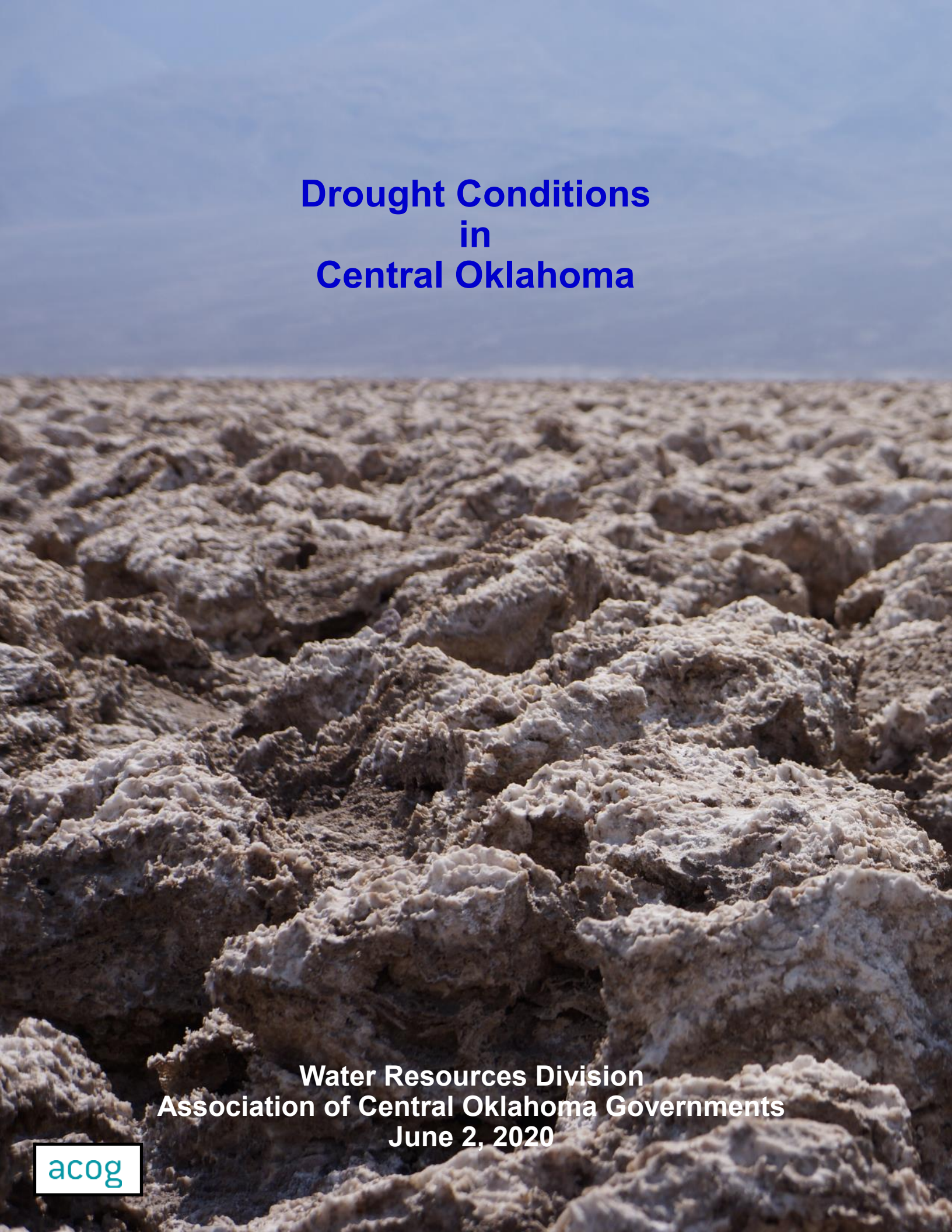
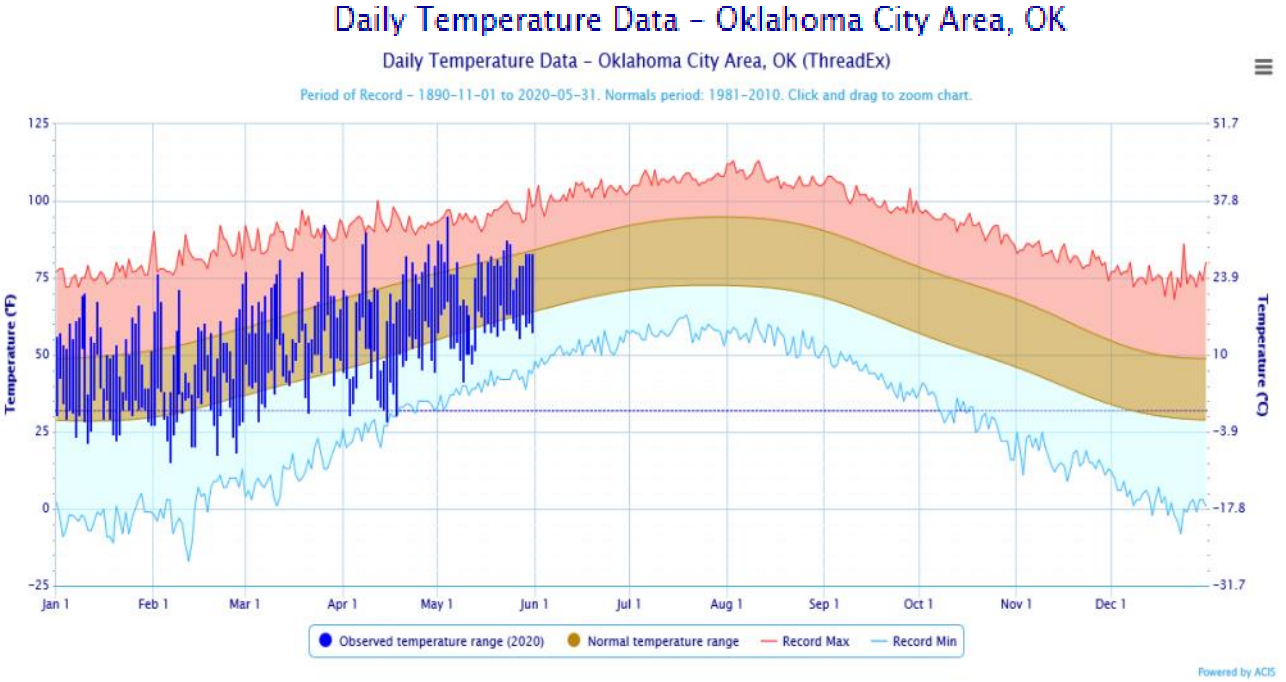


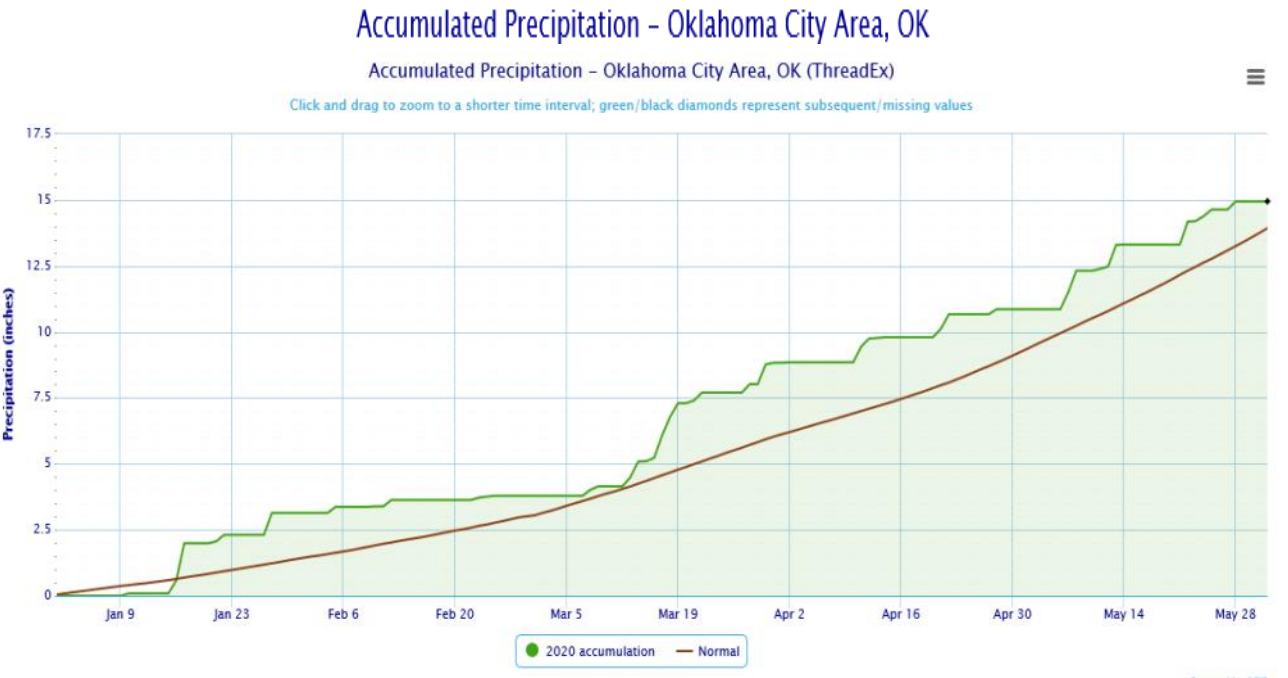
Drought Conditions in Central Oklahoma

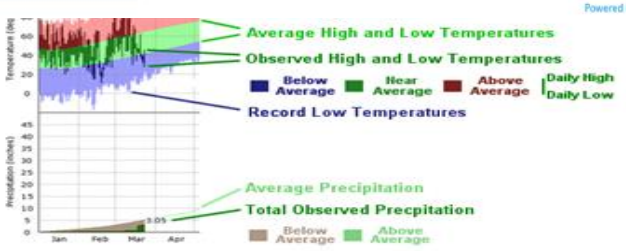
Water Resources Division
Association of Central Oklahoma Governments
June 2, 2020

