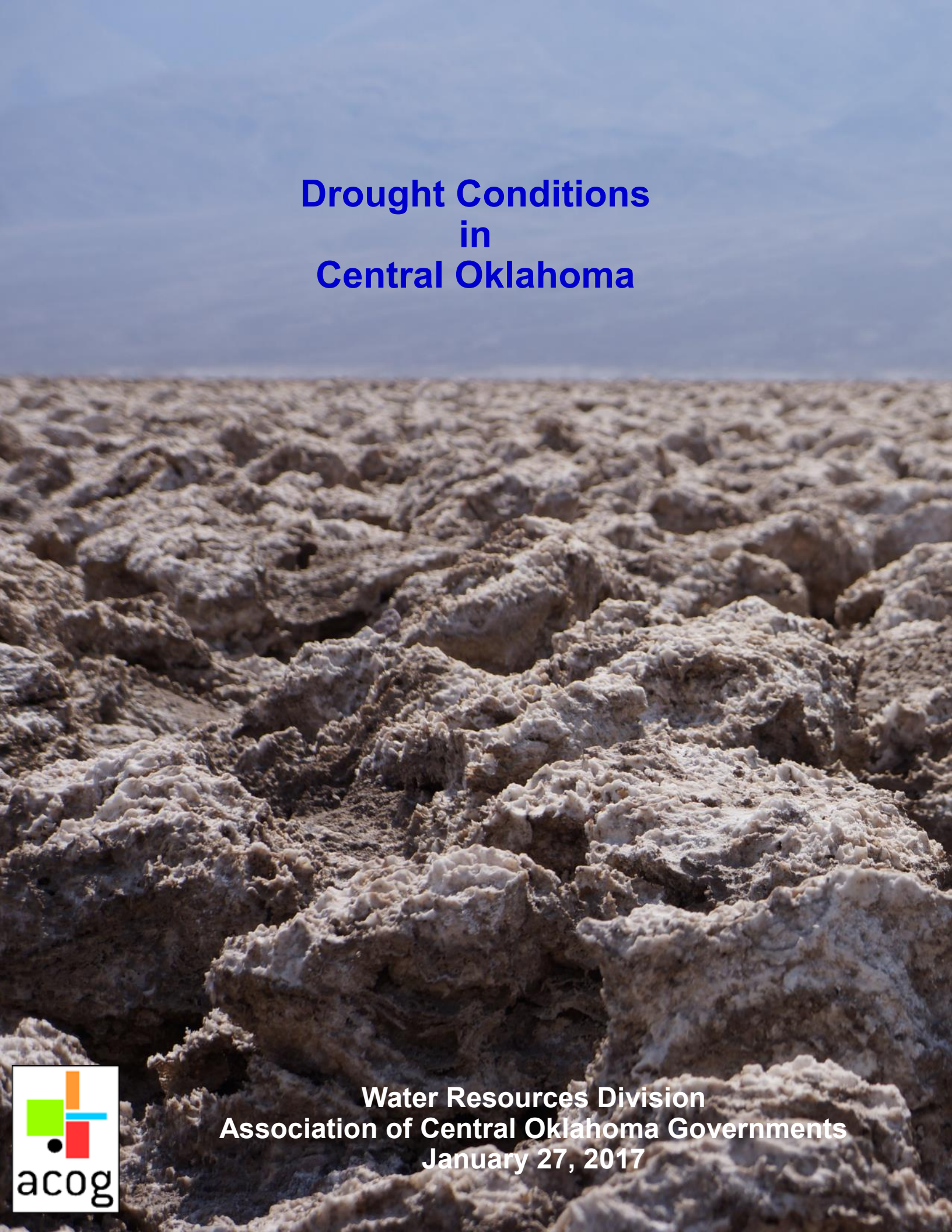
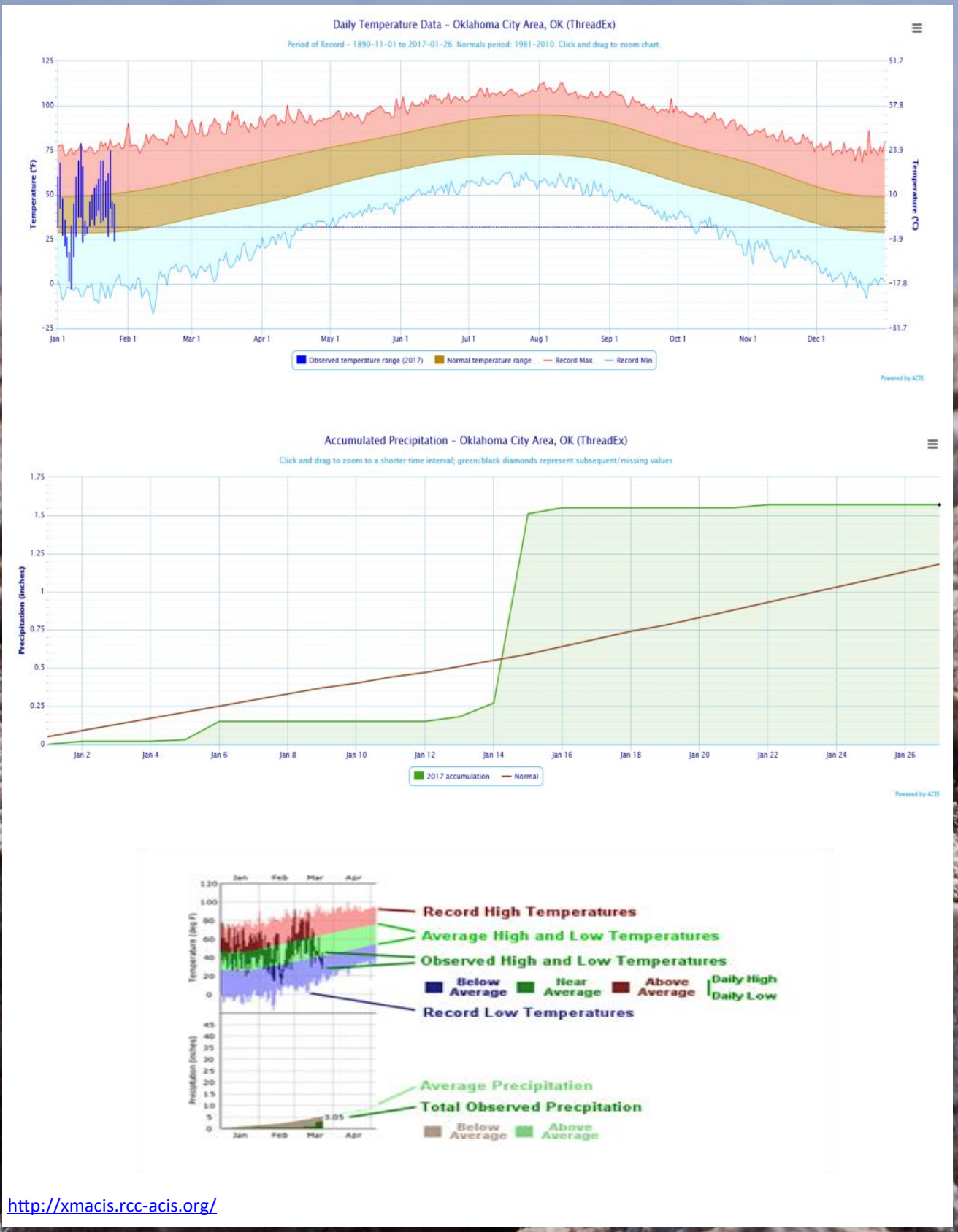
Drought Conditions in Central Oklahoma



Water Resources Division
Association of Central Oklahoma Governments
January 27, 2017

Temperature and Precipitation Plot for Oklahoma City, Oklahoma for 2017



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

Rainfall Summaries by Oklahoma Climate Division

Calendar Year 01-Jan-2017 though 26-Jan-2017

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	2.68"	+1.91"	349%	2nd wettest	0.00" (1986)	3.62" (1949)
Central	2.17"	+1.00"	186%	11th wettest	0.00" (1986)	5.34" (1949)
S. Central	2.85"	+1.17"	170%	14th wettest	0.02" (2003)	6.85" (1932)
Statewide	2.52"	+1.22"	194%	8th wettest	0.04" (1986)	4.96" (1932)

