RECORDS OF SOUTH CAROLINA WHITE-TAILED DEER 1906-2023

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South Carolina White-tailed Deer Antler Records Program

The South Carolina white-tailed deer Antler Records Program was initiated in the spring of 1974 and since that time, 8,171 sets of antlers (**7,845 typical** and **326 non-typical**) have been officially entered into the list. Initially, measuring sessions were only conducted a few times each spring but, since 1987 antler measuring sessions have been scheduled throughout the state with approximately 12 sessions occurring annually. Each year SCDNR wildlife biologists, wildlife technicians and volunteers measure approximately 500 sets of antlers. Generally, only about 25 percent of the antlers that are measured make the Antler Records List with the bulk of entries falling short of the minimum scores.

The first comprehensive Records of South Carolina White-tailed Deer was published in 1998. Between 1998 and 2023 a number of updates have been published on an annual or semi-annual basis. The updates include only the new entries for the current year and the top **100 typical** and top **50 nontypical** entries from the All-time List (**2023 Deer Records Information**). This publication represents the complete listing of all typical and nontypical entries on file through spring 2023. It is only available on SCDNR's website because the size of the document makes printed copies cost prohibitive.

The purpose of the Antler Records Program is two-fold. First, because of the increased interest in deer hunting exhibited by sportsmen, it is a means of recognizing outstanding white-tailed deer taken in South Carolina. Secondly, it provides management information that allows SCDNR wildlife biologists to identify areas that produce quality deer. When particular areas stand out it is important to attempt to recognize the underlying characteristics that produce outstanding animals.

Measuring System

SCDNR's antler measuring system is the same as that utilized by both the Boone & Crockett and Pope & Young Clubs which are recognized as the national organizations that record exceptional North American big game taken with firearms and archery equipment, respectfully.

The scoring system is based primarily on antler size and symmetry and includes measurements of the main beams, greatest inside spread of the beams, circumference measurements at certain designated locations, and the number and length of the points. To be counted as a point, a projection must be at least one inch long and it must be longer than it is wide at its base.

Deductions are made for points that arise abnormally from the main beams or from other points and for symmetrical differences between corresponding measurements on the right and left antlers. For non-typical antlers, abnormal points are added to the score rather than being deducted as in the typical category. A set of antlers is classified as typical or non-typical based on its general conformation, the number of abnormal points, and a determination as to whether it will rank higher in the typical or non-typical category. Current minimum scores for the South Carolina Antler Records List are 125 typical points and 145 non-typical points. All antlers must undergo a minimum 60-day drying period before they can be officially measured, and a fair-chase statement must be signed for all hunter killed deer. If a set of antlers meets the minimum score the record is added to the list and a certificate is issued recognizing the outstanding white-tailed deer taken in South Carolina.

The South Carolina Antler Records List is continually undergoing revisions and editing. However, due to the size and nature of the list mistakes are inevitable. If you become aware of mistakes associated with the records list please contact Antler Records, P.O. Box 167 Columbia, SC 29202 in writing. Proposed corrections will be considered after reviewing the original score sheet that is on file.

Comments and Trends Concerning the Records List

The most frequently asked question concerning SCDNR's Antler Records Program is what county or region produces the most records. **Table 1** presents the county totals related to the All-time Records List and includes each county's rank. However, it is important to understand that comparing record entries among counties is meaningless because counties vary greatly in size. Therefore, each county's rank is also presented based on record entries per unit area (per square mile) which standardizes each county as it relates to other counties.

In the process of compiling this publication a number of distribution maps were produced in an effort to graphically demonstrate potential trends in record production among counties or regions. Unfortunately, none of these maps show any meaningful trend in record antler production. For that reason, one basic distribution map is presented (**Figure 1**). This map depicts the upper 50 percent and lower 50 percent of county record entries per square mile. Although trends are difficult to identify in this map, the following possible trends are cautiously offered.

First, no county that borders the coast is in the upper 50 percent of the records per square mile distribution. This may be related to poor soil fertility that is generally associated with these coastal counties. Also, Pee Dee counties are virtually absent from the top 50 percent of the records. Again, this could be related to poor natural soil fertility but it could also be associated with the history of the deer herd, habitat, and hunting in the area. With the exception of Jasper County, which borders the coast, and McCormick County, all counties that border the Savannah River are in the top 50 percent of the records per square mile distribution. Additionally, once removed from the coast, counties below the fall line and located between the Savannah and Congaree Rivers are generally in the top 50 percent of the distribution. In each of these cases better natural soil fertility may play a role. Finally, there is a band of lower piedmont counties lying just above the fall line that tend to be in the upper half of the records per square mile

distribution. Soil fertility may be involved here, as well. Overall, 12 of 18 piedmont counties and 11 of 28 coastal counties are in the upper 50 percent of the distribution.