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-May-2020

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	8.24"	-2.57"	76%	29th driest	3.03" (1996)	21.03" (1957)
Central	16.31"	+1.50"	110%	29th wettest	5.41" (2014)	26.95" (1990)
S. Central	23.58"	+6.71"	140%	5th wettest	8.33" (1963)	35.47" (1990)
Statewide	17.94"	+3.45"	124%	13th wettest	7.07" (1936)	25.55" (1957)

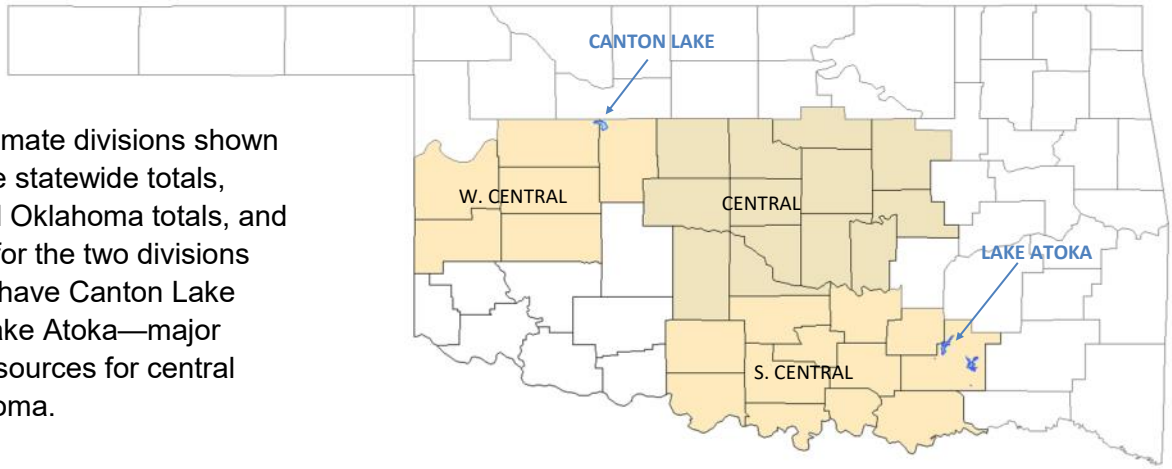
Water Year: 01-Oct-2019 through 31-May-2020

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	11.70"	-4.65"	72%	24th driest	5.31" (1995-96)	30.41" (2018-19)
Central	23.64"	+0.72"	103%	32nd wettest	10.52" (1995-96)	36.01" (1984-85)
S. Central	33.52"	+6.96"	126%	13th wettest	12.02" (1955-56)	41.91" (2015-16)
Statewide	26.41"	+3.84"	117%	20th wettest	11.27" (1995-96)	33.26" (2018-19)

Spring 01-Mar through 31-May-2020

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	5.83"	-2.85"	67%	19th driest	1.84" (1971)	19.14" (1957)
Central	11.55"	+0.06"	100%	43rd wettest	3.49" (2005)	22.51" (1957)
S. Central	15.65"	+3.22"	126%	21st wettest	4.60" (2005)	29.14" (2015)
Statewide	12.65"	+1.63"	115%	23rd 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.