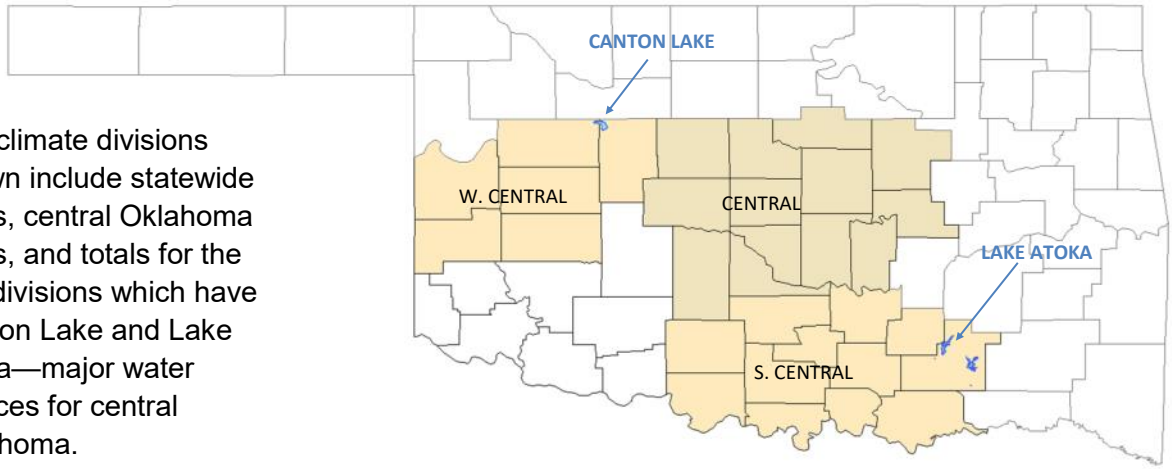
Water Year: 01-Oct-2016 through 26-Jan-2017

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	5.06"	-1.25"	80%	48th wettest	1.10" (1950-51)	13.40" (1986-87)
Central	5.39"	-3.89"	58%	23rd driest	2.26" (1921-22)	16.68" (1931-32)
S. Central	7.79"	-3.58"	69%	29th driest	2.10" (1950-51)	22.55" (2015-16)
Statewide	6.44"	-2.94"	69%	23rd driest	2.43" (1950-51)	15.88" (2015-16)

Winter: 01-Dec-2016 through 26-Jan-2017

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	3.54"	+1.55"	178%	11th wettest	0.22" (1981-82)	4.89" (1959-60)
Central	2.85"	-0.31"	90%	35th wettest	0.38" (2005-06)	8.47" (1984-85)
S. Central	3.73"	-0.54"	87%	47th wettest	0.69" (1922-23)	10.94" (1997-98)
Statewide	3.34"	-0.03"	99%	32nd wettest	0.74" (2005-06)	7.43" (1997-98

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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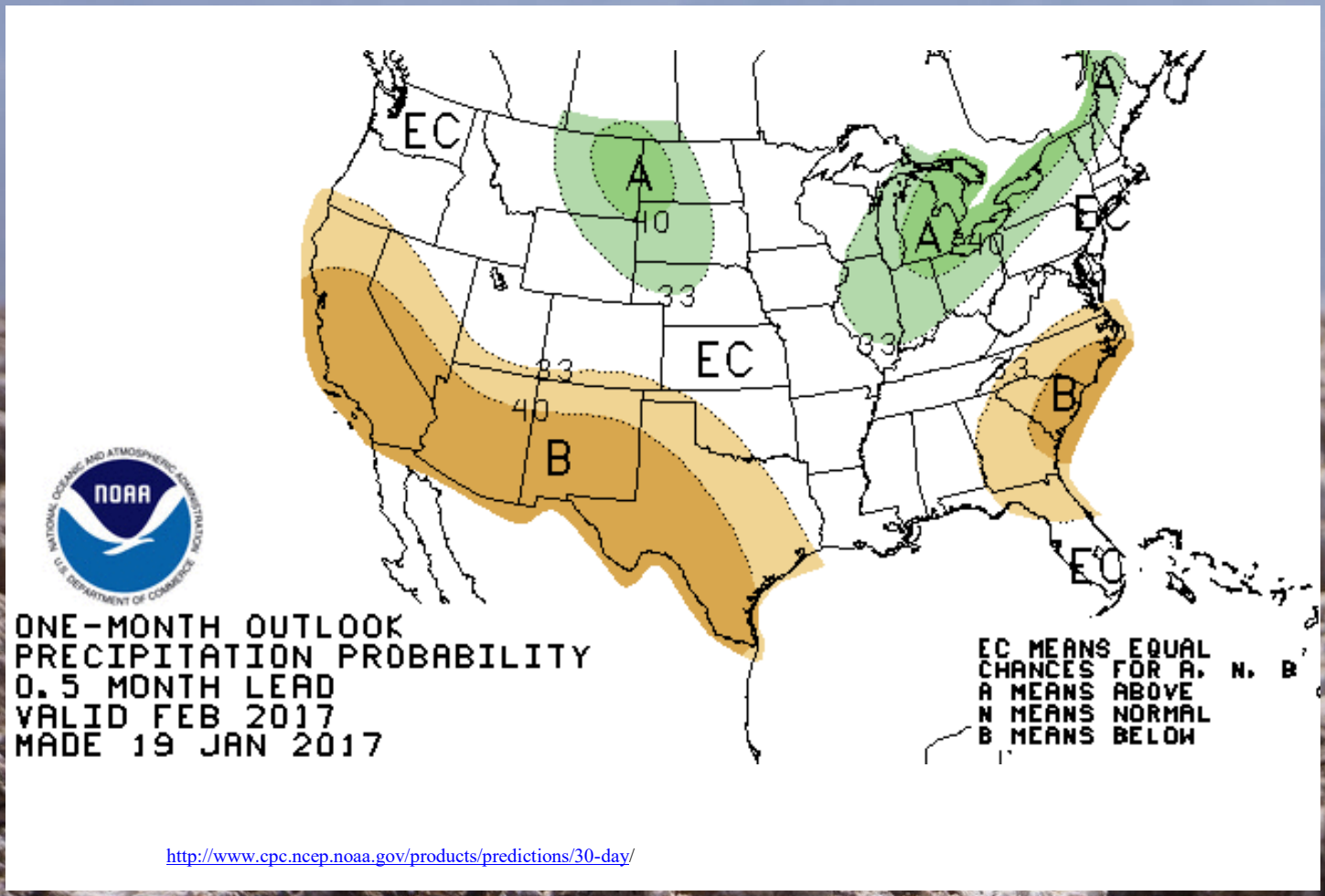
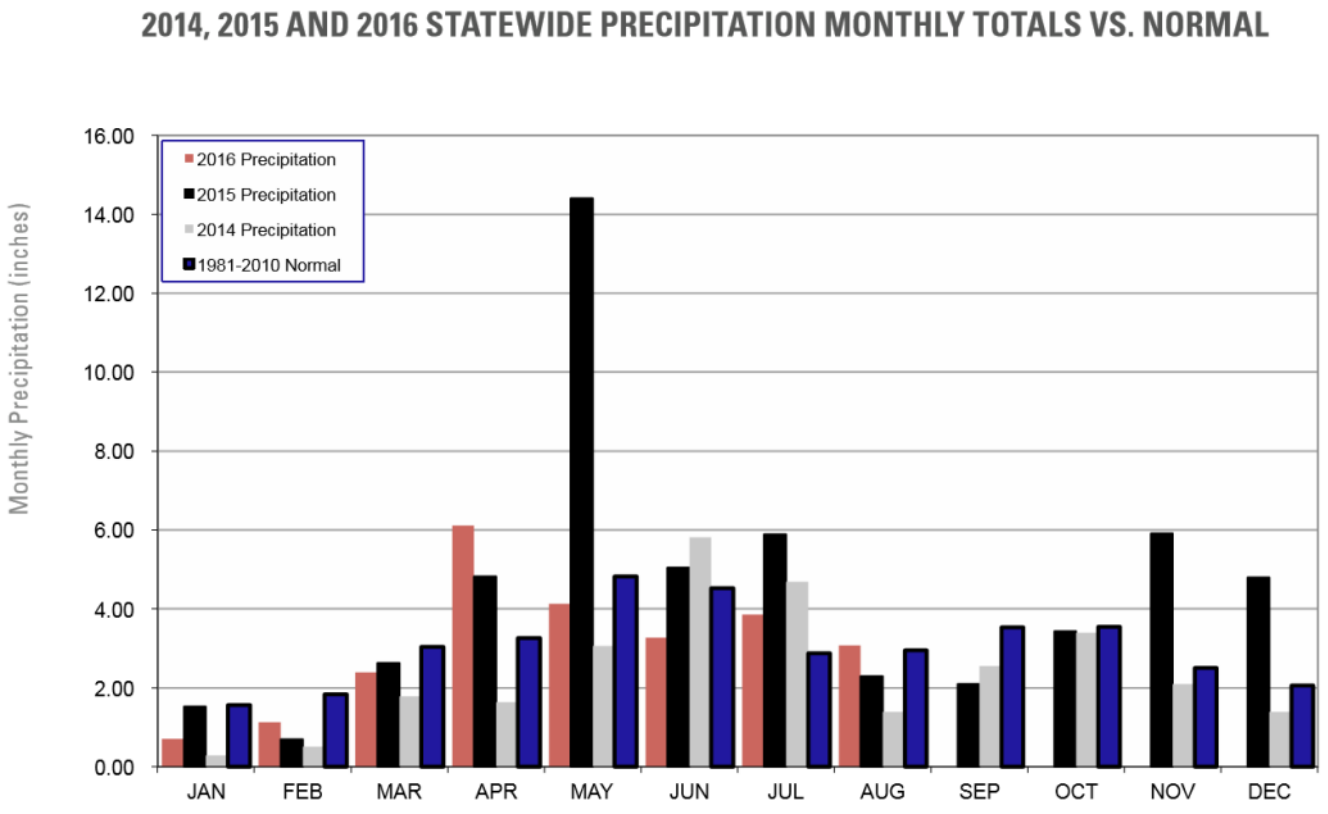
NOAA One-Month Outlook



