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Texas Agricultural Extension Service

Determining the Age of a Deer

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Knowing how to tell the age of an animal has been an important skill for managers and users of animals for hundreds of years. Selecting an animal the right age for a particular use was a mark of an experienced herdsman.

Cattle producers use well established criteria based on the replacement of front teeth for determining the age of their livestock. Horsemen also use the pattern of eruption of permanent teeth to age their animals. However, since horses live many years after growing permanent teeth, horsemen also use the degree of wear on the teeth as indicators of age.

Wildlife biologists applied these techniques to aging deer. They found that deer shed and replace all front teeth (incisiform milk teeth) by 7 months of age. Thus, they could not determine the age of an adult deer solely by examining the replacement of front teeth.

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The teeth of all mammals wear as an animal chews its food. Soft parts of the cheek teeth wear more than hard parts. Biologists found that in large herbivores such as deer, elk and antelope, the ridges on the top of the cheek teeth (crests) wore in a predictable manner. As the hard, white outer coat (enamel) wore away an increasing amount of the softer, dark inner core of each tooth (dentine) was exposed.

By examining animals of known age, biologists found that the tooth ridges next to the tongue (lingual crests) were best for comparisons. They developed criteria for identifying age classes based on the width of exposed dentine compared to the adjacent enamel in particular teeth.

Texas wildlife biologists and technicians tested the technique with white-tailed deer of known ages. They found a small percentage of animals whose teeth did not fit the criteria for their corresponding age class, but these were only a single year off. The most common error was overestimating the age of mature animals (4+ years of age) by 1 year.

The biologists learned that it was best to use multiple criteria to describe deer age classes, because accident, deformity or individual differences can cause unusual wear on any single tooth. They found that using multiple characteristics tended to be self-correcting and allowed them to age a deer even with a missing tooth.

Figure 1. A jawbreaker-extractor can be used to remove a deer's jawbone. This makes it much easier to age the deer by examining the teeth.

Using the technique

Position the head so you can see the teeth in the lower jaw. If the deer has been dead for several hours, you may need to use a jawbreaker to open the jaws before proceeding further. Insert the small end of the tool in front of the cheek

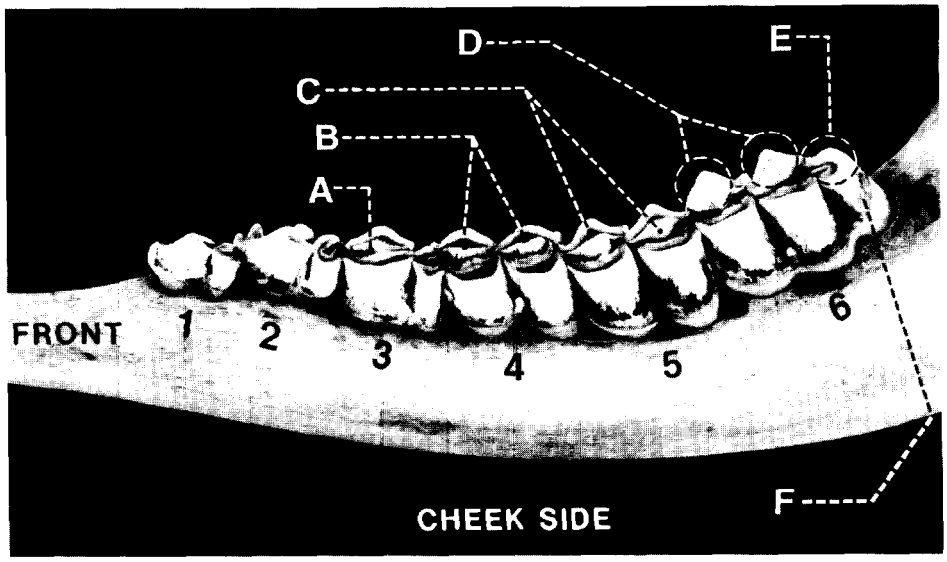


Figure 2. The major tooth parts used in determining a deer's age are shown in this illustration.

Teeth 1, 2, 3 – Premolars: The rather narrow jaw teeth in front of the molars adapted to cutting food.

Teeth 4, 5, 6 – Molars: The large jaw teeth adapted for grinding food.

A – Infundibulum: The funnel-shaped depression in the central crown of tooth between crests. Exterior surfaces will be stained dark.

B – Dentine: The softer inner core of a tooth, much darker in color than the enamel.

C – Enamel: The hard, white outer coat of a tooth.

