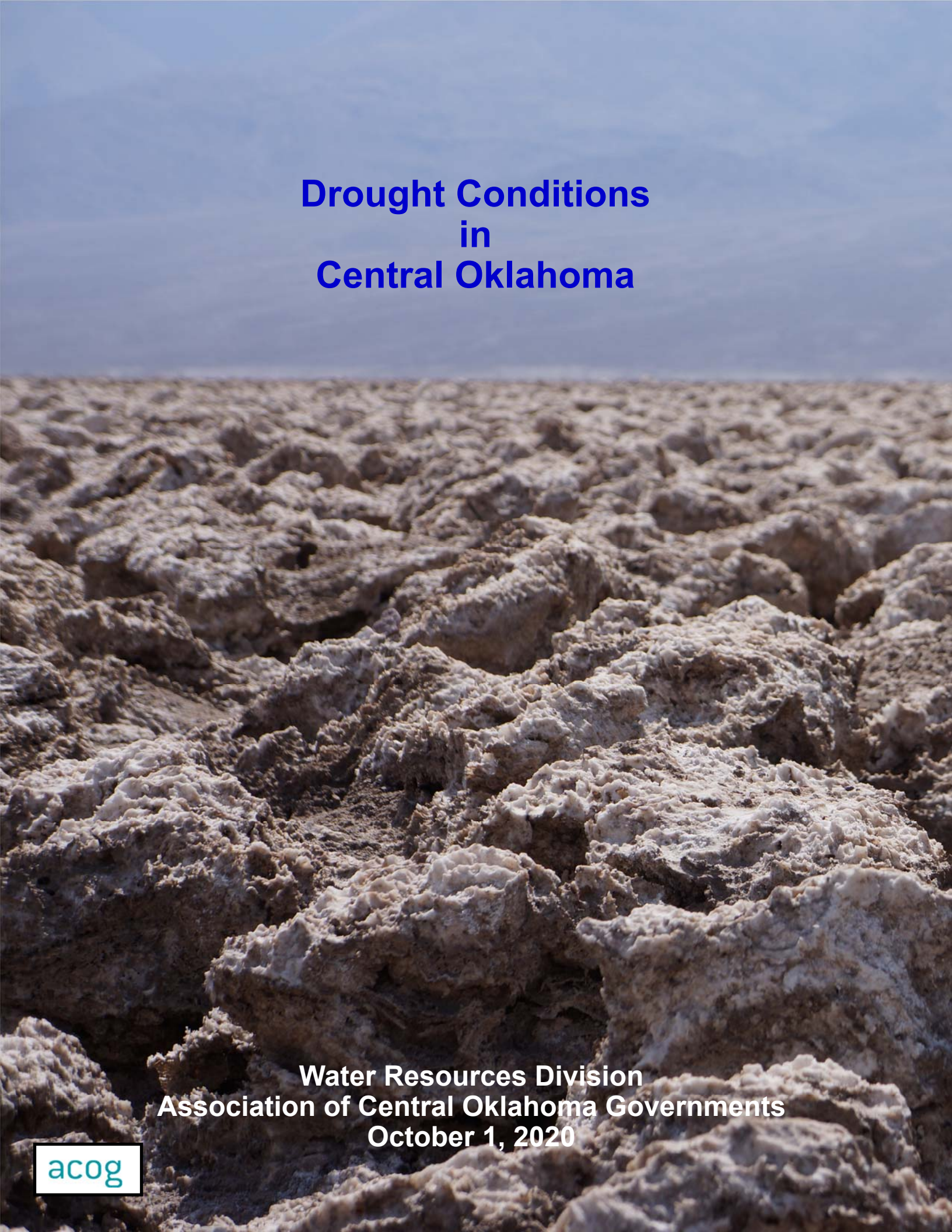
Drought Conditions in Central Oklahoma



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

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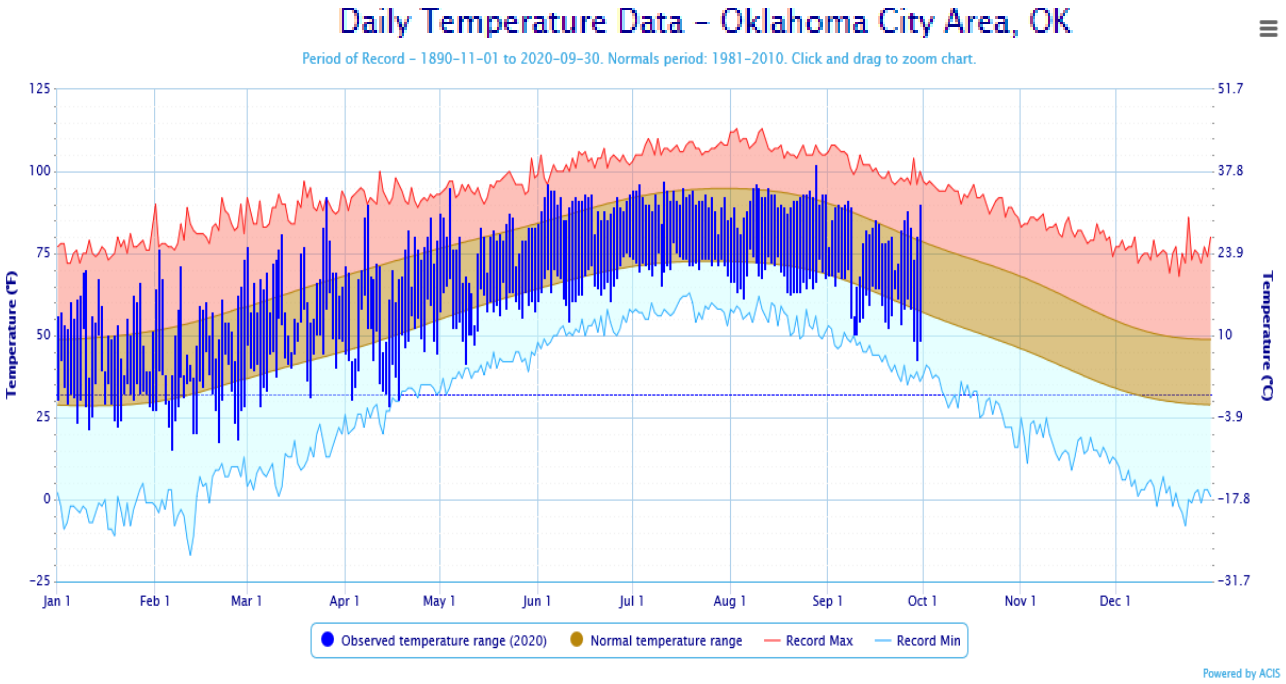
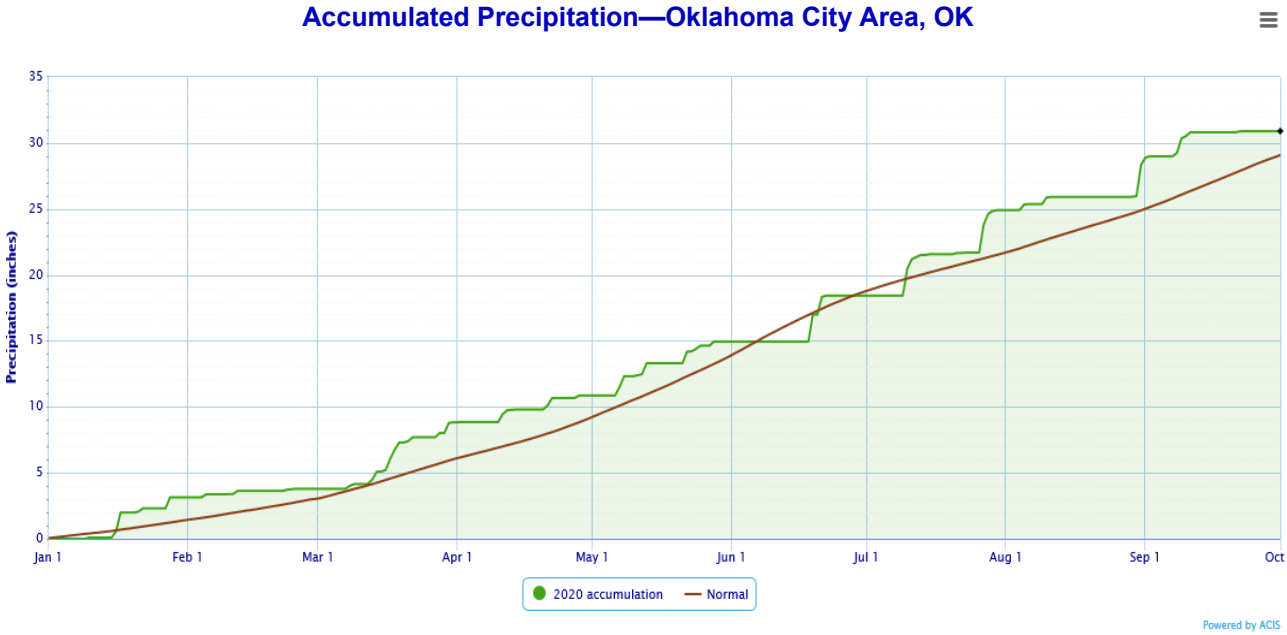
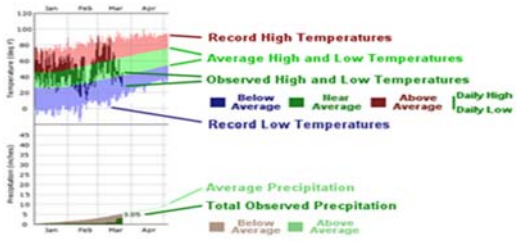
Temperature and Precipitation Plot for Oklahoma City, Oklahoma for 2020







