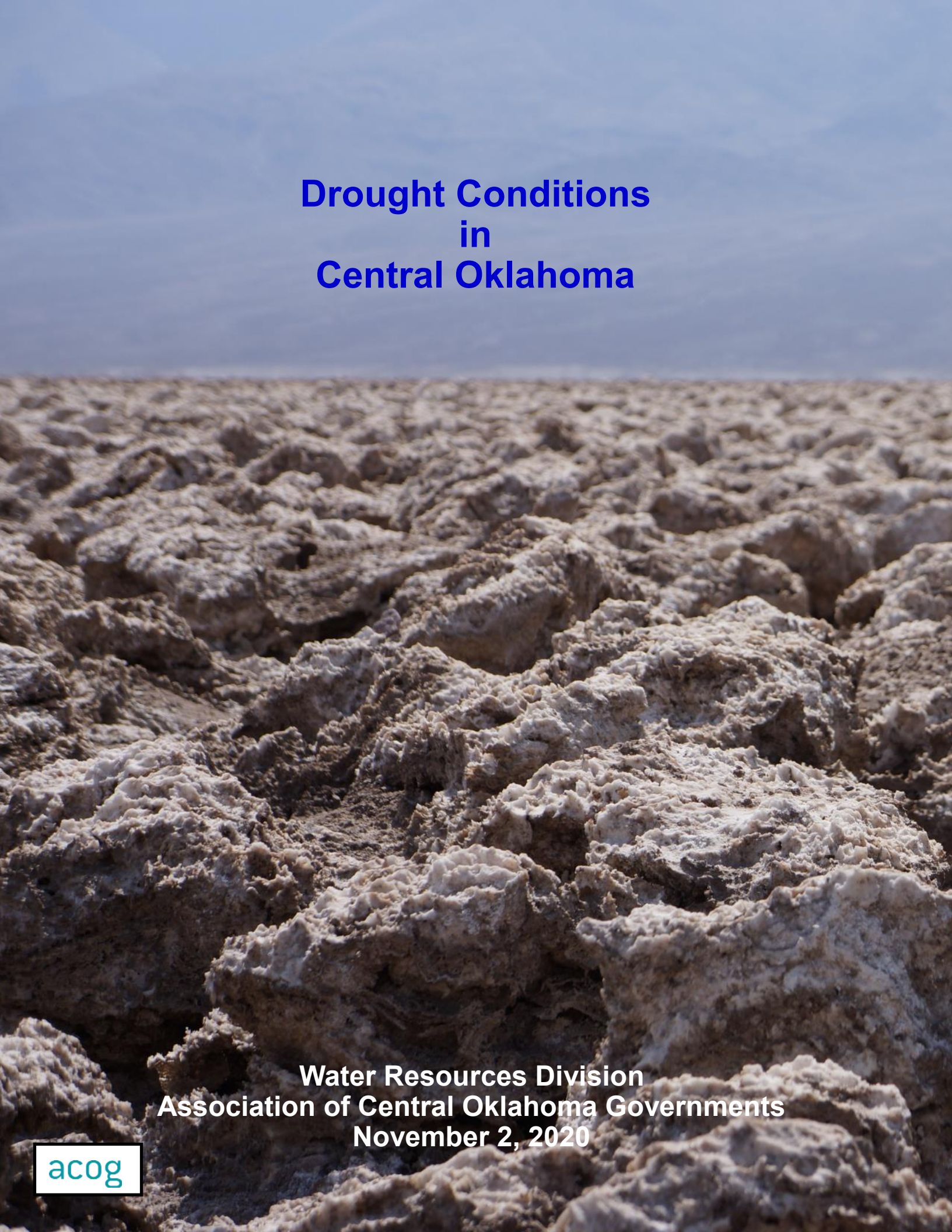

Drought Conditions in Central Oklahoma

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

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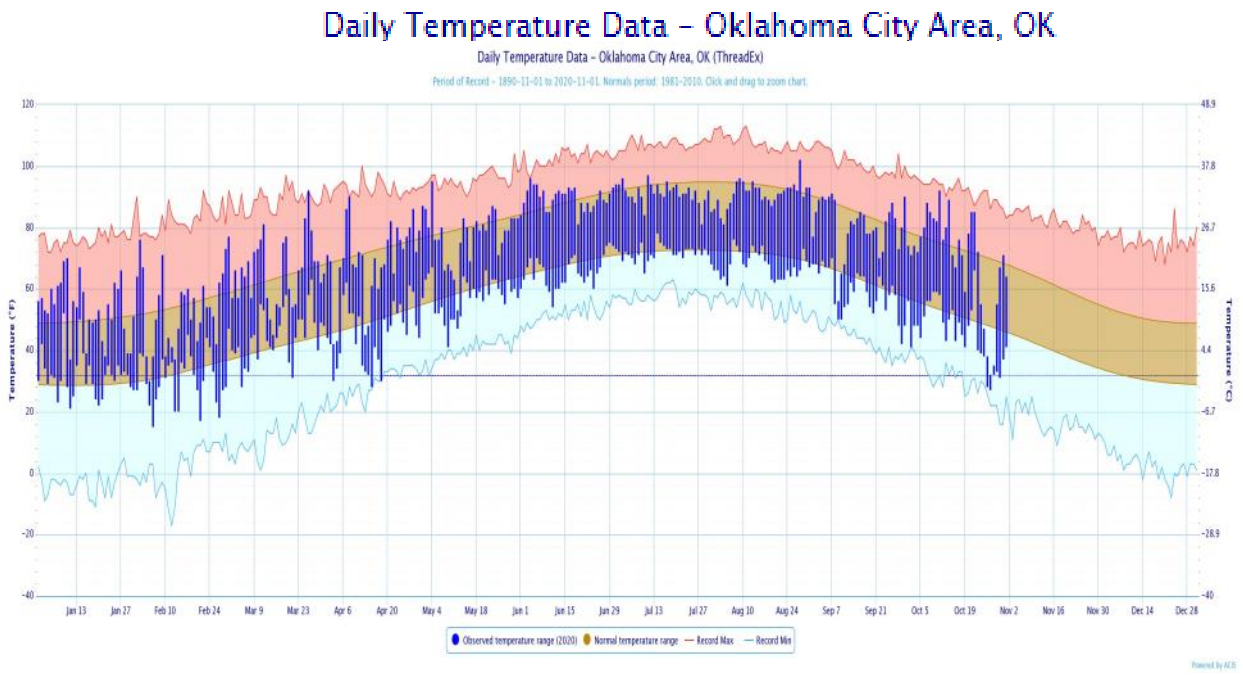
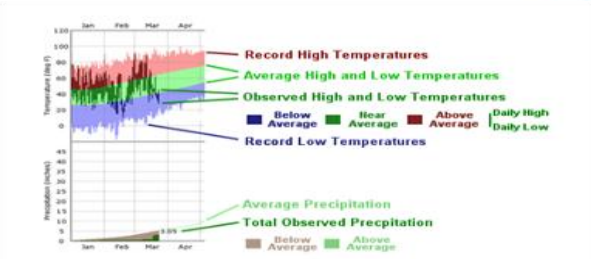
Temperature and Precipitation Plot for Oklahoma City, Oklahoma for 2020



Accumulated Precipitation—Oklahoma City Area, OK



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

Rainfall Summaries by Oklahoma Climate Division

Calendar Year 01-Jan-2020 though 01-Nov-2020

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	16.71"	-8.59"	66%	9th driest	10.36" (2011)	39.45" (1941)
Central	31.99"	-0.70"	98%	40th wettest	16.11" (1956)	50.84" (2007)
S. Central	39.57"	+4.94"	114%	19th wettest	16.26" (1963)	54.66" (2015)
Statewide	32.53"	+1.15"	104%	30th wettest	16.28" (1956)	43.62" (1957)

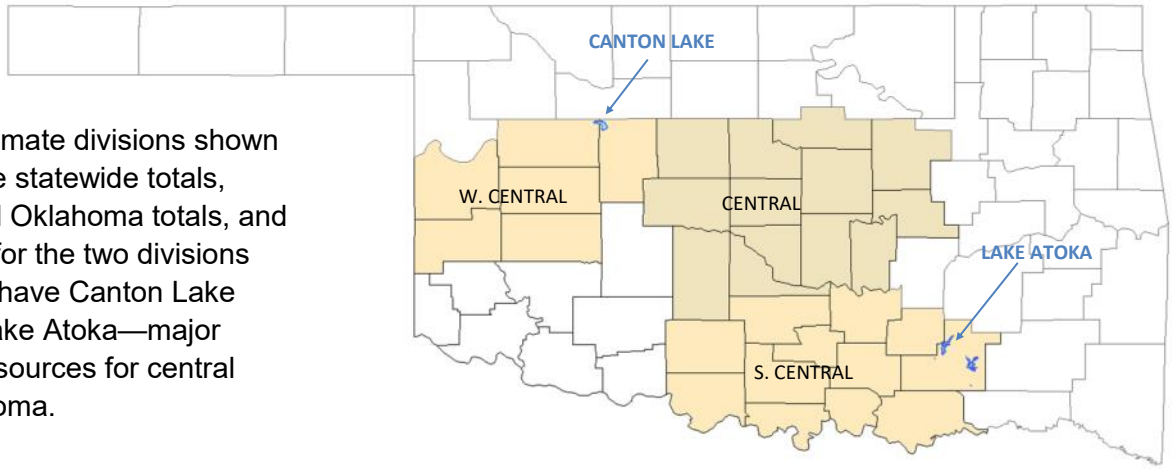
Water Year: 01-Oct-2019 through 01-Nov-2020

