

Summary: Southern Plains Drought Assessment and Outlook Forum Spring 2013 – Goodwell, OK

Key messages from the Forum:

- The outlook is not favorable for a return to El Nino conditions this year, which would be more likely to usher in much-needed drought relief
- A third consecutive drier-than-normal spring season is becoming increasingly likely across much of the region (Figure 1).
- “Another bad spring rainfall would be catastrophic for the Southern Great Plains” - Gary McManus, Oklahoma Associate State Climatologist

Drought Review:

- Since October 2010 most of the Southern Plains have grappled with historic drought conditions, punctuated by periods of precipitation and some short-term recovery especially in early 2012.
- The Oklahoma and Texas panhandles in particular continue to feel the effects of the drought, as they did not receive the beneficial spring 2012 rains that other parts of the region did.
- During this drought, Oklahoma observed its warmest summer on record in 2011, its driest May-December period on record in 2012, and its warmest year on record in 2012 along with the U.S. overall (since 1895).
- Prior to the onset of the current drought, the Southern Plains had generally been experiencing a 30-year wet period, causing many communities and businesses to become accustomed to above normal precipitation and suffer “drought memory loss.”

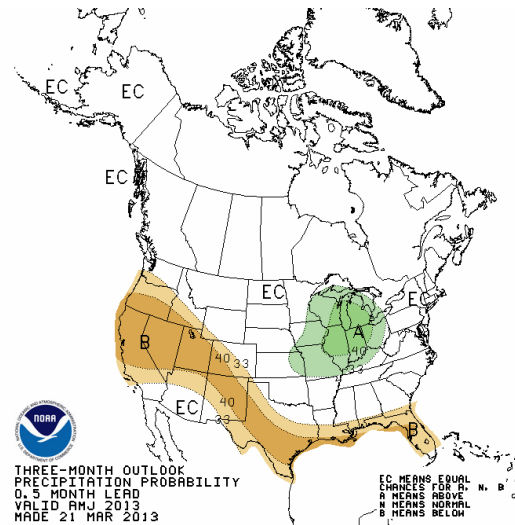


Figure 1: Three-month precipitation outlook (April, May, June) from the National Weather Service, Climate Prediction Center (<http://www.cpc.ncep.noaa.gov/>)

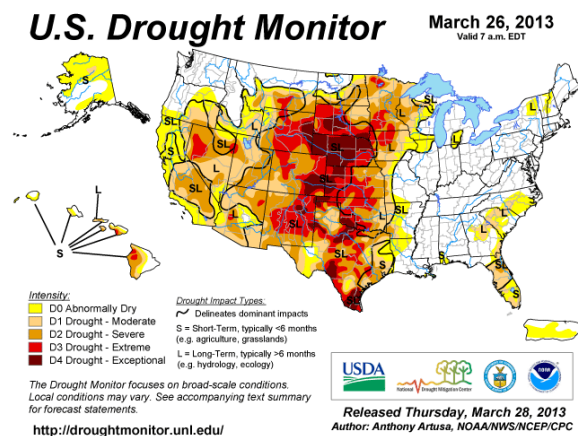


Figure 2: U.S. Drought Monitor released on March 28, 2013 (<http://droughtmonitor.unl.edu/monitor.html>)

Changes in Conditions Since The Forum:

In February, most of the Southern Plains observed above normal rainfall and below normal temperatures, leading to some short-term drought recovery including a slight decrease in D3 and D4 areas across Oklahoma and Texas (Figure 2). Although below normal temperatures have continued, March has not brought significant precipitation to the Southern Plains. Regional soil moisture tells the current story well, with the upper soil zone having near normal moisture, and the

lower zone remaining exceptionally dry and representative of long-term drought. As warmer springtime temperatures return and the growing season begins, regular precipitation will be needed to ensure any broad regional drought recovery.

Southern Plains Drought Webinars:

In September 2011 a drought management webinar series was developed to improve communication among agencies and organizations dealing with the drought in the Southern Plains (Figure 3). The webinars provide information on available resources and assistance to help monitor and manage drought; improve communication and understanding of the impacts of drought in this region from the perspective of those who are tasked with managing it; and provide an overview of regional drought conditions and the outlook for next several weeks to months. The webinars are typically held on the second Thursday of each month at 11:00 a.m. (CT). A short briefing is typically recorded every Thursday and posted to the YouTube page of the Southern Climate Impacts Planning Program (SCIPP); <http://www.youtube.com/SCIPP01/>. For more information, please visit SCIPP's website at <http://www.southernclimate.org>.

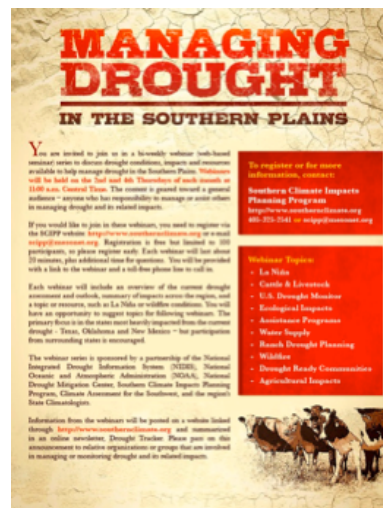


Figure 1: Flyer for the Managing Drought webinar series.

Drought Assessments on Agriculture:

Crop Water Management

Hot summer temperatures that have been a hallmark of the current drought have increased the water required to raise crops. Based on a study using 15 years of weather observations from the Goodwell, OK Mesonet site, about 30 inches on average of irrigated water is moved through an annual corn crop on the High Plains. Due to very high evapotranspiration from heat, 45 inches of water was required for the corn crop in 2011. Since such excessive watering is not sustainable, the drought has caused agricultural producers to become especially conscientious when considering crop money return per inch of water used. At Oklahoma Panhandle State University fields during 2011, corn returned about \$48 per inch of water used, whereas sorghum returned about \$100 per inch of water. Sorghum has proven resilient as a dry land crop during the drought.

Water Supplies

The current price return for corn provides easy incentives to pump aquifer water, but state water managers in the Southern Plains are concerned about future availability. Kansas, for example, has more water rights on the books than can be sustainably supplied. A transition of more land to grazing or rangeland is one solution so as to reduce the amount of irrigation required. Agricultural producers use most of the water, but other competing interests include hydraulic fracturing for natural gas or out of state municipal drinking supplies. Local stakeholders are being encouraged to plan for their desired future condition in partnership with state and regional water managers.

Rangeland Management

Ranchers are also struggling to determine how animal gain can still be effectively achieved due to heat stress on animals and depleted food stocks triggered by the current drought. Since precipitation and animal stocking rate are the two most important impacts on the health of grassland pasture, agricultural producers have been forced to reduce herd size. About 56% of annual grass yield is dependent on May and June precipitation in west Kansas, another indication of how important rainfall this spring will be to the continuation of drought. In the Oklahoma and Texas panhandles, some pastures have not seen growth in three years due to harsh conditions, and grass cover in most places has deteriorated.