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

Rainfall Summaries by Oklahoma Climate Division

Calendar Year 01-Jan-2020 though 30-Sep-2020

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	16.61"	-6.25"	73%	15th driest	8.26" (2011)	35.74" (1997)
Central	30.47"	+0.95"	103%	31st wettest	14.36" (1956)	47.43" (2007)
S. Central	38.53"	+7.51"	124%	9th wettest	13.23" (2011)	52.47" (1945)
Statewide	31.49"	+3.10"	111%	22nd wettest	14.87" (1956)	41.25" (1957)

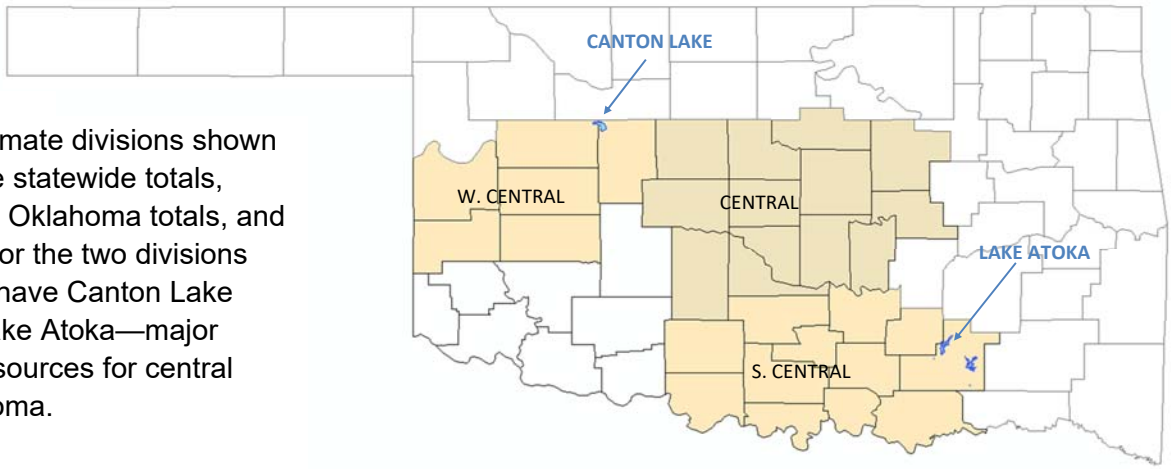
Water Year: 01-Oct-2019 through 30-Sep-2020

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	20.07"	-8.33"	71%	11th driest	12.80" (2010-11)	43.17" (1994-95)
Central	37.80"	+0.17"	100%	32nd wettest	19.58" (1955-56)	54.43" (2006-07)
S. Central	48.47"	+7.76"	119%	14th wettest	16.26" (1955-56)	63.25" (1944-45)
Statewide	39.97"	+3.50"	110%	20th wettest	18.32" (1955-56)	48.70" (1972-73)

Autumn 01-Sep through 30-Sep-2020

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	1.91"	-0.89"	68%	35th driest	0.05" (2000)	8.30" (1923)
Central	3.64"	-0.20"	95%	42nd wettest	0.21" (1956)	10.15" (1945)
S. Central	6.33"	+2.36"	159%	18th wettest	0.15" (1956)	10.82" (2018)
Statewide	3.81"	+0.27"	108%	37th wettest	0.25" (1956)	7.92" (1945)

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

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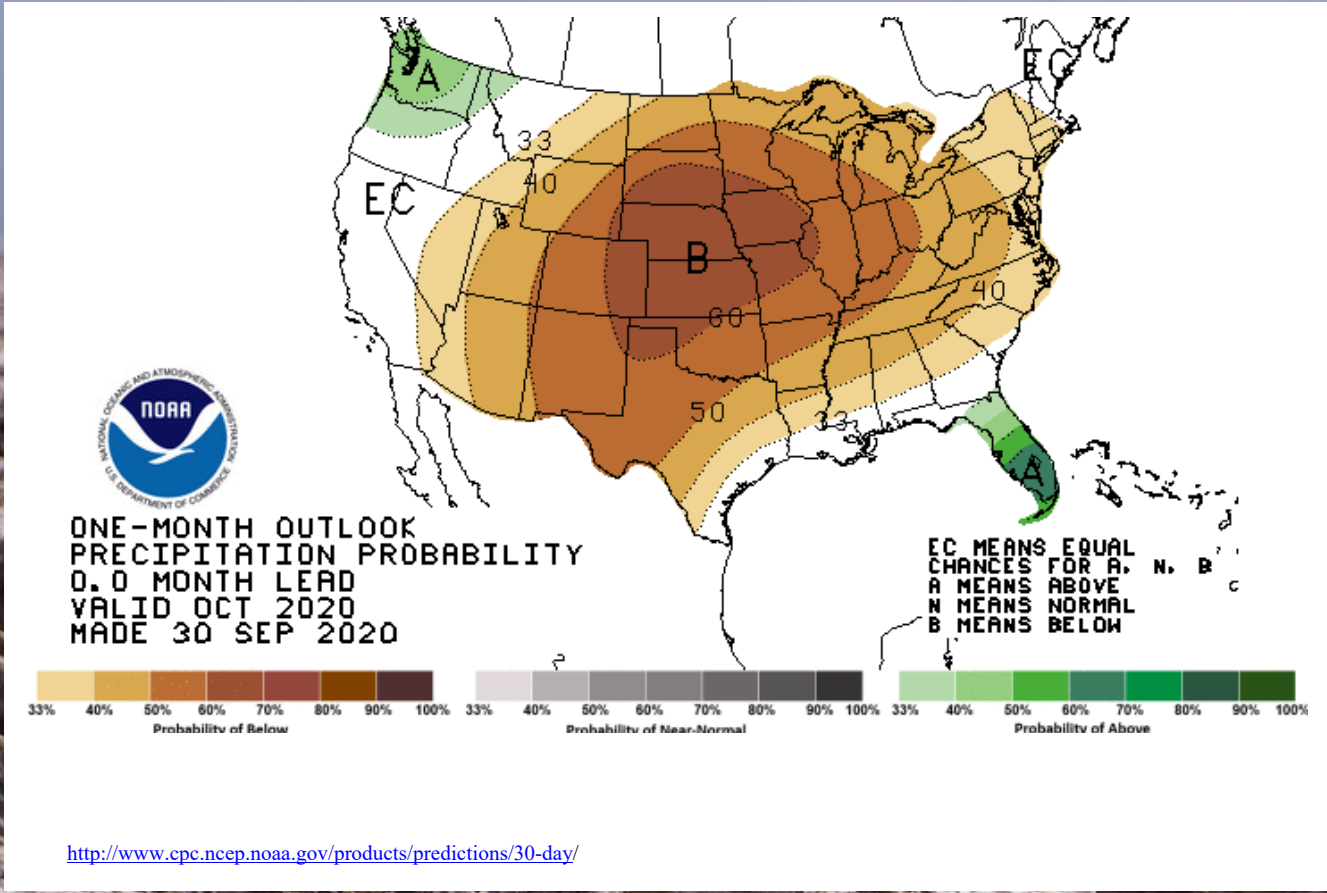
NOAA One-Month Outlook