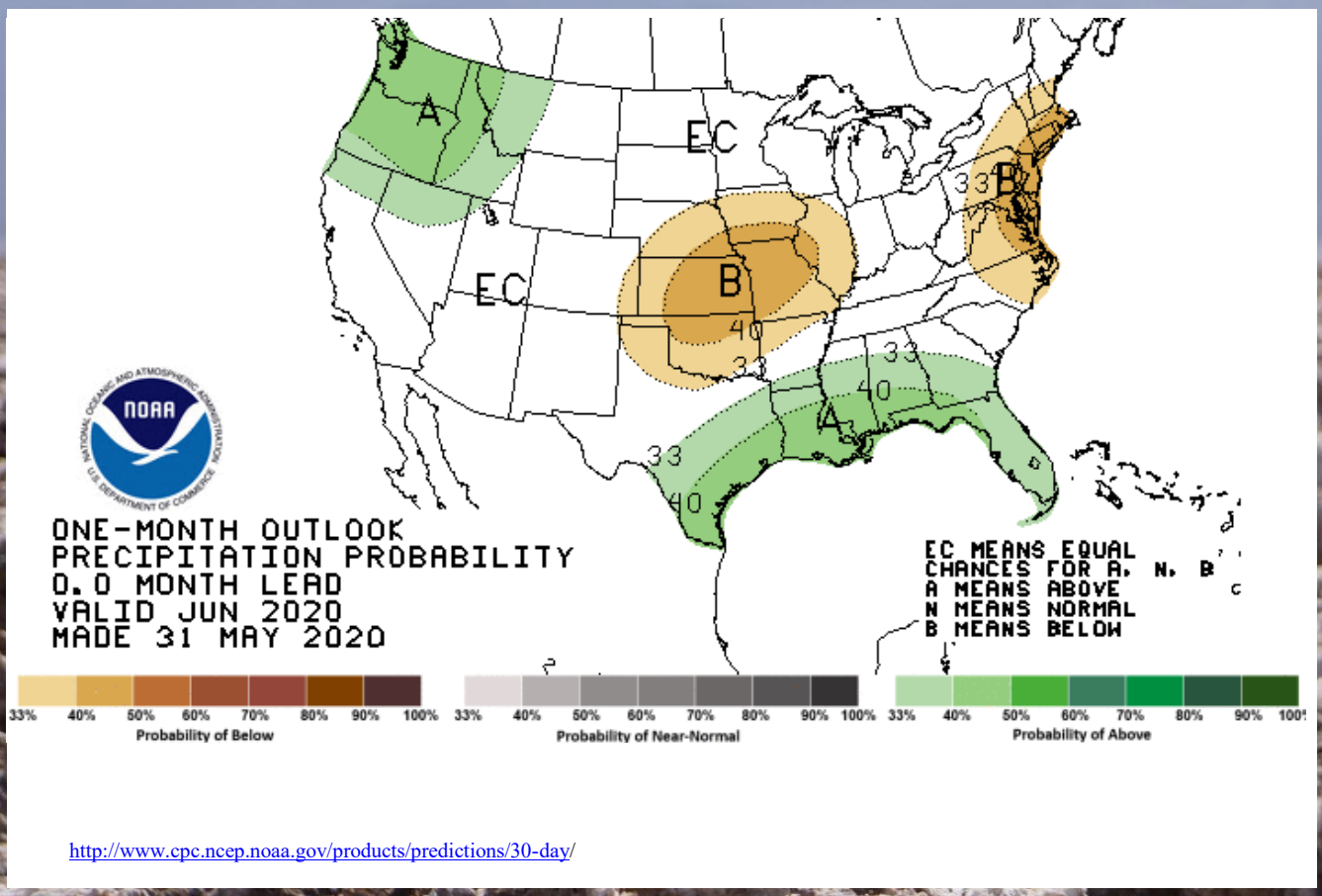


http://climate.ok.gov/index.php/drought/last_30_days/

OKLAHOMA CLIMATOLOGICAL SURVEY

acog

NOAA One-Month Outlook

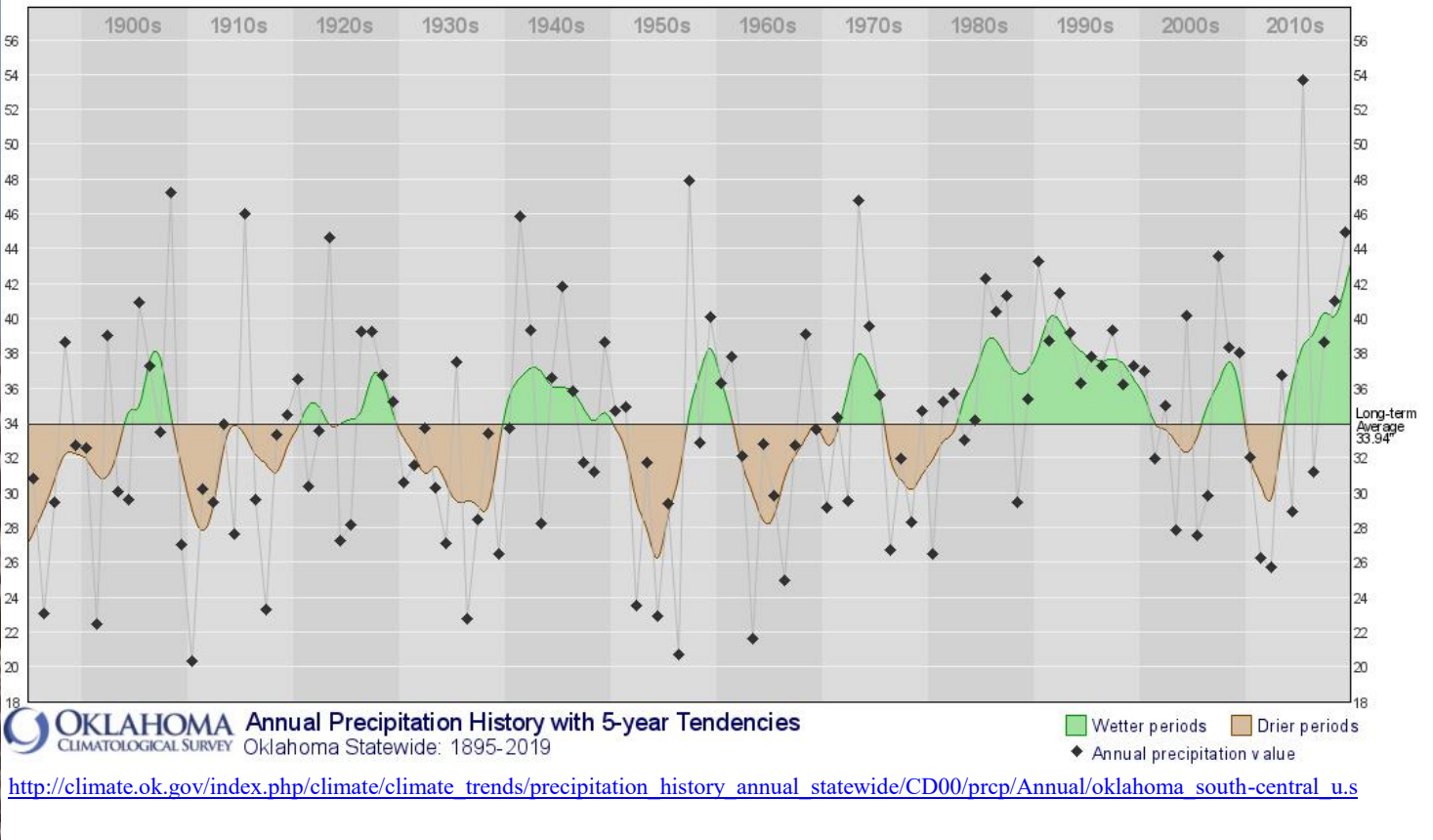


http://www.cpc.ncep.noaa.gov/products/predictions/30-day/

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



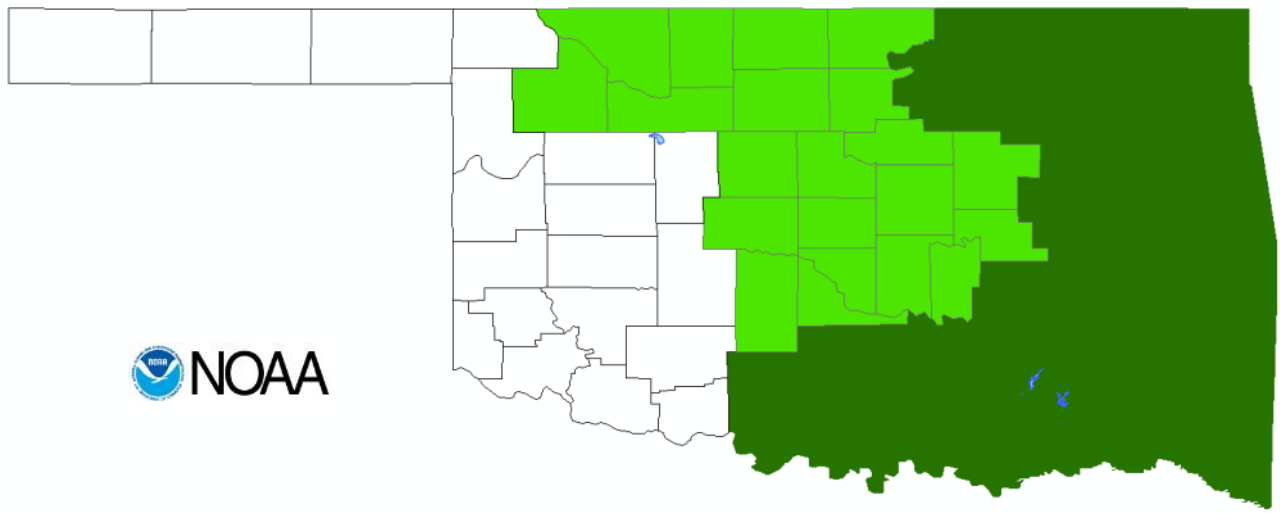
http://climate.ok.gov/index.php/climate/climate_trends/precipitation_history_annual_statewide/CD00/prcp/Annual/oklahoma_south-central_u.s

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 23 May 2020



extreme drought	severe drought	moderate drought	mid-range	moderately moist	very moist	extremely moist
-4.00 and below	-3.00 to -3.99	-2.00 to -2.99	-1.99 to +1.99	+2.00 to +2.99	+3.00 to +3.99	+4.00 and above

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

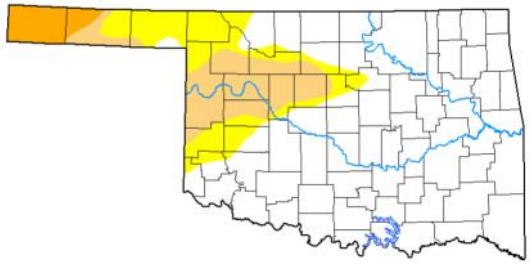
U.S. Drought Monitor

Week	Date	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	5/26/2020	73.67	26.33	14.44	3.46	0	0
Last Week	5/19/2020	72.34	27.66	16.66	3.46	0	0
3 Months Ago	2/25/2020	86.53	13.47	4.66	0.84	0	0
Start of Calendar Year	12/31/2019	76.45	23.55	10.47	3.64	0	0
Start of Water Year	10/1/2019	71.94	28.06	11.08	1.01	0	0
One Year Ago	5/28/2019	100	0	0	0	0	0

U.S. Drought Monitor

Oklahoma

Abnormal dryness or drought are currently affecting approximately 103,773 people in Oklahoma.

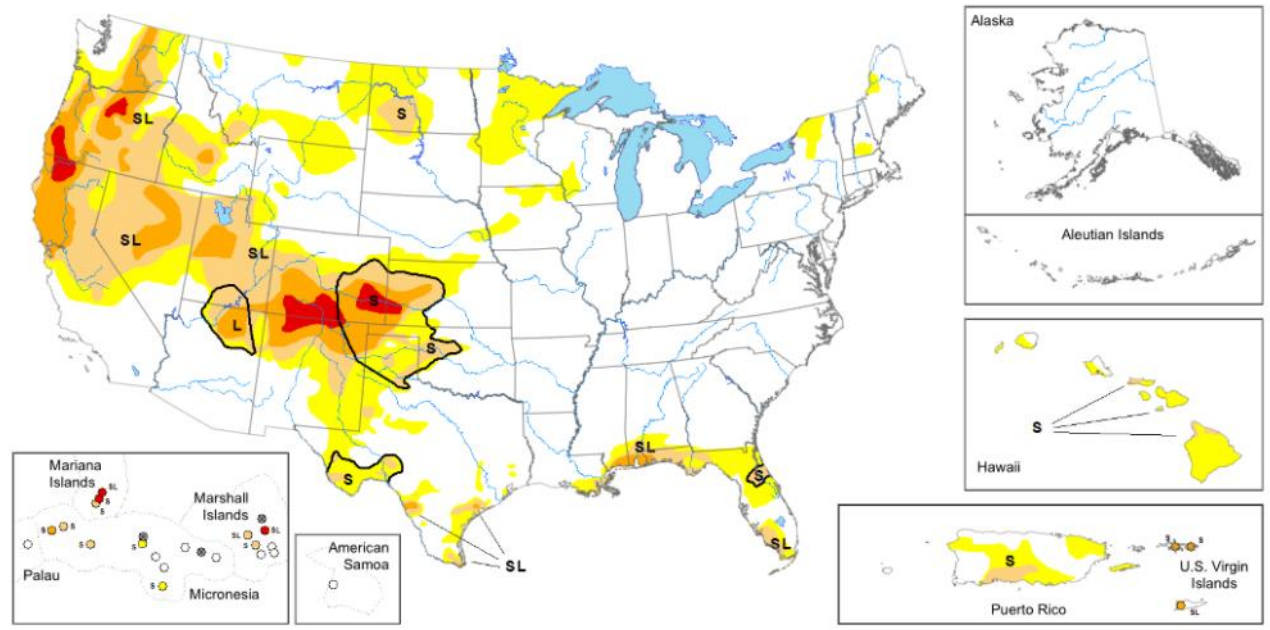


NATIONAL INTEGRATED DROUGHT INFORMATION SYSTEM NIDIS Drought.gov U.S. Drought Portal