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	0.09"	-2.35"	4%	4th driest	0.00" (1952)	8.85" (1986)
Central	1.52"	-1.65"	48%	34th driest	0.03" (1952)	10.54" (1983)
S. Central	1.04"	-2.57"	29%	20th driest	0.03" (1921)	14.88" (1981)
Statewide	1.04"	-1.95"	35%	20th driest	0.10" (1921)	8.18" (1941)

Autumn 01-Sep through 01-Nov-2020

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	2.00"	-3.24"	38%	15th driest	0.26" (1952)	17.10" (1923)
Central	5.15"	-1.86"	74%	41st driest	0.57" (1952)	18.38" (1923)
S. Central	7.37"	-0.21"	97%	45th wettest	0.59" (1952)	19.56" (2018)
Statewide	4.85"	-1.68"	74%	31st driest	0.82" (1952)	14.62" (1923)

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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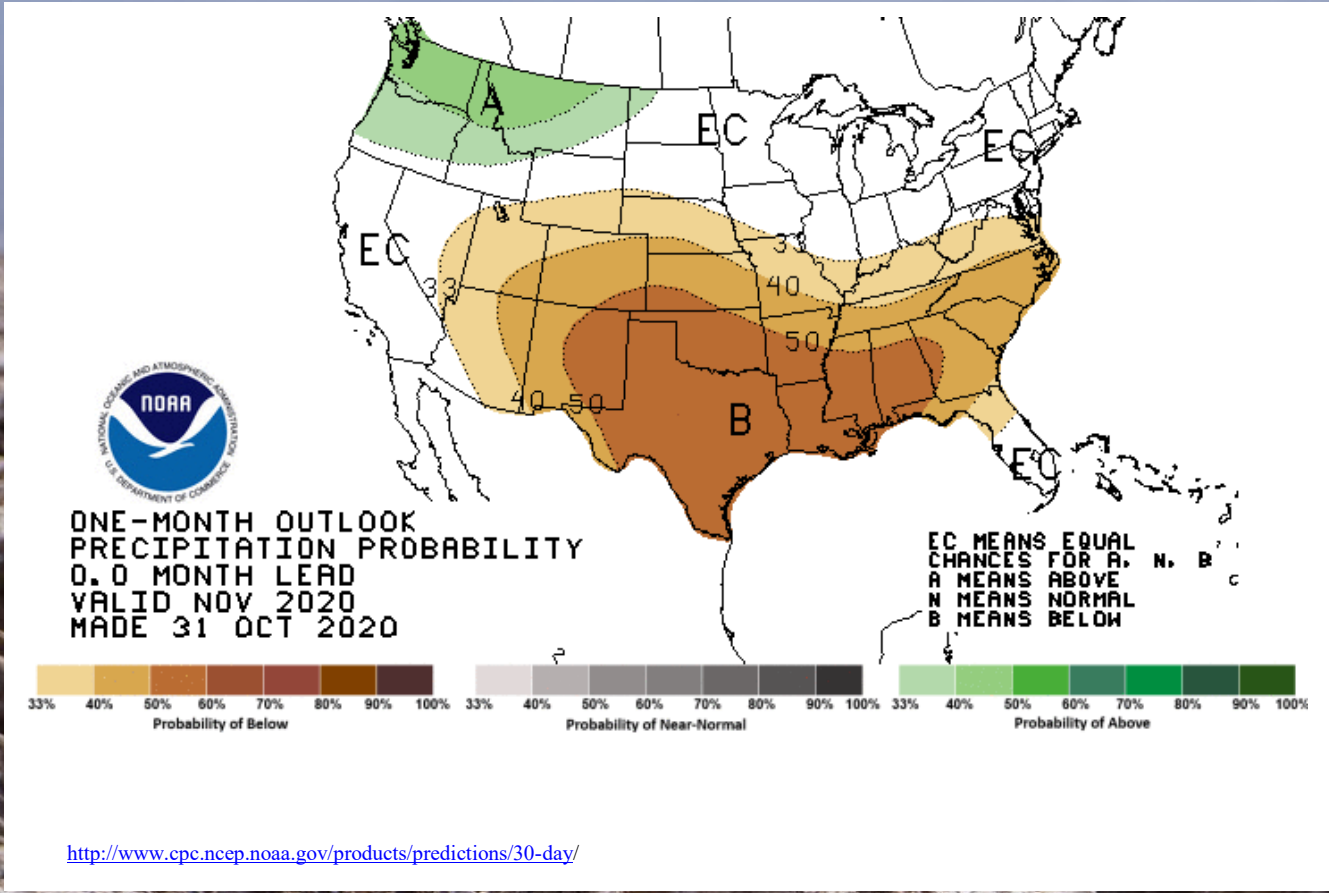
NOAA One-Month Outlook

