BUILDING YOUR OWN
'DEER FACTORY'

Harvest Strategies For A Healthy Herd

Removing the right deer from the herd at the right time is one of the fundamentals of sound deer management. Here are some common-sense guidelines to simplify the process.

by David Morris

You've just reached a decision point in your management program. By censusing your herd, you now have a feel for the most important herd variables: the number of deer living on your land; the buck:doe ratio; the age structure; the recruitment rate; and natural mortality. You've even plugged the data into a herd model to predict the impact of certain management decisions. Now you're at a key crossroads, one lying at the very heart of your program: What harvest goals do you set to meet the short- and long-term objectives of the people involved?

Regardless of the amount of land we have or our personal goals, our overriding objective as managers should be to return the herd to a healthier, more natural state and then keep it there. This gives us some guidelines on harvest strategy. Still, there are many ways to go, and the manager is the only person who can decide what's right for his program.

WEIGHING THE FACTORS

You do face certain realities, of course. To start with, when laying out a harvest strategy, you have to consider *all* of the deer affected by your management program, whether or not they stay on your property all the time. If your neighbors shoot deer that have been spending time on your land, that must be factored into your harvest strategy. A deer shot out of "your" herd is just as gone whether it's you or Neighbor Bob who pulls the trigger.

This fact is the bane of managing tracts of limited size, especially if you have neighbors who shoot deer indiscriminately. One answer is to get them to join in a program similar to or at least compatible with yours. Such cooperatives can be good for all involved, as long as everybody has similar goals and sticks to them.

Of course, if you share a herd with neighbors who just won't cooperate, the effectiveness of your program boils down to what you can do on your own acreage. That depends on your ability to hold deer on your land, which is a function not only of acreage but also cover, hunting pressure and food sources. A food source supplying the bulk of the herd's nutritional needs will keep the animals closer than will one of less importance. This makes highly attractive food sources vital when you're managing limited acreage.

Also, how ambitious your harvest objectives are in light of losses to neighbors will determine whether or not your program can meet your expectations. If you have modest hopes, you might be satisfied with the outcome, but if your hopes for deer numbers and size are high, relative to the total number of deer using your land, losses to neighbors will be frustrating. After improving on the variables you can control, you must realistically weigh all factors to set workable harvest goals.

Lack of control over the herd and indiscriminate losses to neighbors are the primary justification for high fences. With land prices being what they are, few can afford the acreage necessary to have full control over large numbers of deer. Because of conflicts with neighbors and/or high road-kill losses, some folks with intensive-management ambitions are using high fences as a tool to limit excessive losses of deer.

'NEEDS' vs. 'WANTS'

Let's assume you have substantial control over enough deer to meet your management objectives. How do you decide how many of which bucks and does to harvest?

