (2018-19)
Central	34.17"	+0.38"	101%	35th wettest	15.93" (1935-36)	51.47" (2006-07)
S. Central	42.14"	+5.40"	115%	15th wettest	16.11" (1955-56)	57.30" (2014-15)
Statewide	36.16"	+3.23"	110%	22nd wettest	17.81" (1935-36)	44.96" (2018-19)

Summer 01-Jun through 31-Aug-2020

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	6.47"	-2.78"	70%	28th driest	2.59" (1980)	15.95" (1995)
Central	10.51"	-0.36"	97%	46th wettest	2.15" (1936)	24.12" (2007)
S. Central	8.62"	-1.56"	85%	43rd driest	1.69" (2011)	19.00" (1945)
Statewide	9.74"	-0.62"	94%	44th driest	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.

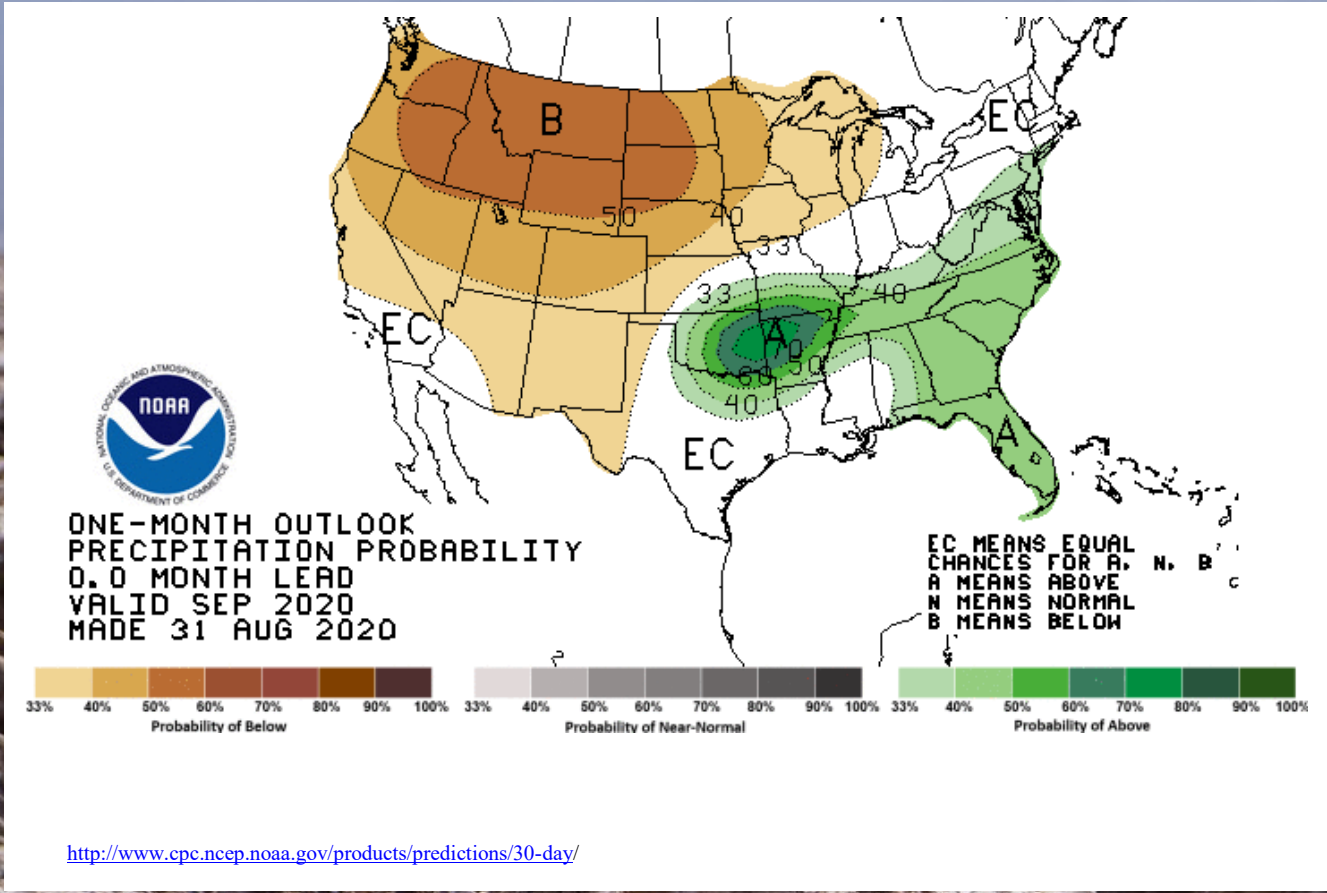


http://climate.ok.gov/index.php/drought/last_30_days/

OKLAHOMA CLIMATOLOGICAL SURVEY

acog

NOAA One-Month Outlook



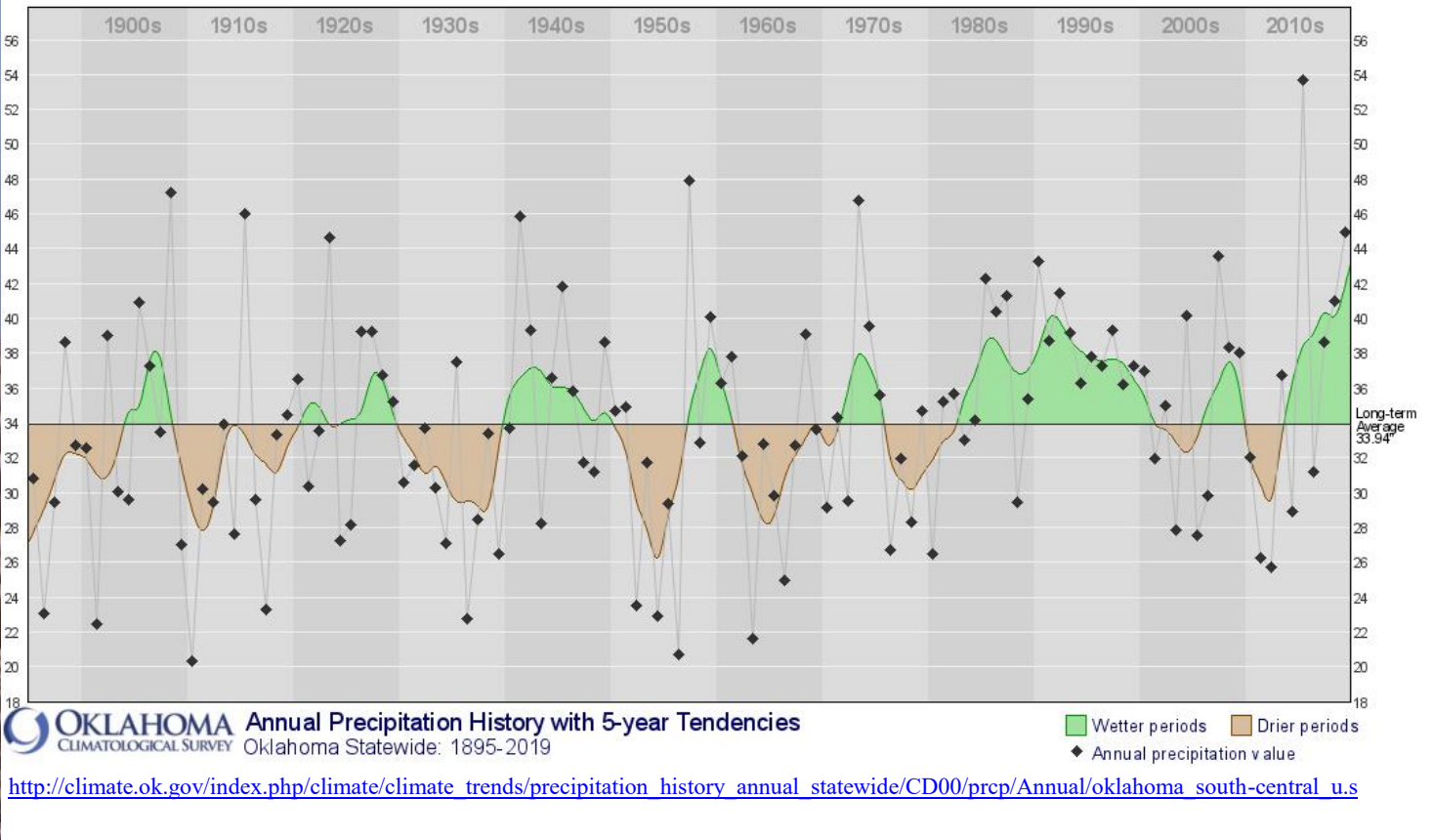
http://www.cpc.ncep.noaa.gov/products/predictions/30-day/