D – Lingual crests: Tooth ridges running from front to back adjacent to the tongue.

E – Cusps: The points or projections on the surface of a tooth.

F – Gum line: Point to which flesh of the gum covers a tooth. Food stains are deposited above the gum.

teeth and rotate the handle 90 degrees. Rinse the teeth with water if necessary. Examine both sides of the lower jaws and select the one which looks normal (no broken teeth or deformed jaw). Use a flashlight to see the teeth clearly for aging.

It is much easier to examine the teeth with the lower jaw detached from the carcass, so if the deer's head is not to be mounted, cut open the cheek and remove a lower jaw with a knife or lopping shears. Be sure to tag the extracted jaw so that it can be matched with other recorded measurements of the carcass.

If you plan to have the head mounted, do not cut the cheeks or any part of the neck above the shoulders. You may remove a jaw without cutting the cape by using a jawbreaker-extractor and lopping shears. Turn the deer's head upright. As you straddle the neck, insert the jawbreaker between the cheek and gum and push downward to separate the muscle tissue from the skin.

Next, insert the lopping shears so that the blade is over the tongue and the cutting bar is to the outside of the lower jaw to be cut. Cut through the lower jaw where it curves upward and try to make the cut parallel to the roof of the mouth. Press downward on the shears as you cut and make sure that you cut through the bone completely.

After severing the bone, insert the jaw-breaker-extractor horizontally and hook the loop over the cut end of the lower jaw (see Figure 1). Place one hand underneath the jaw to help guide it over the lip of the puller. Once secured, stand on the neck of the animal and pull up to extract the jaw. Continue pulling until the puller reaches the front of the jaw, then rotate the puller about 90 degrees to break the jaws apart in front. The jaw is then free and can be pulled out.

Aging

Each time an animal is aged, follow the progression in the picture key from youngest to oldest. Read each descriptive characteristic and see if it applies. Soon the process will become automatic.

Technical terms are used to describe exactly where to look and what to look for. These terms are defined and the locations where they apply are pictured in Figure 2.

Do not try to randomly match lower jaws with pictures. That approach will cause problems because all of the multiple criteria which are necessary to recognize each age class must be considered. A systematic approach is much easier to learn and less subject to error.

Deer are aged in 1-year groups beginning with 1/2 year. Fawns usually are born in May and June and their age group is 1/2 year old during their first hunting season. In subsequent hunting seasons, deer will be 1 1/2 (yearlings), 2 1/2, 3 1/2, etc., years of age.

Using age related information

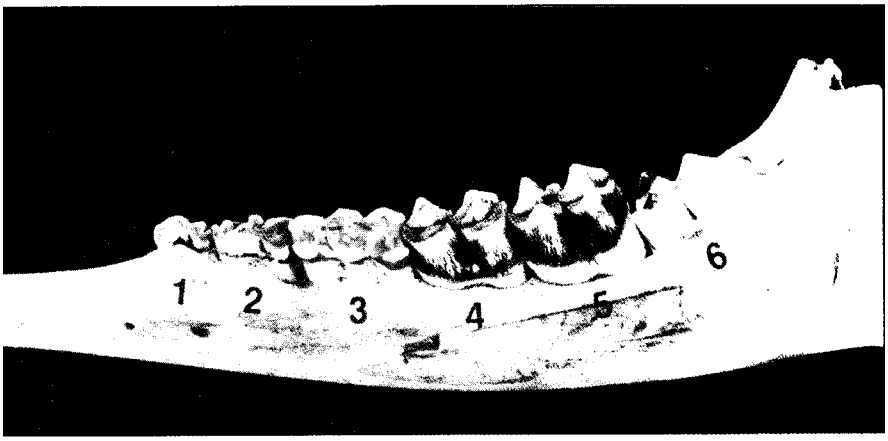
Interest in aging deer is shared by other hunters, deer managers and nature lovers. Most people motivated to learn the technique are not just curious but have a

½ year

Fewer than six teeth are present in the jaw (usually four teeth for ages 5 and 6 months and five teeth for 7 months). Teeth 1, 2 and 3 are temporary (milk) teeth. Tooth 3 has three cusps. Tooth 4 is the first permanent tooth to erupt.

