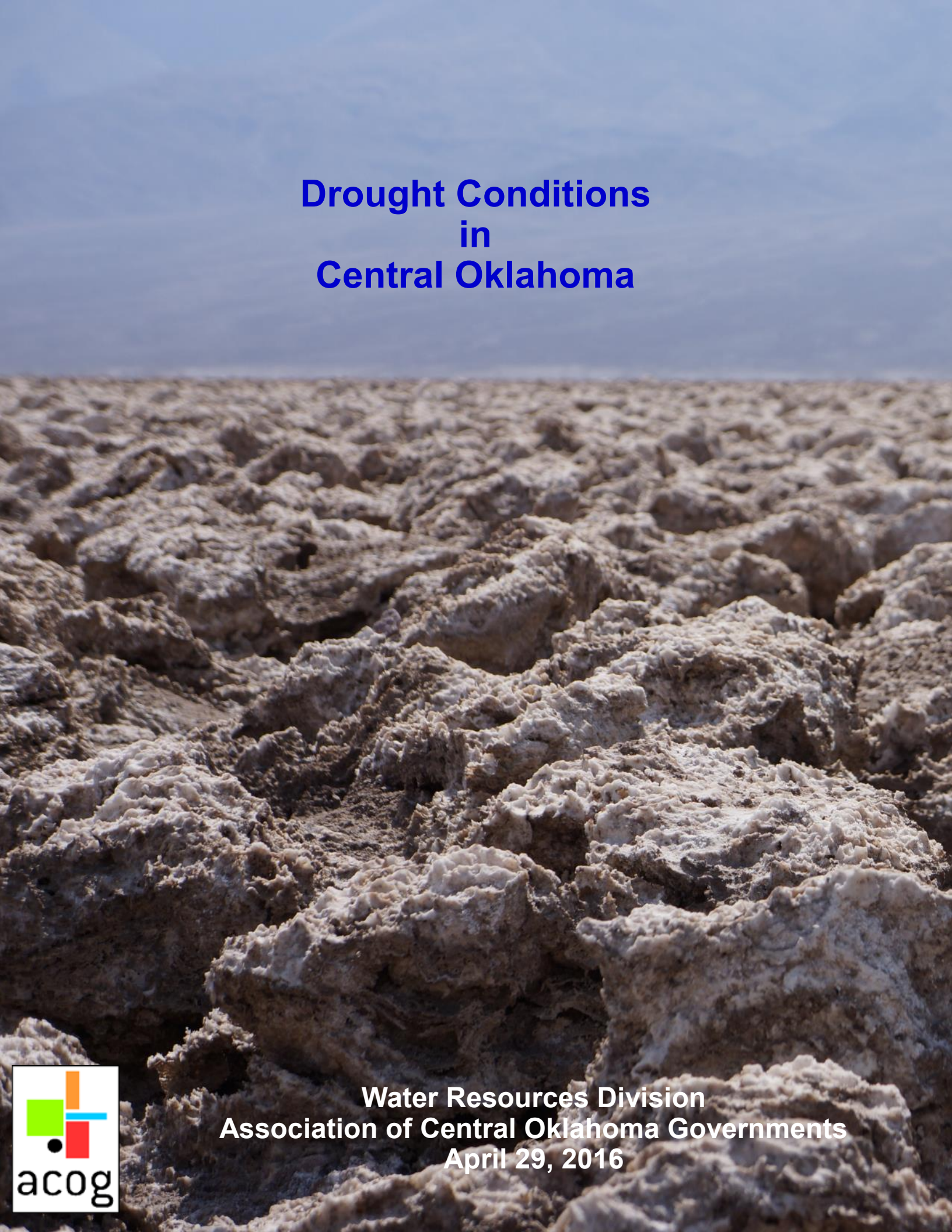
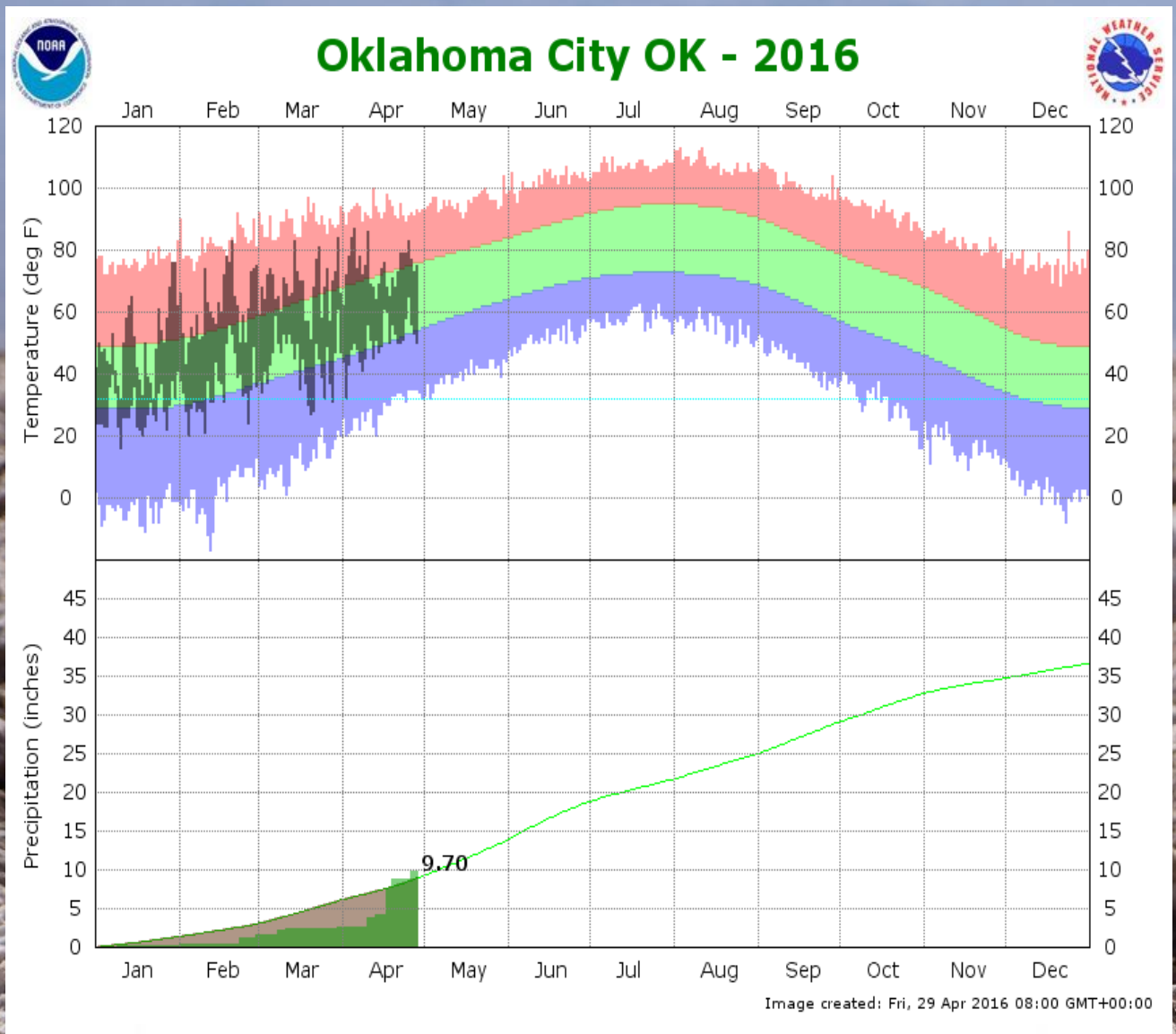
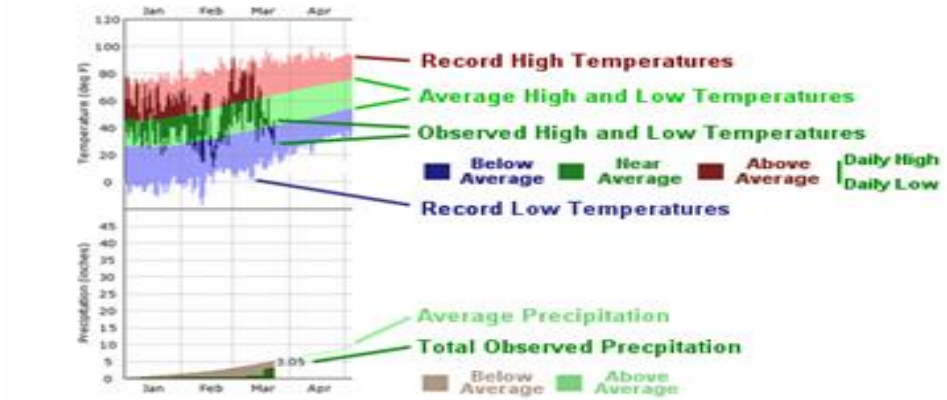
Drought Conditions in Central Oklahoma