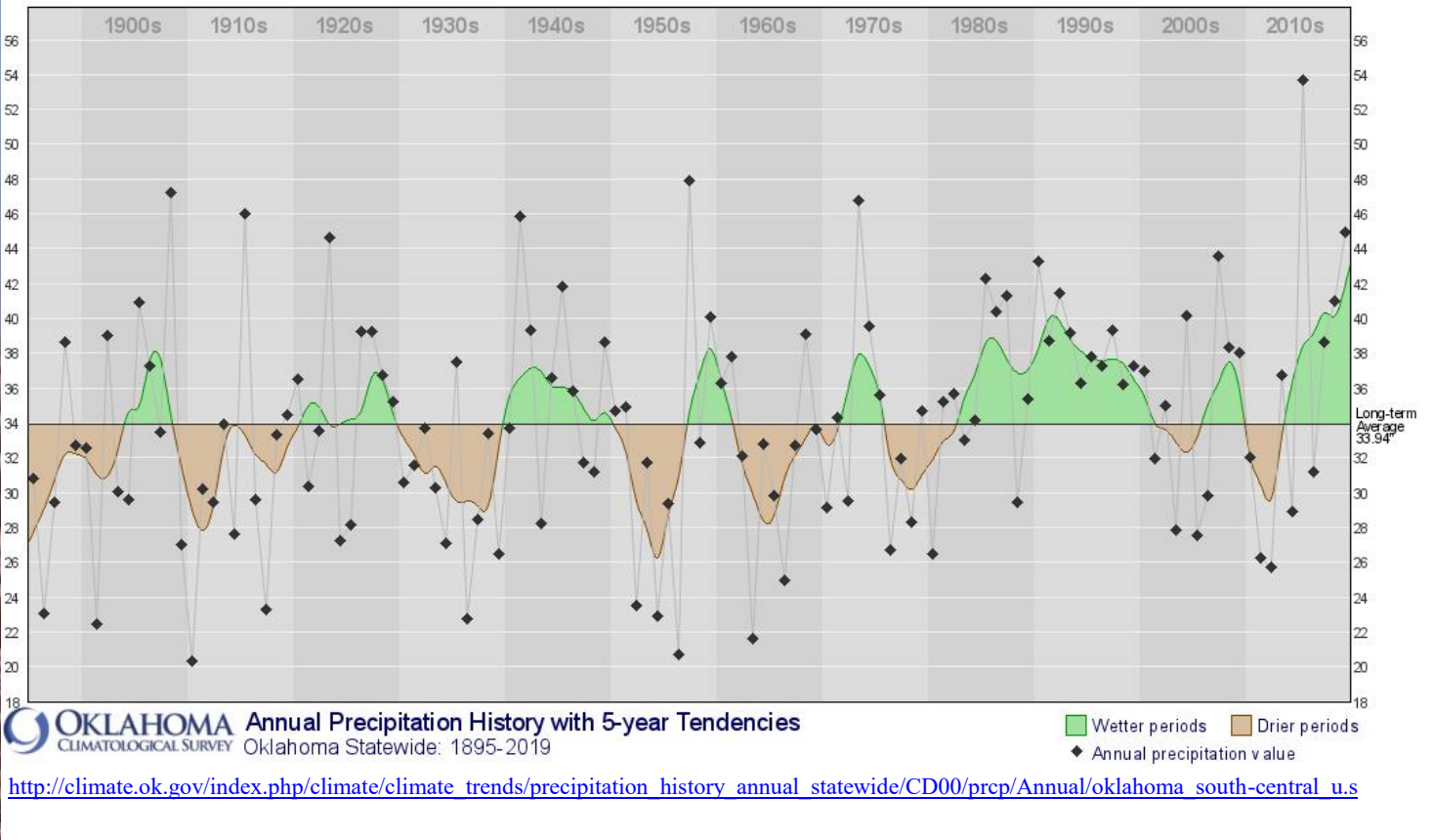


http://www.cpc.ncep.noaa.gov/products/predictions/30-day/

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



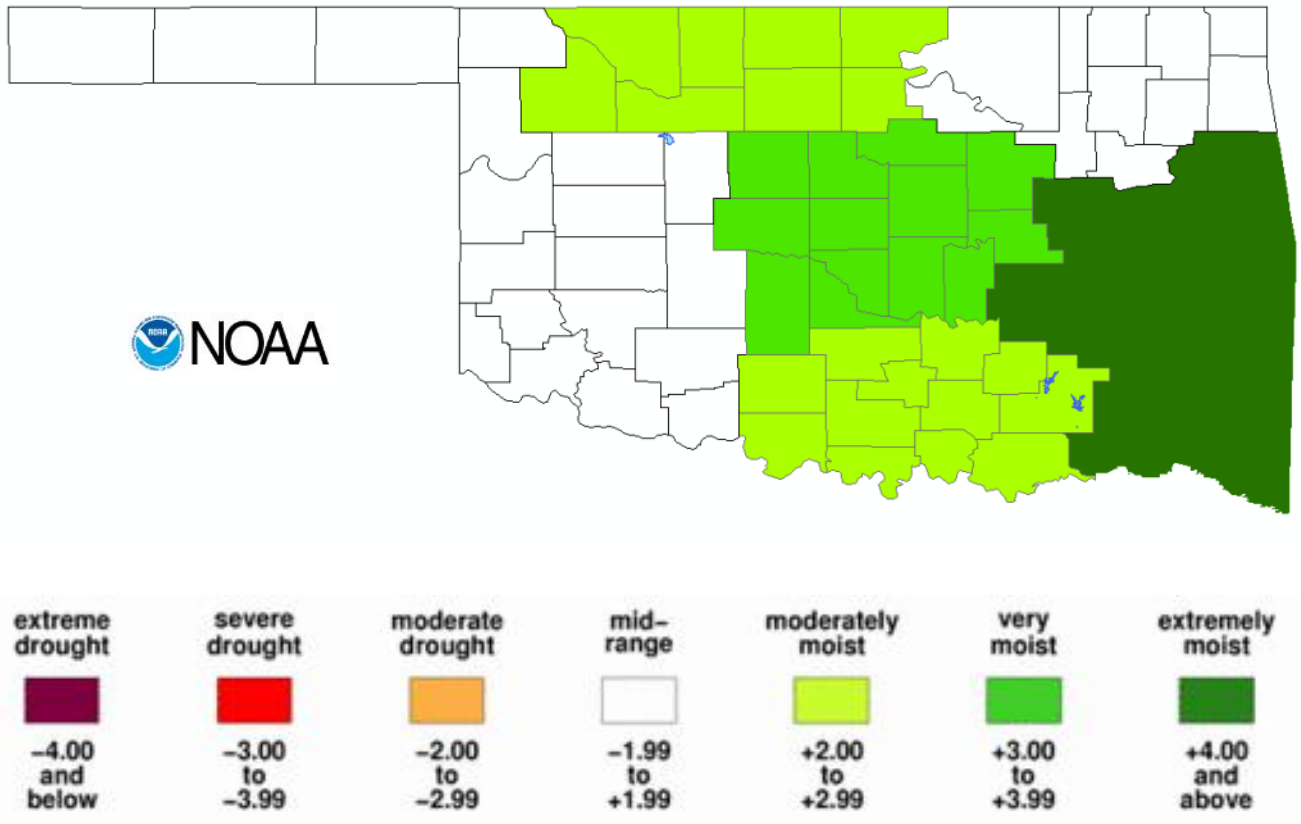
http://climate.ok.gov/index.php/climate/climate_trends/precipitation_history_annual_statewide/CD00/prcp/Annual/oklahoma_south-central_u.s

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 31 OCT 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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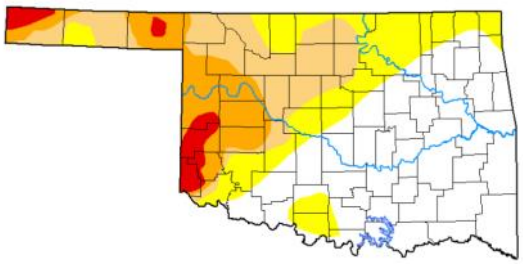
U.S. Drought Monitor

Week	Date	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	2020-10-27	47.94	52.06	32.42	15.58	3.61	0.00
Last Week	2020-10-20	36.91	63.09	38.38	15.93	3.69	0.00
3 Months Ago	2020-07-28	39.83	60.17	25.96	10.26	2.79	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	2020-09-29	66.79	33.21	17.71	11.97	1.55	0.00
One Year Ago	2019-10-29	75.22	24.78	7.62	0.78	0.00	0.00

U.S. Drought Monitor

Oklahoma

Abnormal dryness or drought are currently affecting approximately 331,580 people in Oklahoma.