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.

acog

Annual Precipitation History with 5-Year Tendencies



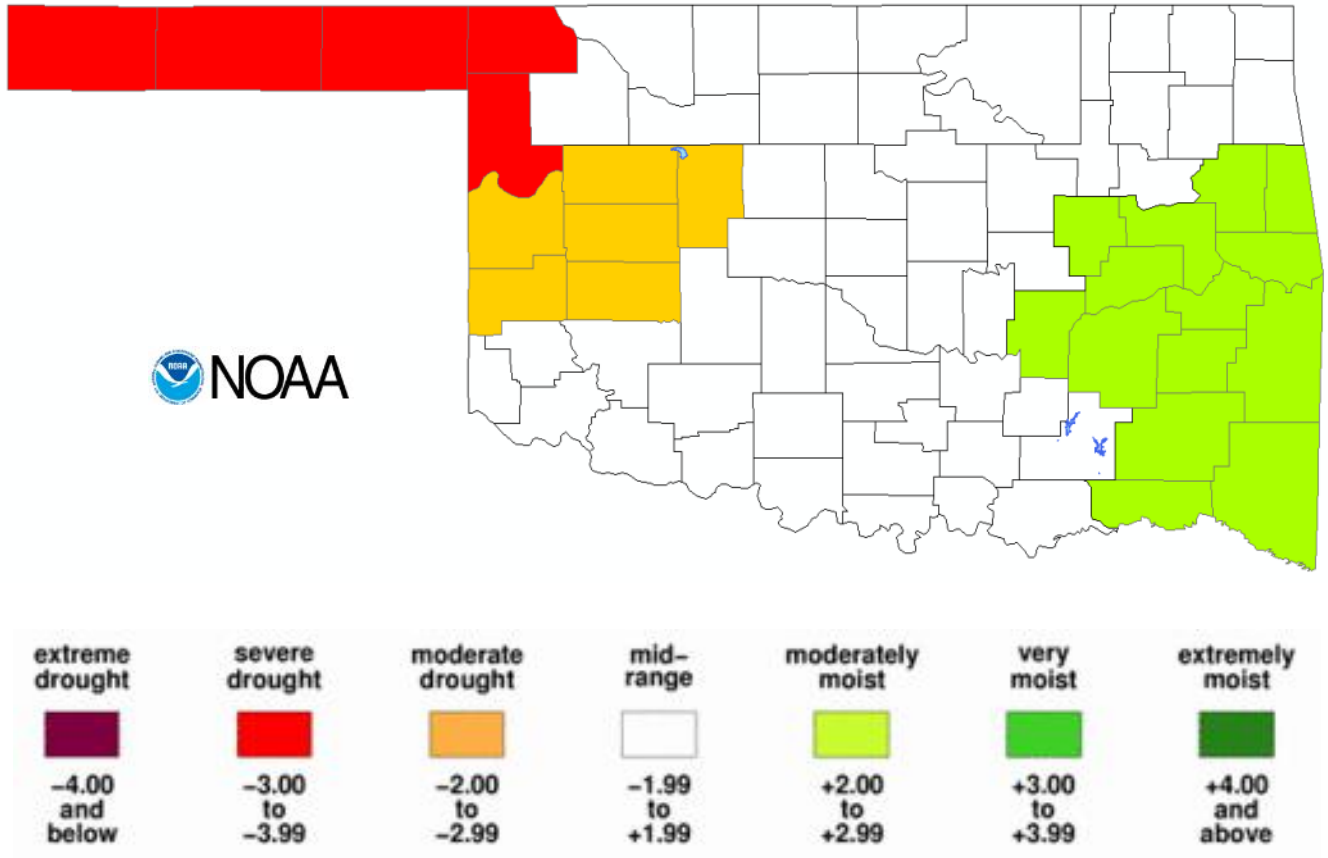
http://climate.ok.gov/index.php/climate/climate_trends/precipitation_history_annual_statewide/CD00/prcp/Annual/oklahoma_south-central_u.s

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 29 AUG 2020



http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/cdus/palmer_drought/wpdsouth.txt

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.

acog

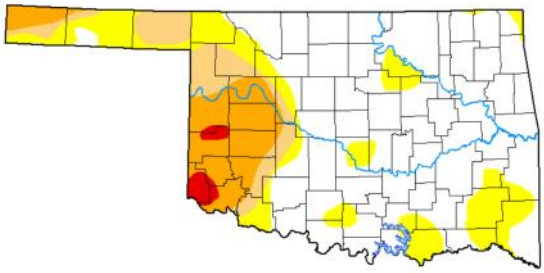
U.S. Drought Monitor

Week	Date	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	2020-08-25	62.46	37.54	20.25	12.32	1.33	0.00
Last Week	2020-08-18	65.06	34.94	18.59	10.74	0.46	0.00
3 Months Ago	2020-05-26	73.67	26.33	14.44	3.46	0.00	0.00
Start of Calendar Year	2019-12-31	76.45	23.55	10.47	3.64	0.00	0.00
Start of Water Year	2019-10-01	71.94	28.06	11.08	1.01	0.00	0.00
One Year Ago	2019-08-27	61.77	38.23	18.47	7.94	2.62	0.00

U.S. Drought Monitor

Oklahoma

Abnormal dryness or drought are currently affecting approximately 165,206 people in Oklahoma.

