

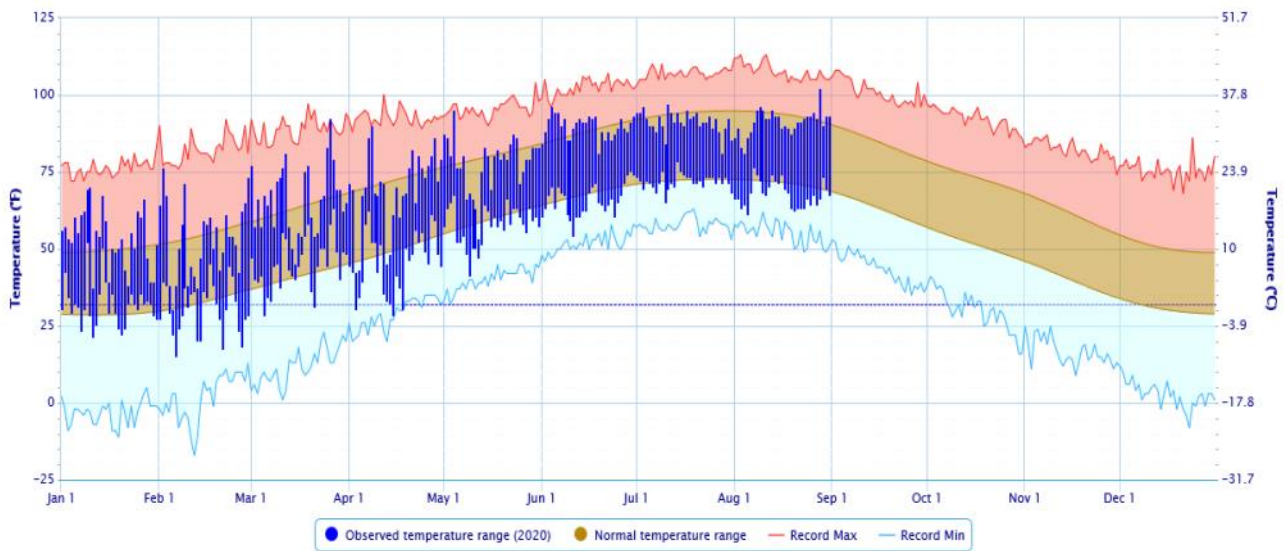


Drought Conditions in Central Oklahoma

**Water Resources Division
Association of Central Oklahoma Governments
September 1, 2020**

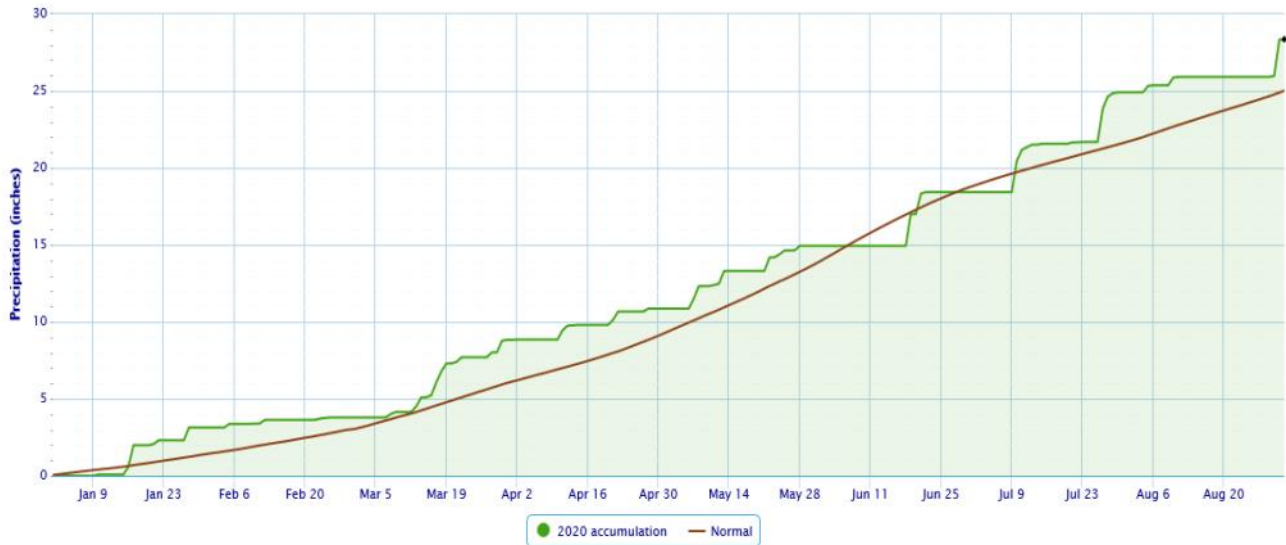
Temperature and Precipitation Plot for Oklahoma City, Oklahoma for 2020

Daily Temperature Data – Oklahoma City Area, OK

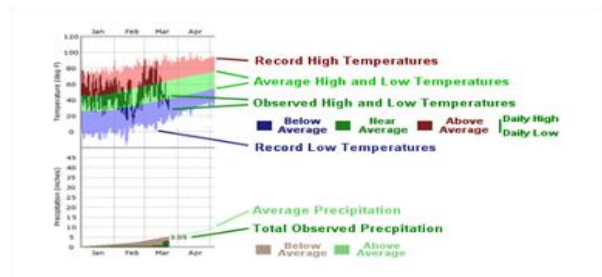


Powered by ACIS

Accumulated Precipitation—Oklahoma City Area, OK



Powered by ACIS



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

Rainfall Summaries by Oklahoma Climate Division

Calendar Year 01-Jan-2020 through 31-Aug-2020

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	14.70"	-5.36"	73%	19th driest	7.15" (2011)	32.23" (2007)
Central	26.84"	+1.16"	105%	33rd wettest	8.65" (1936)	44.47" (2007)
S. Central	32.20"	+5.15"	119%	15th wettest	11.94" (2011)	48.48" (2015)
Statewide	27.68"	+2.83"	111%	23rd wettest	10.00" (1936)	36.68" (2015)

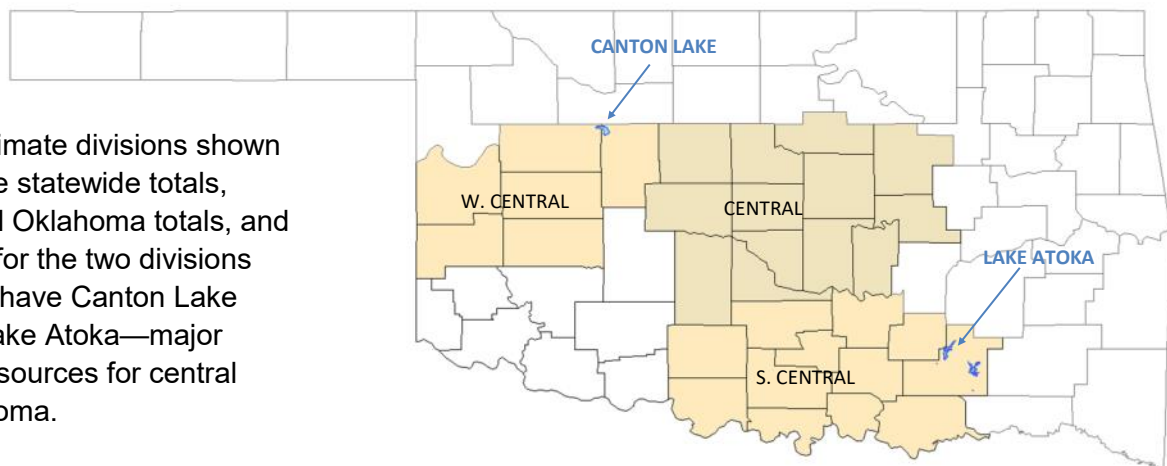
Water Year: 01-Oct-2019 through 31-Aug-2020

