

Dr. Deer's Whitetail World

BY DR. JAMES C. KROLL

Nutrition, Age And Genetics: The Critical Trinity, Part 1

I just returned from a field trip to Louisiana with several graduate students. As part of my course, "Ecology, Management and Harvesting of White-tailed Deer," offered once a year at Stephen F. Austin State University, we go to various properties to evaluate potential for producing trophy whitetails.

It was a memorable trip. The property we visited has been in the family since the 1950s. Three generations now hunted the hardwood forest and agricultural land adjacent to the Mississippi River levee. The owners had e-mailed me about coming to look at their place because they were not happy with their management program. They recounted a much-too-familiar theme.

"There was a time when we harvested 30 to 40 bucks a year — good bucks — from this place, and now we are lucky to kill 8 or 10 bucks a season!" one of the men told me.

Each season, the owners had meticulously recorded their harvest statistics. The records substantiated their complaint. This is a growing theme that I see everywhere. If something is not done soon, I'm afraid that the tremendous interest in deer management that has been generated over the last two decades could slip away. So with this column I'm beginning a new series, one aimed at helping you evaluate your situation and helping you renovate your herd. Hopefully, over the next few issues, we can rekindle the enthusiasm you had when you first decided to grow better bucks.

THE "LIMITING FACTOR"

I chose the title of this month's column carefully. It really is a worn-out phrase, all the more appropriate for our beginning. If you attend a talk by almost any deer biologist today, you no doubt will hear this statement within the first five minutes: "The three keys to producing whitetails are age, nutrition and genetics." This is an easy thing to say, quite another to execute. First of all, what does each factor really mean? How do you go about putting together a plan to blend the three together into a coherent management program? And what can you expect and what is the cost in time and money? Let's start down this road with some frank talk.



PHOTO BY BILLKINNEY.COM

In order to grow more bucks and bigger bucks on any property large or small, the author says that you need to incorporate a well-balanced management plan that works from the bottom up. If you provide good nutrition to your plants, they in turn will provide good nutrition to your deer.

You might have noticed my title is slightly different from the above quote. I placed nutrition ahead of age, something few biologists do. Last year, and continuing into the first issues of 2009, I completed a lengthy series on nutrition. So, you might think I'm beating a dead horse. But believe me, there is a lot more to this than I wrote about last year. And our trip to Louisiana brought this vividly home to my students.

Handpicked, each of my graduate students has special talents and career goals. I try to instill in these young biologists an ability to quickly analyze a property and pinpoint what we call the "limiting factor." Simply stated, the limiting factor is the one thing that keeps folks from realizing their goal of producing more and better bucks.

In this case, good old nutrition once again raised is head. Over the years, the productive capacity of the habitat had slowly drained away. The owners had not noticed it, and seemed unwilling to accept the reality of it, but there it was. Sure, there were other factors in play, but *the* limiting factor was indeed nutrition. The property butted right up against a national wildlife refuge where for decades little had been done to manage the bottomland forests. And nothing had been done to improve deer nutrition!

CONSERVATION OR PRESERVATION?

I sometimes wonder what refuge managers do all day. It's hard to say, but most refuges are just large hunks of the earth set aside to "protect" nature. There is the false assumption that Daniel Boone is still alive, and the landscape looms large and expansive. In reality, refuges are but small, remnant pieces of what once was the great American forest. Like the average



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Unfortunately, more and more so-called food plot seed companies throw large amounts of money into advertising low-preference seeds as magical solutions to growing big bucks. In reality, no single planting can do this alone. The majority of these nutritional plot-type plants run very high in protein and, while they are a good idea, they should be used as springtime nutritional plots. They are not the fall "super attractants" they are advertised to be. When choosing new varieties that go into our bag, the Buck Forage staff works hard to determine preference based upon criteria such as extreme winter tolerance to last well into the hunting season and growth characteristics that allow for more tender and palatable plants. Our research and plant breeding program specifically for deer has produced a variety that is cold tolerant, highly attractive and nutritious (20+% protein).

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American hunter, many wildlife refuges are approaching old age. Whitetailed deer are not climax species. They thrive on disturbances that generate new forages and release vital nutrients. If you want whitetails, you are going to have to stir up the ground!

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This column is a necessary wakeup call for deer management, and I'm not going to apologize for hurting someone's feelings! So far, we've not even looked closely at what our landowners have on their property. We're still on the perimeter. The refuge takes care of two sides, but what about the other neighbors? Well, seems they have tired of the difficult farming life and opted instead to cash in on government programs to "restore" natural habitats.

Under various names, such as Conservation Reserve Programs (CRP) or Wetland Reserve Programs (WRP), these programs provide financial incentives for landowners to stop farming. All in all, this is not a bad idea as government programs go, but it is an imperfect one. Why? Because most of the folks overseeing such programs are second- and third-generation conservationists who did not grow up on the land. And they tend to confuse "preservation" with "conservation." Remember, my hero Theodore Roosevelt and his buddy Gifford Pinchot defined conservation as "wise use," not "no use at all." Pinchot knew full well from his European training that land must be managed, not locked up.

