Drought in Oklahoma: Current Status and Trends

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Looking Ahead: Soil Health, Drought Management & Climate
October 26, 2015    Chickasaw Nation Conference Center, Sulphur, OK
Good news: compared to recent conditions, drought in Oklahoma is not too bad right now!

Do you remember last spring?
U.S. Drought Monitor

CONUS

April 7, 2015
(Released Thursday, Apr. 9, 2015)
Valid 7 a.m. EST

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

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
Michael Brewer
NCEI/NOAA

http://droughtmonitor.unl.edu/
After 4 ½ years of drought, May was the wettest month on record for Oklahoma and Texas, and the wettest June for Oklahoma.
The U.S. Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.
Cumulative Rainfall by October 26, 2015

Source: Oklahoma Mesonet
Does it seem to you that there has been a lot of news about drought?

There’s a reason for that...
U.S. Drought Monitor

October 20, 2015
(Released Thursday, Oct. 22, 2015)
Valid 8 a.m. EDT

Drought Impact Types:
- Delineates dominant impacts
- S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)
- L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

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Author:
Brad Rippey
U.S. Department of Agriculture

http://droughtmonitor.unl.edu/
U.S. Drought Monitor for Oklahoma

October 20, 2015
(Released Thursday
October 22, 2015)
The quick return of the drought this late summer and fall in southern and central Oklahoma is called “flash drought”.
But then it rained...and flooded....again.

7-Day Precipitation ending October 27, 2015
So expect the Drought Monitor Map for Oklahoma to look a bit better this week!

What about the rest of the fall, winter, and spring?
Godzilla El Niño headed for California
CBS News

The Strongest El Nino in Decades Is Going to Mess With Everything ...
http://www.bloomberg.com/

El Nino may cause 'substantial weather event' - BBC News
The image above shows the typical pattern in the winter during El Niño events. The polar jet stream tends to stay to the north of the Missouri Basin region, while the Pacific jet stream remains across the southern U.S. With the Missouri Basin isolated between the storm tracks, warmer and possibly drier conditions can develop during El Niño events.
U.S. Winter Outlook
Temperature

-60% Warmer
-50% Warmer
-60% Warmer
-40% Warmer
-33% Warmer
-33% Equal Chances
-40% Cooler
-33% Cooler
-50% Warmer
-60% Warmer

Temperature Probability
Dec - Jan - Feb
U.S. Seasonal Drought Outlook
Drought Tendency During the Valid Period
Valid for October 15 - January 31, 2016
Released October 15, 2015

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 Allgood
NOAA/NWS/NCEP/Climate Prediction Center

http://go.usa.gov/3eZ73
WARNING – These seasonal forecasts for wetter or cooler than average conditions have very poor forecast skill for Oklahoma.
So what about next summer?
And the coming decades?
http://droughtmonitor.unl.edu/MapsAndData/Graph.aspx
Climate studies concentrate on averages, but averages tell us little to nothing about the succession of daily weather and extreme events that impacts crops, forages, livestock... or water supplies and infrastructure. What matters more are the variations, especially the extreme weather events.
Projected Change in Number of Consecutive Dry Days, 2041-2070:

**1971-2000 averages**

**Number of Consecutive Days**

20 25 30 35 40 45

**Change in Number of Consecutive Days**

-1 0 1 2 3 4

From the National Climate Assessment, 2014
Average temperatures continue to climb, but most of the change in Oklahoma is due to warmer overnight temperatures.
Daily Average Air Temperature, 2015

Source: Oklahoma Mesonet
My thumbnail summary for climate and weather in Oklahoma over the next 5 – 20 years: more of what we already have... increased variability!

Drought punctuated by flood. Too hot alternating with too cold.
Bad news: drought will return. It will be at least as bad, and probably worse, than we have experienced recently.
Our primary tool for adaptation to all of the weather extremes, including drought and flood, is to improve our soil health (recall the demo earlier), but you can’t implement changes during a drought!
So now is the time to prepare, to adjust your plans, and to get your pastures and prairies ready!