Dr. Deer's™ PRESCRIPTION

The Art of Culling—A Primer (Part 2)

By Dr. James C. Kroll, Ph.D.

In the last issue of *The Journal*, I began to tackle the issue of properly culling a herd. To recap, I explained that you first have to focus on how many animals should be on the range, and then you have to know how your herd is doing by monitoring responses of the herd and habitat to harvest. Crucial to this, and probably the most important aspect of deer management, is recruitment, defined as the number of offspring that live to one year of age. I then covered the two culling practices to be considered—first, removing excess animals as a means of controlling the herd, and second, removing males with inferior antler traits for the purpose improving antler quality. But even with all I said about culling in my last column, we've got more ground to cover.

Do We Really Know What We're Doing?

If you've refreshed yourself with the information I dispensed in the first part of this column, you now know that there are a whole lot of things to consider, when we talk about culling whitetails. We have what, in reality, is a paltry amount of known science, so we have to ask, what do we really have to consider in culling whitetails? In a perfect deer world, we would have the following:

1. The first set of antlers would tell us everything we need to know about a buck's genetic potential.
2. Bucks would not breed until they reach a specified age.
3. Only dominant bucks would breed.
4. Bucks with large antlers would have an advantage over those with smaller antlers.
5. At some point, we would be able to remove trophy bucks without damaging genetic quality.
6. We would have complete control over every animal in the herd.

We just completed a landmark study on antler development on free-ranging deer in South Texas. Our study showed there absolutely is no relationship between a buck's first set of antlers and what he has at maturity. *So culling yearling bucks is totally out.* As much as some folks want it to be true, it simply is not! Even if it were true, we also corroborated that a significant number of young bucks (fawns and yearlings) leave even large, low-fenced ranches, ending up on someone else's property, though we also learned that, once bucks reach two or three years of age, they are *less* likely to leave the property (provided of course the ranch is large enough to contain them during the rut).

As discussed before, a single published study and my years of observations support the idea there will be some breeding by younger bucks under free-range conditions. The number that actually breed is also highly variable. But remember, biology is not an absolute world.

The name of the game in natural selection is getting more offspring into the herd than the other buck. It would be ludicrous to assume then, that, even under the best conditions, a dominant buck would do all the breeding. That makes no sense! What he tries to do is get more offspring conceived, born, and weaned than subordinate bucks. It is all about differential reproductive success. So, as a manager, your goal would be to increase the probability this happens,

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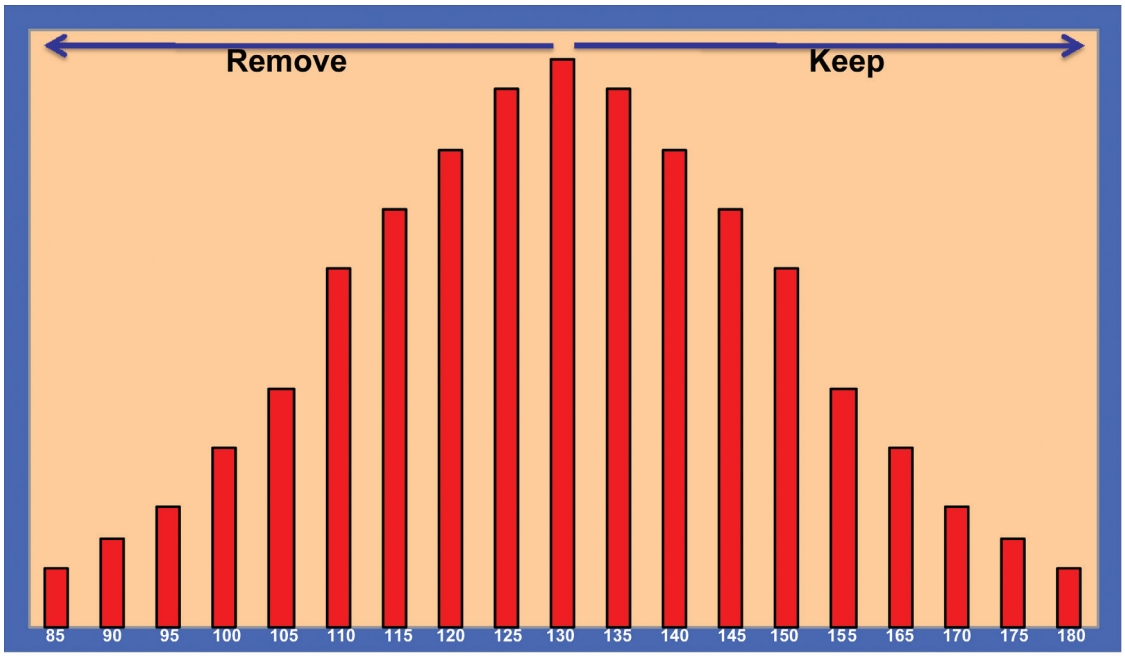


