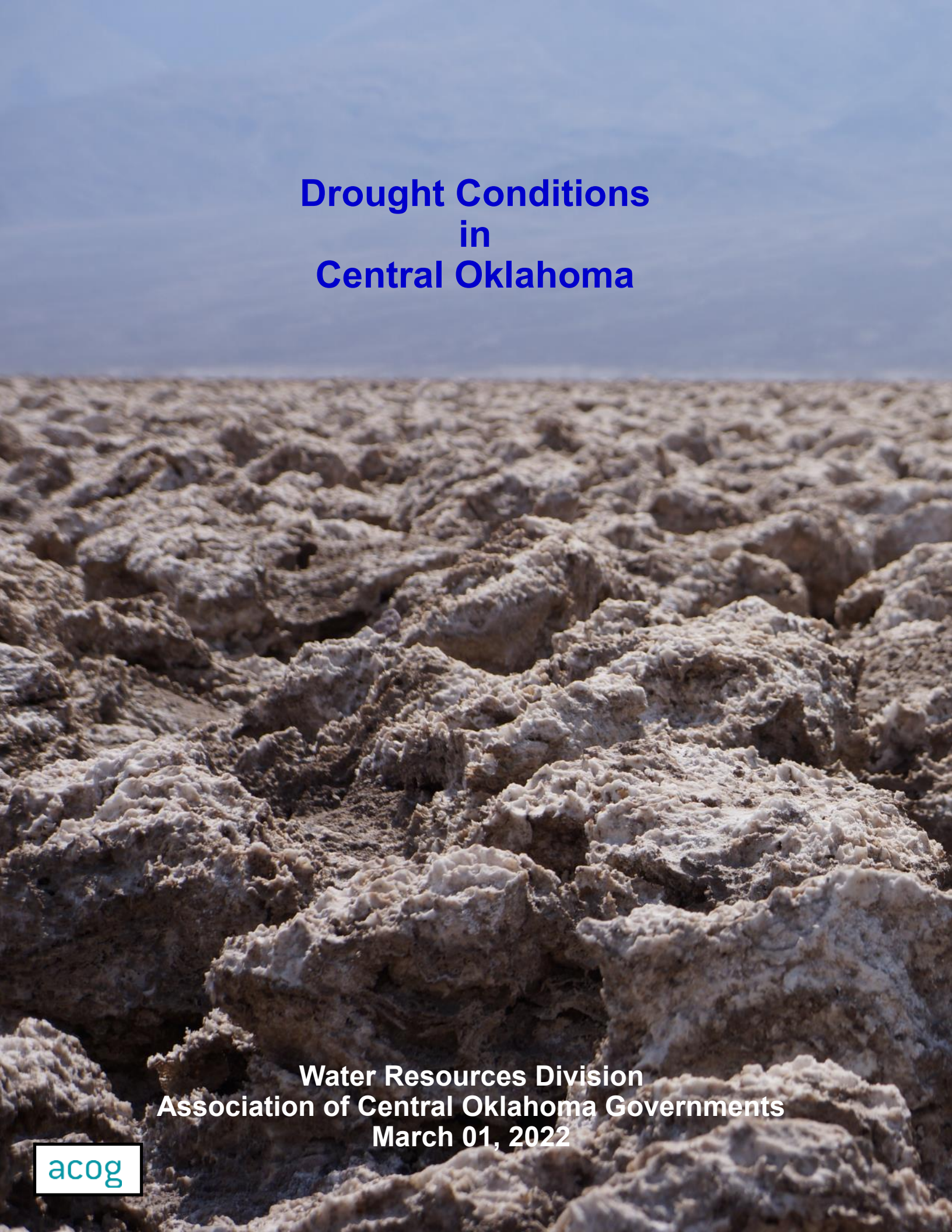
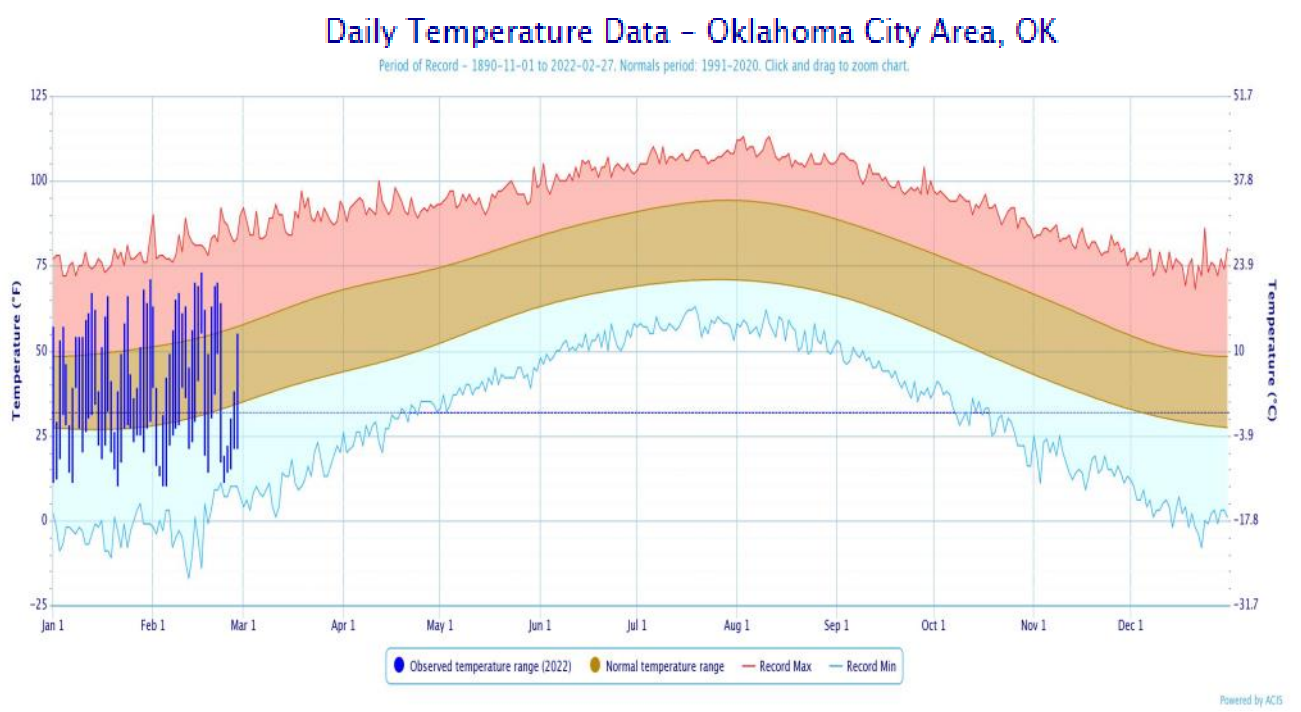


Drought Conditions in Central Oklahoma

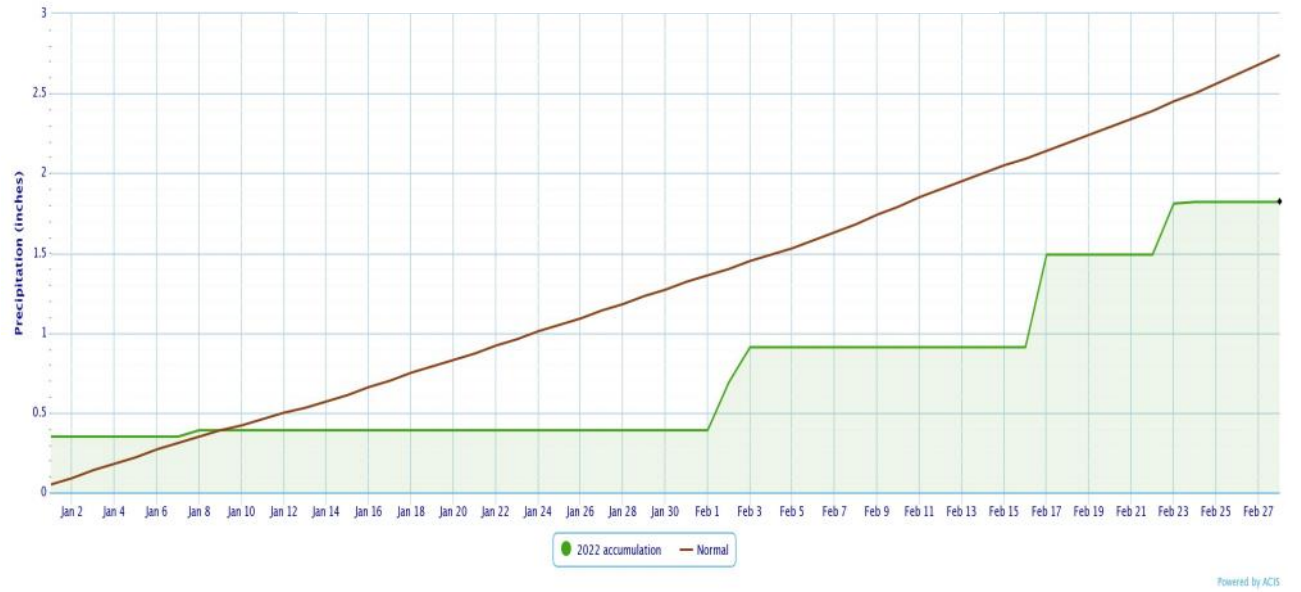
Water Resources Division
Association of Central Oklahoma Governments
March 01, 2022