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	18.17"	-7.43"	71%	18th driest	11.69" (2010-11)	38.41" (2018-19)
Central	34.17"	+0.38"	101%	35th wettest	15.93" (1935-36)	51.47" (2006-07)
S. Central	42.14"	+5.40"	115%	15th wettest	16.11" (1955-56)	57.30" (2014-15)
Statewide	36.16"	+3.23"	110%	22nd wettest	17.81" (1935-36)	44.96" (2018-19)

Summer 01-Jun through 31-Aug-2020

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	6.47"	-2.78"	70%	28th driest	2.59" (1980)	15.95" (1995)
Central	10.51"	-0.36"	97%	46th wettest	2.15" (1936)	24.12" (2007)
S. Central	8.62"	-1.56"	85%	43rd driest	1.69" (2011)	19.00" (1945)
Statewide	9.74"	-0.62"	94%	44th driest	2.93" (1936)	17.77" (2007)

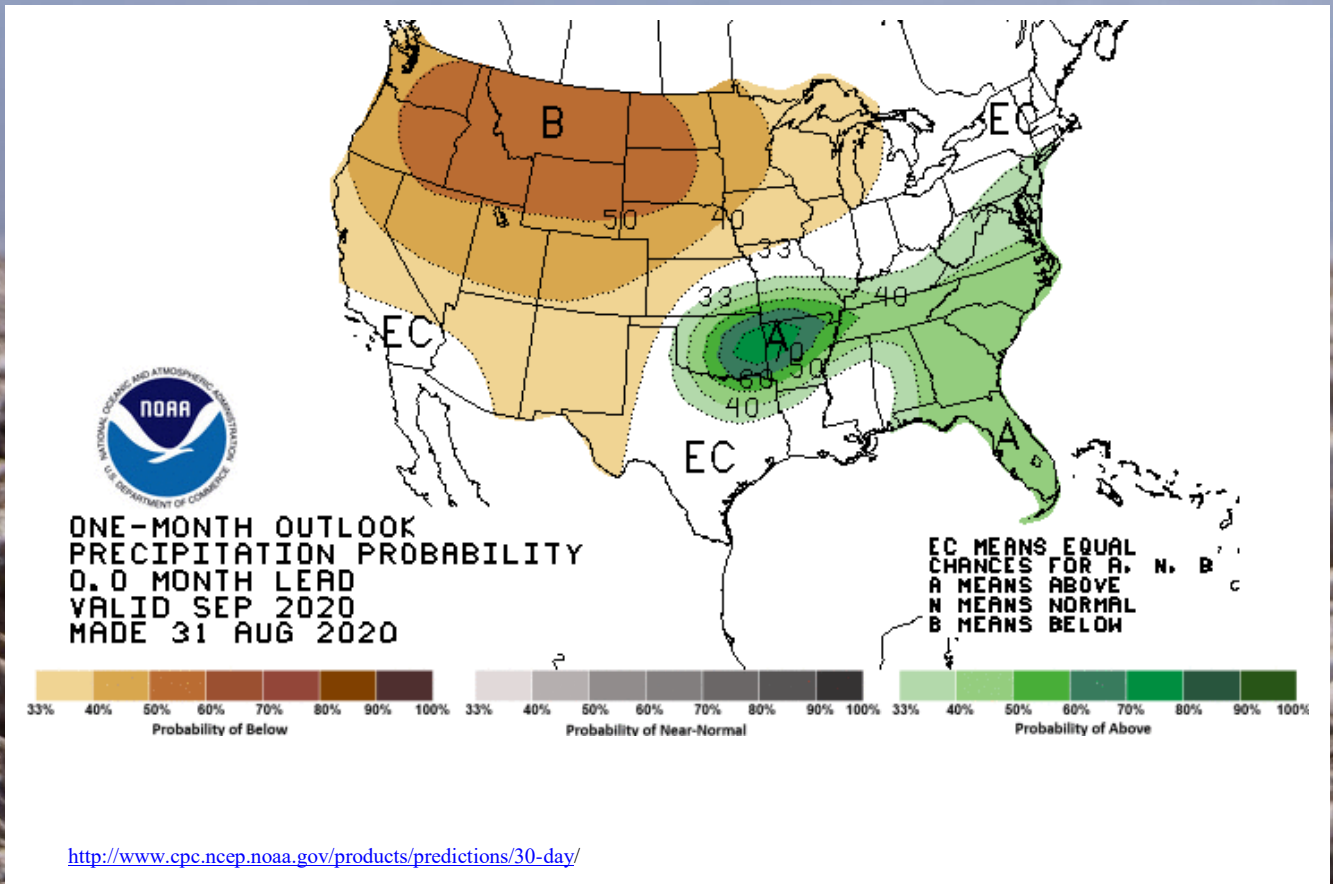
The climate divisions shown include statewide totals, central Oklahoma totals, and totals for the two divisions which have Canton Lake and Lake Atoka—major water sources for central Oklahoma.



