WHITE-TAILED DEER HARVEST RECORDS

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INTRODUCTION

One of the most important tools used in a white-tailed deer management program is keeping **accurate deer harvest records**. These records can help land managers evaluate the effect of hunting pressure, set proper harvest rates, and determine the reproductive capability of their deer herd. Combining harvest records with annual deer population survey data will help landowners determine if their management goals are being achieved. Long term trends can then be analyzed and corrections made to existing management strategies.

GETTING STARTED

Basic information collected from ***each*** deer harvested from a ranch should include the following: 1) **age**, 2) **field-dressed weight**, and 3) **antler measurements** from all buck deer. Other information that may provide insight about specific management goals includes date and time of harvest, location or pasture deer was harvested in, general body condition, and lactation rate of adult does.

AGE - Determining the age of white-tailed deer in the harvest is one of the most important tools land managers have to manage their deer herd. It is the best source of information for determining the success of a deer management program and the accomplishment of long-term goals and objectives. It puts management into perspective and, over a period of time, provides important information about the health of a deer herd and the quality of individual animals in the population. Aging harvested deer is fundamental to deer management. The importance that land managers place on obtaining deer ages from harvested animals will often determine the success of the total management program. Other data collected from harvested deer will have little meaning if not related to age. Antler spread, beam length, basal circumference, number of points, and body weights are all related to age. If management objectives are directed toward improvement in these physical qualities, age determination will be the key to quantifying such achievements.

The physical process of collecting deer age information confirms a commitment on the part of the land manager that he will become involved in deer management. Jawbones must either be extracted from the harvested animal or visually examined by looking inside the opened mouth. If no one is experienced in aging white-tailed deer, extracting the lower jawbone is the best way to preserve important data on each individual animal harvested. Jawbones may then be frozen, or otherwise preserved, until someone with deer aging expertise can be contacted. Jawbones that are collected should be numbered or tagged and correspond with a record sheet where other biological data has been recorded. Age information can be added at a later date.

A method for extracting the lower jawbone is presented in Texas Agricultural Extension Service Bulletin # B-1453. The cheek flesh is cut on both sides of the head to the back of the jaw and skin fleshed from the gum line downward to the bottom of the jaw. The jaw bone is then cut through behind the last molar with a saw or sheers and extracted by inserting a curved metal bar through this cut and pulled forward under the entire jaw bone until it is pulled free. A jawbreaker is an important tool that is also used in prying open a deer's mouth to allow for visual inspection of the lower jaw. Many variations of this tool have been made and all will work. Soon after a deer has been harvested, it is almost impossible to open its mouth. The jawbreaker is inserted in the side of the mouth and twisted to pry open the mouth. If the deer is not to be mounted as a trophy, the cheek should be cut open to the back of the jaw prior to inserting the jawbreaker. Always be sure that the owner of the deer has given permission to cut open the cheek of their harvested deer. The lower jawbone can then be examined. A flashlight is often necessary to aid in examining the teeth. *On buck deer that will be mounted, you can still use the jawbreaker, but* ***do not cut the cheek.*** Examine the lower jaw teeth by looking directly into the opened mouth with a flashlight.

The age of **all** deer harvested should be collected. Deer age is recorded in one-half year increments. Fawns are normally born during late May and early June in most parts of Texas and if harvested are about 6 months of age. In successive years, deer harvested during the fall will be 1 ½, 2 ½, 3 ½, etc. Although the technique for aging white-tailed deer is accurate if followed correctly, variations do occur. It may be necessary to look at both lower jaws if an abnormality occurs. Deer can have cavities, impactions, or other injuries that may result in