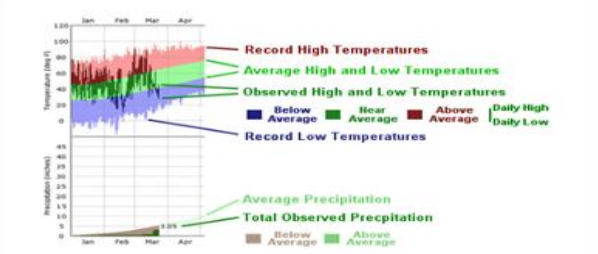
acog

Temperature and Precipitation Plot for Oklahoma City, Oklahoma for 2022



Accumulated Precipitation—Oklahoma City Area, OK





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

Rainfall Summaries by Oklahoma Climate Division

Calendar Year 01-Jan-2021 though 27-Feb-2022

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	0.94"	-1.08"	46%	30th driest	0.13" (1970)	5.04" (1949)
Central	2.05"	-1.11"	65%	34th driest	0.40" (1963)	7.74" (1949)
S. Central	2.53"	-1.71"	60%	28th driest	0.44" (1963)	11.02" (1932)
Statewide	2.09"	-1.22"	63%	28th driest	0.59" (1976)	7.56" (1949)

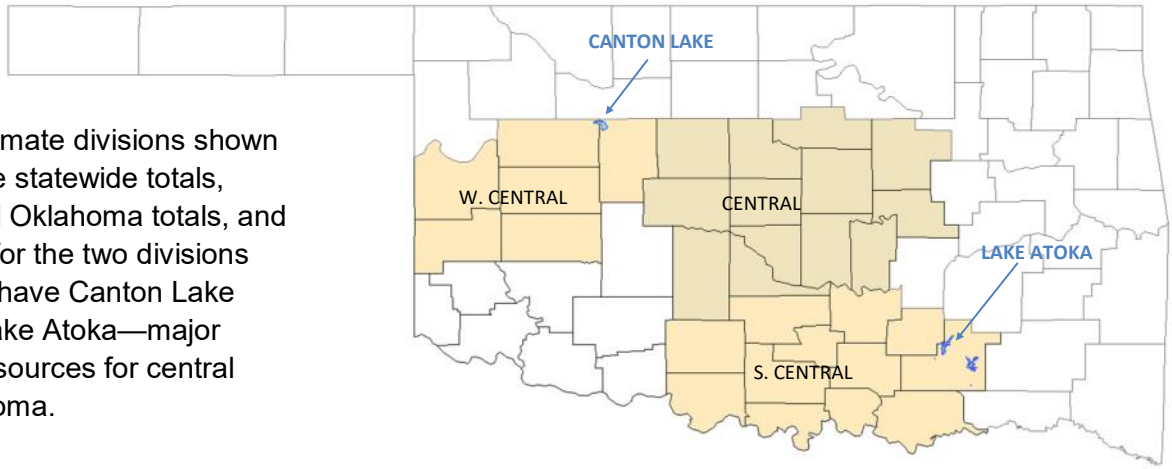
Water Year: 01-Oct-2021 through 27-Feb-2022

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	3.26"	-4.30"	43%	10th driest	1.47" (1966-67)	15.79" (1986-87)
Central	7.56"	-3.71"	67%	30th driest	3.00" (1921-22)	22.08" (1984-85)
S. Central	7.73"	-6.20"	55%	14th driest	3.74" (1966-67)	25.67" (2000-01)
Statewide	7.64"	-3.75"	67%	23rd driest	3.56" (1966-67)	18.93" (1984-85)

Winter Dec 01 through 27-Feb-2022

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	0.94"	-2.30"	29%	12th driest	0.54" (2005-06)	7.90" (1959-60)
Central	2.48"	-2.67"	48%	12th driest	0.90" (2005-06)	14.01" (1984-85)
S. Central	3.67"	-3.17"	54%	16th driest	1.99" (1966-67)	13.14" (1937-38)
Statewide	3.07"	-2.31"	57%	17th driest	1.51" (2005-06)	10.38" (1984-85)

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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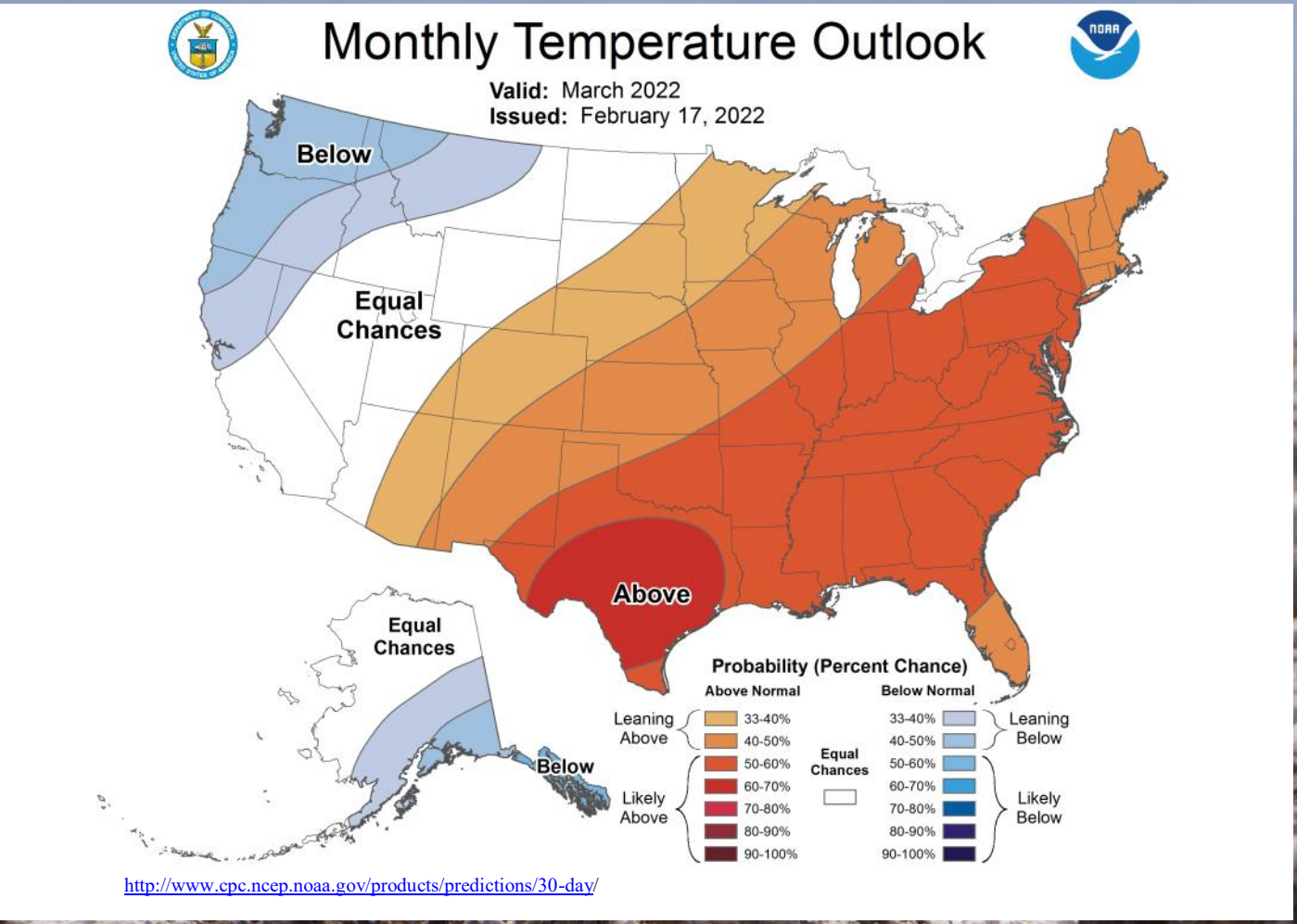
NOAA One-Month Outlook



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.

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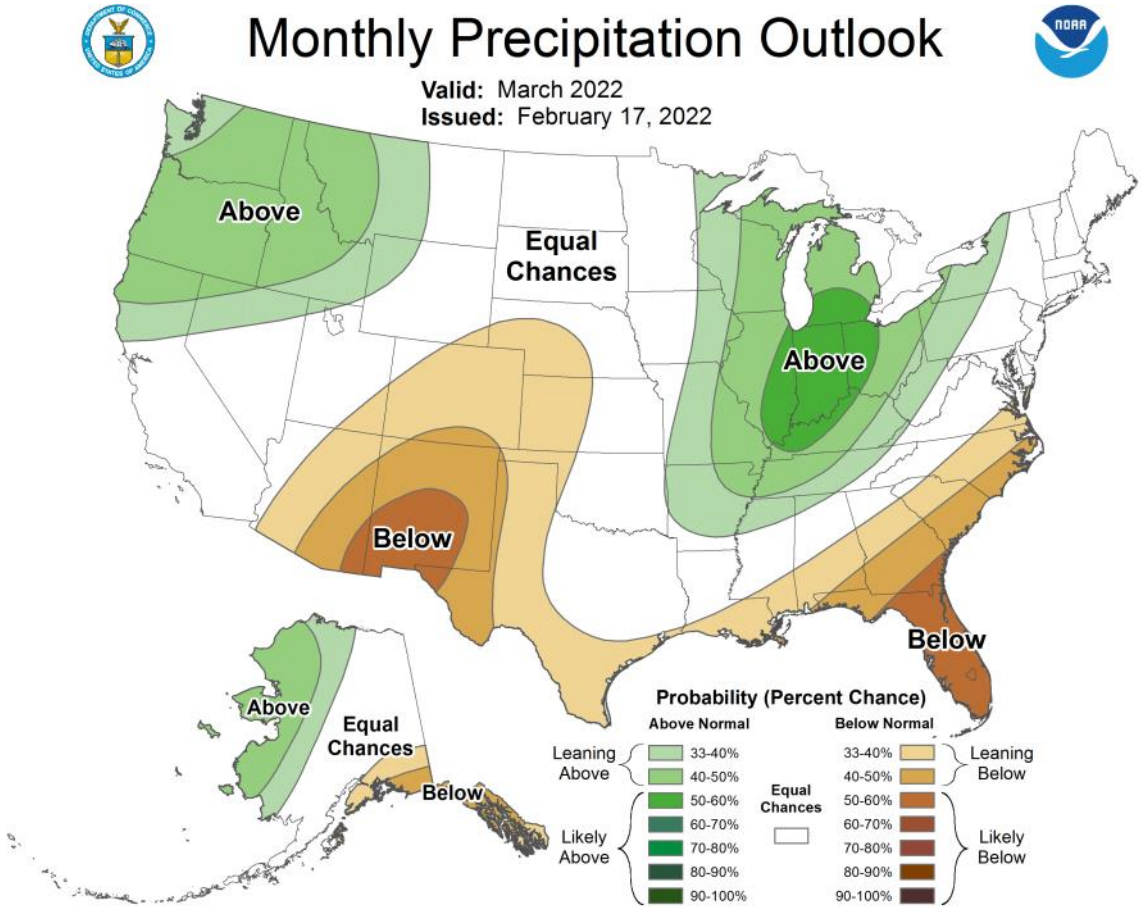
NOAA One-Month Outlook



