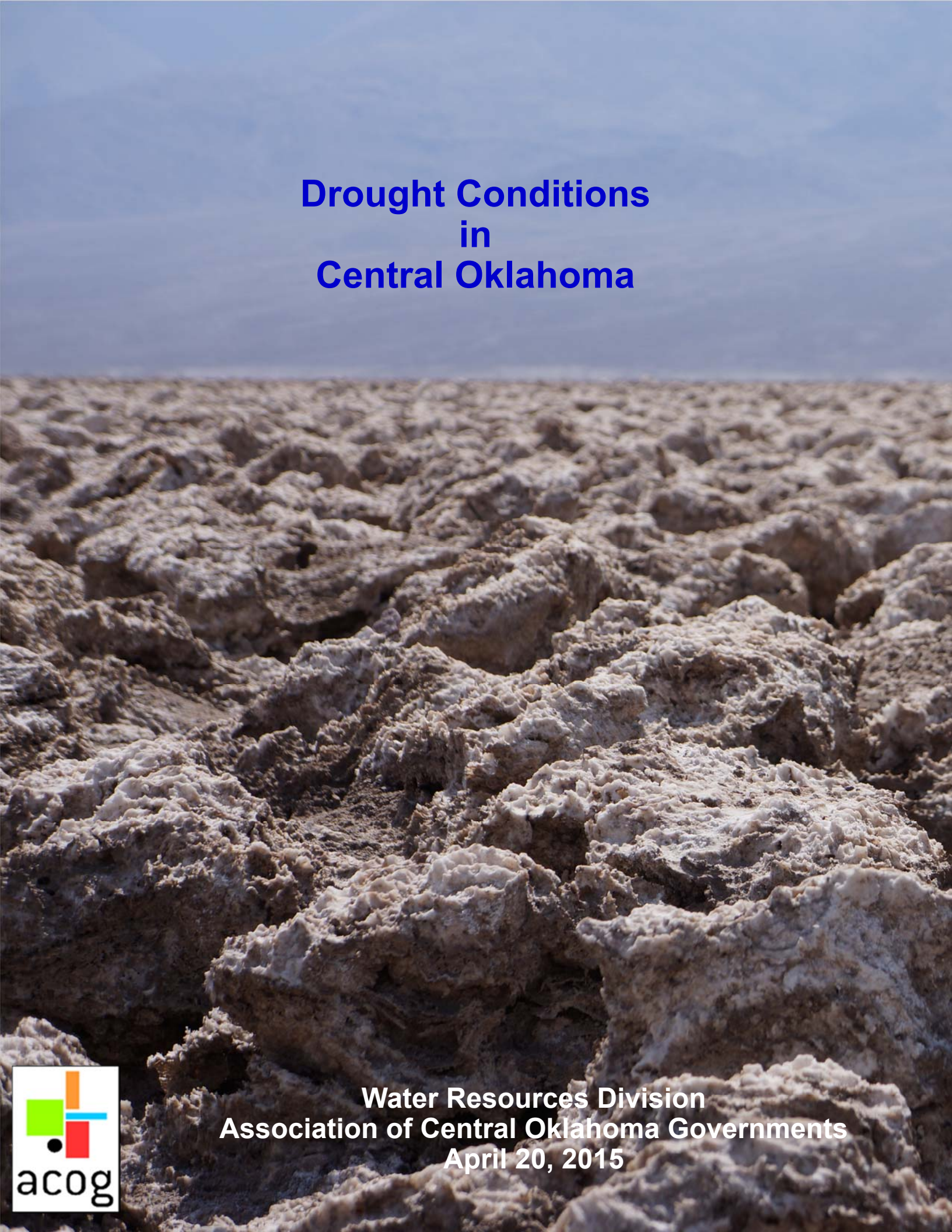
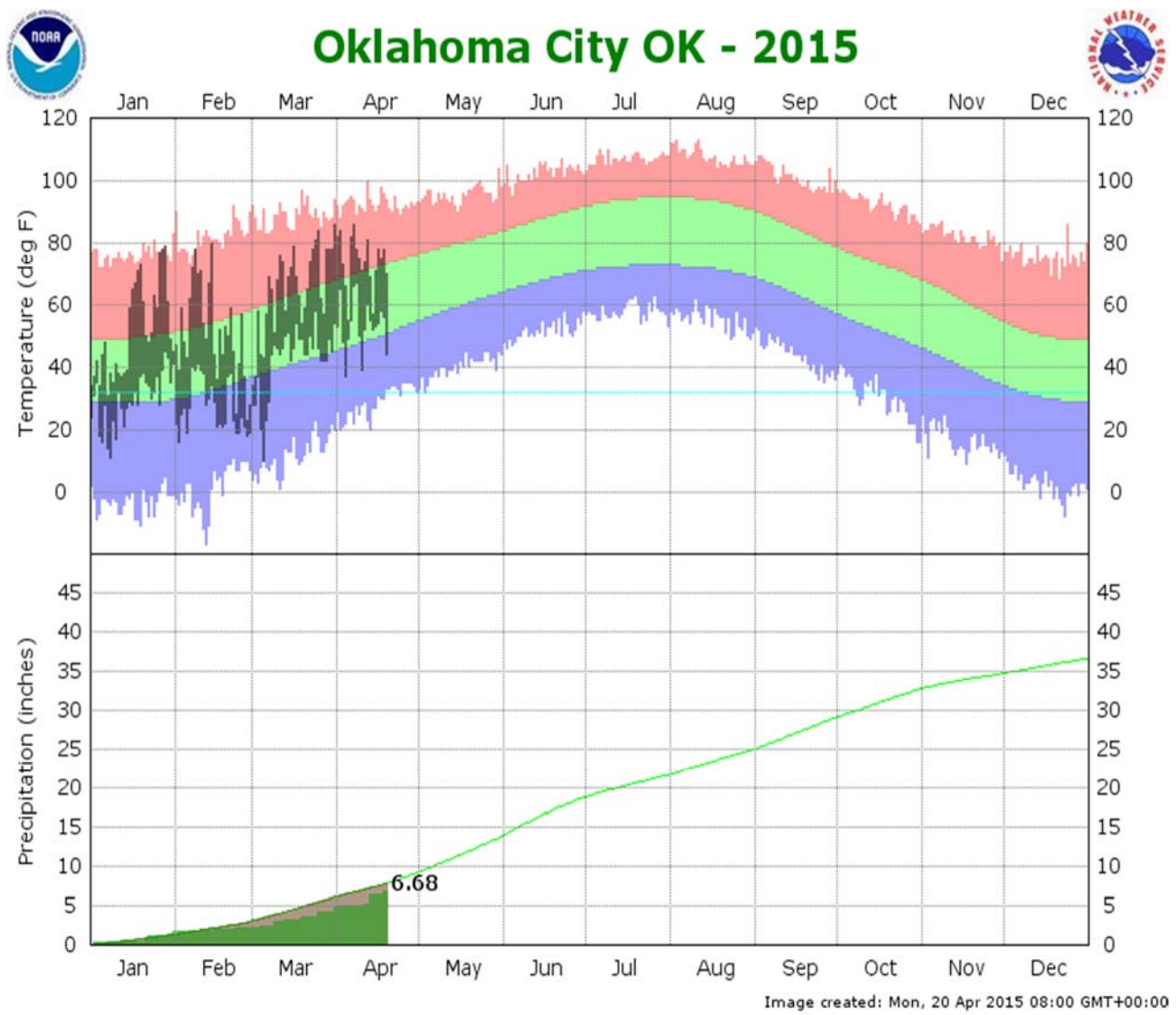
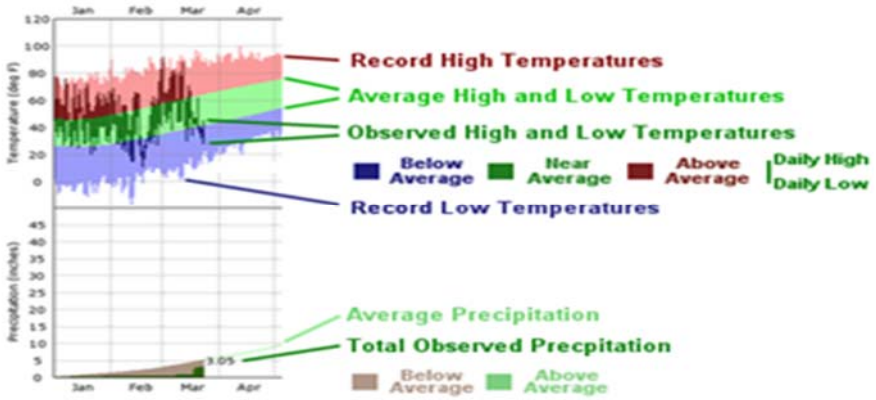
Drought Conditions in Central Oklahoma



