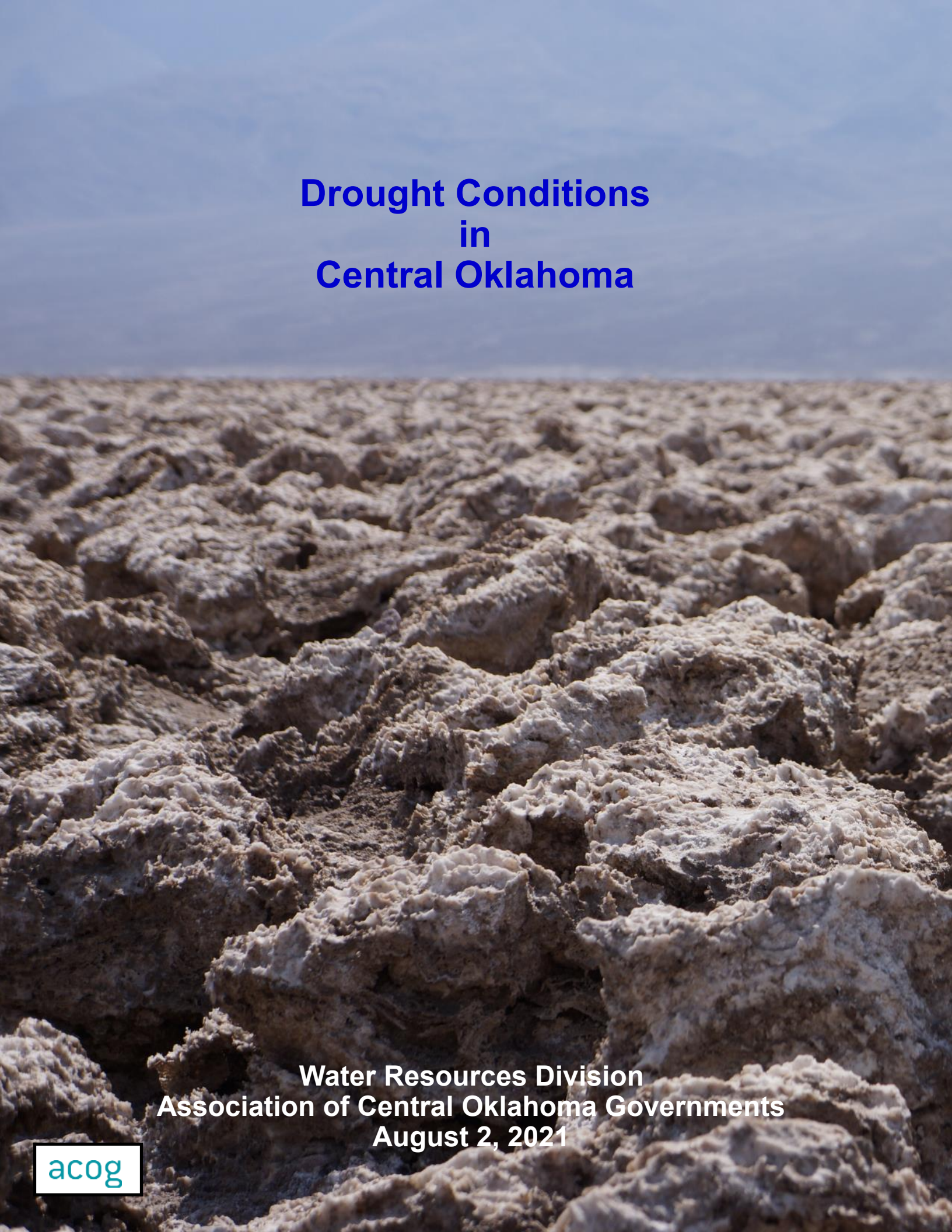
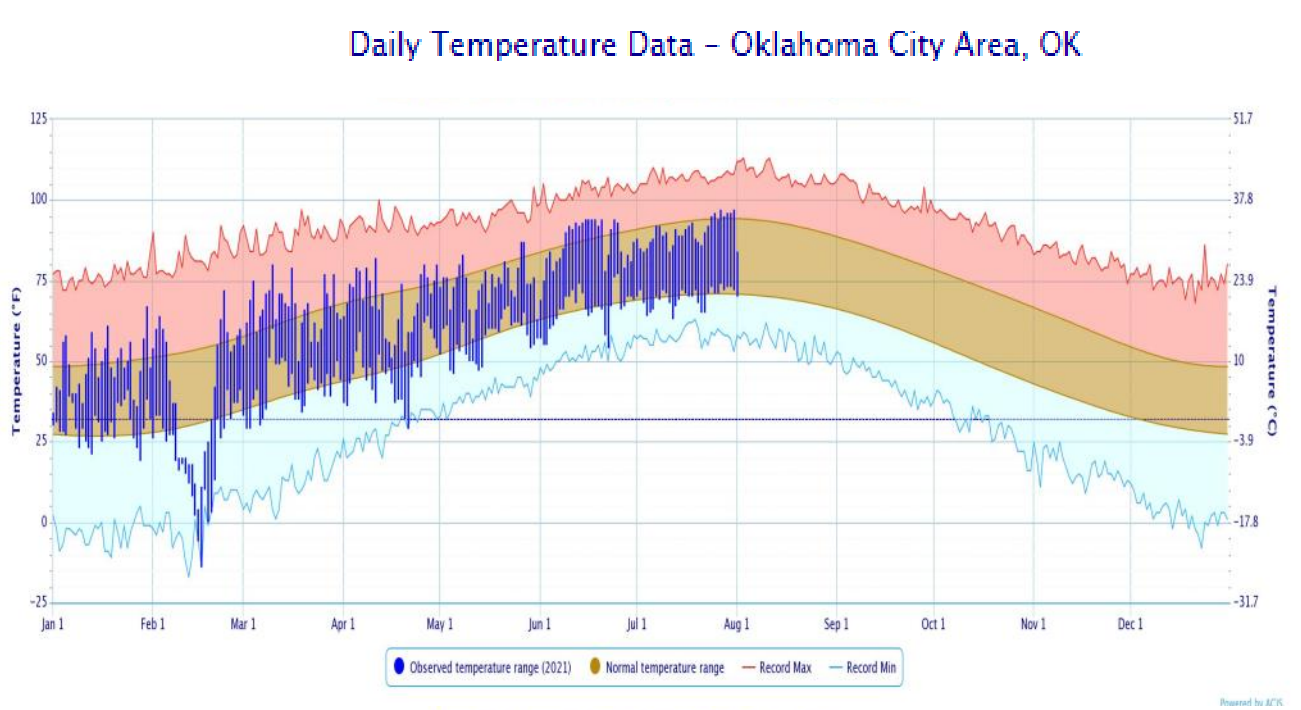


Drought Conditions in Central Oklahoma

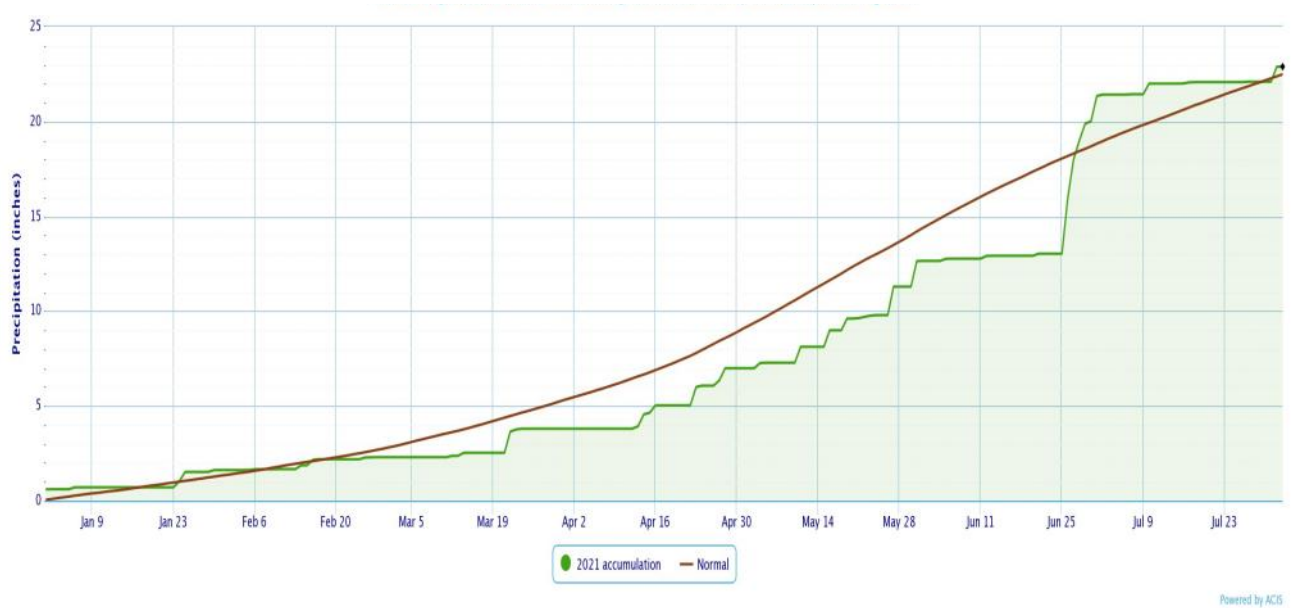
Water Resources Division
Association of Central Oklahoma Governments
August 2, 2021