The timing of harvest for record deer is not random throughout the hunting season. Most deer hunters know that mature bucks are most susceptible to harvest during the breeding season or rut. Historic reproductive data collected by SCDNR indicates that the peak of the rut in most of South Carolina is from mid October through mid November with approximately 83 percent of females breeding from October 6 to November 16. As would be expected, the majority of bucks (74%) entered into the records program were taken during October and November. **Figure 2** plots the percentage of record entries by month of harvest in relationship to the percentage of female deer conceiving by month. A statistical measure of how well the data fit is called R^2, with an R^2 of 1.0 being a perfect fit and an R^2 of zero being no fit. Although the very high R^2 =0.93 value does not necessarily indicate a cause-and-effect relationship between record entries and conception, it does indicate that there is virtually no discrepancy between the two distributions. In any event, the apparent relationship can not be ignored and supports what hunters have always believed as it relates to the harvest of mature bucks during the breeding season.

Hunters often wonder if one year or one time period was better with respect to the number of bucks entering the records program. **Figure 3** plots the number of record entries by year of harvest against the total number of bucks harvested by year. Several interesting points can be made concerning this data. From the early 1970's until the early 1990's the number of annual record entries increased as the number of bucks harvested annually increased. During this time, deer populations were growing in South Carolina and in many areas deer went from being rare to very common. This portion of the graph represents what common sense may tell you, the more bucks that are harvested, the more bucks that will be entered into the records program. Once again, the statistical value $R^2 = 0.94$ is very high indicating that between 1972 and 1991 there was excellent correspondence between the two distributions. Even without statistics, it is easy to see the similarities.

On the other hand, the apparent relationship between annual buck harvest and antler records seems to breakdown beginning in the mid 1990's. Not only is this obvious looking at the two distributions, but the statistical R^2 value of 0.69 indicates that there is a poor relationship between the distributions. What would cause this relationship to change? From a biological standpoint, deer populations that are expanding typically exhibit some of the best quality animals. However, once populations recover there is a point in time where the number of deer with respect to habitat begins to curb what once was optimal body condition. Although the number of animals may continue to increase, the quality of animals begins to decrease to some degree. It could be said that prior to the mid 1990's, South Carolina's deer population was "hitting on all cylinders" with the production of record entries more or less proportional to the annual buck harvest. By the mid 1990's however, the increasing number of deer in the population had begun to mask this relationship and although the buck harvest continued to increase the number of record entries did not.

Most recently the deer population in South Carolina has decreased, most likely as a result of habitat change related to forest management, extremely high deer harvest rates, and coyote predation on deer fawns. With decreasing population density one would expect an increase in quality and it appears that beginning in about 2007 the number of record entries in proportion to the buck harvest has increased substantially. It will be interesting to see if this trend continues although it will be a number of years before this data is available because bucks that were taken

during the last few years will continue to be measured for several more years.

Back to the original question, what was the best year for record entries? Until recently, the year with the best ratio of record entries was 1984 with one in every 526 bucks taken that year making the list. However, as records continue to come in from recent years, 2011 has taken over the lead with one in every 478 bucks taken making the list. Moreover, there are now 7 years since 2010 that have a better ratio than 1984. The worst year since 1980 was 1999 with only one in every 1,221 bucks making the list. Over the long term, approximately one in every 700 bucks harvested in South Carolina makes the antler records list.

There is one other trend in the records that is worth mentioning. Notice in **Figure 3** how the number of record entries by year is a jagged line indicating that the number of records spikes every 2 to 4 years. What would cause these somewhat predictable peaks? It is likely a simple matter of the movement of mature bucks in and out of the population. In other words, following a peak year it takes several years for another cohort of mature bucks to accumulate in the population. Once these mature bucks accumulate, they are harvested resulting in another peak followed by several years when fewer mature bucks are available. If this is this case, it indicates that hunters are at least somewhat successful at harvesting mature bucks once they are available in the population at a certain density.