Water Resources Division
Association of Central Oklahoma Governments
April 20, 2015

Temperature and Precipitation Plot for Oklahoma City, Oklahoma for 2015





http://www.srh.noaa.gov/oun/climate/graphdisplay.php?city=okc&year=2015

Rainfall Summaries by Oklahoma Climate Division

Calendar Year 01-Jan-2015 though 19-Apr-2015

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	6.45"	+0.71"	112%	29th wettest	0.51" (1996)	12.28" (1973)
Central	6.84"	-1.47"	82%	44th driest	1.06" (1936)	17.42" (1990)
S. Central	9.67"	-0.19"	98%	35th wettest	2.17" (1972)	21.42" (1990)
Statewide	7.57"	-0.71"	91%	43rd wettest	1.63" (1936)	15.57" (1990)

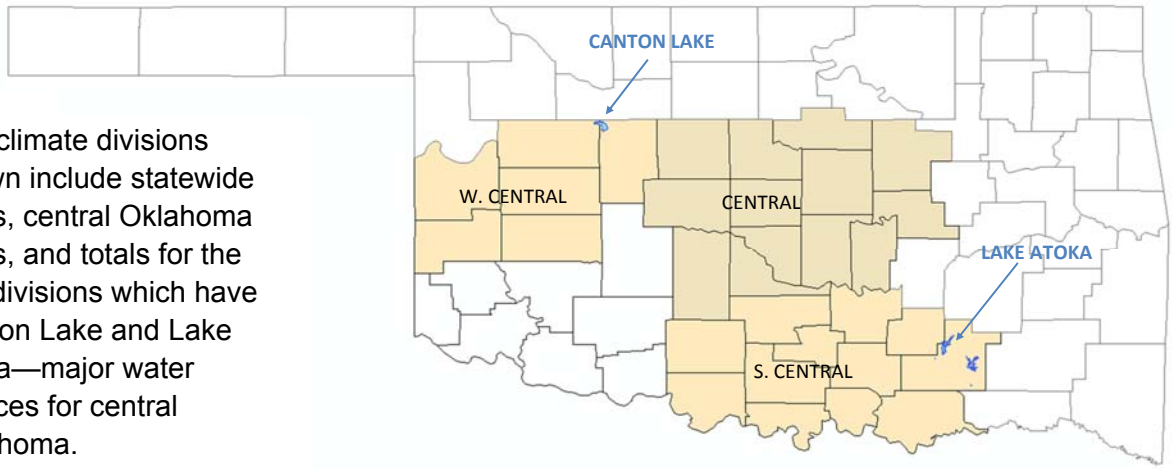
Water Year: 01-Oct-2014 through 19-Apr-2015

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	10.98"	-0.30"	97%	36th wettest	2.76" (1995-96)	18.86" (1986-87)
Central	13.49"	-2.93"	82%	44th driest	5.87" (2005-06)	28.72" (1984-85)
S. Central	18.55"	-1.00"	95%	35th wettest	5.92" (1955-56)	30.63" (1944-45)
Statewide	14.53"	-1.83"	89%	43rd wettest	7.12" (1995-96)	25.49" (1972-73)

Spring 01-Mar-2015 through 19-Apr-2015

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	4.95"	+1.28"	135%	15th wettest	0.25" (1996)	9.57" (1973)
Central	4.95"	-0.13"	97%	36th wettest	0.43" (1936)	11.20" (1990)
S. Central	6.34"	+0.82"	115%	22nd wettest	0.83" (1956)	12.51" (1990)
Statewide	5.35"	+0.46"	109%	26th wettest	0.86" (1936)	10.43" (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