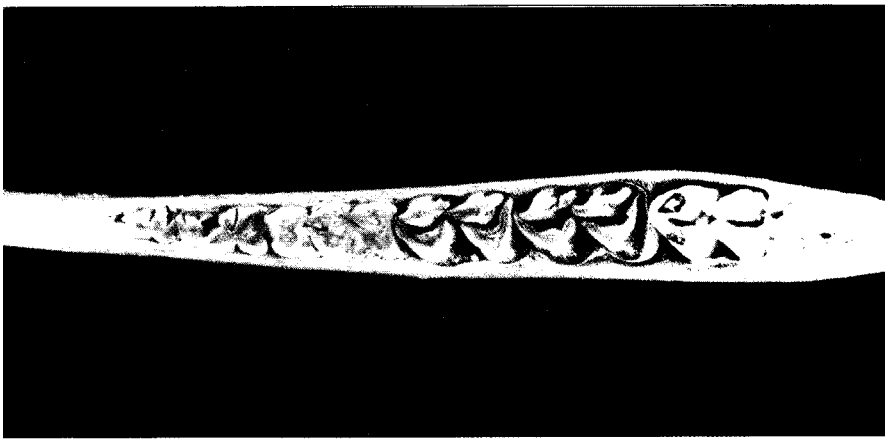
1 ½ years

Six teeth are present in the jaw. Tooth 6–not fully erupted through gum (gum line high on back cusp).

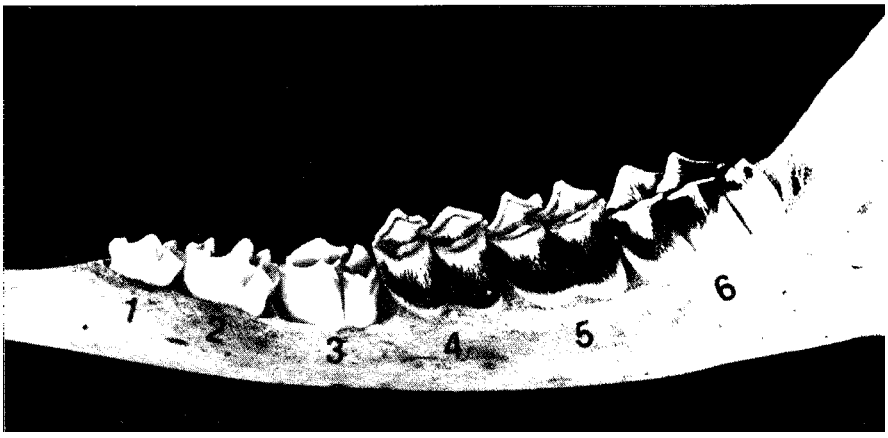


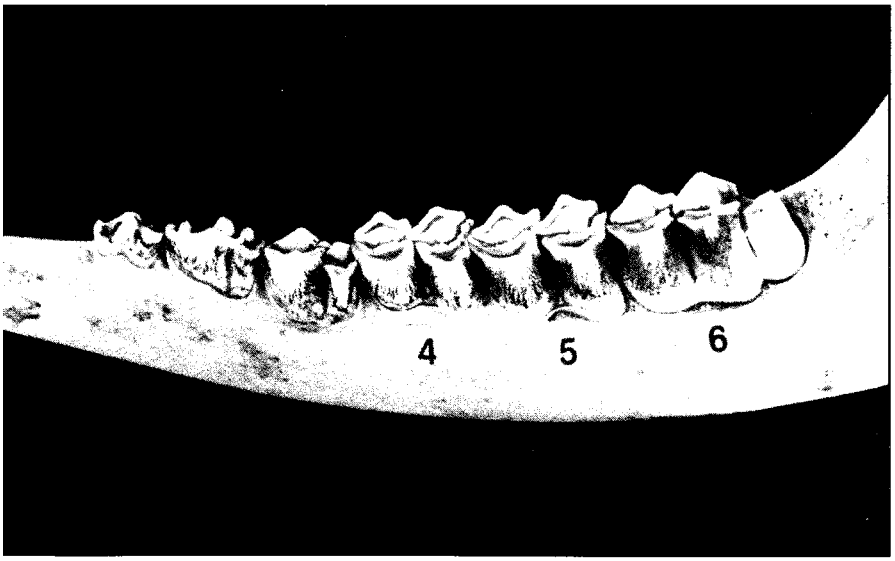
Caution–There may be either of two conditions for the premolars:

- Tooth 3–a milk tooth with three cusps may be heavily worn (less than 1 year, 6 months of age). This is the most common condition.



