



Harold Umber

# Aging Moose

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Photos by Craig Bihrlé

*Each year Game and Fish biologists run moose checking stations to gather information from hunters about harvested animals. A common question from hunters is: "How old is my moose?" If you've ever been lucky enough to hunt moose and brought it into a field check station, a biologist probably estimated the age by looking at its teeth, and told you some basic things about how they did it. But you probably wondered if you couldn't do it yourself. This guide will help successful hunters estimate the age of their moose.*

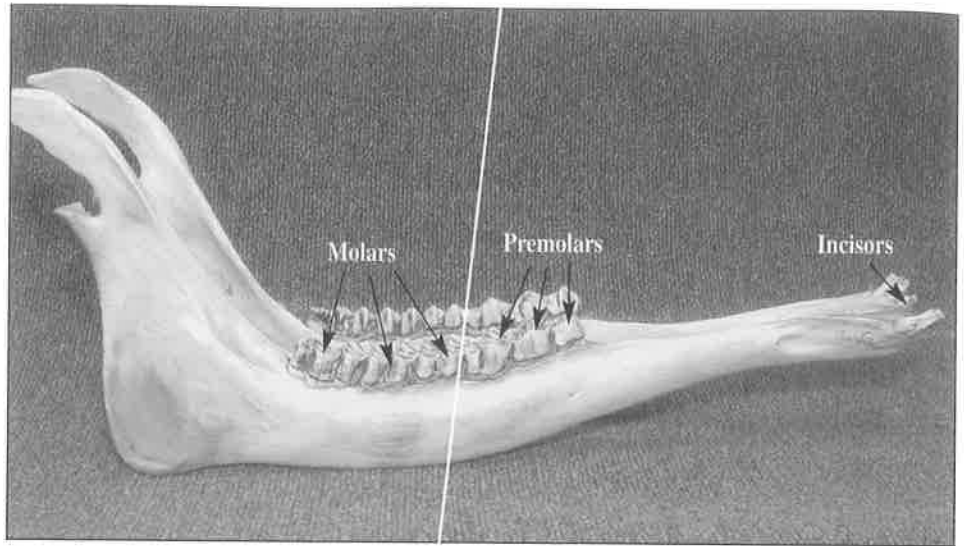
## How to Age Your Moose

Moose in North Dakota are primarily born in late May and early June. Therefore, when most animals are harvested in October and November they are considered either six months, 1½ years, 2½ years, 3½ years, etc., in age. This guide is designed to block moose into these age categories.

Although moose may live to 20 years or more in the wild, the overall age structure of a hunted moose population is younger than most people think. Of the moose harvested in North Dakota that biologists have examined, more than 80 percent of bulls and cows were 3½ years old or younger.

Antler and body size can help indicate a moose's age, but physical characteristics are often misleading. The number of antler points do not correspond to age. Even if it did, it wouldn't help in aging cows, which make up a considerable proportion of the harvest each year.

Antler size in bulls and physical development in both genders is greatly affected by diet, which may account for differences between animals of the same age taken from different locations.



Your basic moose jaw. Incisors in the front, premolars and molars in the back, and a big space between.

## It's All in the Teeth

The science of aging moose is based on tooth development and wear. Unlike white-tailed deer and elk, moose obtain their permanent adult teeth quickly. By the time a moose is 1½ years old, all permanent teeth are in. After this stage, estimating age is based largely on the rate of

tooth wear. Diet and soil types may accelerate tooth wear, but generally, estimating the age of adult moose is straight forward through the age of 3½. In animals 4½ years and older, estimating age by tooth wear is much less reliable.