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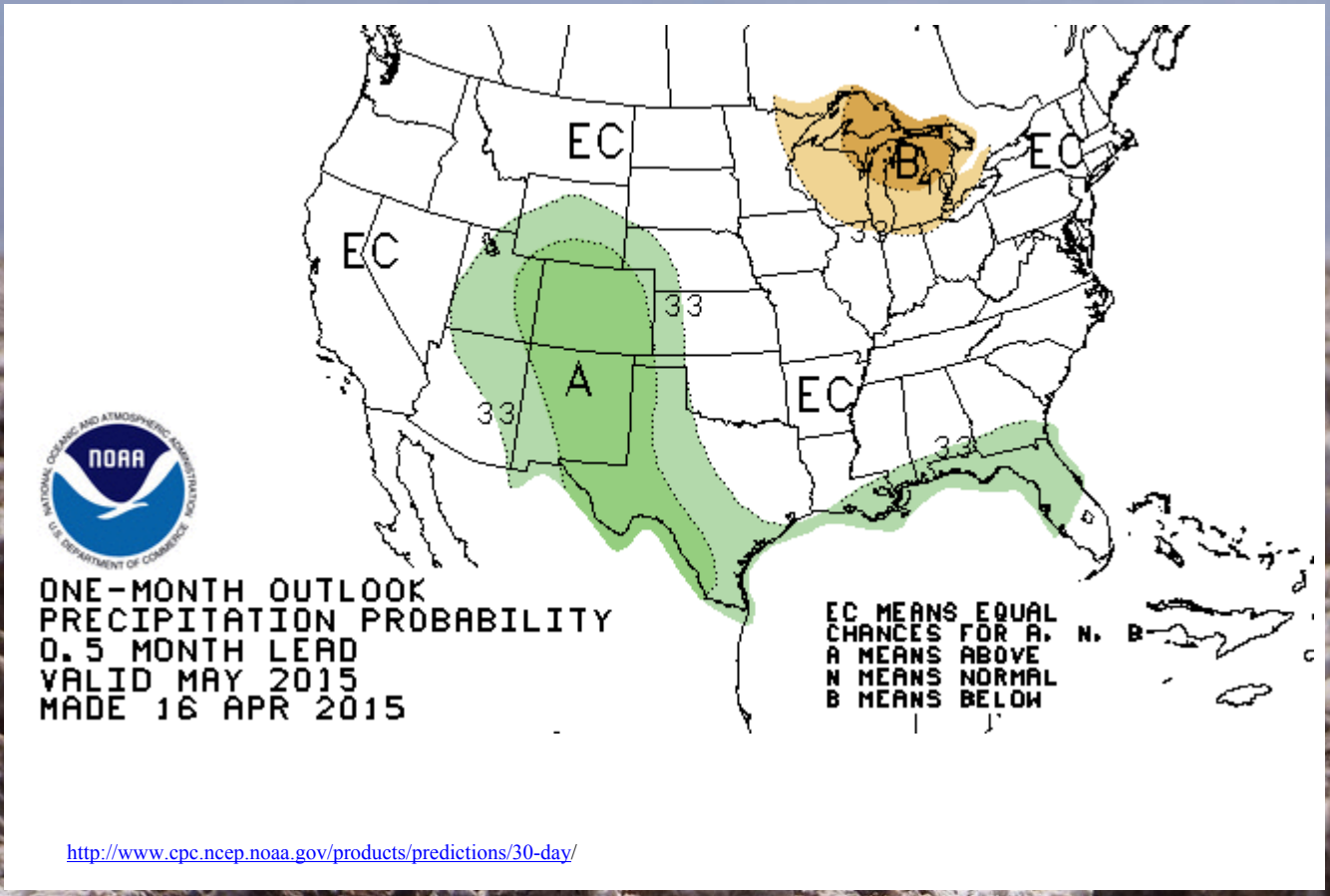
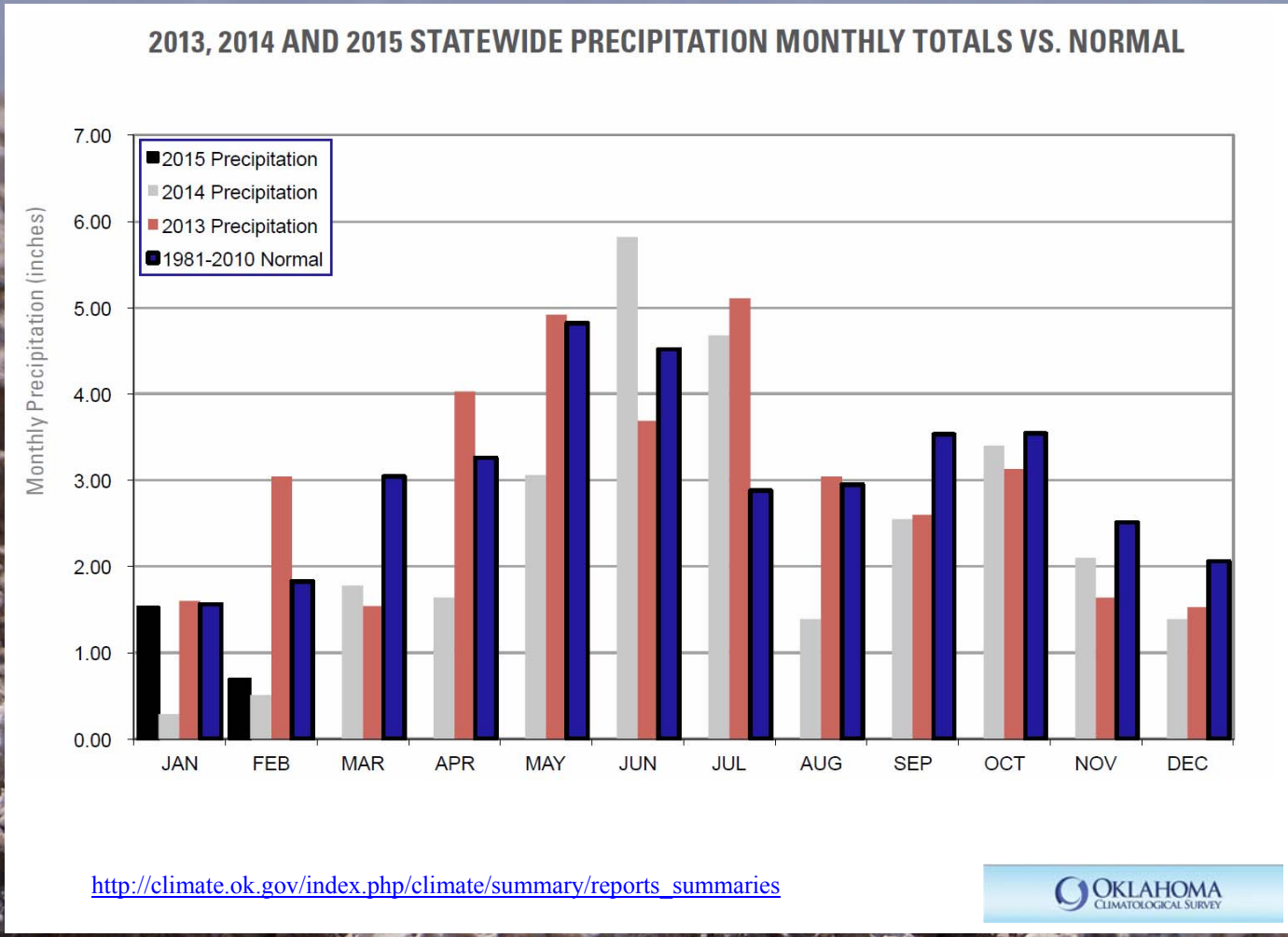
NOAA One-Month Outlook



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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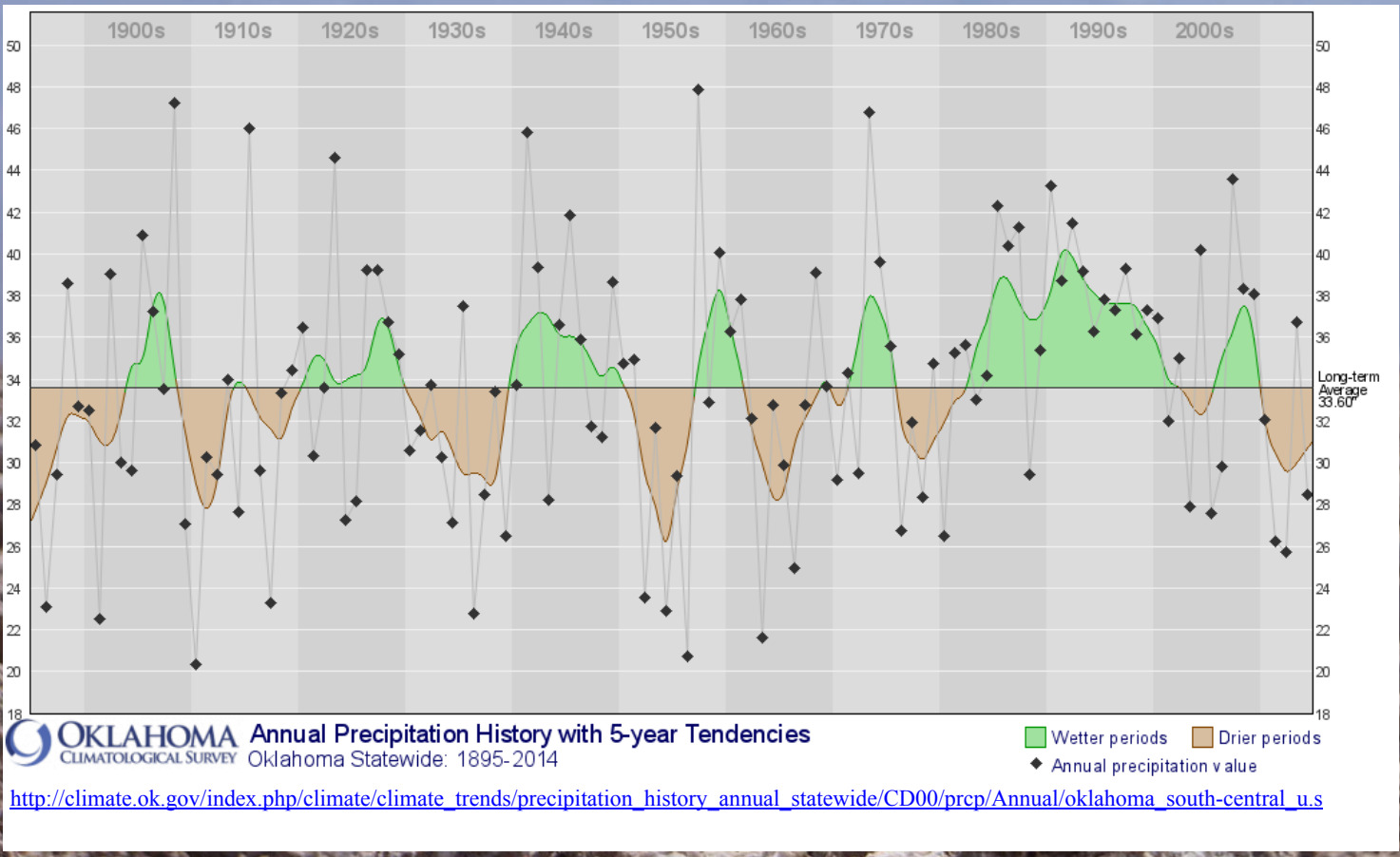
Annual Precipitation History with 5-Year Tendencies



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.