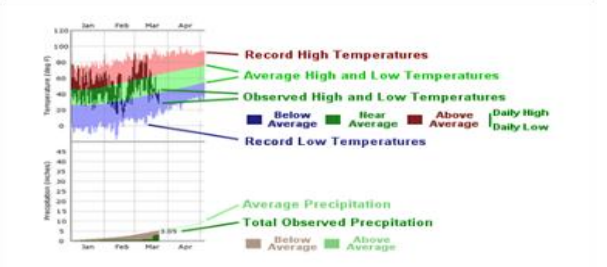
acog

Temperature and Precipitation Plot for Oklahoma City, Oklahoma for 2021



Accumulated Precipitation—Oklahoma City Area, OK





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

Rainfall Summaries by Oklahoma Climate Division

Calendar Year 01-Jan-2021 though 01-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	20.02"	+2.89"	117%	19th wettest	5.25" (2011)	28.29" (2015)
Central	24.91"	+2.24"	110%	26th wettest	8.49" (1936)	39.72" (2007)
S. Central	25.24"	+0.73"	103%	37th wettest	10.84" (2011)	47.78" (2015)
Statewide	23.67"	+1.69"	108%	33rd wettest	9.68" (1936)	34.45" (2015)

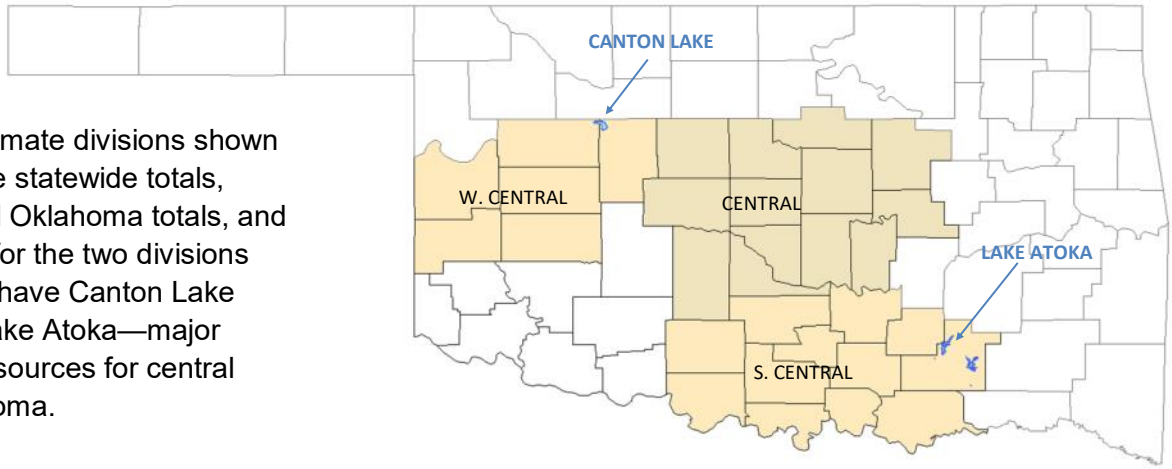
Water Year: 01-Oct-2020 through 01-Aug-2021

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	24.84"	+2.17"	110%	24th wettest	9.79" (2010-11)	35.76" (2018-19)
Central	33.02"	+2.24"	107%	27th wettest	15.82" (1935-36)	46.72" (2006-07)
S. Central	31.39"	-2.81"	92%	48th wettest	14.98" (1955-56)	56.60" (2014-15)
Statewide	31.00"	+0.94"	103%	34th wettest	16.75" (1955-56)	41.32" (2006-07)

Summer 01-Jun through 01-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	8.63"	+2.31"	137%	16th wettest	1.60" (2011)	13.65" (1962)
Central	10.42"	+2.56"	133%	20th wettest	1.94" (1954)	19.40" (2007)
Southeast	9.37"	+1.00"	112%	35th wettest	1.51" (1930)	16.70" (2007)
Statewide	8.62"	+1.13"	115%	26th wettest	1.96" (2011)	14.56" (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.