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

acog

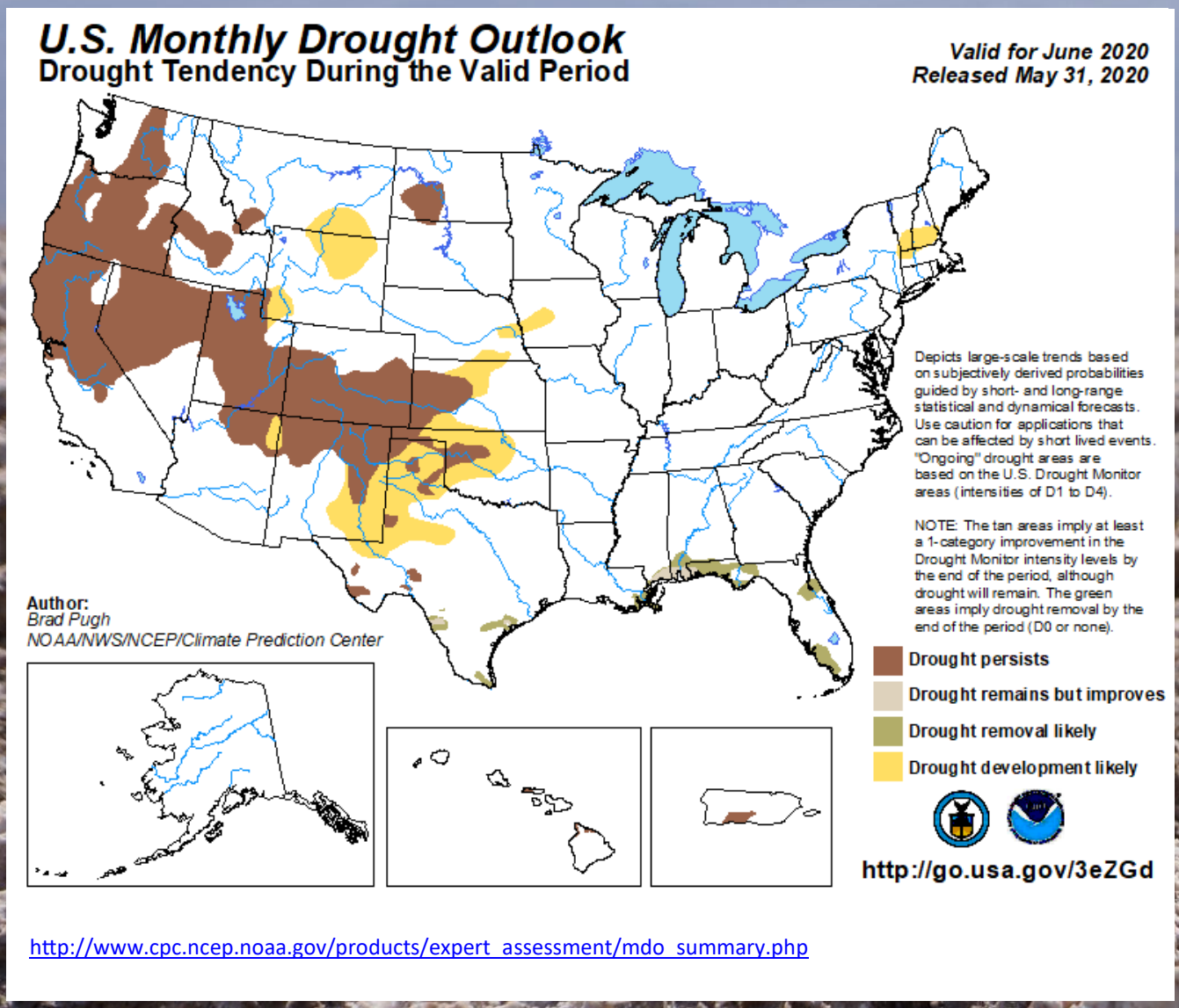
U.S. Drought Monitor Nationwide Map



http://droughtmonitor.unl.edu

U.S. Drought Monitor

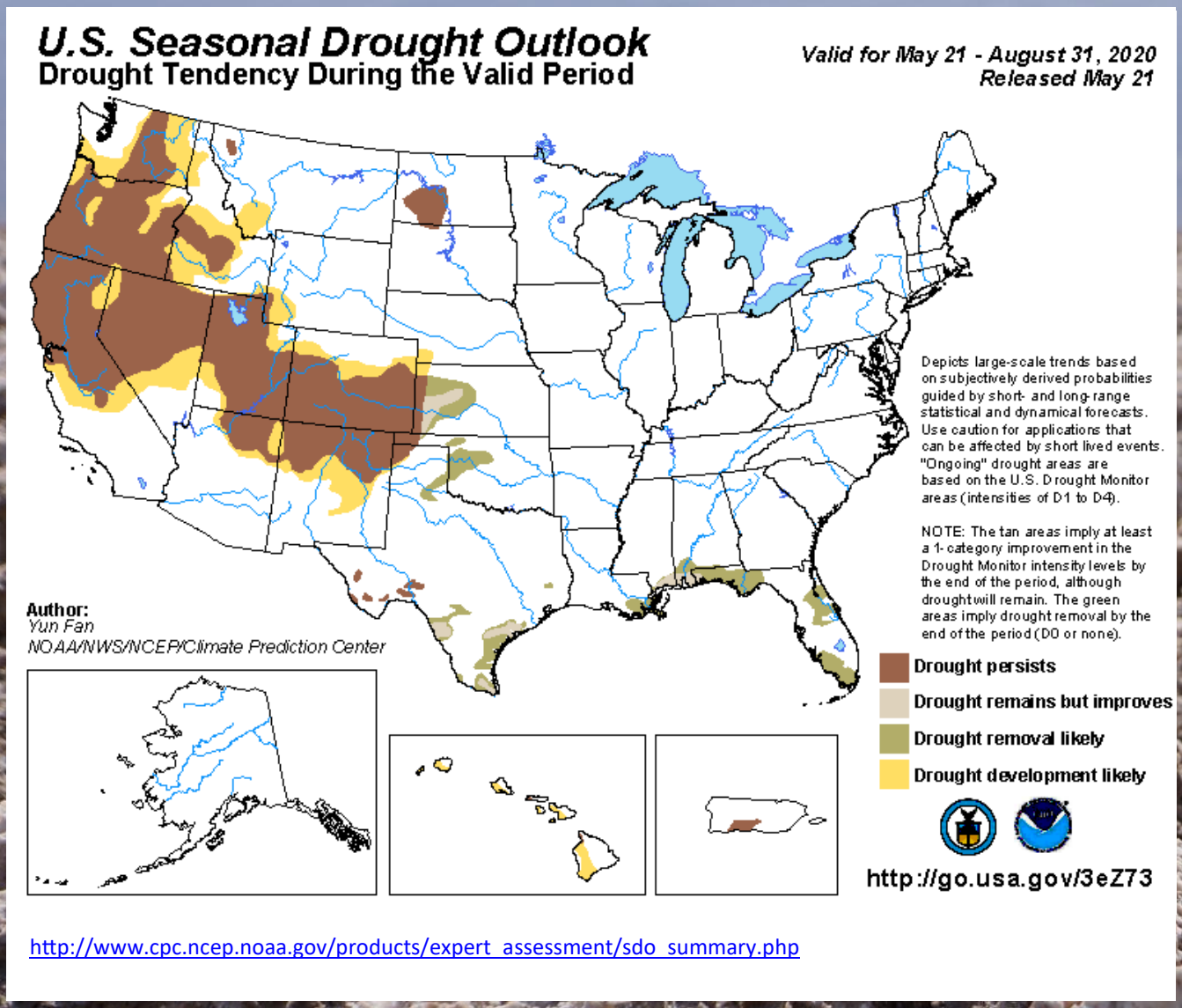
Monthly Drought Outlook Map



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

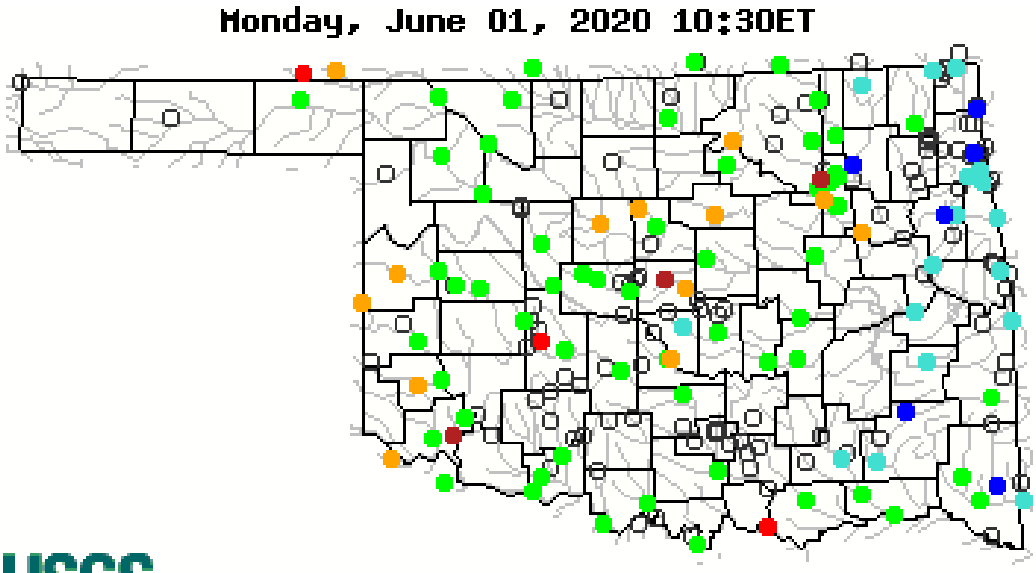
U.S. Drought Monitor

Seasonal Drought Outlook Map



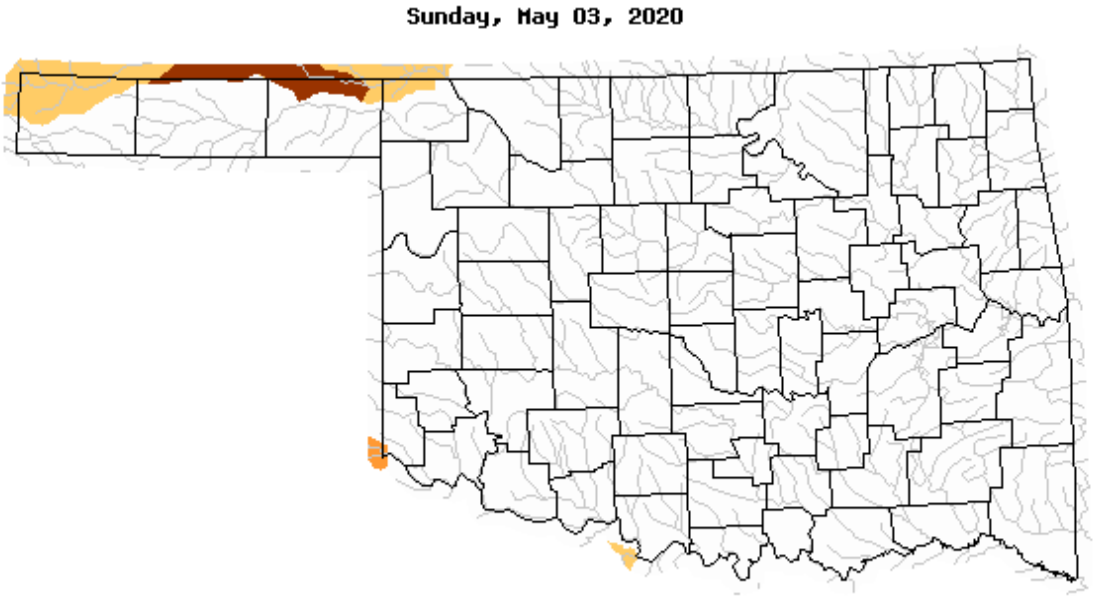
http://www.cpc.ncep.noaa.gov/products/expert_assessment/sdo_summary.php