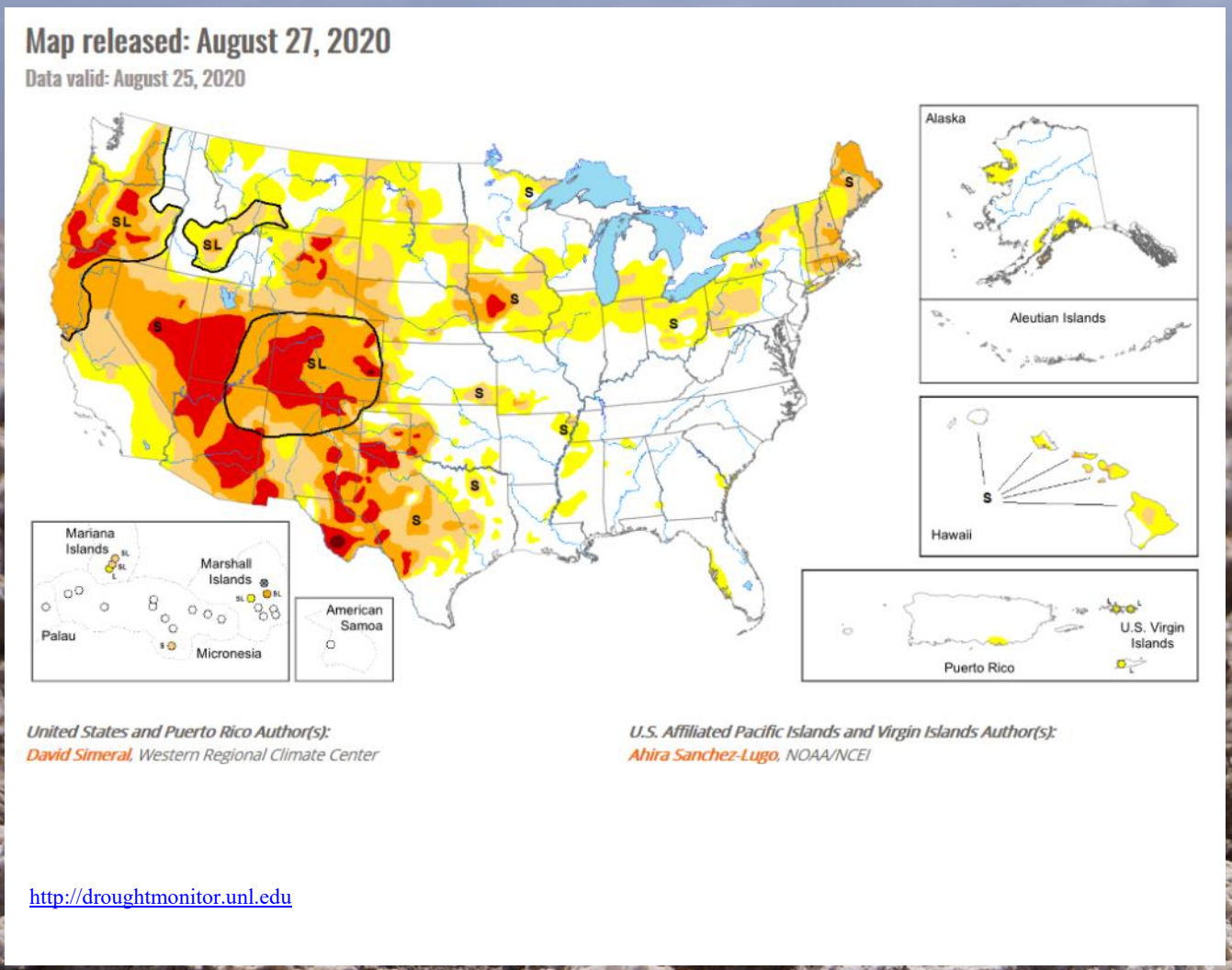


NATIONAL INTEGRATED DROUGHT INFORMATION SYSTEM NIDIS Drought.gov U.S. Drought Portal