Figure 1. Whitetail deer "want" to score 130 Boone and Crockett (B&C) inches and have eight points. If we capture all the mature bucks in South Texas and graph the percentages of bucks for different B&C scores, the mean (average) would be around 130, with progressively lower proportions as you move to the left or right of this average. Hence, removing a few bucks from the two "tails" of the curve will have far greater impact than the same number taken from the average. Genes never disappear from a population, they only become more rare.

plus reduce the probability of lower-quality bucks producing offspring. But how do you do that?

The most important factor in the above six items is the last: we have complete control over the herd. That means no animals can leave the property and we can completely remove all unwanted animals before they breed. Now that, of course, is a very tall order. It is my firm opinion that, unless you have a high fence and no matter the acreage, culling bucks is not an option.

There was a little-publicized study done in South Texas, where an attempt was made to prove that the culling of spikes would improve antler quality. One area was culled, the other not. The project failed to prove what was intended—there was no difference in the areas! Even using large study areas, the problem was that yearlings moved from one area to the other, totally confounding the results.

I'm going to ask you again to stay with me, because if you keep reading, I will give you something to do with your herd.

If you do have control over your herd (i.e., a fence), the next hurdle is removing the right bucks in the right numbers. Our research suggested there is not a reasonable probability level of making the right decisions until bucks are at least 3½ years old. In herds with good age and sex structure, that is the age just before bucks enter what we call the breeding pool and in which dominant bucks produce more offspring. The trick is to get rid of the inferior bucks before this happens.

The second obstacle is culling enough animals to do any real good. It is amazing to me the number of managers and ranchers who think they are culling bucks. Shooting a handful of cull bucks over a season, especially if those kills occur during or after breeding, is not culling. It just makes you feel good. I once managed a ranch for a fellow who one day asked me, "How many cull bucks do I need to shoot this year?" My response was, "All of them." He followed with the question, "And, how many would that be?" That is when I broke the bad news. "You need to shoot at least 70 percent of your bucks 3½ years or older." He ran off the road! Needless to say, we parted company about that time. But, I was telling him the truth. Having gotten infrared camera photos of the vast majority of his mature bucks, most were mediocre eight-pointers or less.

Let's go back to the normal curve discussed in the first half of this column (see Figure 1). Note the vast majority of mature bucks are exactly what Dr. Charles DeYoung reported years ago—eight points and 130 inches. Only a small portion is in the multi-point categories. And length of tines has the greatest impact on score (as much as 40 percent). That is why Milo Hansen's world-record buck outscored the Jordon buck. Milo's buck had 12 points, James Jordon's had 10. Although there is nothing prettier in my opinion than a huge eight-pointer, the probability of such a buck ever being the new world record is virtually nil.

In order to produce large numbers of high-scoring bucks, we have to increase the proportion of multi-tined (in refer-

ence to the main frame) mature bucks in the herd. In order to do so, we have to remove a very large number of average bucks. The impact of removing one 12-point from the herd is astronomically larger than one eight-point; so you can see why I made the harsh recommendation to the fellow about his cull bucks. Unless he removed the vast majority of 3½-year or older bucks with small frames and less than 10 points, he would never see a difference. (By the way, today that man's herd is one of the most mediocre, eight-point herds you could imagine.)