Water Resources Division
Association of Central Oklahoma Governments
April 29, 2016

Temperature and Precipitation Plot for Oklahoma City, Oklahoma for 2016





http://www.srh.noaa.gov/oun/climate/graphdisplay.php?city=okc&year=2016

Rainfall Summaries by Oklahoma Climate Division

Calendar Year 01-Jan-2016 though 28-Apr-2016

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	6.82"	+0.27"	104%	32nd wettest	0.66" (1996)	13.07" (1997)
Central	9.48"	+0.03"	100%	35th wettest	1.40" (1936)	20.88" (1990)
S. Central	12.80"	+1.62"	114%	21st wettest	3.42" (1936)	27.44" (1990)
Statewide	9.12"	-0.27"	97%	41st wettest	2.38" (1936)	18.72" (1990)

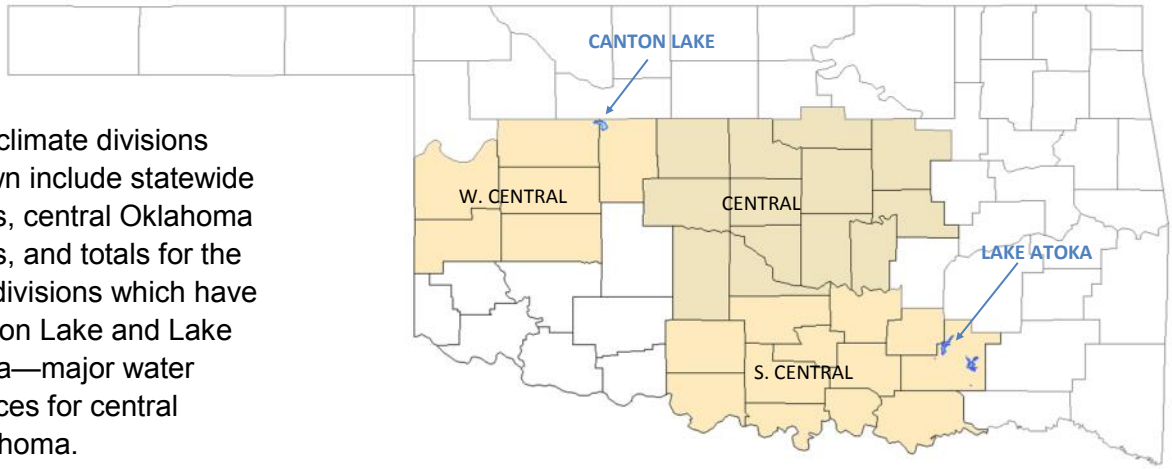
Water Year: 01-Oct-2015 through 28-Apr-2016

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	14.81"	+2.72"	122%	13th wettest	2.94" (1995-96)	20.88" (1998-99)
Central	22.72"	+5.16"	129%	10th wettest	6.61" (2005-06)	31.69" (1984-85)
S. Central	33.81"	+12.94"	162%	1st wettest	6.33" (1955-56)	33.66" (1984-85)
Statewide	24.40"	+6.93"	140%	5th wettest	7.61" (1955-56)	27.33" (1972-73)

Spring: 01-Mar-2016 through 28-Apr-2016

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	5.19"	+0.77"	117%	30th wettest	0.41" (1996)	10.25" (1973)
Central	7.35"	+1.22"	120%	23rd wettest	0.72" (1936)	14.66" (1990)
S. Central	10.32"	+3.58"	153%	12th wettest	1.02" (1956)	18.53" (1990)
Statewide	7.28"	+1.36"	123%	18th wettest	1.51" (1936)	12.27" (1973)

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.