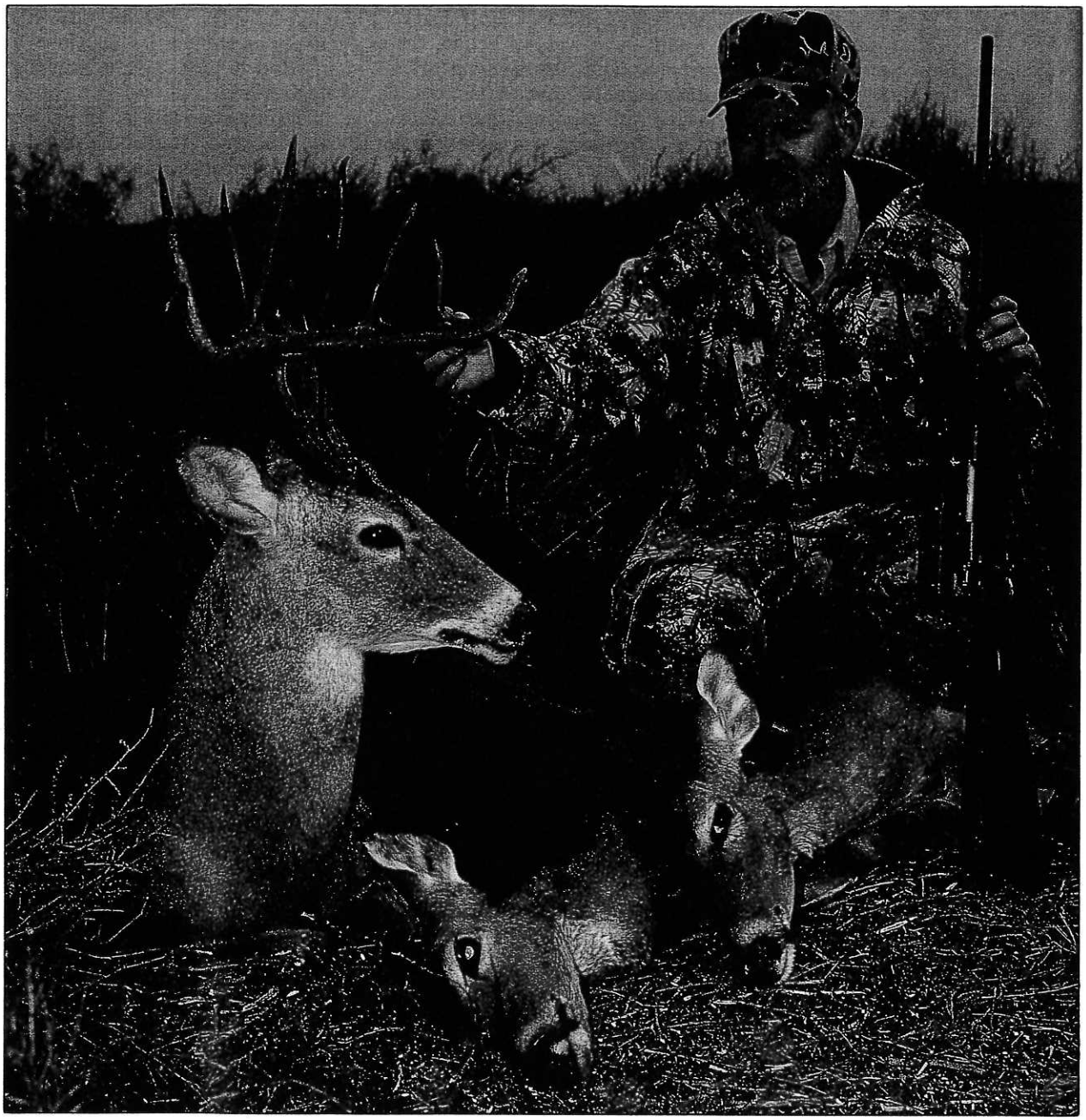
There are two parts to the harvest equation: (1) "*need* to take" and (2) "*want* to take." How do they vary?

You *need* to take enough does to maintain a healthy buck:doe ratio and to hold total deer numbers within the target range. Both of these are vital aspects of our overriding goal of managing for a healthier, more natural herd.

Many managers and hunters alike now are coming to grips with the fact that once total deer numbers reach the right level, the doe harvest should roughly equal — or, in many cases, exceed — the buck harvest. Buck mortality is *naturally* higher than doe mortality.

So, doesn't it make sense that at least as many does need to be taken as bucks, just to maintain roughly the same buck:doe ratio (assuming it's suitably tight to start with)? The answer is yes! As your management program matures, a balanced harvest of bucks and does will be needed.

Now we come to the "*want* to take" part: the buck harvest. The point of management is to give us a



Regardless of which bucks you choose to harvest off your land, in virtually every instance you should take at least that number of females. Here, editor Gordon Whittington examines a 7 1/2-year-old buck he shot on the Diamond H Ranch in Texas, along with two does. Photo by Mike Biggs.

healthy, balanced herd that will yield a sustainable harvest of bucks sufficient in size and number to meet the desires of the people involved. The harvest goals need to spell out the total number of bucks, and does, to be taken and the ages and/or sizes of the bucks to be harvested.

Our goal of returning the herd to a more natural state means we need an ample number of mature bucks. While this is good for herd health, it's also consistent with what we hunters prefer: some older and bigger bucks to hunt. So, the buck harvest should be regulated to promote good age structure.