We are currently in Year 5 of a eight to ten year drought cycle.

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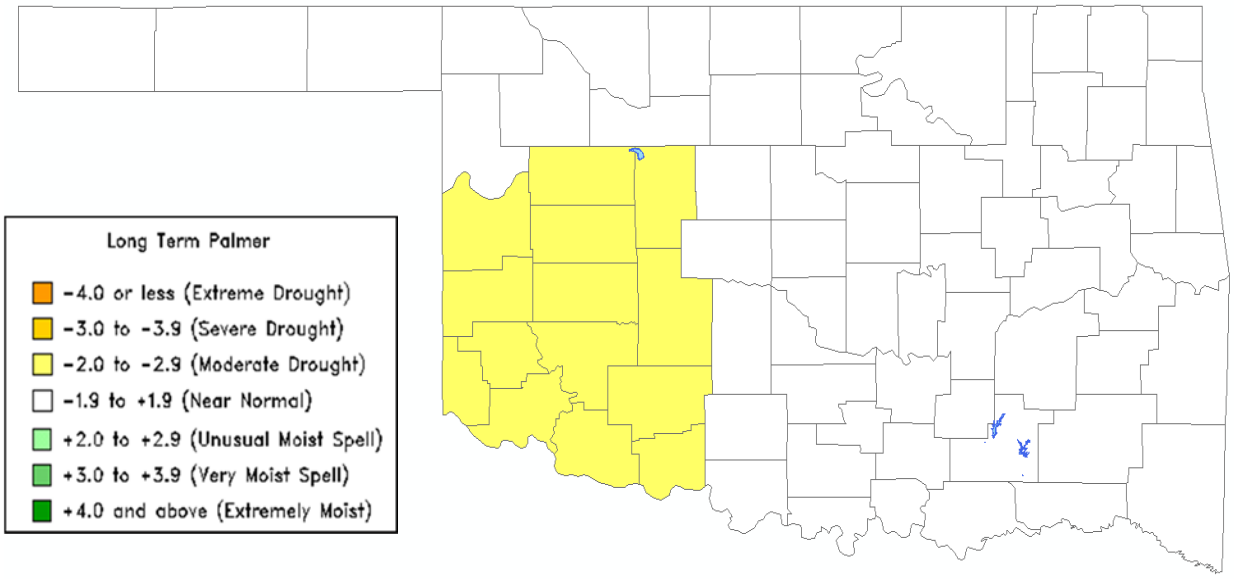
Drought Severity Index by Climate Division

Palmer Weekly Value for Period APR 11 2015



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

NOAA

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.

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U.S. Drought Monitor

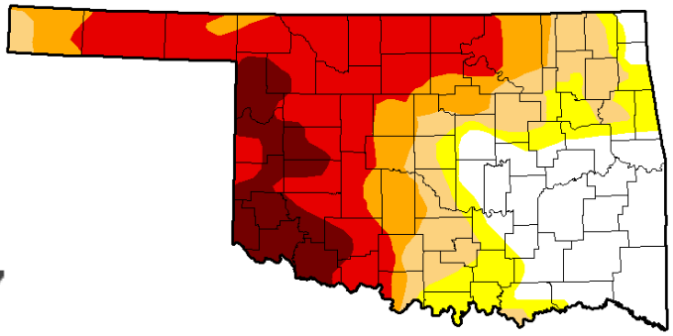
Regional Map Week of 14 APR 2015

Drought Condition (Percent Area):

Week	Date	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	2015-04-14	23.52	76.48	65.21	51.65	39.72	10.73
Last Week	2015-04-07	16.76	83.24	68.27	52.74	39.72	11.60
3 Months Ago	2015-01-13	29.59	70.41	59.12	42.59	22.58	5.69
Start of Calendar Year	2014-12-30	25.63	74.37	62.03	40.84	21.74	5.70
Start of Water Year	2014-09-30	8.55	91.45	73.31	58.13	20.92	4.64
One Year Ago	2014-04-15	6.73	93.27	78.95	54.81	26.51	13.71