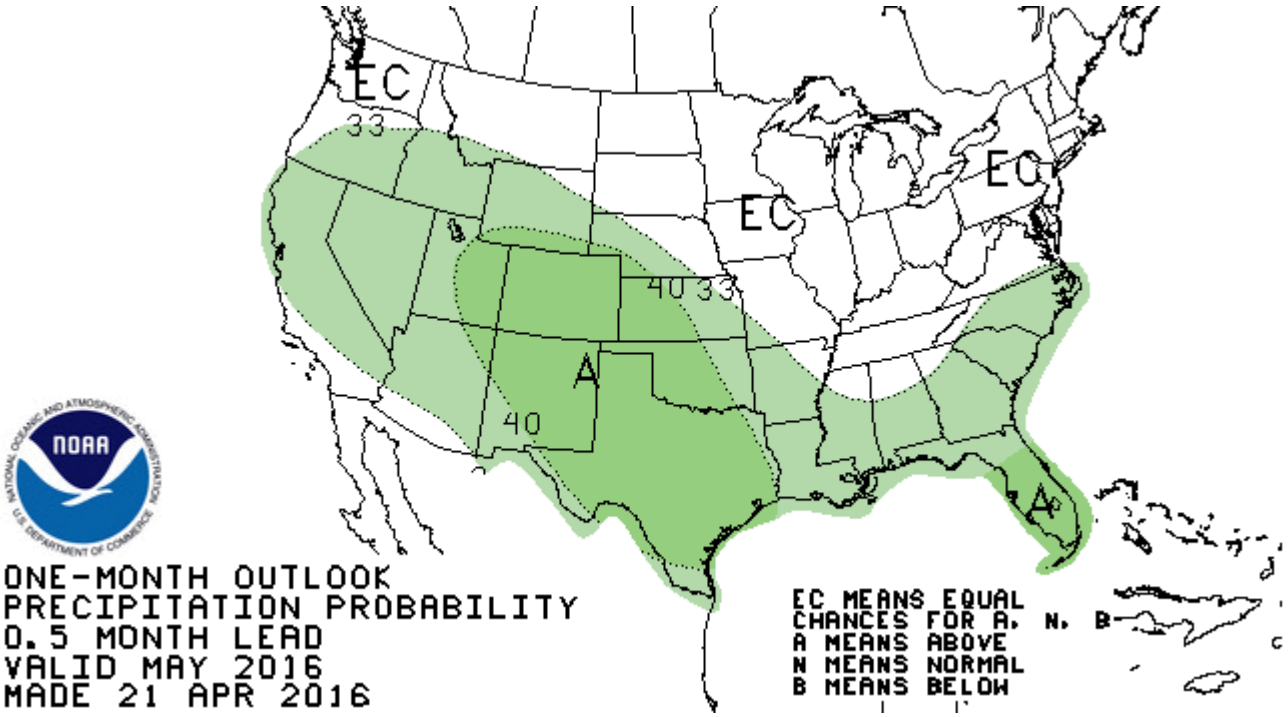


http://climate.ok.gov/index.php/drought/last_30_days/

OKLAHOMA CLIMATOLOGICAL SURVEY

acog

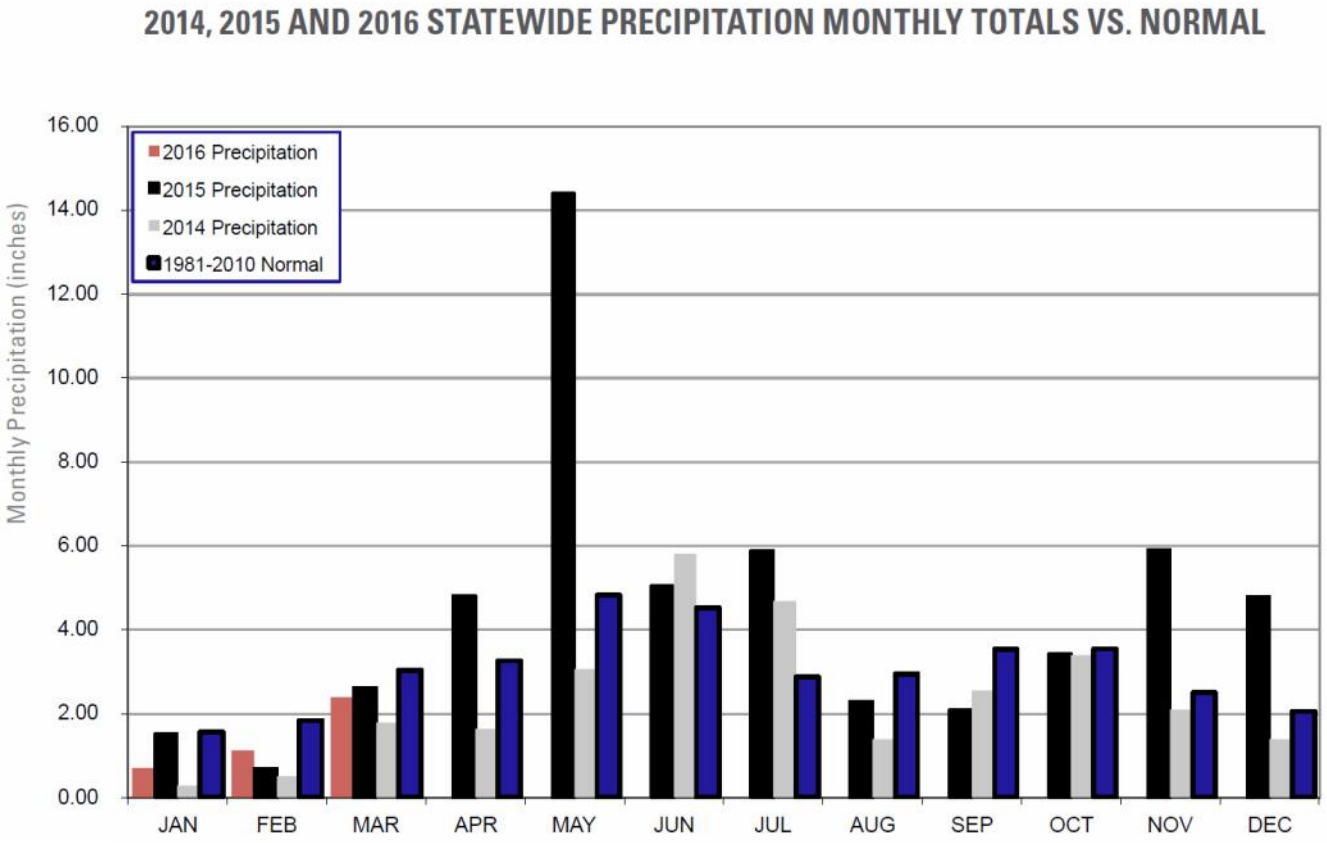
NOAA One-Month Outlook



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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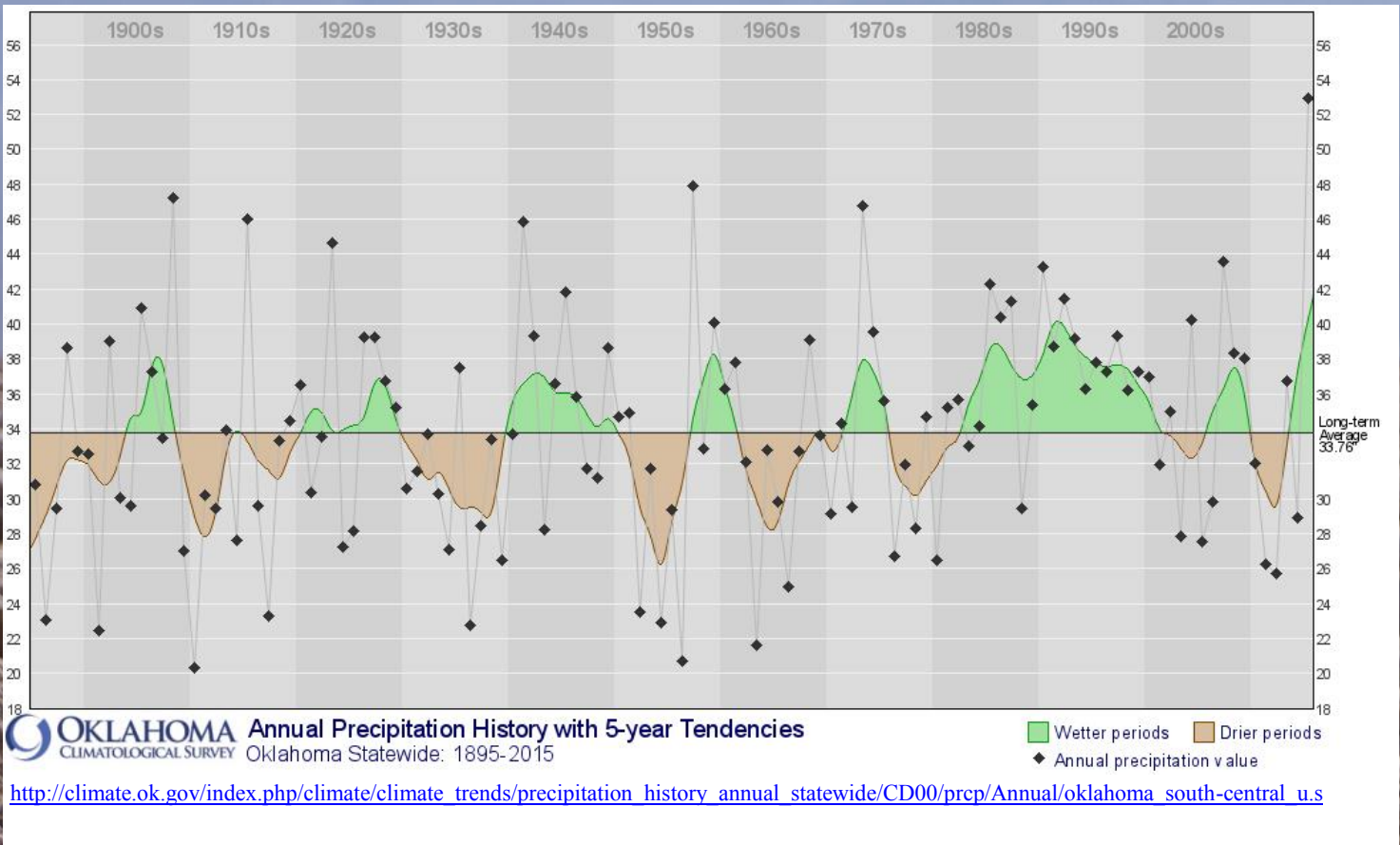
Annual Precipitation History with 5-Year Tendencies

