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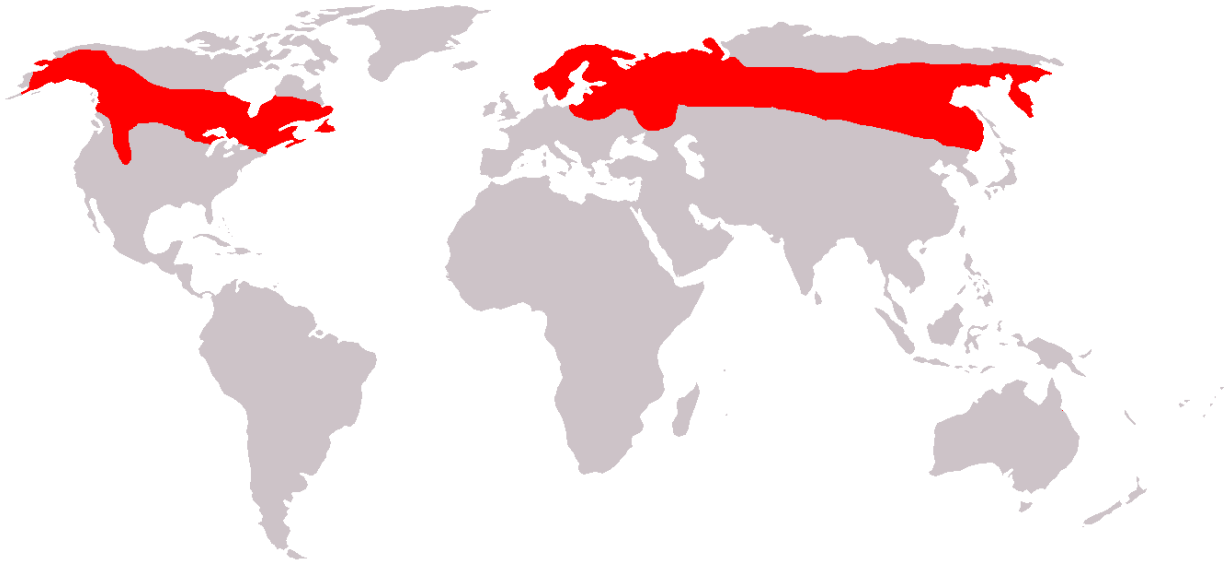


## Moose

The moose (North America) or elk (Eurasia), *Alces alces*, is the largest and heaviest extant species in the Deer family and a member of the New World deer subfamily. Moose are

distinguished by the broad, palmate (open-hand shaped) antlers of the males; other members of the deer family have antlers with a dendritic ("twig-like") configuration.

## Population and Distribution



Moose typically inhabit [boreal forests](#) and temperate broadleaf and mixed 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, though they have been reintroduced to some former habitats.

## Current Distribution

- **Canada:** Population ranges from 500,000 to 1,000,000.
- **USA:** 300,000 moose, including 200,000 in Alaska.
- **Finland:** 115,000 moose (2009).
- **Norway:** 120,000 moose (2009).
- **Sweden:** Summer population estimated at 300,000–400,000.
- **Russia:** Approximately 600,000 moose (2007).

Moose have been reintroduced in various areas to restore their presence in former habitats.

## Physical Characteristics of Bull Moose Antlers



Bull moose have distinctive [antlers](#) that are different from other members of the deer family. These antlers are broad, palmate, and

can grow to impressive sizes. The antlers' shape and size are influenced by the moose's age, diet, and overall health.

- **Antler Growth:**

- Antlers grow as cylindrical beams projecting at right angles from the skull, then fork.
- The lower prong may be simple or divided into multiple tines, often with some flattening.

- **Shape:**

- Moose antlers are broad and palmate (flat) with tines along the outer edge.

- **Size:**

- Mature Alaskan bull moose may have antlers with a spread greater than 200 cm (79 in).
- The widest recorded spread is 210 cm (83 in).
- The heaviest antlers can weigh up to 36 kg (79 lb).

- **Growth Factors:**

- Antler size and growth rate are influenced by diet and age.
- Symmetry reflects the moose's health.

- **Decline with Age:**

- By the age of 13, moose antlers decline in size and symmetry.

## Foot Structure



Moose, like all members of the order [Artiodactyla](#) (even-toed ungulates), have a unique foot structure that is adapted to their environment. Their feet are designed to provide stability on soft ground and snow, as well as efficiency when swimming.

- **Hoof Composition:**

- Two large hooves correspond to the third and fourth toes.
- Two small digits (dewclaws) correspond to the second and fifth toes.

- **Hoof Differences:**

- The hoof of the fourth digit is broader than the third digit.
- The inner hoof of the third digit is longer than that of the fourth digit.

- **Functionality:**

- The hoof splays under load, increasing surface area, which helps prevent sinking into soft ground or snow.
- This structure also aids in swimming efficiency.

- **Footprint Comparison:**

- The moose's footprint has a body weight per surface area that is intermediate between the [pronghorn](#) (optimized for high-speed running) and the [caribou](#) (optimized for deep snow walking).
- The moose's body weight per footprint surface area is about twice that of the caribou's.

## Mating and Behavior



Moose exhibit specific mating behaviors, with cows selecting mates based on the size of the bull's antlers. During the mating season, which occurs in autumn, bull moose use their impressive antlers to establish dominance, engaging in displays to deter rivals. This often leads to sparring or fights between males as they compete for the attention of females.

## Habitat and Adaptation

Moose require habitats with edible plants, predator cover, and protection from extreme weather. They travel between habitats seasonally to meet these needs. With thickened skin, a dense coat, and a low surface-to-volume ratio, moose are well-adapted to cold climates. However, they have poor heat tolerance and seek shade, cooling wind, or water to avoid heat stress.

## Winter Behavior



- Prefer [sub-alpine](#) shrublands in early winter.
- Favor river valleys or [alpine](#) terrain in late winter.
- Avoid areas with little snow due to increased predation risk.
- Avoid deep snow as it impairs mobility.
- Select habitats based on trade-offs between predation risk, food availability, and snow depth.

## Summer Behavior



- Seek shade or cooling wind to avoid heat stress.
- Immerse in water bodies to cool down.

- Access to young forests for browsing and mature forests for shelter.
- Require aquatic feeding sites and [mineral licks](#).
- Often found wading or swimming in lakes or ponds during hot weather.

## Diet and Predation

Moose are herbivores consuming both [terrestrial](#) and aquatic vegetation. They require 9,770 kcal daily, with aquatic plants providing necessary sodium. In winter, their diet includes road salt. Moose consume a variety of plant life, including pond grasses, young trees, and shrubs, with aquatic plants making up a significant portion of their diet to meet sodium needs.

## Predators:

- Main predators: gray wolves, bears, Siberian tigers (Eurasia).
- Occasional predators: cougars, wolverines, killer whales (marine).
- Young moose are vulnerable to American black bears and cougars.

## Human Interaction and Aggression

Moose are generally not aggressive but can be provoked. They are more likely to attack humans than bears or wolves. Cows are protective of their young calves, and bulls may be aggressive during the mating season. Despite this, moose are not territorial and usually do not pursue humans if they run away. Moose that are used to being fed by humans may act aggressively when denied food. They are solitary animals, unlike most deer species, and can become aggressive if harassed or startled.

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