U.S. Drought Monitor

Oklahoma

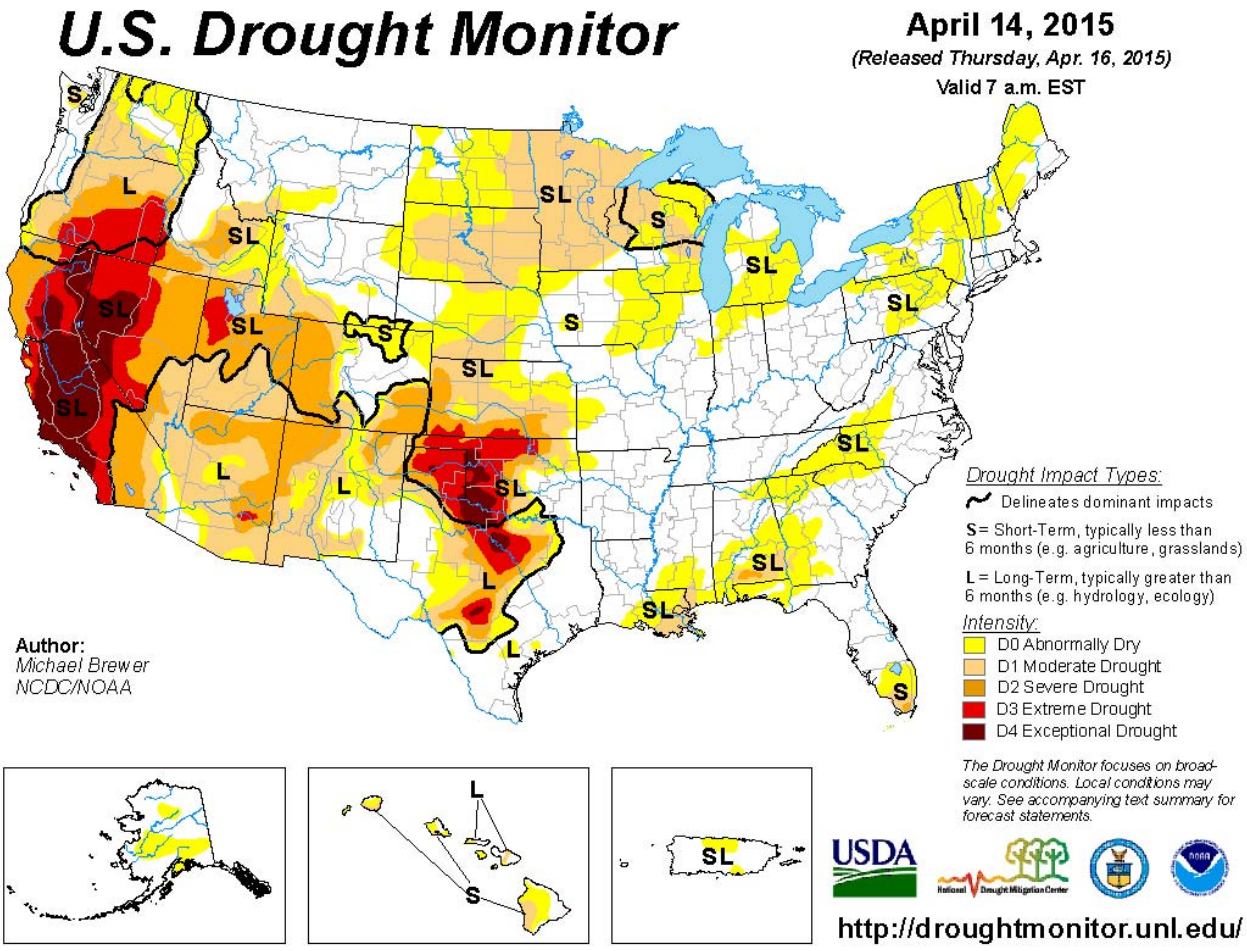


Population Affected by Drought: **2,258,297**

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

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

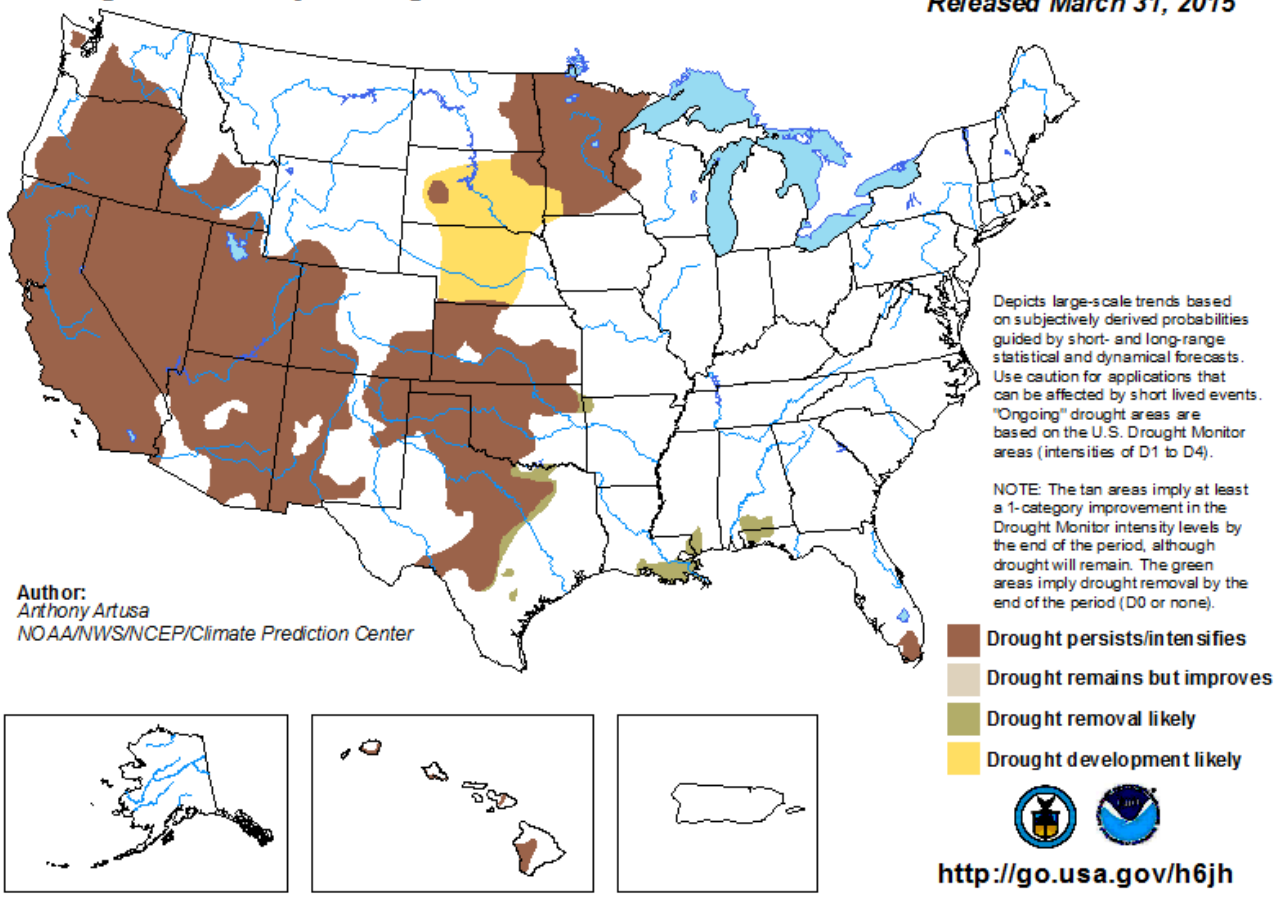
U.S. Drought Monitor Nationwide Map



http://droughtmonitor.unl.edu

U.S. Drought Monitor

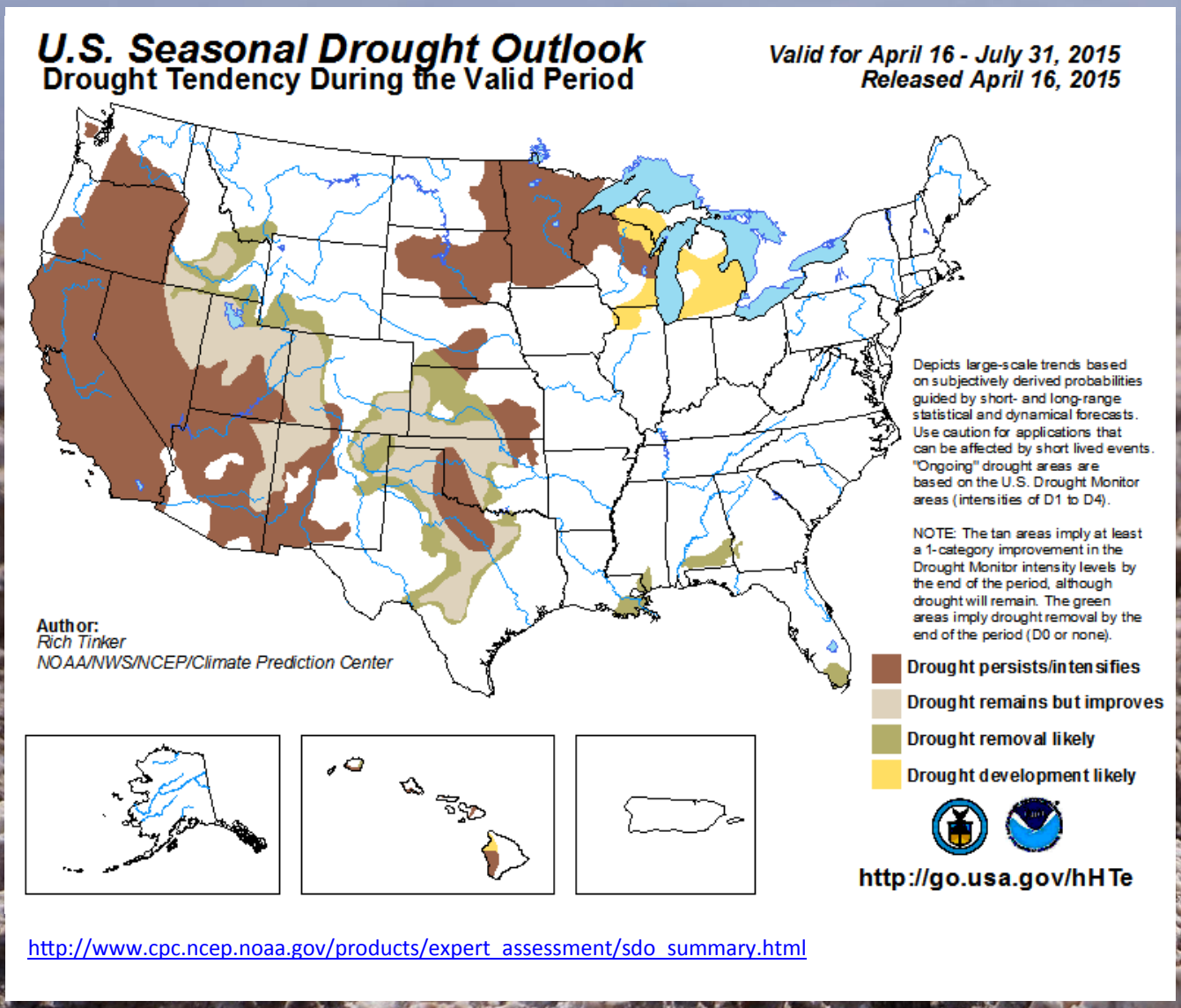
Monthly Drought Outlook Map



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

U.S. Drought Monitor