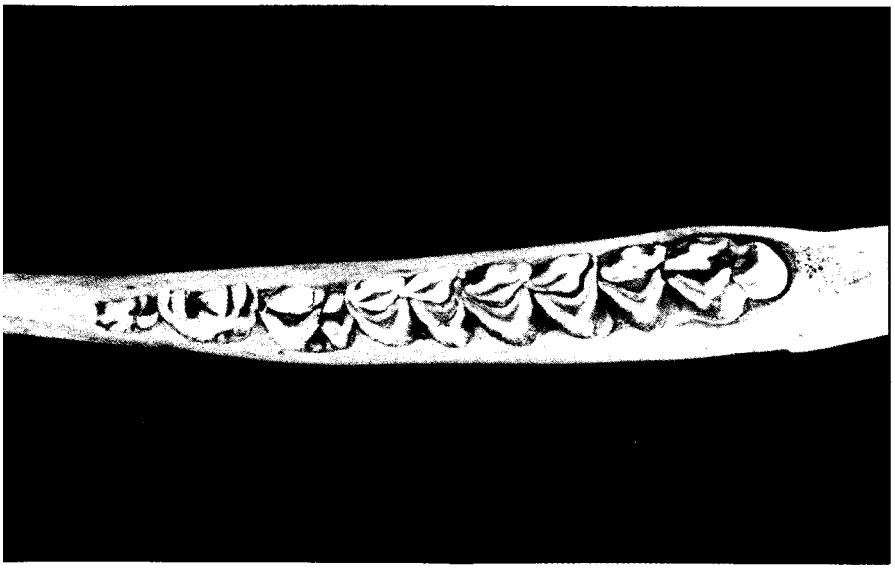
- Tooth 3–a permanent tooth with two cusps may have replaced its milk tooth. This two-part tooth is white or much less stained than adjacent tooth 4 (1 year, 6 months of age or older).





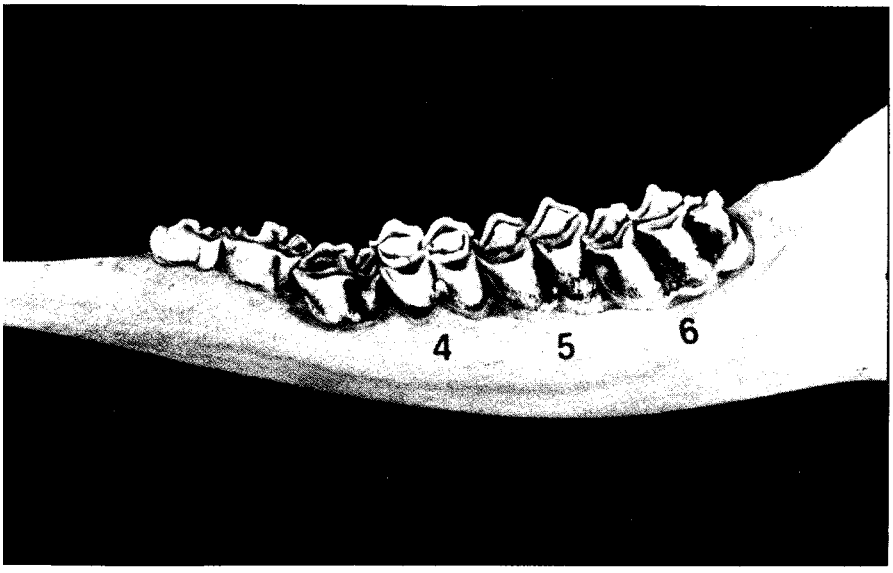
2 ½ years

Lingual crests on all molars are sharp. Tooth 6–gum line is high on back cusp.



Tooth 4–lingual crest has enamel well above narrow dentine of crest.

Tooth 6–wear on back cusp is very slight (dentine, if showing, in narrow line).