But there's still room for a wide range of programs of vastly differing scope. A manager with 200 acres might set his sights on having his family bag two mature bucks per year, along with two or three does, to complement neighbors' harvest and to put some venison away for the winter. A fellow with more land might decide that he and the other three members of his hunting club each will shoot a 2 1/2-year-old or older buck and a doe per year. Then there's the manager with significant control over a great amount of land and deer. What are his options?

First, regardless of his ultimate goal, he doesn't have to reach it the first year. When the goal is to only take older bucks of a certain age or size, getting there via the quickest route often requires all but stopping the buck harvest for a year or two. That's unpalatable for many hunters.

A better option might be to have harvest limitations that allow steady progress to be made toward the end goal but still allow some bucks to be shot every year. It will take longer to get to the ultimate goal, but the manager is less likely to have a mutiny en route.

Perhaps your long-range goal is to

harvest half of your land's 3 1/2-or-older bucks (after allowing for natural mortality) each year. Let's say that by plugging your census results into a herd model, as detailed in our last issue, you find that you'll have 20 such deer when the program matures, letting you take up to 10 mature bucks the year you reach that number. But this year, census data suggest that you have just five 3 1/2-or-older bucks in the herd . . . and eight hunters to satisfy. Now what?

Let's assume the census indicates that, in addition to these five 3 1/2-plus bucks, you have 13 that are 2 1/2 years old. A possible solution would be to let each hunter take one buck from the combined pool of 18 bucks that are at least 2 1/2 years old. As a result, next year there would be somewhere around 10 deer of at least age 3 1/2 in the herd. (The exact number, of course, would depend on natural mortality.)

While that's fewer 3 1/2-plus bucks than there would have been under the ultimate goal, it's still twice as many as are now present. In two or three years, that goal of 20 mature bucks can be reached — and when it is, you'll likely have happier and better-educated hunters than you would have had by getting there more quickly (by shutting off all buck harvest). Goals often must be salted with a touch of practicality.

The transition years of a program are the hardest for many managers, because they know where they want to be and are anxious to get there. Plus, each buck shot before his time represents some slippage in realizing the target goal. But keep in mind that we should *enjoy* deer hunting. In my experience, as the people involved start to see progress, they begin to understand the program and are more willing to see it through.

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Patience is a vital quality in a deer manager . . . and in his fellow hunters, if it can be obtained. But if you make steady progress, the time will come when you reach your goals as manager. Then more decisions are sure to come, including how far you want to push the management-intensity envelope in an effort to produce still more and bigger bucks.

The farther up that ladder you go, the more tradeoffs you must make. As the number and size of the bucks to be harvested go up, so do the resource requirements — especially the size of the land base. That's easy to understand from a numbers standpoint, because the more bucks you want to harvest, the more you have to produce. But the size of the bucks targeted for harvest also can have a great impact on your resource requirements, even if the desired number of larger bucks to be taken isn't all that high.

The higher up the relative buck-size scale a harvest goal is set, the rarer such deer are as a percentage of the population. Producing top-end bucks is a numbers game; you must grow a lot of mature bucks to kick out a few real giants.