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

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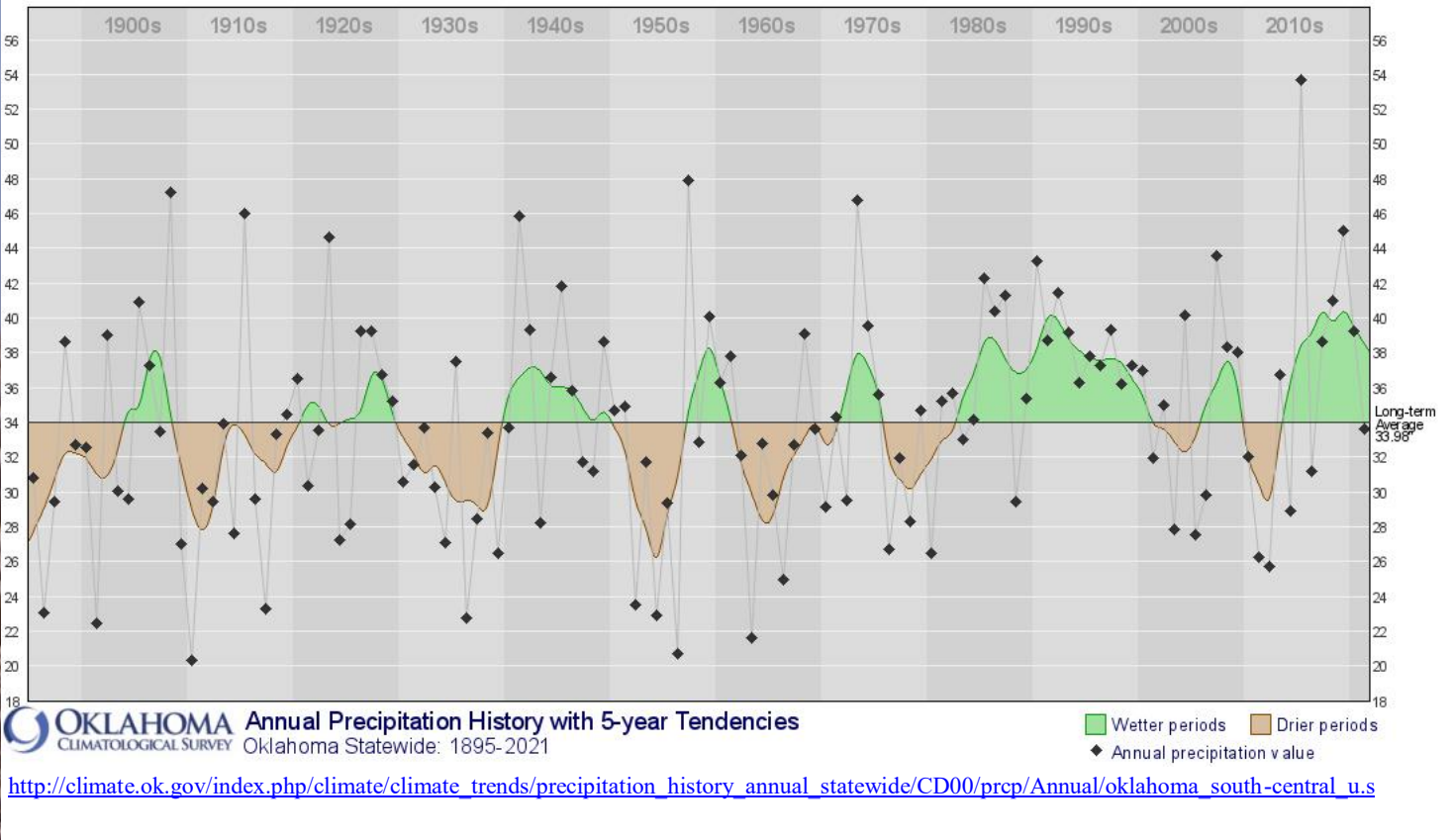
Annual Precipitation History with 5-Year Tendencies



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.

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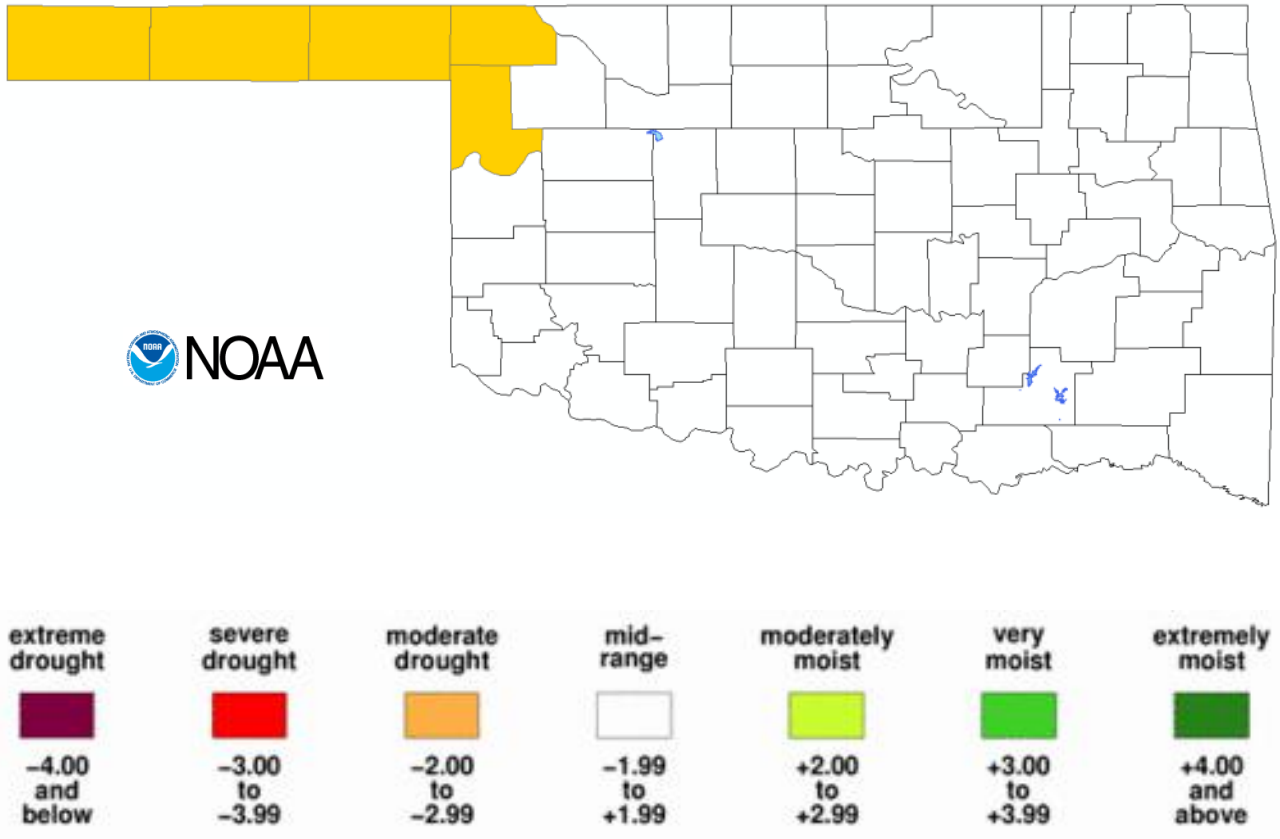
Drought Severity Index by Climate Division

Palmer Value Ending 19 FEB 2022



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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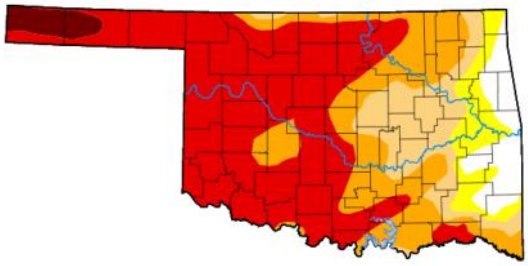
U.S. Drought Monitor