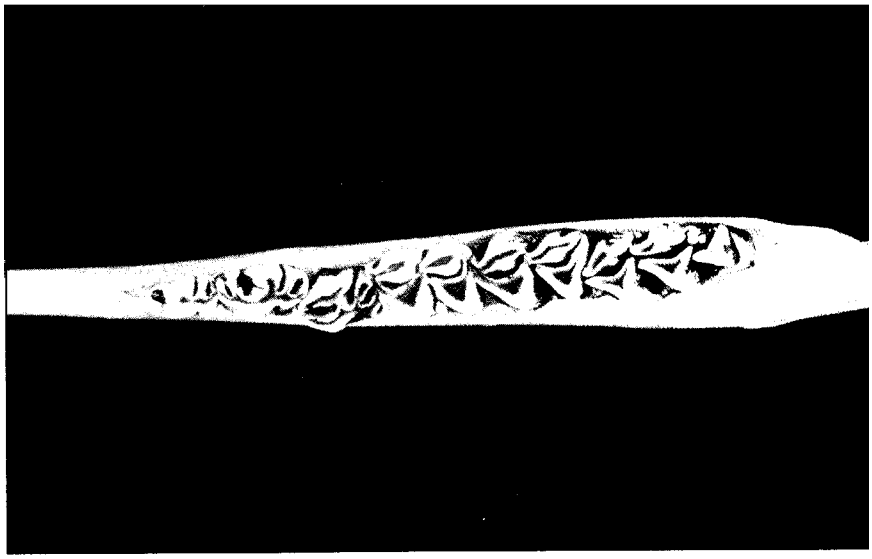
3 1/2 years

Tooth 4–lingual crests are blunt.

Tooth 6–back cusp is worn to a definite concavity.

Tooth 4–dark dentine line in lingual crests is wider than the enamel bordering it, but not in tooth 4 or tooth 6.

Tooth 6–back cusp is worn concave.

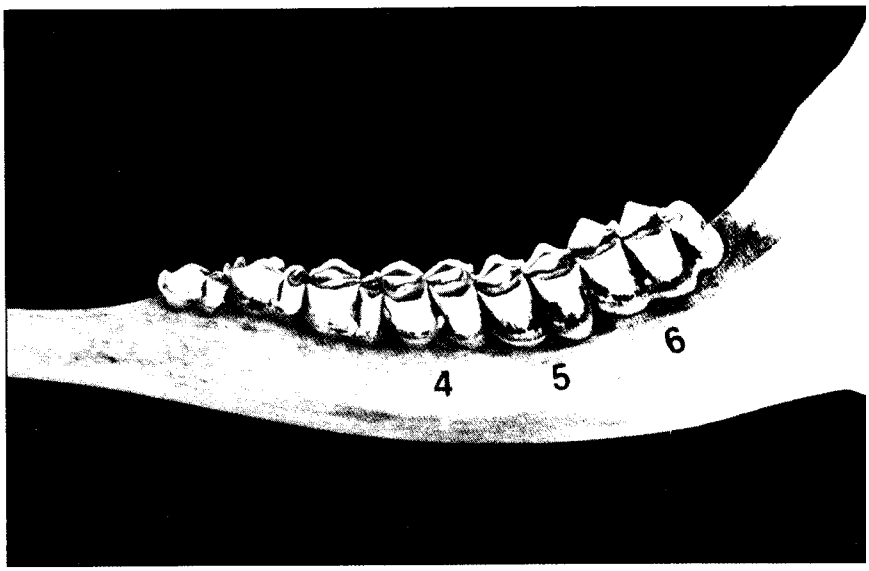


4 1/2 years

Tooth 4–lingual crests are almost worn away.

Tooth 5–lingual crests are blunt.

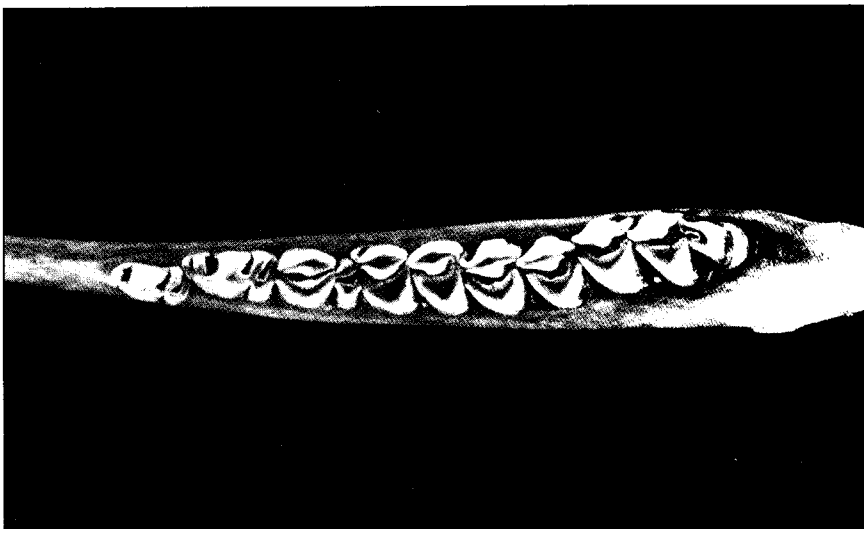
Tooth 6–back cusp is worn so badly that the outward surface slopes downward.