How long will it take to change the genetics (expressed outwardly as big antlers) of a herd culled in such a manner? My experience is that, if you ruthlessly cull your bucks as suggested (see Figure 2), in two generations (seven years), you will have a strikingly different buck population. In three generations (10 years), you will swear someone slipped in and removed your old herd, giving you one that is totally different—that is if you succeed in removing almost all the cull bucks during this time frame, and that is work! In Europe, game keepers have the authority to do this, and they do not rely on common hunters to accomplish the job.

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When Do We Get To Shoot The Big Ones?

Two questions remain, and they are specifically about culling bucks. The first query from those who have stayed with the science as I've laid it out will be, is there ever a time when you can kill your best bucks? Naturally, no buck stays in the breeding pool forever. This pervasive idea rattling around Texas nowadays that you should let bucks live until they are in the double digits is a fallacy. Just as with men, once a buck gets into his later years, he does not have the libido to put much effort into breeding. (And that is why he is so difficult to kill!)

Under perfect conditions, a buck that contributes more than his share of offspring for two breeding seasons is a very lucky buck. I age deer into the following categories: fawns, yearlings, immature (2½ to 3½ years), mature (4½ to 5½ years), and over-mature (6½-plus years). So I see nothing wrong with killing over-mature bucks. They have

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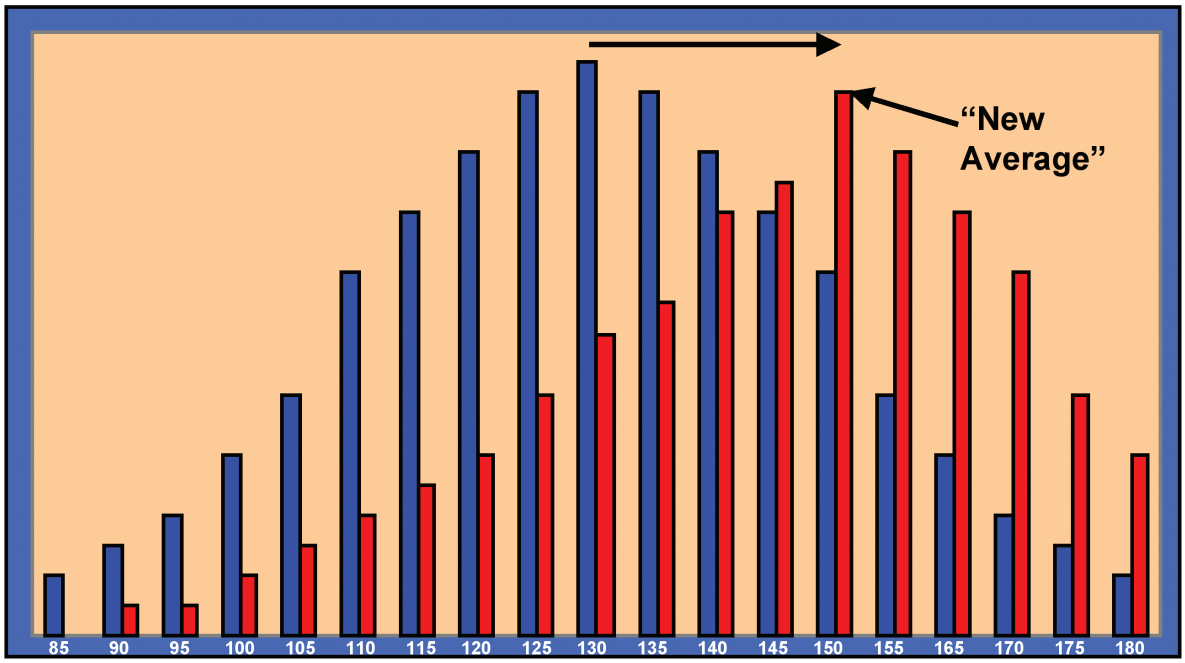


Figure 2. In order to significantly increase the average Boone & Crockett scores of your bucks, you will have to cull extremely large numbers of bucks from the average and below average categories—something few landowners are willing to do. Therefore, the only place culling is feasible at all is on high-fenced ranches.

been in the herd long enough, and there probably are better bucks coming behind them.