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

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

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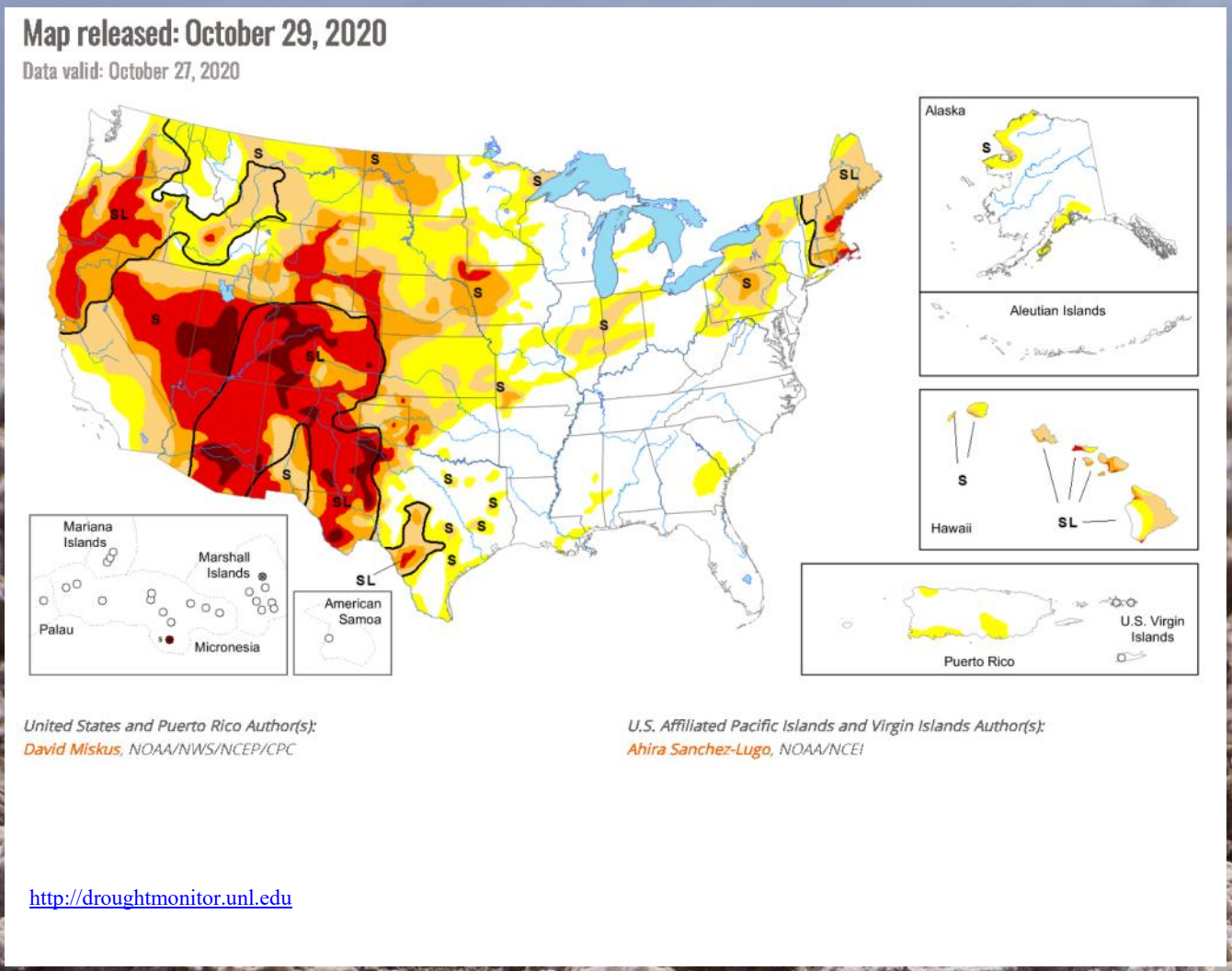
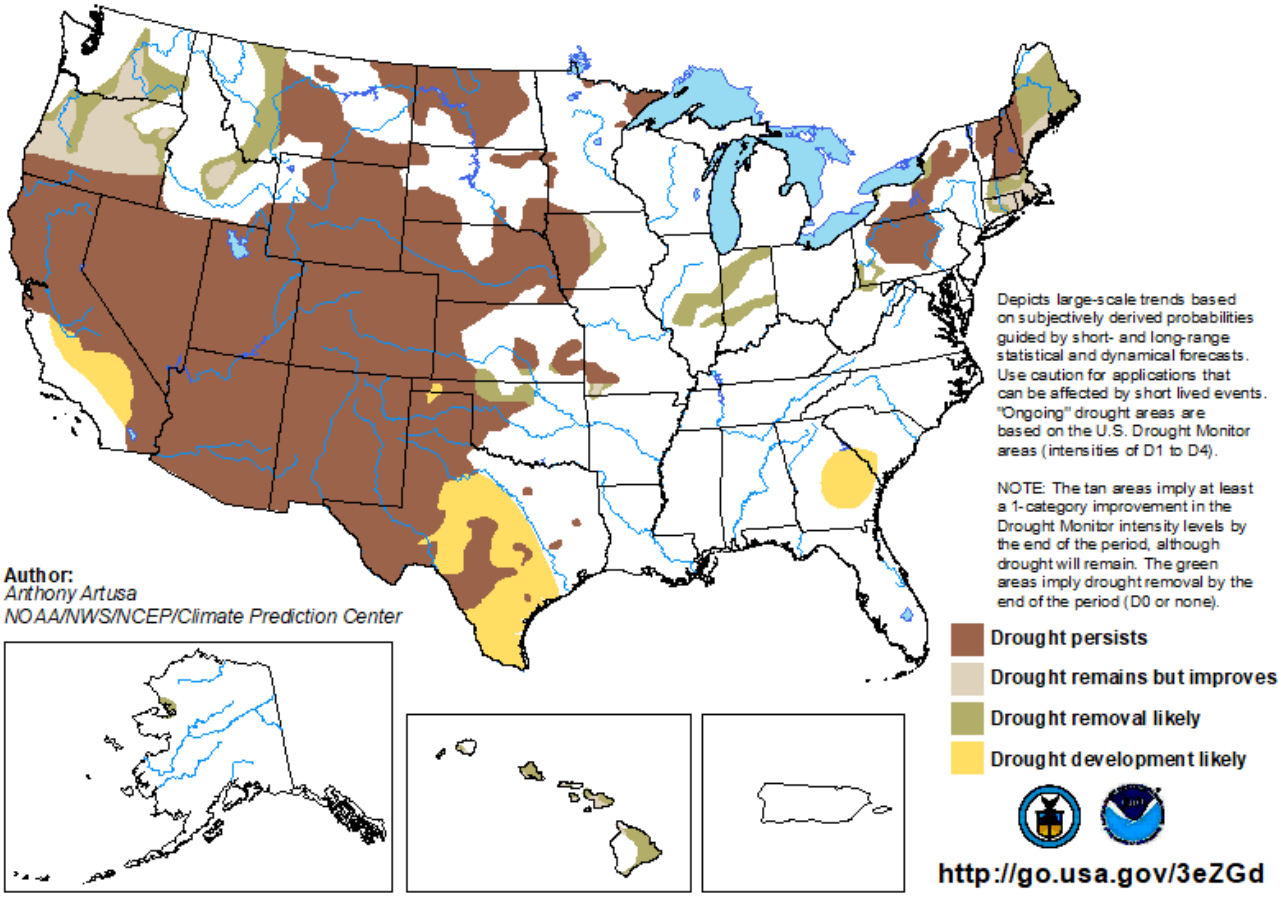
U.S. Drought Monitor Nationwide Map