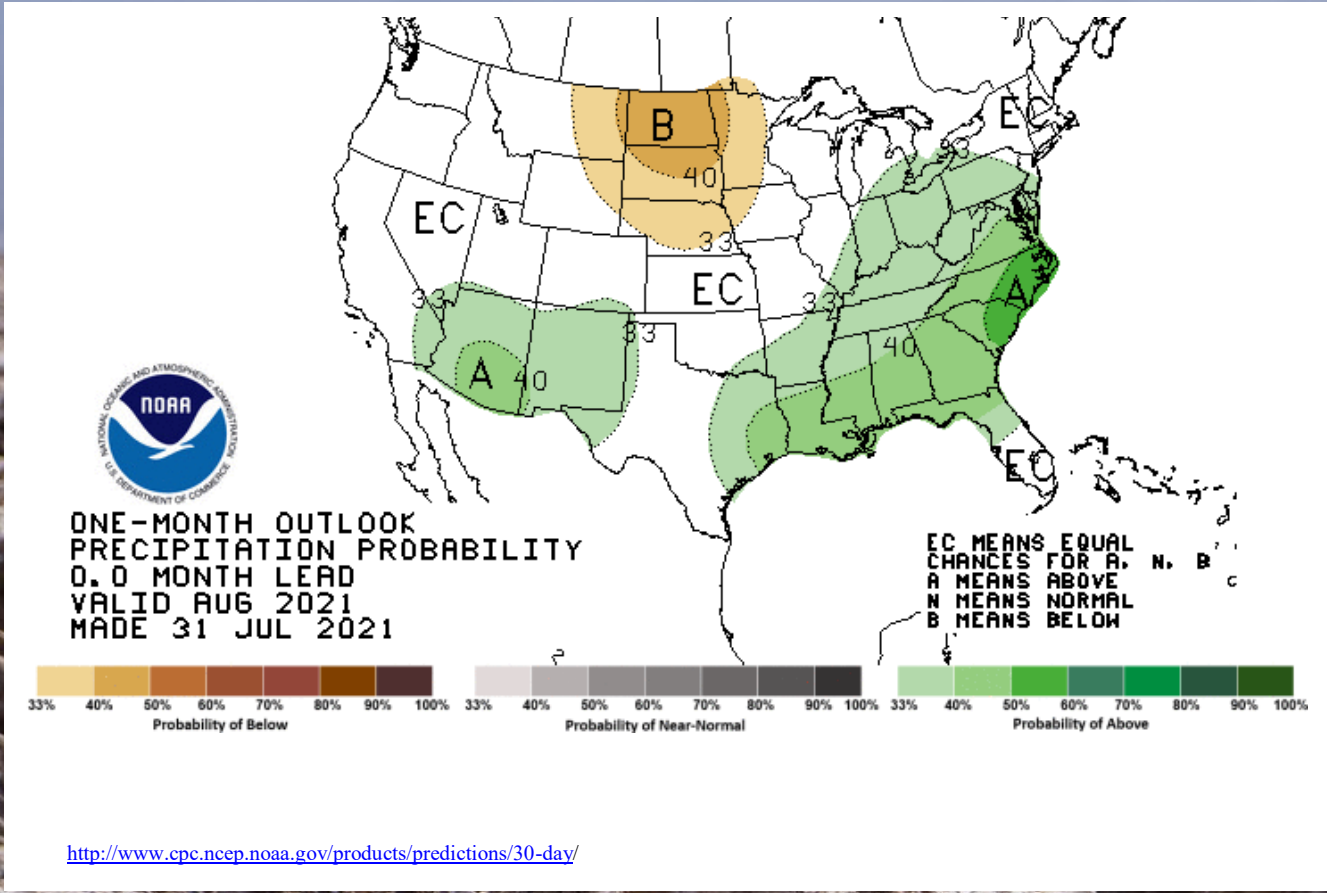


http://climate.ok.gov/index.php/drought/last_30_days/

OKLAHOMA CLIMATOLOGICAL SURVEY

acog

NOAA One-Month Outlook

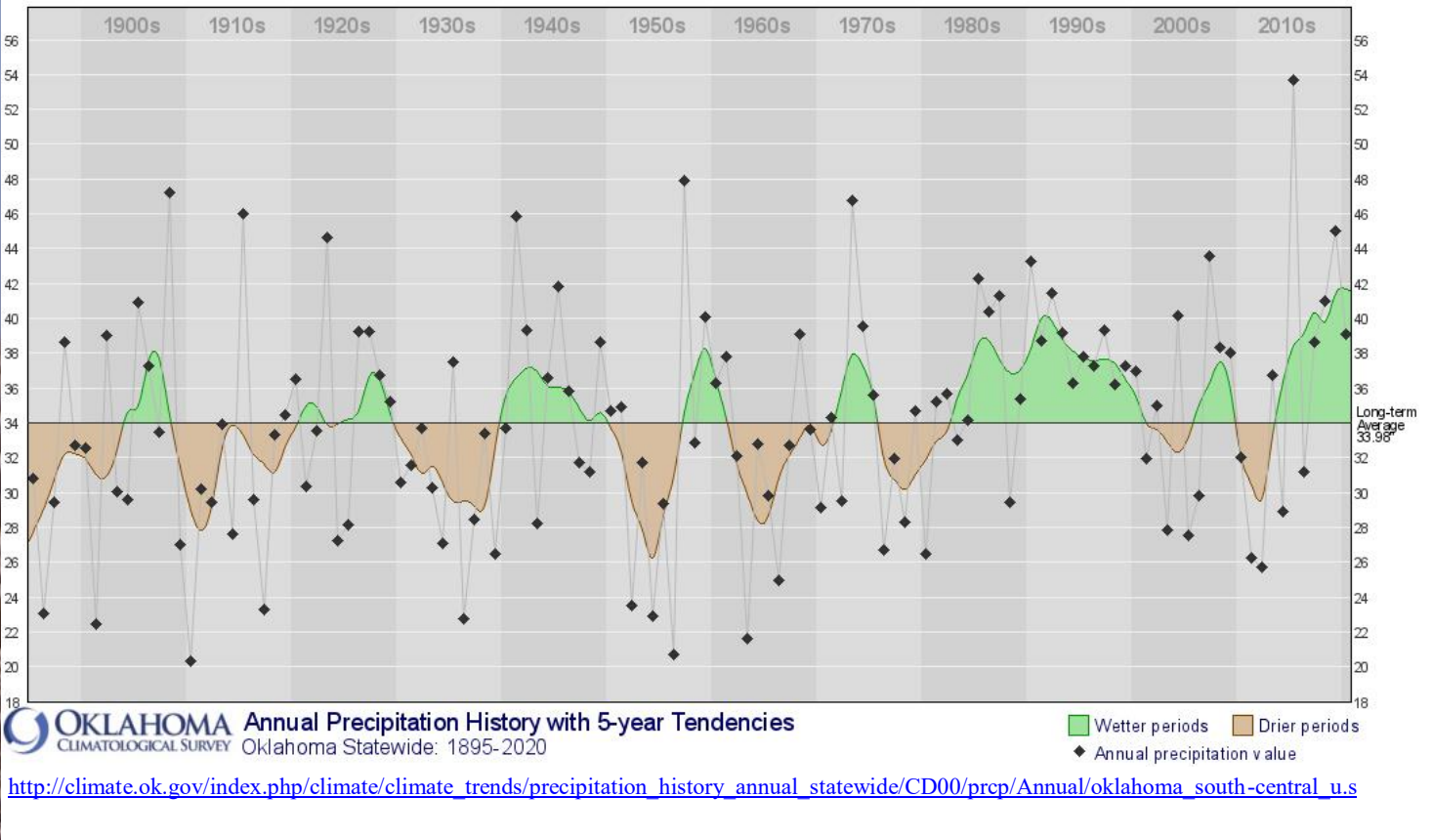


http://www.cpc.ncep.noaa.gov/products/predictions/30-day/

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.

Annual Precipitation History with 5-Year Tendencies



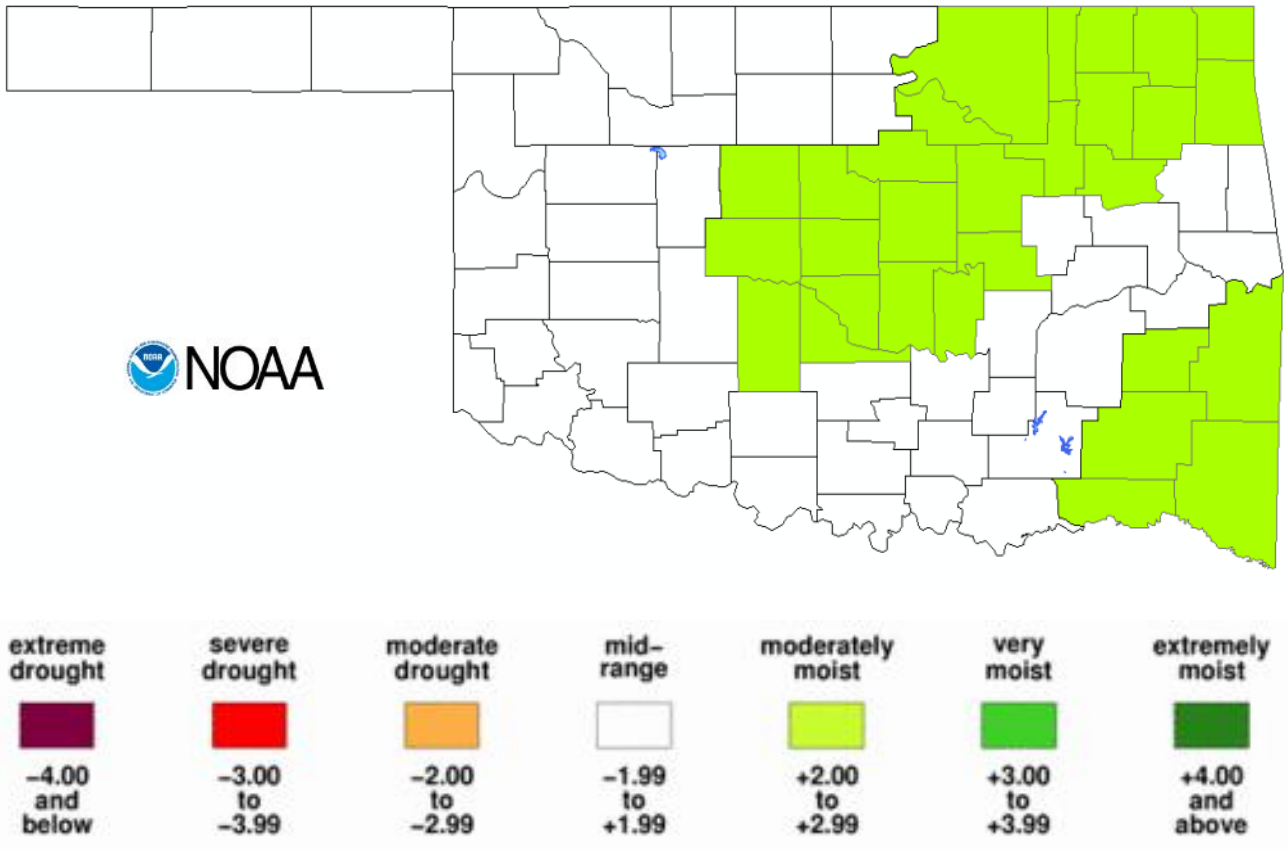
http://climate.ok.gov/index.php/climate/climate_trends/precipitation_history_annual_statewide/CD00/prcp/Annual/oklahoma_south-central_u.s

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 24 JUL 2021



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.

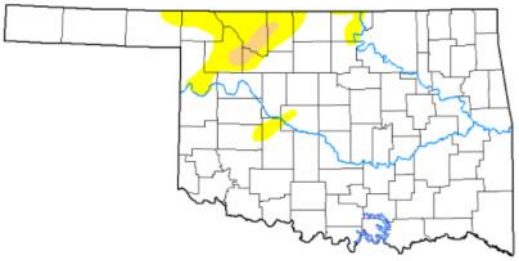
U.S. Drought Monitor

Week	Date	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	2021-07-27	91.45	8.55	1.13	0.00	0.00	0.00
Last Week	2021-07-20	91.45	8.55	1.13	0.00	0.00	0.00
3 Months Ago	2021-04-27	43.60	56.40	20.02	6.30	0.08	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	2020-07-28	39.83	60.17	25.96	10.26	2.79	0.00

U.S. Drought Monitor

Oklahoma

Abnormal dryness or drought are currently affecting approximately 7,365 people in Oklahoma.