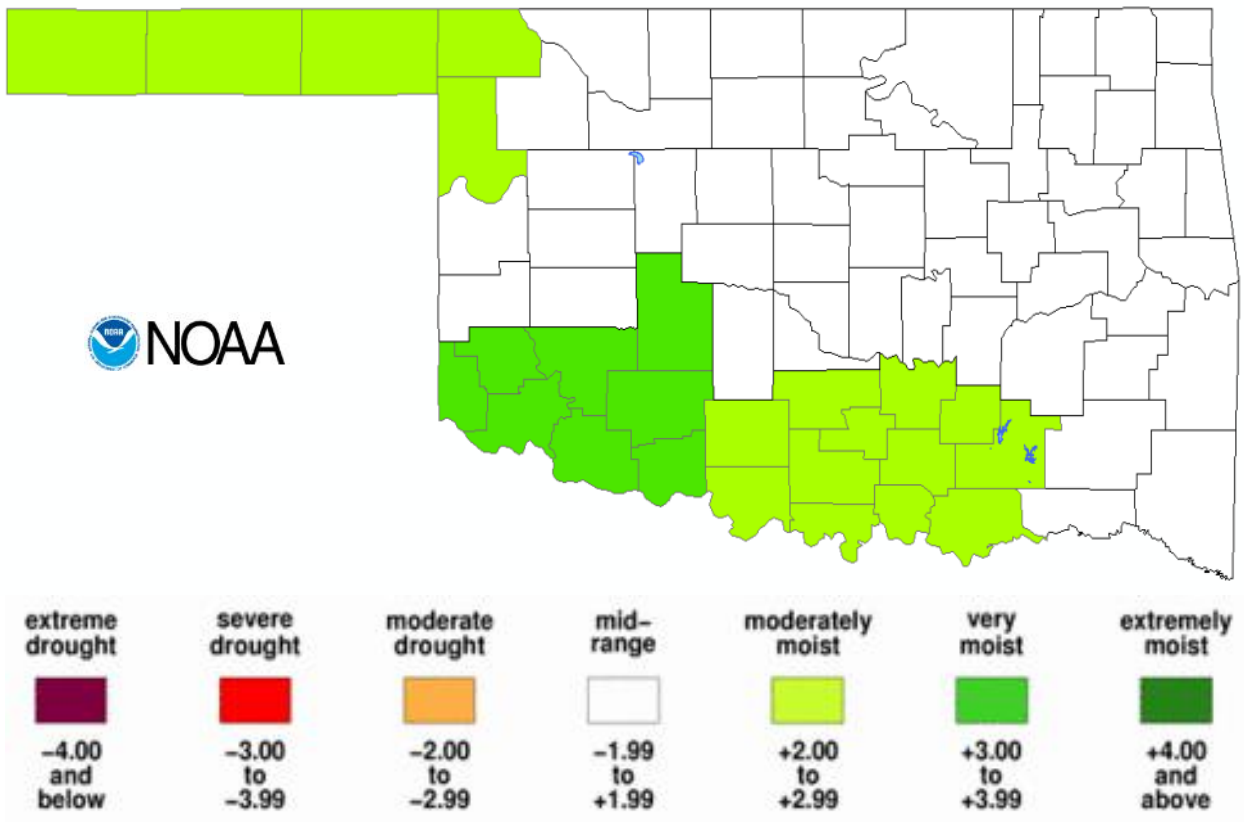


http://climate.ok.gov/index.php/climate/climate_trends/precipitation_history_annual_statewide/CD00/prcp/Annual/oklahoma_south-central_u.s

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.

Drought Severity Index by Climate Division

Palmer Weekly Value for Period MAR 26 2016



http://www.ncdc.noaa.gov/temp-and-precip/drought/weekly-palmers.php?year=2014&month=04&day=12

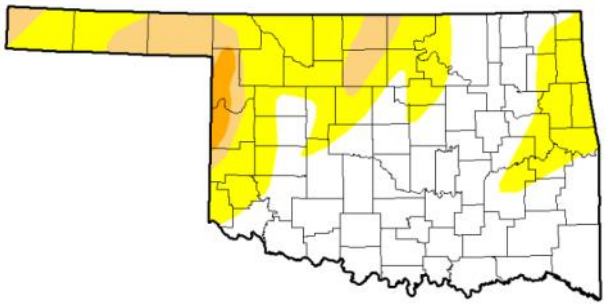
The Palmer Drought Index (PDI) maps show long-term (cumulative) meteorological drought and wet conditions. The maps show how the geographical pattern of the long-term (meteorological) moisture conditions has changed over the last 12 months. On these maps, the red shading denotes drought conditions while 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 26 APR 2016

Week	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current 2016-04-26	56.23	43.77	10.30	1.65	0.00	0.00
Last Week 2016-04-19	56.23	43.77	10.25	1.65	0.00	0.00
3 Months Ago 2016-01-26	100.00	0.00	0.00	0.00	0.00	0.00
Start of Calendar Year 2015-12-29	100.00	0.00	0.00	0.00	0.00	0.00
Start of Water Year 2015-09-29	52.60	47.40	16.79	6.37	0.97	0.00
One Year Ago 2015-04-28	30.08	69.92	59.29	47.51	24.34	4.13



U.S. Drought Monitor

Oklahoma

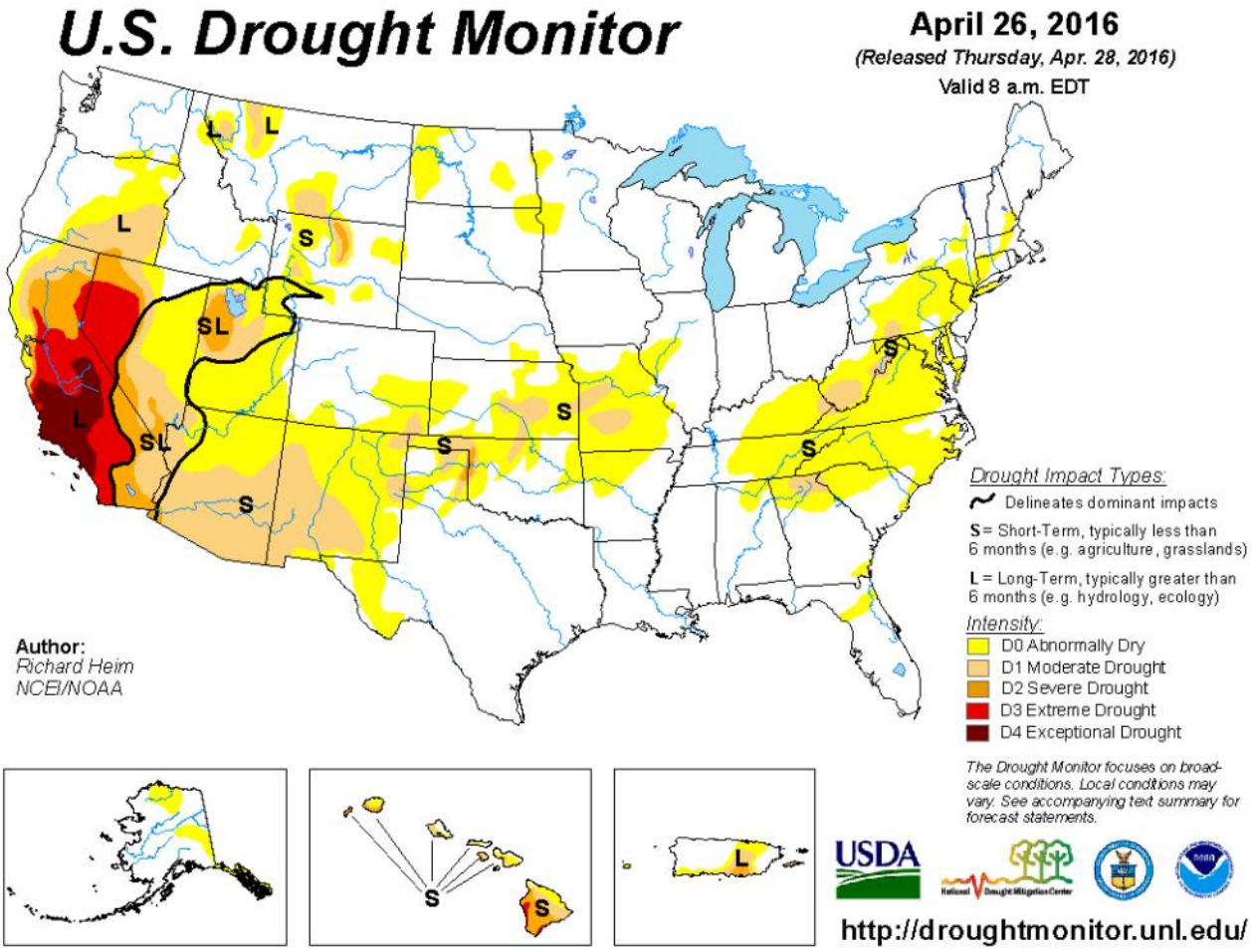
Estimated Population in Drought Areas: **80,549**

Intensity:

