Dr Deer's™ PRESCRIPTION

Time For WADA

By Dr. James C. Kroll

On Feb. 1, 2003, I had the honor of being in charge of what would later become the Columbia Regional Geospatial Service Center. Our center figured significantly in the successful recovery of almost half of the material from the shuttle, and more importantly remains from our heroes who died that horrible day—Rick Husban, William McCool, Michael Anderson, David Brown, Kalpana Chawla, Laurel Clark and Ilan Ramon. Later, the technologies we developed for the disaster would be applied to recovery efforts for three hurricanes (Katrina, Rita and Ike), not to mention countless smaller disasters.

What does this have to do with deer? The technologies we used in the largest recovery effort in the history of man now are being used to gain valuable new information about whitetail management. Analyzing how geography, topography, soils, vegetation, etc., and their effects on wildlife and habitat is collectively called, GIS (geographic information systems). This article's title is not a typo; it involves a term we developed in conjunction with our efforts to develop the nation's first regional geospatial service center, now expanded to four strategically distributed in Texas. WADA stands for *Wide Area Damage Assessment*. The various aspects of WADA are what we need over the coming year to develop strategies for better management of our whitetails.

Unless you were in a deep coma or aliens abducted you to some far away planet, I do not have to tell you 2011 was the worst weather year in the history of Texas and its surrounding neighbors! I was a child during the infamous drought of the 1950s, which saw Hill Country deer populations plummet as ponds dried up and lush habitats deteriorated to desert conditions. I remember helping my grandfather travel twice a day to the Brazos River to bring back water for our cattle. I remember seeing deer staggering around the live oak covered hills around Fredericksburg, then falling down never to rise again. Until 2011, this horrible event was a "dating point" for me, against which I compared each dry year since. Now, we have a new dating point!

Climatologists now tell us 2011 is not the end of this trend. Our own analyses here at Nacogdoches (an area normally receiving 48 inches of rain annually), the drought may last another 5-10 years. So, whatever you thought was the world of whitetails prior to last year, you can forget for the foreseeable future. So, what do we do?

Landscape damage

There are two scales to the topic of this article. First, there is the landscape scale of the entire state, since not a single area was spared. Then, there is the scale of your own property or hunting territory, a more appropriate context for you to consider. The "deer landscape" covers several ecological regions, ranging from the traditionally dry west to the subtropical Rio Grande Valley. Over the next year, I would hope the various resource management agencies (Texas Parks and Wildlife, Texas Forest Service, NRCS, TCEQ, etc.) undertake an analysis of the short-term and long-term impacts of this drought.

I believe this would be a two-part initiative. First, as with the disasters of Columbia, Katrina, Rita, and Ike, there is a need to assess the total impact on the land and its animal residents. In eastern Texas, we have lost millions of trees both to drought and the fires that followed. West of Kerrville water resources have disappeared, leaving deer and other wildlife either to stay in place and die or migrate to find reliable water. Unfortunately, whitetails do not take to leaving familiar territory.

We need a comprehensive assessment of how many deer we have lost, the fate of our water resources and habitat health. We have the technology to do this, but in these hard economic times, I really do not expect much in the way of response. Television coverage of the recent east coast flooding disaster was non-stop, mostly because it involved human misery. Yet, the long-term damage the drought will have on rural lifestyles goes unnoticed.

I think the ultimate impact will be in the billions of dollars. Habitats will change remarkably, including reversion from forests to grasslands in many areas. For years, I have warned about the buildup of ground fuels in the eastern half of the state, as the "UWI" (Urban Wildland Interface) expands. Fragmentation, the breaking up of land into smaller and smaller pieces, is accelerating at an alarming pace; often reducing land to the point of unmanageability.

Private land

Although we Texans pride ourselves in private land ownership, the drought has taught the stark lesson that properties are part of a mosaic in the landscape. On a smaller scale, Texas landowners will have to conduct their own WADA, leading hopefully to strategies for the coming decade. That really is the focus of this article—what can YOU do to prepare for a new way to manage your land and deer herd?

The first step is to assess how the drought has and will affect your habitats. Using the resources now readily available on the Internet, get yourself a recent aerial photograph and identify the various components of your land. Each habitat type provides some critical utility to your deer. One place may provide summer thermal cover, while another natural forages; at least they did! Once you have identified your deer landscape, make an assessment of the amount of damage caused to each. For example, some of the properties I manage in the Hill Country have lost large blocks of blueberry or redberry juniper. Normally considered a nuisance, such blocks provide critical cover, if properly managed. For the first time in my career, the number of dead junipers is mind-boggling in many areas! When juniper dies, it really is bad. Patches of dead trees may not be all that bad, however. Where there was no food, it now is possible for forbs and shrubs to flourish. One habitat utility may give way to another, but then this rearranges the mosaic.