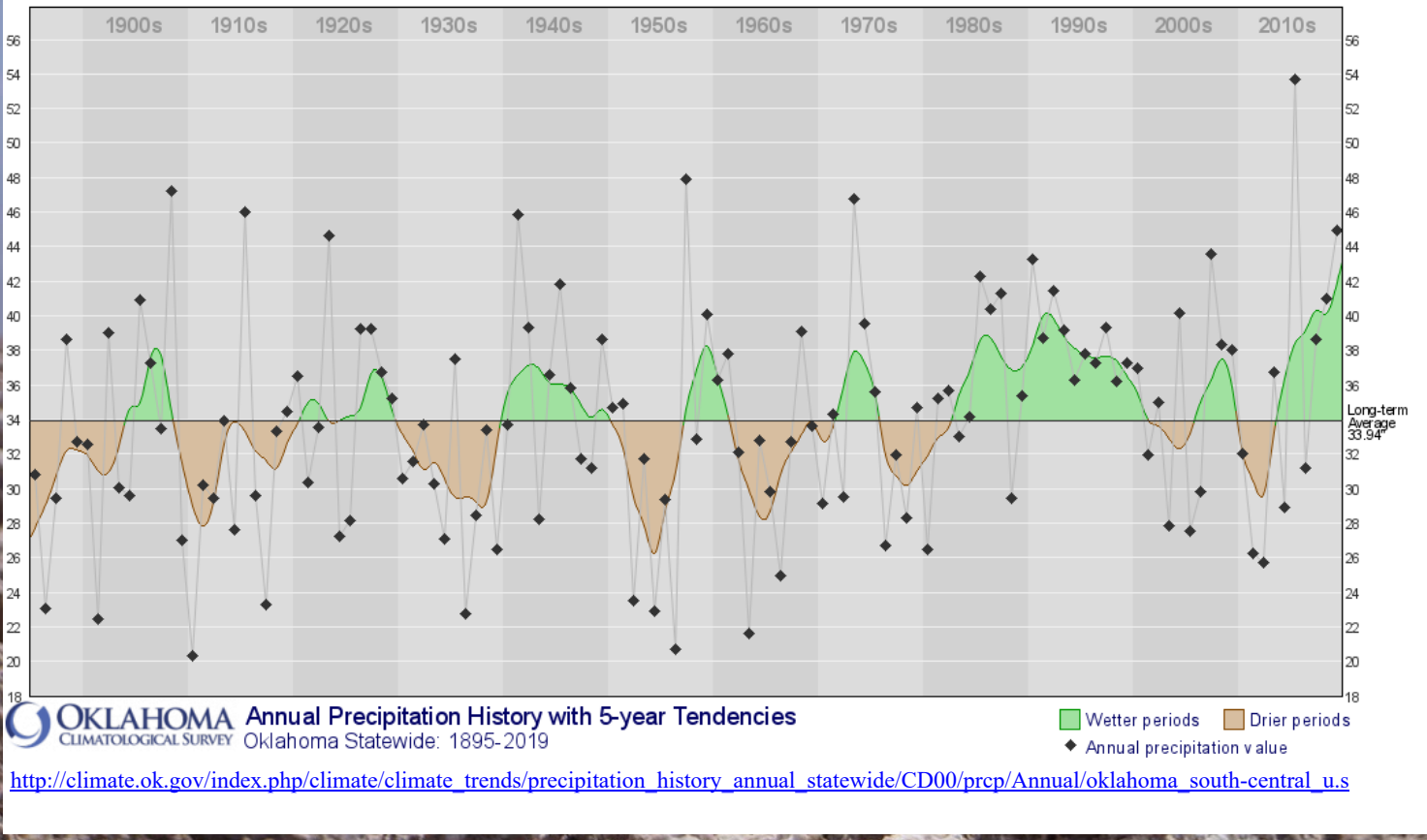


http://www.cpc.ncep.noaa.gov/products/predictions/30-day/

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



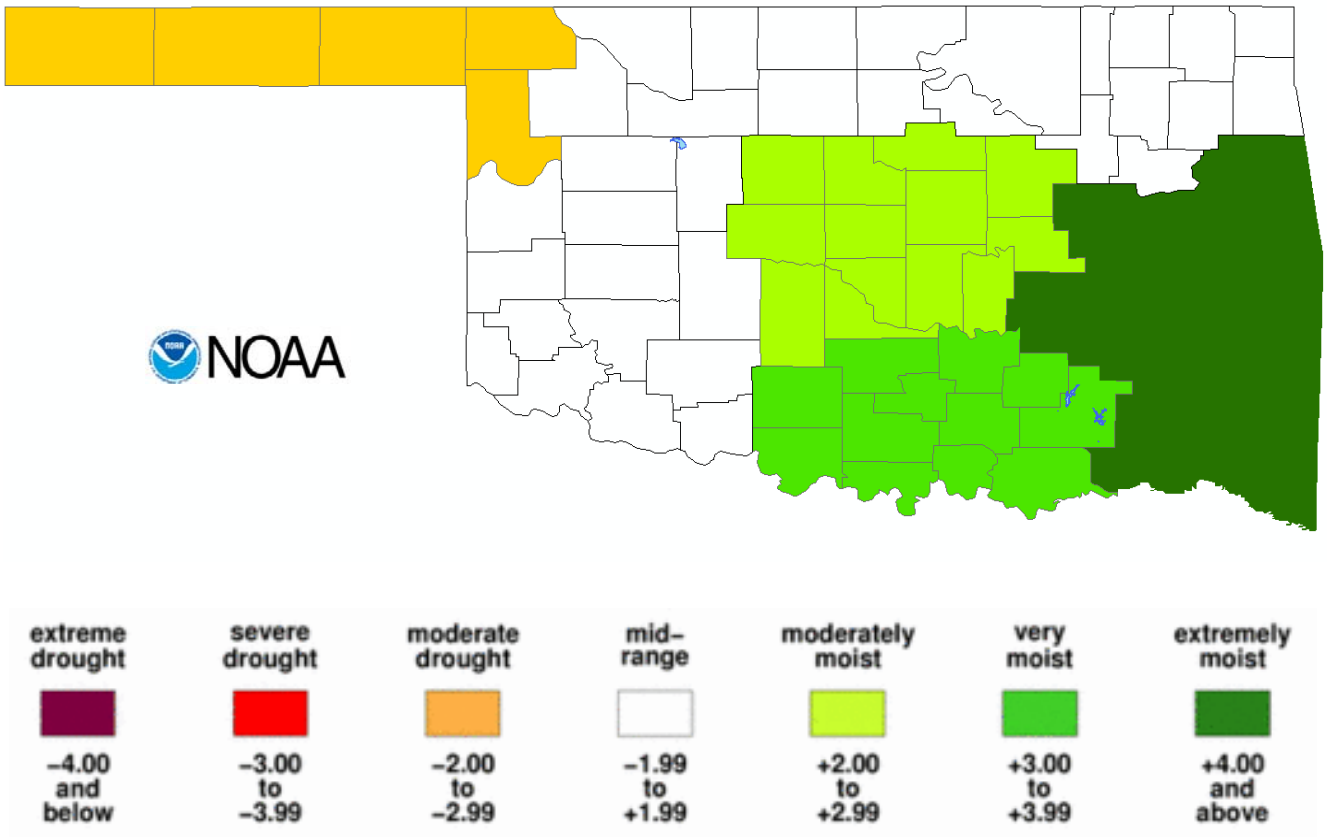
http://climate.ok.gov/index.php/climate/climate_trends/precipitation_history_annual_statewide/CD00/prcp/Annual/oklahoma_south-central_u.s

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 26 SEP 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.

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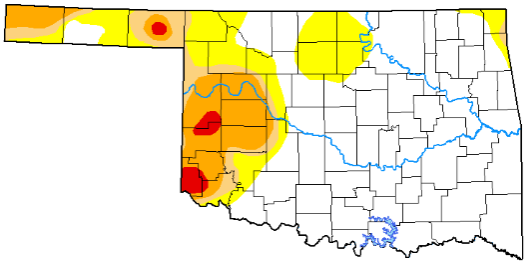
U.S. Drought Monitor

Week	Date	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	2020-09-29	66.79	33.21	17.71	11.97	1.55	0.00
Last Week	2020-09-22	73.41	26.59	17.20	10.80	1.00	0.00
3 Months Ago	2020-06-30	34.87	65.13	43.03	15.39	4.46	0.10
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	2019-10-01	71.94	28.06	11.08	1.01	0.00	0.00

U.S. Drought Monitor

Oklahoma

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



Intensity:

- D0 - Abnormally Dry
- D1 - Moderate Drought
- D2 - Severe Drought
- D3 - Extreme Drought
- D4 - Exceptional Drought

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

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

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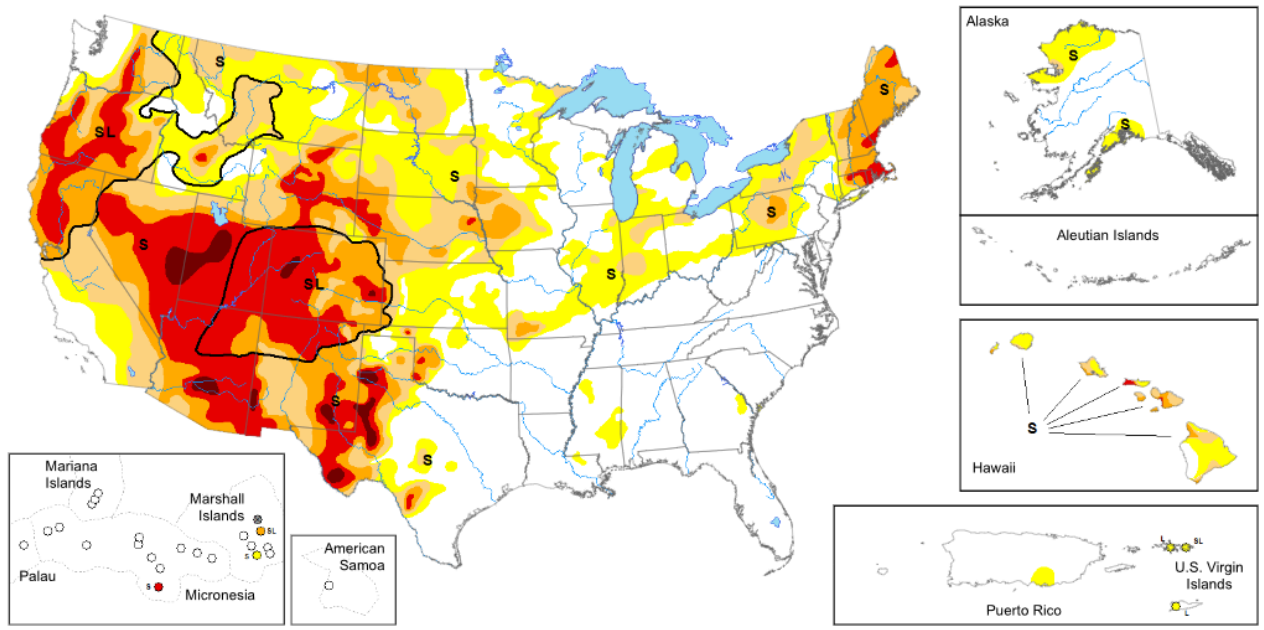
U.S. Drought Monitor Nationwide Map

