BY PAUL D. OHLENBUSCH

Wet or Dry?

Where is this Weather Taking Us?

In the November-December issue of *Tracks*, Jim Heffelfinger had an excellent article, "Grazing Management is Deer Management." The points he made about managing the total vegetation are very good. Using domestic livestock can provide better wildlife habitat management. I am reminded of a definition – habitat is the place where organisms live. Habitat is having space to use for water, food, shelter and reproduction. Managing habitat needs should be to create a diverse habitat that benefits many species. After all, we, the human species, live in the same habitat and require the same things.

Heffelfinger's article started a thought process for me. The recent PBS Ken Burns documentary, "The Dust Bowl," reminded me that some of my previous articles looked at various parts of drought management. The weather of the last few dry years reminded me that we need to learn from our history to better plan and implement our future management. Texas climate, as you go east to west, has a general precipitation pattern of wet to dry. As you go from the Gulf Coast to the north and west, the growing season gets shorter. As Heffelfinger noted, we need to manage within the limits weather provides to maintain or improve the vegetation available. Remember, drought is always just a dry spell away.

Will your operation come through the drought like the buck in the upper photo or areas that are good habitat?

Plants, Drought and Planning

As I think about planning vegetation management for the future, I need to start by realizing that different plants respond to drought in different ways. All plants use some form of stored energy or food to initiate new growth or new plants. Stored food should be the main consideration in managing plants. The role these reserves play in management is important.

Annual plants such as common sunflowers and other annual forbs (broadleaf plants)

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respond to moisture and temperature. Being an annual plant, they start from seed each year. That is, they germinate and emerge when the moisture and temperature are right. Because of this, we may see lot of sunflowers one year but not the next. The seed provides the stored food to start a new plant. Seed can remain viable for one or more years depending on the species if it is not damaged or eaten. Most annual plants are opportunistic in that they wait for the right conditions to germinate and grow. Think weeds!

Perennial plants such as Indiangrass and little bluestem plus trees, shrubs, sedges and forbs. They rely on stored food reserves to continue their growth each year. The food reserves are stored in their stems and roots. Figure 1 shows the general pattern perennial warm season grass plants follow in using and storing food reserves. The solid line is in a year with average precipitation and the dashed line is in a dry summer. Most perennial plants follow a similar cycle.

The reserves are important since the plant only makes food stuffs in the leaves. To produce new leaves each year, the plant stores food for producing new leaves each year or when too many leaves are removed by grazing or other means. Most perennial plants also use food reserves to initiate reproductive growth. Succeeding years with dry periods or heavy defoliation during the storing period can lead to the death of the plant.

Biennial plants, such as bluebonnets, rely on both seeds and stored foods. Biennials start from seed similar to annuals, develop a rosette and then store food. In the spring, the plant may develop additional leaves or reproductive growth or flowers from the reserves.

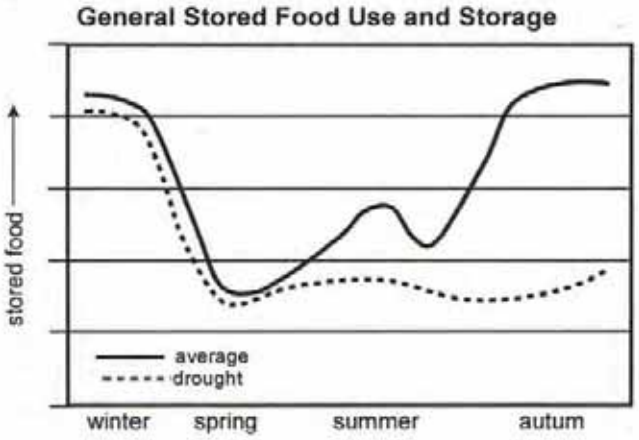
Weather and Climate

Texas weather has been on the dry side for about 10 years. Just looking back four years can be interesting. Figure 2 is the U.S. Drought Monitor map for the third week in November for 2009-2012. The time period represents the end of the time most plants will store reserves. We moved from dry to extreme drought in south Texas in 2009, to extreme to exceptional drought in most of Texas in 2011, and finally to lower drought levels in 2012. The extreme to exceptional drought has moved into the Great Plains and Midwest as of late 2012. The Drought Monitor prediction through the end of February 2013 is for drought conditions to persist and maybe intensify over Texas.

Predicting the weather in Texas has always been an "iffy" thing. However, there are some information sources that are useful to develop management options. See Table 1, or my website, for links to these and other useful web sites and smart phone resources (http://www.grassbydesign.com/TDA/NOAA.htm).