Week	Date	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	2022-02-22	6.69	93.31	86.65	73.94	52.05	2.90
Last Week	2022-02-15	2.33	97.67	87.98	76.35	55.65	2.90
3 Months Ago	2021-11-23	20.17	79.83	41.69	12.36	2.23	0.00
Start of Calendar Year	2021-12-28	4.92	95.08	90.17	72.51	22.62	0.00
Start of Water Year	2021-09-28	6.45	93.55	73.23	23.72	2.65	0.00
One Year Ago	2021-02-23	69.33	30.67	14.83	4.17	0.23	0.00

U.S. Drought Monitor

Oklahoma

Abnormal dryness or drought are currently affecting approximately 3,372,048 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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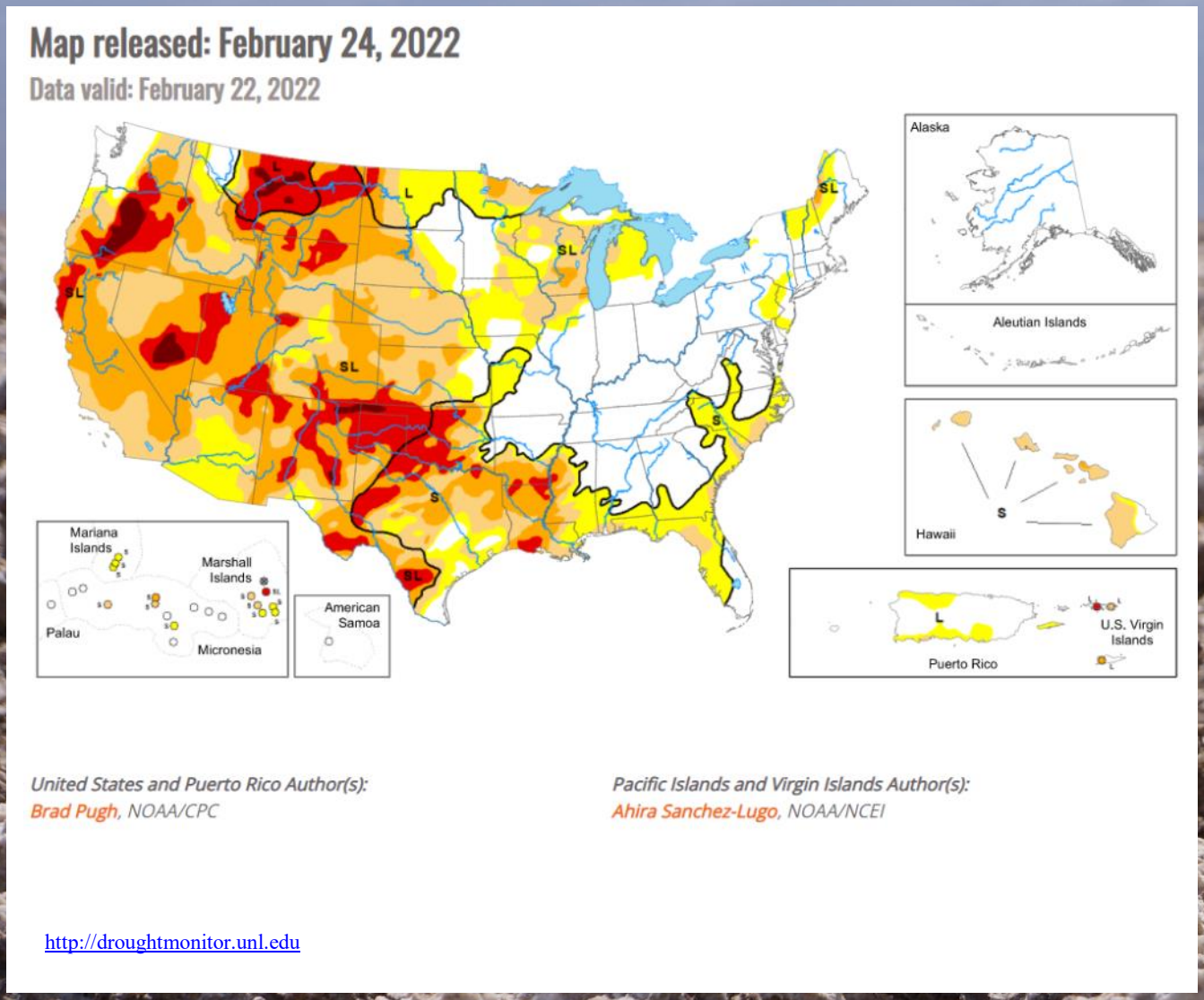
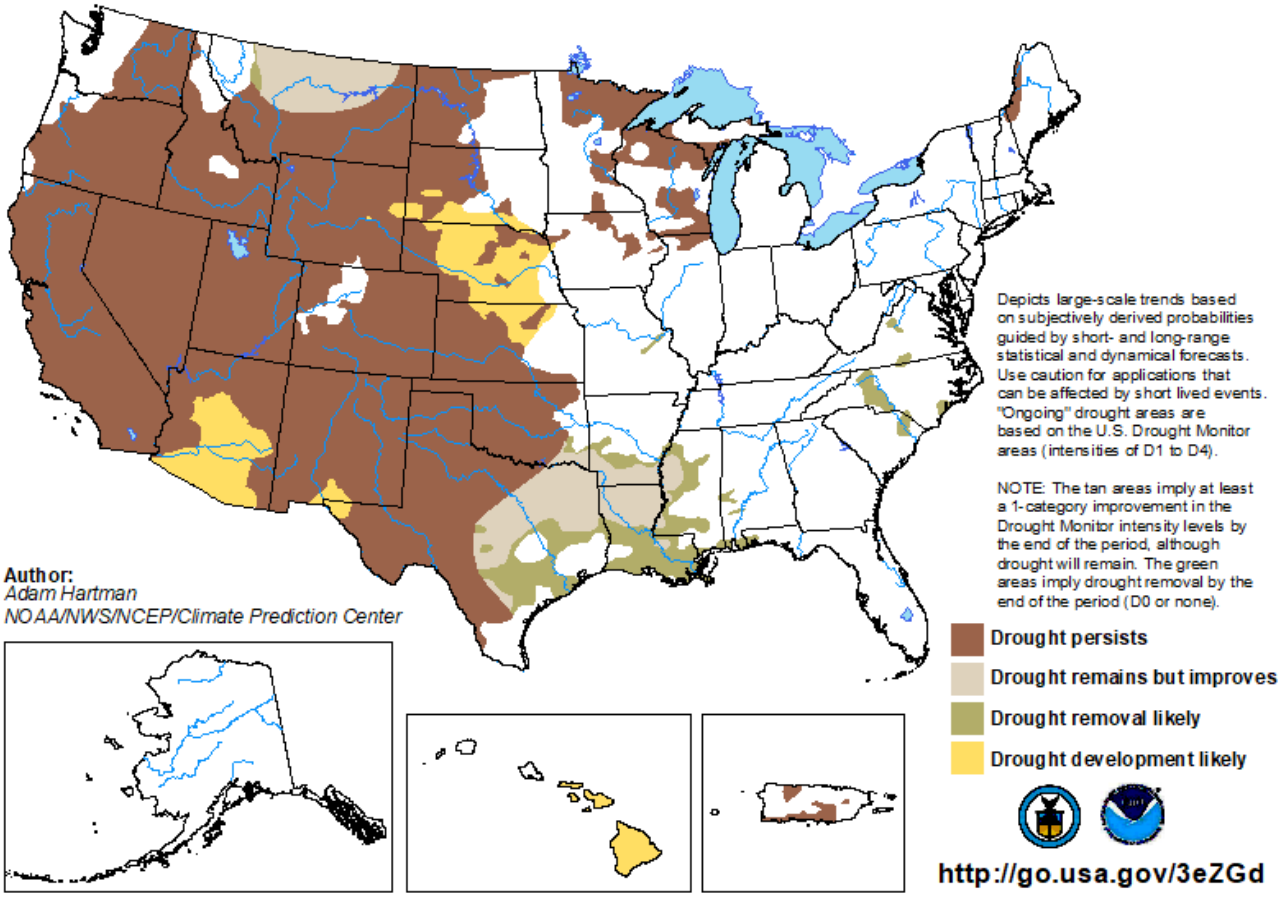
U.S. Drought Monitor Nationwide Map