Map released: October 1, 2020

Data valid: September 29, 2020



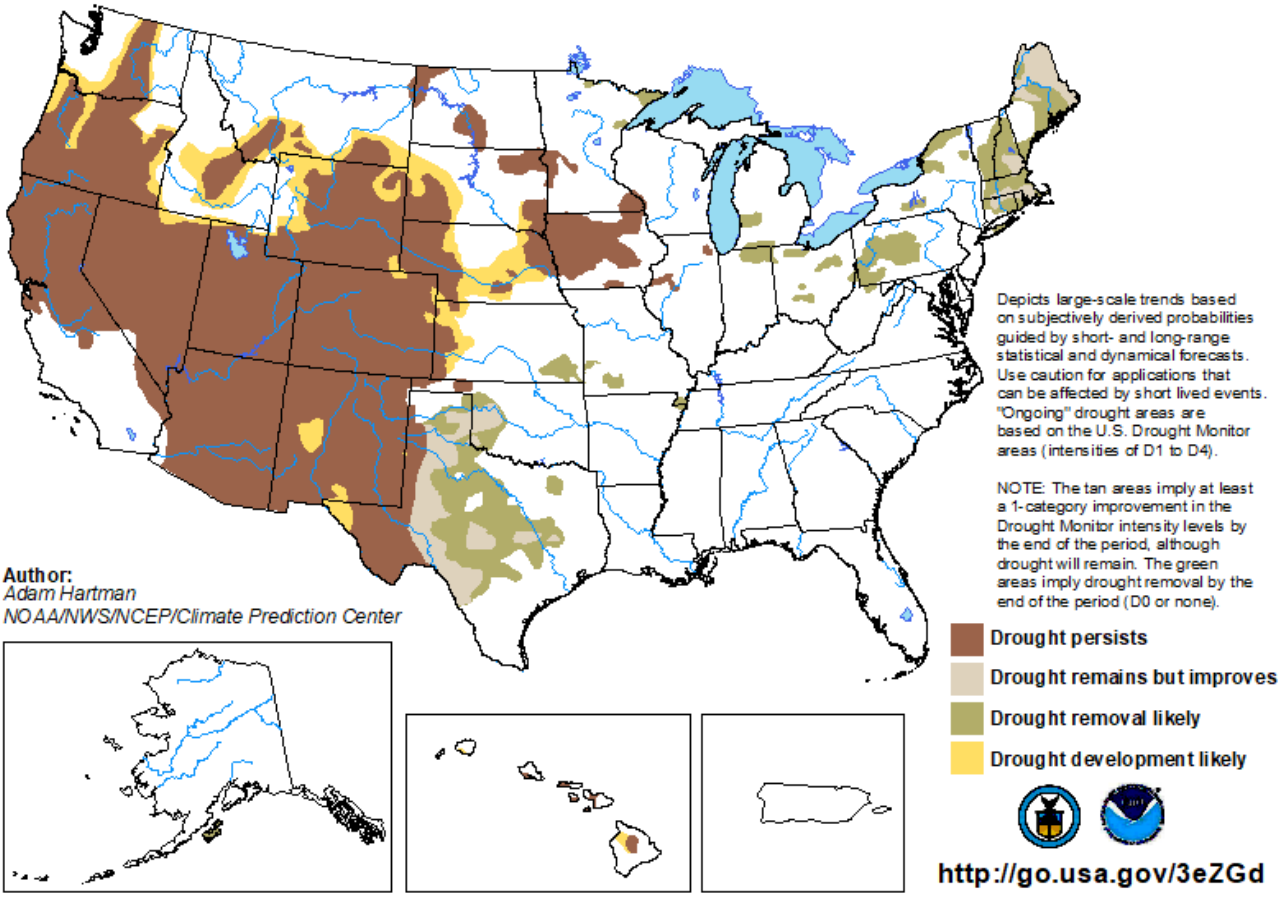
United States and Puerto Rico Author(s):
Brad Rippey, U.S. Department of Agriculture

