Webinar Topic: Livestock and Agriculture
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Regional Drought Summary
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Over the past two months, drought has re-emerged in severity comparable to that of last year. Many of the drought-free areas in Oklahoma and Texas, apparent in the June Drought Monitor maps, has since been filled in with rapid development and intensification over a wide area. Temperatures have had a big impact, like the flash drought situation last year in Missouri and Arkansas, with temperatures peaking above 110 degrees across much of Oklahoma last week. Nearly all of Oklahoma – a record 97%, exceeding the 93% record of 2011 – is now in extreme or exceptional (D3 or D4) drought, as parts of central Oklahoma have gone more than 60 days without significant rainfall. Similar extremes and impacts are apparent in Kansas. The rapid expansion of drought highlights the vulnerabilities that remained from 2011; the recovery was tenuous and some of the same impacts experienced last year returned.

While the drought has expanded substantially across the northern part of the region and on up across the Northern Plains and Midwest, east Texas and Louisiana have fared well with continued rainfall near the Gulf Coast. Meanwhile, parts of eastern New Mexico and the Texas and Oklahoma panhandles never recovered from last year. Arkansas is an epicenter of this drought, with much of the state in D4 and year-to-date rainfall deficits up to 16 inches. Some of this is tempered by a surplus in central Arkansas last year, while some of the recovery in east Texas is tempered by large deficits from 2011.

The outlook shows hope of some relief from temperatures with below-normal temperatures projected in the eastern part of the region. However, not much rain is in the forecast, except from the Mississippi River eastward and in the Southwestern U.S. associated with the monsoon. Rainfall expected along the Gulf Coast may be an early signal of El Nino. The outlook for the remainder of August shows a core of warm, dry air over Nebraska, Missouri, Kansas and Iowa.

Through October, not much change is expected in the pattern, although the drier areas may be north of the Southern Plains region giving a chance for at least marginal relief, although drought conditions are expected to persist or even intensify in the region except for the Gulf Coast and desert Southwest. The drought outlook in June expected some of the recovery to stick, but with the extensive heat, more recent outlooks call for little change in pattern or intensity.

We need your help. Nobody knows drought impacts like the people who live there. Your reports to the Drought Impact Reporter or your State Climatologist helps the U.S. Drought Monitor do a better assessment of conditions, which in turn helps federal agencies target assistance to vulnerable areas. Reports could be simply things you notice or it could be specific losses, such as crops withering, selling cattle, or wildlife changes.
Livestock and Agriculture

The U.S. inventory of beef cattle dropped just under 1 million head last year, almost all of it from Oklahoma and Texas. Because so much had been liquidated last year, slaughter rates in this region are still running below normal, although higher than what would be expected because of continuing drought conditions. Auction receipts in Oklahoma are down 77% this year compared to last year. Unlike last year, though, this year is more challenging in that remaining stocks cannot be relocated to alternate pastures. Nationally, 65% of the country has poor or very poor forage conditions and a decline in corn production from a projected 14.5 billion bushels in May to a current estimate of 10 billion bushels has limited alternate feed sources.

Markets have probably bottomed out, given a tight supply of calves. If prospects for fall pasture improve, a dramatic turn-around in the market is possible. We did not see markets drop as much a year ago because there were other alternatives, but widespread drought this year has resulted in more typical and rapid impacts on the market. There will not likely be a big fall run in cattle sales because so many have already been marketed, so price pressures should remain minimal through Fall.

Livestock is the first value-added component of wheat production, but it depends on getting moisture early. Wheat planted for cattle grazing needs to be sowed around September 1 while wheat grown only for grain can wait until mid-October to plant. Moisture is essential for establishing a good stand before a dormancy period from December until late February. Water demands are greatest in late April when wheat is heading and ripening. In addition to sufficient moisture, extremes in either heat or cold will affect the final yield.

In 2011, most wheat was dusted in to dry ground with little expectation of getting a crop; it is worth taking a chance on a crop because insurance payments for prevented planting are much lower. Unexpected moisture in October combined with warm temperatures helped wheat get a very good start and allow sufficient development that even wheat that did not germinate until October was able to be used for cattle grazing. Despite the great start, however, the hot, dry spring took a toll in kernel production. Temperatures above 85 degrees are detrimental to kernel development; temperatures in April and May were routinely climbing above 90 degrees across much of the wheat belt. Soil moisture columns depleted from the 2011 drought left little reserves for plants. High temperatures, little rainfall, low humidity and high winds stressed plants at a critical time, producing shrunken kernels and highly variable protein.

Warm nighttime temperatures were more important than the daytime temperatures, accelerating wheat development and resulting in a harvest 2-3 weeks ahead of normal. This year’s pattern seems nearly identical to last year. Dry soils make tilling impossible and stressed weeds make herbicide applications ineffective.

The drought has been particularly hard on cotton. Sixty percent of the nation’s cotton crop is grown within 150 miles of Lubbock, Texas. About two-thirds of this is dryland cotton with the rest irrigated. Even though cotton plants in the Texas High Plains only grow to about 8-10 inches high, they produce as much cotton bolls as plants that grow 3-4 feet high in Georgia. In 2011, 60% of the regional crop was lost compared to an average of 18-20%; this year will likely exceed the losses of last year.

After a good start in 2012, ratings have dropped quickly with the quality of the paints at the lowest of the season. The crop started off similar to 2010, a record year for production in the Texas High plains. More cotton was planted than last year and in early July squaring was ahead of each of the last two years. But the recent heat has made it difficult for plants to set bolls. Some dryland production has already cutoff where additional rain would not matter.

Another challenge has been to soil microbiology. **Arbuscular Mycorrhizal Fungi**, a soil microbe that attaches to the roots of the plant helps the plant to uptake phosphorus, aids in resistance to root disease, and increases drought tolerance, especially within the first 8 weeks of plant development. Without the microbes, more moisture and fertilizer is needed. High soil temperatures killed off a large number of these microbes last year leaving plants more vulnerable. Typically about 40% of roots have these fungi; this year they are found on only about 2% of roots. Re-establishing the fungus is difficult as cotton has few roots so that little organic material goes back into the soil. Dryland or irrigated cotton rotated with sorghum or soybeans helps maintain these communities while continuously irrigated cotton actually depletes the microbes. It can take decades to re-establish these colonies, even with good growing conditions.

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