http://droughtmonitor.unl.edu

U.S. Drought Monitor

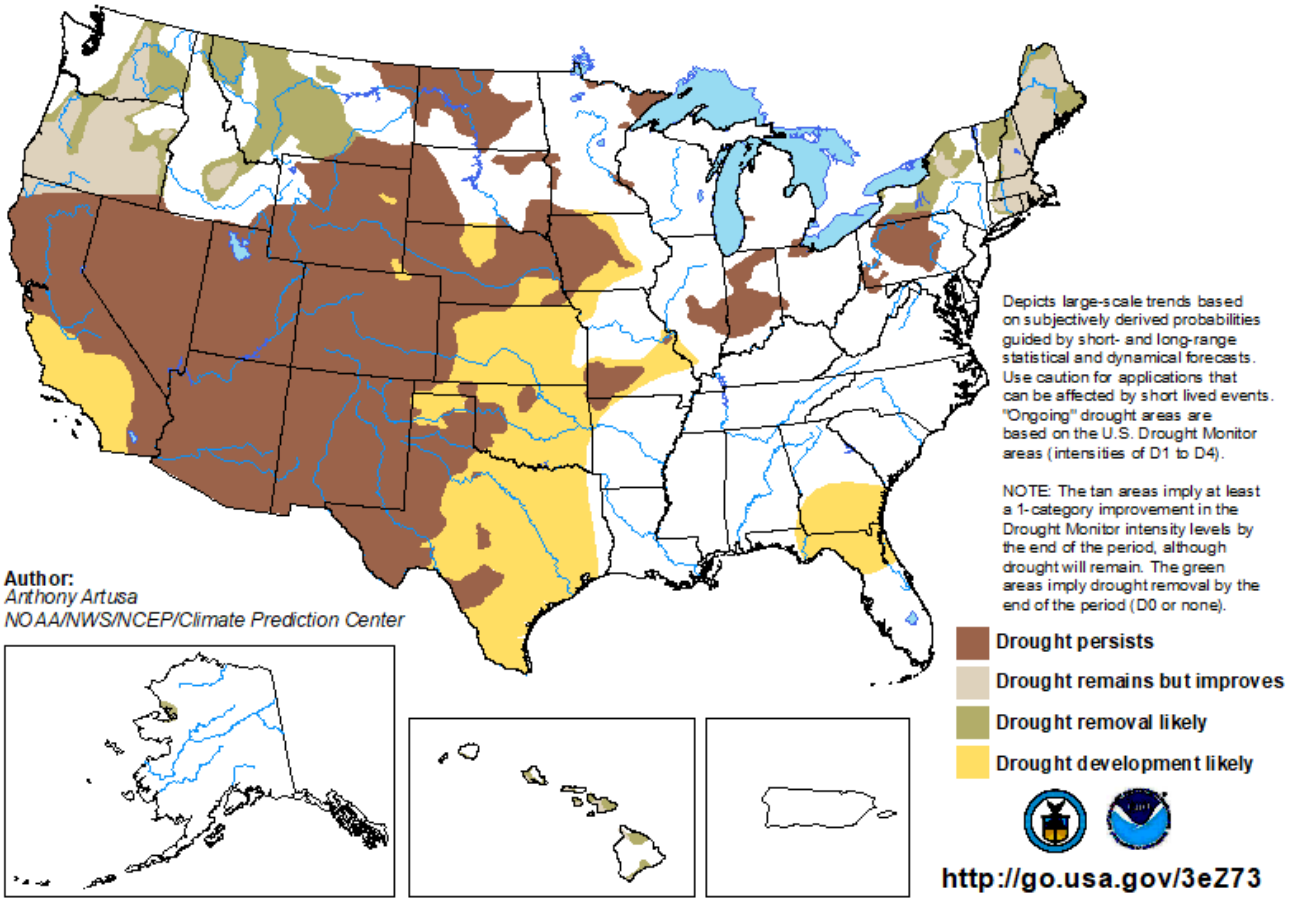
Monthly Drought Outlook Map



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

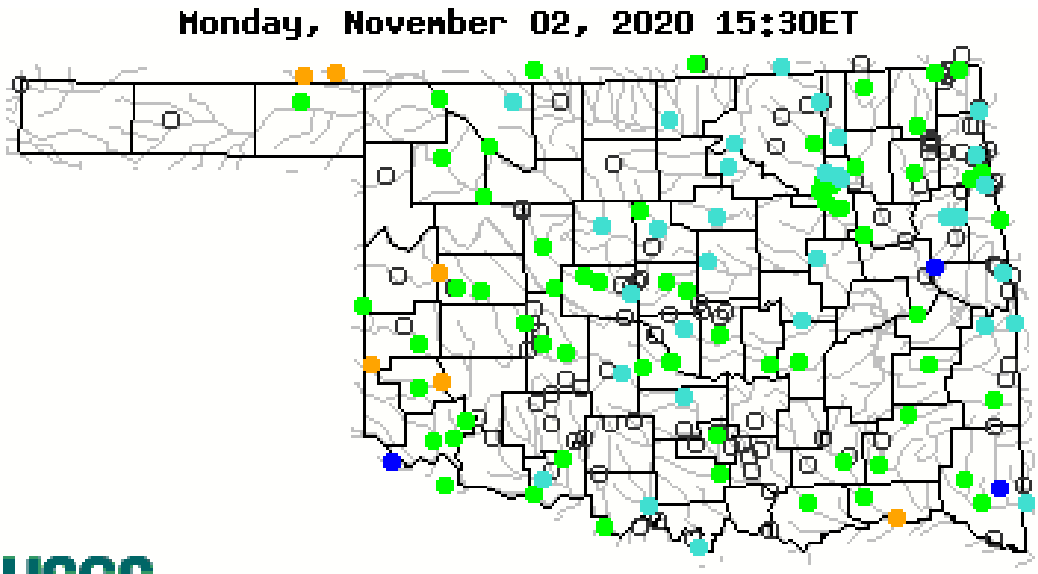
U.S. Drought Monitor

Seasonal Drought Outlook Map



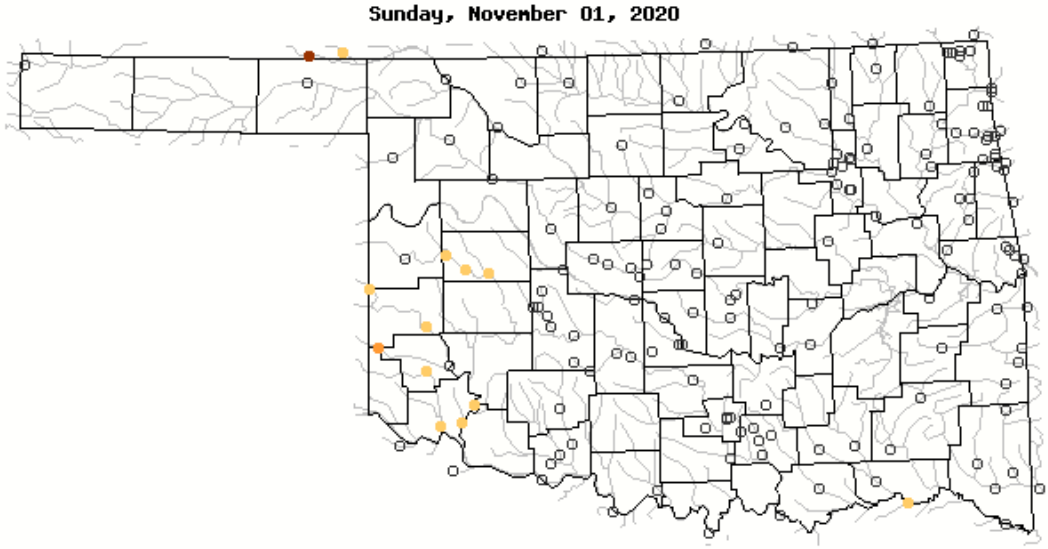
http://www.cpc.ncep.noaa.gov/products/expert_assessment/sdo_summary.php

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

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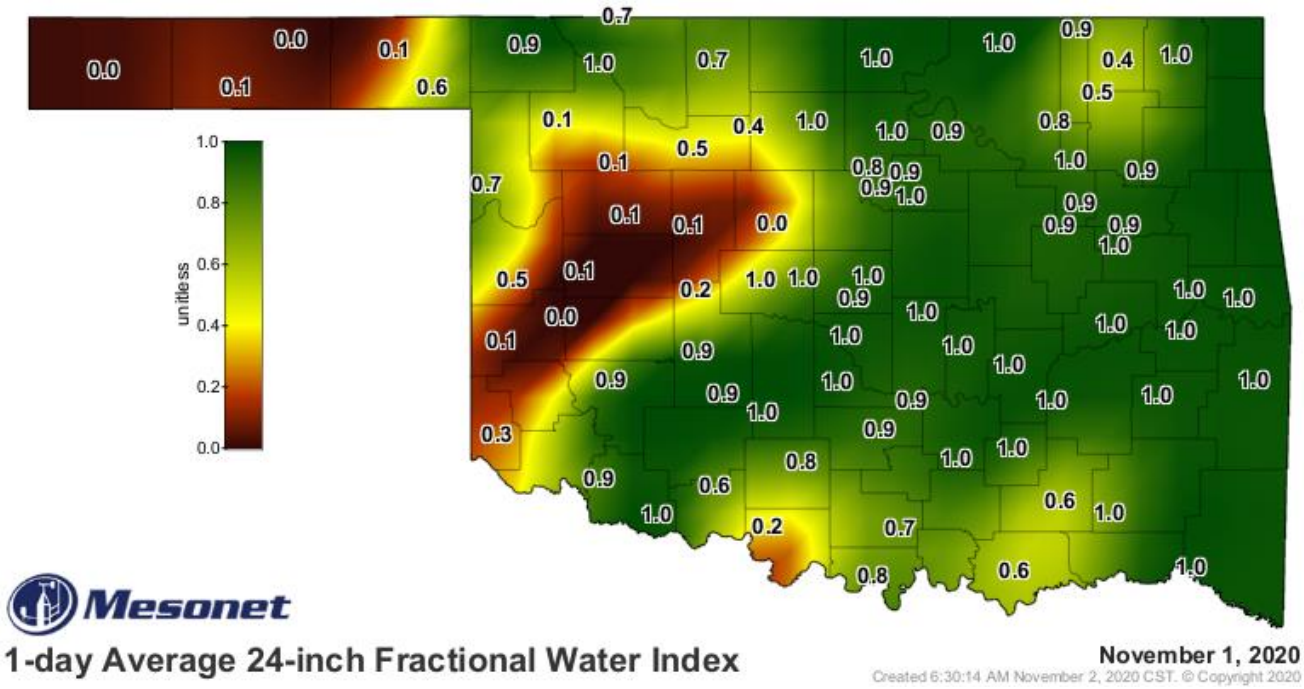
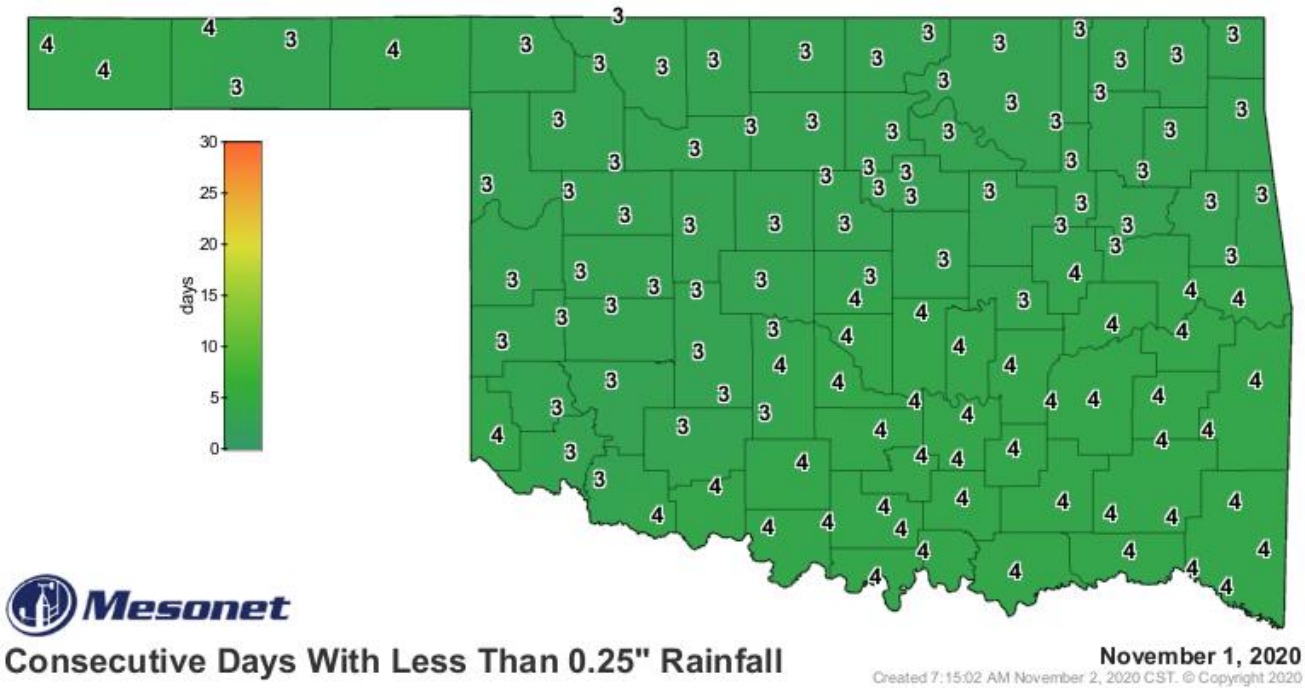
SOIL MOISTURE MAP