http://droughtmonitor.unl.edu

U.S. Drought Monitor

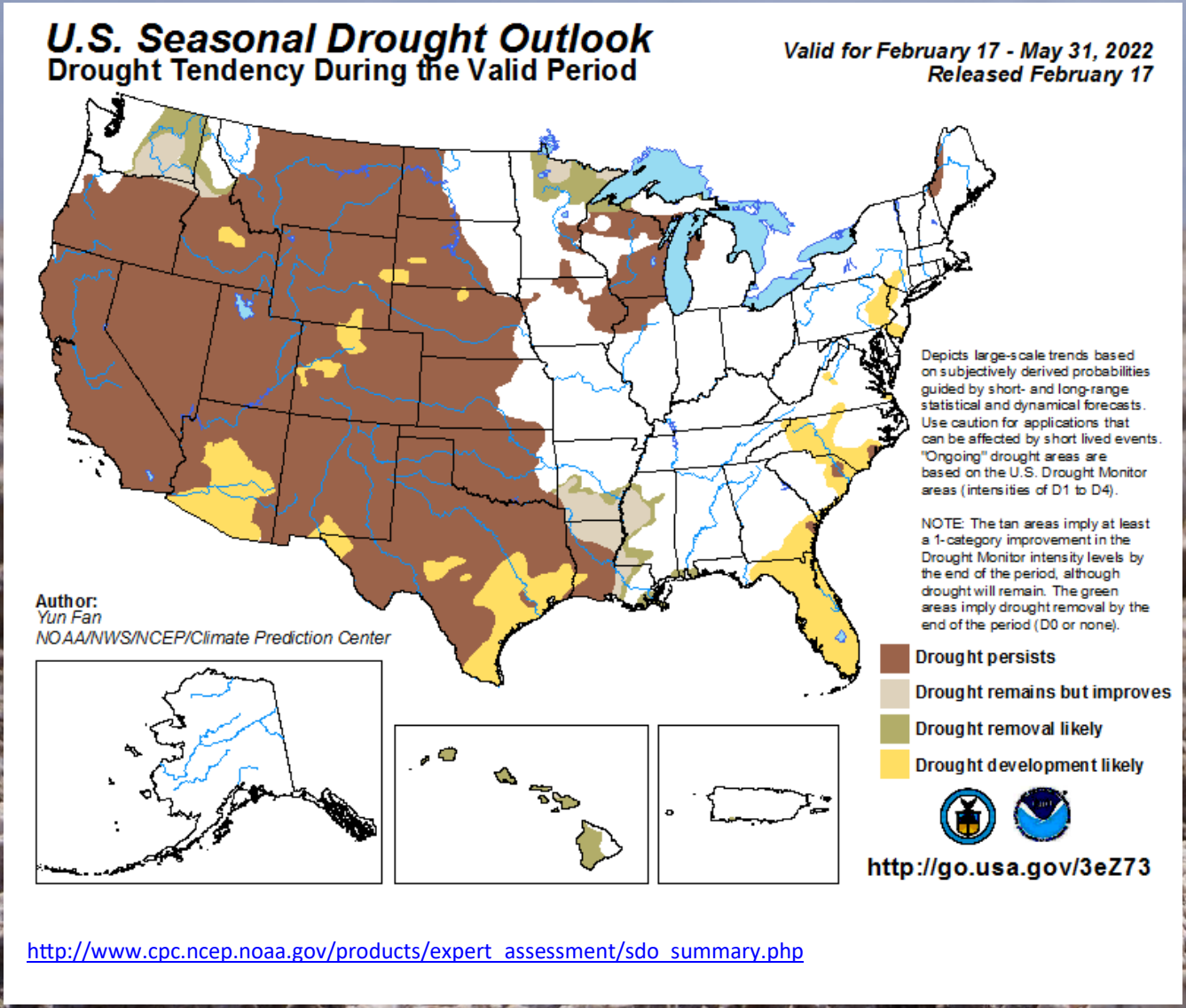
Monthly Drought Outlook Map



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

U.S. Drought Monitor

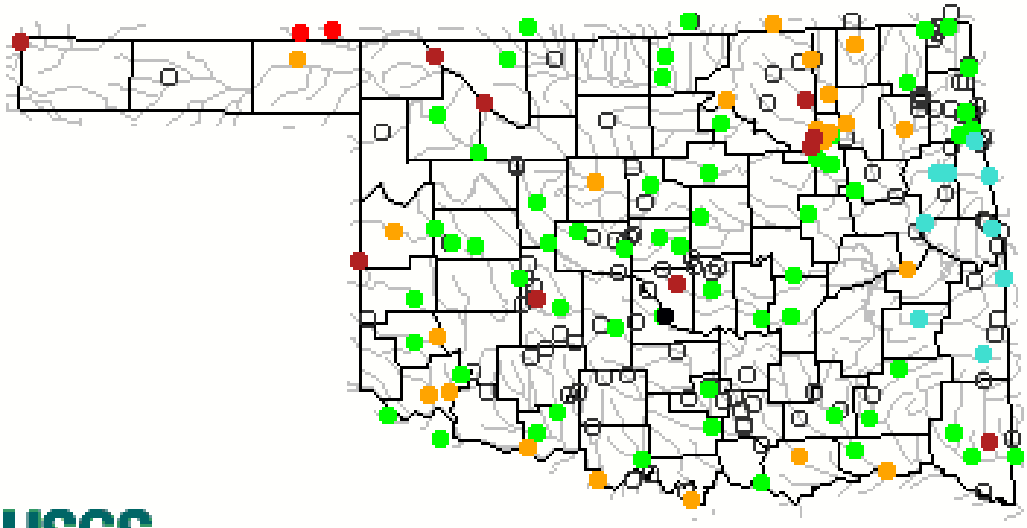
Seasonal Drought Outlook Map



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

USGS Streamflow Data

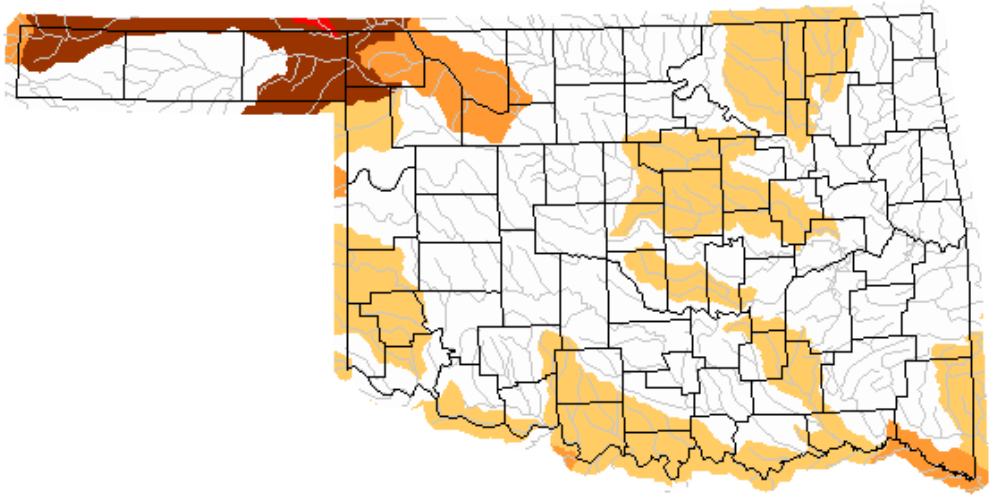
Monday, February 28, 2022 10:30ET



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		

Sunday, February 27, 2022



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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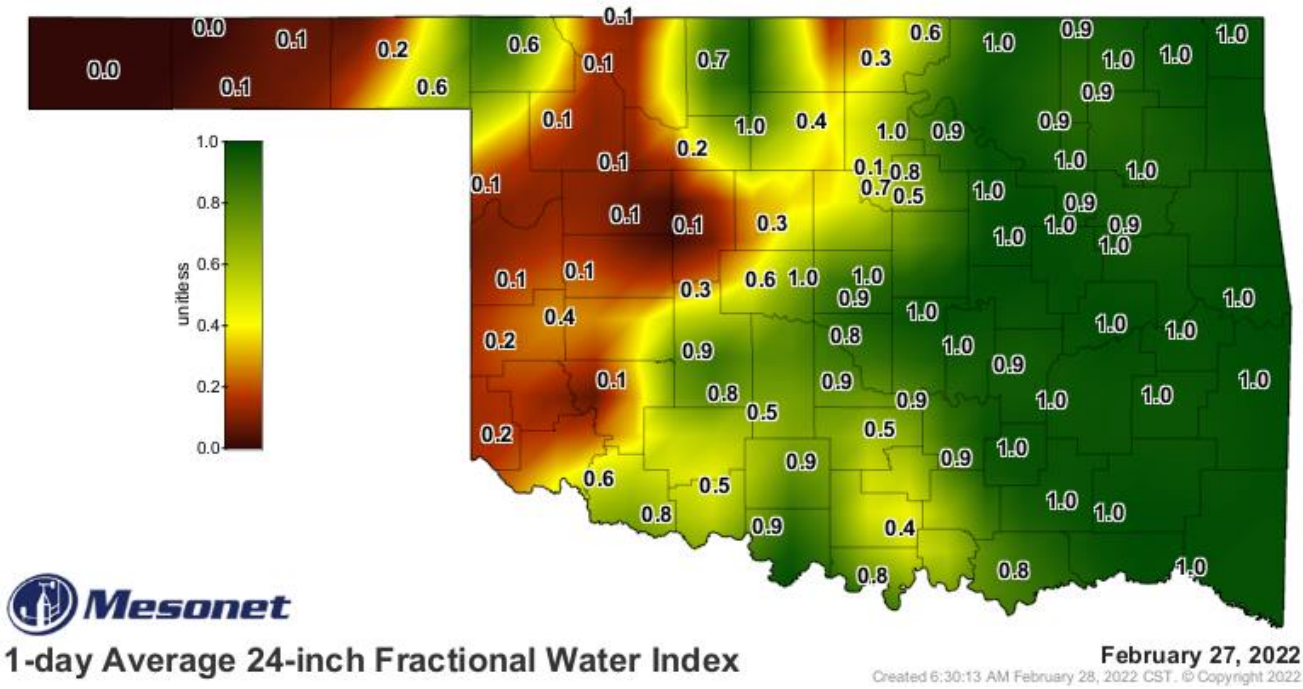
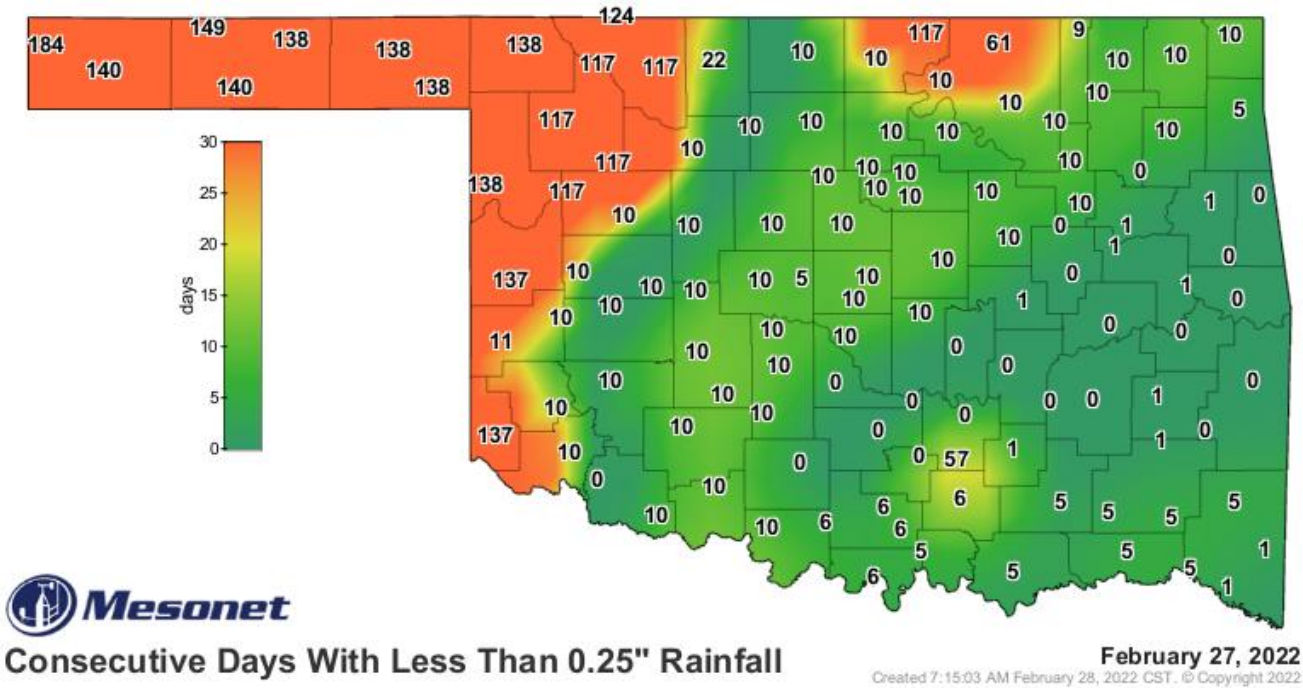
SOIL MOISTURE MAP