NOT AS EASY AS IT SEEMS

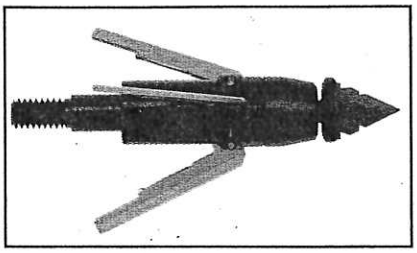
Whereas it's a good thing to turn a cotton field into a forest, it's quite another to do it in a manner that ensures a sustained yield of deer and other wildlife. The soil productivity, choked out by years of clean farming, must be restored. On the surface, it seems that all you have to do is plant some oaks in the abandoned field, wait 30 years or so, and bingo, you have a natural forest!

Go ahead — plant some trees. But where are you going to get them and what species work together in a synergistic system? Can we totally ignore the decades of ecological succession it takes to produce a soil conducive to growing oaks? And finally, what are we going to do for the deer while they wait?

These were my thoughts as I walked along the exterior property line with my students and newfound friends in tow. The neighbors, who once planted soybeans and corn, now owned land dominated by a handful of tree species, representing an odd mix of early and late successional species. Green ash was growing happily beside struggling oaks. Elms thought life was good, while hickories had their doubts. Yet, in spite of the slow growth, each tree was busy trying to close ranks with its neighbors. Grasses — not exactly great deer food — were the dominant understory herb. My students understood as I explained to the landowners that things were not going to get better without a lion's share of effort on their part.

Turning to the property itself, we were delighted to find a recent timber thinning along one side of the property. In the short span since the last growing season, a flush of luxuriant plant growth — dominated by prime deer foods — made walking difficult. This was what I wanted to find, but there was a catch to it. The thinned area represented a single site operation. In addition, there were two smaller clearcuts located a considerable distance away. The total timber harvest, including thinning and clear-cuts, was about 300 acres, almost 10 percent of the total acreage. I explained to the owners that it's better to cut smaller areas, and to spread them around the property so as many deer as possible would benefit.

Gearing Up



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OTHER CONSIDERATIONS

Studies have shown that deer will not leave their home ranges for better food. The basic management unit is 80 acres (remember our previous series) in which everything a deer needs (food, cover, water) must be present. By carefully distributing the timber cuts over the property in the right proportions, the property owners can maximize deer productivity through the abundant food. Fortunately, my students already had prepared an aerial photograph of the property, overlain by an 80-acre grid for the landowners' use.

The next obvious problem was the agricultural fields. About a third of the property was in clean farm fields. This is not a criticism; landowners have to make income from their property. I am not one of those biologists who think landowners are there for the public good. So, we discussed ways to mitigate the forage and cover losses caused by farming. Things like the softening of an edge, the addition of a timber cut along one side of a field, and the planting a food plot were carefully discussed. Fortunately, the landowners got it and were an easy sell.

Food plots in most of the whitetail's range remain the most efficient way to increase nutrition, as well as mitigate deficiencies as you change the land into a better place. Once again, however, it was obvious that the food plot program was not working on this land. When I walk through an anemic stand of wheat and see a plant of one variety here and another there, I know the approach has been to try a host of things touted to be the secret key to growing better deer. My students also saw this, and one of them asked about a soil test. Fortunately, a recent soil test had been completed that they could study.

Turns out, the soils are pretty good from a nutritional standpoint, with one critical exception. One of the most important nutrients is phosphorus. Studies conducted in the Mississippi Delta clearly show soil phosphorus determines body size and antler quality. Most of the soil samples showed a high potassium content, also a critical nutrient, but low phosphorus and nitrogen contents (not surprising). After further testing, we also plan to look at micronutrients such as boron and zinc. From the soil analysis, we will then calculate the right fertilizer to provide a nutritional balance.

You always should work from the bottom up. If you provide good nutrition to your plants, they in turn will provide good nutrition to your deer. After all, it is a food chain! Some folks try to short-circuit the process with feeding, but the simplest way is through the plants (where there is adequate rainfall). Remember, a buck takes the minerals he needs for antler development from his flat bones, not directly from the earth.

CONCLUSIONS

My students also will be devising a sound planting program, featuring varieties suited to the various soils and conditions on the property. It will be a simple mix, probably of various species of legumes, cultivated forbs and cereal grains. At each site, an exclusion cage will be erected so the landowners can see the effectiveness of their planting program. The location of each plot also will be carefully considered. Remember, we want "one-stop shopping" for our deer. Browse (the leaves and twigs of woody plants) is the mainstay of deer forage, as long as this browse is in reach (deer height). Also, the timber management program will coincide with the food-plot program, again considering our 80-acre units.

My students are now busy preparing a management plan for the landowners that will ensure a sustained yield of forage. That's been the primary problem in this case. The forests on the property have matured, land-use for neighbors changed, including the refuge, and the herd has suffered as a consequence. Will things return to the golden days when 30 to 40 bucks were taken annually? Probably not, because the property fits into the landscape.

Unless the owners have a high fence (something few can afford or want), it is an open ecosystem, and the property will always be affected by what the neighbors do. But the owners *will* be able to make *their* property *the* place deer want to be. The next step is to make the plan sustainable, and to visit with the neighbors. Next month, we'll look into the age factor. What are realistic expectations for properties like this, large or small?