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

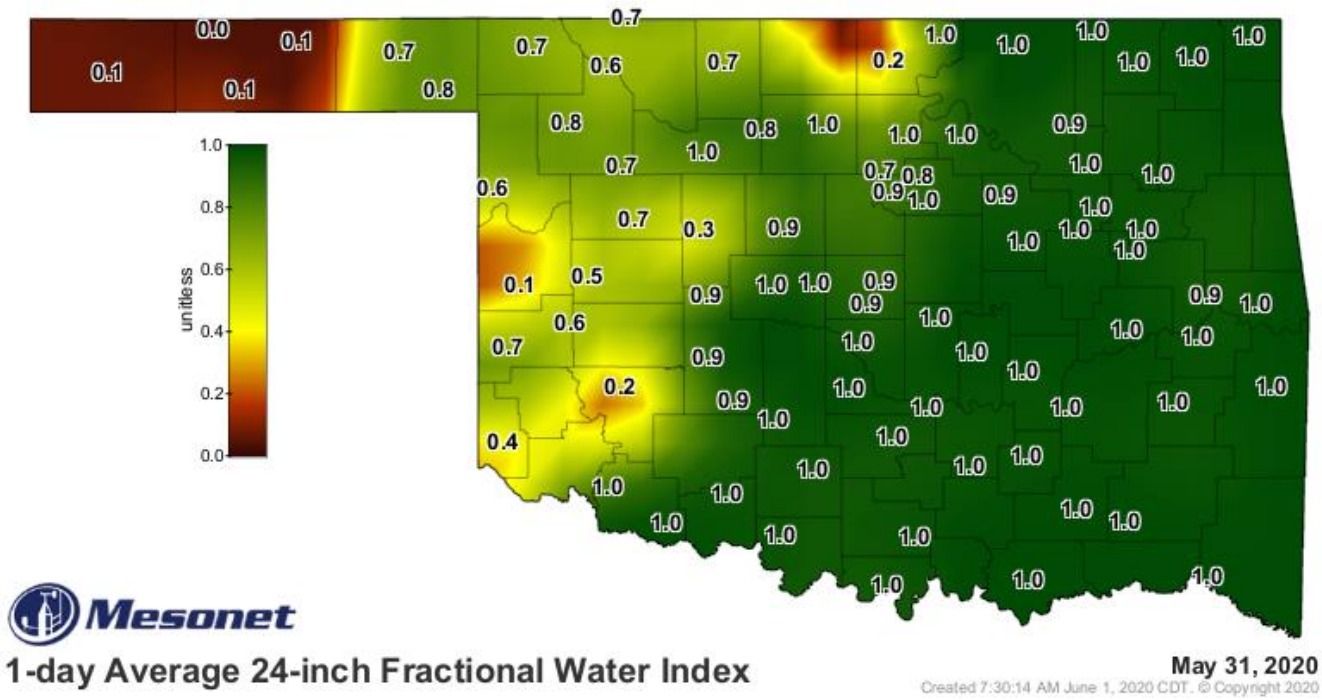
Low	<=5	6-9	10-24	Insufficient data for a hydrologic region
Extreme hydrologic drought	Severe hydrologic drought	Moderate hydrologic drought	Below normal	

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

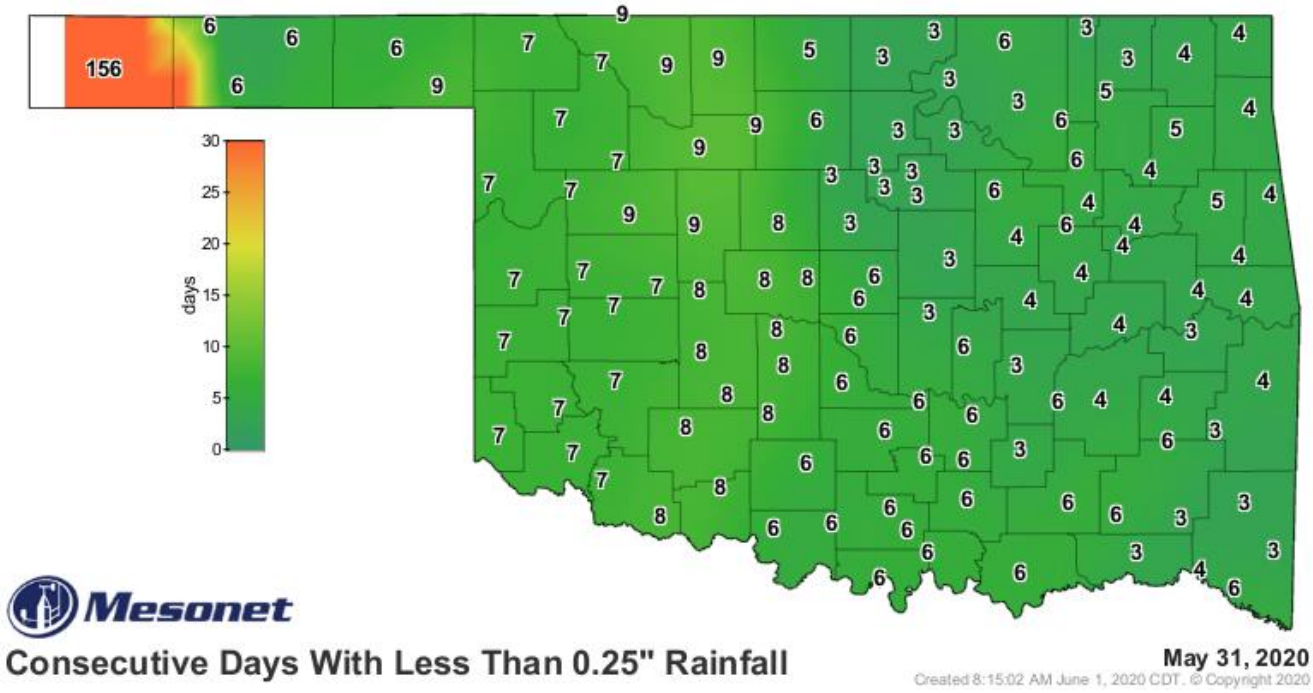


- 1.0 - 0.8 Enhanced Growth
- 0.8 – 0.5 Limited Growth
- 0.5 – 0.3 Plants Wilting
- 0.3 - 0.1 Plants Dying
- < 0.1 Barren Soil