malformed teeth or an interruption in the normal tooth replacement pattern. Body or antler sizes are not necessarily good indicators of a deer's age. It is important to adhere strictly to the aging technique and not let the physical appearance of the harvested animal influence your judgment when assigning an age to the deer. Small body size may be the result of poor nutrition. Deer harvested in areas of overpopulation should be aged, regardless of size. Deer appearing to be fawns may, in fact, be 1 ½ or even 2 ½ years old. Spike bucks are primarily restricted to the 1 ½ or "yearling" age class, but age them anyway to be sure. Having a set of "known-age" jawbones available for reference can be helpful when questions arise. Over time, you can assemble a set and keep them handy at the check station when aging harvested deer. Commercially made sets or boards are also available. The technique for determining the age of a white-tailed deer by tooth replacement and wear is presented in the Texas Parks & Wildlife bulletin # PWD-BK-N7100-7 and in the Texas Agricultural Extension Service bulletin # B-1453. Refer to these and other literature for references and additional information concerning the aging technique.

The currently most accepted method for determining a deer's age is by examining the tooth replacement pattern and wear on the teeth of the lower jaw bone. Deer have six teeth on their lower jawbone when they reach two years of age. Molars are permanent teeth and are not replaced. The following is a review and reference of important things to remember to look for in the different age classes of white-tailed deer.

HOW TO AGE WHITE-TAILED DEER

½ year - Usually, only four teeth are present on the lower jawbone. The lingual (tongue side) crests are sharp with little wear indicated. The 3rd premolar has three cusps (chewing surface of the tooth) and the 1st molar is just appearing through the gum.

1 ½ years - Six teeth present with the last molar just showing through the gum. The 3rd premolar is heavily worn but three cusps are still visible.

2 ½ years - The three premolars have been replaced by permanent teeth. The 3rd premolar now has two cusps. The lingual crests on all teeth are sharp and show no wear. There is little or no wear on the back cusp of tooth 6.

3½ years - The lingual crest on tooth 4 is blunt and the brown line in the middle of the lingual crest is as wide as the white enamel around it. The cusp on tooth 6 is worn concave. Lingual crests on molars 3 and 4 show no wear.

4 ½ years - The lingual crest on teeth 4 and 5 are worn, but not on tooth 6. The back cusp on tooth 6 is worn downward. The lingual crest on tooth 6 shows relatively no wear.

5 ½ years - The lingual crest on teeth 4 and 5 are rounded and the crest on tooth 6 is blunt. Generally, all lingual crests on the back three teeth are worn.

6 ½ years - Tooth 4, the first molar (oldest of all jaw teeth), is worn flat and has no crests. It may appear brown. Cusps are still visible on teeth 5 and 6. Considerable wear is now evident on the premolars.

7 ½ years - Teeth 4 and 5 are worn smooth. Cusps on tooth 6 are worn but still visible.

Determination of deer ages past 7 ½ years can not be reliably determined by examination of jaw teeth. Most errors are made between 1 ½ and 2 ½ year old deer. It is important to look at the very last cusp on tooth 6 if other characteristics are not clearly defined. Being able to recognize yearling (1 ½ year age class) deer is also very important, but often missed. Wildlife technicians and biologists with the Texas Parks & Wildlife Department are available to assist you with aging jawbones you have collected. Contact your local TPWD representative for assistance.

WEIGHTS - Field-dressed weights should be the weight of the deer with all internal organs removed including the heart, lungs, liver, etc. Use a reliable scale and check it against a known weight each year to assure accuracy of your measurements. Field dressed weights of white-tailed deer reflect their nutritional status. Averages of dressed weights by age classes do vary from year to year, depending on the changes in weather and food availability. Weight increases can be misleading in a good mast-producing year. Deer may weigh heavy, but this does not represent good habitat conditions. Field dressed weights of different age-classes of white-tailed deer can provide important information on trends within a deer herd.