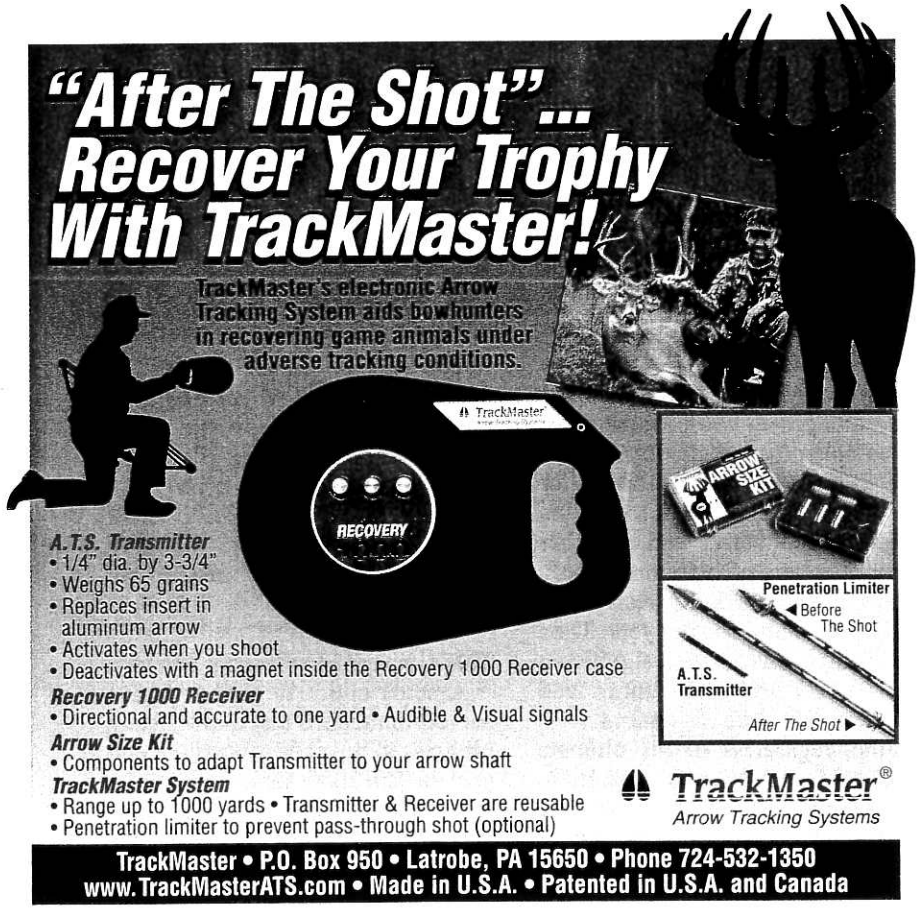
One of the beauties of the food-source management strategy we at ***WHITETAIL*** advocate is that it helps you boost the odds of producing top-end bucks, both by increasing the total number of males your land will carry and by elevating their average size. Still, the more demanding your harvest goal is in terms of buck size, the greater the resource requirements and the fewer the bucks that can be taken.

CHOICES, CHOICES!

If you have enough resources, you have plenty of harvest options. For instance, the goal might be to take a substantial percentage of the mature bucks in order to satisfy a lot of your hunters or to meet economic goals. This type of harvest might be best for the program, but be aware that it would come at the expense of top-end potential, because prime-age bucks would be relatively scarce.

If, on the other hand, your goal is to produce a few top-end bucks, you'll have to lay off the younger mature bucks — especially those with bigger racks — so you can move a lot of them into the peak-antler ages of 5 1/2 to 7 1/2 years.

Of course, there are all levels of in-between harvest options, but one is especially feasible for the manager who wants to maintain a reasonable harvest of mature bucks while still producing top-end deer: He can harvest "management" bucks. This



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essentially allows for shooting a number of smaller-racked mature bucks, usually those with 8 or fewer points, while bigger-racked bucks are left to build the pyramid of good mature bucks so necessary to kick out a few top-end trophies.

This not only allows your hunters to harvest more bucks, it also has a beneficial effect on genetics over the long haul. Removing these bucks from the herd clears the field for bigger-antlered males to do more of the breeding. Management bucks are a natural byproduct of a top-end-oriented program, and taking them doesn't threaten the end goal; in fact, it might even help. Most of today's top-end programs include an annual harvest of management bucks.

'HIGH-GRADING'

When the goal is a heavy harvest of mature bucks, danger lurks. If hunters select for the biggest-racked bucks year after year and leave the rest, there can be an erosion of genetic quality over the long run. This is called "high-grading."

It's better to have a non-selective harvest that removes a representative cross-section of the mature bucks present, regardless of their antler size. However, we all know that if given a choice, hunters will opt for a big rack with a lot of points. The manager can mitigate this problem simply by limiting the total number of mature bucks taken in any year, so that no matter which ones are shot, genetic damage is minimized.

This concern admittedly is more theoretical than real in most cases; it takes many years of high-grading to make a noticeable difference in genetic quality. Plus, few hunters are consistently effective at killing the top bucks out of a herd anyway.