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.

Statewide Precipitation Monthly Totals vs. Normal



http://climate.ok.gov/index.php/climate/summary/reports_summaries

OKLAHOMA CLIMATOLOGICAL SURVEY

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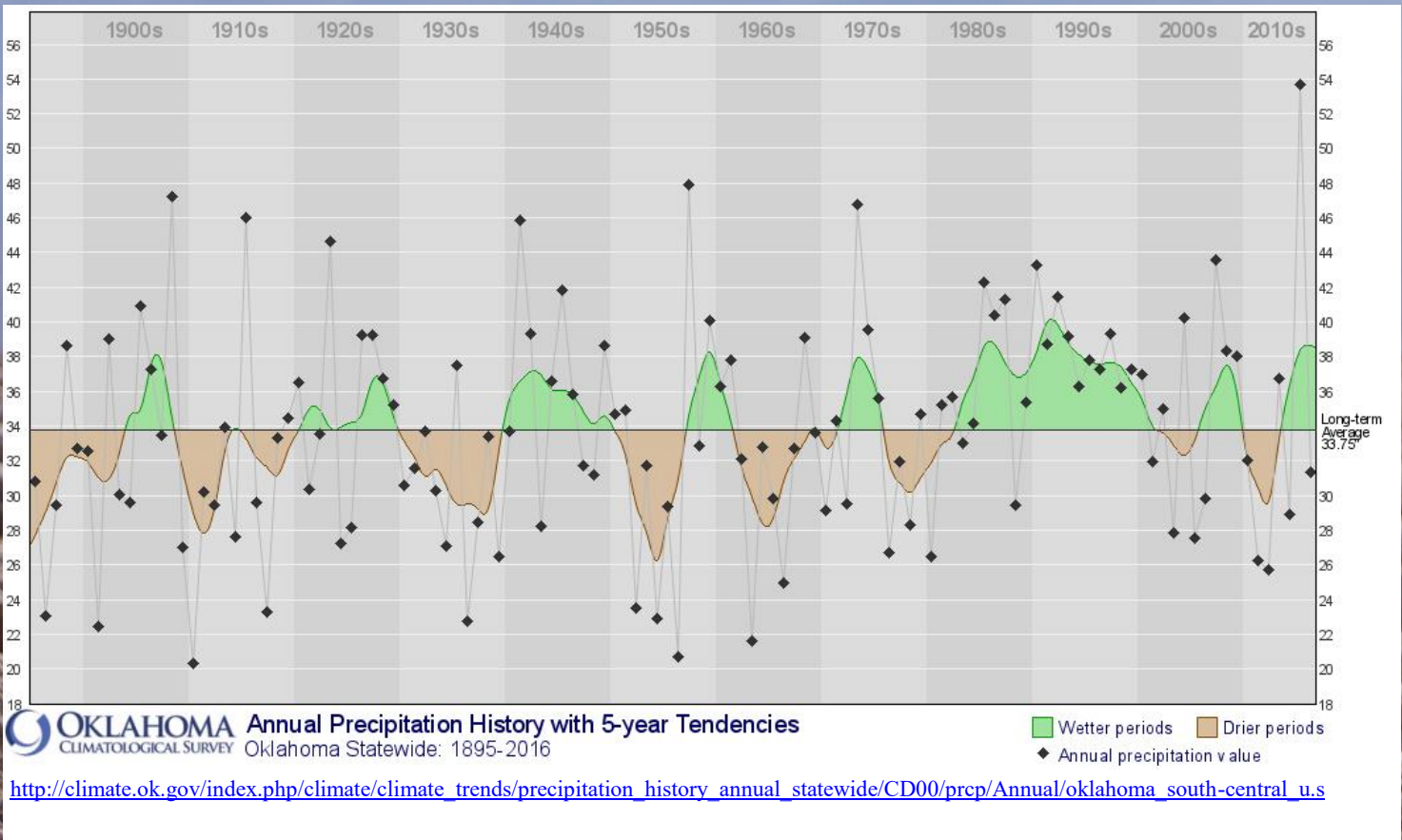
Annual Precipitation History with 5-Year Tendencies



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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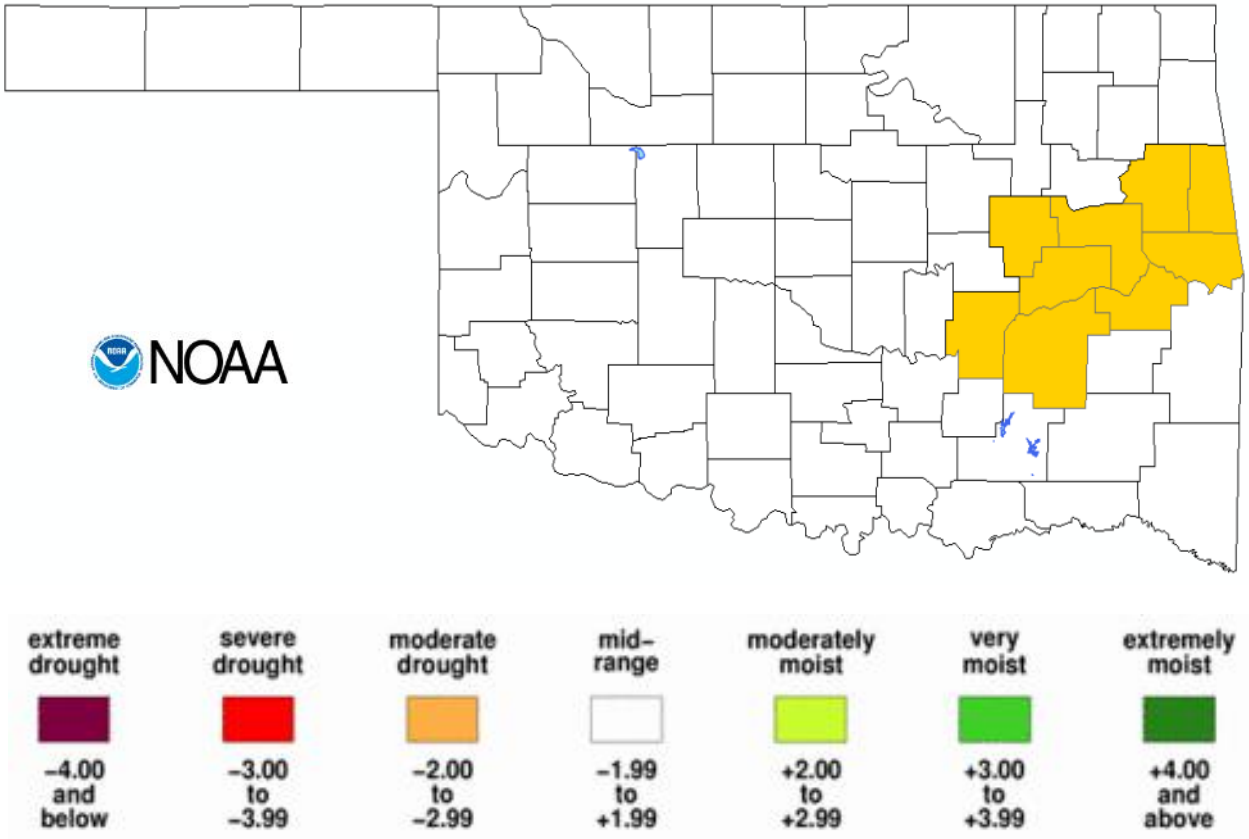
Drought Severity Index by Climate Division