- 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

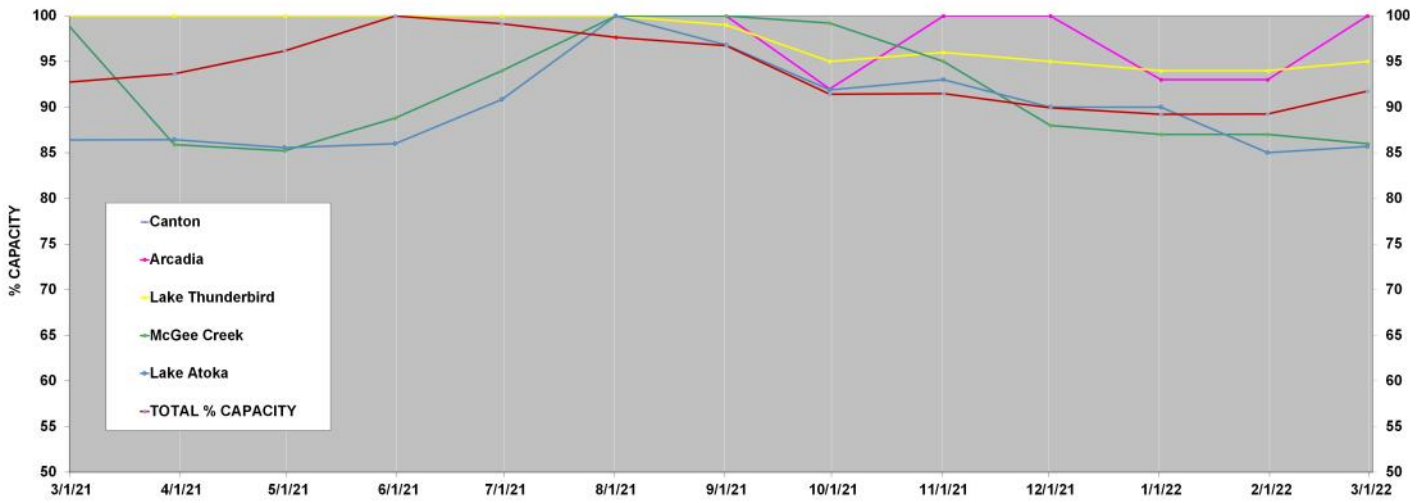
http://www.mesonet.org/index.php/weather/map/24-inch_fractional_water_index/soil_moisture

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.

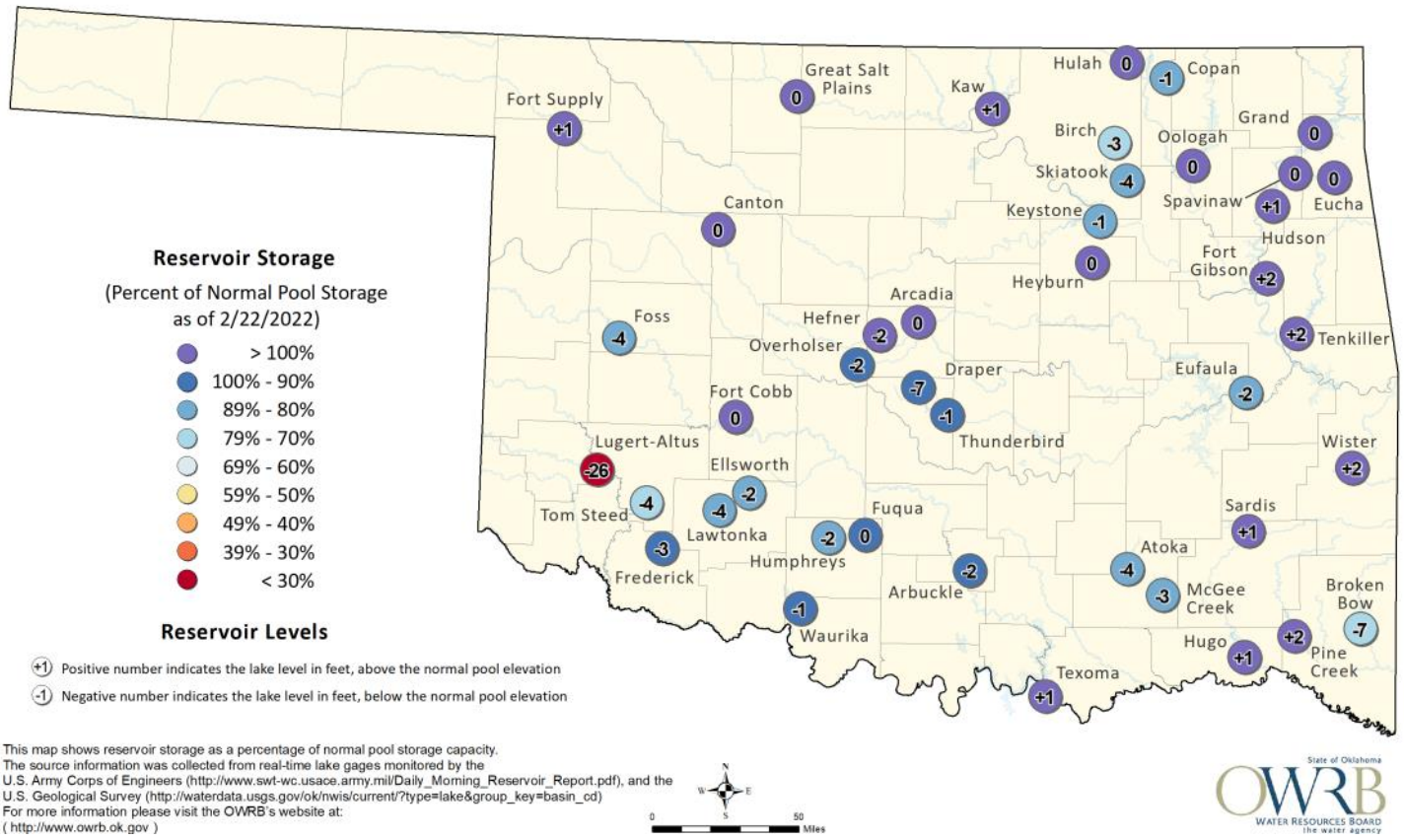
LAKE	% CAPACITY	% CHANGE FROM 1/31/2022
Canton	91.0	9.0
Arcadia	93.0	7.0
Lake Thunderbird	94.0	1.0
McGee Creek	86.0	2.0
Lake Atoka	85.7	-1.7
TOTAL % CAPACITY	89.2	2.6

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

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.

