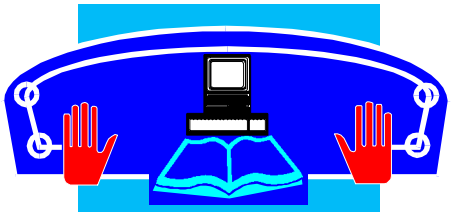

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Muskox

of the Northwest Territories

NWT Renewable Resources

Muskox
of the Northwest Territories

Ovibos moschatus

About 90,000 years ago when the Bering **Straits** were dry land, muskoxen crossed into North America from Siberia. When the last glacier covered North America, muskoxen survived in ice-free areas or "glacial refugia" in the northern arctic islands and Greenland. As the ice retreated, they spread throughout northern Canada and Greenland, then westward into Alaska.

Today their range is smaller, and of the approximately 40,000-50,000 muskoxen in Canada, most are found on the arctic islands, especially Banks, Ellesmere, Melville and Victoria Islands. On the mainland they are found in substantial numbers in the area north of Great Bear Lake up to the arctic coast, and in the Queen Maud Gulf area. Lesser numbers are present in the Thelon Game Sanctuary.

Description

For 8 months of the year, the muskoxen's range is covered with snow. In the high arctic islands, 4 months of the year is spent in darkness with temperatures of -30 and -40° C combined with winds from frequent blizzards. Without their remarkable two-layered coat, muskoxen would never survive such extreme conditions.

"Oomingmak", or the bearded one (as the Inuit call the muskox), is covered all over, except for the horns, hooves, lips and nose, with an underlayer of short fine wool of exceptional warmth. A much longer outer coat composed of shaggy hair up to 62 cm long covers the animal, hanging nearly to the ground and giving the muskox its characteristic appearance.

The coat is generally dark brown or nearly black. About the shoulders it is extremely shaggy and forms a distinct mane, especially noticeable on bulls. Behind the shoulders is a short white or creamy yellow "saddle". The lower legs have light brown to white "stockings".

In May when arctic temperatures begin to rise, muskoxen start to shed their inner coats, becoming untidy and tattered as the woolly hair falls off in patches with pieces left clinging to the long outer coat. Rocks and bushes about the tundra become littered with bits of fleece, which may be used by small birds for nest building. The new undercoat grows throughout the summer and by August, muskoxen are again sleek and dark. The outer hair is not shed at any specific time, but probably discarded and replaced continuously throughout the year.

Other adaptations for cold are small furry ears, and a very short tail hidden beneath the coat. Rounded hooves with sharp rims provide traction on ice and rocky surfaces. Muskoxen have exceptionally good hearing, eyesight and sense of smell. In their most northerly ranges they experience no difficulty in moving about and locating food in winter darkness.

Muskox horns begin to grow when a calf is 4 **to** 5 weeks old, and continue to grow until the muskox is about 6 years old. The large and sweeping horns of an adult bull merge at the bases to form a massive, heavily ridged and furrowed boss. On cows, the boss is smaller and divided in the middle by a tuft of white hair. The horns become darker with age, and may also be stained brown from vegetation when the bulls butt at peat banks in summer. The largest set of muskox horns on record, found near Perry River, measured 80 cm between the tips.

***Range of (he muskox** in the Northwest Territories.*

Calf with eartagged and de-horned cow — part of (he domesticated herd in Alaska,

Because of their shaggy coats and massiveness, muskoxen appear to be extremely large animals. In fact, a full grown bull may measure only between 130 and 150 cm at the shoulder, which is about the height of a man's chest. The average weight of a male is about 340 kg, while females usually weigh about 90 kg less. In captivity, muskoxen reach much greater weights as a result of better nutrition.

Food

Muskox food varies from season to season. In summer, muskoxen range through river valleys, along lake shores and in seepage meadows for browse such as willow, sedge, rushes, grasses, willow herb, bladder campion, knot weed and fleabane. In winter, the herds spend more time on hilltops, slopes and plateaus where vegetation such as graminoids, crowberry, bilberry and willow is exposed by arctic winds.