Palmer Weekly Value for Period JAN 2017



https://www.drought.gov/drought/data-maps-tools/current-conditions

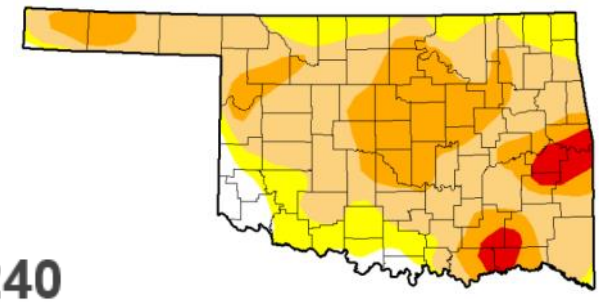
The Palmer Drought Index (PDI) maps show long-term (cumulative) meteorological drought and wet conditions. The maps show how the geographical pattern of the long-term (meteorological) moisture conditions has changed over the last 12 months. On these maps, the red shading denotes drought conditions while the green shading indicates wet conditions.

For an animated gif of the long term PDI see http://www.ncdc.noaa.gov/oa/climate/research/prelim/drought/pdiimage.html.

U.S. Drought Monitor

Regional Map Week of 24 JAN 2017

Week	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current 2017-01-24	4.49	95.51	79.90	30.95	3.90	0.00
Last Week 2017-01-17	4.08	95.92	81.05	31.71	4.17	0.00
3 Months Ago 2016-10-25	47.43	52.57	25.04	4.26	0.00	0.00
Start of Calendar Year 2016-12-27	5.63	94.37	72.32	45.73	3.14	0.00
Start of Water Year 2016-09-27	57.82	42.18	19.04	3.05	0.00	0.00
One Year Ago 2016-01-26	100.00	0.00	0.00	0.00	0.00	0.00



U.S. Drought Monitor

Oklahoma

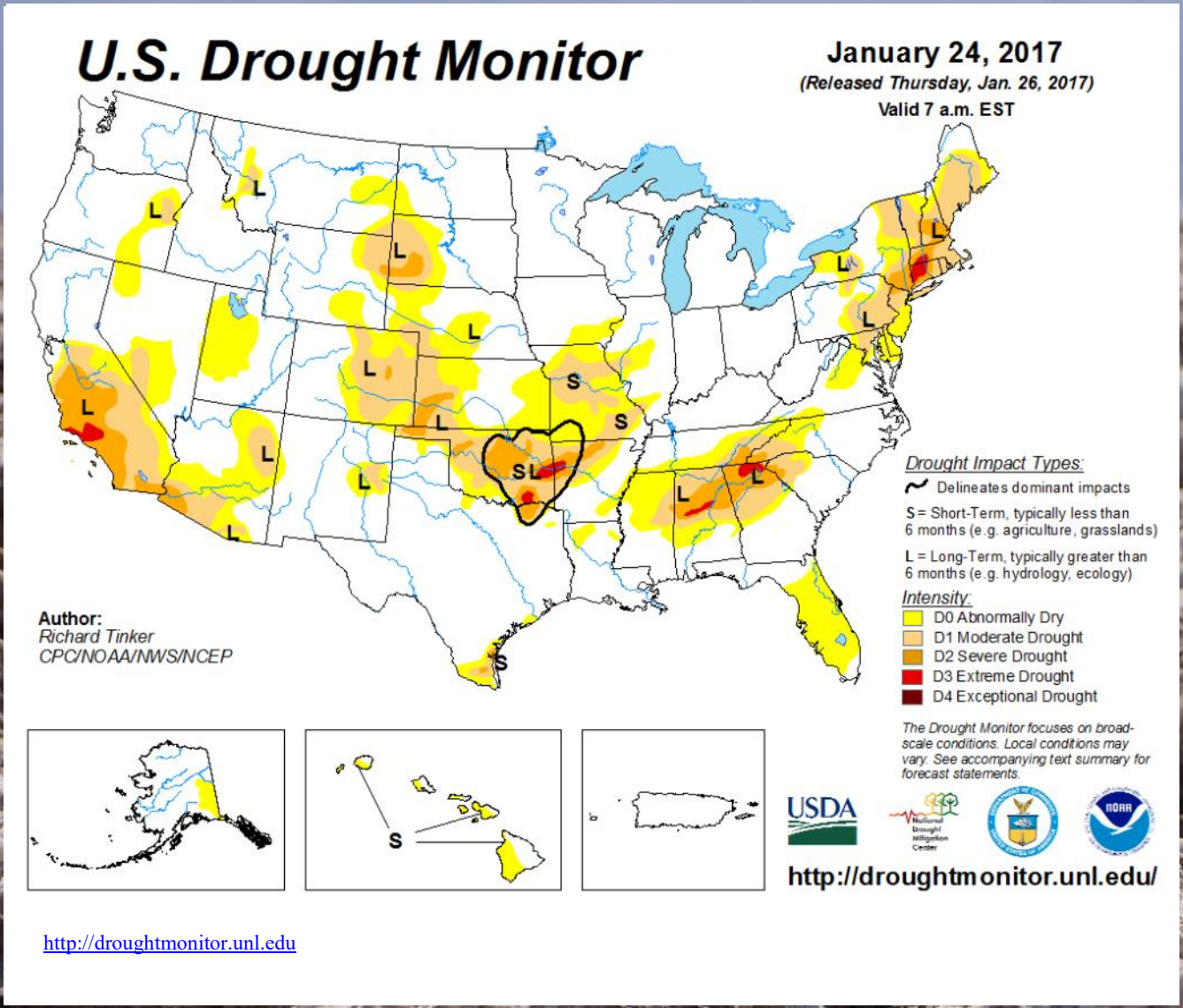
Estimated Population in Drought Areas: **3,426,240**

Intensity:

