

Muskox

The **muskox** (*Ovibos moschatus*) is called omingmak meaning “the animal with skin like a beard” by Inupiaq-speaking Eskimos, a reference to the long guard hair that hangs nearly to the ground. Taxonomists now classify muskoxen with the sheep and goats. The closest living relative of the muskox is the takin, a large goat-like animal which is found in the Himalayas. Muskoxen as a species have changed little since the ice age and are perfectly adapted to live in their harsh arctic environment.

General description: The muskox is a stocky, long-haired animal with a slight shoulder hump and a very short tail. Both sexes have horns, but the horns of bulls are larger and heavier than those of cows. The horns of bulls develop large bases which nearly span the entire forehead. The pelage consists of a long, coarse, outer layer and a short, fine underhair. Coloration of the Greenland muskox, the race found in Alaska, is generally dark brown with creamy-colored hair on the “saddle,” forehead, and legs. Muskoxen have cloven hooves, all four of which are the same size.

Mature bulls are about 5 feet high (1.5 m) at the shoulder and weigh 600 to 800 pounds (273-364 kg). Cows are smaller, averaging approximately 4 feet (1.2 m) in height and weighing 400 to 500 pounds (182-227 kg). The name “muskox” is misleading because the animals have no musky odor.

Life history: The breeding season begins during late summer; mating takes place during the time from August to October. Single calves, weighing 22-31 pounds (10-14 kg), are born in the spring (April to June) to cows older than two years.

Growth is rapid and the animals weigh 150-235 pounds (68-107 kg) as yearlings. Muskoxen are gregarious animals. Winter herds may include up to 75 animals. Smaller harem groups which form during the mating season contain from 5 to 15 females and subadults, with one dominant bull who prevents other adult bulls from entering the group. Bulls excluded from these breeding herds wander widely in search of a harem but generally rejoin mixed sex herds in winter. However, some non-breeding bulls may segregate into bull-only herds during spring.

Battles between bull muskoxen during the rut are spectacular and violent contests. After a period of aggressive display, the bulls charge at top speed from distances of 50 yards (46 m) or more and collide squarely on the horn bosses. The sound of the tremendous impact can be heard from a mile away on a calm day. After a clash, the bulls back away from each other swinging their heads from side to side and repeat the sequence until one bull turns and runs. A battle may include 20 clashes. Analysis of motion-picture footage has determined that the force generated in a clash between muskox bulls is equivalent to that of an automobile ramming a concrete wall at 17 mph (27 km/h). Bull muskoxen have heavily armored skulls to protect them from the shock of impact. Four inches of horn and three inches of bone lie directly over the brain in the area of contact.

The group defense formation adopted by muskoxen in response to predators is well known. When danger approaches, muskoxen run together. Every animal tries to face the source of the threat. If only one predator is nearby, the defense formation takes the form of a line. If several predators surround the group, as with a wolf pack, the formation becomes a compact circle with all muskoxen facing outward. Occasionally, one or more animals will charge the predator. The muskox's defense strategy is extremely effective against its principal enemies, wolves and grizzly bears. Unless the herd stampedes, it is nearly invulnerable to wolf attack. Early human hunters soon learned to exploit this defensive behavior and with the aid of dogs were easily able to wipe out whole herds of muskoxen. Whalers and arctic exploring parties, using the same techniques, took a heavy toll of muskoxen in some regions.

Food habits: Muskoxen eat a wide variety of plants, including grasses, sedges, forbs, and woody plants. Muskoxen are poorly adapted for digging through heavy snow for food, so winter habitat is generally restricted to areas with shallow snow accumulations or areas blown free of snow.

History in Alaska: The return of muskoxen to Alaska is an important success story in wildlife conservation. The original Alaska muskoxen disappeared in the mid- or late 1800s as they had much earlier in Europe and Asia. Overhunting likely contributed to their demise, at least in some areas. By the 1920s, muskox distribution was reduced to arctic Canada and East Greenland where a high take by whalers, hide hunters, and natives continued. Concern over the impending extinction of the species worldwide led to a move to restore a protected population to Alaska. In 1930, 34 muskoxen captured in East Greenland were brought to Fairbanks. In 1935 and 1936, all survivors and their calves were transported from Fairbanks to Nunivak Island and released. Muskoxen thrived on Nunivak Island and increased from 31 in 1936 to an estimated 750 by 1968.

Muskoxen from Nunivak Island were intended to provide stock for relocating animals to formerly occupied ranges. Nunivak Island muskoxen have been transplanted to the Arctic National Wildlife Refuge, Cape Thompson, the Seward Peninsula, Nelson Island, and to Wrangel Island and the Taimyr Peninsula in Russia. Additional animals have been donated to zoos and other institutions.

Most of the transplanted animals quickly adapted to their new surroundings and increased. Further transplants may be considered in the future. However, dispersal from previously translocated herds will be the primary method by which future range expansion occurs.

Population: By 2000, the muskox population in Alaska had grown to approximately 3,800: 650 on Nunivak Island, 250 on Nelson Island, 550 in north-central and northeastern Alaska, 450 in northwestern Alaska, 1,800 on the Seward Peninsula, 100 on the Yukon-Kuskokwim Delta, and an additional 105 animals in captivity in domestic herds, research herds, and the Alaska Zoo in Anchorage. The Nunivak Island and Nelson Island populations have been stabilized by hunting. Between 2000 and 2006, the population in northcentral and northeastern Alaska declined to about 200 muskoxen. Causes of the decline are currently under investigation. The other wild populations are expected to continue to increase and to expand their range.

Potential value to Alaskans: Although the success achieved to date is impressive, there is still much potential for expansion. Although muskoxen were once severely reduced in numbers and distribution, their habitat until recently has remained largely unchanged. It appears that habitat suitable for muskoxen is widespread, and given public support and proper management, muskoxen may eventually become a more visible and familiar wildlife species in Alaska. However, potential changes in habitat characteristics across northern Alaska, due to human activities and to broad-scale changes in climate, may influence the distribution and abundance of muskox in the future.



Hunting of muskoxen under a limited permit system is conducted on Nunivak Island and Nelson Island. Muskoxen are considered a unique and valuable trophy. Muskox meat is highly valued among those who have tried it. This hardy survivor of the ice ages is an important attraction to tourists, photographers, researchers, and students of wildlife.

The soft brownish wool-like underhair, or "qiviut," has been called the rarest fiber in the world. A domestic muskox herd at Palmer is farmed exclusively for the production of qiviut, but Eskimos on Nunivak Island collect the naturally shed wool clinging to bushes and tundra plants, and spin it by hand.

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