Water is the most critical, yet least considered aspect of deer management. I have written a great deal over the last several months about water management. Statewide, we need an assessment of the total loss of water resources in 2011. On the private land scale, however, loss of water resources can be devastating. Did you keep track of which water sources were first affected by the drought? How did water availability affect the movements and distribution of your deer? Either by divine intervention or dumb luck, here at the Institute we began water management and drought research two years ago. We are developing inexpensive ways to collect, bank and distribute water to wildlife. We even have installed water collection systems on our research buildings to hold water in storage tanks. We have installed water tanks and watering troughs evenly over the landscape to keep our deer spread out. At Dos Gringos Ranch, owned by Al and Quad Boenker near Alice, Texas, we have developed a system of man-made water holes, connected to a network of water lines. Graduate student Ryan Cantrell recently demonstrated how well these water holes spread out the deer and reduced stress on individual animals.

No geographic area was exempt from wildfires in 2011. I recently drove through the Bastrop area and my heart

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was broken for the people who once lived among the "Lost Pines." Unfortunately, if the pines return, it will be long after most of us have passed on. We now need to assess the conditions leading up to these fires, and what land management practices could have prevented or at least reduced the impact of wildfire. On an individual basis, whether you were struck by fire or not, you should assess your vulnerability to the next fire season. You need to decide which habitats you need to modify to protect your deer landscape.

Oftentimes, wildfires are the result of over-protection from fire. Public acceptance of prescribed burning often is very low; yet, a well-planned prescribed burn can reduce wildfires hazard significantly, while enhancing deer habitat. It may seem preposterous to think about a burn this winter, but that may be exactly what your land and your deer need. Development of fire lanes, strategically placed to stop or at least slow the spread of wildfire until crews arrive is a sound management strategy. Use topography and habitat types to make decisions about the placement of these structures. Further, hazard rate various areas of your land. For example, it is obvious any area adjacent to a public road is a high hazard area.

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Recently, I walked a county roadside, counting the number of cigarette butts adjacent to the pavement. I lost count in the hundreds!

One habitat type may serve as a barrier to fire, while another accelerates the spread. A dense stand of hardwoods, for example, produces little in the way of ground fuels. Well-distributed hardwood stands can be as useful as a fire lane. Juniper or pine habitats can be the same thing as a tank of gasoline! Keeping large blocks of these trees is a serious danger to your land, so break them up with other habitat types.



High-fenced properties

High fencing is a controversial topic in many states. I often have admonished landowners who high-fence, "You now are totally responsible for the welfare of your deer." I recently drove past a large East Texas property that had been fenced. The pine forests within were totally burned, giving the appearance of a nuclear disaster. "I wonder how the deer survived this?" was my immediate reaction. Those of you with high fences should include in your assessment provisions to allow your deer to escape wildfires. Large impoundments, even when they are dry provide escape areas. Disking of fields under drought conditions also provide places for deer to escape death or injury. Again, include these features in your landscape analysis of your property, and make provisions for the worst case scenario.

Nutrition management

Providing adequate nutrition is the second most important aspect of your drought management program. Again, we are involved in intensive research on ways to provide nutrition in dry conditions. One of these projects is looking at the importance of corn over protein pellets. This work began almost 20 years ago, but we now have returned to the topic. So far we are seeing what we discovered two decades ago; energy is as or more important than protein to deer. The greatest energy demand is during summer months when does are nursing and bucks are growing antlers. This may seem like heresy, but when combined with good native forage, feeding corn is not as bad as portrayed by biologists in the past, including ME. Normally, this would be good news, since traditionally corn is cheaper than protein. However, we now are paying more for corn than pellets. The drought, coupled with the flawed policy of price supports for corn and soybeans have driven prices to high levels. In my opinion, growing corn for ethanol is not ecologically sound; especially when it takes an acre-foot of water to grow a ton of corn, and the use of diesel and chemicals to do so.

We now are looking at using electric fencing to bank forage and grains. We have successfully used electric fences to keep deer out of corn-soybean fields until needed. You may be asking how they would work if there is a drought? We have learned plants such as cowpeas and chicory are remarkably drought tolerant, provided they can reach a level of development beyond the first two-leaf stage. As I write this article (October 2011) I still have cowpeas in my research plots, in spite of not having a decent rain since last June. Finally, we are looking at ways to produce silage from food plots during the accelerated spring growth stage, when more plant material is being produced than the deer can consume.

The bottom line is you need to begin an entirely new way to look at deer management; and, so do state agencies. These drought conditions are not going away in the near future. You need to conduct a WADA on your property, consider the worst case scenario, then develop a management plan that mitigates as much damage to your deer herd and habitat as possible.