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

http://droughtmonitor.unl.edu/Home/StateDroughtMonitor.aspx?OK

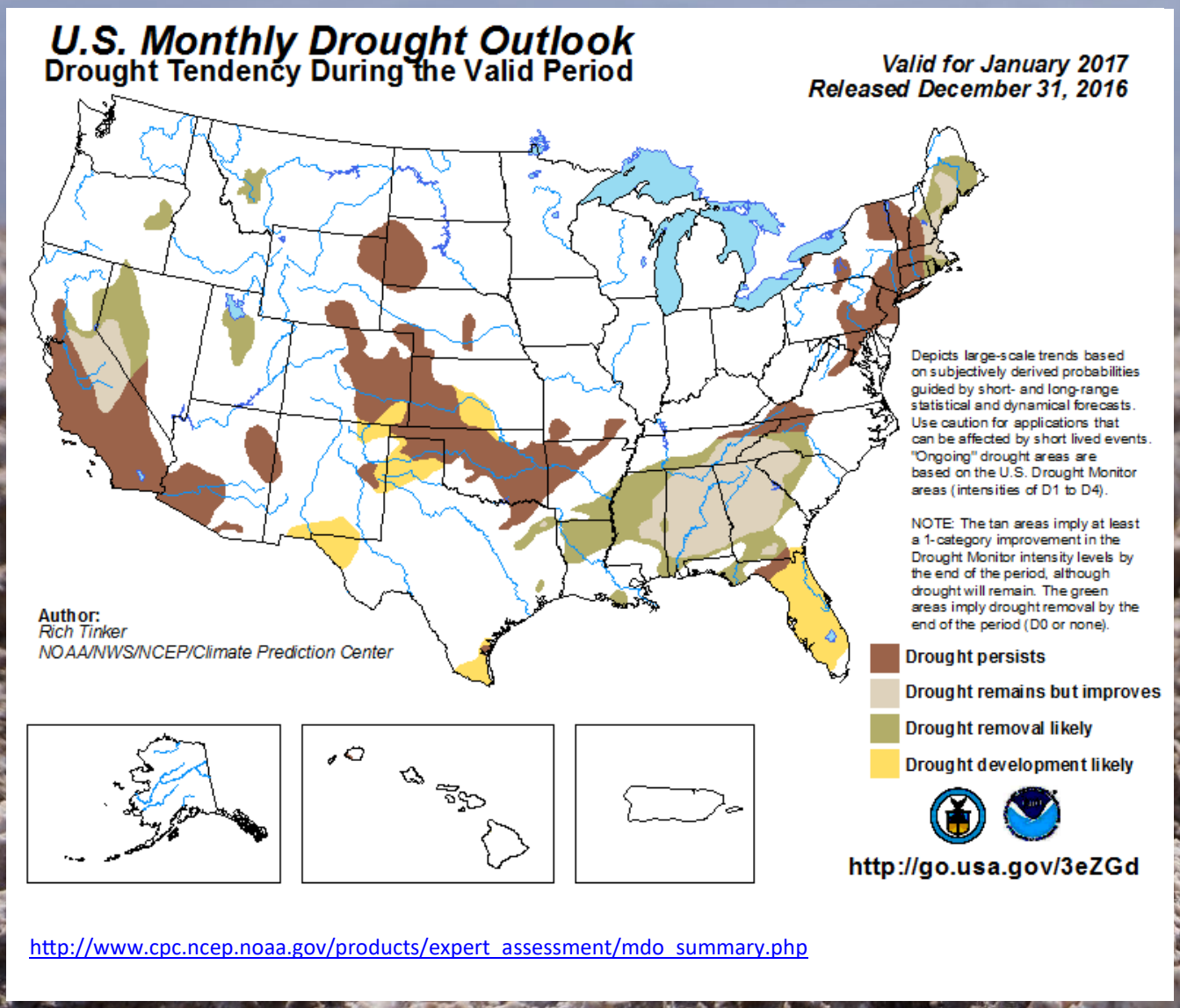
U.S. Drought Monitor Nationwide Map



http://droughtmonitor.unl.edu

U.S. Drought Monitor

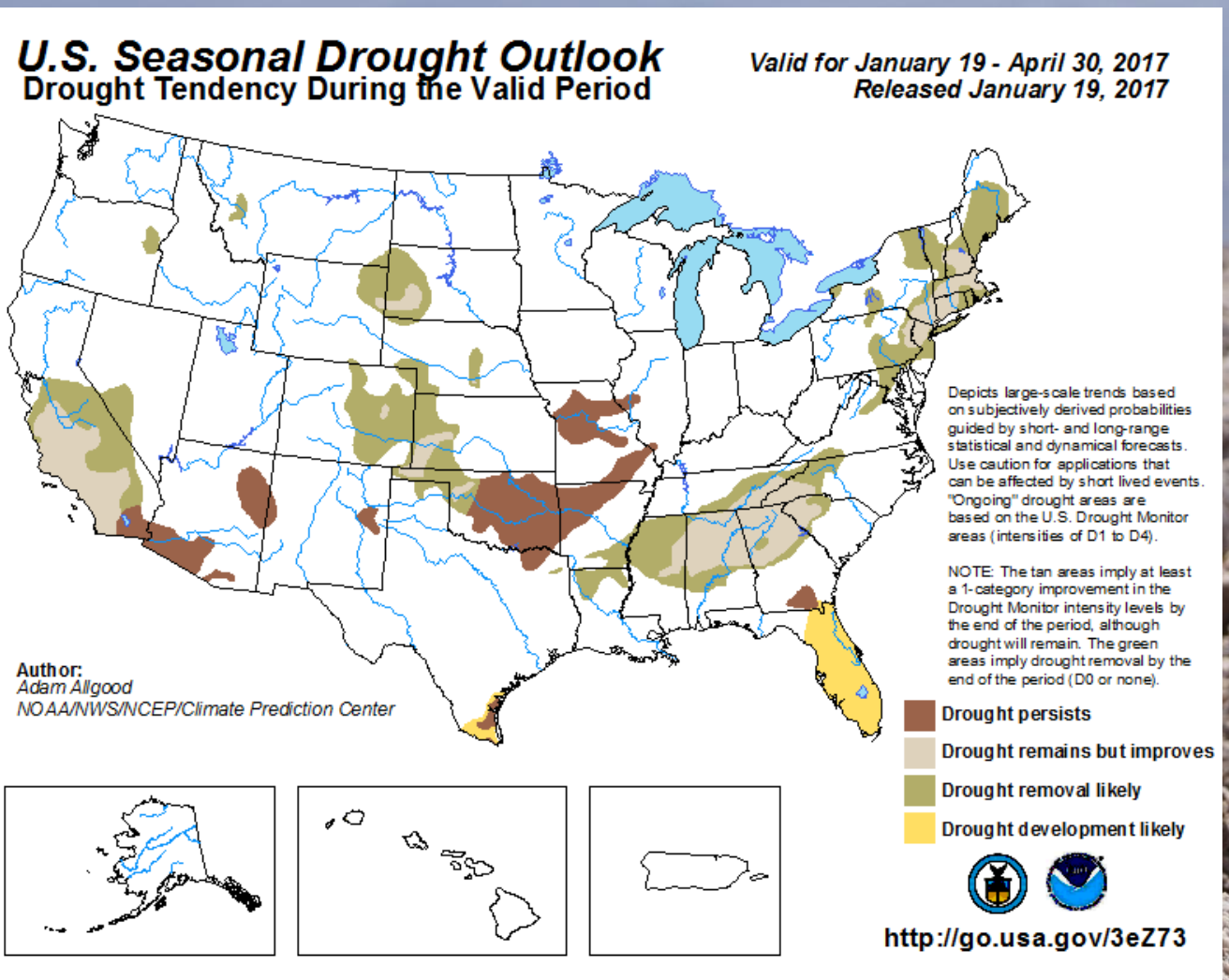
Monthly Drought Outlook Map



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

U.S. Drought Monitor

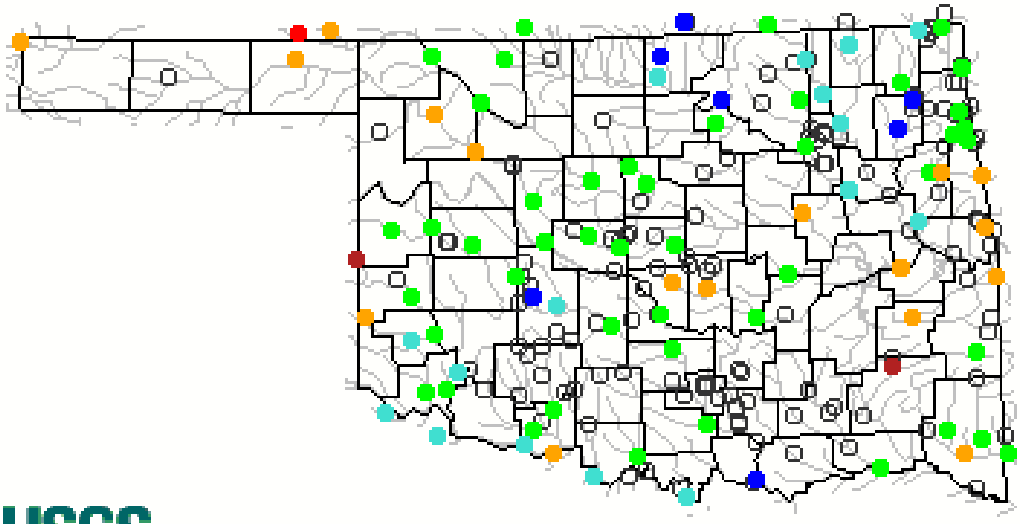
Seasonal Drought Outlook Map