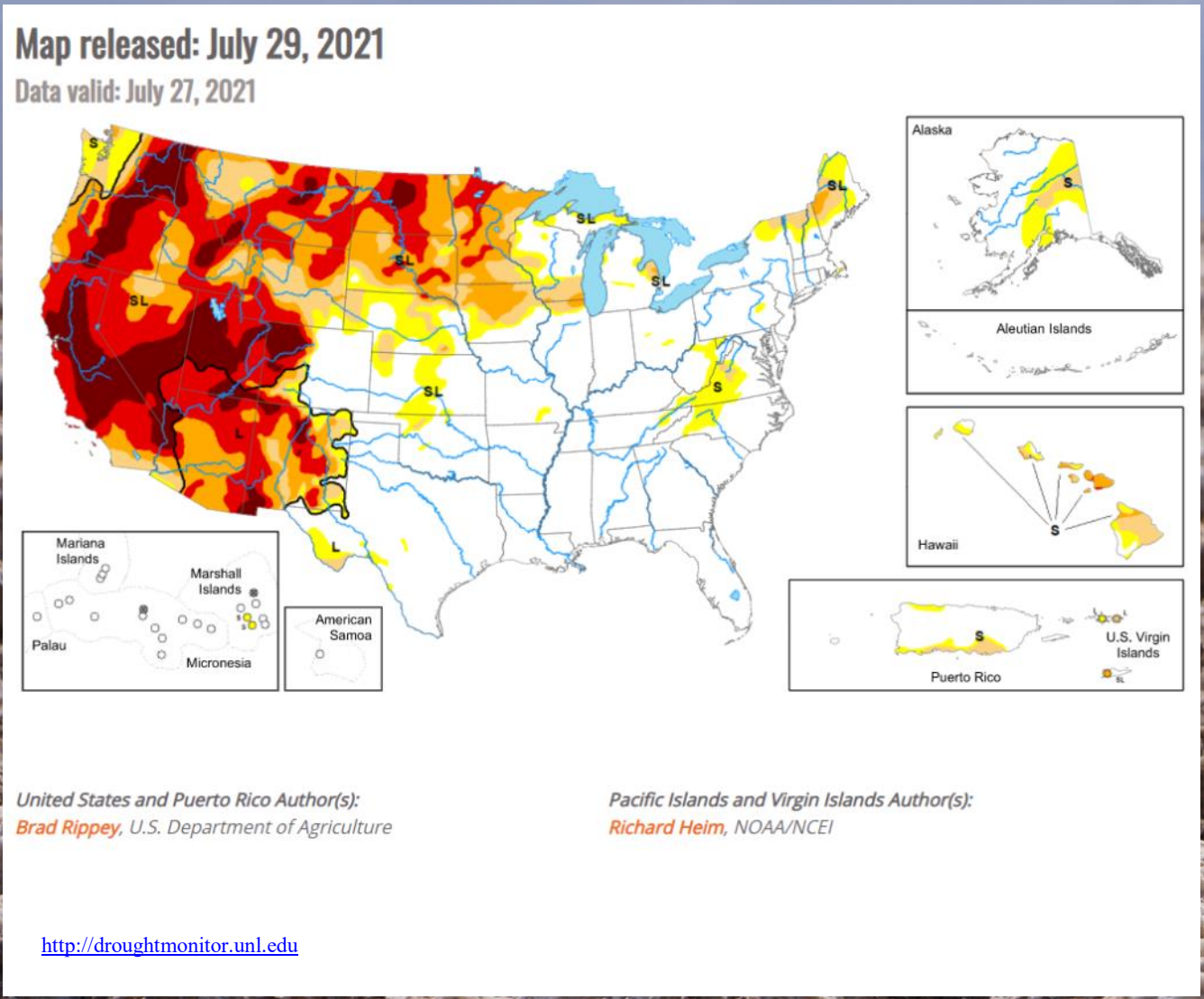


NATIONAL INTEGRATED DROUGHT INFORMATION SYSTEM NIDIS Drought.gov U.S. Drought Portal