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

acog

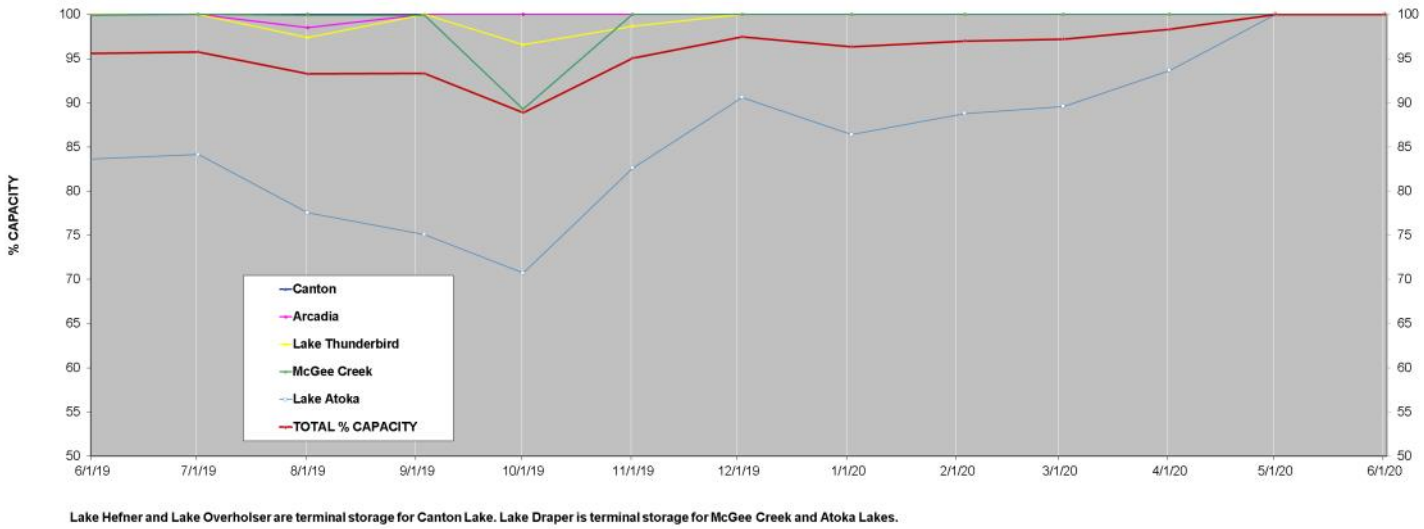
CONSECUTIVE DAYS WITHOUT RAINFALL MAP



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

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 5/1/2020
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

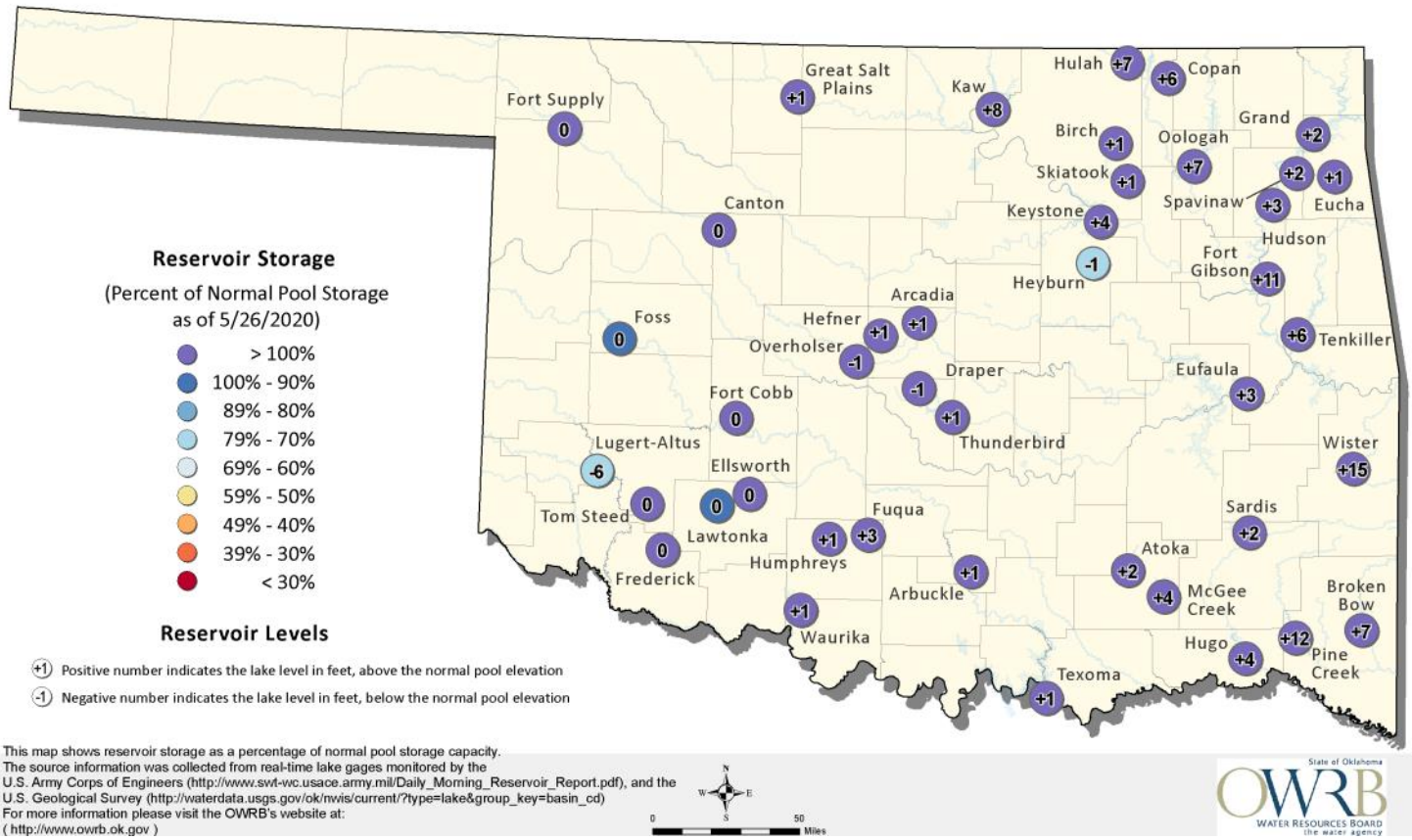
http://www.swt-wc.usace.army.mil/Daily_Morning_Reservoir_Report.pdf

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

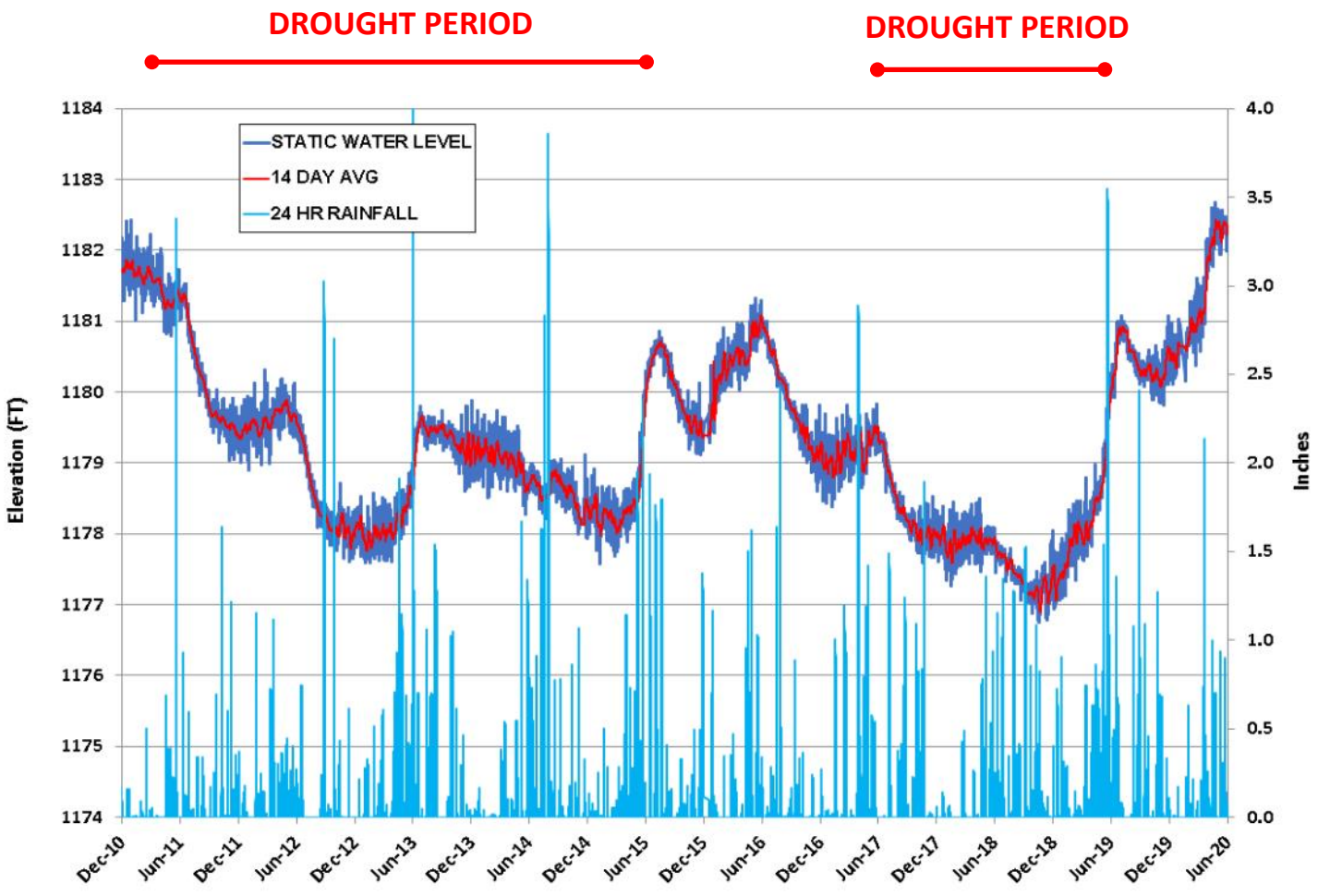
Reservoir Levels and Storage as of 5/26/2020