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

OKLAHOMA
CLIMATOLOGICAL SURVEY

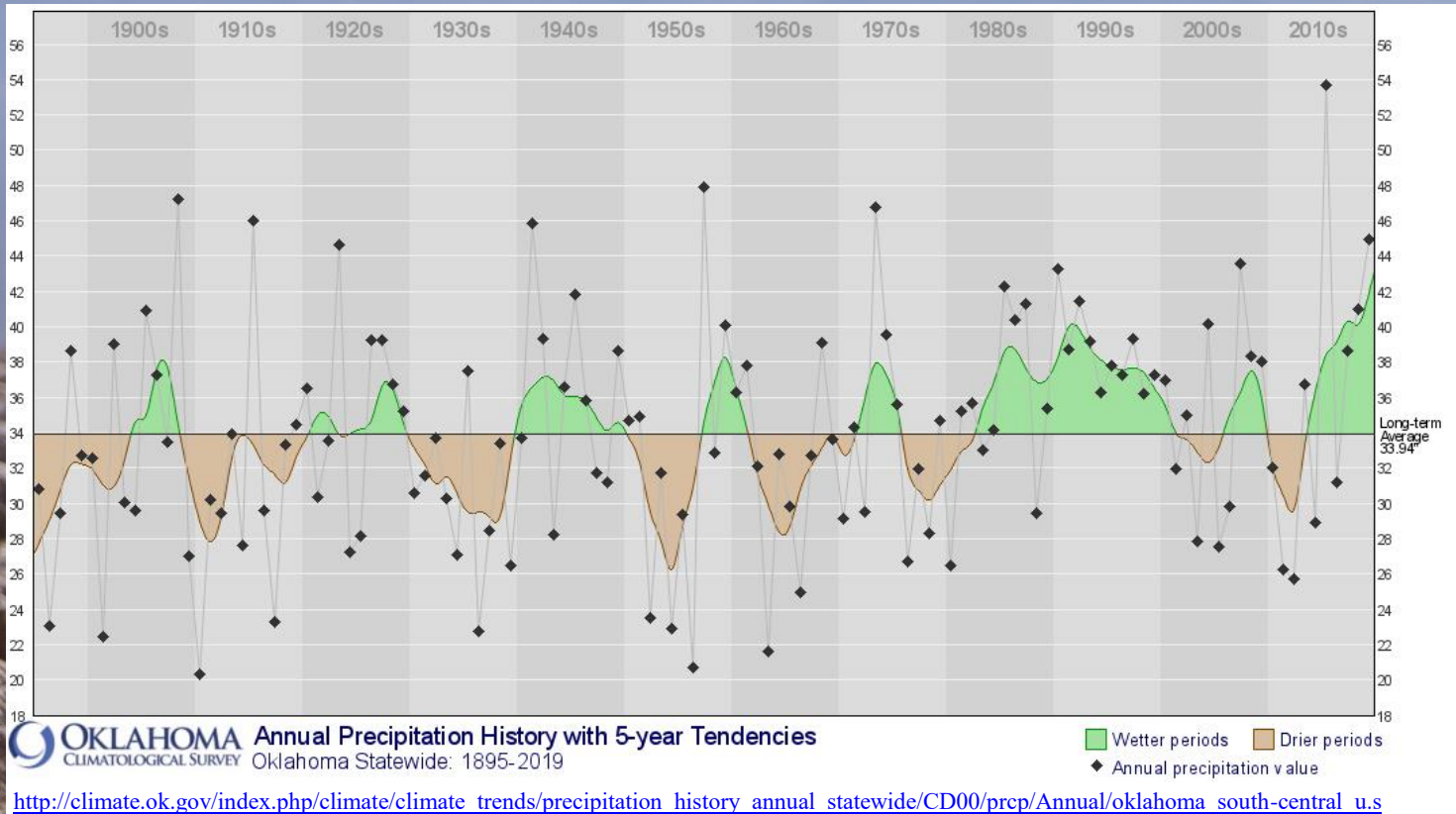
NOAA One-Month Outlook



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

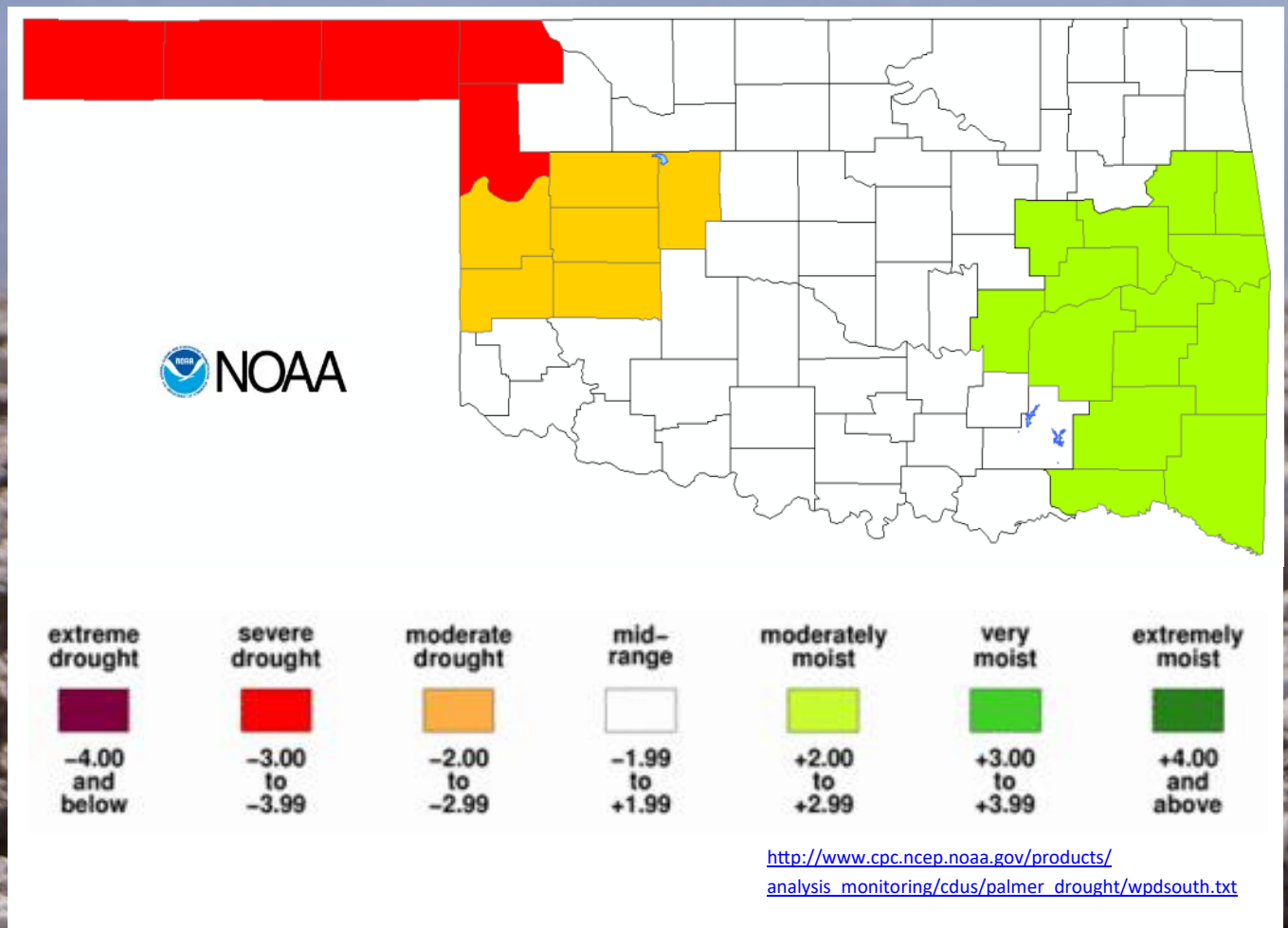


This graph shows the cyclical nature of wet and drought periods in Oklahoma. The black dots represent the annual precipitation for that particular year. The line represents the annual precipitation data smoothed over five years.

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 29 AUG 2020



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.

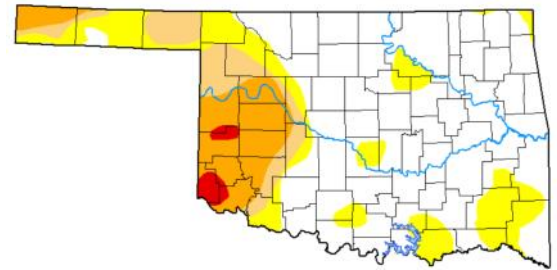
On these maps, the red shading denotes drought conditions while the green shading indicates wet conditions.

U.S. Drought Monitor

Week	Date	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	2020-08-25	62.46	37.54	20.25	12.32	1.33	0.00
Last Week	2020-08-18	65.06	34.94	18.59	10.74	0.46	0.00
3 Months Ago	2020-05-26	73.67	26.33	14.44	3.46	0.00	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	2019-10-01	71.94	28.06	11.08	1.01	0.00	0.00
One Year Ago	2019-08-27	61.77	38.23	18.47	7.94	2.62	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



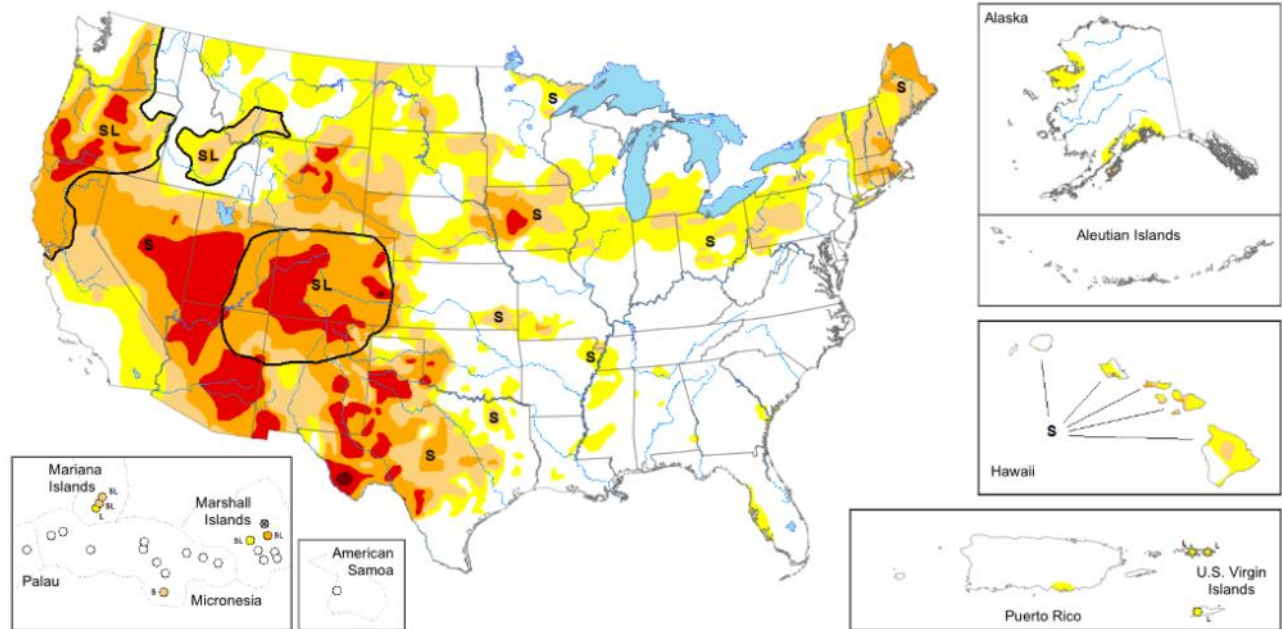
Drought.gov
U.S. Drought Portal

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

U.S. Drought Monitor Nationwide Map

Map released: August 27, 2020

Data valid: August 25, 2020



United States and Puerto Rico Author(s):
David Simeral, Western Regional Climate Center