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

acog

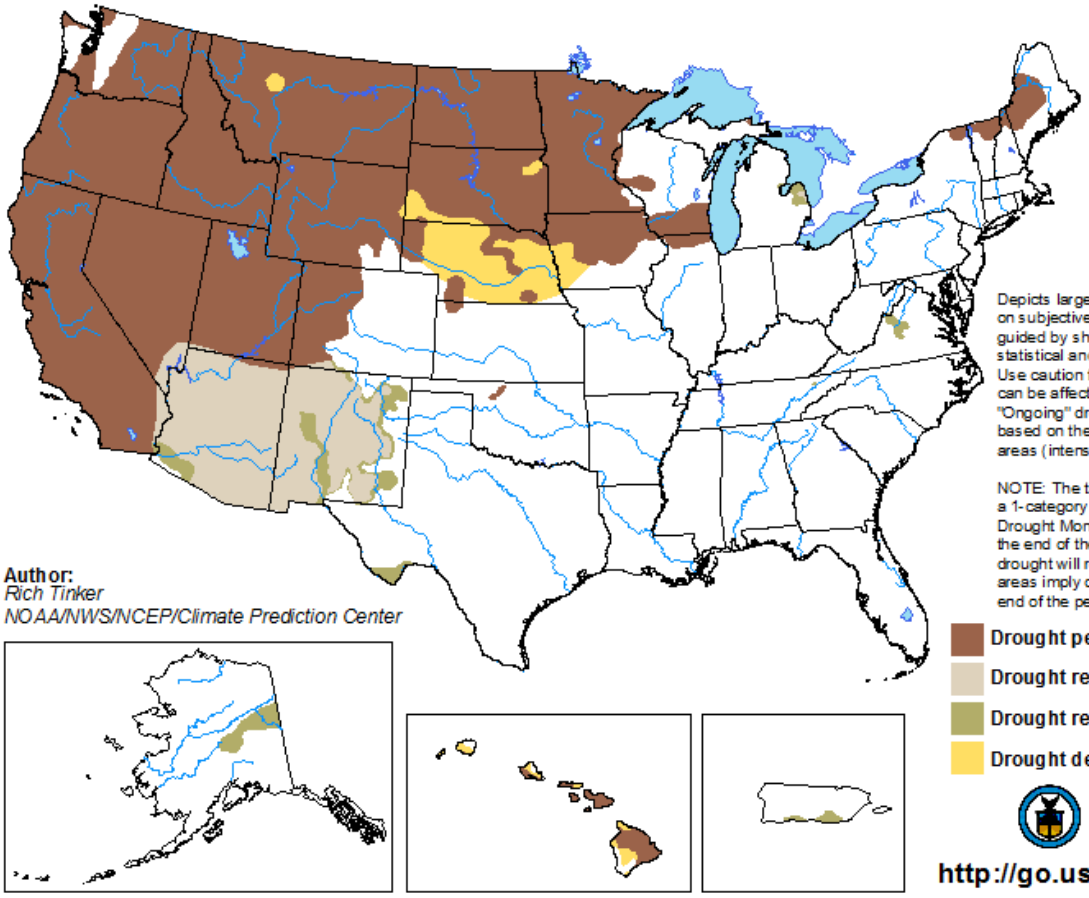
U.S. Drought Monitor Nationwide Map



http://droughtmonitor.unl.edu

U.S. Drought Monitor

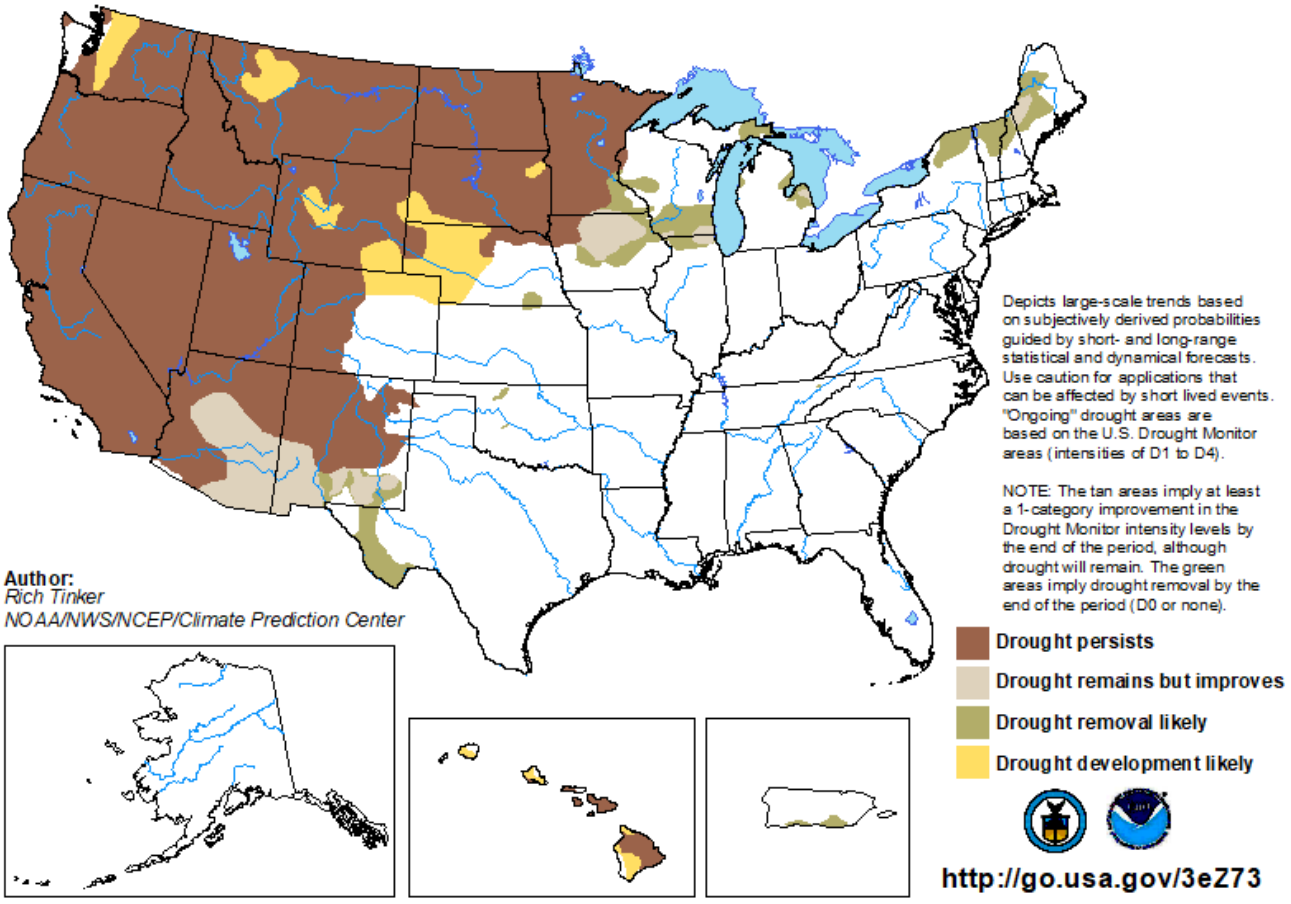
Monthly Drought Outlook Map



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

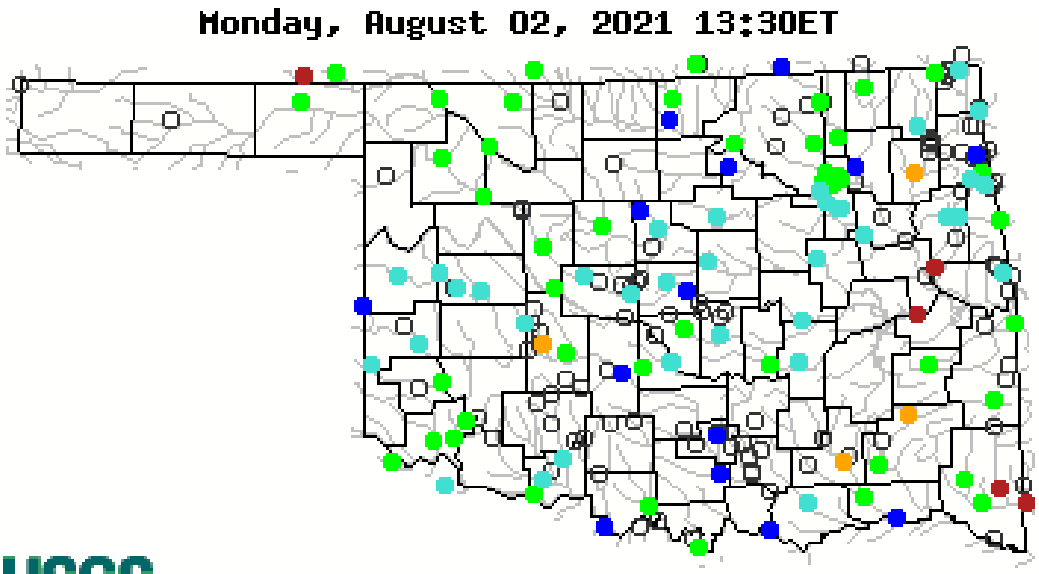
U.S. Drought Monitor

Seasonal Drought Outlook Map



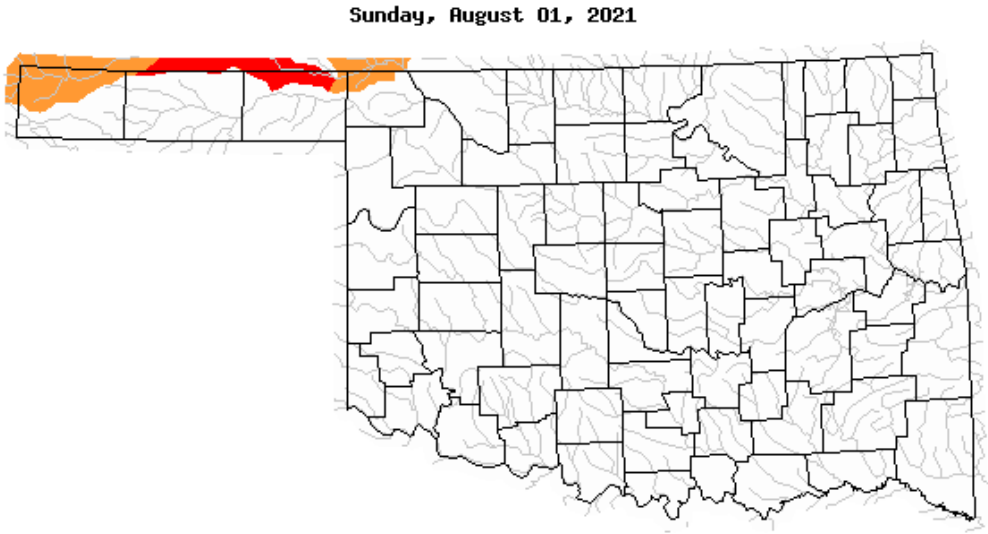
http://www.cpc.ncep.noaa.gov/products/expert_assessment/sdo_summary.php

USGS Streamflow Data



USGS

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