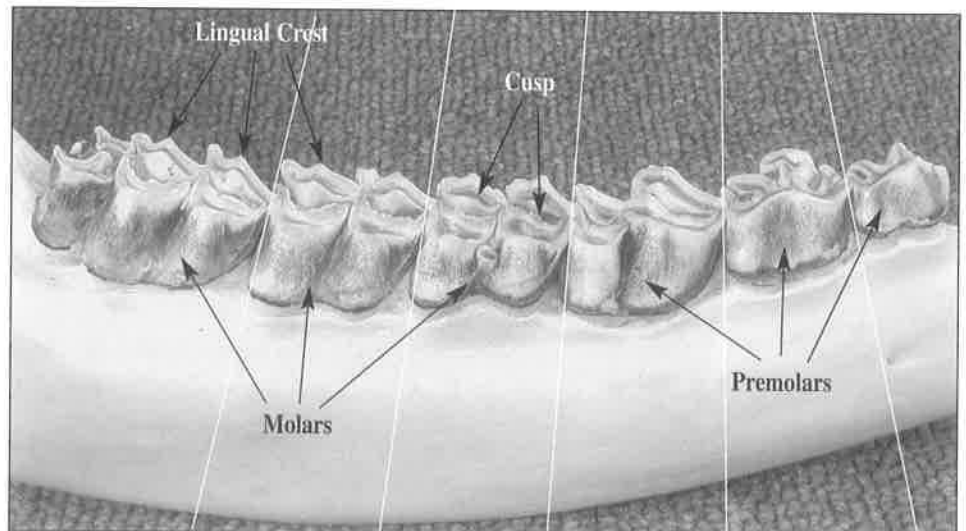
## Tooth Identification Basics

Moose basically have two groups of teeth. The front teeth, or incisors, are used for collecting food. The back teeth or cheek teeth – molars and premolars – are used to chew and grind food. Between the incisors and molars is an open space along the jaw that has no teeth. (Note: In all photos, black line indicates the gum line.)

## Cheek Teeth

**Premolars:** The first three teeth on each side of the jaw are called premolars. Moose grow two sets of premolars. The first set appear in calves and last until the animal is about 14 months old, when permanent adult premolars push out the baby premolar teeth. An important characteristic of the first set of premolars is that the third premolar has three crowns or cusps. When the permanent teeth come, all premolars have just two cusps.

**Molars:** The four, fifth, and sixth cheek teeth are the molars. Moose grow one set of molars. Generally, six-month-old moose have only one molar when they enter the fall hunting season. Therefore, six-month-old animals usually have only four cheek teeth. By 1½ years of age – the second fall – the second and third molar have erupted through the gum, though the last cusp of the third molar may still be below the gum line. All six molars and premolars are fully erupted by 2½ years. To determine the age of animals in older age classes we need to look more closely at tooth wear.

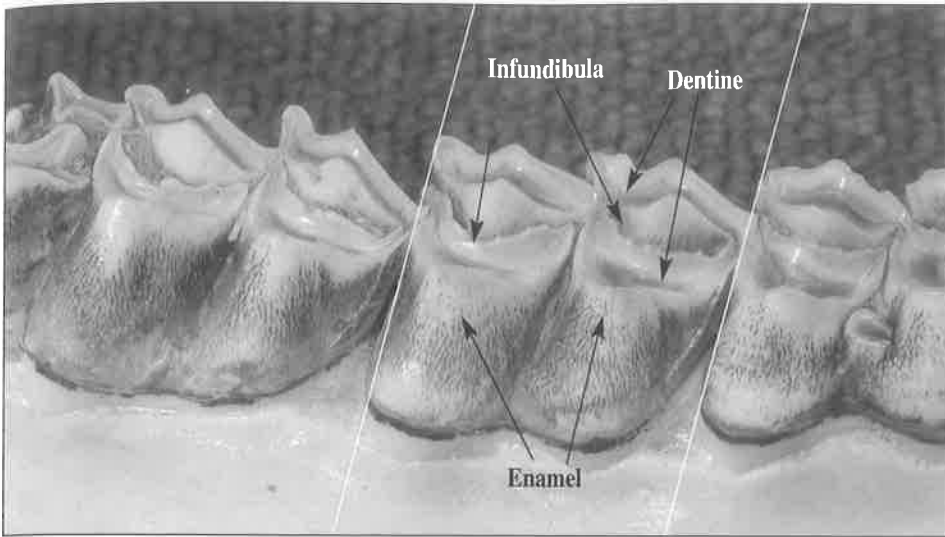


Cheek teeth of a 3½ year-old moose. Premolars and molars are indicated. Each permanent premolar and molar has two cusps or crowns, except the third molar, which has three cusps. The cusps on the lower jaw form a ridge of sharp points on the side nearest the tongue, called lingual crests.