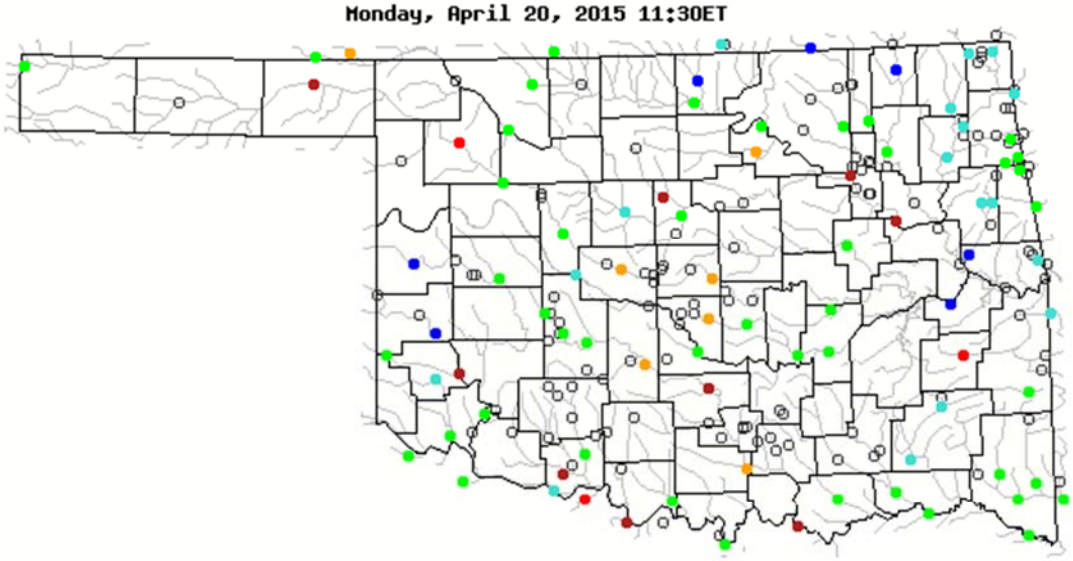
Seasonal Drought Outlook Map



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

USGS Streamflow Data

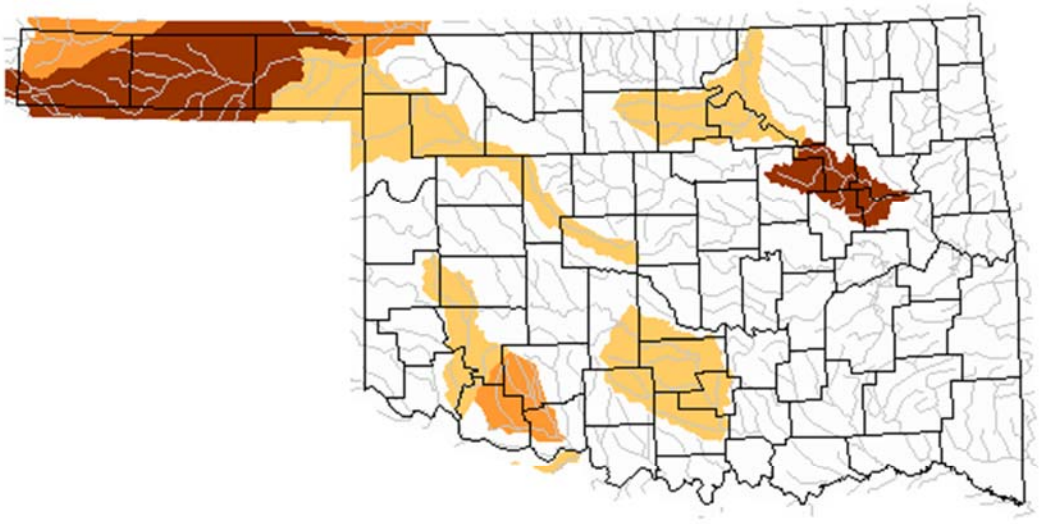
Monday, April 20, 2015 11:30ET



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, April 19, 2015



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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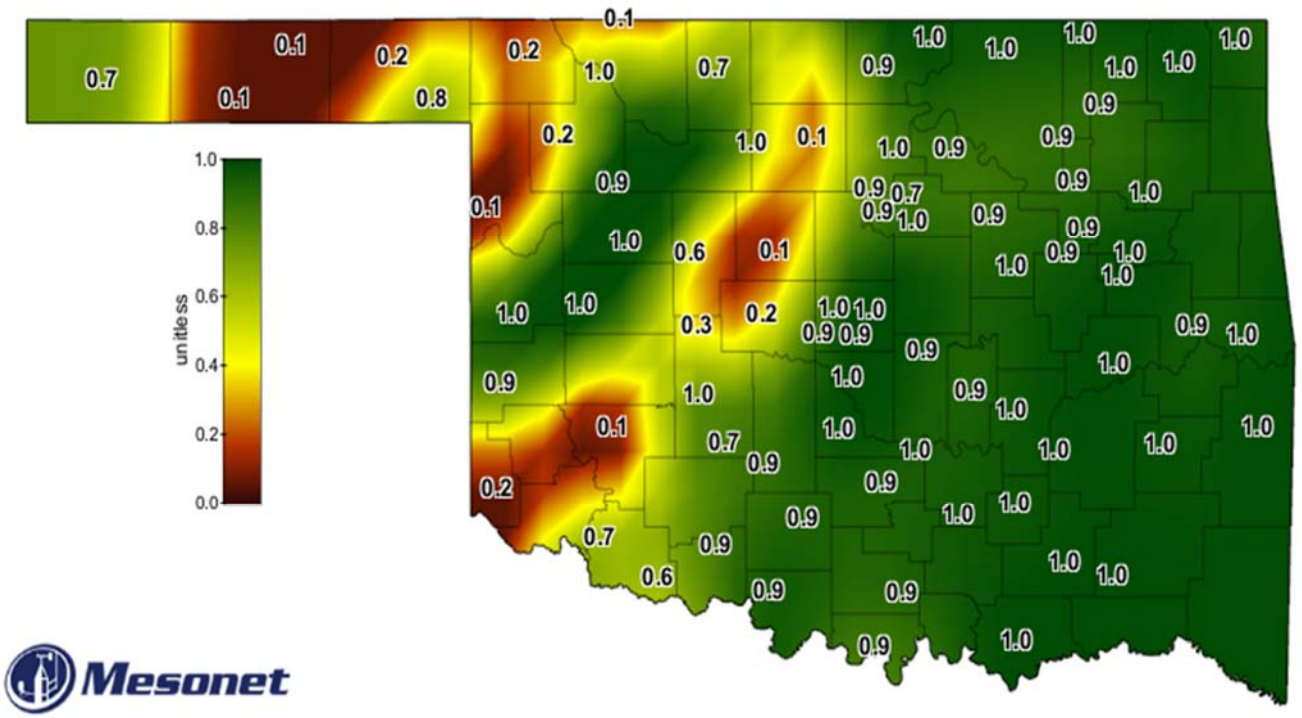
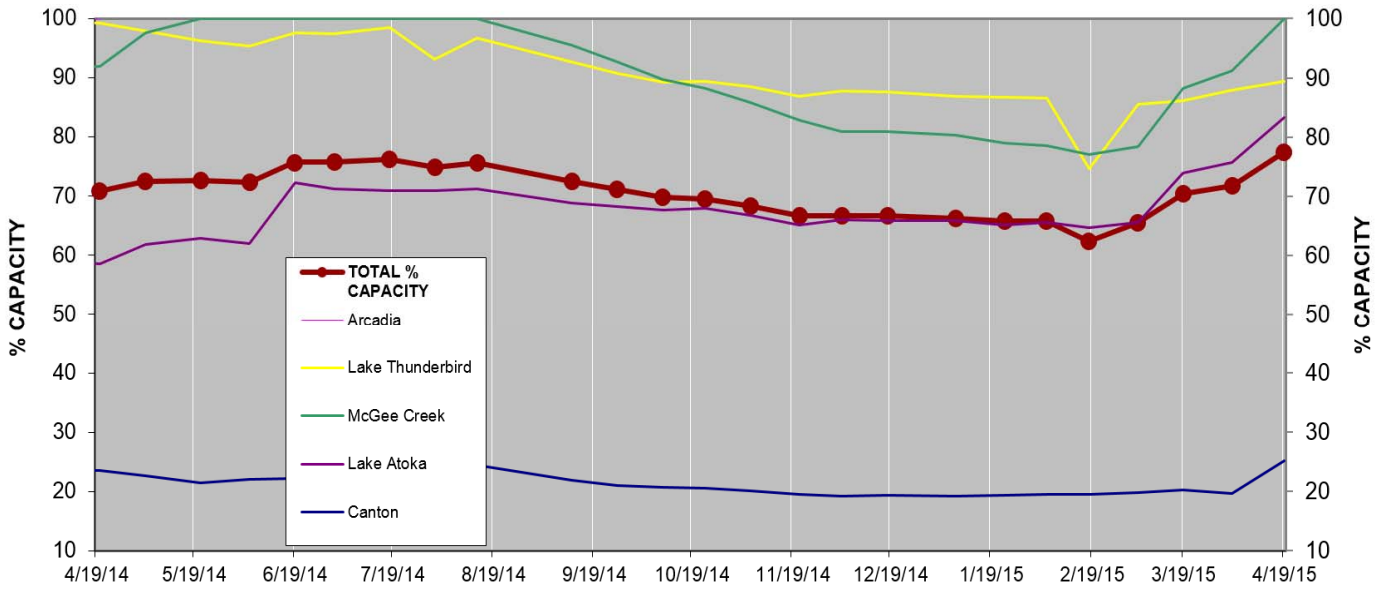
SOIL MOISTURE MAP