USGS

Below normal 28-day average streamflow

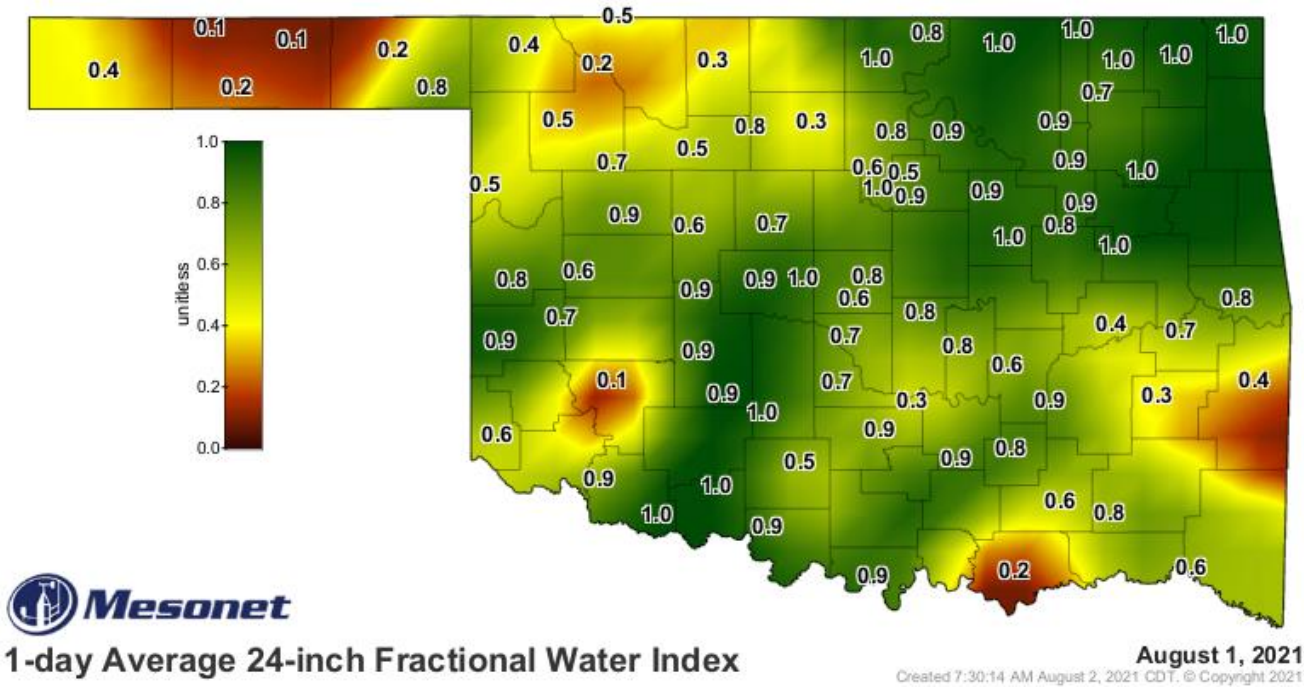
Explanation - Percentile classes				
Low	<=5	6-9	10-24	Insufficient data for a hydrologic region
Extreme hydrologic drought	Severe hydrologic drought	Moderate hydrologic drought	Below normal	

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

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

acog

SOIL MOISTURE MAP

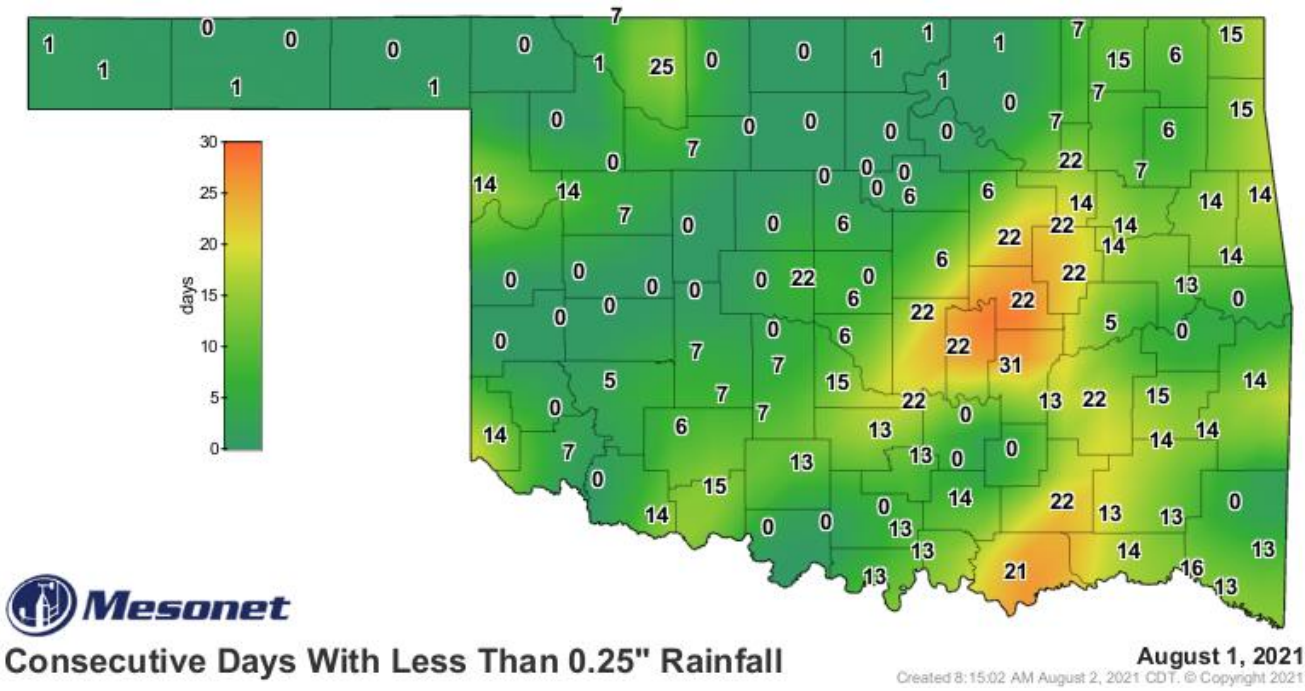


- 1.0 - 0.8 Enhanced Growth
- 0.8 – 0.5 Limited Growth
- 0.5 – 0.3 Plants Wilting
- 0.3 - 0.1 Plants Dying
- < 0.1 Barren Soil