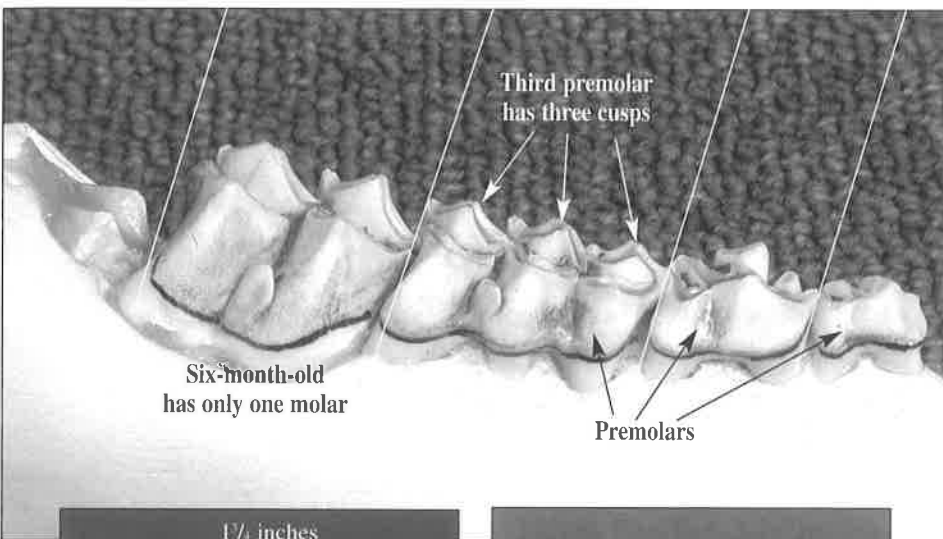
## Through the Ages

While it is possible to determine whether a moose is six months, and possibly 1½ years-old, by looking at its incisors or front teeth, it is the cheek teeth, specifically those of the lower jaw, that harbor the most reliable clues for older animals.

To get a good look at the cheek teeth – premolars and molars – you need to cut back the lip and cheek skin. If you plan to have the head mounted, let your taxidermist skin out the head and remove the jaw for you.



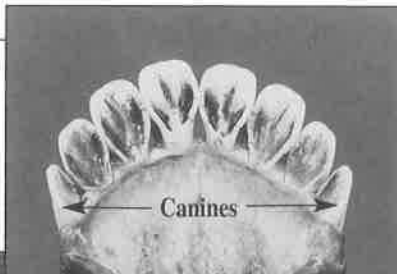
Each premolar and molar shows white and dark portions. The white portion is the enamel. The dark portion is dentine. The pits in the tooth are called infundibula.



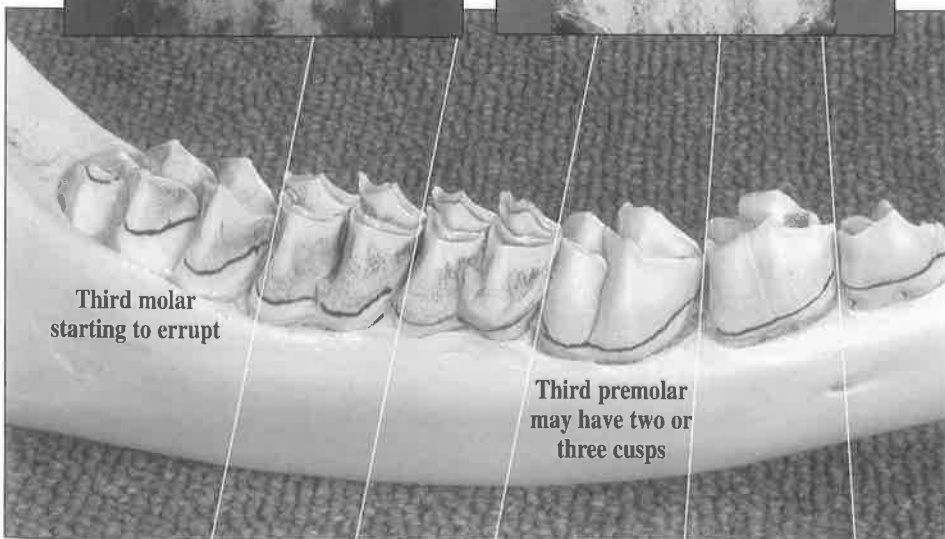
**Six Months:** The nose or muzzle of the moose appears short or stubby, when compared to older moose. All the immature incisors are still present. Generally, there are only four cheek teeth showing. The third premolar has three cusps.