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

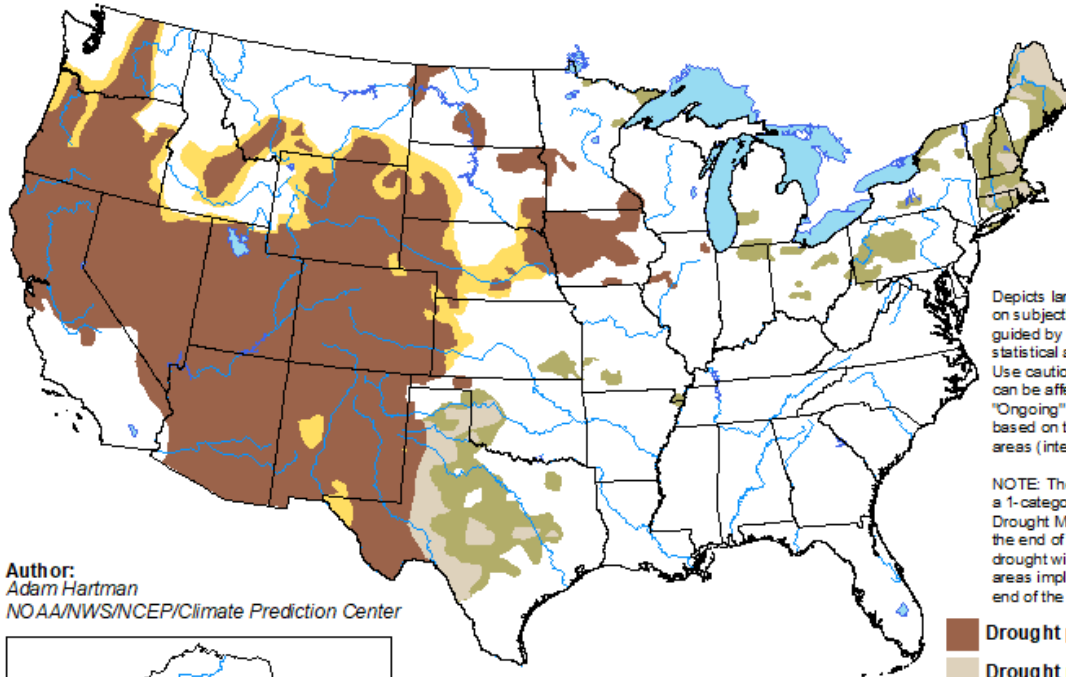
<http://droughtmonitor.unl.edu>

U.S. Drought Monitor

Monthly Drought Outlook Map

U.S. Monthly Drought Outlook Drought Tendency During the Valid Period

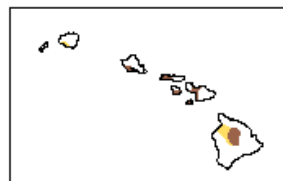
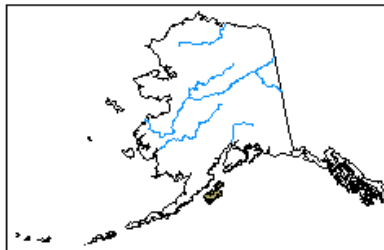
Valid for September 2020
Released August 31, 2020



Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).

NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).

Author:
Adam Hartman
NOAA/NWS/NCEP/Climate Prediction Center



- Drought persists
- Drought remains but improves
- Drought removal likely
- Drought development likely



<http://go.usa.gov/3eZGd>

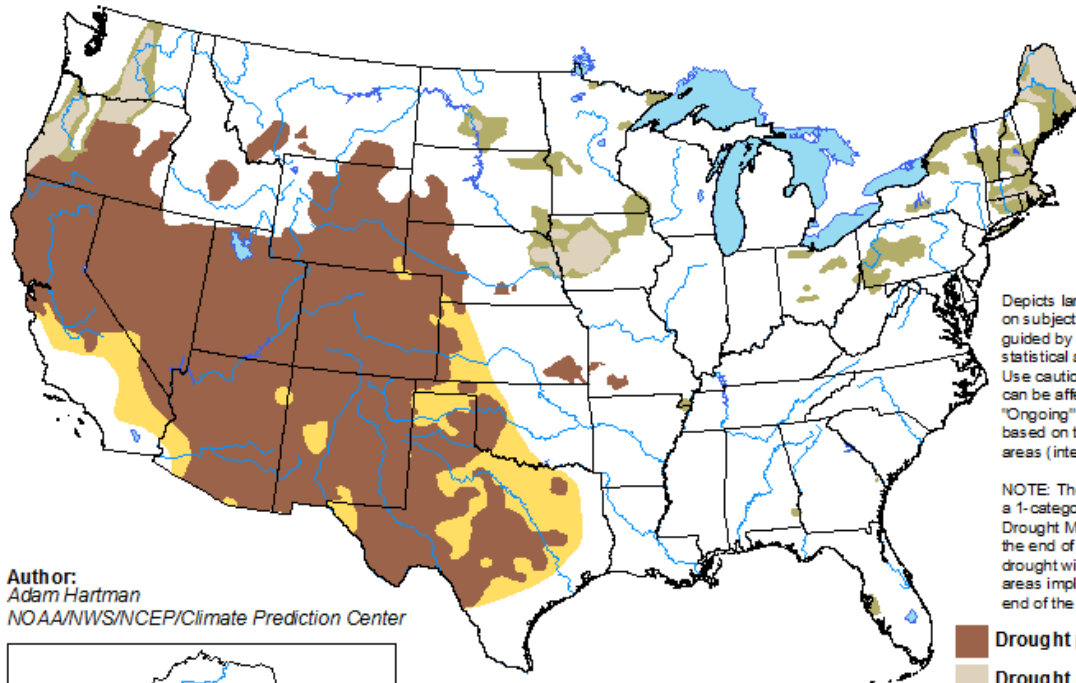
http://www.cpc.ncep.noaa.gov/products/expert_assessment/mdo_summary.php

U.S. Drought Monitor

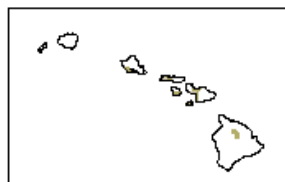
Seasonal Drought Outlook Map

U.S. Seasonal Drought Outlook Drought Tendency During the Valid Period

Valid for August 20 - November 30, 2020
Released August 20



Author:
Adam Hartman
NOAA/NWS/NCEP/Climate Prediction Center



Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).

NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).