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

acog

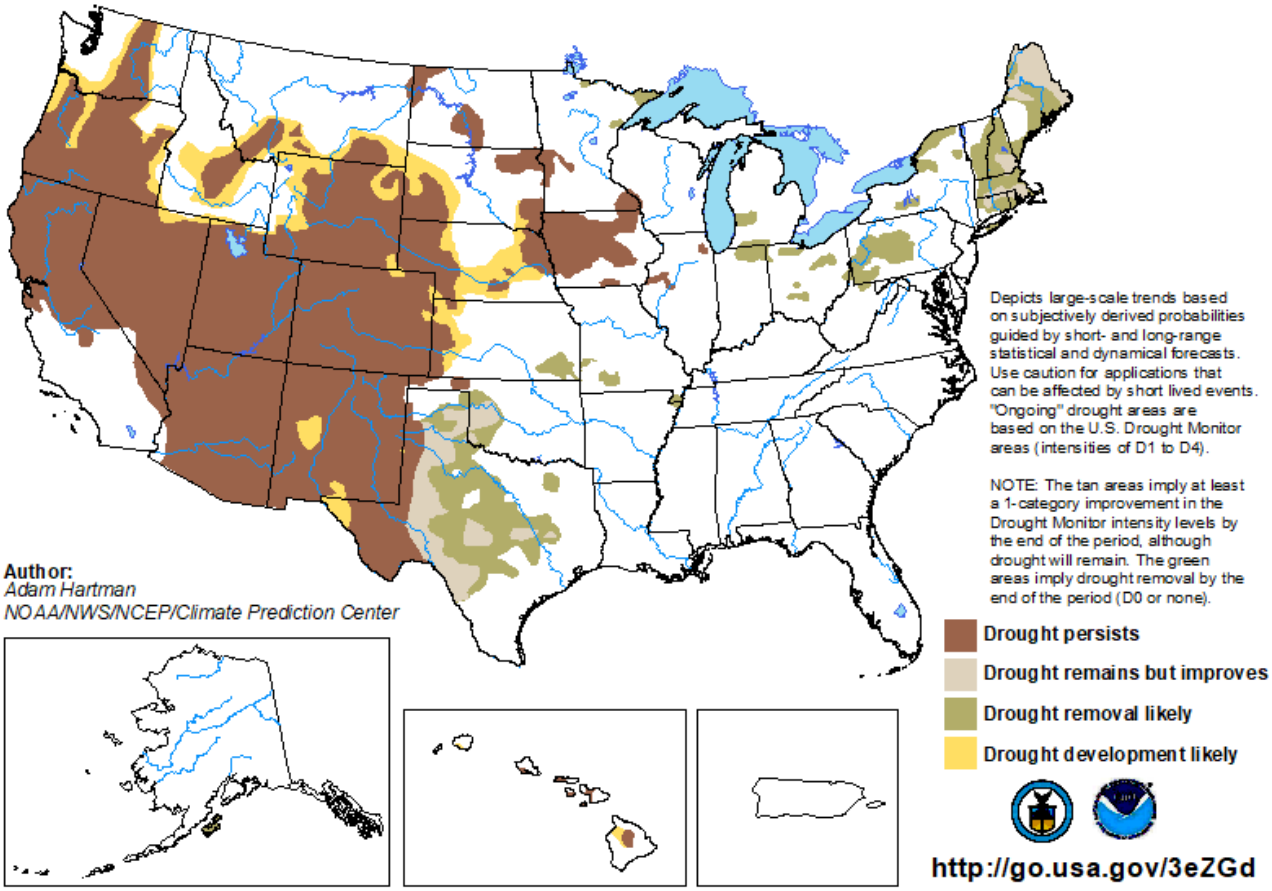
U.S. Drought Monitor Nationwide Map



http://droughtmonitor.unl.edu

U.S. Drought Monitor

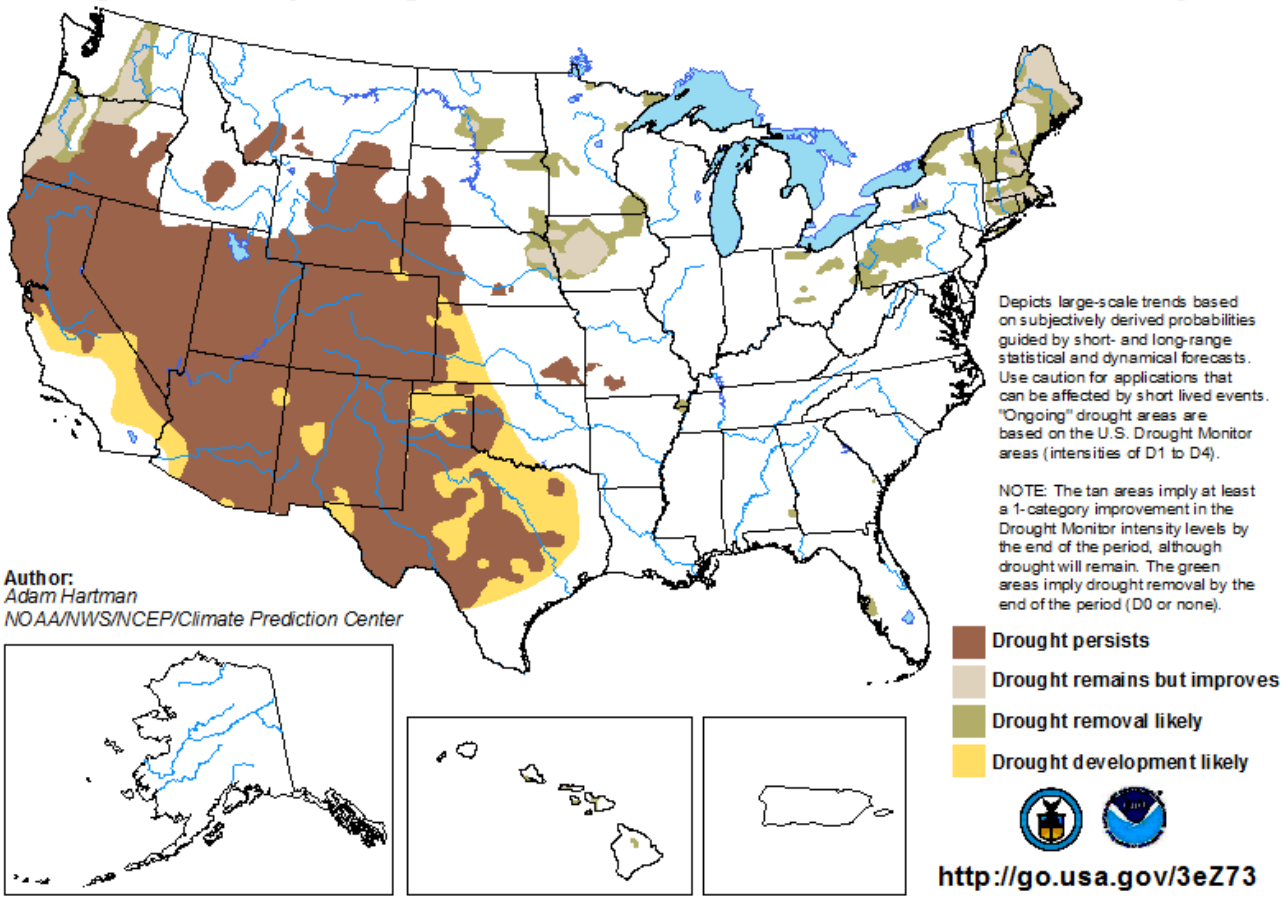
Monthly Drought Outlook Map



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

U.S. Drought Monitor

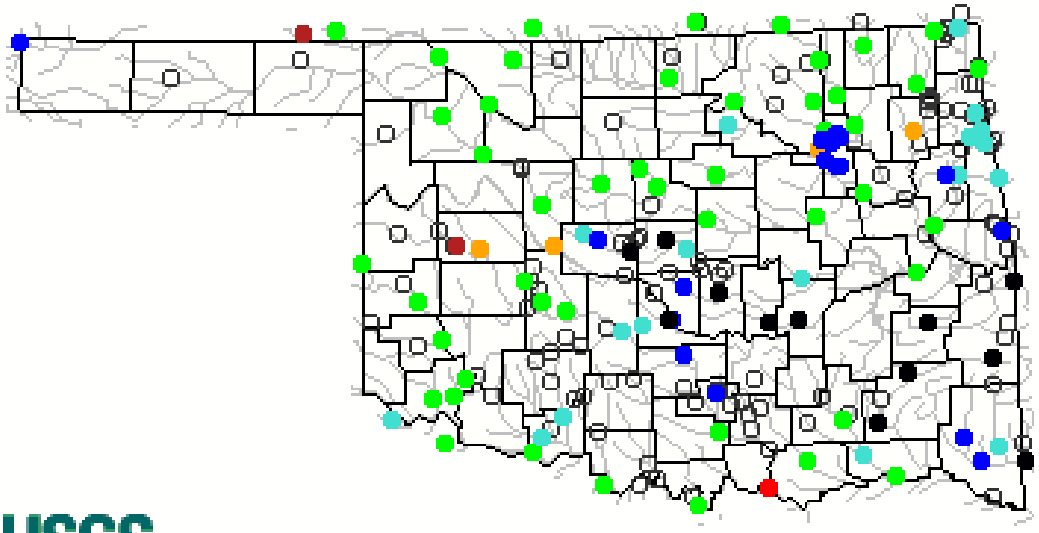
Seasonal Drought Outlook Map



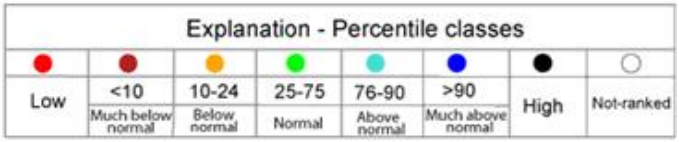
http://www.cpc.ncep.noaa.gov/products/expert_assessment/sdo_summary.php

