

Big Charlie Was No Ordinary Deer

by: Jim Cox

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For 6 ½ years, Big Charlie was an integral part of the Kerr Wildlife Management Area's spike buck study. The impressive white-tailed buck fathered a significantly higher number of fork-antlered offspring than did the bucks with spike antlers. From these studies, biologists have concluded that spike bucks are genetically inferior deer and will never achieve the same body weight and antler mass as deer that had forked antlers as yearlings.



When the handsome white-tailed buck died of a bacterial infection and pneumonia shortly before Christmas at Kerr Wildlife Management Area, the big fellow left behind perhaps a greater legacy in the field of deer research than has any other single animal.

In short, Big Charlie was the grandsire of many of the deer used in the Texas Parks and Wildlife Department's studies probing the mysteries of the spike buck.

During his 6 ½ years of life, Charlie fathered many of the animals which formed the nucleus of a genetic study which biologists believe will clear the air on the controversial issue of spike buck harvest.

Whether or not to harvest spike bucks in Texas is a question as old as deer management itself. A spike buck is one whose first set of antlers (produced at 1 ½ years of age) are single spikes without prongs or forks. In other words, a spike buck is a two-pointer under the traditional Texas system of counting antler points. In Colorado, a spike buck would be considered a one-pointer.

Through the years some hunters and landowners have persistently held to the belief that a spike buck is simply a young animal which needs only additional time to blossom into a trophy-sized buck. However, nutrition studies during the past decade and, more recently, genetic studies at the Kerr research facility have shown this theory to be false.

The casual observer of the Texas deer scene might find it odd that a serious problem exists in the nation's number one white-tailed deer state, with a total herd in excess of three million animals. But biologists point out that high deer populations are an integral part of the problem. Deer have outstripped the ability of the habitat to sustain them in many areas. This has led to declines in body and antler size and, in some cases, massive die-offs.

Answers to the problem are not easily found. Biologists believe an adequate annual harvest of does and spike bucks is one factor which would help. But Donnie Harmel, project leader for the Kerr studies, points out there are other factors. "Spike harvest, or doe harvest alone won't do the job unless you consider all the factors of deer production," he said. These include habitat, number of deer, numbers of domestic livestock competing with deer, deer herd composition (bucks, does, fawns, etc.), past hunting pressure and even the size of the tract to be managed.

Harvest of spike bucks still is illegal in many Texas counties. Most of these are general law counties, which are not under the Texas Parks and Wildlife Department's regulatory authority. Their game laws are set either partially or wholly by the Texas Legislature.

Why then, should spike bucks be harvested instead of protected?

The Kerr studies, in the opinion of the biologists involved, prove spike bucks are inferior animals due to nutrition and genetics. "Harvesting the best bucks and protecting spikes could be compared to a stockman slaughtering his best young bulls and saving the poorest animals for breeding stock," Harmel explained.

Poor nutrition is the primary cause for the appearance of spike bucks in a deer herd, but until recently, no proof had been found to indicate that genetics also played a role. That's where Big Charlie and his progeny entered the picture.

Charlie was a six-pointer at 1 ½ years of age and added points and bulk to his antlers in subsequent years. At the time of his death he had 15 points with an inside spread of 19 inches. His live weight was 216 pounds.

The big buck was born on the Kerr area. His father, from Milam County, weighed 176 pounds when field dressed after he died at age 3 ½. His mother, born in the Texas A & M University deer pens, was sired by a Maverick County buck which lived to age 15 and weighed 164 pounds live weight.

In the Kerr investigations, Charlie was bred to one group of does, while another group of does was bred with spike bucks. All deer were maintained on high-protein rations. Only one of Charlie's 16 male offspring was a spike buck, while the spike fathers produced five spikes among their 19 male offspring, or 26 percent. In all, of 36 bucks whose fathers were spike bucks, 42 percent had spike antlers at age 1 ½. Big Charlie's sons averaged 122 pounds in weight at age 1 ½, while the sons of spikes averaged 109 pounds at the same age.

Carrying the experiment further, female progeny of the spikes were backcrossed with their fathers. This produced 16 spikes out of 32 male offspring, or 50 percent.

The theory that a spike eventually will grow to have normal-sized antlers is refuted by the Kerr study. Three spikes were maintained on high-protein rations through 2 ½ years of age and they still grew only spike antlers. Also, 60 percent of the male offspring of one second-generation, high-protein spike were spike bucks at 1 ½ years.

Even before Big Charlie entered the scene, side-by-side growth studies on groups of spike and fork-antlered yearlings showed the differences in body and antler development between the two groups. The experiment started with nine bucks which were spikes at age 1 ½, and seven with fork-antlers of the same age. Under equal nutrition, the fork-antlered bucks consistently produced twice as much antler mass (weight) through 5 1/2 years. "One of the spike bucks in that group never produced more than four points during that time, and another had no more than six points," said Harmel.

Harmel added that the Kerr studies have convinced him that two other long-standing theories about spike bucks are not necessarily true. "Some people believe that a buck born late in the breeding season is more likely to be a spike, and others think a buck born to a yearling doe is more likely to be a spike," he said. "Our experiments have involved bucks born throughout the normal breeding season and to does of all ages, and we have found no correlation between these factors and the percentage of spikes produced.

"Nutrition is the number one cause of the spike buck phenomenon, but at some point along the line it is obvious that genetics play an important role as well." Harmel theorized that the probability of producing a spike buck is carried equally in the genes of both bucks and does. "It appears to me that production of spike or fork-antlered bucks is related to genetics, just as are other characteristics such as body conformation, hair color, and perhaps the incidence of twins."

The Kerr studies already have provided ample proof that the incidence of spike bucks can be reduced through a combination of hunting pressure and habitat management. After the installation of a deer-proof fence in 1968 and the subsequent removal of sheep and goats from the area, deer populations and body condition have been closely monitored. Populations have been maintained at one deer per 10 acres, while much of the Hill Country habitat surrounding the area carries a much higher density of deer. Public hunting on the area, which included an adequate harvest of does and spike bucks, has held the herd within the range's carrying capacity.

As a result, some 70 percent of the yearling bucks on the area have forked antlers, compared to only 30 percent before the herd was reduced. Yearling does with fawns, a rare occurrence in the past, became almost commonplace and the average body weight of fawns, does, and bucks all climbed impressively. This dramatic improvement in the deer herd was accomplished while the area was grazed by cattle, dramatizing the fact that landowners can have two important cash crops on a single tract of land. While sheep, goats and exotics such as axis deer or sika deer compete directly with whitetails, moderate grazing by cattle actually has been found to be beneficial to deer habitat.

Biologists are quick to point out that a true genetic spike still has not been found. "But there is enough evidence to indicate that the probability of producing spike bucks can be carried through several generations even where nutrition is adequate," Harmel said. "This alone convinces me that a spike buck is an inferior animal which is not contributing to the overall quality of the herd. This buck should not be given more protection than other bucks in the herd.

Many landowners do not have the advantage of a deer-proof fence within which to upgrade the quality of their deer. However, a deer spends most of its life in a relatively small area. If enough landowners attempt to apply the principles of good deer management - including harvest of spike bucks - developed at Kerr Wildlife Management Area, the current decline in Texas deer quality could be reserved.