Left: Front teeth of a six-month-old moose (calf). Width of incisors less than 1¾ inches.



Right: Yearling jaw with all permanent front teeth fully emerged. Outer canine teeth may still be rotating into their final position in September and early October.

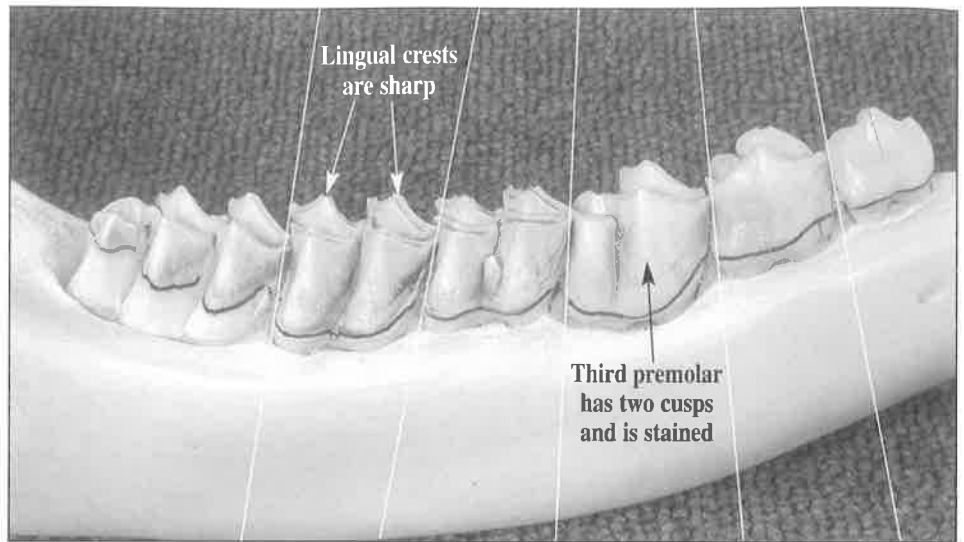


**1½ Years:** All permanent front teeth are in place. Moose harvested in September and early October may show the outer canine teeth still emerging and may not be fully rotated into final position (see incisor inset photo). Six cheek teeth are visible in the lower jaw. The third premolar may still have three cusps and be well worn. Third molar starting to erupt through the gum and shows no sign of wear. Lingual crest of molars have sharp points.