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

USGS Streamflow Data

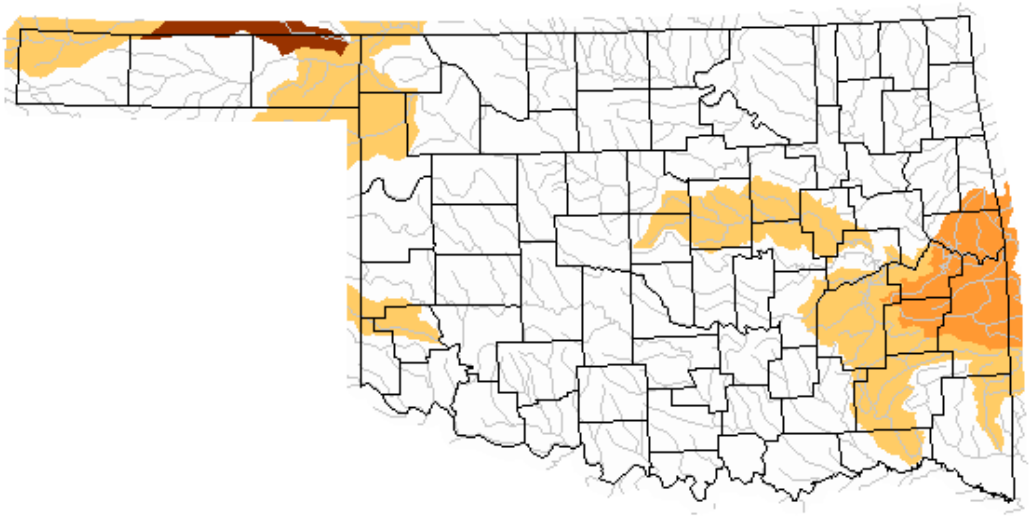
Friday, January 27, 2017 11:30ET



USGS

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

Thursday, January 26, 2017



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

http://ok.water.usgs.gov/drought/

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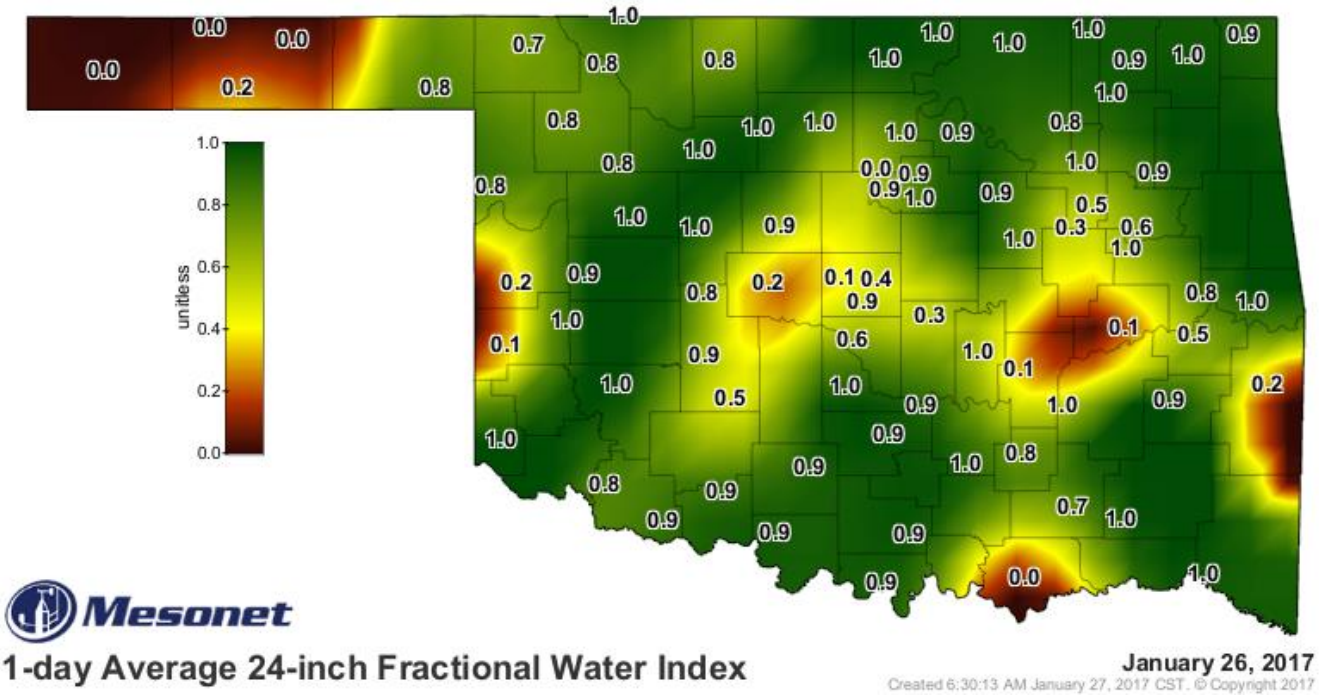
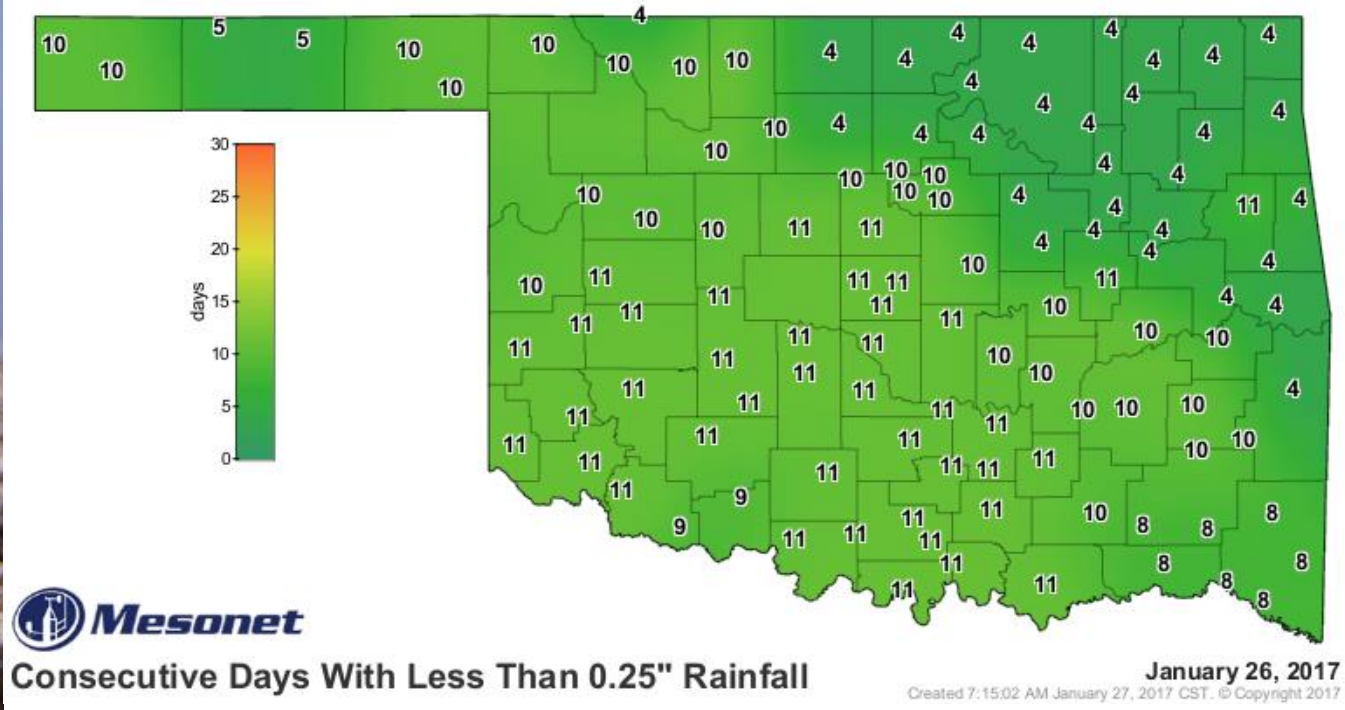
SOIL MOISTURE MAP