The second question is, do you ever get to a point where the herd is as you want it and you can stop culling? Most of the folks whose herds I've managed honestly believe there is a point at which the herd is in a condition such that they can just sit back and enjoy what they've produced. Nope! It is impossible to exterminate genes from a population. They remain out there, even if only at very low frequencies. The minute you stop culling they start returning to the original levels. So you *never* stop culling. The bottom end just keeps getting better. One herd I have managed most of my career has almost no eight-point mature bucks. After 10 years, we began shooting 10-point bucks with small frames and short brow tines. Today the average "management" buck is in the 150s! But that was after not three generations, but *nine* generations of culling. Genes almost never disappear from the herd. They are always there lurking and waiting for a chance to re-express themselves. So once you quit maintenance, the herd will try to return to the "average" condition.

The one exception to this rule might be for folks with small fenced properties. The day the fence is closed, you are locked into the genetics you have at that point in time. Under natural conditions, this often is called "genetic drift." I am amused by biologists who tell such a landowner to just work with what he has, when the truth is he may have confined deer with very poor genetics. And that would be a case that would support bringing in new genetics.

Let's revisit the guy who does not have a high fence. I have been emphatic that such a person, no matter the size of his ranch, should be intensively culling bucks! How's he going to do this? It depends on the size of his property and what his neighbors are doing. If he has less than 3,000 acres and/or neighbors who kill every buck that jumps the fence, he needs to focus on producing

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and holding on his property as many 3½-year-old or older bucks. His efforts are best placed on making his property the place for whitetails to be. Improving cover and nutrition, then, would be that landowner's most important strategies, and, therefore, there certainly would be no place for culling bucks of any age.

The fellow with a larger ranch, say 5,000 acres or more, still shouldn't cull, but needs to be careful about which bucks he takes. Remember, we found that once a buck passes his second year, he pretty much is a resident. So even though most of the mature buck offspring will leave his place, removing the younger, small-framed bucks will give the better bucks a chance to reach overmature status.

Now, here comes the really strange concept moving around South Texas these days. If spike yearling bucks are looking less and less "genetically inferior," the question is being asked, if you have a very high population of deer and a balanced sex ratio, wouldn't it be advisable to remove the lesser yearlings as part of population control? *What*? Correct me if I'm wrong, but I never have seen a buck birth a fawn, ever! On places I manage, we try to have only the number of does needed to produce the number of bucks we want to take. We focus population control on the does, not bucks. In fenced properties, I even work towards a buck-to-doe ratio of 3:1 or 4:1—that's right, at least three bucks per doe. Under such conditions there is less fighting and less antler breakage than with the mythical 1:1 ratio. I came under a lot of heat when I first came out with this a number of years ago—and now many biologists are claiming they've been doing it for years!—but that is only with a high fence.

If you want to include bucks in your population control strategy on low-fenced ranches, then you should kill a random selection of mature bucks, pure and simple. That will prevent deterioration of antler traits. Fortunately, most hunters shoot randomly anyway, so this is fairly easy to do.

I am not a fan of golf, but I understand its allure comes from the fact that even Tiger Woods has not perfected the game. Likewise, trophy buck management never can be perfected. There always are new challenges and bucks that do not measure up to your goals. Each landowner or manager has a goal different from others. As trite as it is to say, beauty is indeed in the eye of the beholder. Every intensively managed herd reflects the likes and dislikes of the guy who manages the land (and that is really cool in my book).

Now, let's reflect over what I've tried to communicate in this article. First and foremost, if you do not have complete control of your herd—both by fence and by harvest—there is no place for culling bucks in your management program! Second, culling is a long-term practice that demands steadfast adherence, not only to removal of all unwanted individuals, but also to proper management of the three tenets of trophy management, that is nutrition, age, and genetics. If you are not willing to address each of these, just enjoy your herd and the hunting it provides. There is absolutely no place for culling in low-fenced ranches, no matter the size.