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

http://droughtmonitor.unl.edu

U.S. Drought Monitor

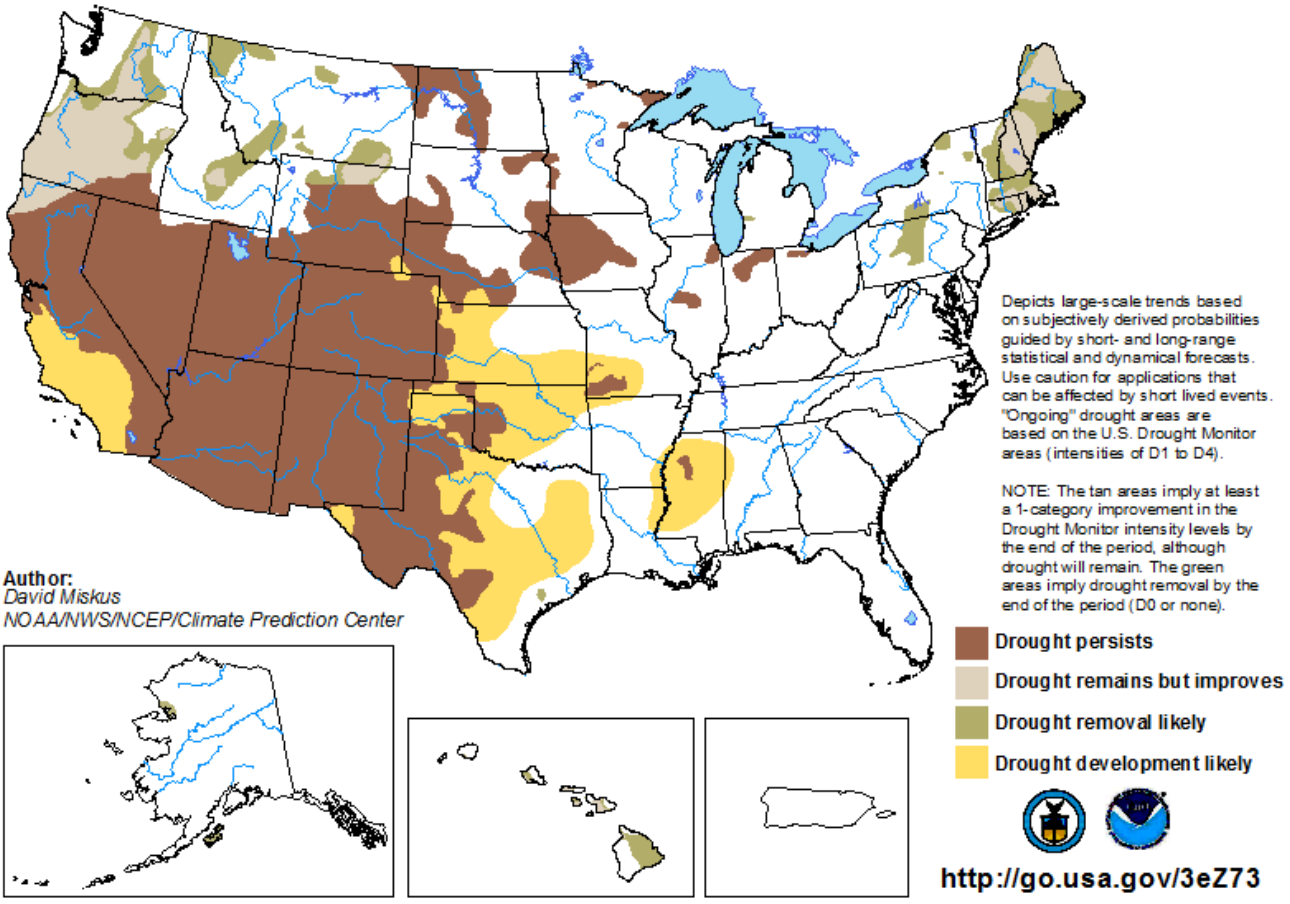
Monthly Drought Outlook Map



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

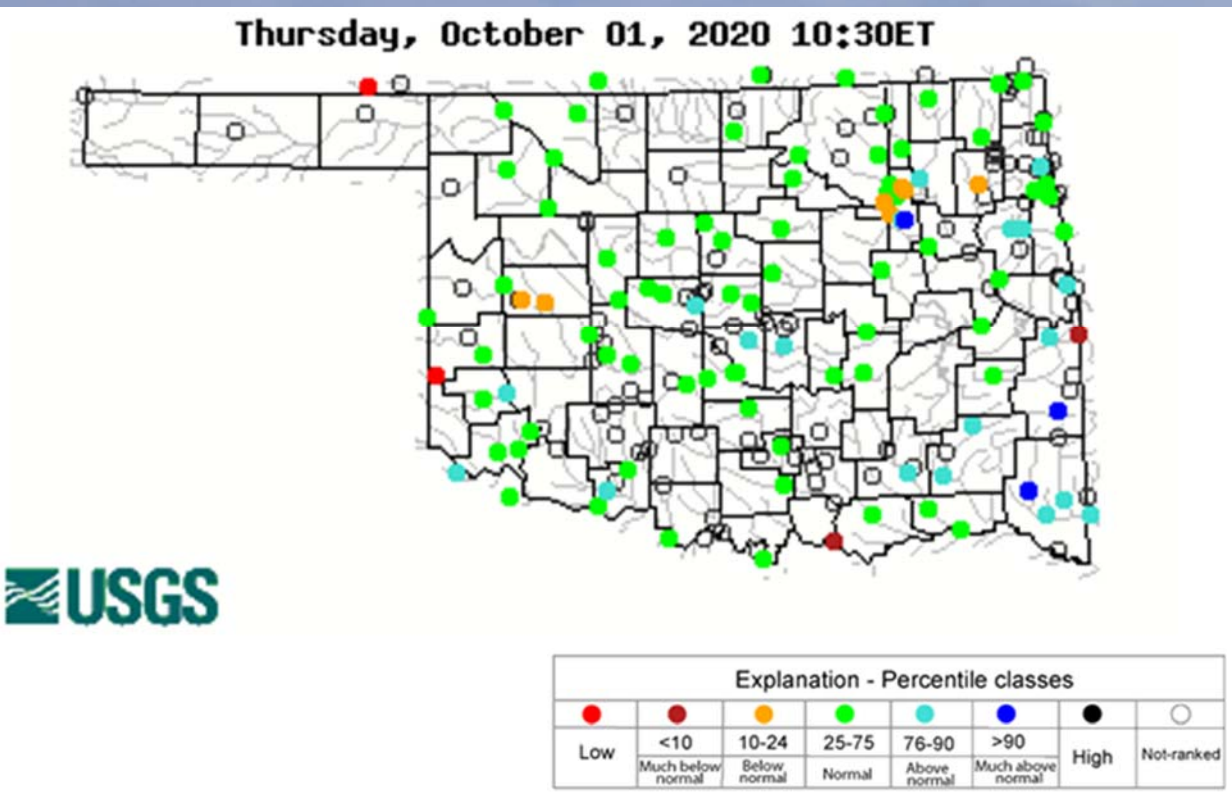
U.S. Drought Monitor

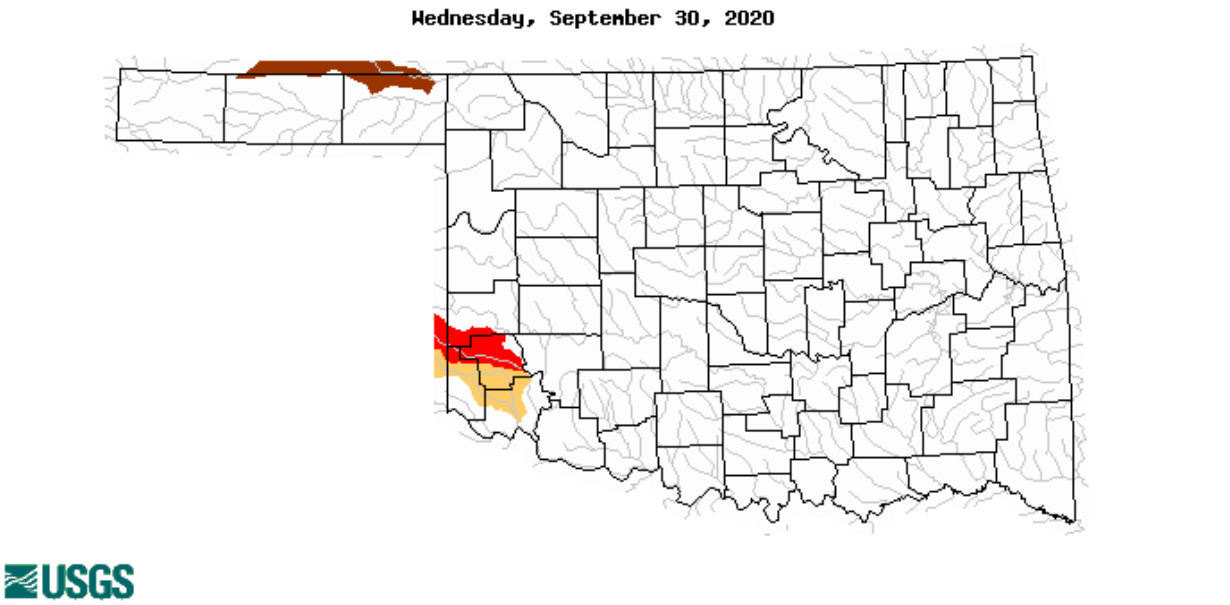
Seasonal Drought Outlook Map



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

USGS Streamflow Data





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

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

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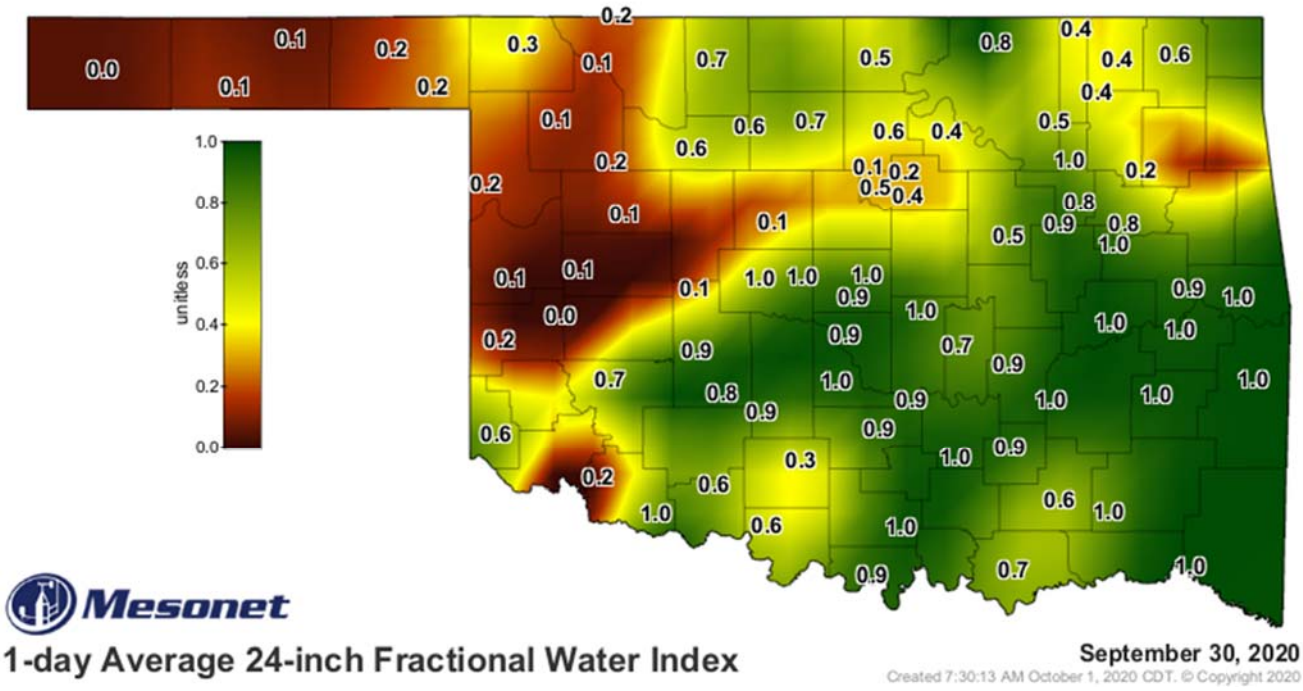
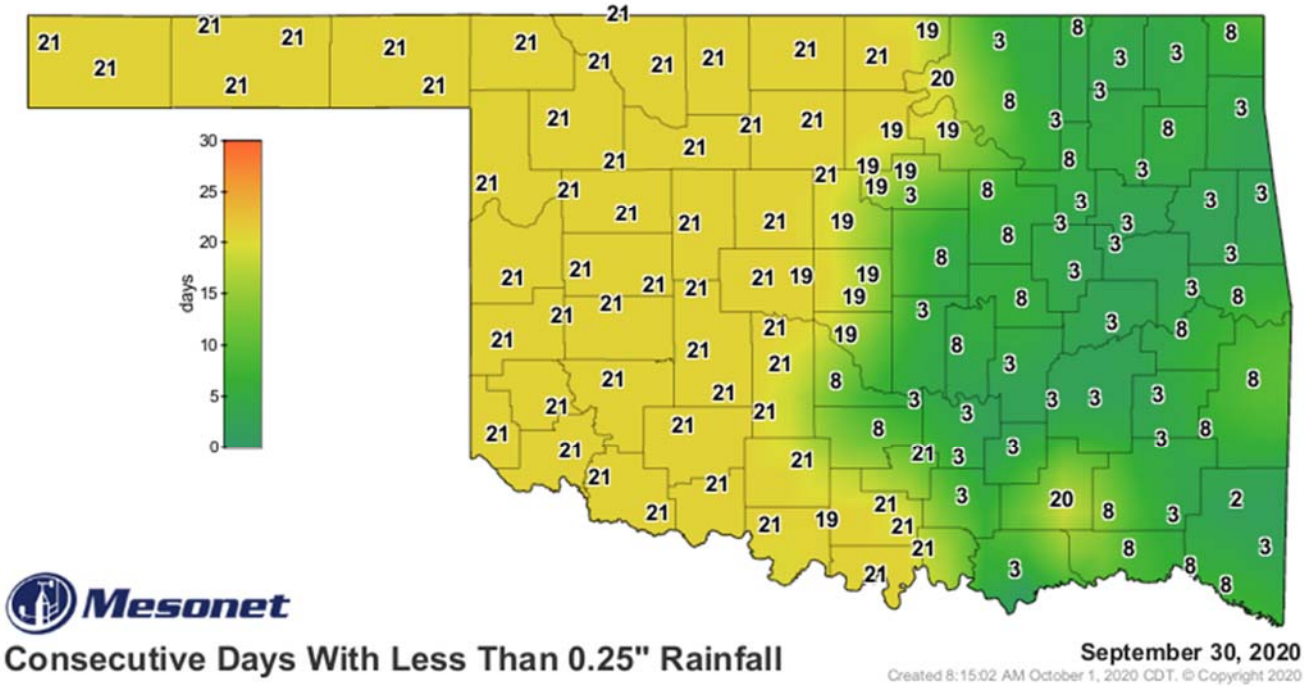
SOIL MOISTURE MAP