- 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

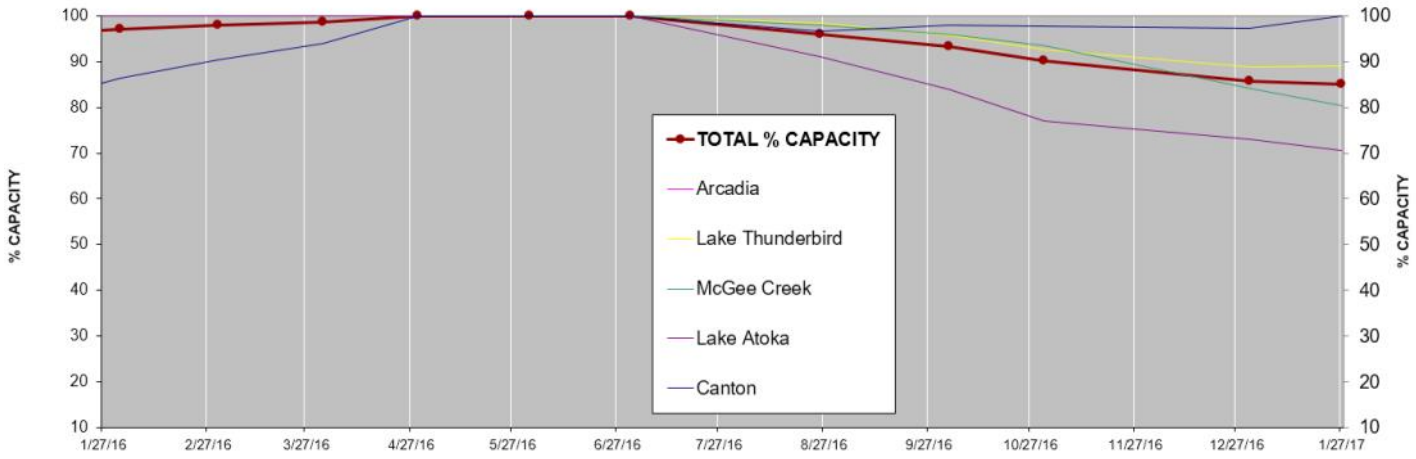
http://www.mesonet.org/index.php/weather/map/24-inch_fractional_water_index/soil_moisture

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.

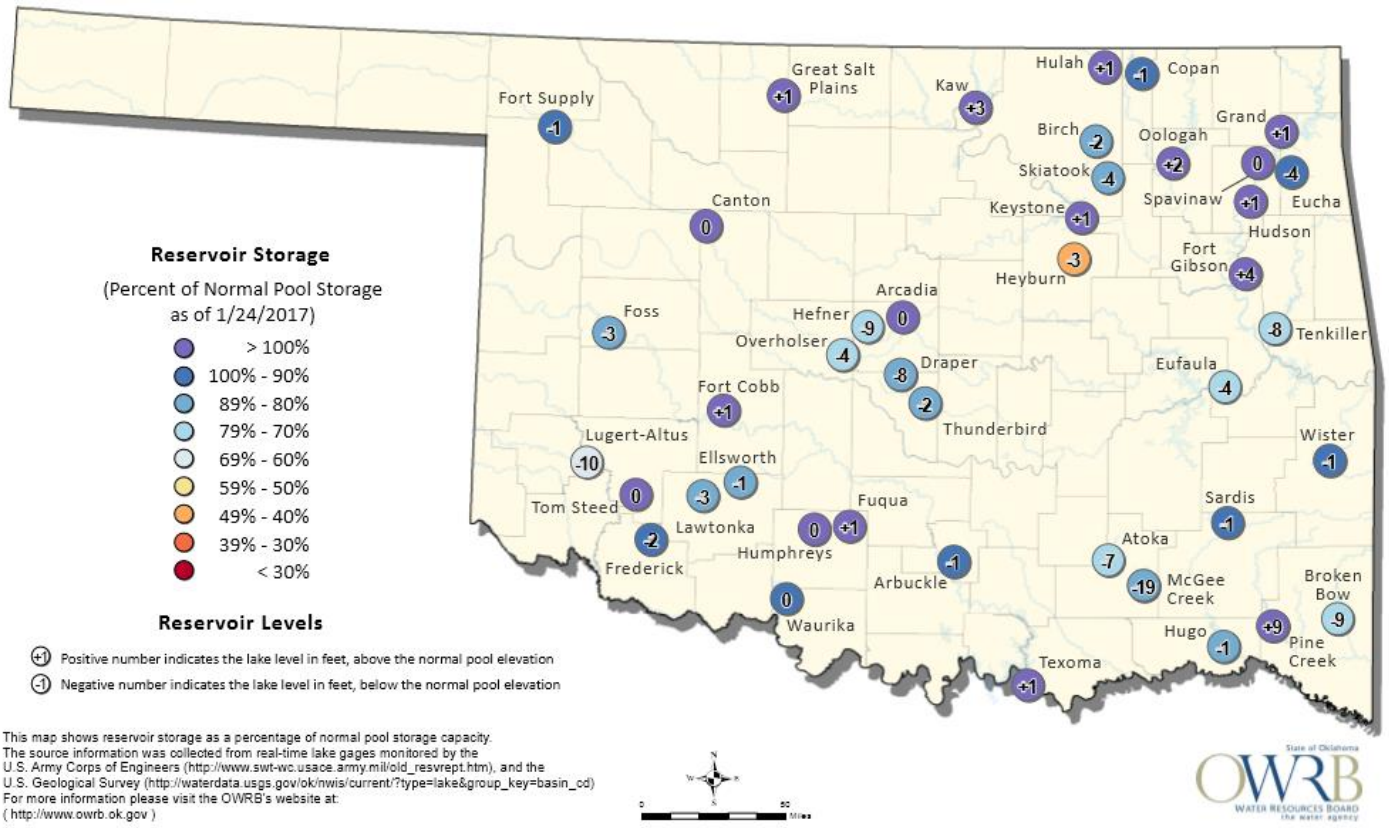
LAKE	% CAPACITY	% CHANGE FROM 12/31/2016
Canton	100.0	2.6
Arcadia	100.0	2.4
Lake Thunderbird	89.1	0.2
McGee Creek	80.3	-3.8
Lake Atoka	70.7	-2.3
TOTAL % CAPACITY	85.1	-0.8

http://www.swt-wc.usace.army.mil/old_resvrept.htm 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 1/24/2017



Reservoir Storage

(Percent of Normal Pool Storage as of 1/24/2017)

- > 100%
- 100% - 90%
- 89% - 80%
- 79% - 70%
- 69% - 60%
- 59% - 50%
- 49% - 40%
- 39% - 30%
- < 30%

Reservoir Levels

(+1) Positive number indicates the lake level in feet, above the normal pool elevation

(-1) Negative number indicates the lake level in feet, below the normal pool elevation

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/old_resvrept.htm), 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)

