

SPIKES—TO SHOOT OR NOT TO SHOOT: ONLY THE FACTS

There, before you in the sendero or in your food plot, stand two yearling spike antlered bucks. One has three inch tall antlers and the other has “cow horn spikes” that are at least ten inches tall. Which one would you shoot?

In the mid 1920's, a game law was passed in Texas which protected spike antlered deer. The belief then was that spike antlered deer were young deer and would eventually grow into big deer. By the mid 1950's, biologists had learned to age deer using a tooth wear and replacement technique developed by Severnhouse in 1949. It soon became obvious that not all yearling deer were spikes and that not all spikes were yearlings. About the same time, a review of nutritional studies was published which strongly suggested that nutrition was a major determining factor in antler size. Poor range conditions throughout Texas were assumed to be the reason for spike antlered deer. By the early 1970's, biologists had collected enough data from deer grown on the same range and under similar conditions to suspect that more than nutrition was influencing antler growth and that deer that were grown under similar range conditions exhibited a wide range of antler characteristics.

In 1974, a 16 acre research facility was constructed on the Texas Parks and Wildlife Department's Kerr Wildlife Management Area. Biologists began a long-term research program to understand why some deer produced big antlers and why some deer produced smaller antlers. Research was approached from two viewpoints: one was nutritional and one was genetic.

In order to study and isolate nutritional and genetic effects, the need to control diets, breeding, and objectively analyze results was paramount. This could only be done with penned deer. There are simply too many variables in the natural world to identify and isolate biological cause and effect. Biologists began gathering deer throughout the state and placing them into the research pens. Only native Texas deer were used in the study and since 1974, no new deer have been added. All deer used in research have been born in the pens and all deer born since 1974 has a pedigree record dating back to 1974.

“The Kerr Studies”, as they are commonly referred to, include spike buck research topics such as: Spike vs. Forked Antlered Yearlings 1974-1994; Comparison of Spikes vs. Forked Antlered Deer Grown Under Field Conditions: 1983-1986; Effects of Nutrition on Antler Development: 1974-1977; Role of Genetics in Antler Development: 1974-1984; Spike Line Herd Research: 1974-2000; and Genetic/Environmental Interaction: 1992-2000, just to name a few. We are talking about thirty three continuous years of penned deer research! No other individuals or states have this tenure or volume of statistically proven data to back up their results.

A **spike buck** is a male deer 1.5 years of age or older and whose antlers are unbranched. It is not a fawn, commonly referred to as a “nubbin buck”. A **forked antlered yearling** is a male deer that is 1.5 years of age and whose antlers are forked or branched.

Since 1983, TPWD biologists have been collecting deer age, weight, and antler data from hunter harvested deer throughout the state. Analysis of these data has demonstrated that

in years with good nutritional range conditions, fewer spikes were in the harvest. They also indicated those years in which range conditions were poor, there were more spikes in the harvest. Range nutrition was affecting antler production. However, these same data also indicated that even under poor range conditions, there were some deer that produced good antlers. They also demonstrated that under good range conditions, there were always some spike antlered deer.

Therefore, it was reasoned that there are three types of yearling deer on the range: (1) deer that always produce forked antlers even under adverse conditions; (2) deer that always produced poor antlers even under good conditions; and (3) deer that in good years produced forked antlers and in poor years produce spike antlers. Biologists named this third group of deer “swing deer.” From a management point of view, swing deer slow management gains because poor genetic traits are masked in good years. Researchers reasoned that if there was a genetic basis for these deer, then the frequency of “swing deer” in a population could be reduced through a selection program and more rapid antler improvement would result.

Let's examine some of the findings from thirty three continuous years of Kerr WMA deer pen data:

- Data indicates the best time to harvest spike antlered yearlings and MAKE GENETIC GAIN in a deer herd is during periods of nutritional stress such as droughts, or when beginning a habitat management program before the range has had a chance to recover. Giving priority to removal of spike antlered deer during that time will help accelerate genetic gains.
- All antler growth is genetically based and environmentally influenced. Nutrition is an environmental influence. In order to grow deer with large antlers, a manager should manage for the best genetic deer possible, and simultaneously manage the habitat for the best nutrition possible. This will insure those deer reach their genetic potential.
- At four years of age, deer that were forked antlered as yearlings produced three feet more gross Boone and Crockett inches than deer that were spike antlered as yearlings.
- Of all deer classified as spike antlered yearlings, NONE scored higher than 130 gross Boone and Crockett points at maturity.
- At maturity, spike antlered yearlings averaged 17% less live body weight than yearlings with six or more points.
- The number of antler points at 1.5 years was closely correlated with the number of antler points at 2.5, 3.5, and 4.5 years of age.
- It was demonstrated that spike antlered yearlings produced smaller antlers (points, tine length, mass, circumference, beam length and spread) than forked antlered yearlings throughout their lifetime.
- Future antler quality and body weight can be predicted based on yearling antler characteristics.

- Improvement of gross Boone and Crockett scores within a herd could be accomplished by selectively culling spike antlered yearling bucks.
- The degree of success is directly proportional to the intensity of selection placed on the herd.

Management Implications:

There are three basic components to managing a deer herd: genetics, nutrition, and age. Having a nutritionally healthy deer herd at or below the carrying capacity of the land usually means a highly productive deer herd. This means that excess deer need to be removed annually in order to maintain the herd at carrying capacity and in good nutritional health. One of the basics for habitat management included the balancing of proper animal numbers to available food supply. This insures that deer receive adequate amounts of and variety of nutritious foods to reach their genetic antler potential. The number of deer on the range in relation to the quality of vegetation is the important factor. A plant does not care whether it has been bitten by a cow or deer. There are many ways to increase food supply and nutrition on ranges, and these include, but are not limited to, prescribed burning, rotational cattle grazing, brush management, and adjusting total number of animals on that range.

Each year, a deer herd will produce a given number of offspring, or fawns. This cohort of deer will be reared under a given set of environmental conditions. Some will produce good antlers at 1.5 years, some will not. In poor nutritional years, there will be fewer good quality yearlings and more poor quality yearling bucks. In good nutritional years, the opposite will be true. The point to understand is that all the yearlings within a cohort were grown under similar conditions. Each year the poor antlered portion of that cohort should be removed. This could be the bottom quarter, third, or even half, depending on the antler quality level a manager wishes to achieve and how quickly he wishes to attain it.

As far as body growth is concerned, approximately 60% of deer growth takes place the first year of its life. Long bone growth in deer is essentially complete after three years. This is when a deer completes his “teenage” years. For the first three years of life, a great deal of nutrient resources are allocated to body growth. After that time, more resources can be channeled into antler growth.

The key to effective and efficient management is to remove those animals with the least amount of potential, then manage the habitat to ensure that the remaining animals reach their genetic potential. Do not manage for individual animals, but manage for populations.

In conclusion, EACH AND EVERY hunter practices genetic selection when they pull the trigger or release the bowstring. When harvesting deer, why not select for higher quality antlers by removing poor quality bucks?

Now, the answer to the question that began this article: shoot the long-antlered spike that is eighteen months old and feel good about managing your deer herd properly. Happy hunting....

Macy Ledbetter
Spring Creek Outdoors, LLC
www.SpringCreekOutdoors.com