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

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

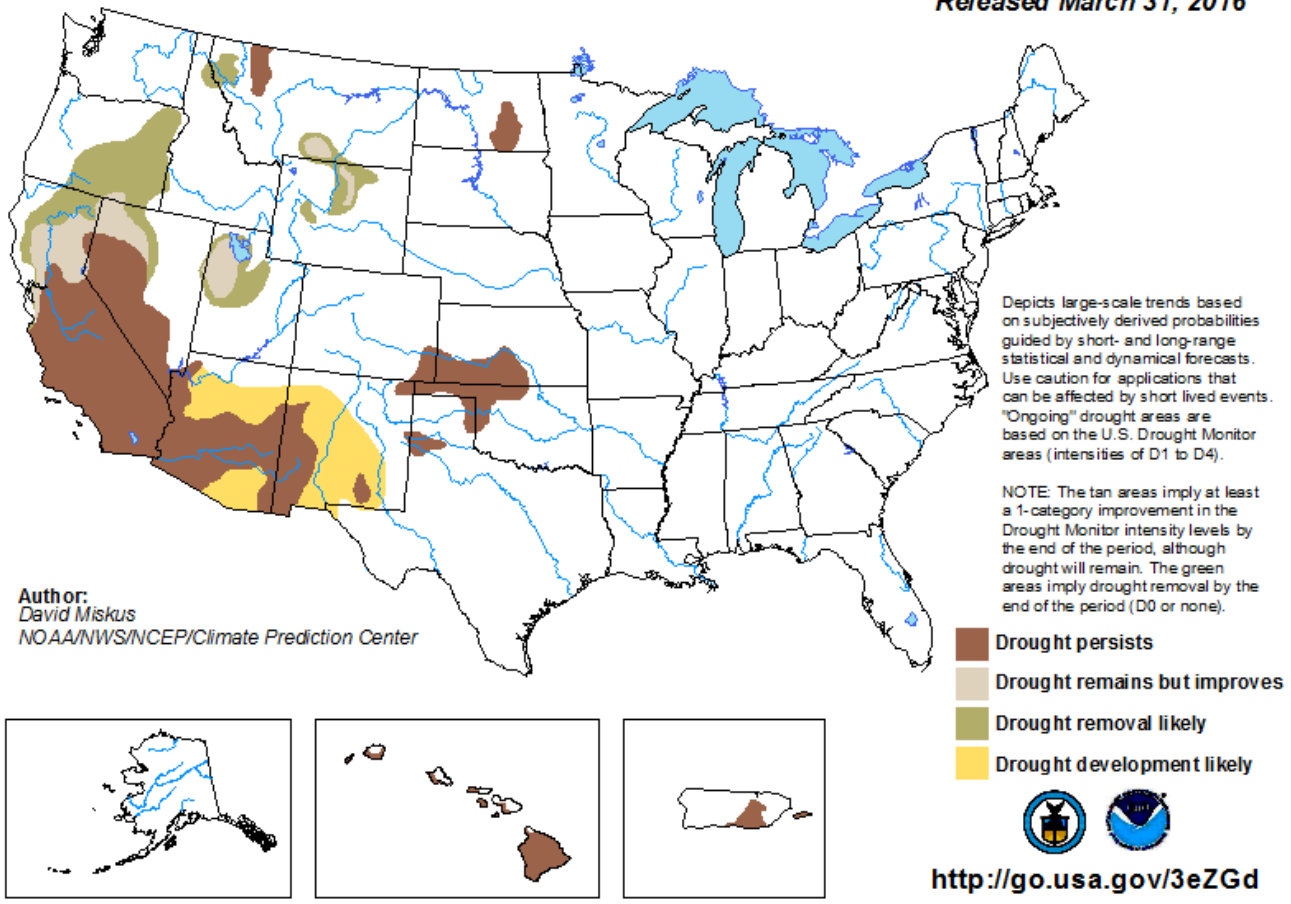
U.S. Drought Monitor Nationwide Map



http://droughtmonitor.unl.edu

U.S. Drought Monitor

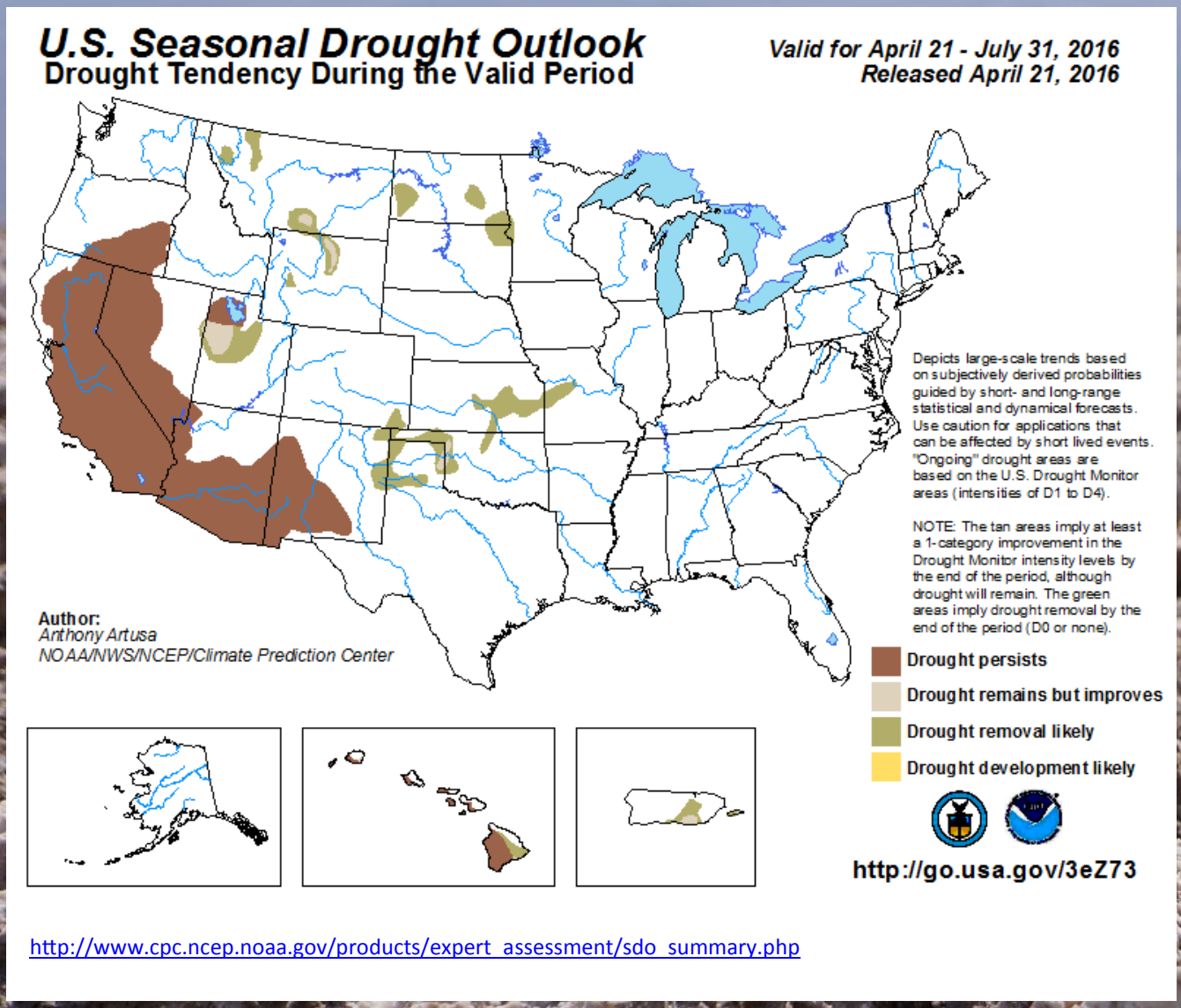
Monthly Drought Outlook Map



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

U.S. Drought Monitor

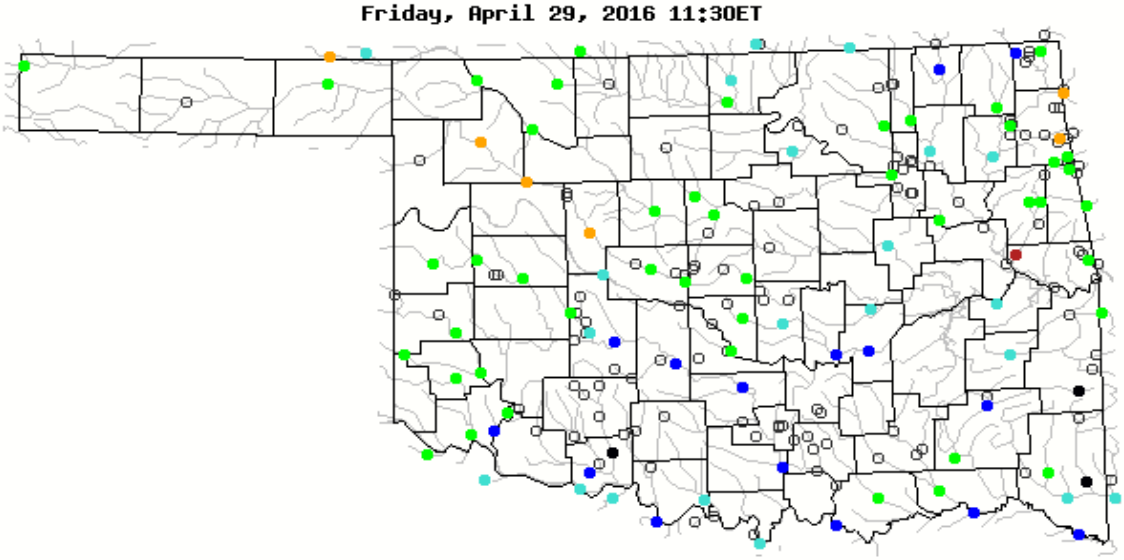
Seasonal Drought Outlook Map



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