- 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

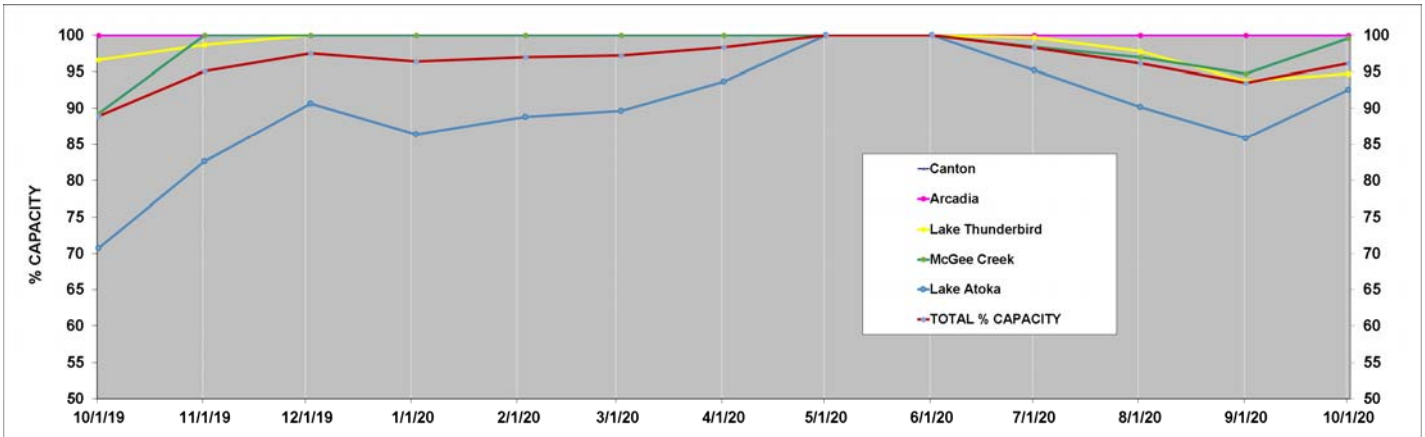
http://www.mesonet.org/index.php/weather/map/24-inch_fractional_water_index/soil_moisture

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 9/1/2020
Canton	97.4	-2.4
Arcadia	100.0	0.0
Lake Thunderbird	94.7	1.0
McGee Creek	99.6	4.9
Lake Atoka	92.5	6.7
TOTAL % CAPACITY	96.2	2.7

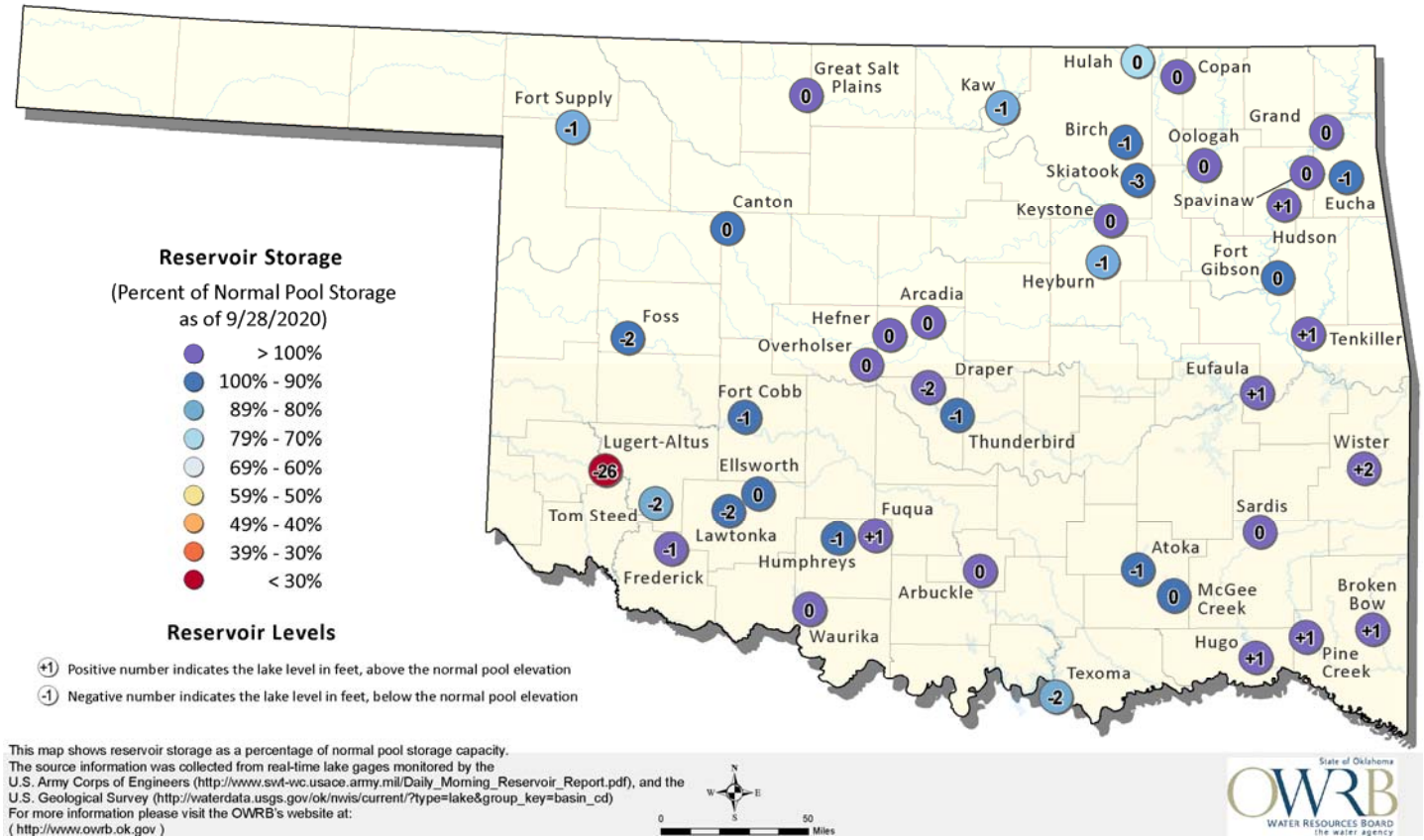
http://www.swt-wc.usace.army.mil/Daily_Morning_Reservoir_Report.pdf

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.