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

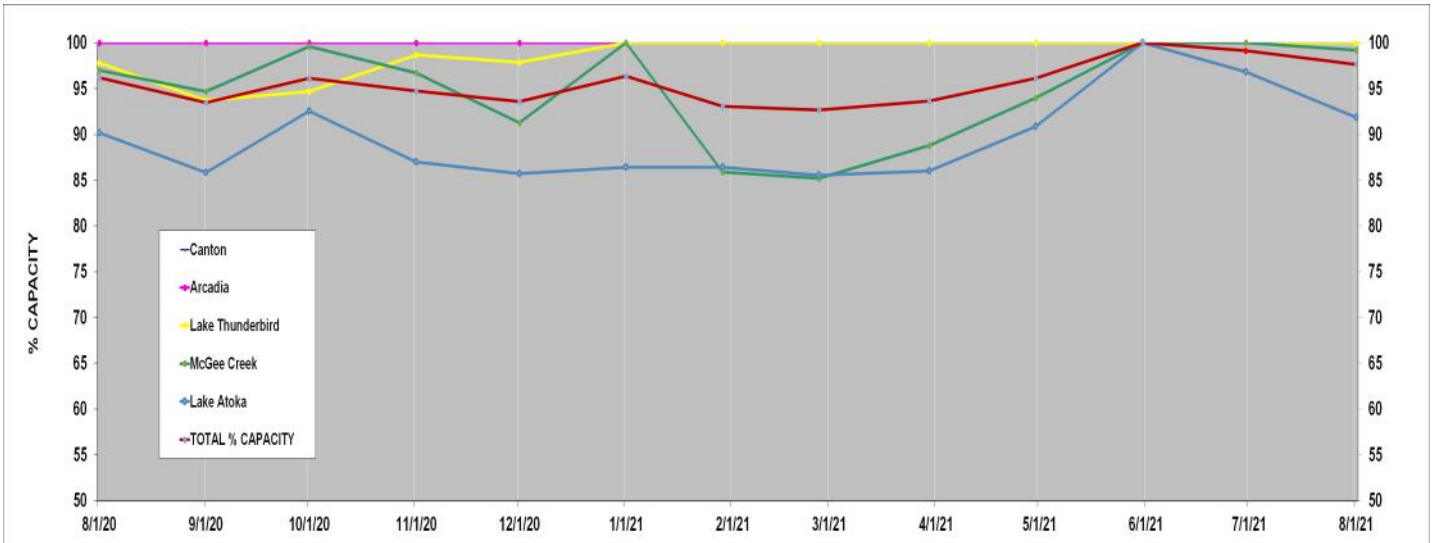
acog

CONSECUTIVE DAYS WITHOUT RAINFALL MAP



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

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 6/30/2021
Canton	100.0	0.0
Arcadia	100.0	0.0
Lake Thunderbird	100.0	0.0
McGee Creek	99.2	-0.8
Lake Atoka	86.4	-4.9
TOTAL % CAPACITY	97.6	-1.5

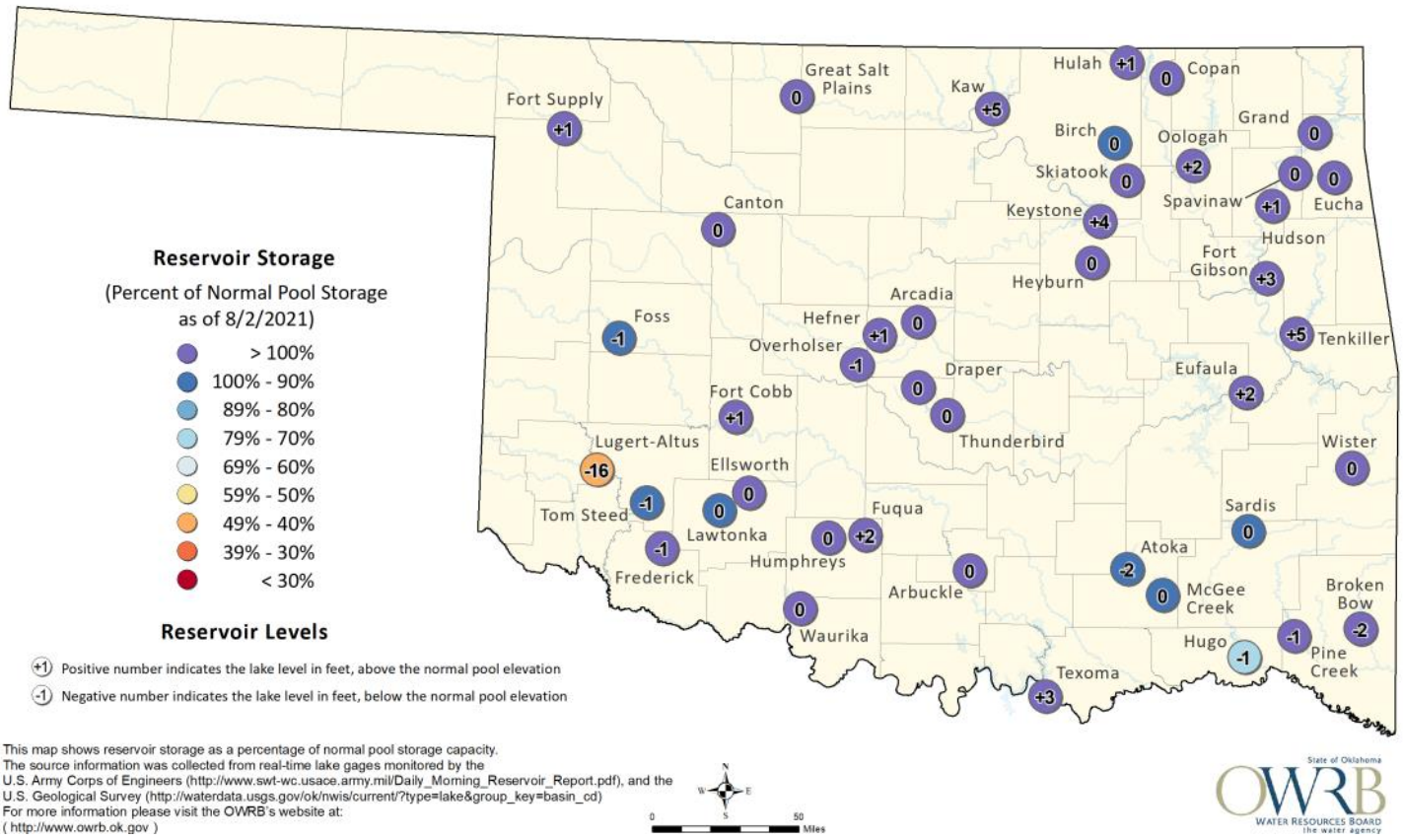
http://www.swt-wc.usace.army.mil/Daily_Morning_Reservoir_Report.pdf

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 8/2/2021



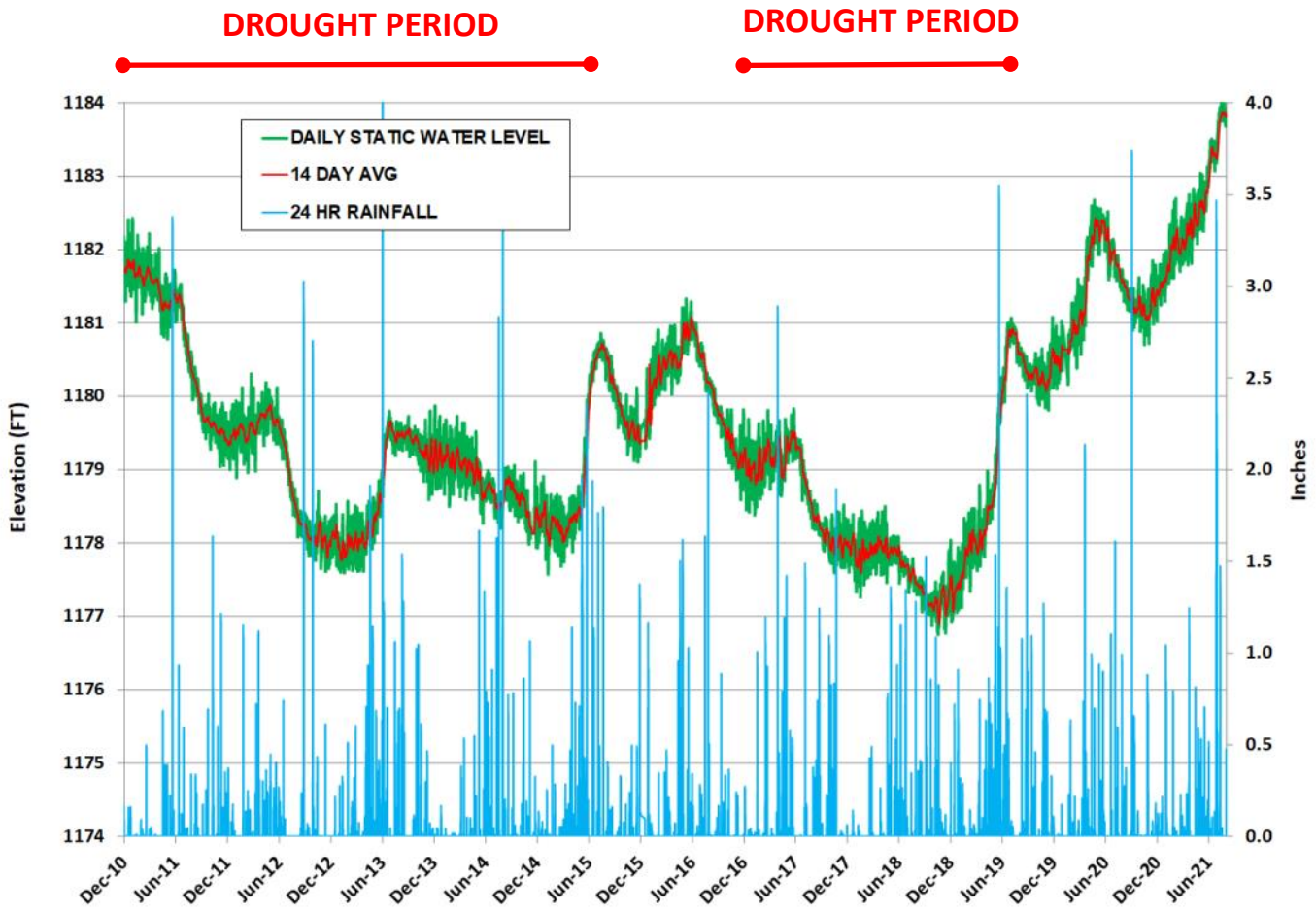
This map shows reservoir storage as a percentage of normal pool storage capacity.
The source information was collected from real-time lake gages monitored by the U.S. Army Corps of Engineers (http://www.swt-wc.usace.army.mil/Daily_Morning_Reservoir_Report.pdf), and the U.S. Geological Survey (http://waterdata.usgs.gov/ok/nwis/current/?type=lake&group_key=basin_c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