USGS Streamflow Data

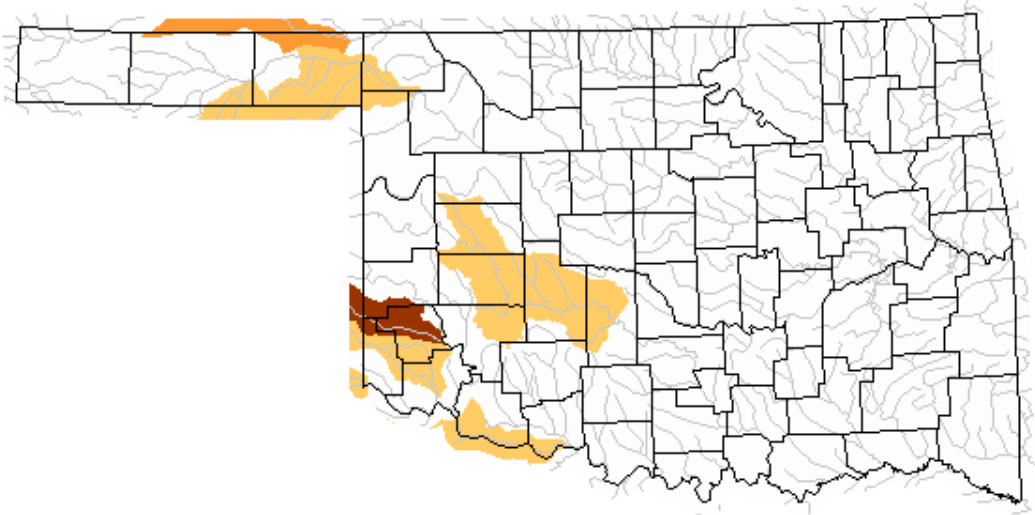
Tuesday, September 01, 2020 10:30ET



USGS

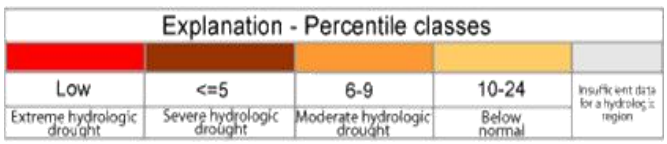


Monday, August 31, 2020



USGS

Below normal 28-day average streamflow

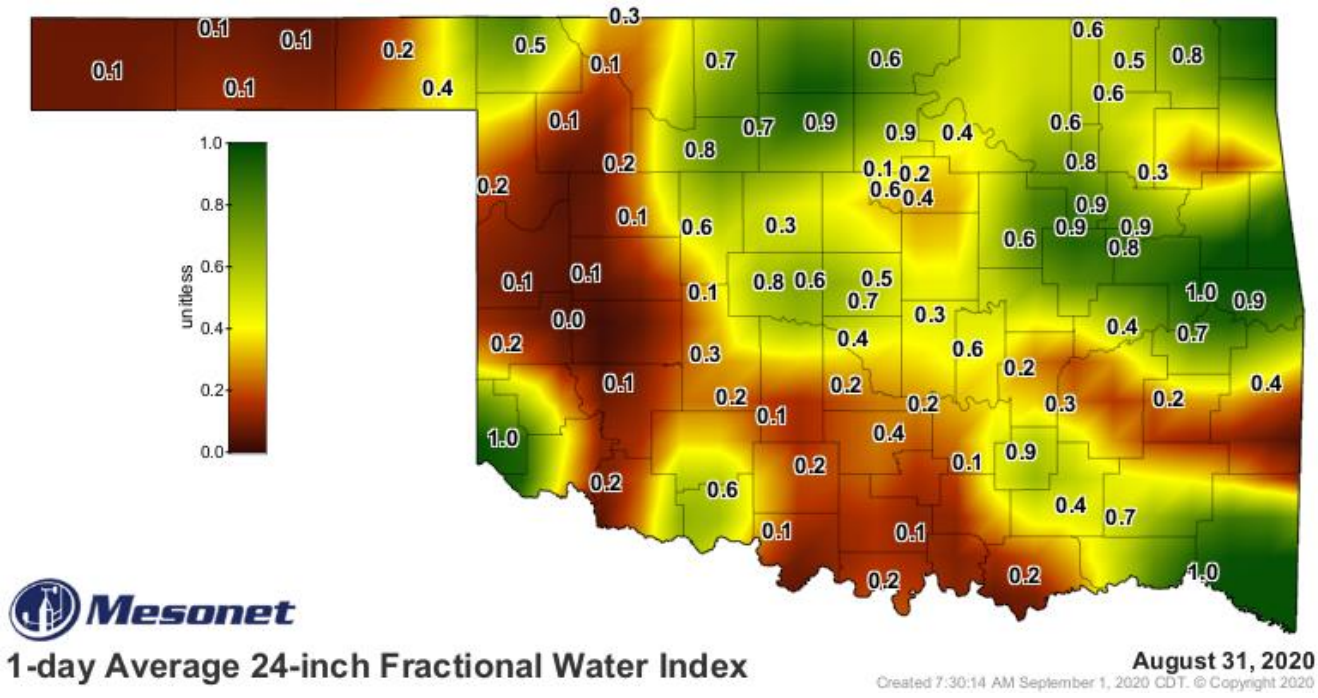


https://waterdata.usgs.gov/ok/nwis/rt

https://waterwatch.usgs.gov/index.php?id=pa28d_dry&sid=w__map|m__pa28d_dwc&r=ok

acog

SOIL MOISTURE MAP



Mesonet

1-day Average 24-inch Fractional Water Index

August 31, 2020

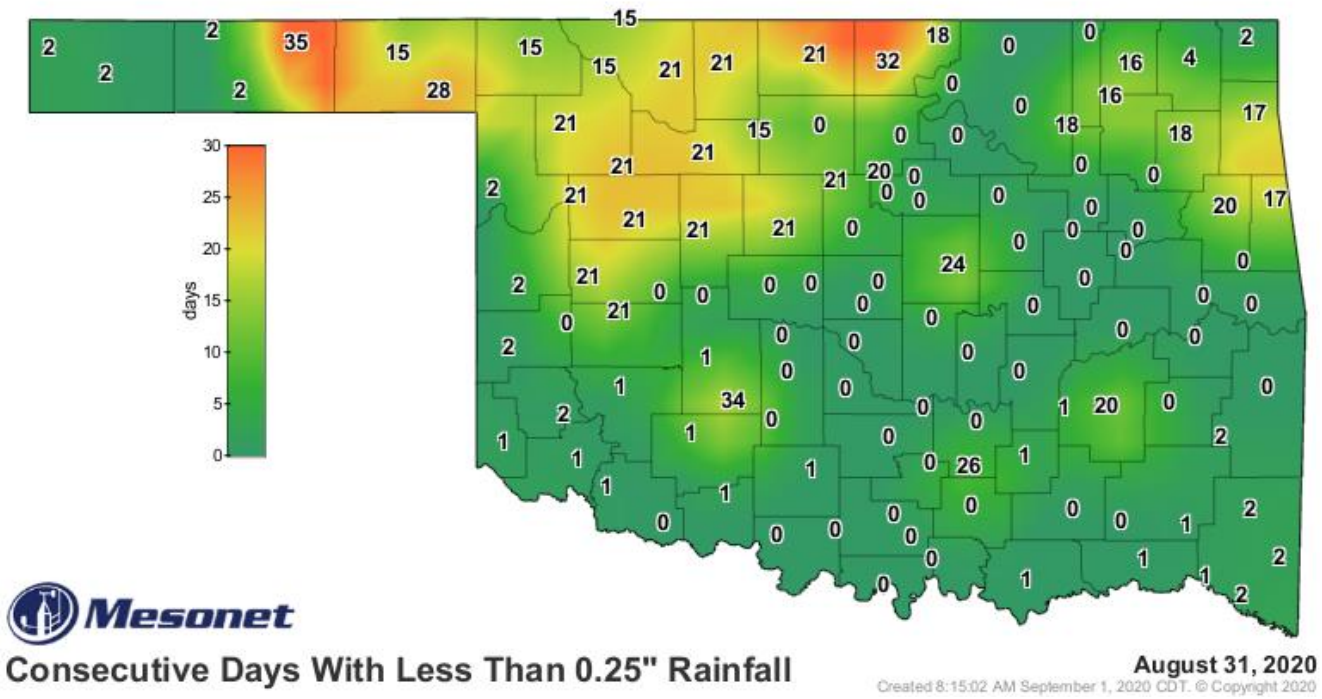
Created 7:30:14 AM September 1, 2020 CDT. © Copyright 2020

- 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

acog

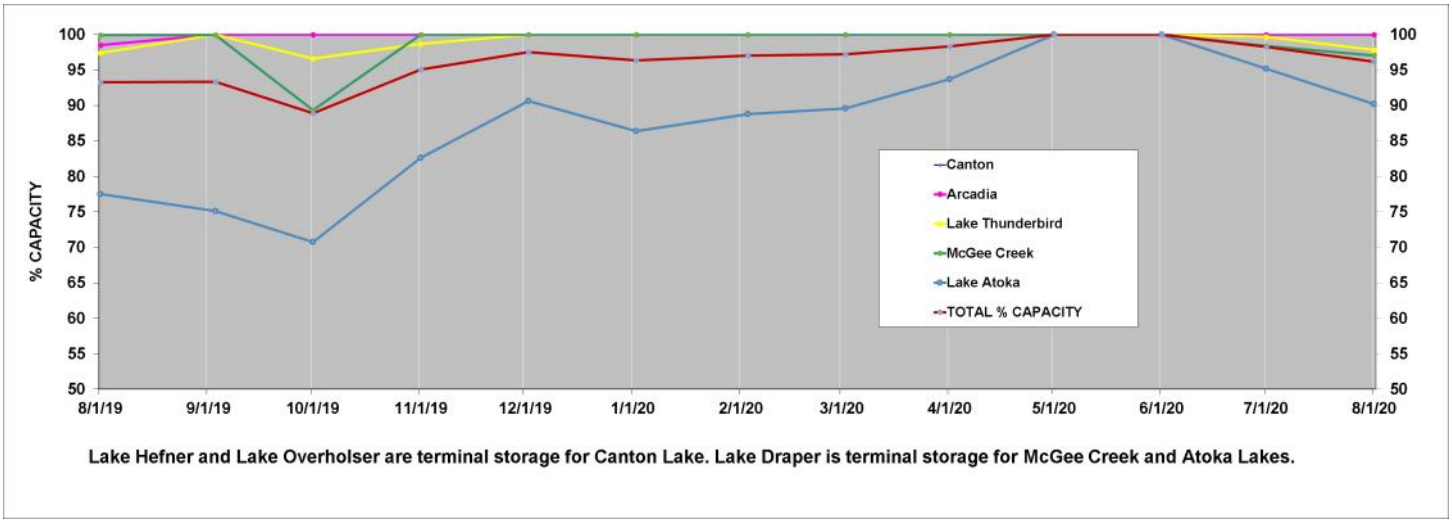
CONSECUTIVE DAYS WITHOUT RAINFALL MAP



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

acog

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 8/1/2020
Canton	99.8	-0.2
Arcadia	100.0	0.0
Lake Thunderbird	93.7	-4.1
McGee Creek	94.7	-2.3
Lake Atoka	85.8	-4.3
TOTAL % CAPACITY	93.5	-6.5