In most winters, muskoxen are easily able to find enough browse on wind-blown hilltops, provided the weather is cold and the snow is not too deep. However, if rain or sleet falls late in the year, or frequent thawing and freezing occurs, a crust of ice may form over the tundra, followed by deep snow. Under such circumstances, muskoxen have great difficulty in foraging beneath the ice and may die of starvation. Normally, if there is only a light crust of snow over the vegetation, muskoxen can break through by pawing. A stronger crust can be broken by the animal lifting its head and dropping its nose onto the surface. The muskox then paws in the crater, pushes away the broken ice and feeds on the exposed browse.

Behaviour

Muskoxen are gregarious animals and live in loosely organized herds. Herd size and composition vary with season, range conditions and the number of bulls in the population. An average herd is about 15 animals. After the rut in July and August, the herds increase as bulls and/or mixed groups join together. The presence of wolves may cause an increase in herd size in response to harassment. Some groups of muskoxen may merge together for feeding, while in severe winters large herds may fragment as a result of limited forage.

Unlike caribou, muskoxen do not undertake long migrations, but in some areas winter and summer ranges are distinct and as much as 80 km apart. On

treks between ranges, a dominant bull or cow leads the group.

The dominant bull is usually one of the largest animals in the herd. He will likely have large, dark coloured, cracked horns, and clinging to his coat in summer will be a great deal of unshed wool. When the dominant bull walks through the herd, subordinate animals move out of his way and stand watching. When danger threatens, the dominant bull is often the last member of the herd to respond and the first to relax when all is clear. In all-cow herds, a cow may display the same characteristics of leadership.

The influence of the dominant or lead animal is shown most clearly when a herd encounters some obstacle such as a deep river or steep bank. While other herd members mill about, the dominant bull appears to take the situation in hand and leads the others past the obstacle. In cases of disturbance from man, machines or wolf attack, the dominant bull again takes charge.

At the approach of wolves the herd often runs towards high ground or to an area of shallow snow. At the top of the high ground, the dominant bull stops and turns to face the threat while other herd members close ranks behind him in a characteristic defense formation. Calves and yearlings are pushed to the centre of a semi-circle of bulls and cows who stand, horns outward, facing the intruders. Such a formation is extremely effective against wolf attack as long as no animal allows itself to become separated from the line of defense. Wolves will circle the herd and attack individual animals that charge out. If the herd is well-organized, the wolves will eventually give up to search for easier game. However, if an animal does become separated, or if wolves encounter a lone animal, its chances of survival are considerably lessened.

Normally a full-grown muskox is formidable prey for a wolf and can easily defend itself by charging with its horns. But if the wolves begin worrying the muskox with intermittent attacks it becomes increasingly tired and vulnerable. Eventually, unless it can break away, it will likely fall victim to the wolves.

Adult bull muskox.

Rennie Knowlton

Reproduction

Throughout most of the year, muskoxen are placid animals. But towards the end of summer, the arctic stillness is broken by the crash of muskox horns as the bulls challenge each other for supremacy of the herds.

A lead bull must continuously defend his position. Skirmishes may occur at any time of year, but when the rut begins, fighting between bulls becomes serious and prolonged. Normally a mere threat from a dominant bull is sufficient to frighten away an intruder, but at the height of the rut, threats give way to noisy and dramatic battles with bulls charging each other and meeting head on with resounding thuds. The impact of the great blows is absorbed by the thickness of the horns and skull, and the weaker contender usually moves off before much damage is done. During the battles, cows and immature animals pay little attention and continue grazing placidly.

Rutting reaches its peak in late summer and courtship continues through September. As the dominant bull establishes his position, the herds change to harem-like groups composed of one adult bull with several cows, calves and sub-adult bulls. Defeated bulls either group together or become solitary. Young bulls may aggressively try to rejoin herds, while older ones seem content to wander about the tundra alone, feeding and sleeping.

The period of gestation for muskoxen is 8 to 9 months. Calves are born at similar times throughout the Northwest Territories despite differing temperatures on the most northerly and most south-

***Muskoxen** in defense formation.*

erly ranges. In the northern islands, calving occurs between April and June. [n the TheIon Game Sanctuary, which is the most southerly part of their range, calving has been observed from the 3rd week in April until mid-May. Temperatures are still well below freezing and the snow cover is deepest when the calves are born, but unless conditions of extraordinary wind or freezing rain occur, new-born calves are well able to survive the harsh conditions.

