Dr. Deer's™ PRESCRIPTION

The Deer Landscape

By Dr. James C. Kroll

In the last issue, I presented a very strong criticism of the state of deer management on both private and public lands. An increasing number of deer biologists and interest groups are growing concerned about the future of whitetails. At least 20 states now are recognizing they may have a problem with declining populations; and frankly, professional biologists really do not want this information spread too far. It could affect sales of hunting licenses and permits in many states where deer pay the bills for much of agencies' activities. It is one thing to criticize; quite another to offer solutions. In this column, I begin a series that presents suggestions as to how deer should be managed, and what YOU the landowner and sportsman should be expecting from professional deer managers.

We begin with a concept I hit upon a number of years ago. I spent some 25-plus years capturing and radio-tracking mature bucks in an effort to determine what they were doing that kept them from being taken by hunters. Turns out the average hunter is not hunting where the mature bucks are, and certainly not *when* they are there! One interesting aspect of my studies was the realization that deer perceive their habitats in a way similar to the way you view your yard or land. The landscape on which deer reside is made up of various elements, each of which has some utility to each deer. If we lay out these elements in the proper distribution and size, I felt we could not only increase the productivity of your land for deer, but make them want to spend more time there.

I was blessed to have begun my work here in eastern Texas prior to the time when clear-cutting became a common forest management practice. I worked primarily at Boggy Slough Hunting & Fishing Club, Scrappin' Valley, and Brushy Creek. The first two locations belonged to the Temple-Inland company, while Brushy Creek went through several ownerships among timber companies. One of the early controversies was how big to make a clear-cut. A great deal of early forest wildlife research focused on this question. As we were working this out, my analyses began to point out that changing the landscape through timber harvest affected the size and shape of deer home ranges. Any mammal's home range tends to be elliptical in nature, since in unmanaged habitats, animals have to extend movements to acquire all their basic needs. It occurred to me that if needs were being met in the right arrangement, then home range shape should be more circular.

So, we started manipulating habitats through cuttings to see if this was true. Not only could we make home ranges more circular, but we soon learned we also could make them smaller! The question became: How small can we make a deer's home range through habitat manipulation? The answer was 80 acres. It appears a deer is genetically programmed to roam over at least 80 acres, no matter how good the habitat is, and that makes sense. So, the bottom line was we established the minimum management unit size for whitetails at 80 acres. The key would be to provide everything a deer needs within that management unit—no easy task.



Marty Berry Photos

The Elements



Each habitat type has utility(ies) to deer. The basic needs of whitetails are food, cover, and water. Deer are "slaves" to their ruminant (4 chambered) system, which requires feeding of micro-organisms within the first chamber (rumen) every 3-4 hours. A mature deer eats about a ton (dry weight) of forage each year. That translates to a great deal of plant material. However, it grows significantly when you consider that deer are NOT cows! A cow can eat and digest much poorer quality forages than a deer, which has to consume the more palatable species and plant parts. They have definite preferences for specific plants and actively seek them among an array of plants with varying qualities. If you look at the head of a deer from above, note the nose is long and pointed. Deer also have relatively long tongues. These are adaptations for reaching into dense vegetation and extracting the best parts of the plant. A cow, on the other hand, has a broad nose and short tongue, and just walks around the land "Hoovering" up vegetation that a deer would not even consider.

If a deer eats about a ton of food, and it is a "picky" eater, how many acres does it take to support a deer? Well, in East Texas an acre of typical hardwoods will produce about 100 pounds of deer forage per acre, which will support a deer for only a week! That means it will take 52 acres to support one deer, unless we do something to increase production. I might point out here I just presented information the average biologist outside of the South cannot give you, since there has been very little research effort on this topic. So, as much as ⅝ of the management unit will have to be devoted to producing deer food in this example. Of course, we will learn in future columns how to change this.

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Given this information, we can turn to the next requisite, cover. There are two types of cover, summer and winter thermal. Summer cover is characterized as having a dense canopy and very little vegetation or short (less than two feet tall) plants that do not impede wind movement. Bucks in particular enjoy summer thermal cover. Winter thermal cover is quite different in having both a canopy and dense vegetation to impede wind flow; the purpose of which is obvious, especially in the cold, snowy north country.

Last in need is water. We have been working for some time on the use of artificial water systems for deer and other animals. Providing water within the 80 acre unit will provide many benefits, including spreading your deer out and reducing social conflicts and reducing the spread of diseases such as EHD. A simple water tank connected by a hose or pipe to a tank and float valve can provide all the water needs for your deer, without spending a fortune on pond or well construction.

I overlay an 80-acre grid over the property and examine each square for the various utilities provided by the habitats therein. Now, I am fully aware not everyone owns or controls even 80 acres. I also know that land holdings are not always square. So, if you have less than 80 acres you need to examine what your neighbors are doing and determine what is missing, so you can make up for it on your land. I also am aware that some of you own very large tracts, and managing at such an intensity is not economically feasible or practical. In these cases, we just increase the unit size to 160, 320, or 640 acres, depending on the goals of the landowner. Of course, in doing so you must accept that productivity will be reduced.

Once you have analyzed utilities of habitats within your management units, the next step is to determine what actions are necessary to improve or provide each type. THAT is where a good deer manager excels and many fail! If you are not managing your habitats to produce sustainable resources and landscape elements, you are *not* managing deer. Putting out a bunch of protein feeders is nice, but it does not substitute for this type of management. Do not get me wrong, I regularly use *supplemental* feed, but I do not look upon it as management in and above itself.

I hope this clarifies my position on what is management of the deer landscape. Yet, there is a lot more to deer management. Remember, in my last column I compared deer management to a three-legged stool. One leg represents habitat management; another population management; and the third people management. If your plan does not deal with all three, you know where you end up—on your bottom!

Next issue, we will talk about ways to provide a sustained yield of forage within the food elements of your deer landscape.