- 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

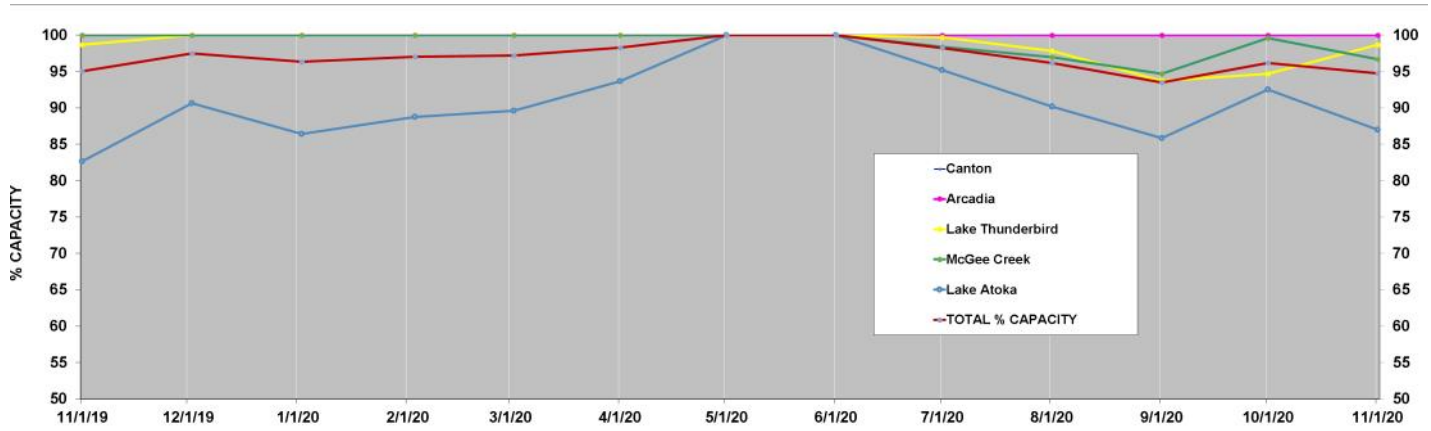
http://www.mesonet.org/index.php/weather/map/24-inch_fractional_water_index/soil_moisture

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 10/1/2020
Canton	96.6	-0.8
Arcadia	100.0	0.0
Lake Thunderbird	98.7	4.0
McGee Creek	96.7	-2.9
Lake Atoka	87.0	-5.6
TOTAL % CAPACITY	94.7	-1.4

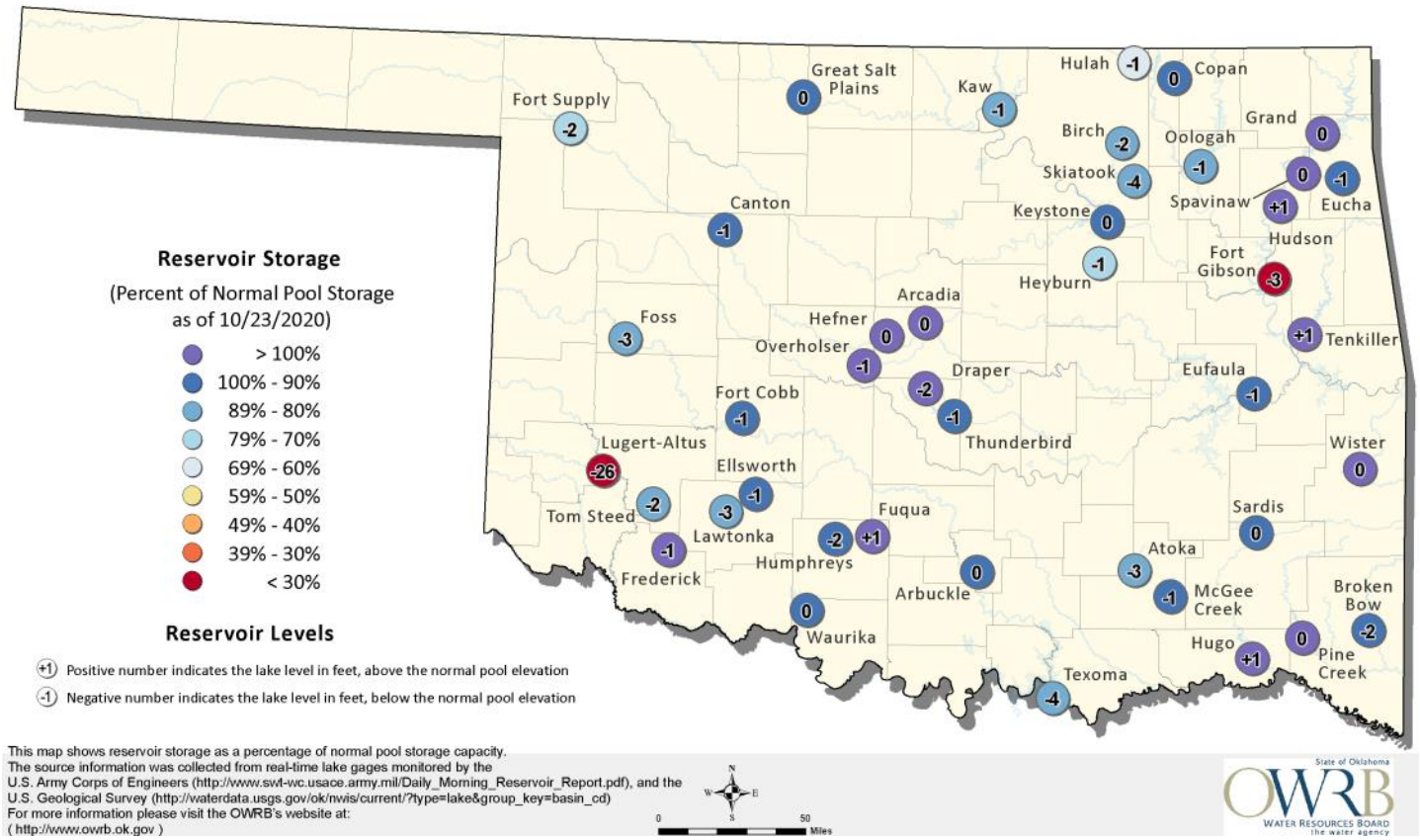
http://www.swt-wc.usace.army.mil/Daily_Morning_Reservoir_Report.pdf

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 10/23/2020



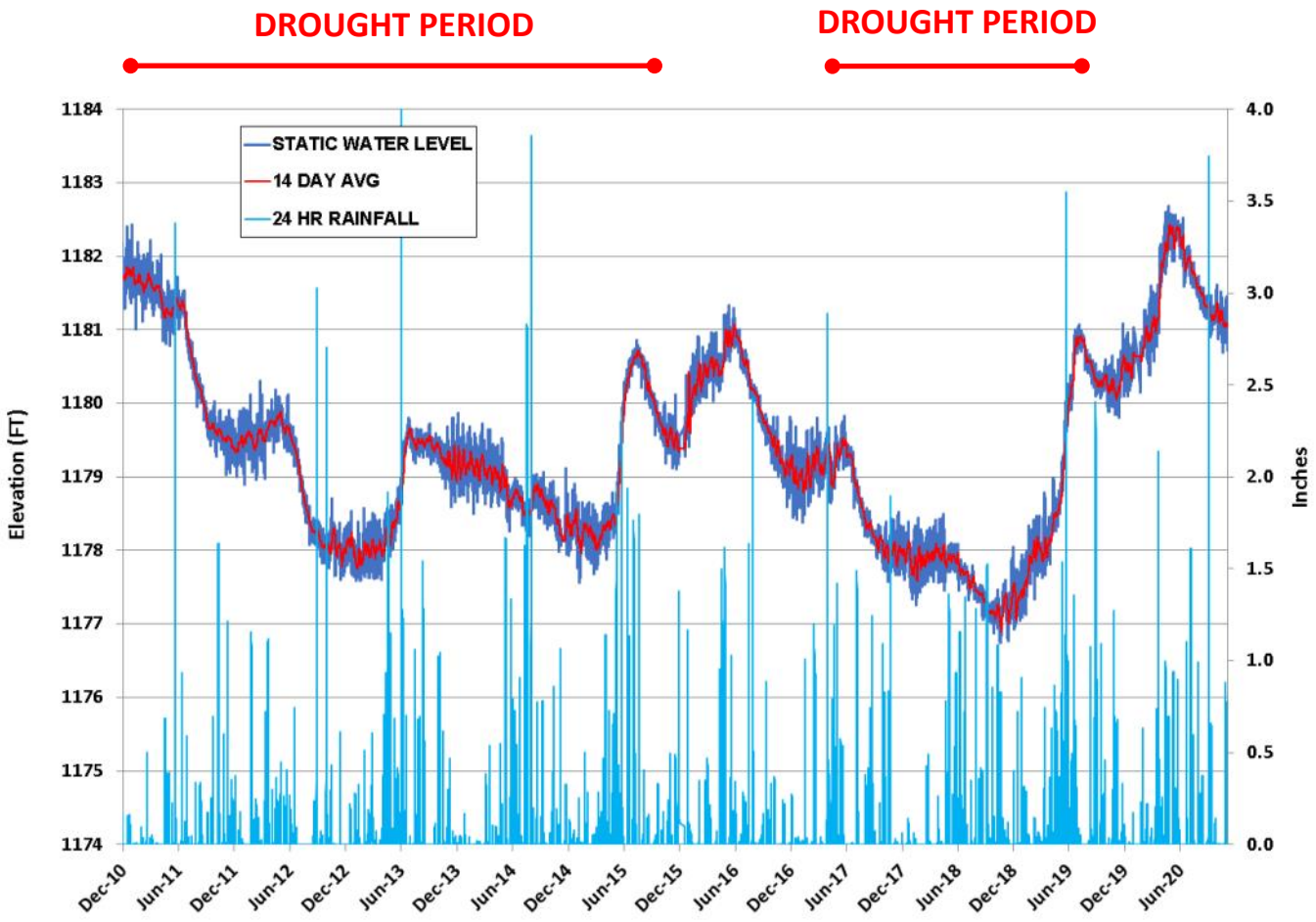
This map shows reservoir storage as a percentage of normal pool storage capacity.
The source information was collected from real-time lake gages monitored by the U.S. Army Corps of Engineers (http://www.swt-wc.usace.army.mil/Daily_Morning_Reservoir_Report.pdf), and the U.S. Geological Survey (http://waterdata.usgs.gov/ok/nwis/current/?type=lake&group_key=basin_c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