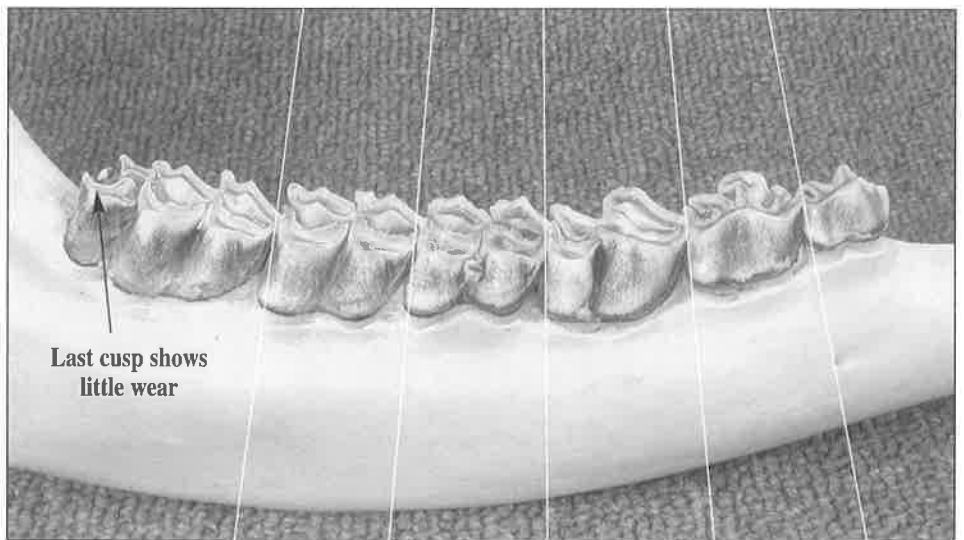


*Incisors of a moose 2 1/2 years old; all incisors in their final position. Little wear is visible.*

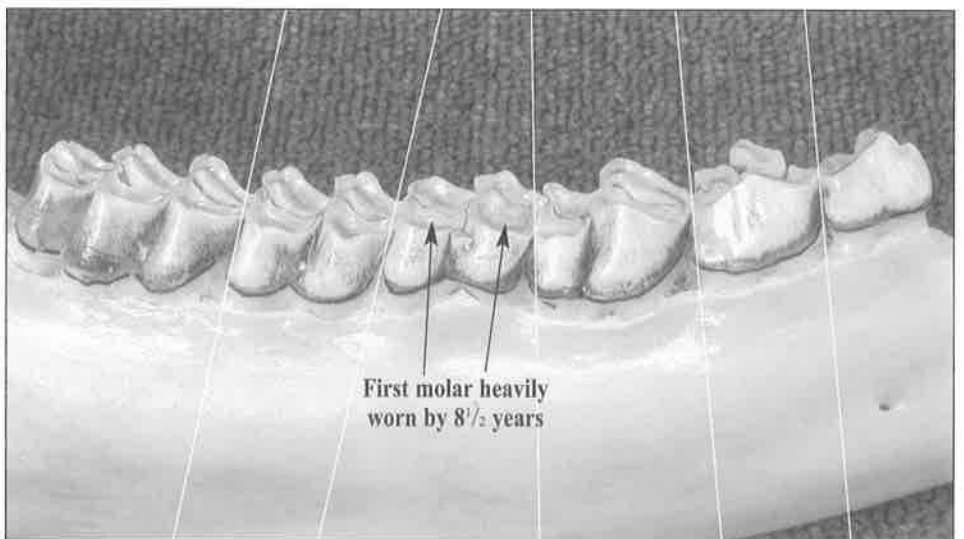
**2 1/2 Years:** Last cusp of third molar slightly cradled into the angle of the jaw. All the premolars and molars show slight wear and are stained.



**3 1/2 Years:** Lower jaw has now elongated so that the last cusp of the third molar does not appear cradled into the back angle of the jaw. The dentine (brown portion) now wider than the enamel (white portion) of the lingual crest.



**4 1/2 Years and Older:** Aging moose 4 1/2 to 8 1/2 years is difficult. Wear on the lingual crest and cupping of molars becomes increasing pronounced. By 8 1/2 years the pit, or infundibula of the first molar (four cheek tooth) will usually be completely worn away. Older animals show excessive wear and cupping in all molars. By 12 1/2 years the pit, or infundibula, of the third premolar is usually worn away completely. Periodontal diseases, impacted food, and infection of tissue around the teeth is very common among older moose.



**BILL JENSEN** is a Game and Fish Department big game biologist. The Department would like to thank Mary Hindelang and Rolf Peterson of Michigan Technological University, and Isle Royale National Park for allowing us to photograph the older aged jaws used in this article.