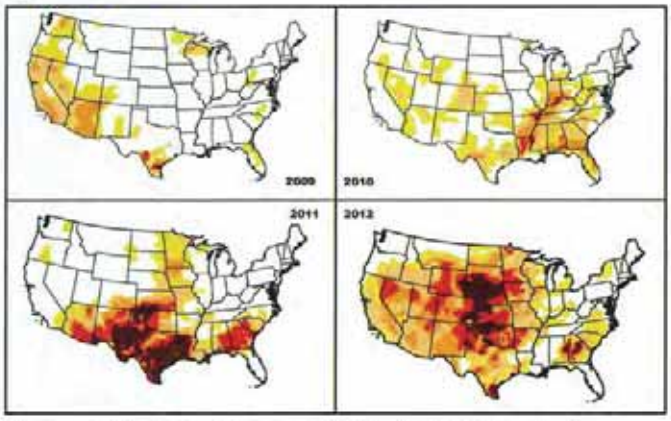
How can this information be used? Let's look at a short description

Fig. 1



The Drought Monitor weekly maps for the third week in November for 2009-2012.

Fig. 2



The Drought Monitor weekly maps for the third week in November for 2009-2012.

of what these sites indicate as of late November. In November 2012, the National Oceanic and Atmospheric Administration Climate Prediction Center (NOAA-CPC) indicated that El Niño would probably be neutral with warmer-than-average temperatures in much of Texas, northward through the Central and Northern Plains and westward across the Southwest, the Northern Rockies, and eastern Washington, Oregon and California. NOAA-CPC also suggested wetter-than-average conditions across the Gulf Coast states from the northern half of Florida to eastern Texas. The NOAA-CPC three-month outlook is for Texas to be up to 5 degrees warmer than average and precipitation to be about average. (Monthly and Seasonal Color Outlook Maps have data through 2014.)

Based on these predictions, managing for dry weather needs to continue. This means management should be prepared for dry weather with consideration for continued reduced forage and browse production. Livestock and wildlife water availability may be a concern where precipitation is the main water source.

Some Things to Think About

In thinking about the future, realize that plant communities do not respond quickly. They must have good growing conditions to start recovering, and then have continued good moisture time to rebuild to their potential.

When plants are stressed by drought, there is a process that they must go through to recover. It begins when average moisture returns and the plant goes through a complete growth cycle (one year) with 50% or more leaf area available to produce food for growth and storage. In high precipitation areas, such as east Texas, the plants should recover from the past five to 10 years of drought in two to four years with proper management. Going west, the Hill Country will take three to six years, while West Texas will take much longer. If the plants have been highly overused, they may never recover. The Panhandle will be similar to the Hill Country.

If you have been reducing your animals to match the vegetation available and keeping plants in good condition, you may want to match herd rebuilding to plant recovery. This is particularly important if the animals remaining are your genetic base and you want to carry it forward. Buying replacements with similar genetics may not be possible. It will probably be expensive, even if you can find the genetics.

When I was working in the Permian Basin area in the 1969-71 period, I met a rancher that had survived the 1950s drought with management. As the drought deepened, he culled his cattle and sheep herds each year using genetics as his guide. When the drought broke, he looked at the prices of replacements and decided to expand using his current

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genetics and only buying higher-quality males. After several years, not only did he have the genetics he wanted, but his pastures were in better condition than this neighbor's. The best indicator of this was the absence of bitterweed in his pastures!

Another consideration would be to look at your facilities. Water is always the major concern. Evaluate your water sources by how they performed over the last several years. Include their operating condition (need major repairs, failed early, best source, etc.), cost of repair, upgrading or placement, and how far your available capital will allow you to take improvement. Figure 3 may give you some ideas.

Maybe it's even time to review your long term goals and objectives. Sometimes a drastic change like drought will cause you to look at new alternatives. As the drought changed around you, you may have wondered if there were ways of managing differently. Maybe changing the mix of products (animals, services, audience), or even adding another resource use (recreation options, bed and breakfast) might be things to consider.

Change is never easy. Managing for drought is change. Decisions can be traumatic, especially when there is little choice. Once made, change can be a positive influence and can open the door to new opportunities.

An anonymous quote I found recently seems to fit here. "Diversity is the one true thing we all have in common. Celebrate it every day."

Until next time, keep the water flowing and the place in good repair!

Fig. 3

Water is very important in managing habitat and grazing. Not only is availability important, but access and reliability are also important.

Managing habitat for multiple uses or species is always a balancing situation. Each use or species has different requirements. Management needs to create a situation that can meet most of the requirements.