0 50 Miles

State of Oklahoma OWRB Water Resources Board the water agency

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

Groundwater Levels
Spencer Mesonet Station



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

Mesonet

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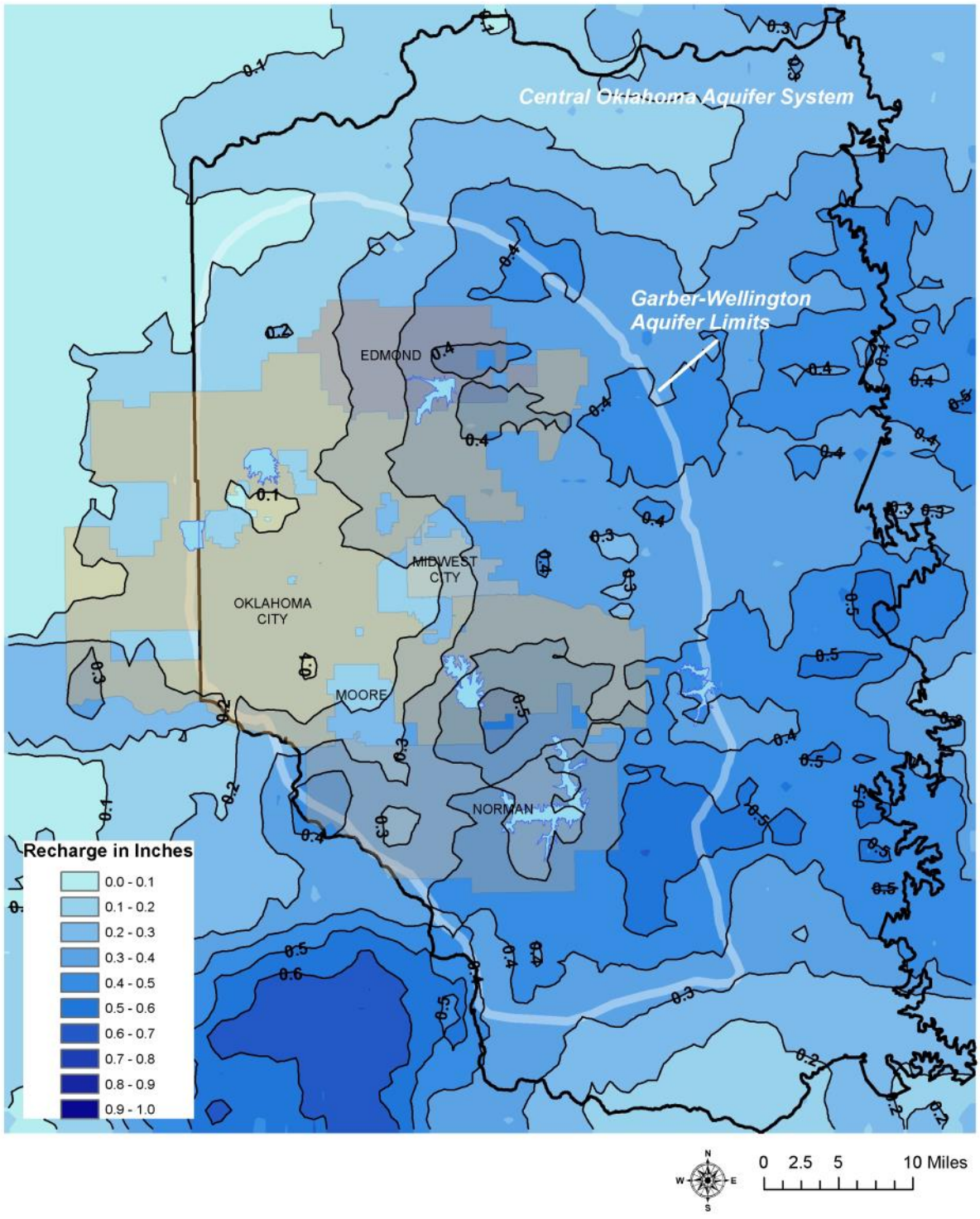
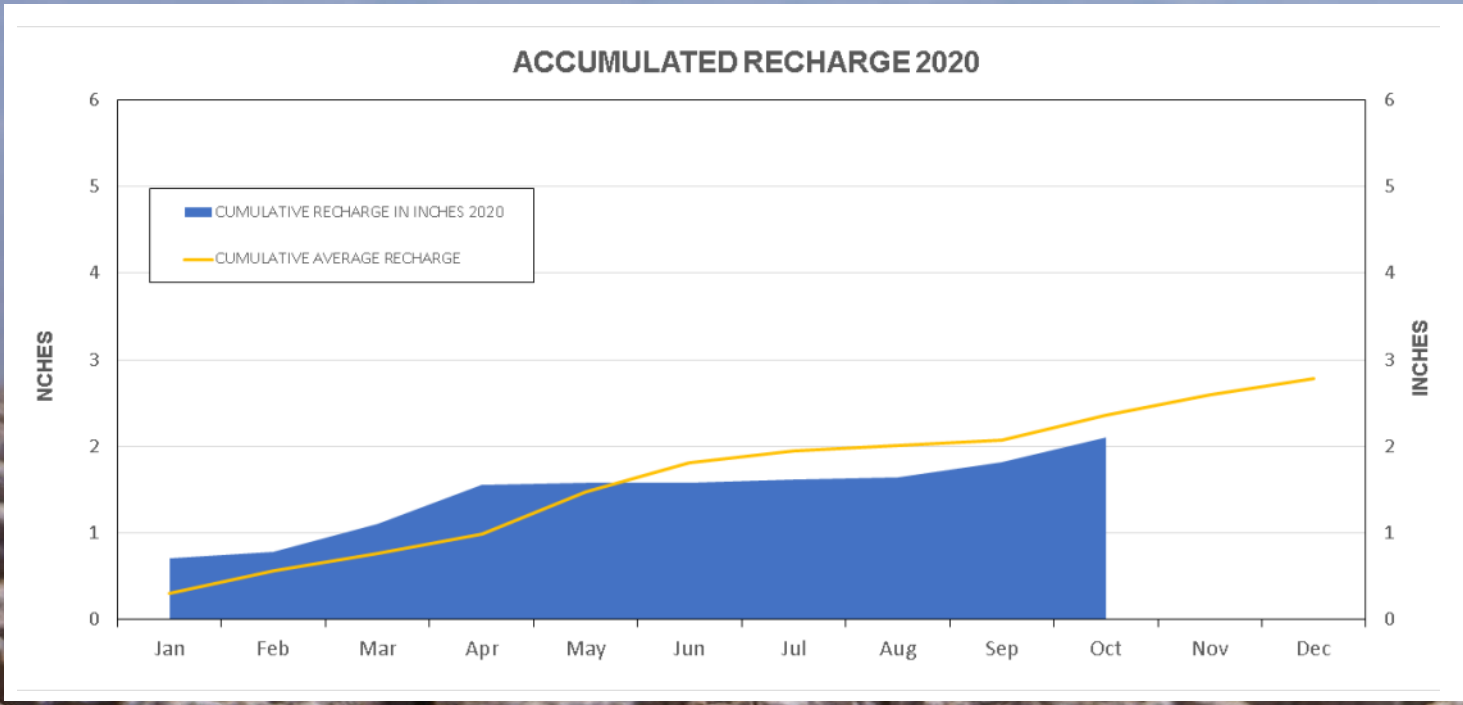
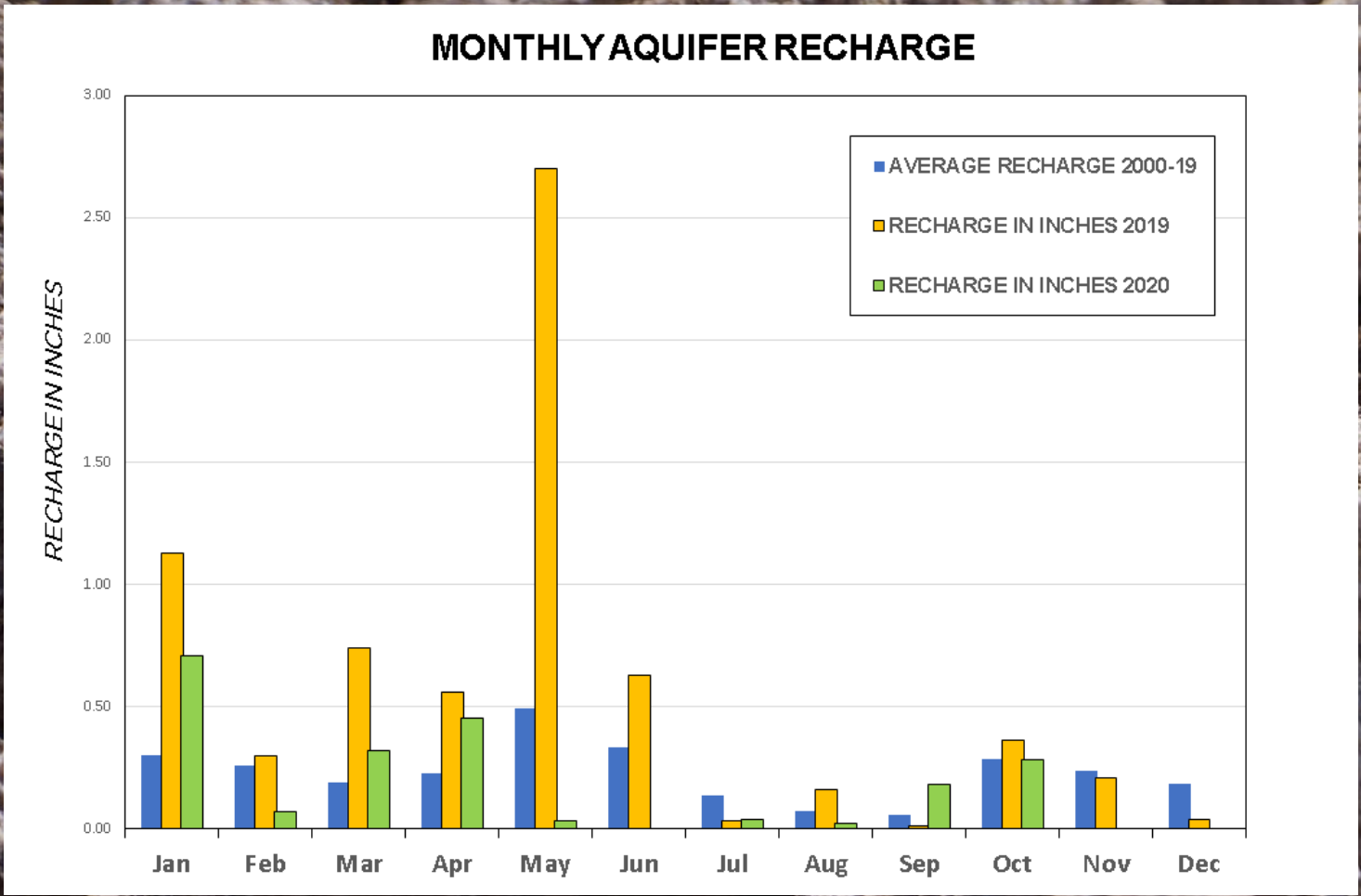
Recharge Map
Central Oklahoma Aquifer System