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

acog

Groundwater Levels
Spencer Mesonet Station



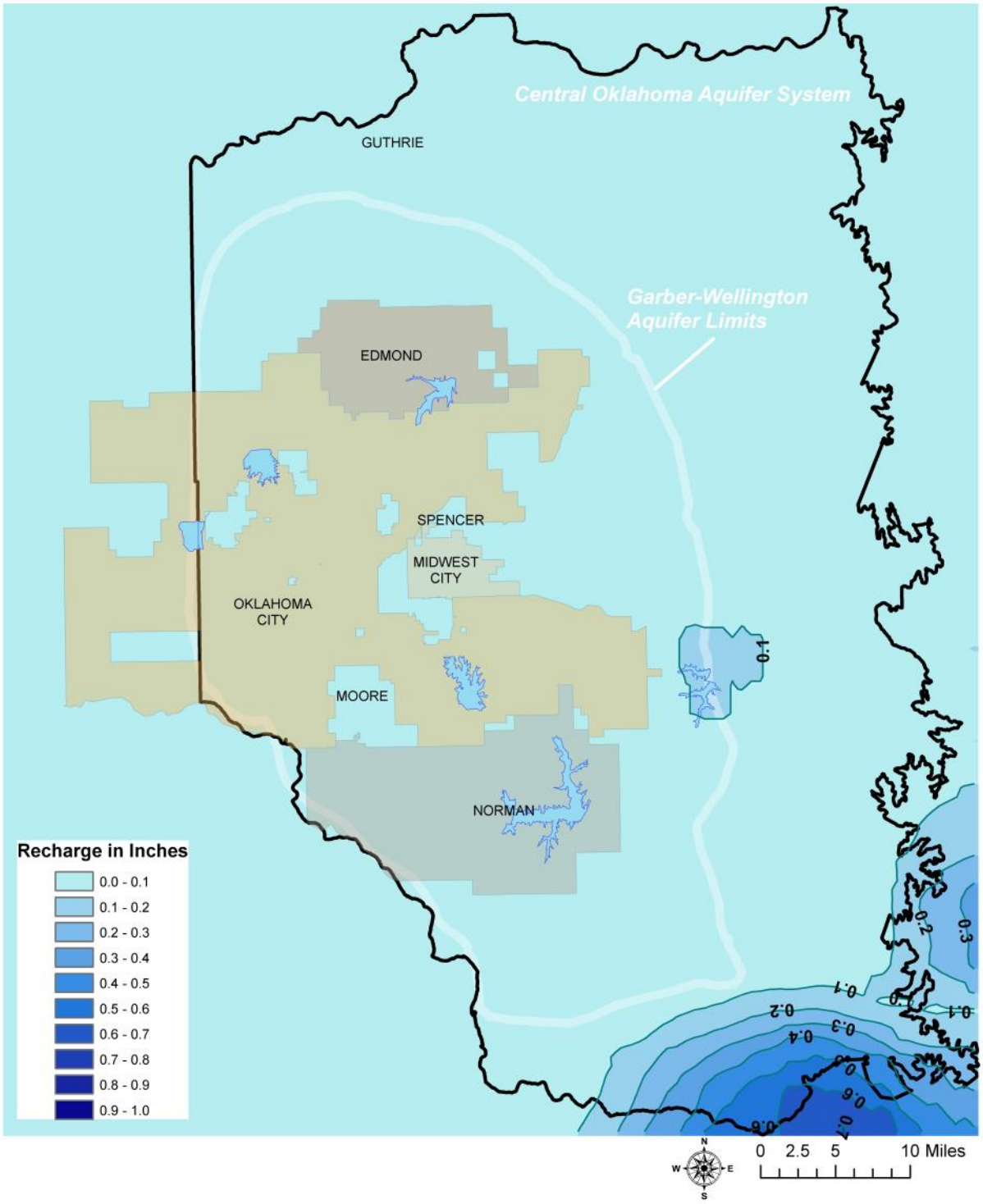
http://www.mesonet.org/index.php/weather/groundwater

Mesonet

acog

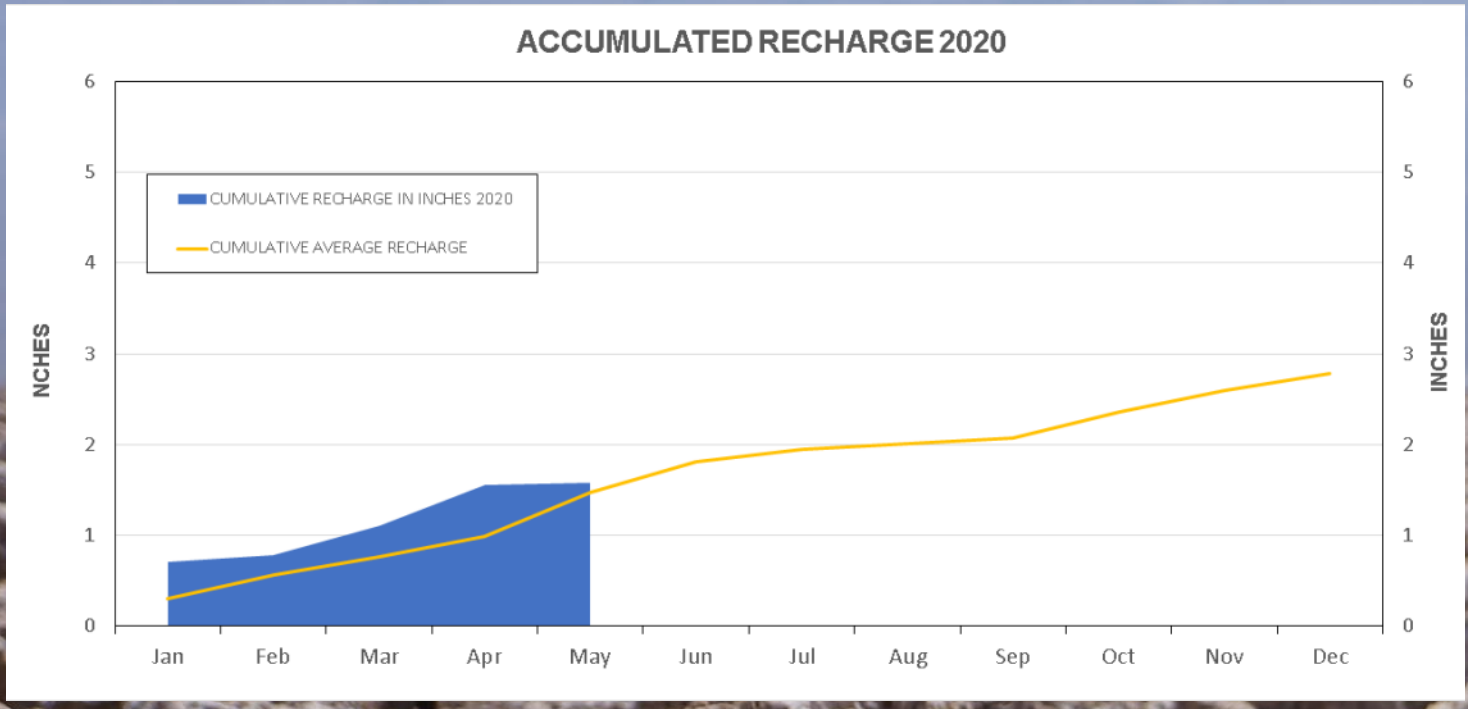
Recharge Map
Central Oklahoma Aquifer System