Still, it can happen. I know of a 10,000-acre unfenced ranch that endured heavy, selective hunting of the bigger bucks (nearly every 10-pointer seen was shot) for decades. Now, despite 10 years of intensive management, the negative effects linger. The ranch still has a herd dominated by 8-pointers, and few are the 10-pointers to be found, even among the older bucks! It pays to avoid long-term high-grading.

GOOD FOOD, GOOD GENES?

Along these lines, it's apparently possible to enhance the base line genetic potential of bucks through better long-term nutrition. This goes far beyond the animals' simple

immediate response to improved nutrition. I'm talking about a progressive generational *release* of even greater genetic potential than the herd displayed when nutrition was poor. This obviously presents an exciting opportunity for those who use food-source management.

Dr. Gary Schwarz brought this theory to my attention. He'd come across a study, reported in the 1986 *Wildlife Society Bulletin*, that dealt with theories as to why the racks of red stags and roe deer in Europe are now much smaller than those from medieval times. Although this study was conducted before World War II by European scientist Franz Vogt, it wasn't brought to the attention of North American researchers until Canada's Valerius Geist published

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the results of Vogt's study.

Vogt's theory was that in modern red deer and roe deer, the effects of poor nutrition over many generations had suppressed the potential for full genetic expression of antler and body size. (We'll focus only on antler size for now.) He wasn't just saying that the antlers of a given animal were smaller due to poor nutrition; he believed the genetic potential for size actually had been eroded as an adaptation to long-term malnutrition. And if this was true, he theorized, with optimum nutrition the suppression of antler size could be reversed over time.

Vogt was right. In five to seven generations under good nutrition, deer in his studies overcame their environmentally induced genetic suppression and realized their full potential. Once again, there were red stags and roebucks equal in antler size to those of medieval times!

From the perspective of a whitetail manager, this discovery's importance can't be overstated. It means that in theory, *the ultimate genetic potential in many deer herds is better than it would appear*. If managers, through time and nutritional improvement, could realize the latent potential for antler size in their existing herds, they probably could reach their size

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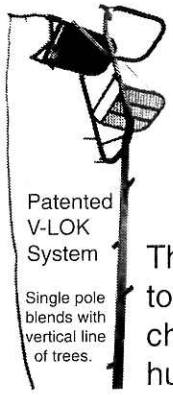
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goals without having to introduce "better" genetics. And they could expect an effective nutrition program to result in real and steady progress in increasing buck size for years to come, as long as herd-management strategies were sound!

THE QUESTION OF CULLING

If the negative genetic effects of high-grading are real, then the reverse is equally true: Rack size can be *increased* by removing certain bucks from the herd, allowing those with more desirable antler traits to do more breeding. This is the idea behind taking management bucks.

Genetics can be improved to a degree over time; however, genetics is seldom the limiting factor in a program, at least to start with. Once nutrition and age problems have been addressed, *then* a manager's attention can turn to genetics.

Harvest goals can be quite basic or intricate; there's no "one size fits all" formula.

I see no reason to avoid taking bucks that clearly won't make a positive contribution to the herd's genetic quality or eventually grow to a size that meets the program's standards for a desirable buck. Even so, I believe it's best to *let most questionable bucks reach maturity (age 3 1/2) before removing them.* That way, if nutrition is good, they'll get a fair chance to show their stuff. Without good nutrition, you can't tell what a buck's genetic potential is.

What about culling spikes? A more controversial subject I've never known; the scientific community has come down firmly on both sides of the issue at one time or other. But today, the answer is a resounding "No!" *Spikes shouldn't be culled, at least not if they're yearlings. If you're sure a spike is at least 2 1/2 years old, then it's OK to take him, but be very careful in aging him!*

As it turns out, very few bucks grow spikes because of genetics. Most yearling spikes are the result of nutritional stress or simply their age; they were born later than normal the previous year. So, removing these spikes won't improve genetics.

Over and over, it's been proved that young spikes can and often do grow big racks later in life. For example, Gary Schwarz once put a