USGS Streamflow Data

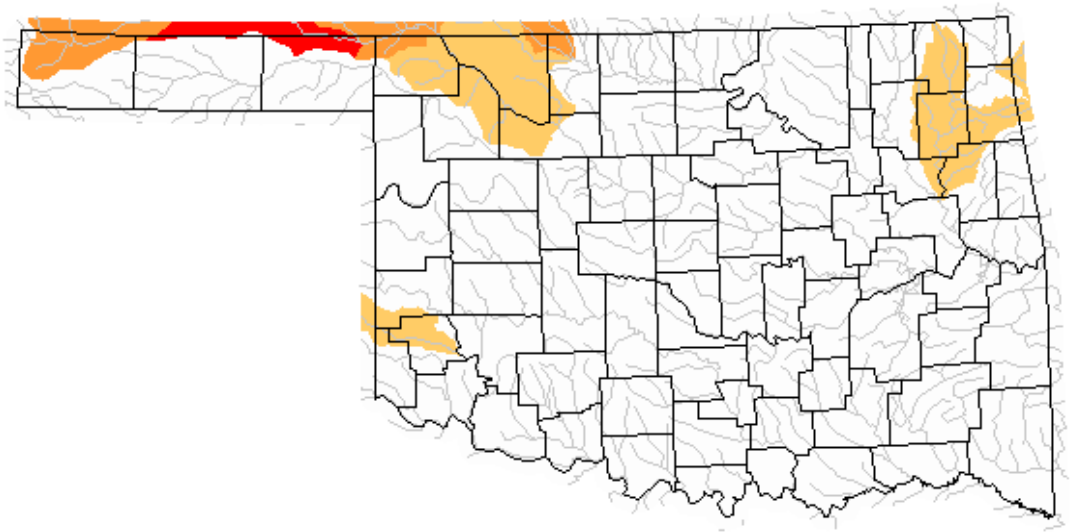
Friday, April 29, 2016 11:30ET



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

Monday, February 29, 2016



USGS

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	

http://waterwatch.usgs.gov/new/?m=real&r=ok&w=map

http://waterwatch.usgs.gov/new/index.php?m=dryw&r=ok

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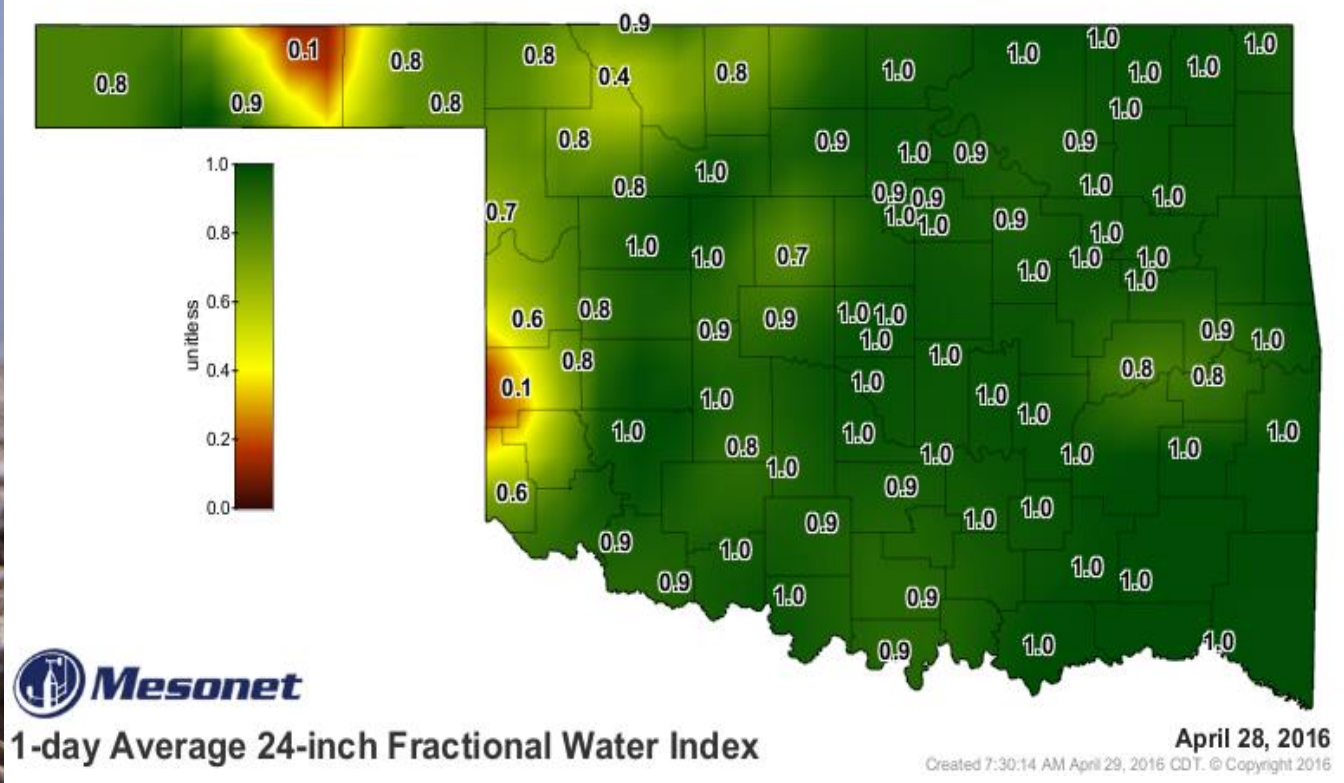
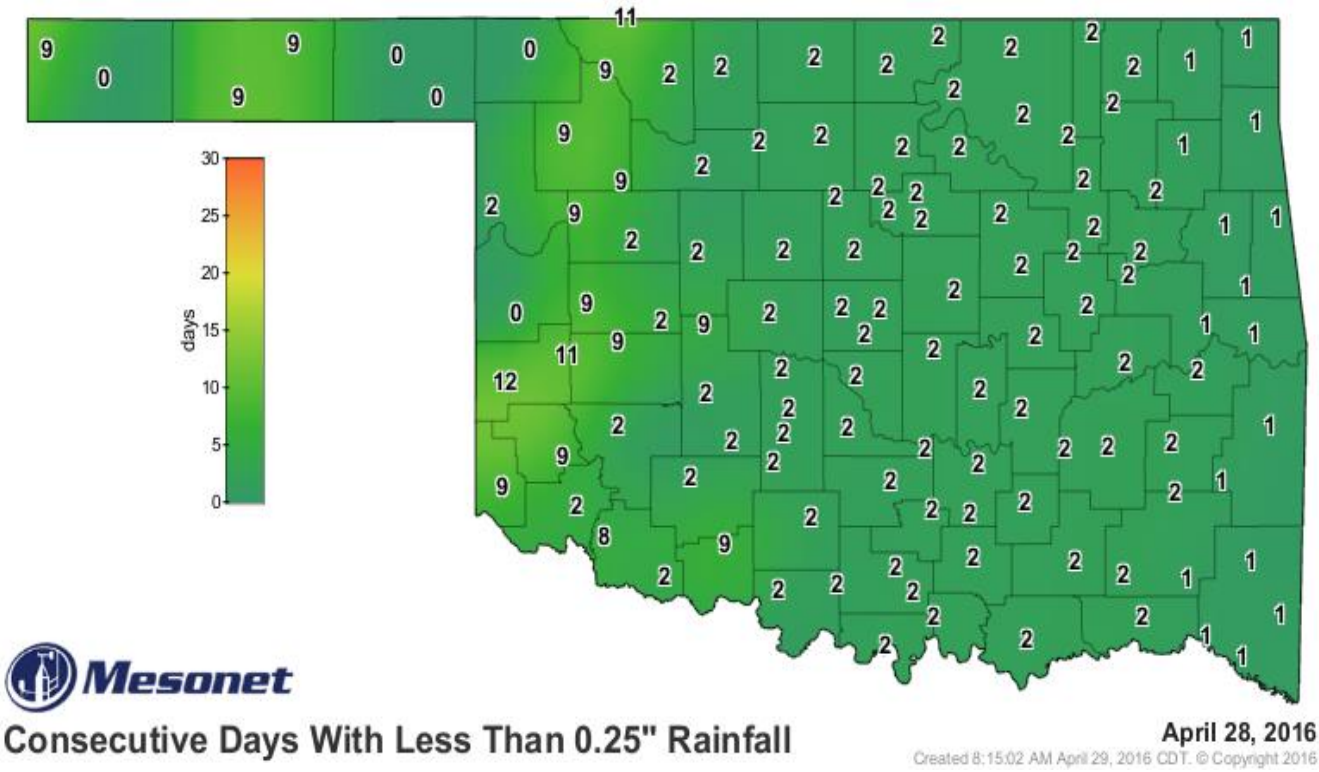
SOIL MOISTURE MAP