State of Oklahoma OWRB Water Resources Board the water agency

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

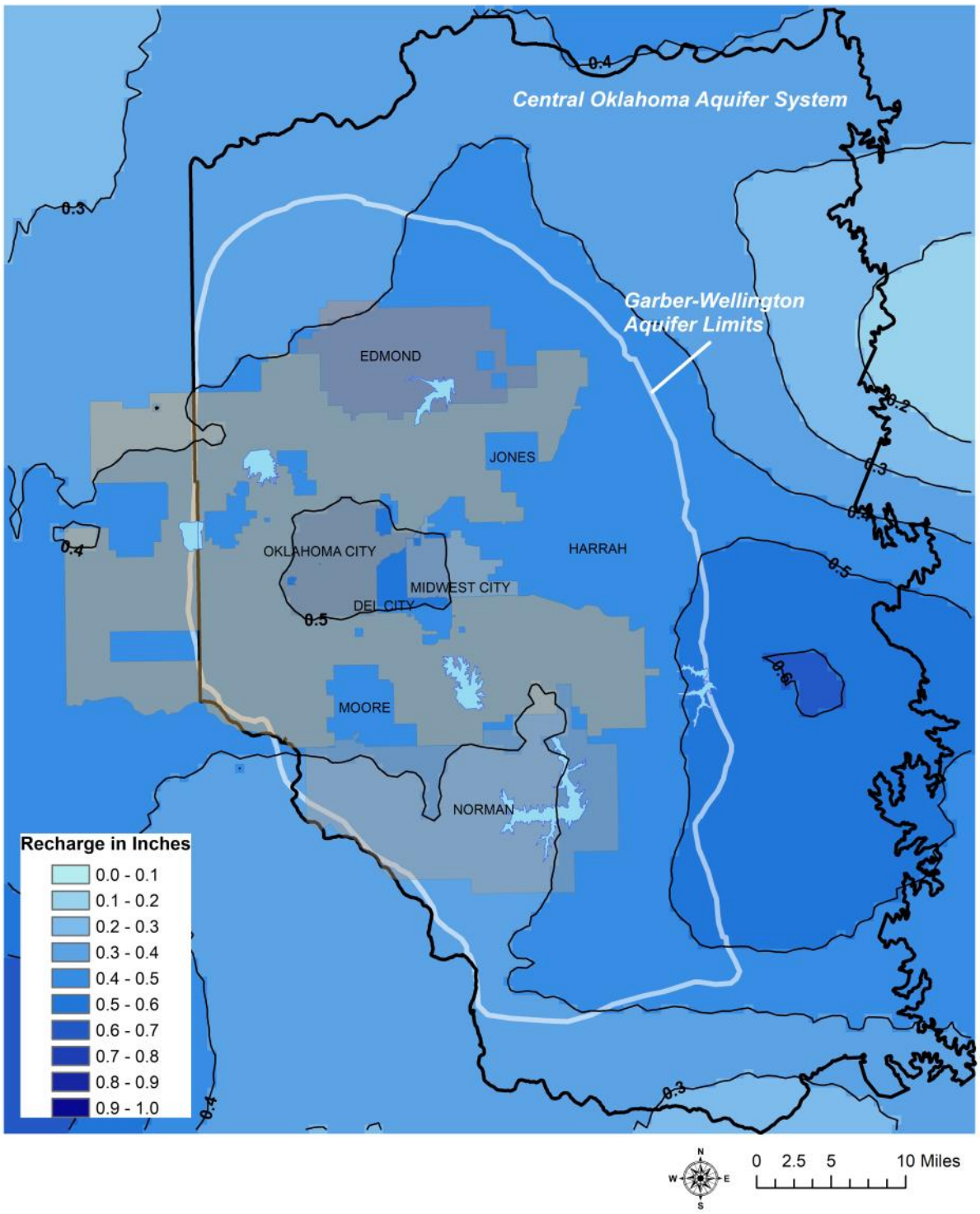
acog

Groundwater Levels
Spencer Mesonet Station

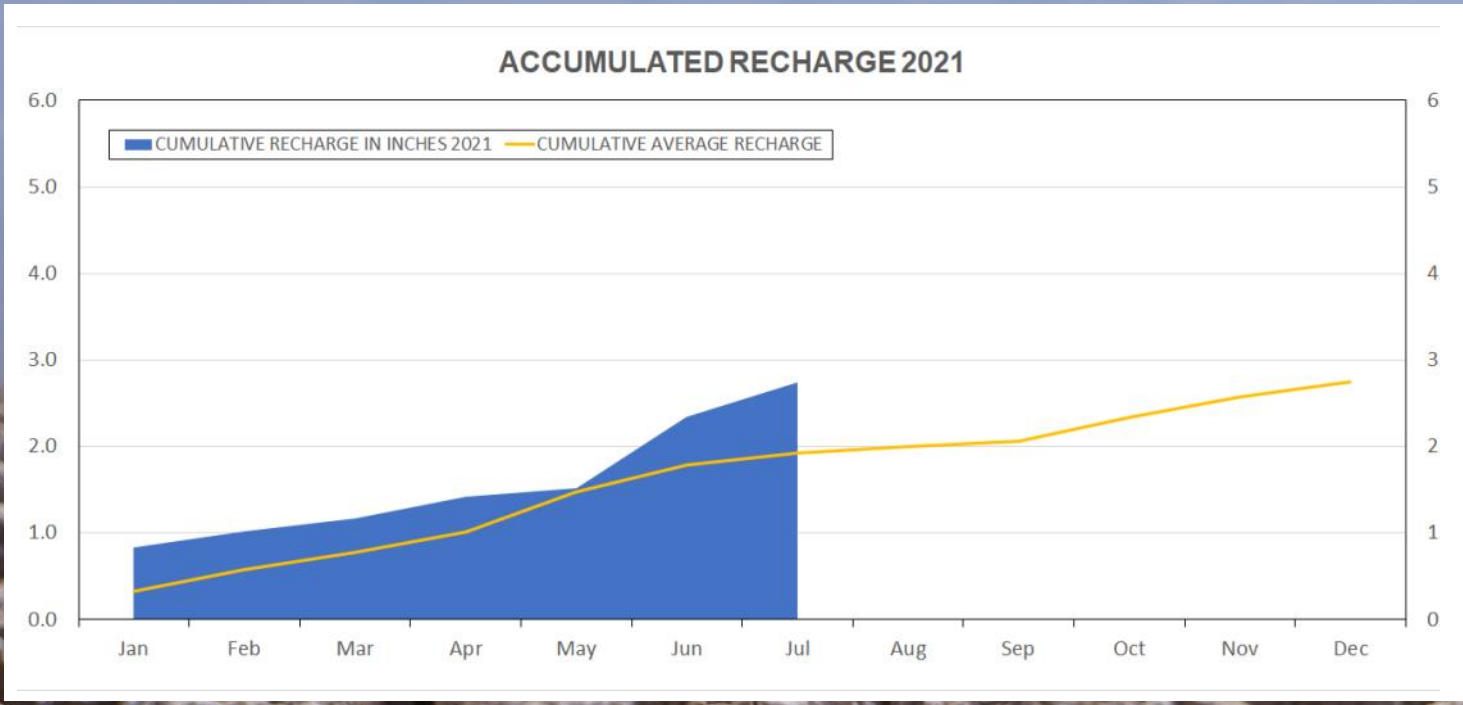


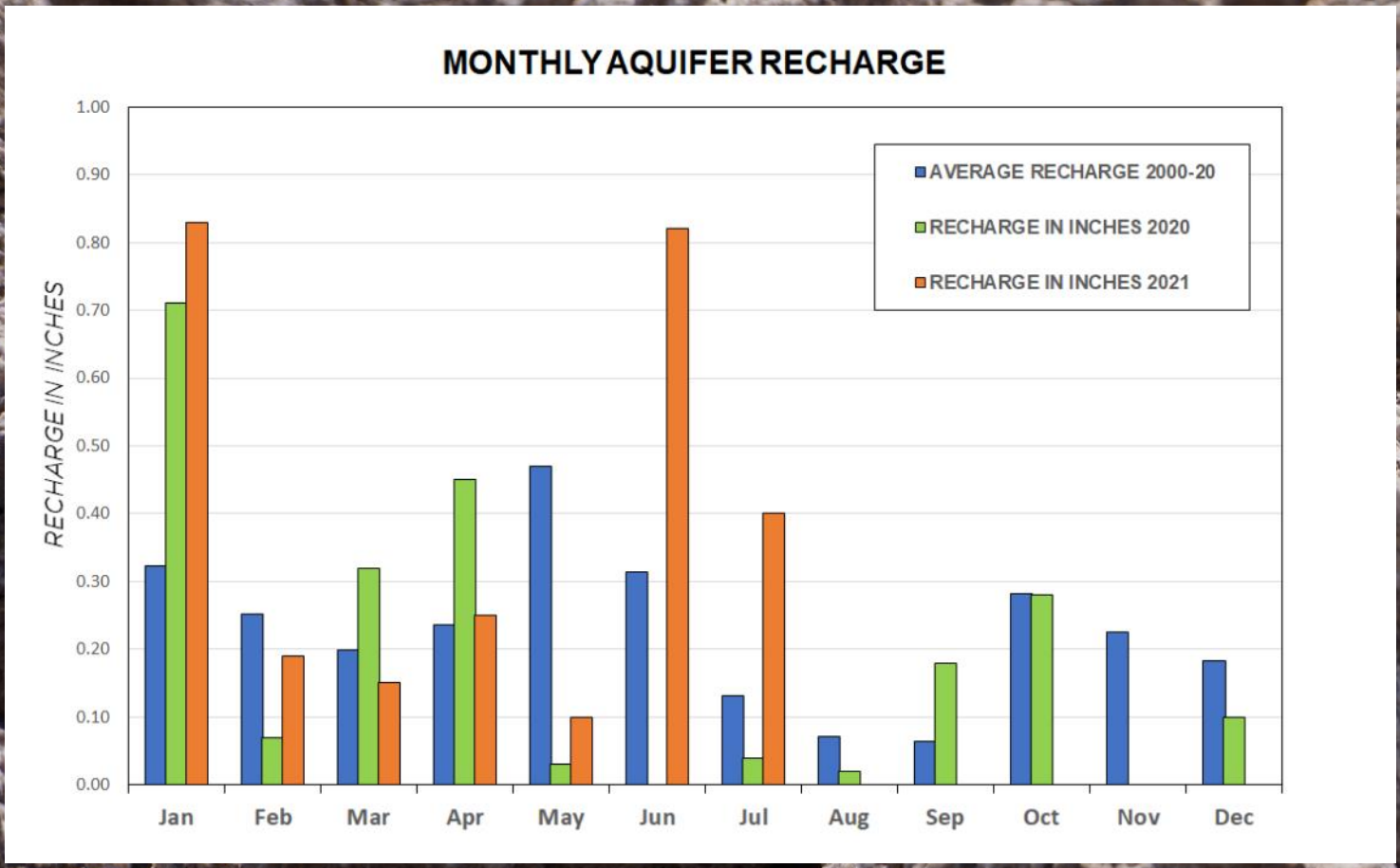
http://www.mesonet.org/index.php/weather/groundwater

Recharge Map
Central Oklahoma Aquifer System

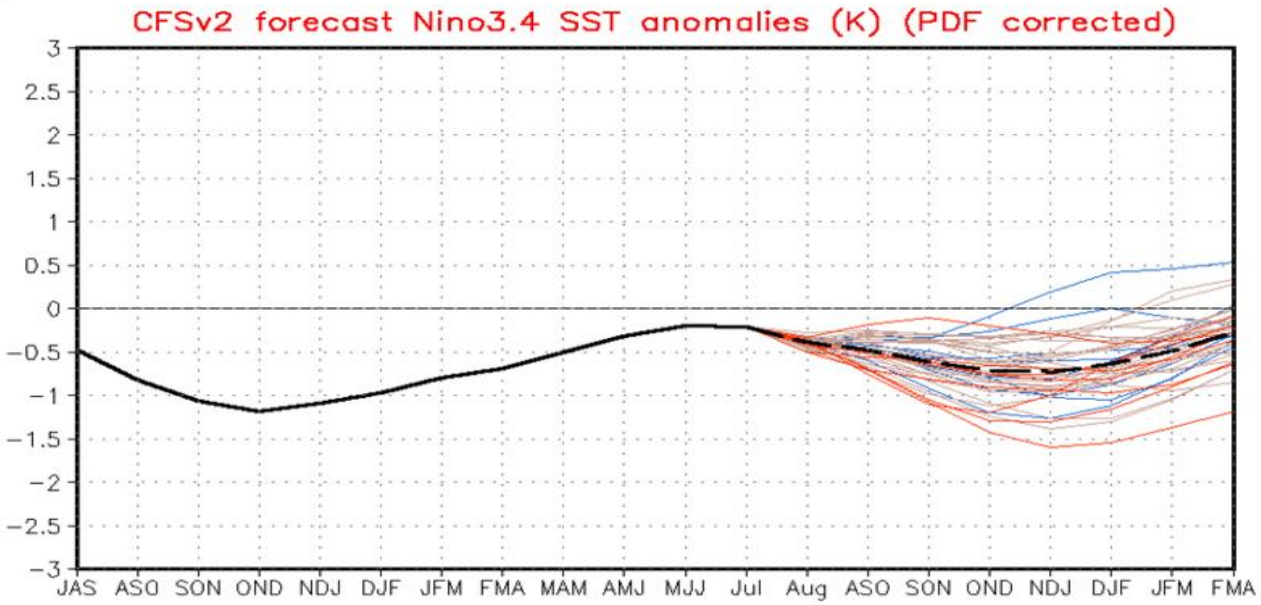


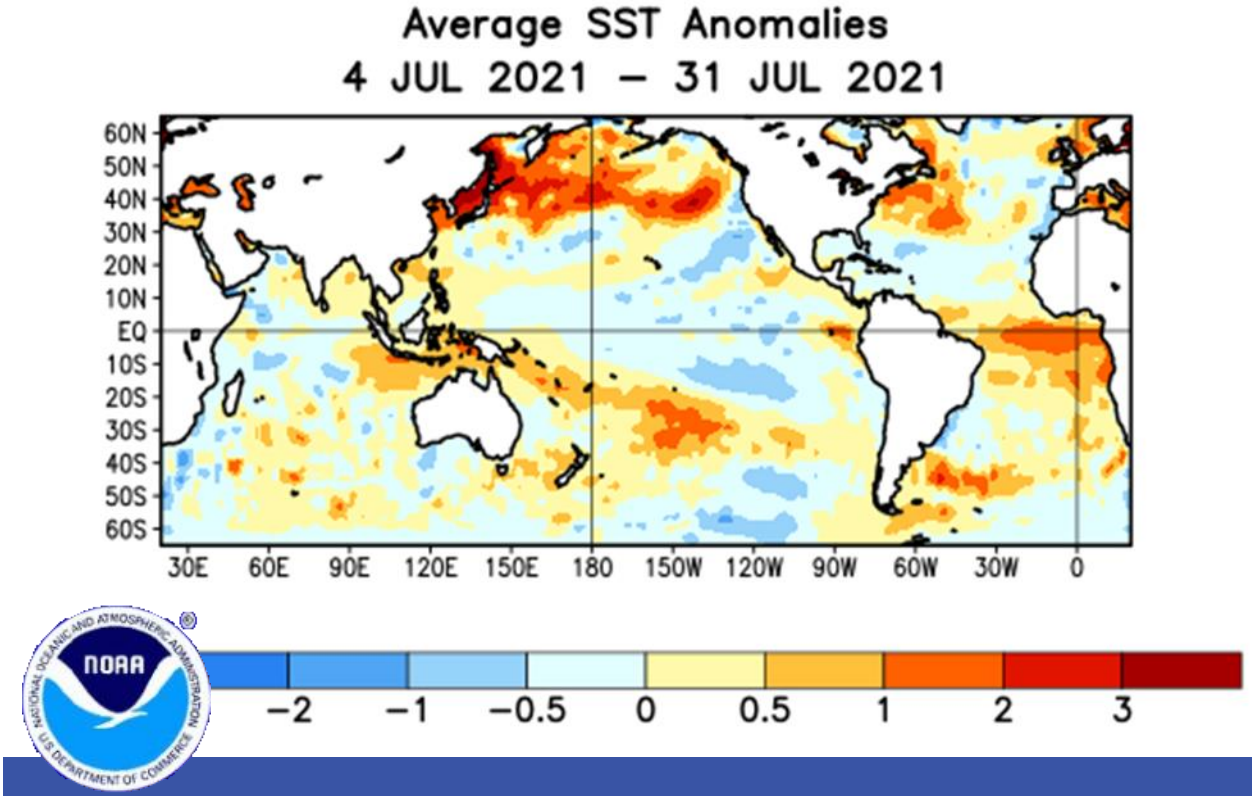
Recharge Charts
Central Oklahoma Aquifer System





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 through the Northern Hemisphere summer and into the fall (51% chance for the August-October season), with La Niña potentially emerging during the September-November season and lasting through the 2021-22 winter (66% chance during November-January).

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

acog