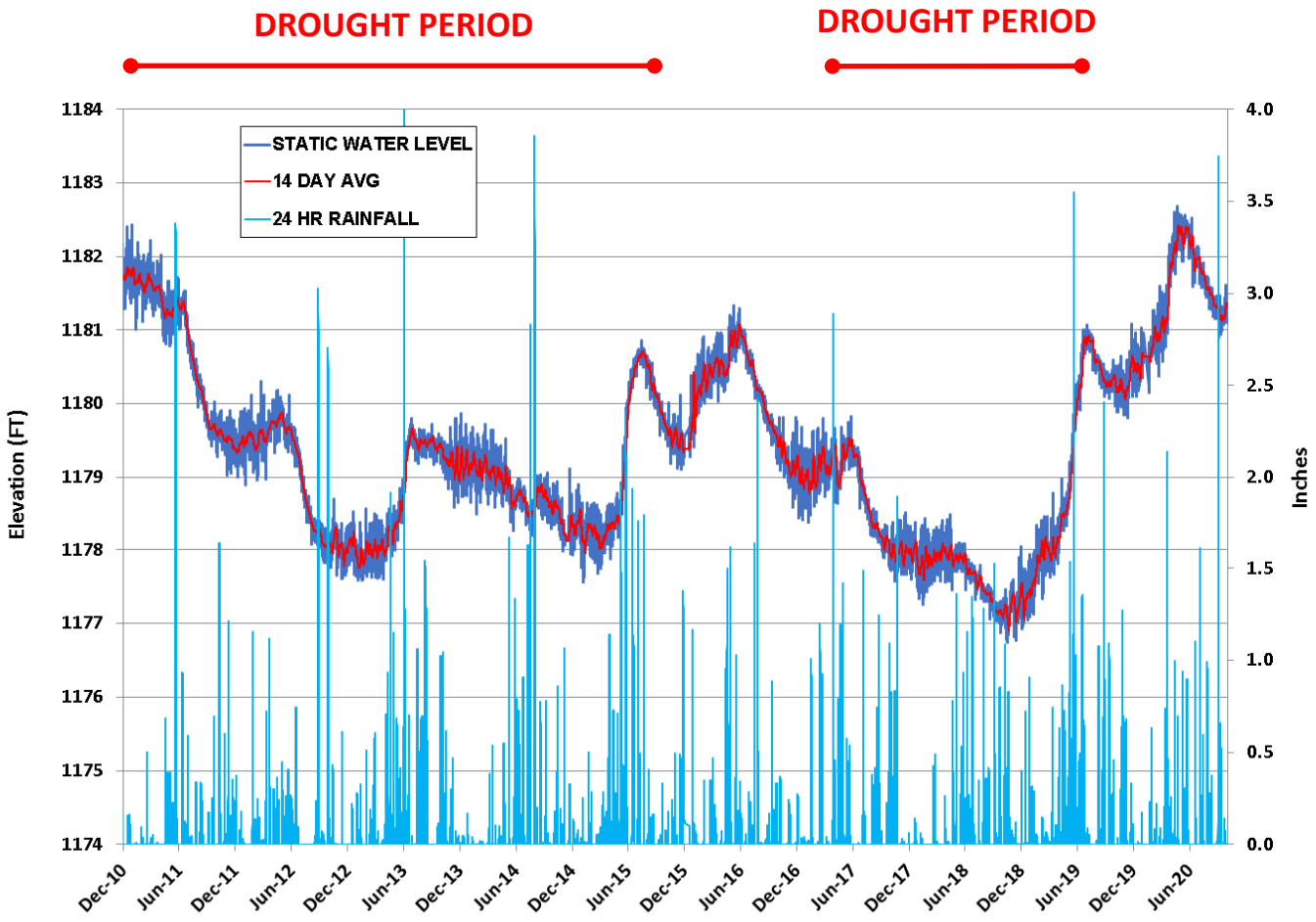
Oklahoma Surface Water Resources

Reservoir Levels and Storage as of 9/28/2020



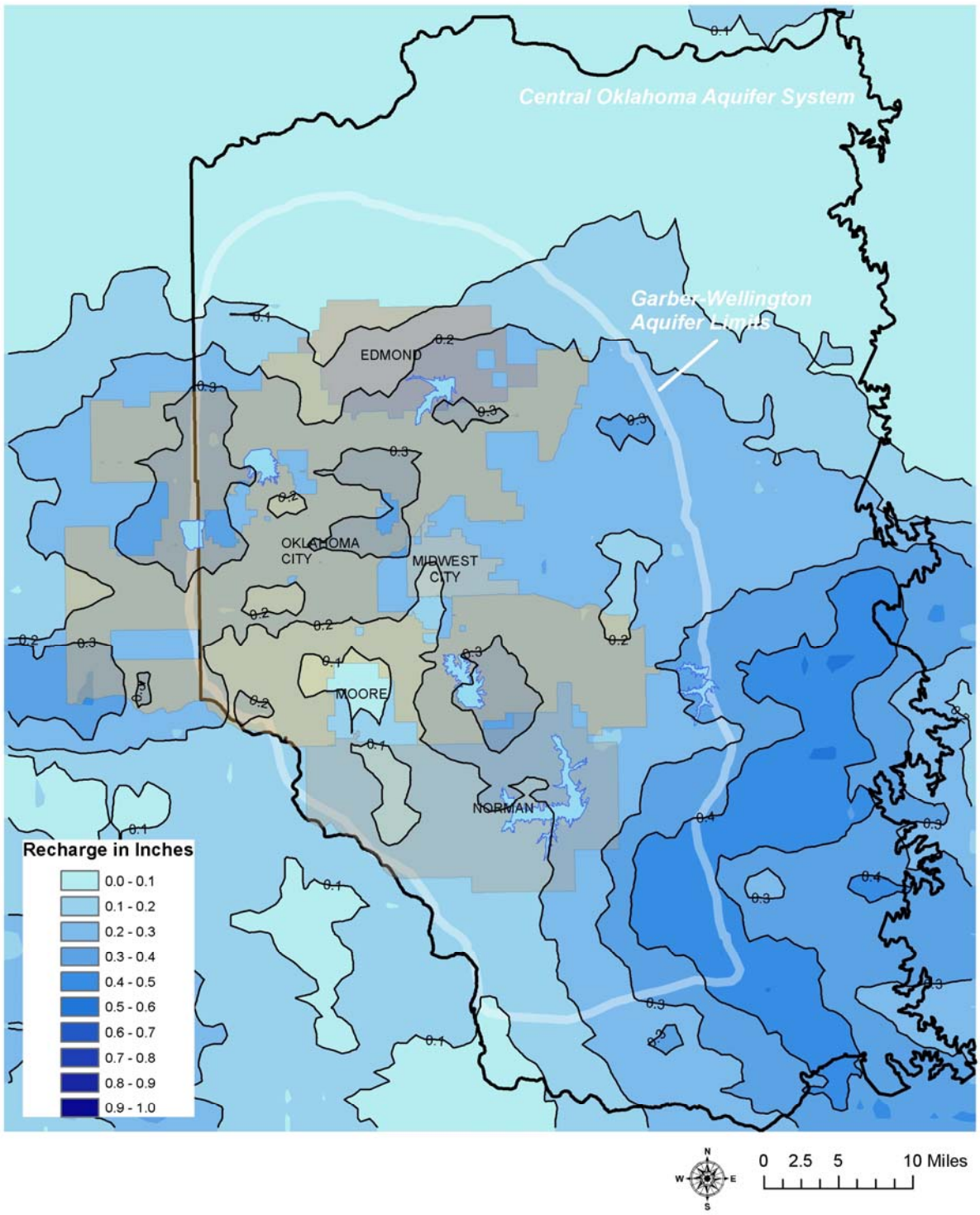
https://www.owrb.ok.gov/supply/drought/reservoirstorage.php

