

Moose

The moose (North America) or elk (Eurasia), *Alces alces* is a member of the [Deer](#) subfamily and is the largest and heaviest extant species in the [Deer \(internal link to "Deer" page\)](#) family.

Moose are distinguished by the broad, palmate (open-hand shaped) antlers of the males.

Moose typically inhabit [boreal](#) and [temperate](#) broadleaf forests of the [Northern Hemisphere](#) in temperate to subarctic climates.

Hunting and other human activities have caused a reduction in the size of the moose's range over time.

Moose have been reintroduced to some of their former habitats. Currently, most moose are found in Canada, Alaska, North Eastern United States, [Fennoscandia](#), Baltic states, and Russia.

Their diet consists of both land and water vegetation.

The most common moose predators are the gray wolf along with bears and humans.

Unlike most other deer species, moose are solitary animals and do not form herds.

Although generally slow-moving and sedentary, moose can become aggressive and move quickly if angered or startled. Their mating season in the autumn features energetic fights between males competing for a female.

Image of moose

Scientific name: <i>Alces alces</i>
Species: Deer
Distinguishing feature: broad open-hand shaped antlers (male only)
Habitat: Boreal forests of the Northern Hemisphere

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1.Features

1.1 Males and Females

Bull (male) moose have antlers like other members of the Deer family. Cows (female) select mates based on antler size. Bull moose use dominant displays of antlers to discourage competition and will spar or fight rivals. The size and growth rate of antlers is determined by diet and age; symmetry reflects health.

Image of bull with caption

Image of female with caption

1.1.1 Antlers

The male's antlers grow as cylindrical beams projecting on each side of the head at right angles to the midline of the skull, and then fork. The lower prong of this fork may be either simple, or divided into two or three points, with some flattening. Moose antlers are broad and palmate (flat) with tines (points) along the outer edge.

The antlers of mature Alaskan adult bull moose (5 to 12 years old) have a normal maximum spread greater than 200 centimeters (79 in). By the age of 13, moose antlers decline in size and symmetry. The widest spread recorded was 210 centimeters (83 in) across. (An Alaskan moose also holds the record for the heaviest weight at 36 kilograms (79 lb)).

Diagram of antler

1.2 Hoof

As with all members of the order *Artiodactyla* (even-toed ungulates), moose feet have two large [keratinized](#) hooves corresponding to the third and fourth toe, with two small [posterolateral dewlaps \(vestigial digits\)](#), corresponding to the second and fifth toe. The hoof of the fourth digit is broader than that of the third digit, while the inner hoof of the third digit is longer than that of the fourth digit. This foot configuration may favor striding on soft ground.[85] The moose hoof splays under load, increasing surface area, which limits sinking of the moose foot into soft ground or snow, and which increases efficiency when swimming. The body weight per footprint surface area of the moose foot is intermediate between that of the pronghorn foot, (which have stiff feet lacking dewlaps—optimized for high-speed running) and the caribou foot (which are more rounded with large dewclaws, optimized for walking in deep snow). The moose's body weight per surface area of footprint is about twice that of the caribou's.

Diagram of hoof with names of the parts pointing to them.

1.3 Diet

The moose is a [herbivore](#) and is capable of consuming many types of plant or fruit. The average adult moose needs to consume 9,770 kcal (40.9 MJ) per day to maintain its body weight. Much of a moose's energy is derived from ground vegetation, mainly consisting of [forbs](#) and other non-grasses, and fresh shoots from trees such as willow and birch. These plants are rather low in sodium, and moose generally need to consume a good quantity of [aquatic](#) plants. While much lower in energy, aquatic plants provide the moose with its sodium requirements, and as much as half of their diet usually consists of aquatic plant life.

1.3.1 Winter

In winter, moose are often drawn to roadways, to lick salt that is used as a snow and ice melter. A typical moose, weighing 360 kg (794 lb), can eat up to 32 kg (71 lb) of food per day.

2. Habitat and Migration

Image of moose habitat

Moose require habitat with adequate edible plants (e.g., pond grasses, young trees and shrubs), cover from predators, and protection from extremely hot or cold weather.

Moose travel among different habitats with the seasons to address these requirements. Moose are cold-adapted mammals with thickened skin, dense, heat-retaining coat, and a low surface:volume ratio, which provides excellent cold tolerance but poor heat tolerance. Moose survive hot weather by accessing shade or cooling wind, or by immersion in cool water. In hot weather, moose are often found wading or swimming in lakes or ponds. When heat-stressed, moose may fail to adequately forage in summer and may not gain adequate body fat to survive the winter.