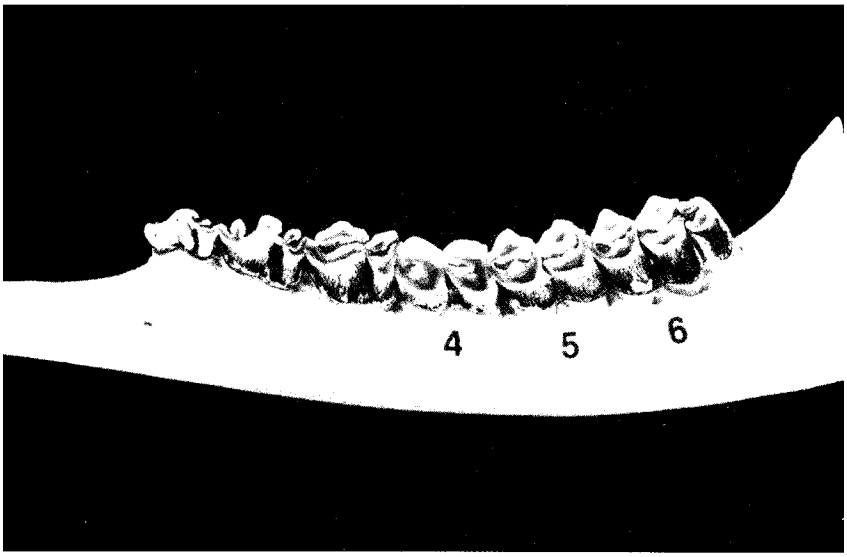


Tooth 4–dark dentine line in lingual crest is almost twice as wide as the enamel bordering it.

Tooth 5–dentine in lingual crest is wider than enamel.

Tooth 6–dentine in lingual crest is about as wide as enamel.

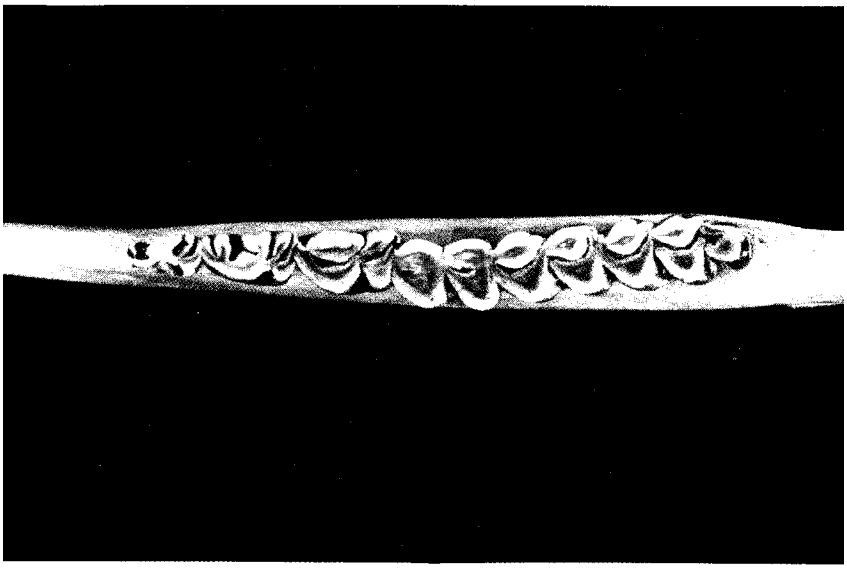




5 1/2 years

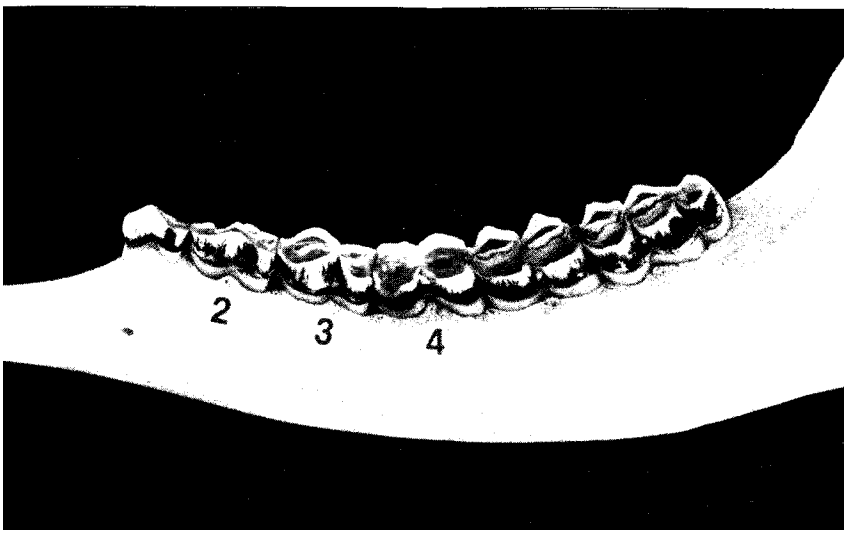
Tooth 4 and tooth 5–lingual crests are worn away to rounded ridges.