- 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

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.

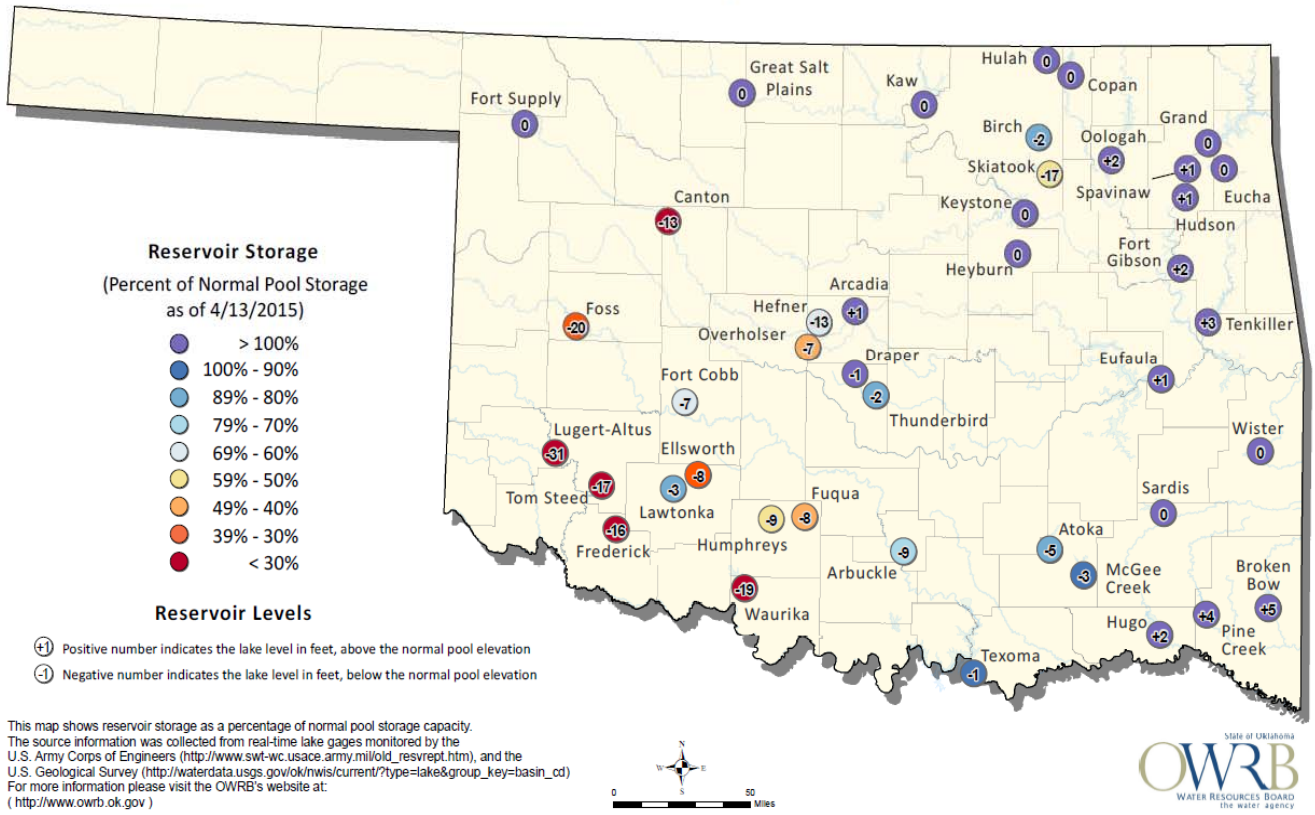
LAKE	% CAPACITY	% CHANGE FROM 4/3/2015
Canton	25.2	5.6
Arcadia	100.0	0.0
Lake Thunderbird	89.4	1.4
McGee Creek	100.0	8.8
Lake Atoka	83.3	7.5
TOTAL % CAPACITY	77.4	5.6

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.