State of Oklahoma OWRB Water Resources Board the water agency

http://www.owrb.ok.gov/maps/pdf_map/Monthly%20Reservoir%20Storage.pdf

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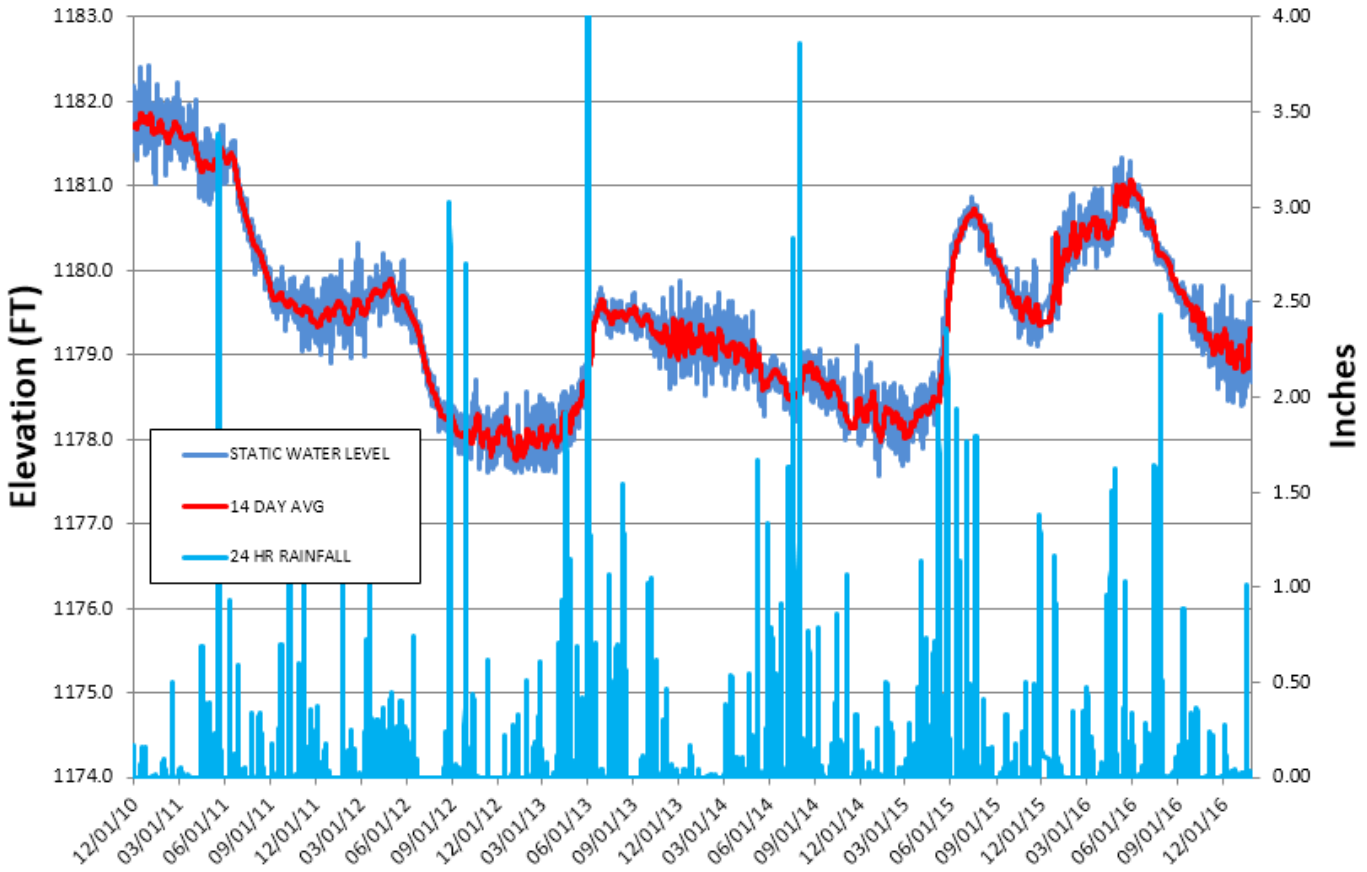
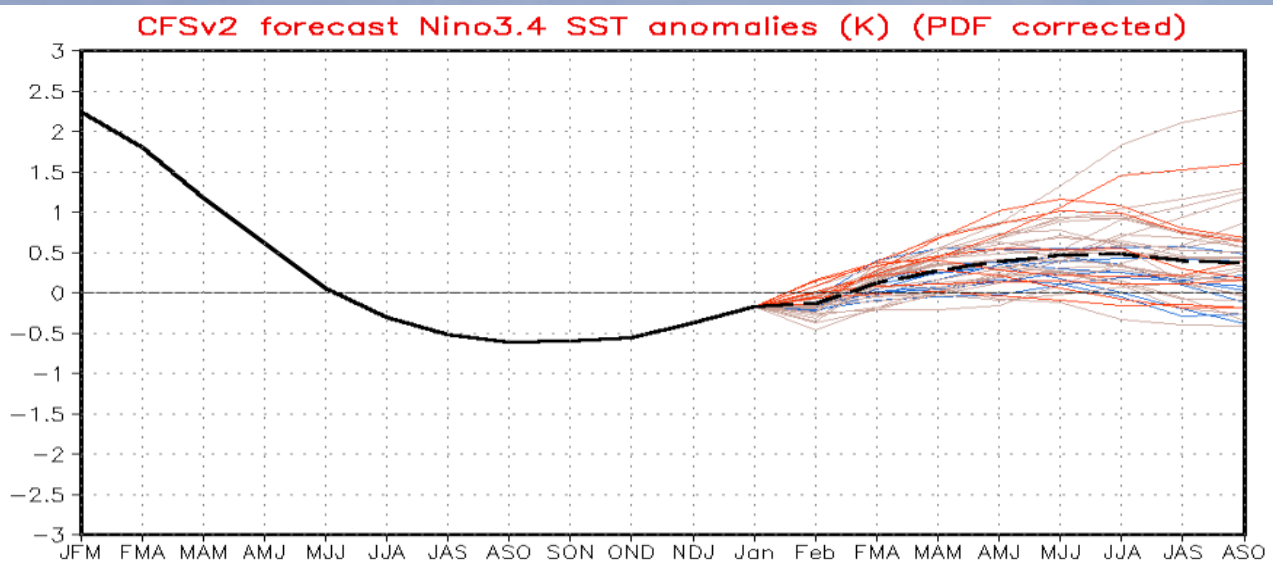
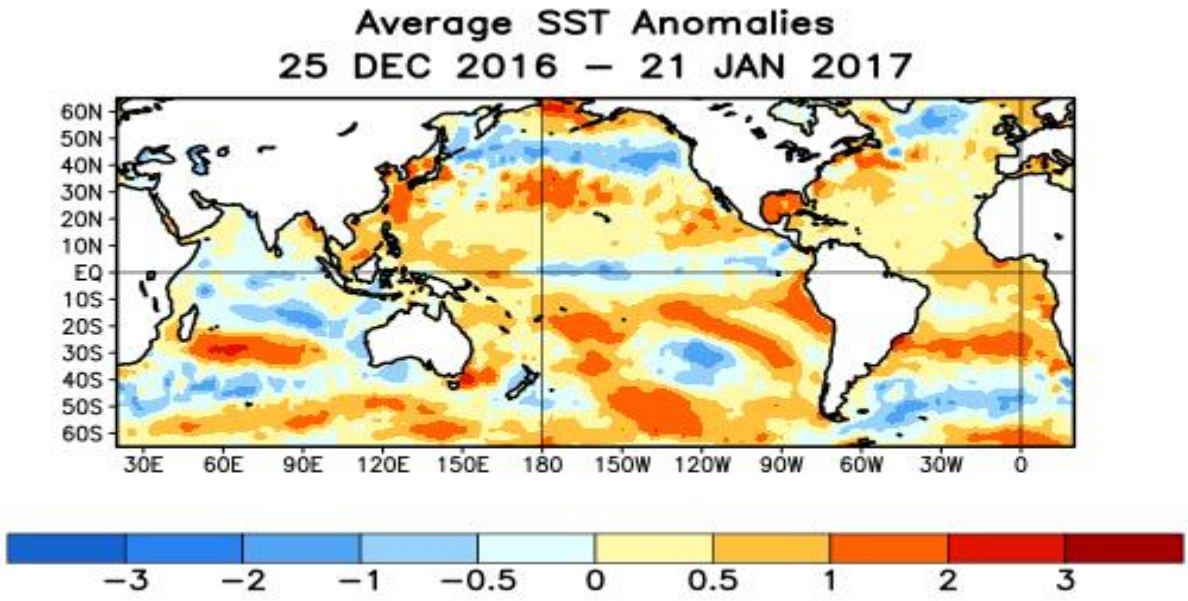
Groundwater Levels
Spencer Mesonet Station



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

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 near-to-below average in the central and east-central Pacific Ocean. They are above-average in the far eastern Pacific Ocean.
- A transition to ENSO-neutral is expected to occur by February 2017, with ENSO-neutral then continuing through the first half of 2017.

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

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