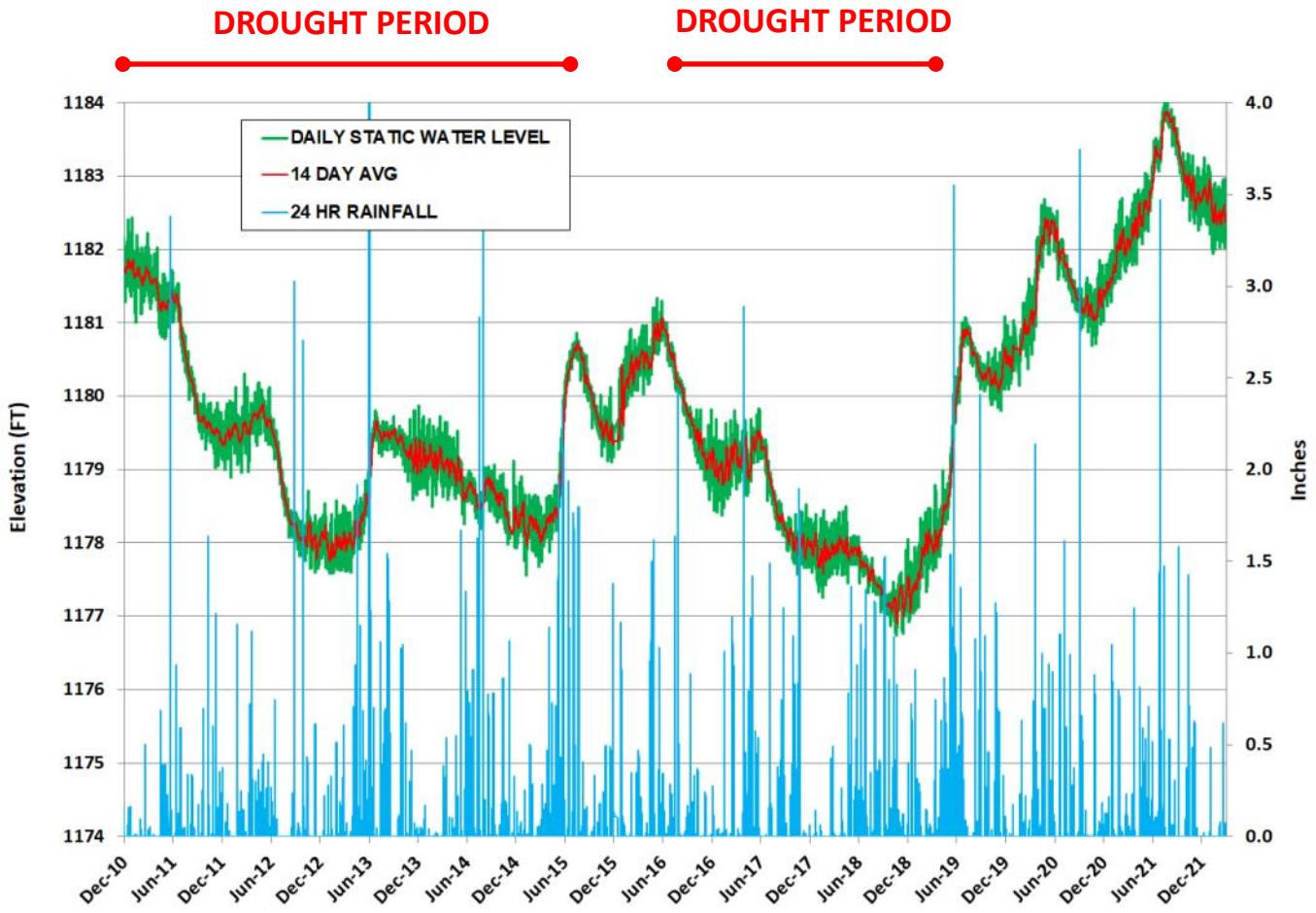
Oklahoma Surface Water Resources

Reservoir Levels and Storage as of 2/22/2022



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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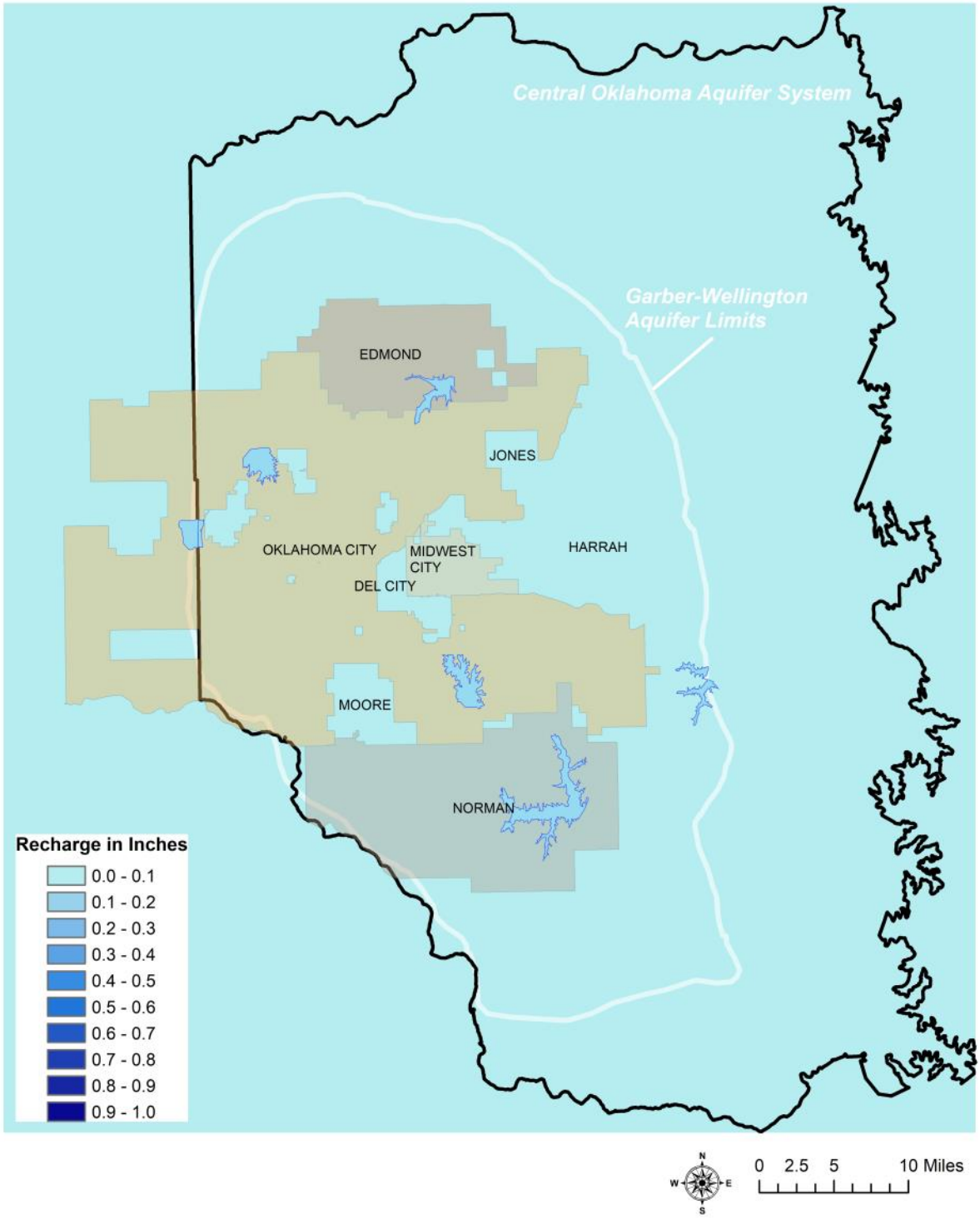
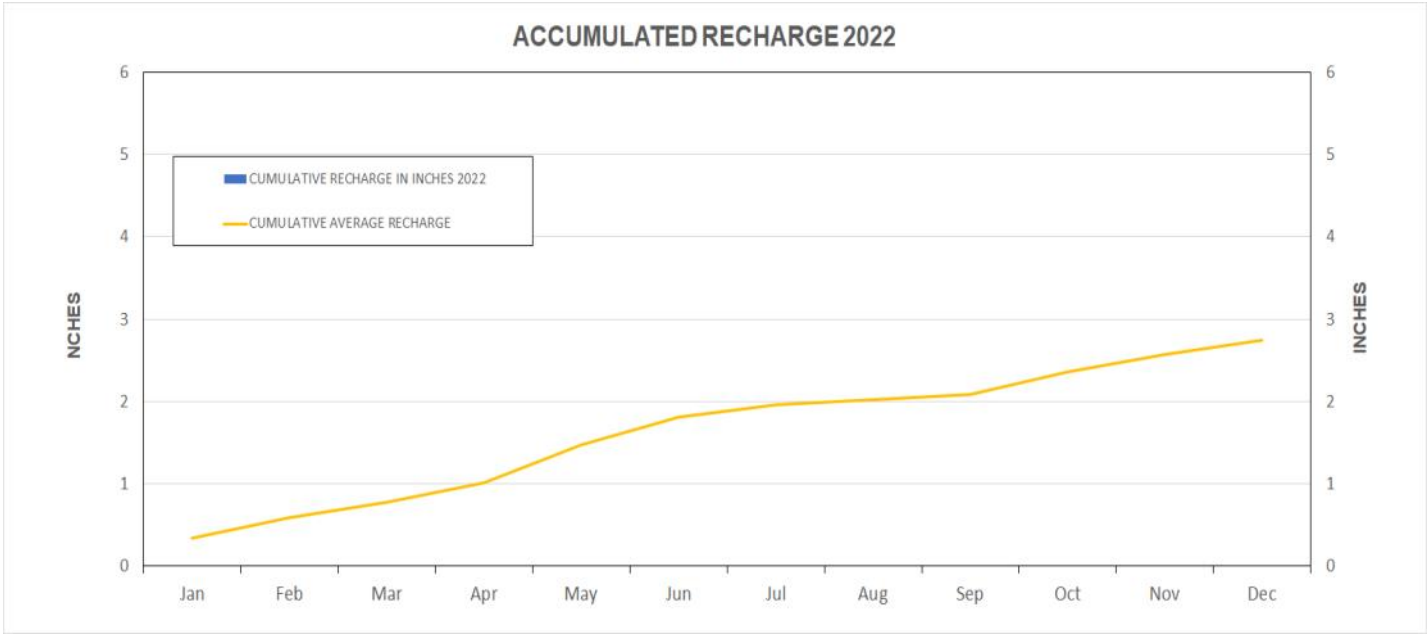
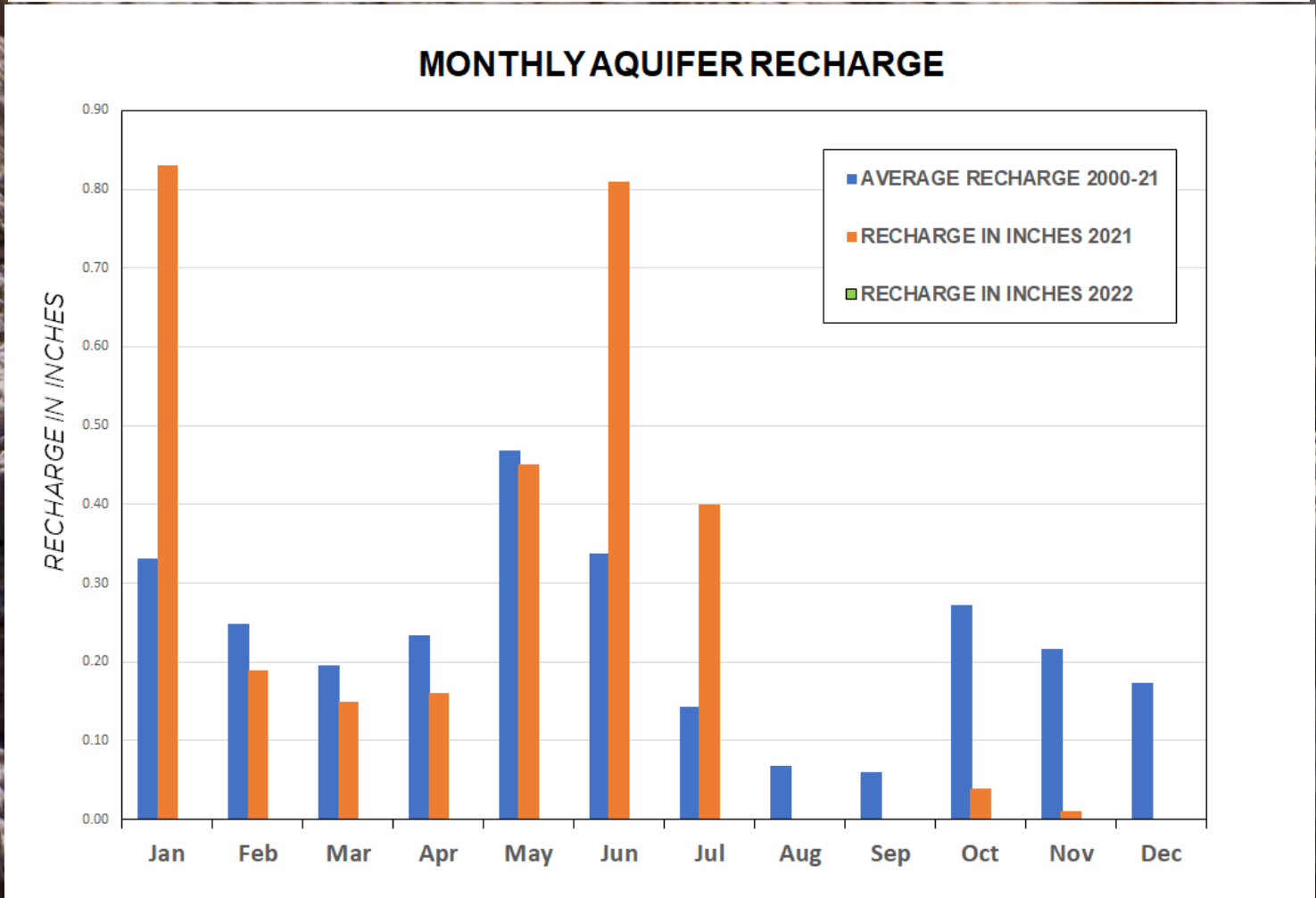
Recharge Map
Central Oklahoma Aquifer System