- Drought persists
- Drought remains but improves
- Drought removal likely
- Drought development likely

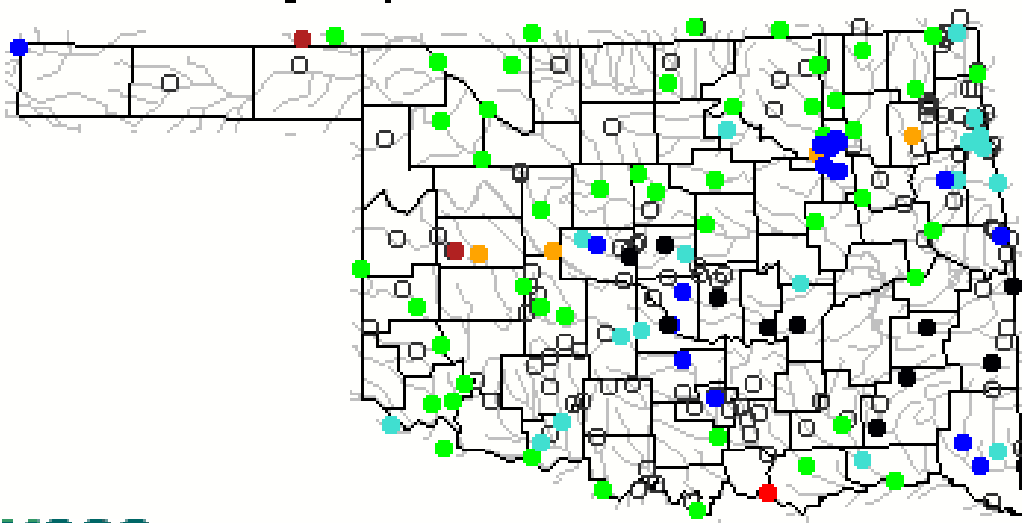


<http://go.usa.gov/3eZ73>

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

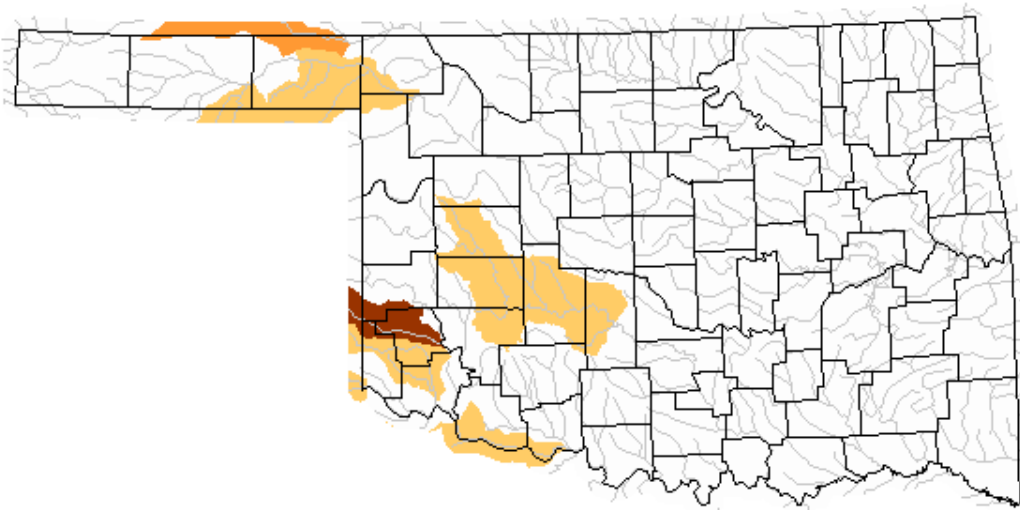
USGS Streamflow Data

Tuesday, September 01, 2020 10:30ET



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

Monday, August 31, 2020



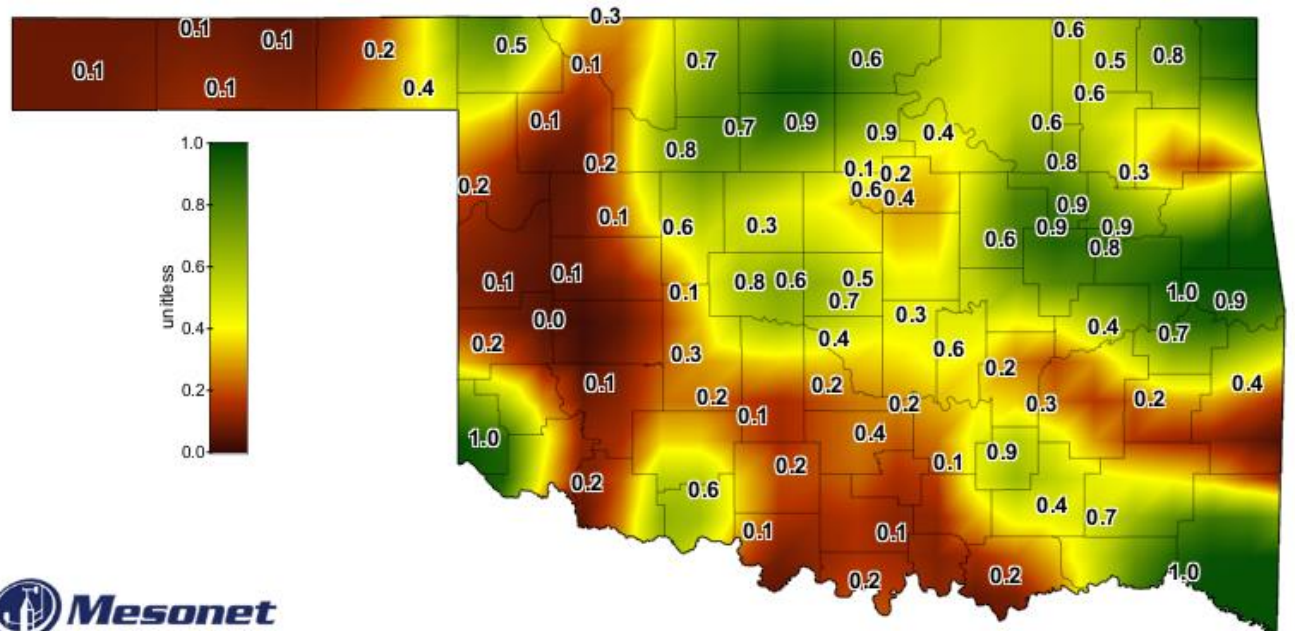
Below normal 28-day average streamflow

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

SOIL MOISTURE MAP



1-day Average 24-inch Fractional Water Index

August 31, 2020

Created 7:30:14 AM September 1, 2020 CDT. © Copyright 2020



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

CONSECUTIVE DAYS WITHOUT RAINFALL MAP

Mesonet
Consecutive Days With Less Than 0.25" Rainfall

August 31, 2020
Created 8:15:02 AM September 1, 2020 CDT. © Copyright 2020

[http://www.mesonet.org/index.php/weather/map/consecutive days with less than 0.25 inches Rainfall/rainfall](http://www.mesonet.org/index.php/weather/map/consecutive%20days%20with%20less%20than%200.25%20inches%20Rainfall/rainfall)

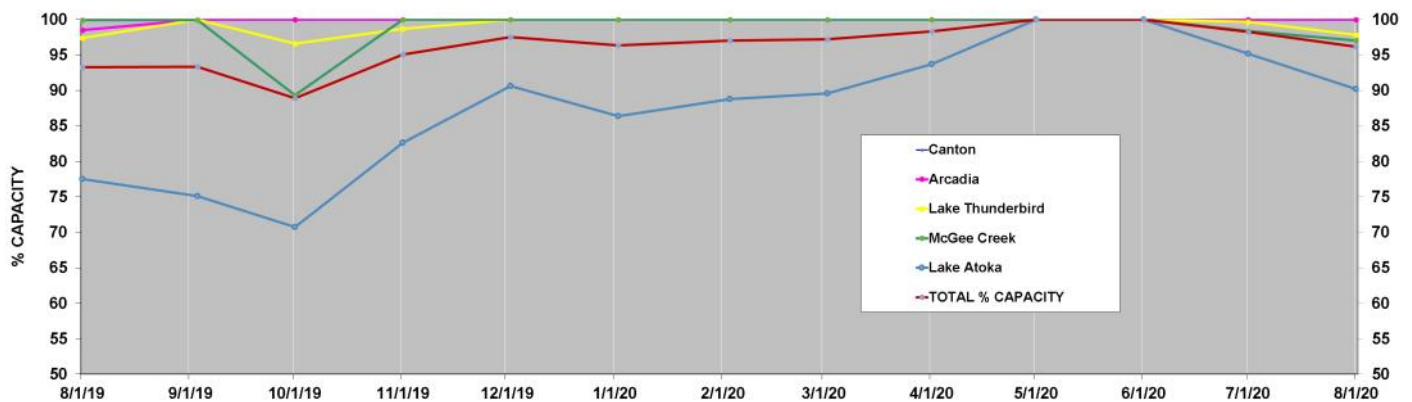


August 31, 2020

Created 8:15:02 AM September 1, 2020 CDT. © Copyright 2020

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 8/1/2020
Canton	99.8	-0.2
Arcadia	100.0	0.0
Lake Thunderbird	93.7	-4.1
McGee Creek	94.7	-2.3
Lake Atoka	85.8	-4.3
TOTAL % CAPACITY	93.5	-6.5