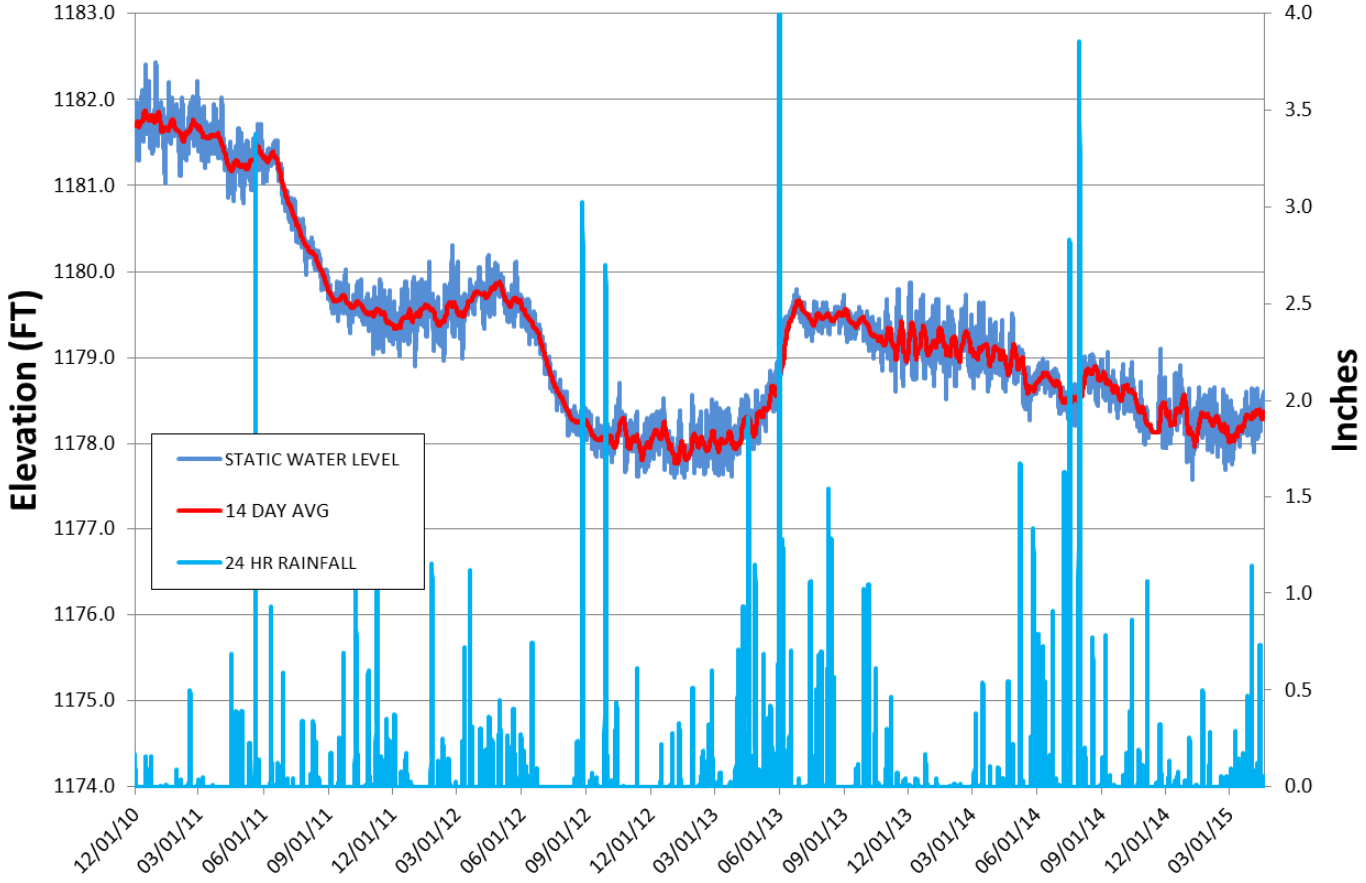
Oklahoma Surface Water Resources

Reservoir Levels and Storage as of 4/13/2015



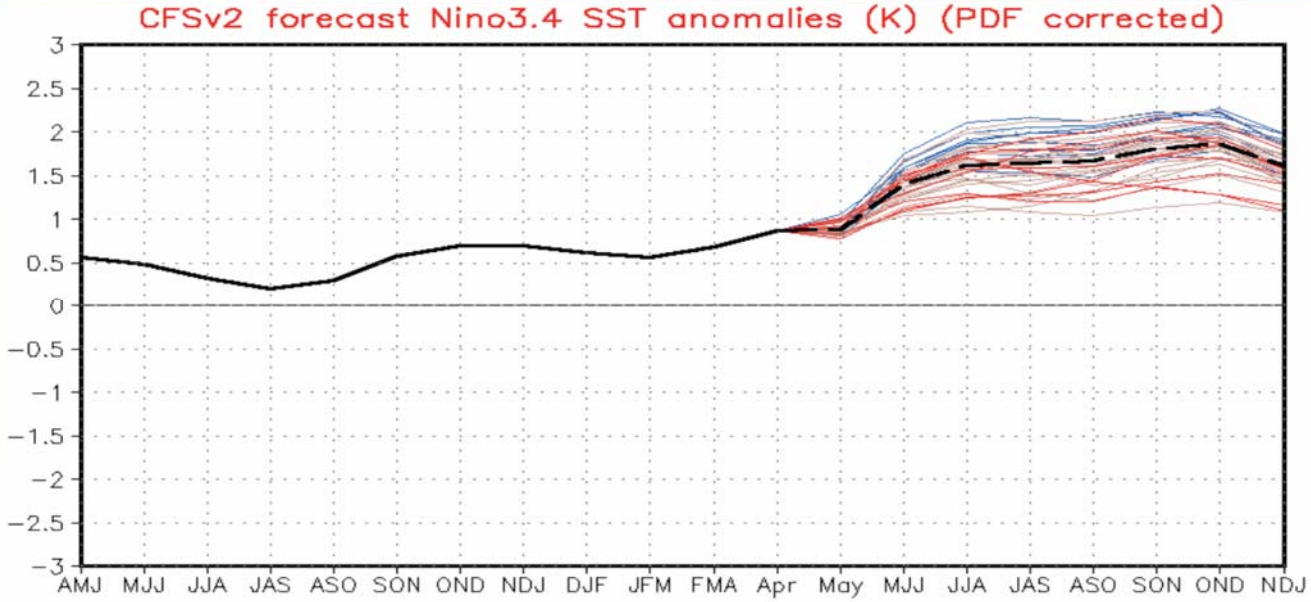
http://www.owrb.ok.gov/maps/pdf_map/Monthly%20Reservoir%20Storage.pdf

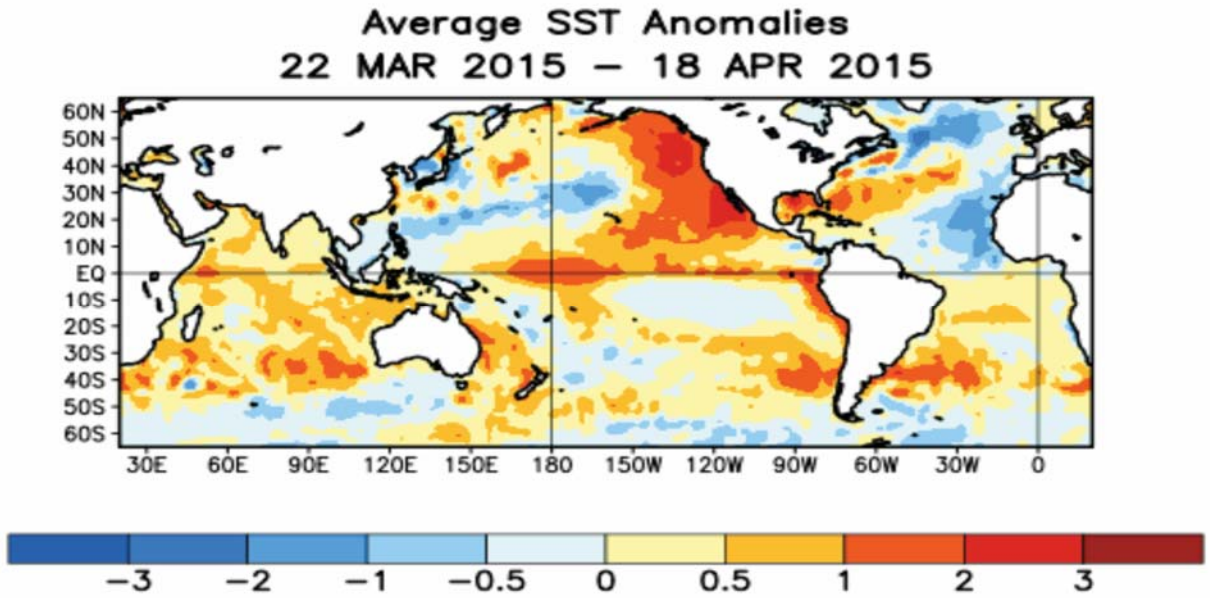
Groundwater Levels
Spencer Mesonet Station



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

ENSO Cycle
Recent Evolution, Current Status and Predictions





Summary

ENSO Alert System Status: El Niño Watch

- El Niño conditions are present.
- Positive equatorial sea surface temperature (SST) anomalies continue across most of the Pacific Ocean.
- There is an approximately 70% chance that El Niño conditions will continue through Northern Hemisphere summer 2015, and a greater than 60% it will last through autumn.

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