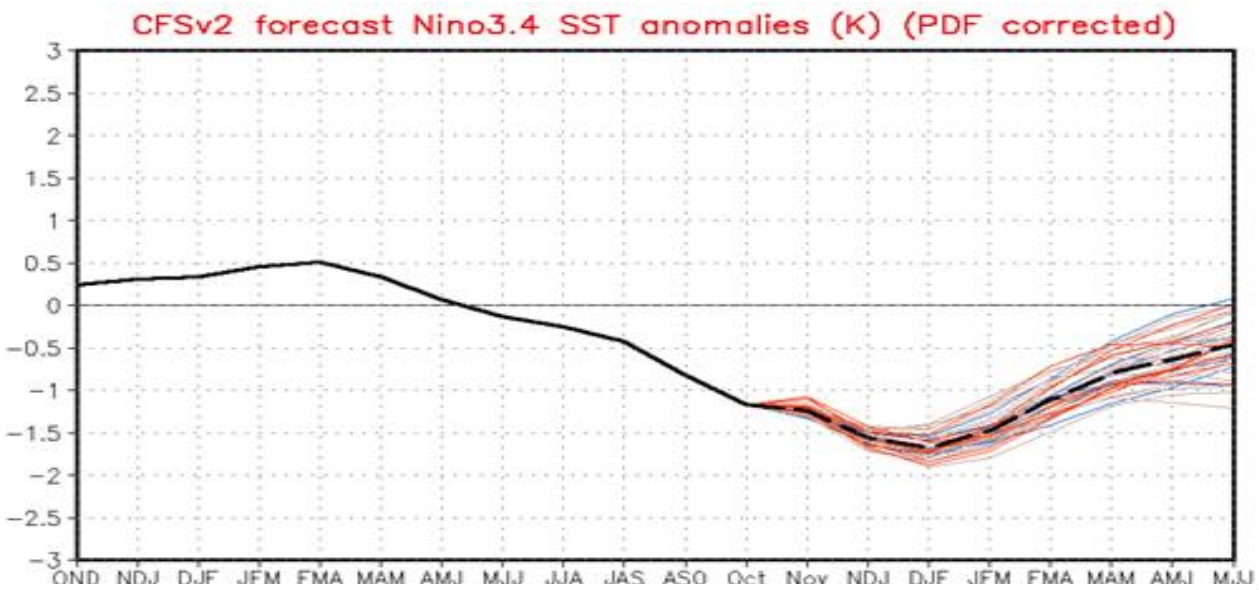


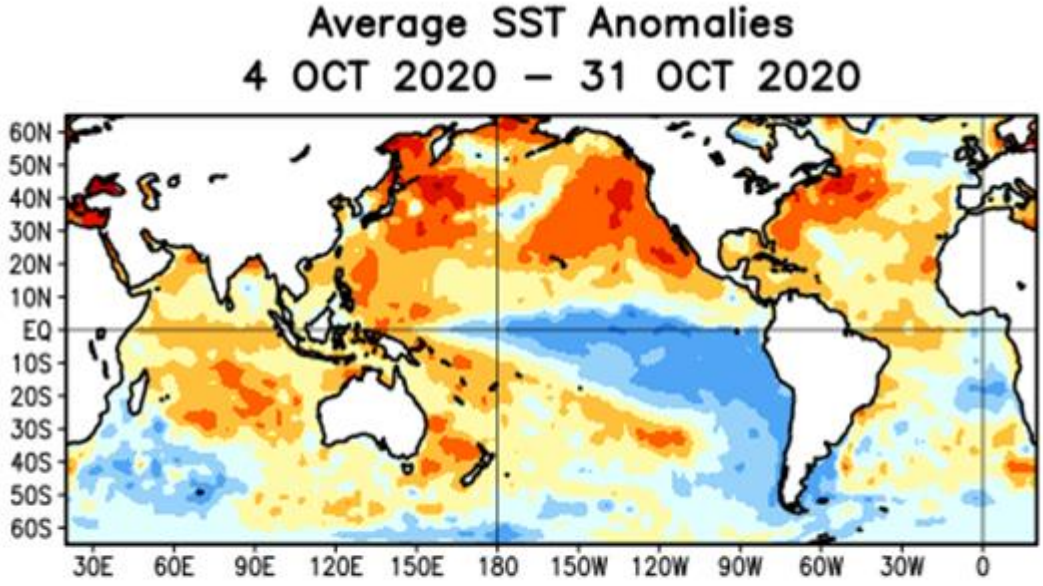
Recharge Charts
Central Oklahoma Aquifer System





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 from the west-central to eastern Pacific Ocean.
- The tropical atmospheric circulation is consistent with La Niña.
- La Niña is likely to continue through the Northern Hemisphere winter 2020-21 (~85% chance) and into spring 2021 (~60% chance during February-April).

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

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