Also, moose cows may not calve without adequate summer weight gain. Moose require access to both young forest for browsing and mature forest for shelter and cover. Forest disturbed by fire and logging promotes the growth of fodder for moose. Moose also require access to mineral licks, safe places for calving and aquatic feeding sites.

2.1 Where not to find moose

Moose avoid areas with little or no snow as this increases the risk of predation by wolves and avoid areas with deep snow, as this impairs mobility. Thus, moose select habitat on the basis of trade-offs between risk of predation, food availability, and snow depth.

3. Population

Moose population by area

Area	Population	Date
Canada	500,000 to 1000,000	
<i>Newfoundland</i>	<i>150,000</i>	<i>2007</i>
United States	300,000	
<i>Alaska</i>	<i>200,000</i>	<i>2011</i>
<i>New York and New England</i>	<i>50,000</i>	<i>2007</i>
<i>Wyoming (Rocky Mountain)</i>	<i>7,692</i>	<i>2009</i>
<i>Michigan (Upper Penninsula)</i>	<i>433</i>	<i>2011</i>
<i>Wisconsin (Michigan border)</i>	<i>20-40</i>	<i>2003</i>
<i>Minnesota (Northeast)</i>	<i>5600</i>	<i>2010</i>
<i>Minnesota (Northwest)</i>	<i>Less than 100</i>	<i>2009</i>
Finland	115,000 (summer)	2009
Norway	120,000 (winter)	2009
Sweden	300,000 to 400,000 (summer)	
Latvia	21,000	2015
Estonia	13,260	
Poland	2,800	
Czech Republic	50	
Russia	600,000	2007

3.1 Predators

A full-grown moose has few enemies except [Siberian tigers](#) ([Panthera tigris altaica](#)) which regularly prey on adult moose, but a pack of [gray wolves](#) ([Canis lupus](#)) can still pose a threat, especially to females with calves.

Images of both Siberian Tiger and gray wolf with captions

[Brown bears](#) ([Ursus arctos](#)) are also known to prey on moose of various sizes, including many pregnant adult cows in some parts of Alaska and Scandinavia and even the rare bull moose, and are the only predator besides the wolf to attack moose both in Eurasia and North America. However, brown bears are more likely to take over a wolf kill or to take young moose than to hunt adult moose on their own.

Image of brown bear with caption

[American black bears](#) ([Ursus americanus](#)) and [cougars](#) ([Puma concolor](#)) can be significant predators of moose calves in May and June and can, in rare instances, prey on adults (mainly cows rather than the larger bulls).

Image of black bear and puma with caption

[Wolverine](#) ([Gulo gulo](#)) are most likely to eat moose as carrion but have killed moose, including adults, when the large ungulates are weakened by harsh winter conditions.

Image of wolverine with caption

[Killer whales](#) ([Orcinus orca](#)) are the moose's only known marine predator as they have been known to prey on moose swimming between islands out of North America's Northwest Coast, however, there is at least one recorded instance of a moose preyed upon by a [Greenland shark](#) ([Somniosus microcephalus](#)).

Image of a killer whale with caption

3.2 Interactions with humans

Moose are not usually aggressive towards humans, but can be provoked or frightened to behave with aggression. In terms of raw numbers, they attack more people than bears and wolves combined, but usually with only minor consequences.

In the Americas, moose injure more people than any other wild mammal, and worldwide, only hippos injure more.

When harassed or startled by people or in the presence of a dog, moose may charge. Also, as with bears or any wild animal, moose that have become used to being fed by people may act aggressively when denied food.

Unlike other dangerous animals, moose are not territorial, and do not view humans as food, and will therefore usually not pursue humans if they simply run away.

In 2015 31,131 moose were shot. In 1999, a record number of 39,422 moose were shot. Around 100,000 are shot each fall. About 10,000 are killed in traffic accidents yearly.

3.2.1 Special cautions

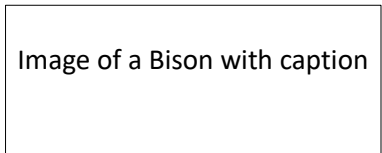
During the fall mating season, bull moose may be aggressive toward humans because of the high hormone levels they experience.

Cows with young calves are very protective and will attack humans who come too close, especially if they come between mother and calf.

3.3 Bison reintroduction

With reintroduction of [Bison \(Bison\)](#) into boreal forest, there was some concern that Bison would compete with moose for winter habitat, and thereby worsen the population decline of moose.

However, this does not appear to be a problem. Moose prefer sub-alpine shrublands in early winter, while Bison prefer wet sedge valley meadowlands in early-winter.



In late-winter, moose prefer river valleys with deciduous forest cover or alpine terrain above the tree line, while bison preferred wet sedge meadowlands or sunny southern grassy slopes.

4. References