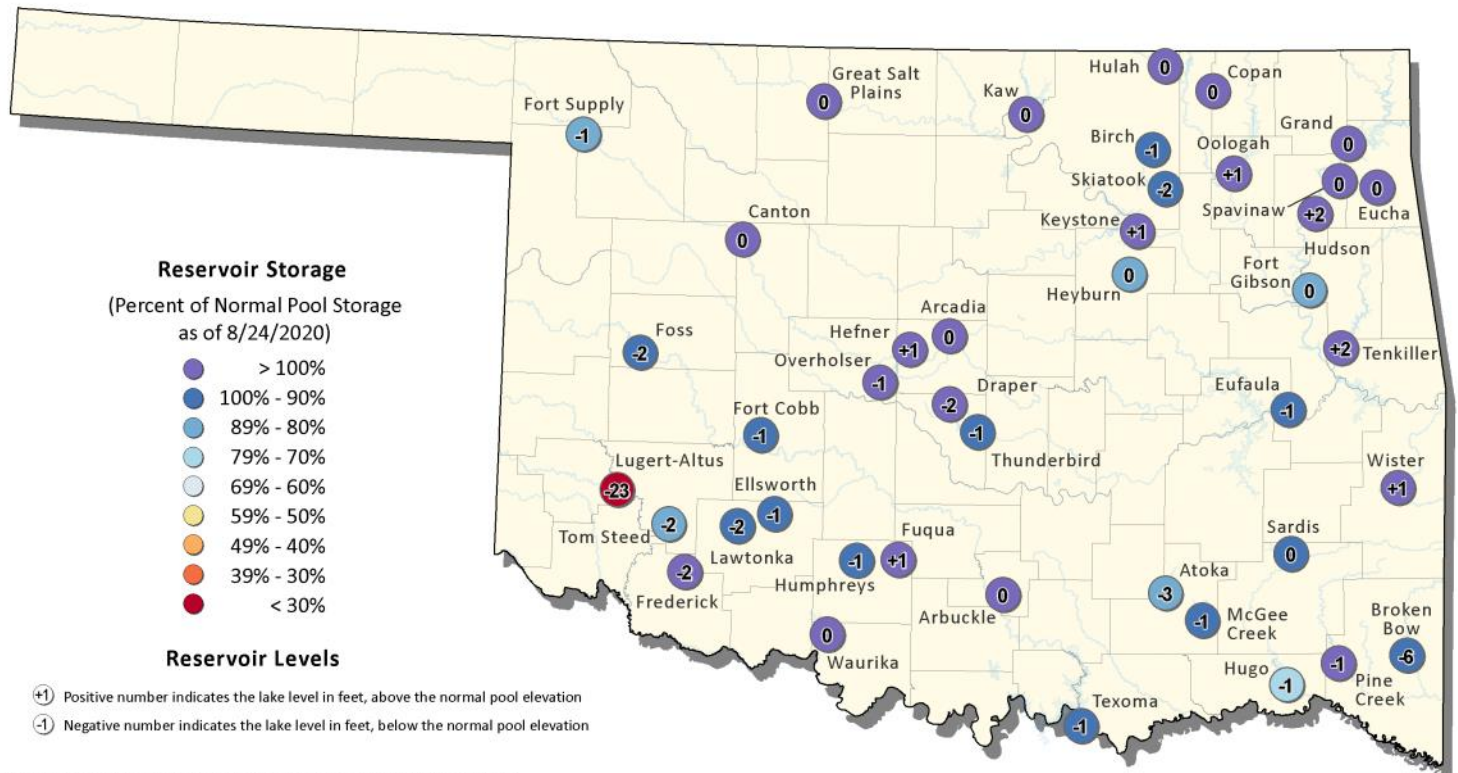
http://www.swt-wc.usace.army.mil/Daily_Morning_Reservoir_Report.pdf

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 8/24/2020

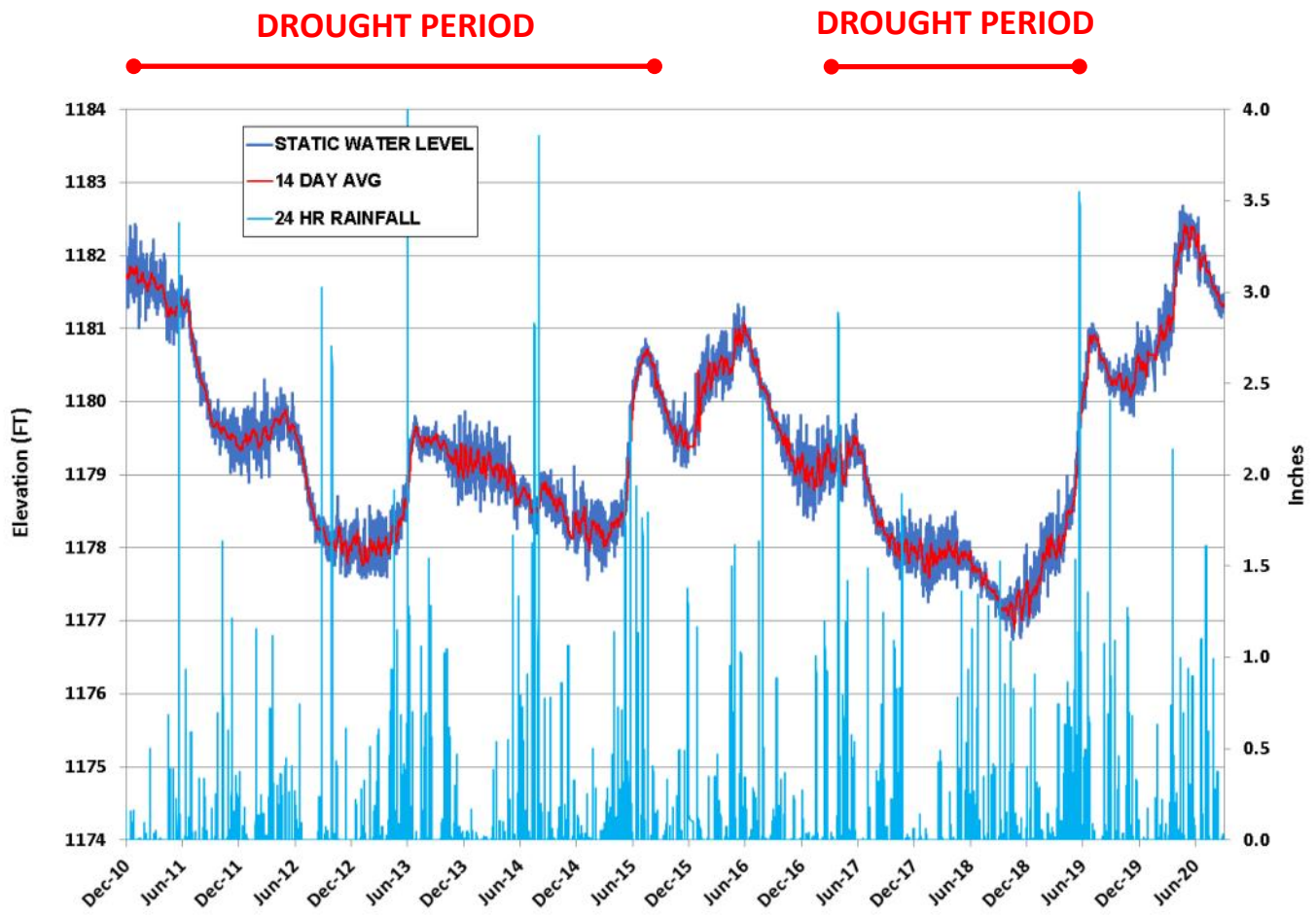


This map shows reservoir storage as a percentage of normal pool storage capacity. The source information was collected from real-time lake gages monitored by the U.S. Army Corps of Engineers (http://www.swt-wc.usace.army.mil/Daily_Morning_Reservoir_Report.pdf), and the U.S. Geological Survey (http://waterdata.usgs.gov/ok/nwis/current/?type=lake&group_key=basin_c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