AQUIFER RECHARGE FEB 2022



Recharge Charts
Central Oklahoma Aquifer System





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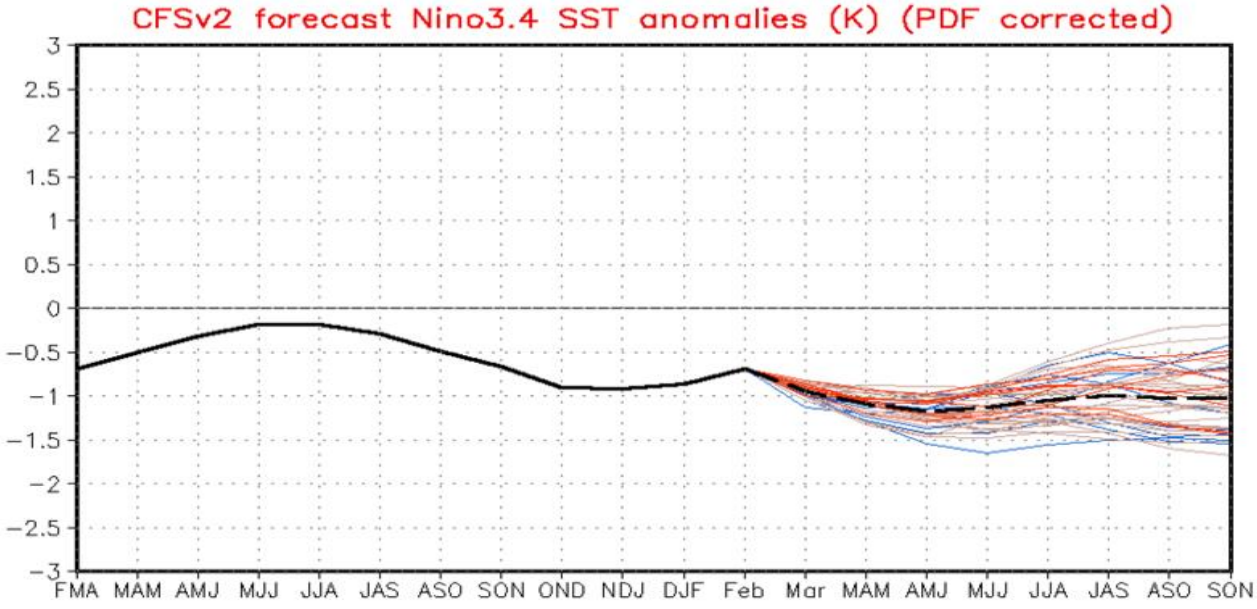
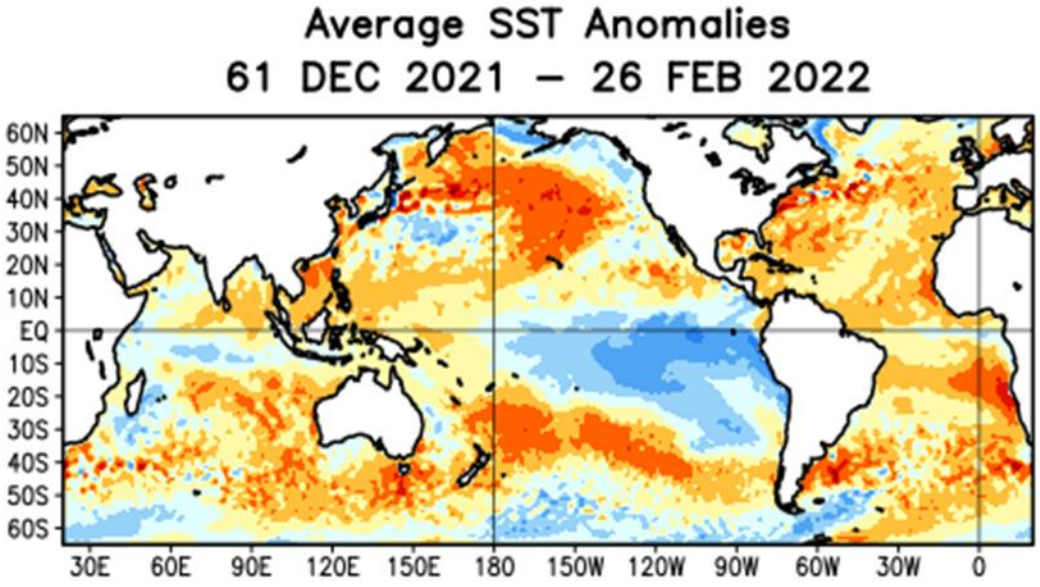
ENSO Cycle
Recent Evolution, Current Status and Predictions





Summary

ENSO Alert System Status: La Niña Advisory

- La Niña is present.
- Equatorial sea surface temperatures (SSTs) are below average across the central and east-central Pacific Ocean.
- The tropical Pacific atmosphere is consistent with La Niña.
- La Niña is likely to continue into the Northern Hemisphere spring (77% chance during March-May 2022) and then transition to ENSO-neutral (56% chance during May-July 2022).

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

acog