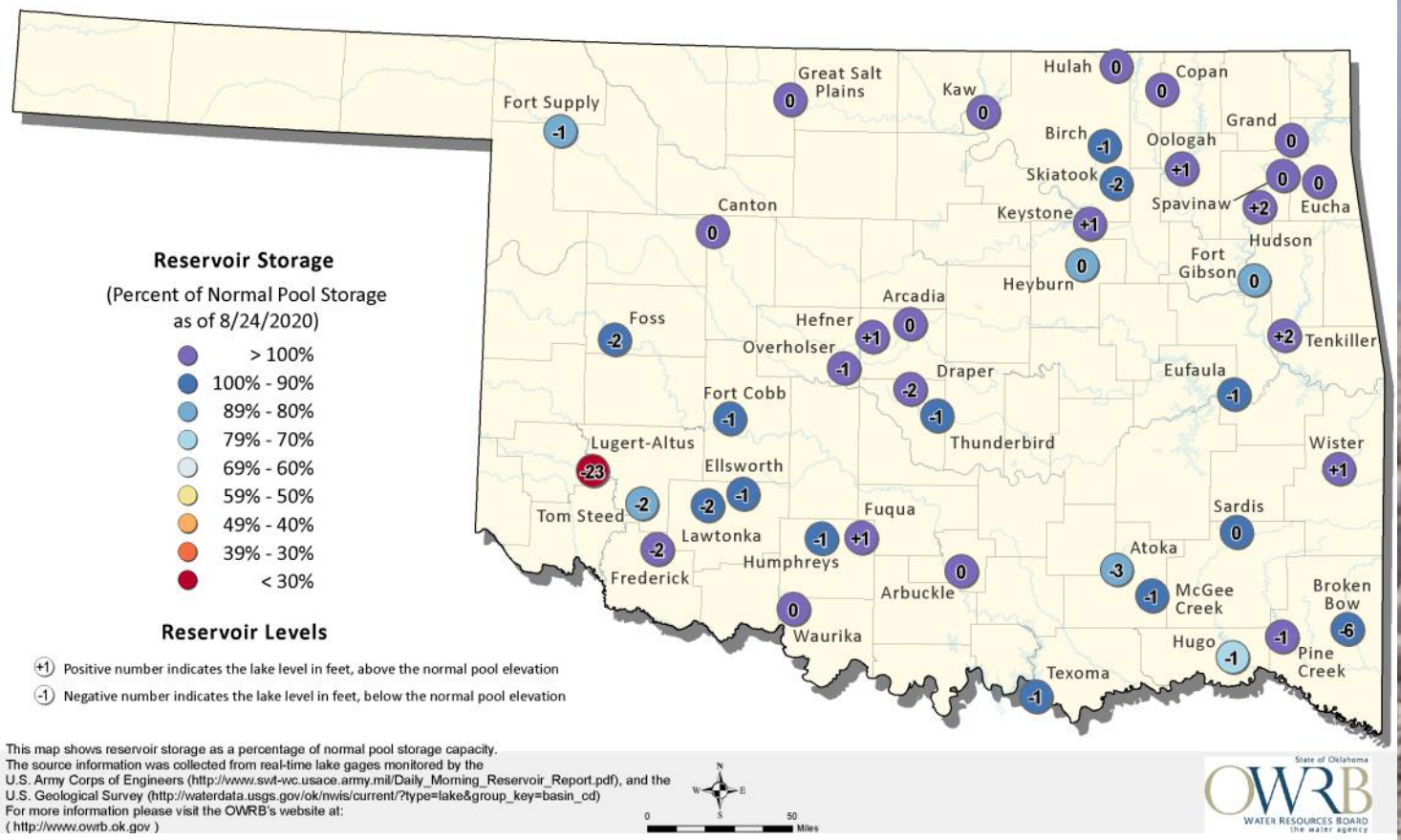
http://www.swt-wc.usace.army.mil/Daily_Morning_Reservoir_Report.pdf

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.