Average deer field dressed weights by age-class will indicate whether you are gaining or losing ground with your deer management program. Comparing body weights between age-classes can be misleading. Below is a chart indicating the average field-dressed weights of deer harvested in North Texas by age-class:

WHITE-TAILED DEER BODY WEIGHTS BY AGE-CLASS

NORTH TEXAS

½ year old bucks	**-**	**43 pounds**
1½ year old bucks	**-**	**73 pounds**
2½ year old bucks	**-**	**88 pounds**
3½ year old bucks	**-**	**98 pounds**
4½+ year old bucks	**-**	**107 pounds**
½ year old does	**-**	**38 pounds**
1½ year old does	**-**	**60 pounds**
2½ year old does	**-**	**65 pounds**
3½ year old does	**-**	**70 pounds**
4½+ year old does	**-**	**72 pounds**

If field-dressed weights of deer harvested from your ranch consistently fall below the above age class averages, deer may not be receiving proper nutrition. The cause may be too many deer and/or heavy continuous grazing pressure exerted by livestock.

ANTLER MEASUREMENTS - A standard for taking antler measurements is necessary to avoid errors in measurements obtained by different persons in a hunting camp. Antler measurements should always consist of these measurements: 1) total number of points, 2) inside spread, 3) basal circumference, and 4) main beam length. A point should be classified as a projection at least one inch long. Spread is the inside spread between the main beams measured at right angles to the centerline of the skull at the widest point between the main beams. Basal circumference is measured halfway between the burr and the first point (brow tines) on the main beam. The main beam length is measured from the burr to the tip of the antler on the outside curve.

Nutrition is extremely important in antler development, particularly good quality forage during the months of April, May, and June (when bucks are growing new antlers). A continued lack of proper nutrition is characterized by yearling age class bucks developing small antlers and small body size (weights) compared to the norm. Antler measurements in the yearling age class can be a very good indicator of future antler growth. Most bucks in the 4-½ year old age class have completed their physical growth (bone structure) to a great extent and more of the physical resources can be channeled into antler development. A buck usually does not reach his maximum antler development until he is 5 ½ to 6 ½ years old.

DOE LACTATION RATES - Determining lactation rates simply means checking each harvested doe for the presence of milk in her udder. The percentage of harvested does that were lactating provides additional information about the productivity of the deer herd and gives some indication of reproductive success and survival of fawns.

BODY CONDITION - Body condition can be divided into three categories: 1) **good** - fat across the back and base of the tail, fat present on kidneys and in the body cavity; 2) **fair** - little or no excess fat, but bones not showing; and 3) **poor** - ribs, backbone, and pelvic girdle showing under the skin. During years of average or above average rainfall, few deer should be in poor body condition. If over 10% of the deer harvested are judged to be in poor condition, then a lack of nutrition is indicated and reducing deer and/or livestock numbers will be necessary.

CONCLUSIONS - You don't know if your deer management decisions are working unless you know where you started. Proper deer harvest data collection is the cornerstone of any type of deer management plan. In many areas of Texas deer sex and age structures have been skewed by years of high buck-only harvests, which often exceeded 70% of the total standing buck population. Deer herds composed primarily of younger age-class animals usually indicates either a growing deer population or a very heavy harvest. Conversely, a very old age-class may indicate an inadequate harvest within most deer management schemes. Reducing herd density through proper antlerless deer harvest, when necessary, will help improve average body weights, antler development, and reproductive rates. Improvements in these physical features can often be detected after two to three years under a deer management program. An effective deer management program will require approximately 5,000 acres (low fenced). The accumulative influences of other factors such as illegal harvest, heavy hunting pressure on adjacent lands, improper range and livestock management, deer densities above carrying capacity of the habitat, or poor quality habitat may limit achievement of long term goals and objectives. Many Wildlife Management Cooperatives have been successfully established in Texas by private landowners with proper white-tailed deer harvest management being one of their primary objectives.

For more information on white-tailed deer management assistance on your ranch contact: ***Private Lands Enhancement Program, Texas Parks & Wildlife Department, 4200 Smith School Road, Austin TX 78744 (phone 1-800-792-1112).***