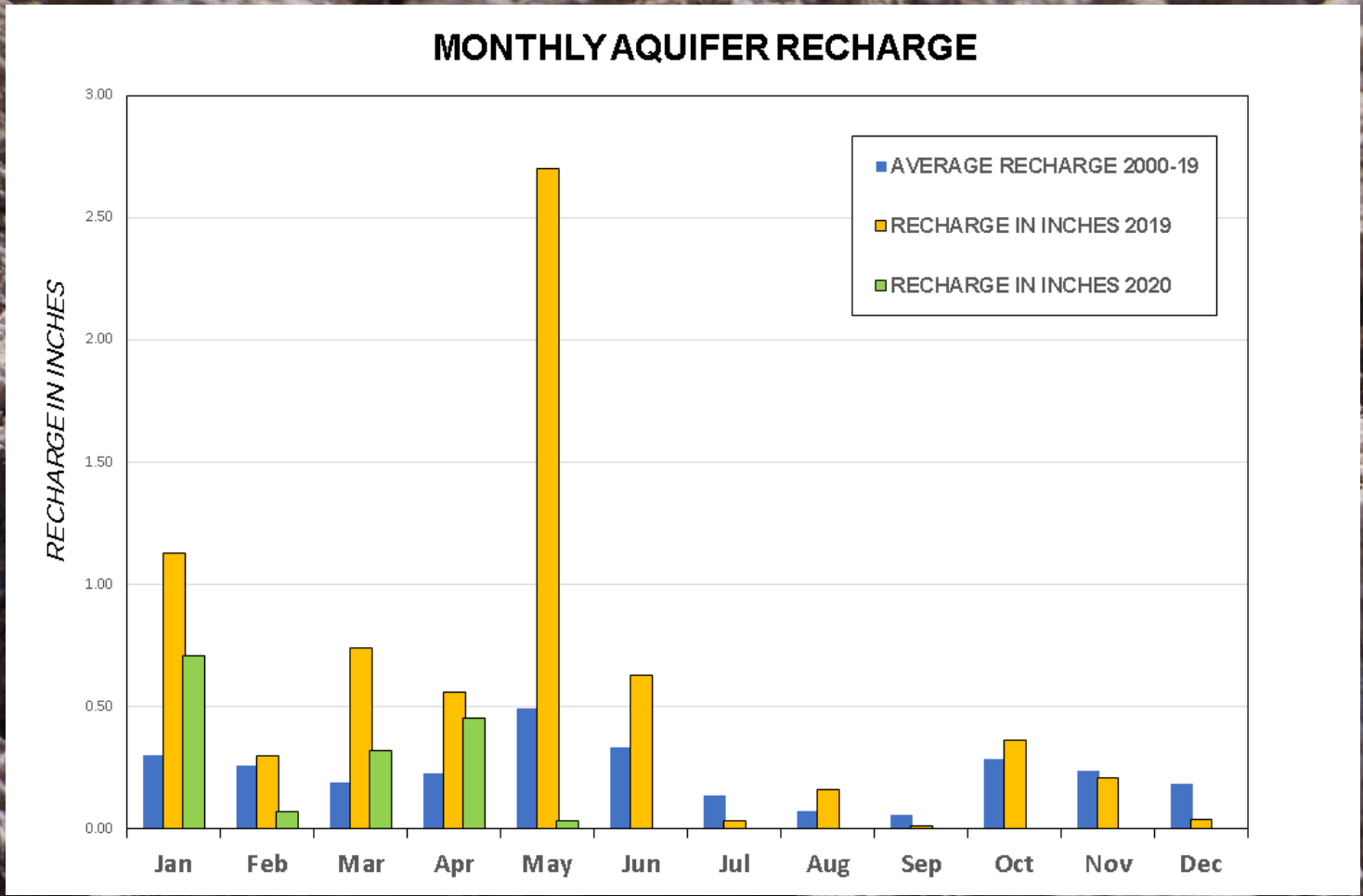
AQUIFER RECHARGE MAY 2020



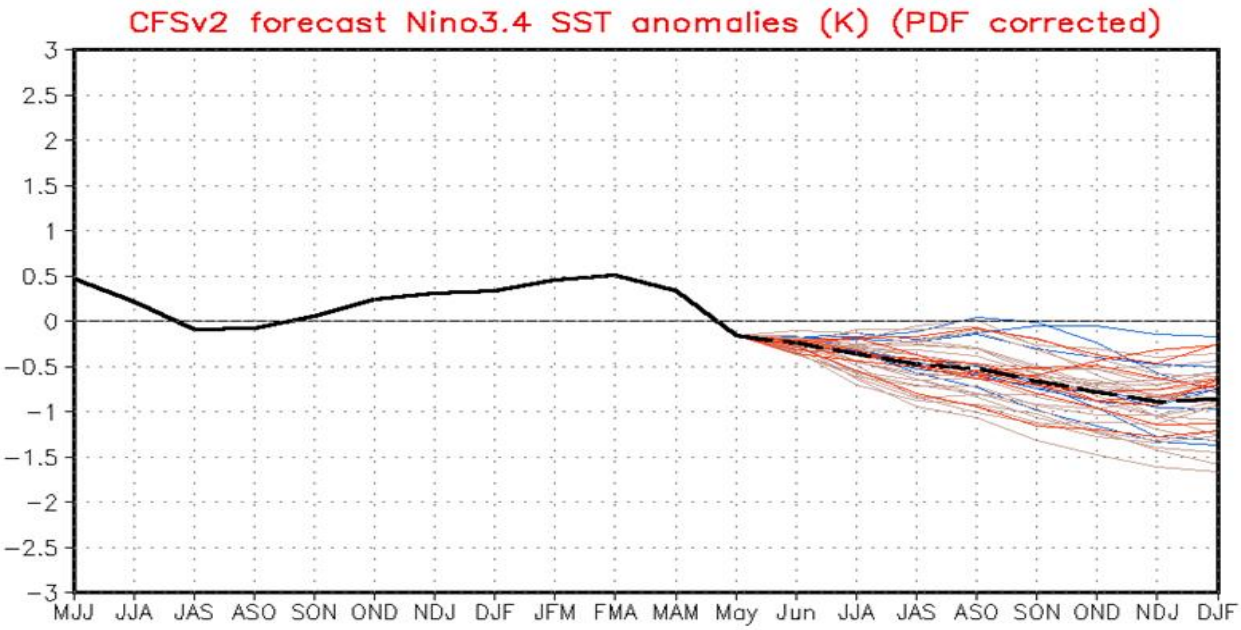
acog

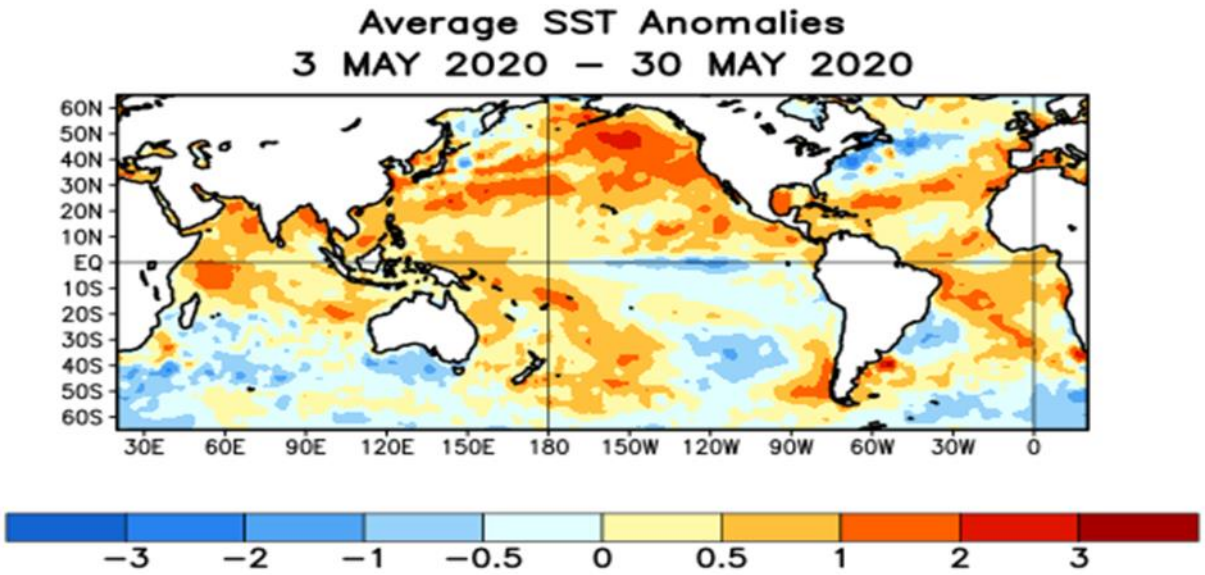
Recharge Charts
Central Oklahoma Aquifer System





ENSO Cycle
Recent Evolution, Current Status and Predictions





Summary

ENSO Alert System Status: Not Active

- ENSO-neutral conditions are present.
- Equatorial sea surface temperatures (SSTs) are near average across most of the Pacific Ocean.
- The tropical atmospheric circulation is consistent with ENSO-neutral.
- There is a ~65% chance of ENSO-neutral during Northern Hemisphere summer 2020, with chances decreasing through the autumn (to 45-50%).

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

acog