Tooth 6–lingual crests are blunt.



Tooth 4, tooth 5 and tooth 6–dark dentine line is wider than the enamel bordering it.

6 1/2 years

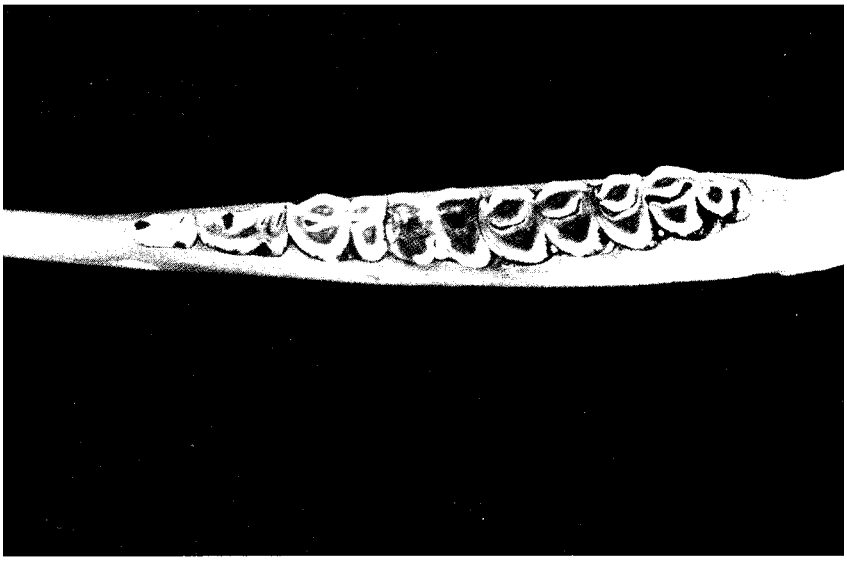


Tooth 4–crown is worn smooth.

Tooth 2 and tooth 3–crown is heavily worn. This is the first time for heavy wear on permanent premolars.

Tooth 3–infundibulum is a small triangular hole.

Caution–Heavily worn two-cusped, permanent tooth 3 should not be confused with similar conditions on three-cusped, temporary tooth 3 in 1 1/2-year-old.

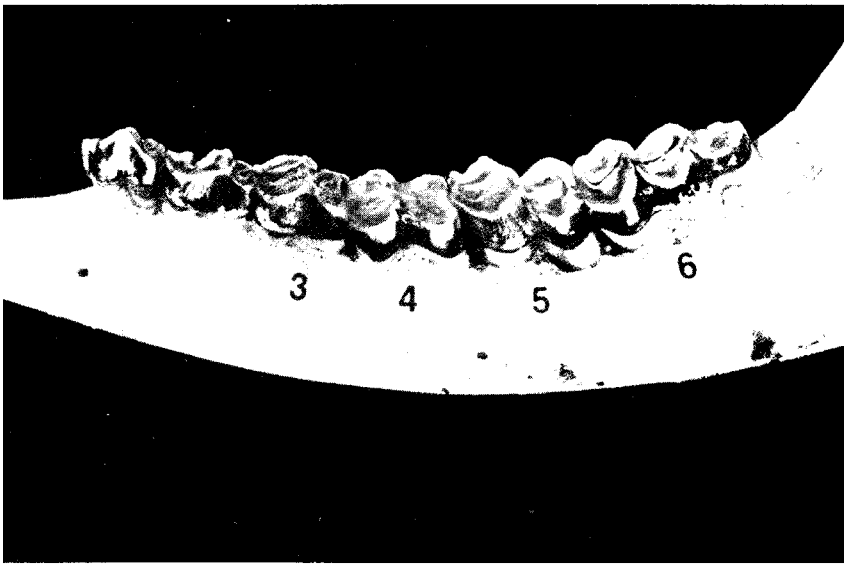


7 1/2 years

Tooth 4–crown is worn smooth.

