

Summary: Southern Plains Drought Assessment and Outlook Forum Winter 2011-2012

Key messages from the Forum:

- La Nina has returned and is expected to last through the winter
- Through May 2012, the odds of below normal precipitation are 2 to 3 times greater than those for above normal (Fig. 1)
- Any significant drought improvement is likely to take months, and will depend in large part on the spring rainy season starting in April
- Summer temperatures will likely be warmer than normal, but not as warm as the historic heat of 2011

Changes in Conditions Since Forum:

Since December 1st, surprisingly abundant rainfall and below normal temperatures have prevailed across the Southern Plains. Several low-pressure systems worked their way across the region, unusual for La Nina conditions, and as a result there have been some improvements in the drought depiction for the southern plains (Fig. 2). This precipitation has allowed for a short-term refocusing of the Southern Plains drought toward groundwater recharge, reservoir replenishment, and long-term recovery from the damage done to rangeland and pastures.

Forecast Uncertainty and the Potential for Long-term Trends:

As long as La Niña conditions persist throughout the winter, however, there is a low probability of breaking out of the current drought pattern in the Southern Plains before the onset of the spring rainy season and the potential for tropical storm and hurricane activity in the summer and fall. If conditions were to switch to El Niño next fall and winter, it would likely favor an end of the 2010-12 drought. The likelihood of a 3rd consecutive La Niña winter, while not unprecedented, is low at present.

Southern Plains Drought Webinars:

In September 2011 a series of drought webinars were developed to improve communication among agencies and organizations, dealing with the drought in the Southern Plains. The webinars provide information on available resources and assistance to help monitor and manage drought as well as

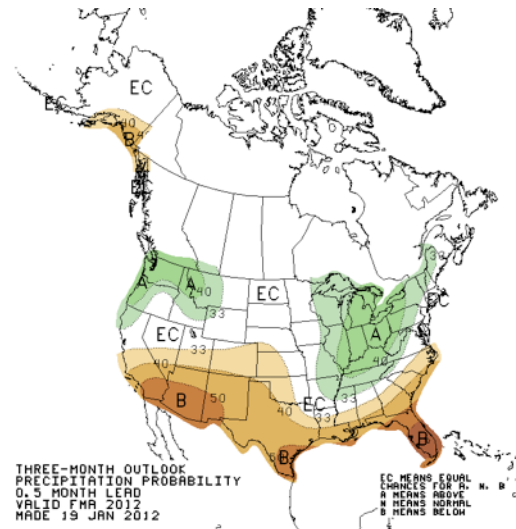


Figure 1: Three-month precipitation outlook (March, April, May) from the National Weather Service, Climate Prediction Center (<http://www.cpc.ncep.noaa.gov/>)

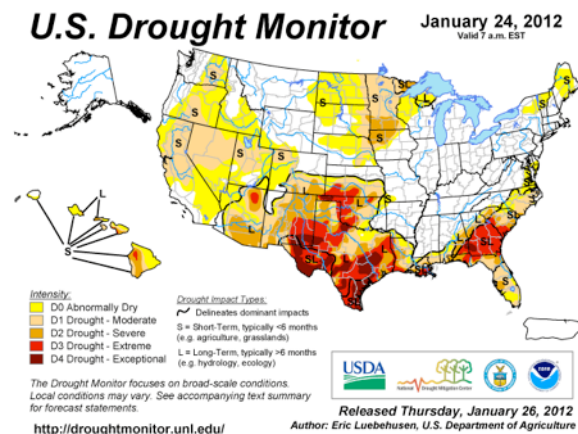


Figure 2: U.S. Drought Monitor released on January 24, 2012 (<http://droughtmonitor.unl.edu/monitor.html>)

improve communication and understanding of the impacts of drought in this region from the perspective of those who are tasked with managing it. The webinars are held on the 2nd and 4th Thursdays of each month at 11:00 a.m. (CST) and provide an overview of regional drought conditions and the outlook for next several weeks to months. To sign up for the webinars please go to: <http://www.southernclimate.org>

Impacts of the 2011 Southern Plains Drought:

Water-Precipitation patterns in Kansas have a major influence on the both the landscape and associated land use in the state. For example, the differences in precipitation regimes between western Kansas and eastern Kansas are as large as those from eastern Kansas to the U.S. East Coast. Drought has moved eastward into south-central and eastern Kansas, with more direct impact on streamflows and reservoir levels, which becomes more of a concern for public water supplies, livestock and wildlife due to drier surface water conditions. The U.S. Army Corps of Engineers noted there could be some water management challenges if the drought persists, particularly in those areas where the drought has been most severe.

Agriculture-To date, the U.S. Department of Agriculture's Risk Management Agency has paid indemnities of \$30M (New Mexico), \$1.9B (Texas), \$352M (Oklahoma), and \$609M (Kansas) for all crops. Because of record high cattle prices, ranchers have been able to maintain revenue despite the unprecedented numbers of animals moving through markets; however, the drought has put a dent in long-term plans of increasing national inventory, which had been steadily declining since 1975. If drought returns with a pattern similar to 2011, expectations are for additional liquidation to begin in early in April due to dwindling feed and financial resources. If drought is delayed until summer, there will be more flexibility in maintaining herds, although financial resources will still be an issue. Long-term rebuilding of herds will face higher costs due to the market's high prices and reduced availability of proper genetic stock. Of the 15,500 members of the Texas and Southwest Cattle Raisers Association, 84% have reported reducing herd size by an average of 38%. This translates to a net reduction of 600,000 to 800,000 head, or about 12%-16% of supply. Total impacts on the Texas economy are estimated at \$2.2 billion from livestock losses alone.

Wildfire and Ecosystems- Texas is in one of the worst droughts in state history. Compounding the problem, the drought has left a large amount of dead and drying vegetation including high-risk fuels like pines and junipers that burn intensely. With La Nina projected to continue throughout the winter, the soaking rains that are needed to break the drought will likely be infrequent. Whitetail deer, pronghorn sheep, and bobwhite quail were all affected by the 2011 drought. Whitetail deer populations, however, are not expected to experience long-term impacts. The largest impact will likely to be fawn production and recruitment due to poor forage quality and production. The pronghorn sheep crop this year was 10% of normal, and almost all of that could be explained by lack of rainfall and restocking activities, which have stopped due to the potential stress on the animals. Bobwhite quail have, over the last several years, had very low reproductive success but 2011 has been particularly bad and is most likely a result of the drought and lack of food availability. In aquatic species, the U.S. Fish and Wildlife (USFWS) were forced to relocate populations of shiner and mussels as a result of drying rivers and tributaries. According to USFWS, better predictive tools would have been useful for planning purposes.



Figure 1: Flyer for the Managing Drought webinar series.