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

Groundwater Levels Spencer Mesonet Station

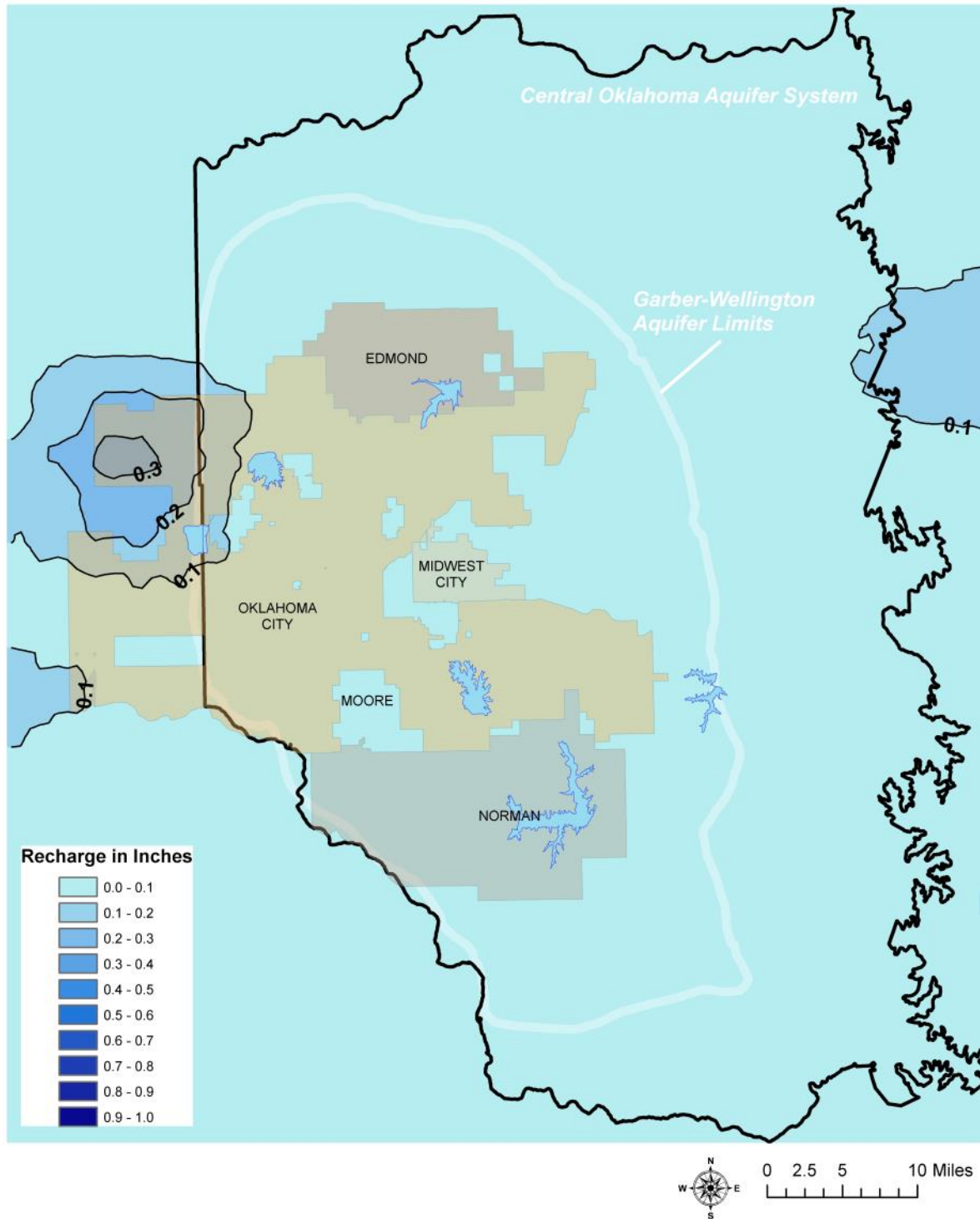


<http://www.mesonet.org/index.php/weather/groundwater>



Recharge Map Central Oklahoma Aquifer System

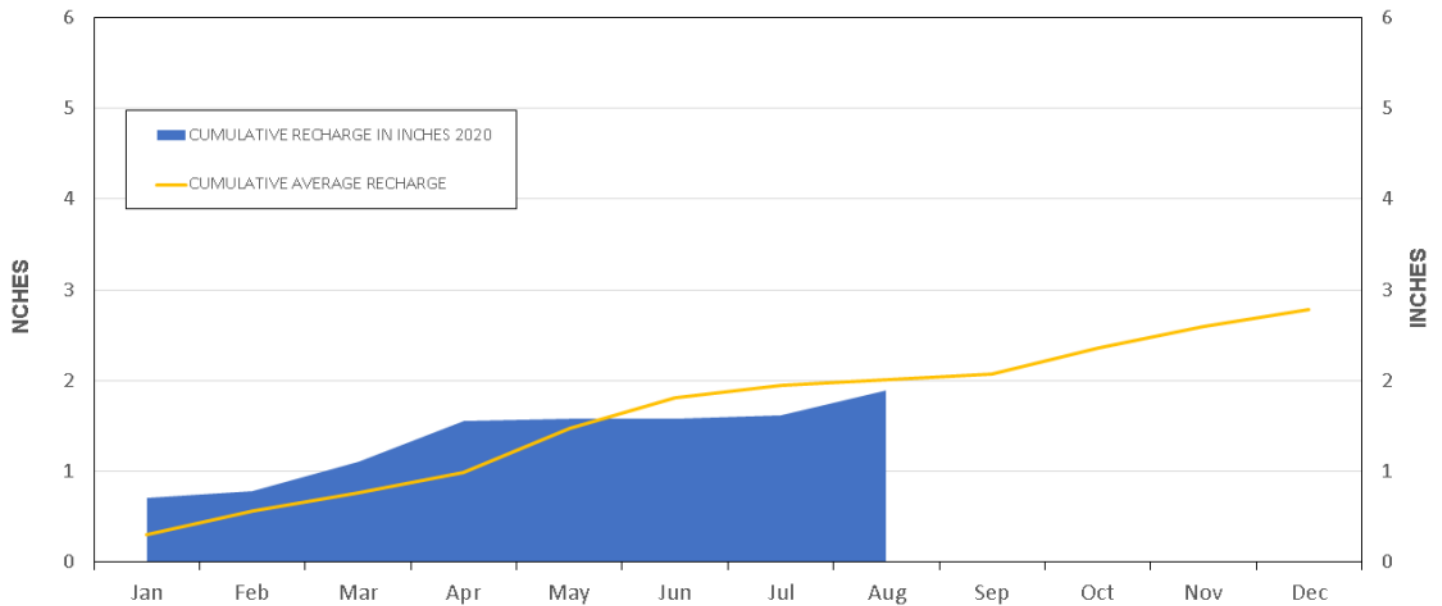
AQUIFER RECHARGE AUG 2020



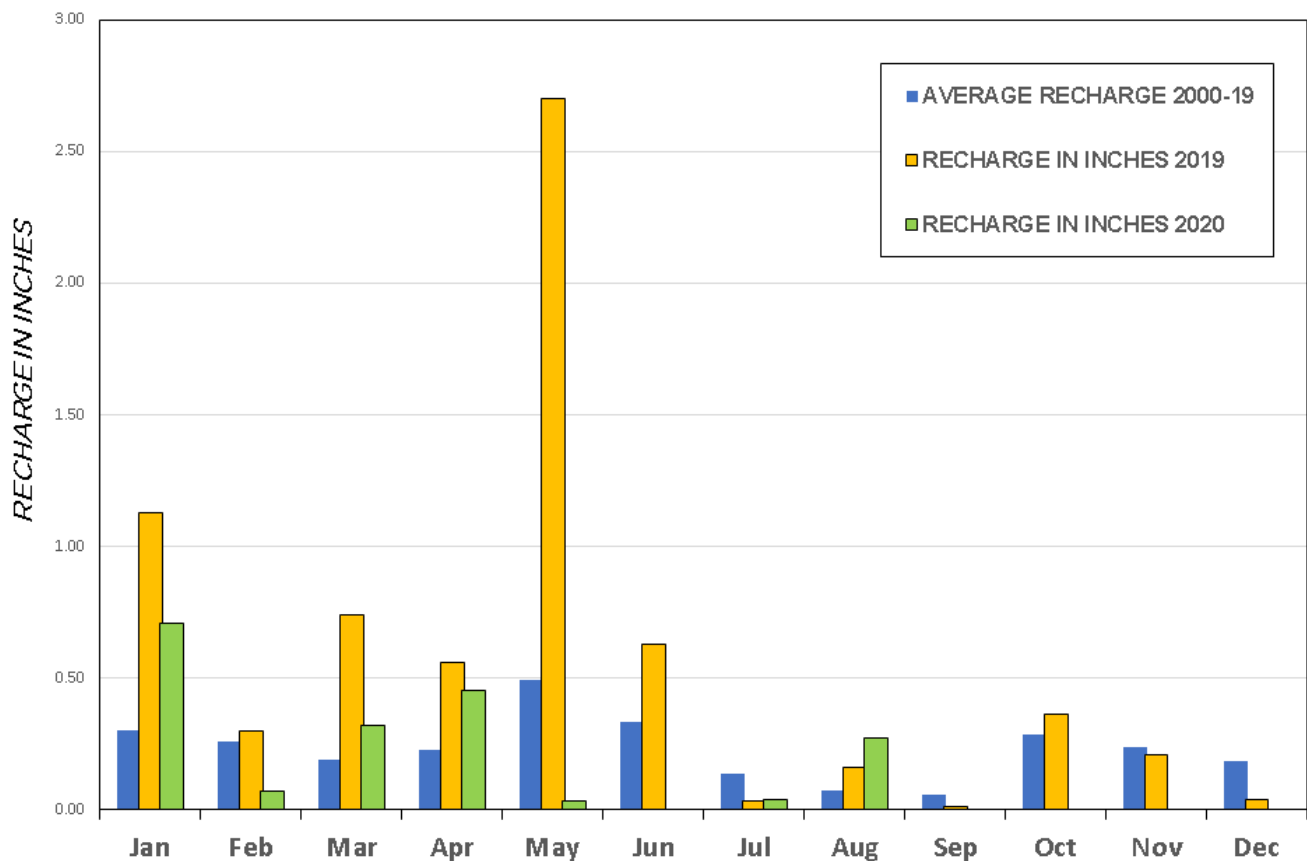
Recharge Charts

Central Oklahoma Aquifer System

ACCUMULATED RECHARGE 2020

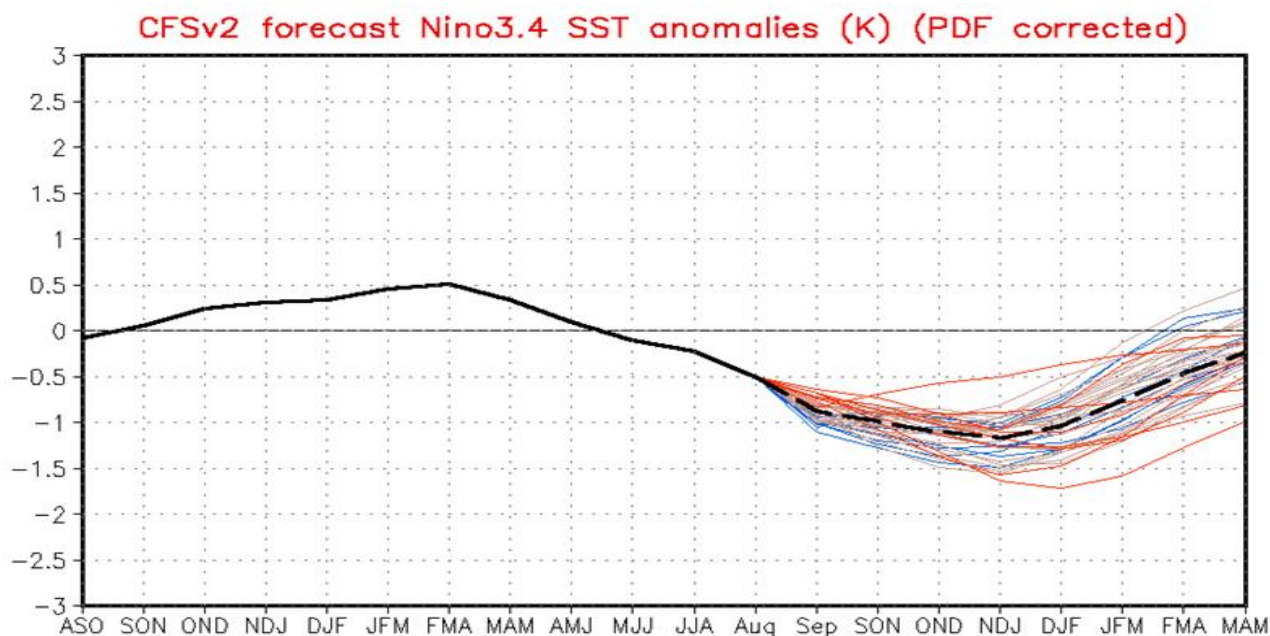


MONTHLY AQUIFER RECHARGE

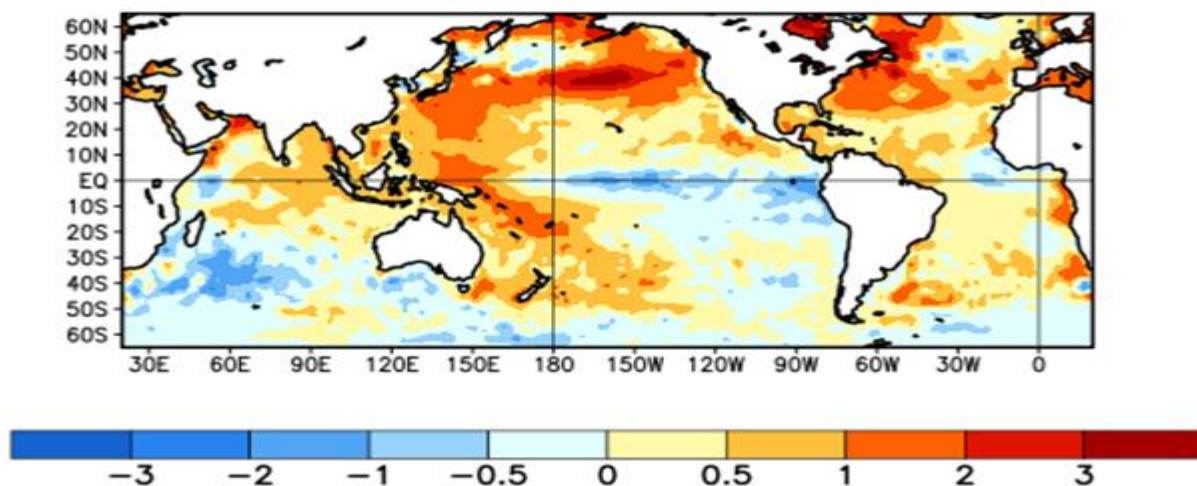


ENSO Cycle

Recent Evolution, Current Status and Predictions



Average SST Anomalies
2 AUG 2020 – 29 AUG 2020



Summary

ENSO Alert System Status: La Niña Watch

- ENSO-neutral conditions are present.
- Equatorial sea surface temperatures (SSTs) are near-to-below average across the east-central and eastern Pacific Ocean.
- The tropical atmospheric circulation is consistent with ENSO-neutral.
- There is a ~60% chance of La Niña development during Northern Hemisphere fall 2020 and continuing through winter 2020-21 (~55% chance).