Muskox calves can stand upright and suckle within a few minutes of birth. For the first few weeks, they remain close to their mothers and within the safety of the herd. Lone cows and calves have been observed far from a herd, but this must be unusual behaviour, for without herd protection, a cow and her new-born calf have little hope of surviving a wolf attack.

As the calf grows, it moves around the herd's feeding area and plays with other young animals, but at any sign of danger it rushes to its mother, sometimes hiding itself completely under her flowing skirts.

Muskox calves are almost pig-like in appearance. They are born with short woolly coats, which begin shedding in July. By September, the small muskox is a miniature replica of its elders with new underhair and longer overhair. During the third winter, the full coat or pelage of an adult muskox develops.

The calf may stay with its mother until well into its first year. In productive areas, the females produce calves in successive years and weaning probably occurs in late fall or early winter. In less productive areas, such as the High Arctic, the female may only breed in alternate years and the yearling may continue to nurse until it is 15 to 18 months old. Prolonged lactation provides extra nourishment during harsh winter months when food is difficult to obtain.

Economic Status and Management

Prior to the 18th century, it is likely that muskoxen played only a minor part as a food source to the native peoples of the Northwest Territories.

The Chipewyan Indians who lived along the treeline from Hudson Bay west to the Coppermine River harvested muskoxen only when their traditional foods of caribou and fish were not available. The same was likely true of the early Inuit who lived primarily in coastal regions and hunted caribou and sea mammals.

Over the course of the 18th century as more Europeans arrived to open up the new land, native people began slowly to abandon traditional patterns of living.

They spent more time in, or traveling to, settlements to benefit from trade items such as food and guns. The Chipewyans who travelled overland to Churchill, Manitoba, began killing muskoxen encountered along the way. Some of the meat they used for themselves when traveling through areas where caribou were scarce, but much of it was sold, together with hides, to trading posts.

By the 1820s, muskoxen had also become more important to the coastal Inuit, who required more food as the population of their communities increased. They began to travel farther inland and as they reached prime muskox habitat, many herds were hunted nearly to extinction.

At the same time as indigenous peoples were becoming increasingly dependent on muskoxen, explorers and whalers were killing many thousands for fresh meat and for hides which had become fashionable in Europe as sleigh robes.

Muskoxen are particularly susceptible to over-hunting for several reasons. One is that they are generally unwary and easy to stalk. The second is that because they do not range far, they are easily located by people familiar with their home territories. Finally, and perhaps saddest of all, is that their defense position, so effective against wolves, becomes suicidal when practiced against men with guns.

By 1900, the combination of demands for meat and hides, together with the introduction of guns, had led to serious declines in muskox populations. In 1917, the Canadian government, realizing that the animals were in danger of being completely exterminated, prohibited trading in hides and put muskoxen under complete protection. In 1927 the TheIon Game Sanctuary was established in the TheIon River drainage to protect muskoxen there. Since then, the animals have made a slow but steady comeback both in numbers and in occupied range.

By 1967, muskoxen had increased so significantly that hunting under a quota system was permitted in several Inuit communities. By **1983 community quotas had** risen to around 2300, of which 2000 were assigned solely to Banks Island. Quotas are under continual review by the N.W.T. Dept. of Renewable Resources.

Holman Island and Sachs Harbour are two settlements which have allowed part of their quota to be used by sport hunters. For several thousand dollars, a southern hunter can purchase a package hunt complete with guides. Snow-machines may be used to within 3.25 km of the muskoxen. The animals are then stalked on foot and with dogs.

The economic potential of the muskox's inner wool or "qiviut" has yet to be explored in the Northwest Territories. This wool is of exceptional quality, having the weight and warmth of cashmere. In Alaska, a muskox domestication project has been established for the purpose of developing a cottage industry that specializes in woven or knitted articles.

As interest in Canada's north grows, unique northern animals such as muskox could become tourist attractions in National Wildlife areas or parks. But even for those Canadians who will never see a muskox in the wild, it is important that these ancient animals be preserved, for they are a link with a time before man ever set foot in North America. In a world where time goes by so quickly, it is reassuring to know that somewhere in the far north of our country, there is an animal still placidly grazing its way across the tundra in much the same way as it was 90,000 years ago.

Jonquil Graves
Yellowknife
1983

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Typical group of cows and calves on summer range,

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