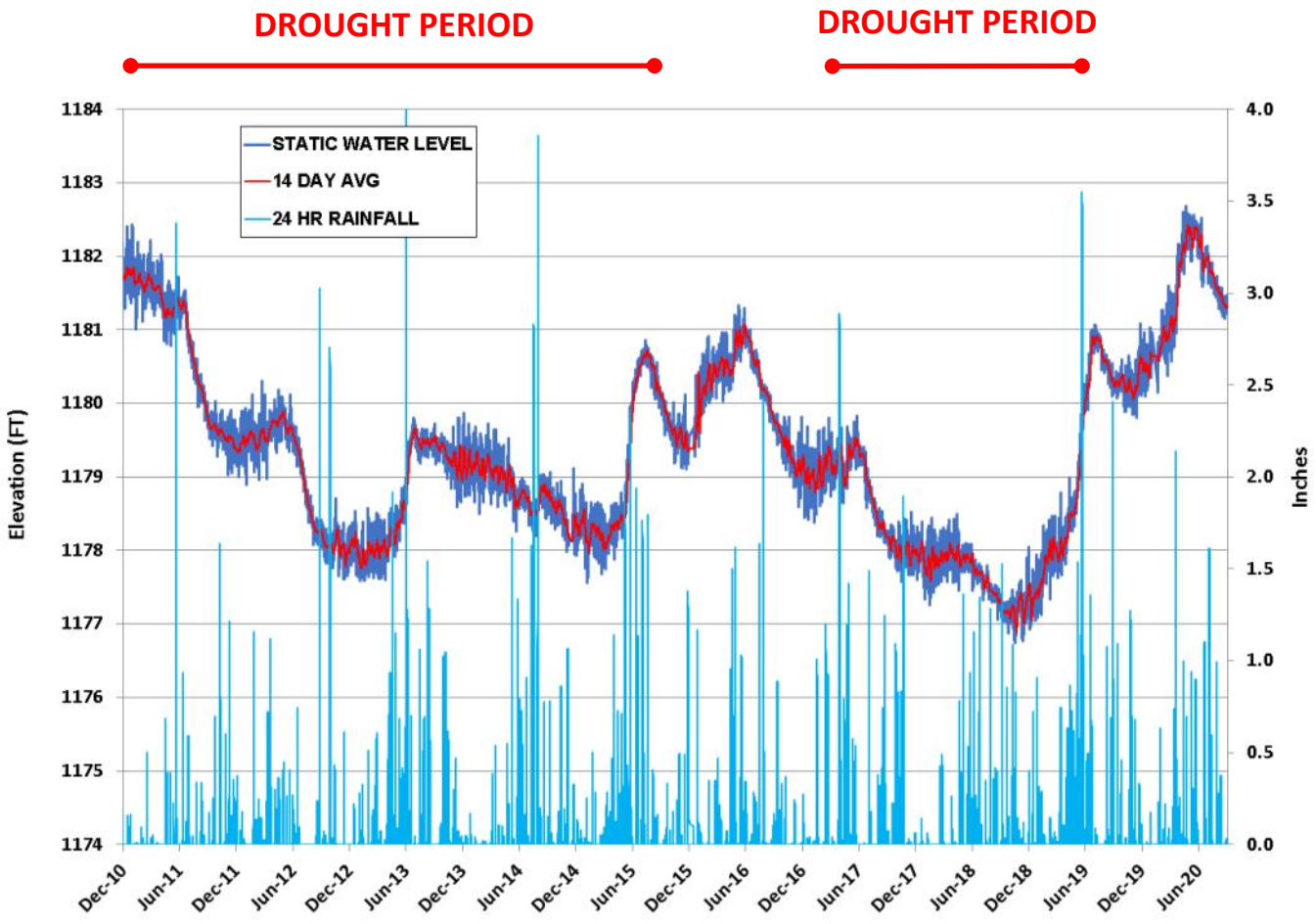
Oklahoma Surface Water Resources

Reservoir Levels and Storage as of 8/24/2020



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

Groundwater Levels
Spencer Mesonet Station

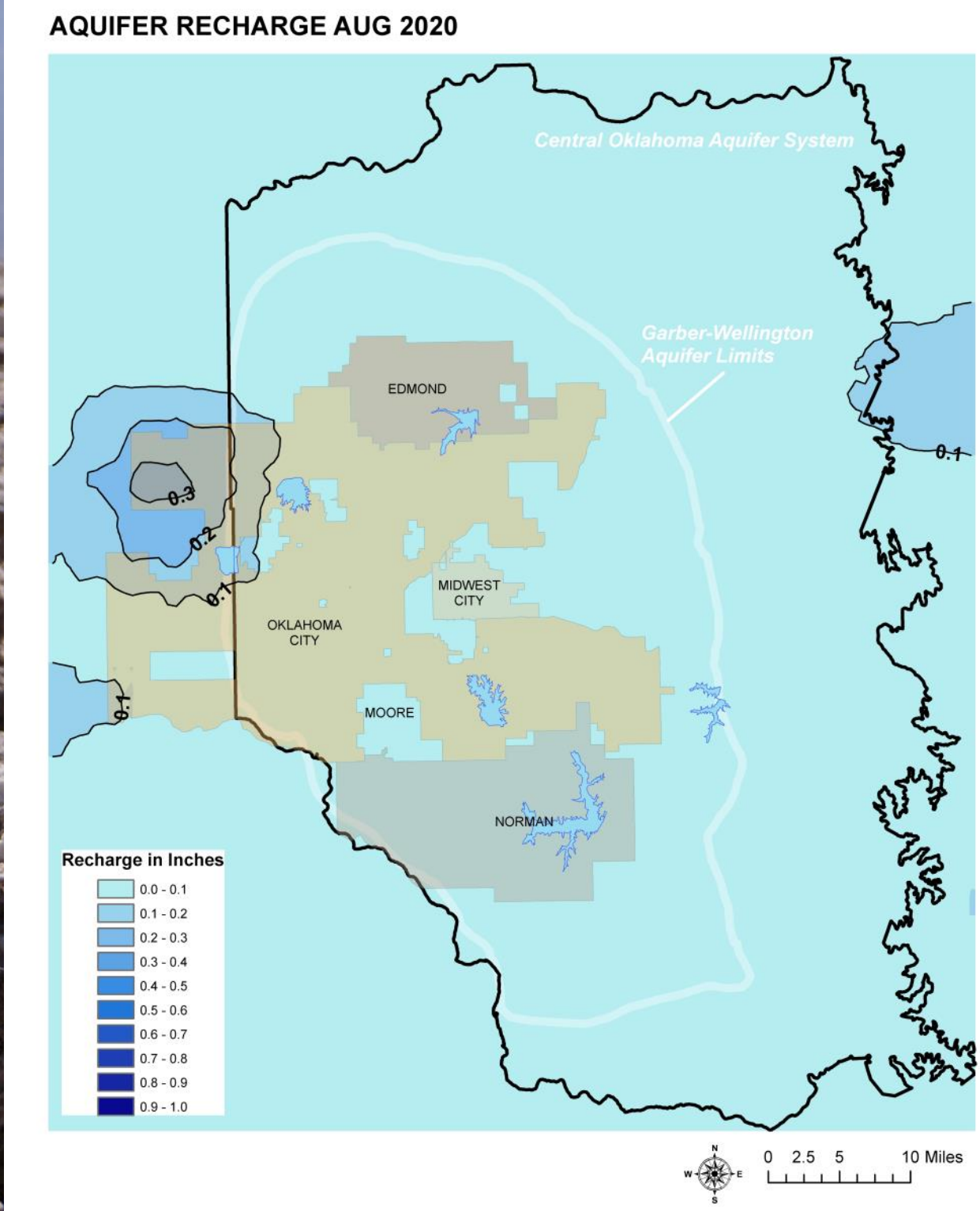


http://www.mesonet.org/index.php/weather/groundwater

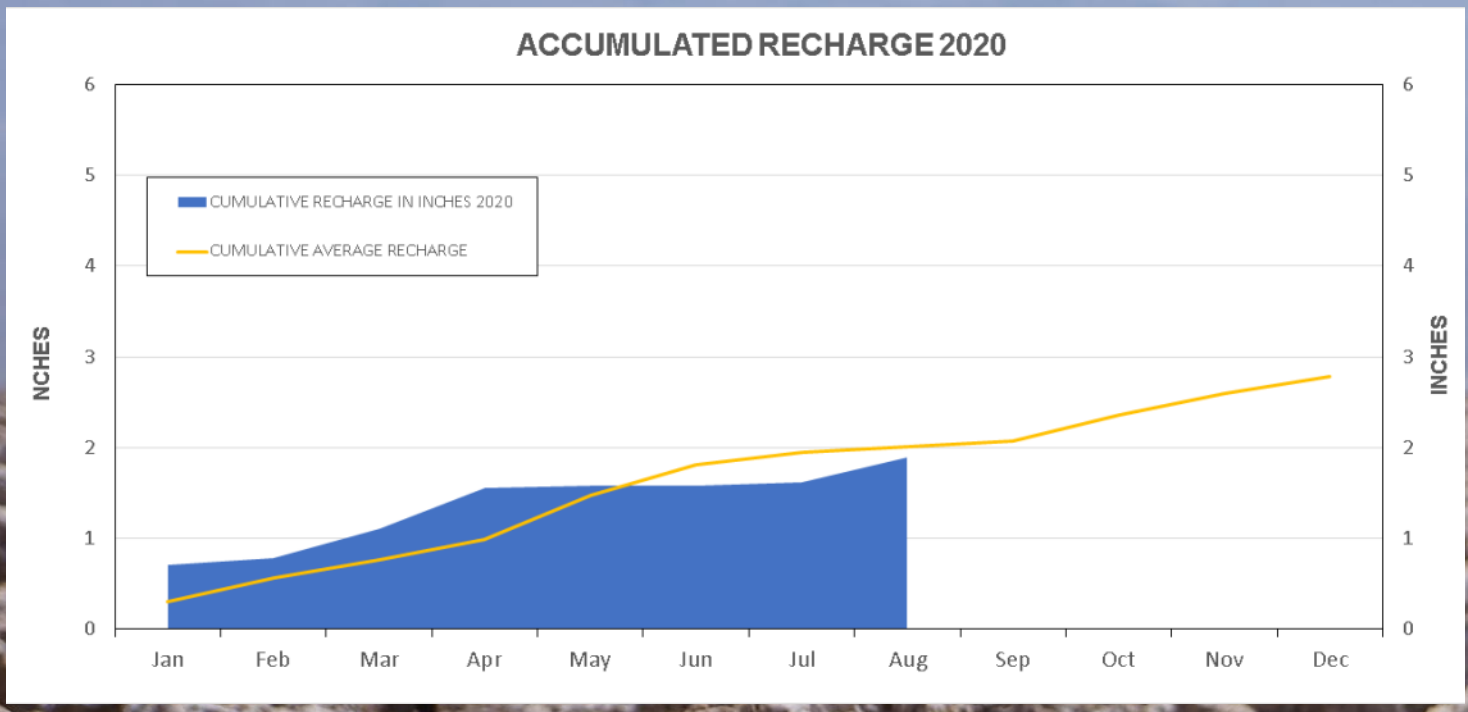
Mesonet

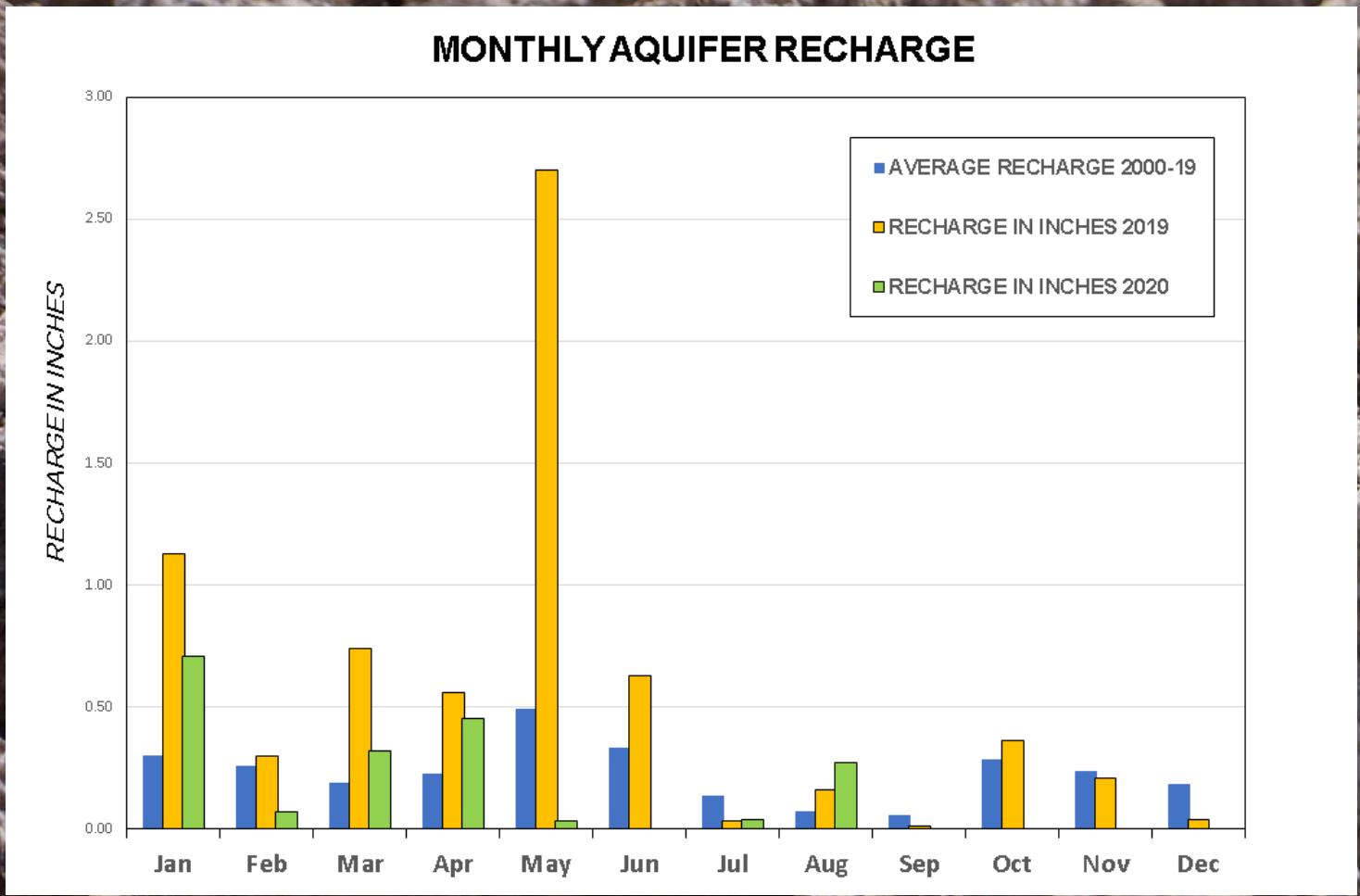
acog

Recharge Map
Central Oklahoma Aquifer System



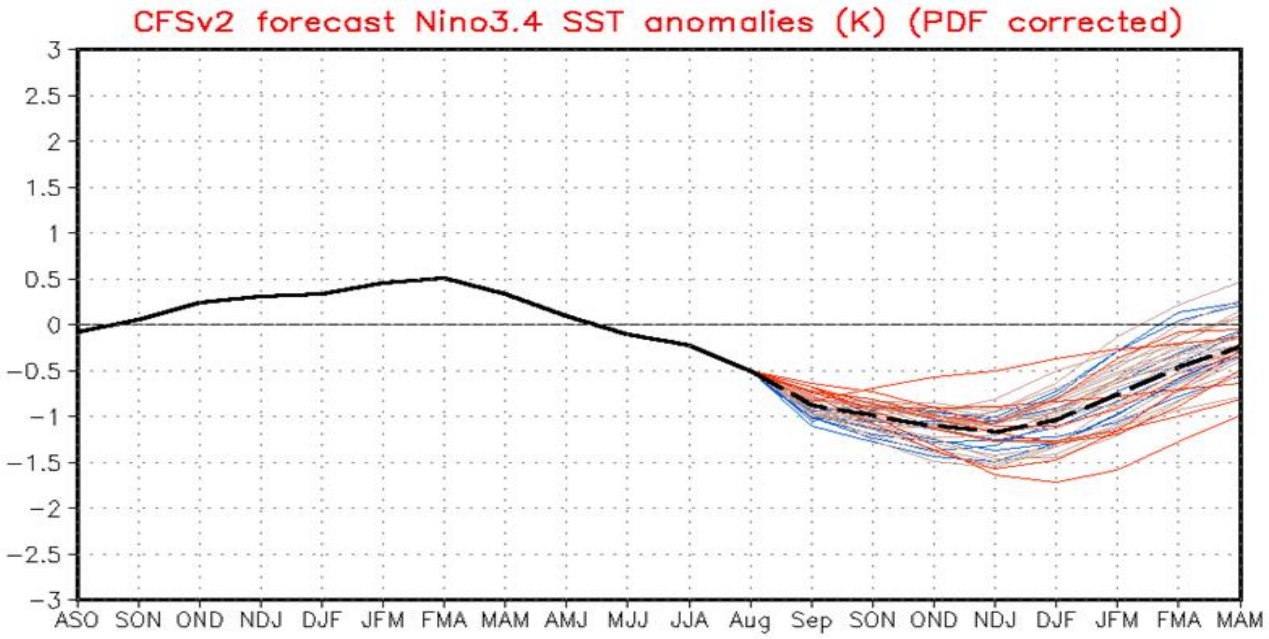
Recharge Charts
Central Oklahoma Aquifer System