- 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

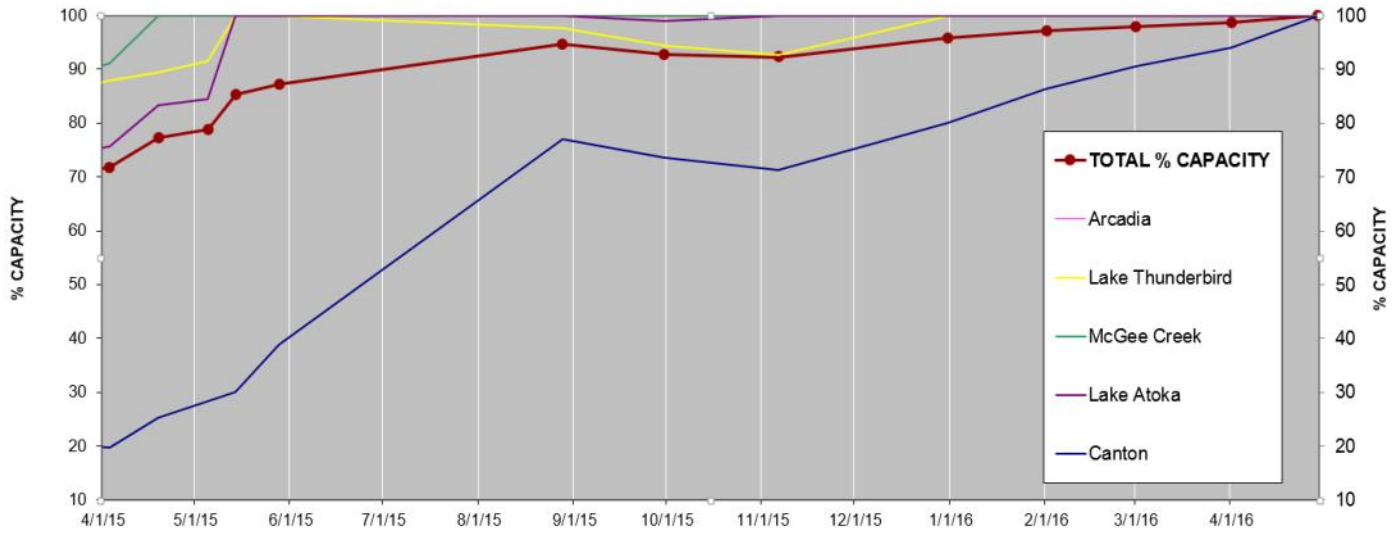
http://www.mesonet.org/index.php/weather/map/24-inch_fractional_water_index/soil_moisture

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.

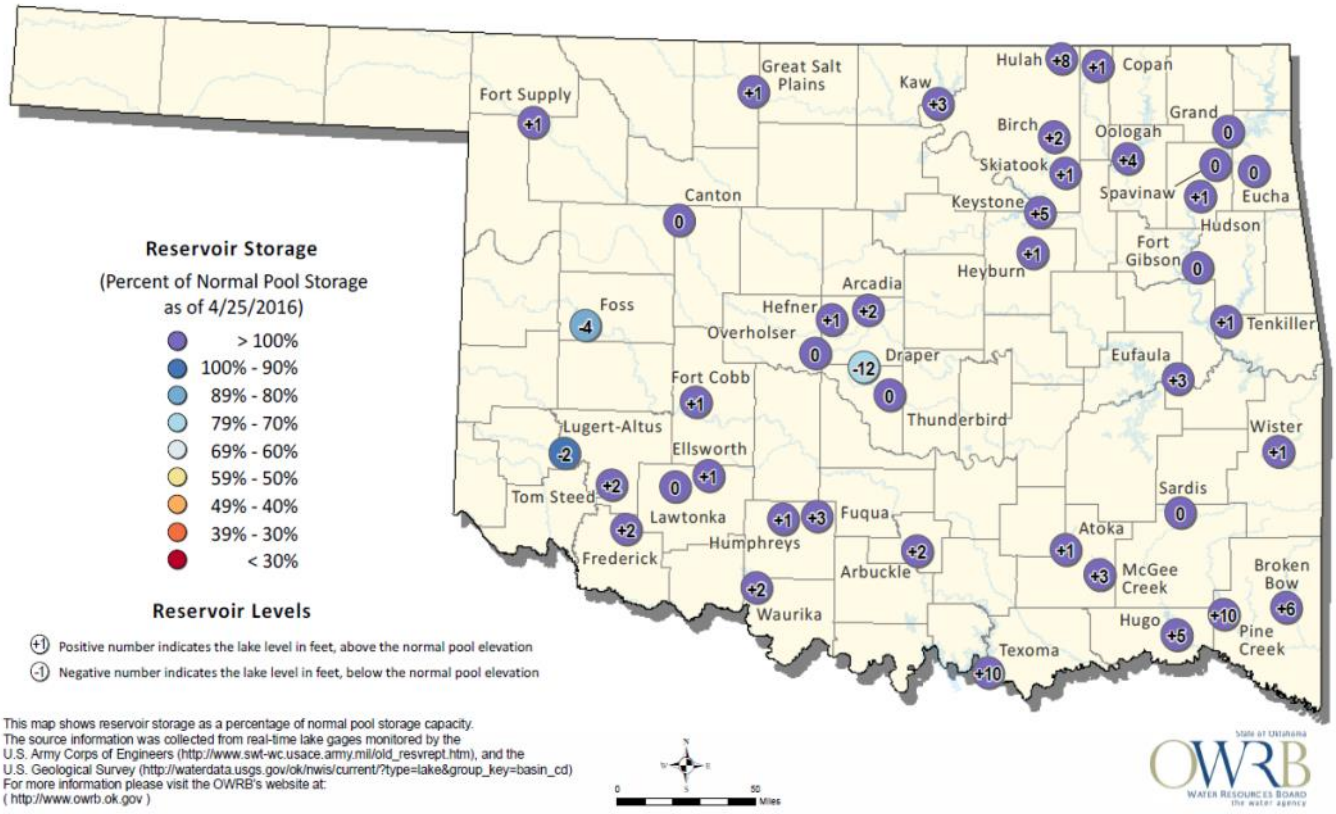
LAKE	% CAPACITY	% CHANGE FROM 4/1/2016
Canton	100.0	6.0
Arcadia	100.0	0.0
Lake Thunderbird	100.0	0.0
McGee Creek	100.0	0.0
Lake Atoka	100.0	0.0
TOTAL % CAPACITY	100.0	1.3

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.