Tooth 5–crown is almost worn smooth.

Tooth 6–lingual crests are gone.



Tooth 3 and tooth 5–infundibulum is almost gone.

Tooth 6–infundibulum is a narrow, crescent-shaped line with some depth.

desire to learn more about deer. Many indicators of deer quality and herd welfare are related to age. For example, the presence of young animals–fawns and yearlings–that are growing well indicates good forage conditions. Poor reproduction in yearlings suggests inadequate nutrition.

A high percentage of old animals–4 and older–in the harvest may indicate light hunting pressure. Conversely, a high percentage of yearlings usually indicates heavy hunting pressure. The point is that various kinds of information and measurements must be interpreted in the context of the age groups represented.

To gain the most information you can use two complimentary approaches: 1) Compare your data with measurements of a standard–a high quality deer herd; and 2) Compare measurements taken in different years. Several years of data will indicate trends. For example, in a high quality deer herd nearly all 1 1/2-year-old does become pregnant with single fawns. If examination of reproductive tracts showed that only 10 percent of yearlings were pregnant, or that only 30 percent of the 2 1/2-year-old does showed evidence of lactation, a nutritional deficiency should be suspected. An increasing percentage of yearlings testing pregnant over several years could indicate the success of a management program.

Three kinds of age-related measurements are particularly useful: those that reflect status or growth of the individual; those that show the age structure of a deer herd; and those that are descriptive averages of particular characteristics such as average weight of 3 1/2-year-old bucks.

Individual characteristics

Does grow in body size for about 3 years, while bucks become full-grown in about 5 years. However, body growth is not uniform. It occurs in seasonal bursts interrupted by periods of weight loss, regardless of the food supply. Figure 3 illustrates the growth of a buck from weaning through 4 years of age.

Maximum antler size, as measured by the number of points and the spread, is reached by 4 years of age. Massiveness, as described by beam circumference, continues to increase with age until the deer's teeth break down.

Fawns can attain puberty their first fall, but more commonly do so during their second fall as yearlings. However, they are likely to breed as yearlings only when nutritional conditions are good.

Age characteristics of a deer herd

White-tails have an average lifespan of 8 years, but most do not live beyond 4 to 5 years of age. Captive animals have lived nearly 20 years.

Reproduction adds animals to a population while mortality removes them. If these elements are out of balance, the total number of deer increases or decreases as a result. Even when mortality and reproduction are approximately in balance the composition of a deer population changes as animals grow old and are replaced by younger ones.

Three types of measurements are used to describe population changes-population size, sex ratio and age distribution. The relative size of age groups, by sex, can give some insight into the impact of hunting on a herd of deer.

Averages and trends

Measuring the average body sizes of an age class of bucks or does over several years is useful in understanding the general welfare of a deer herd. An increasing average could indicate improving conditions, a decreasing one the opposite.

Deer managers should keep accurate records of the ages, antler sizes and body weights of all deer harvested. These records and the trends which they show are important in evaluating the effects of management.

For further information contact your county Extension office or the Texas Parks and Wildlife Department.

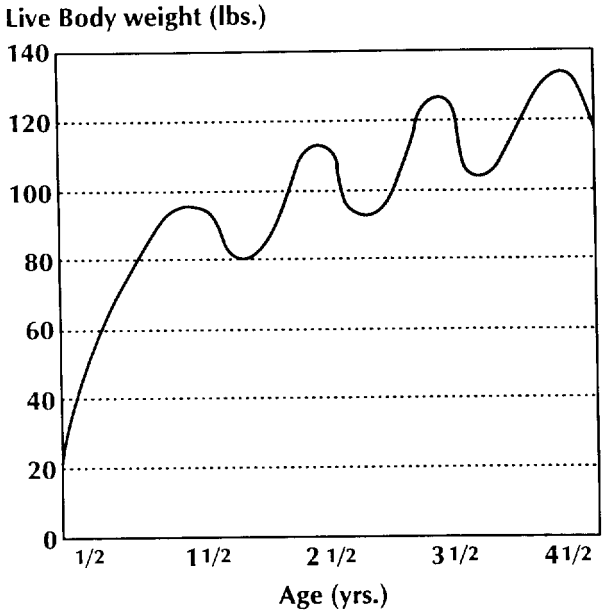


Figure 3. The growth of bucks.

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