Groundwater Levels
Spencer Mesonet Station

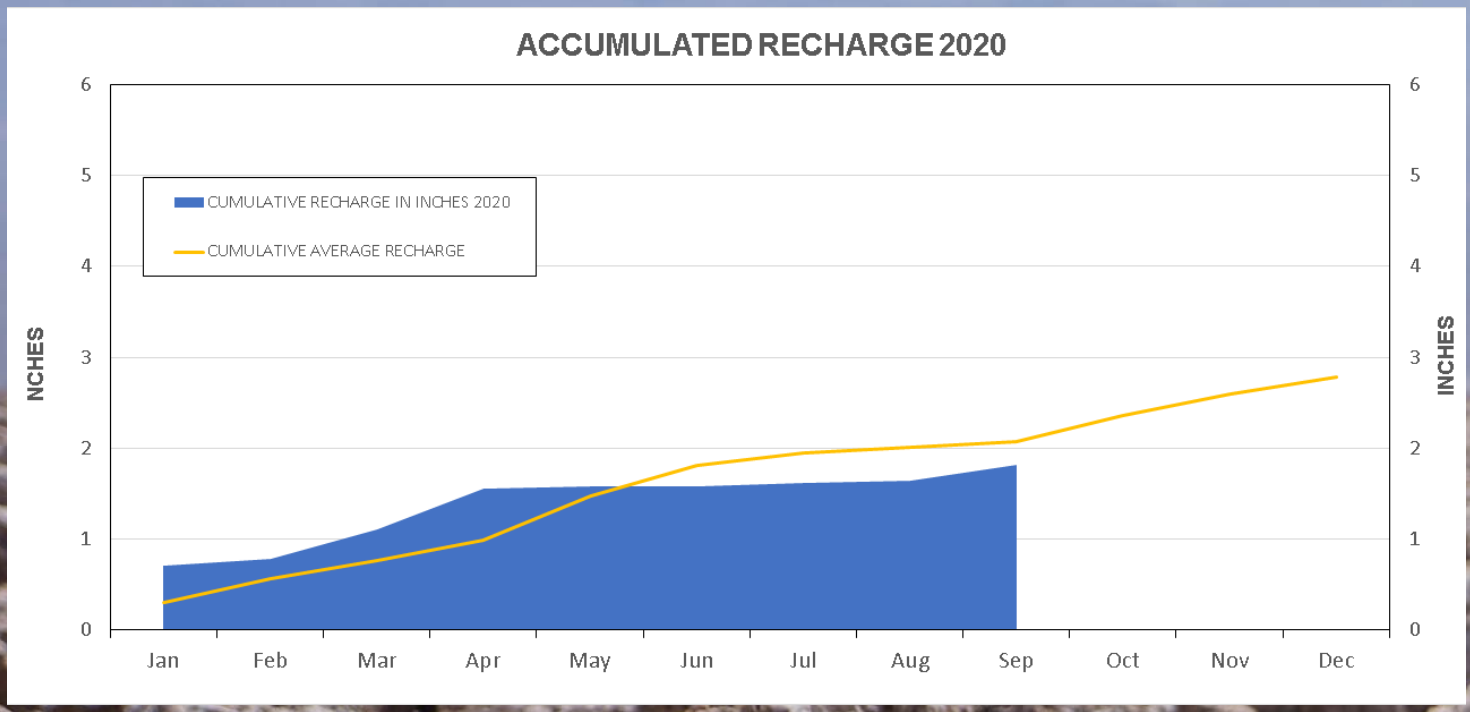


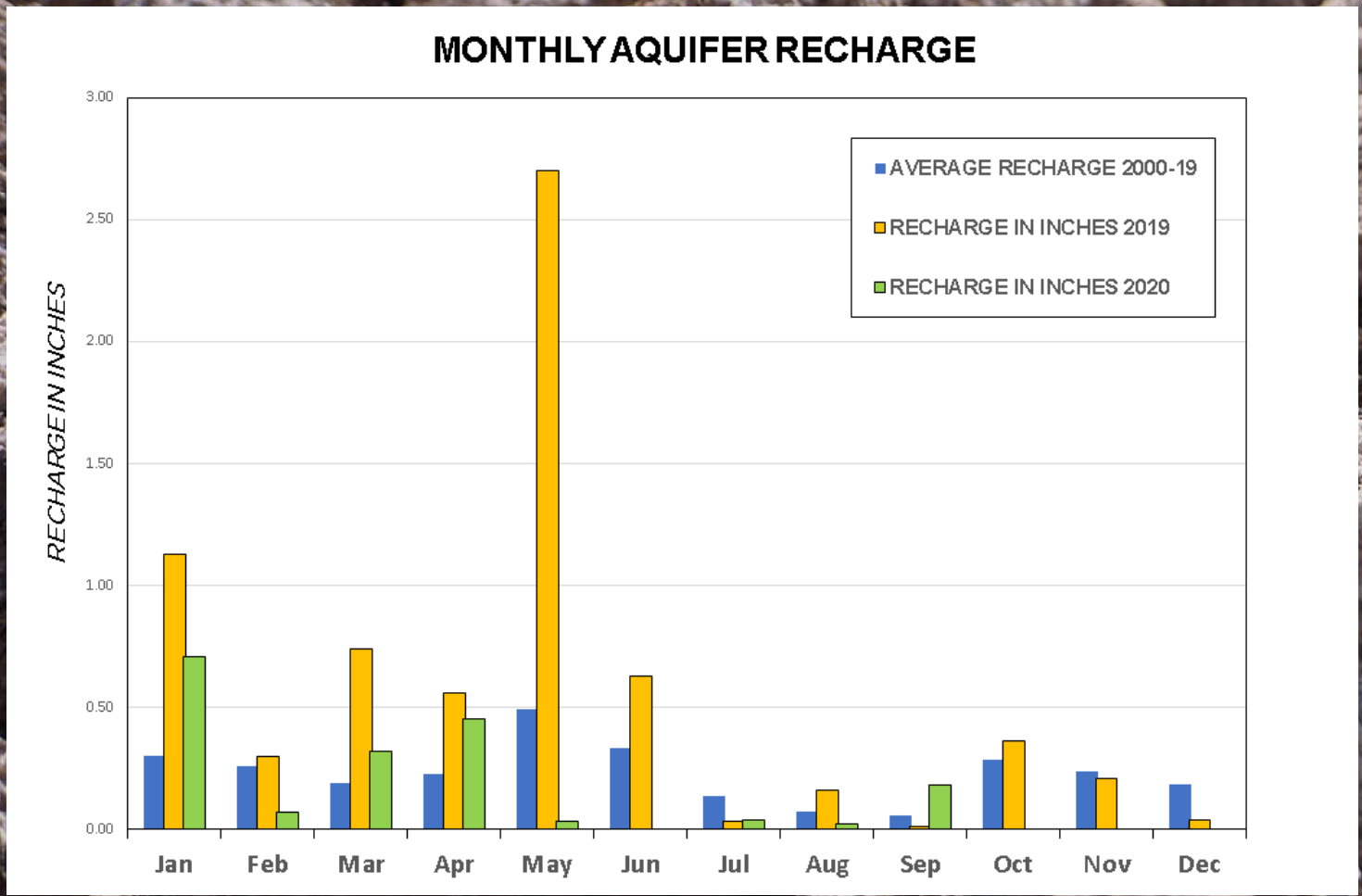
http://www.mesonet.org/index.php/weather/groundwater

Recharge Map
Central Oklahoma Aquifer System

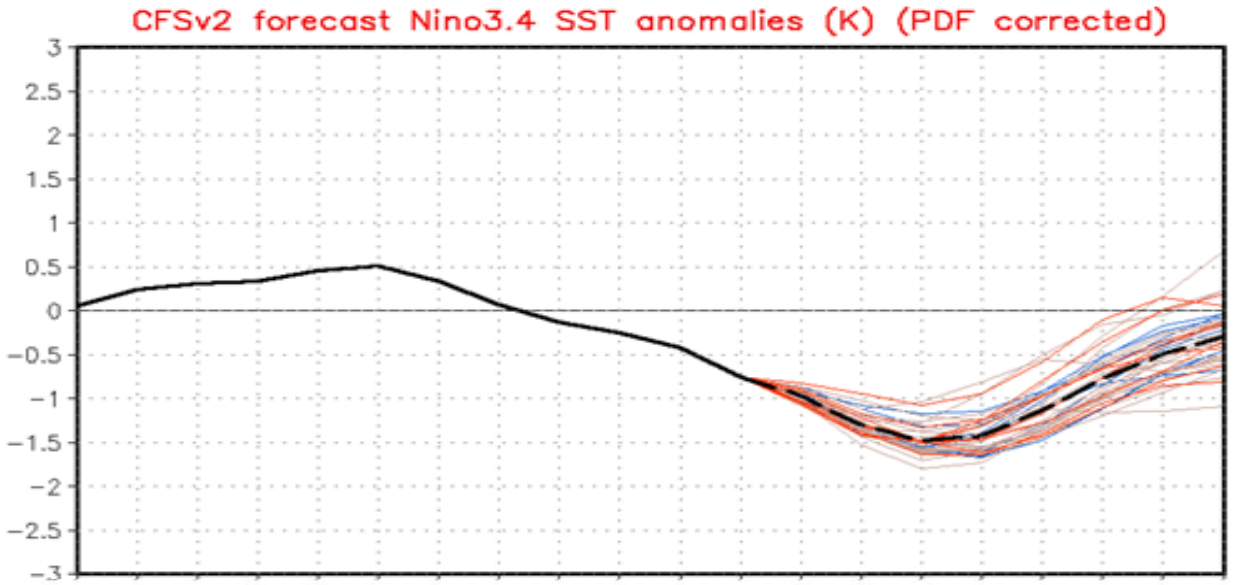


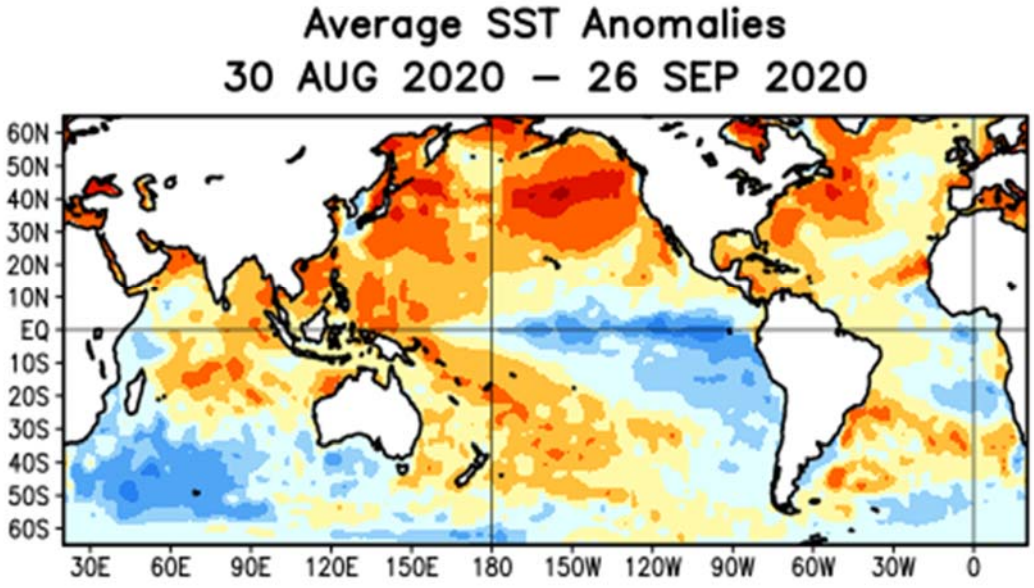
Recharge Charts
Central Oklahoma Aquifer System





ENSO Cycle
Recent Evolution, Current Status and Predictions





Summary

ENSO Alert System Status: La Niña Advisory

- La Niña conditions are present.
- Equatorial sea surface temperatures (SSTs) are below average across the east-central and eastern Pacific Ocean.
- The tropical atmospheric circulation is consistent with La Niña.
- La Niña conditions are present and are likely to continue through the Northern Hemisphere winter (~75% chance).

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

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