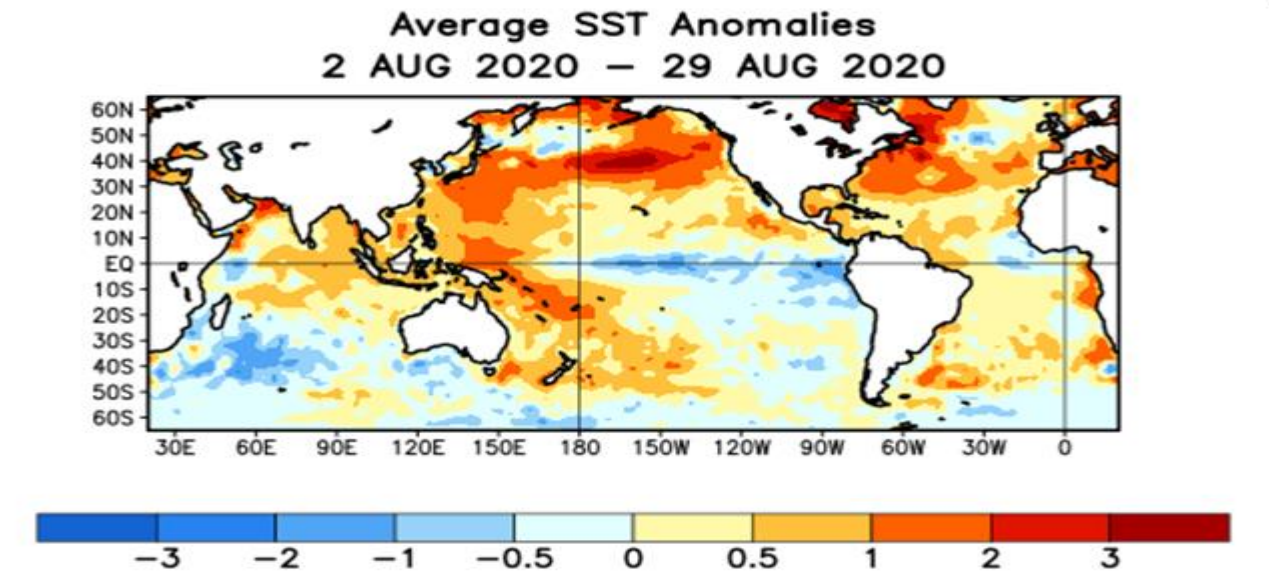




acog

ENSO Cycle
Recent Evolution, Current Status and Predictions





Summary

ENSO Alert System Status: La Niña Watch

- ENSO-neutral conditions are present.
- Equatorial sea surface temperatures (SSTs) are near-to-below average across the east-central and eastern Pacific Ocean.
- The tropical atmospheric circulation is consistent with ENSO-neutral.
- There is a ~60% chance of La Niña development during Northern Hemisphere fall 2020 and continuing through winter 2020-21 (~55% chance).

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

acog