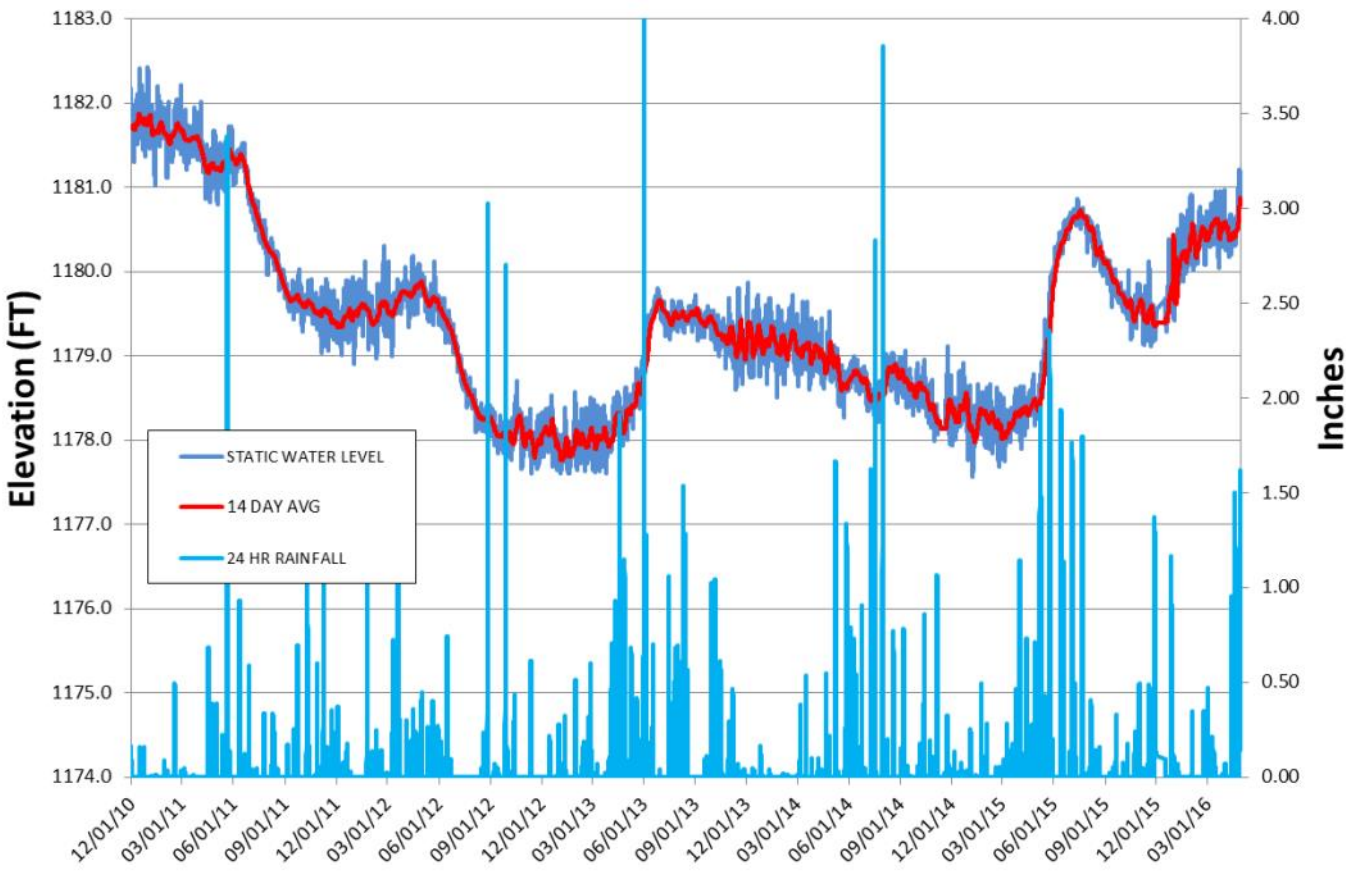
Oklahoma Surface Water Resources

Reservoir Levels and Storage as of 4/25/2016



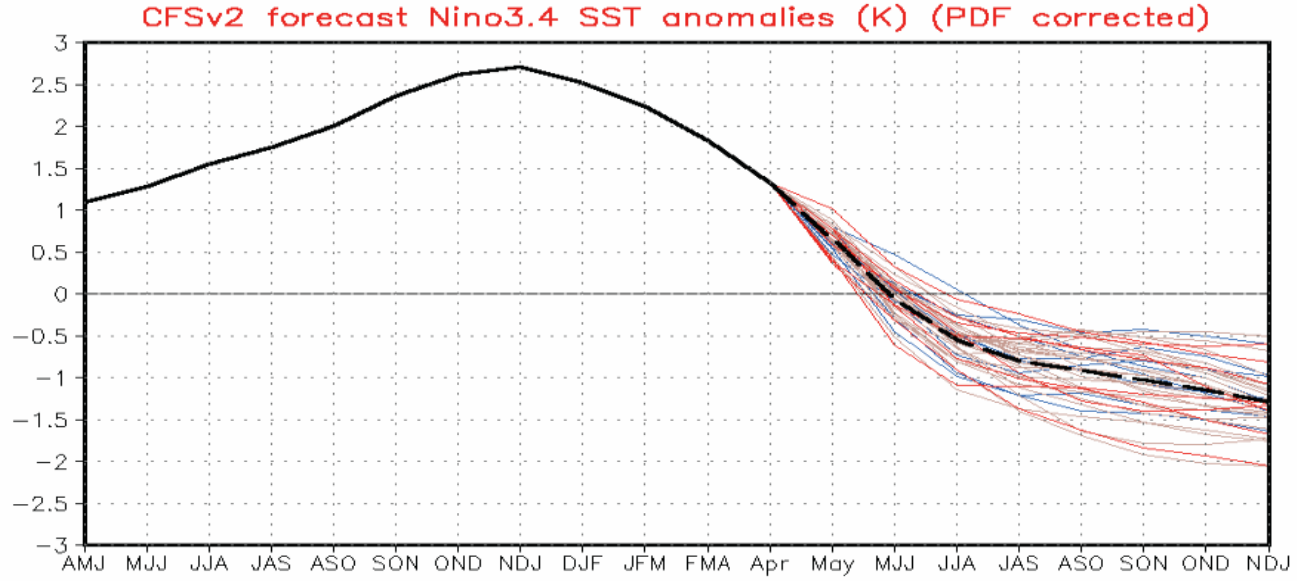
http://www.owrb.ok.gov/maps/pdf_map/Monthly%20Reservoir%20Storage.pdf

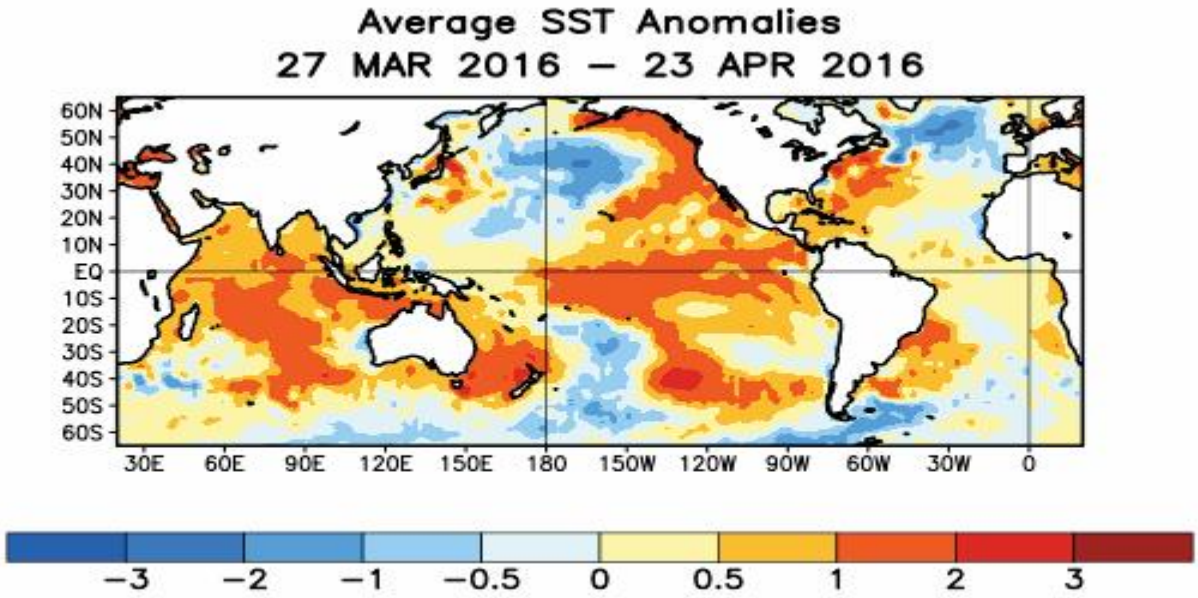
Groundwater Levels
Spencer Mesonet Station



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

ENSO Cycle
Recent Evolution, Current Status and Predictions





Summary

ENSO Alert System Status: El Niño Advisory

- A strong El Niño is present and is weakening.*
- Positive equatorial sea surface temperature (SST) anomalies continue across most of the Pacific Ocean.
- A transition to ENSO-neutral is likely during late Northern Hemisphere spring or early summer 2016, with an increasing chance of La Niña during the second half of the year.

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

acog