

Reindeer Grazing

on the Seward Peninsula, Alaska



U. S. Department of the Interior
Bureau of Land Management
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Oh, give me a home

In the American west, you are likely to see cattle peacefully grazing on public land. In western Alaska, if you look closely, you'll see reindeer grazing instead. The Bureau of Land Management and other agencies in Alaska issue permits for grazing on the only land in the nation used for reindeer. While BLM managers in the Lower 48 worry about how many cattle a particular area can support, BLM managers in Alaska try to determine how many reindeer can feed on lichen without over-grazing, and worry about conflicts between reindeer, caribou, wolves and grizzly bears.

Biology

While reindeer might remind you of Santa Claus in his sleigh being pulled across the night sky, they are really a domestic form of *Rangifer tarandus*, the wild caribou. Reindeer differ slightly from caribou in behavior and appearance. They tend to be smaller, shorter and lighter in color. Sometimes they are spotted. Reindeer and caribou readily interbreed, but fawns may not survive. In fact, caribou herds are a major problem for reindeer herders because reindeer have a strong herding instinct and often join caribou herds and migrate away with them.

In summer reindeer eat grasses, marsh plants, willow and birch leaves, even mushrooms and bird eggs. In winter they rely on lichens and grasses. Lichens are composed of algae and fungi living together in a symbiotic relationship. Lichens are important forage for reindeer in cold weather because they don't take much energy to digest. Lichens are brittle when dry and break easily when trampled. Overused or severely trampled lichen areas may need 20 to 40 years to regenerate. Wild fires on the tundra may also destroy lichen, and a burned area may take 75 years to recover. Because the lichen is so vulnerable, careful management of the winter



Female reindeer don't drop their antlers until after the calves are born in the spring.

BLM photo

range is critical to the reindeer's survival.

Reindeer live an average of 10 to 15 years. Females breed at the age of two, and continue producing calves until they are about 10 years old. Caribou and reindeer are the only species of the deer family in which the females normally grow antlers.

Seasonal migrations take the reindeer from one part of their range to another over the course of a year. Each spring the herd moves to its traditional calving grounds. The females give birth, usually to one fawn, from mid-April through May, about a month earlier than wild caribou. This is a critical time: the reindeer's fat reserves are low, food can be scarce, freezing and thawing weather may limit freedom of movement, and predators such as wolves and bears kill both fawns and adults. Ravens also kill newborn calves. Reindeer herders often stay close to the herd at this time.

During the summer the reindeer are tormented by mosquitoes, blackflies, warble flies and other insects. They move to breezy places such as ridgetops or coastlines to escape. Reindeer tend to move into the wind, and since the prevailing winds on the Seward Peninsula are from the west, the reindeer tend to drift westward.

In late June or early July the herders round up the reindeer. Herders use airplanes or helicopters to find and drive the animals because travel across

the wet tundra is difficult. The still soft, velvet-covered antlers are harvested. Some bulls are castrated, fawns are marked to show ownership and some animals are butchered.

Reindeer tend to scatter in small groups during summer, but gather again in September to October during rutting season. One bull to 10 to 15 females is considered an optimum ratio. When the rutting season is over and the snow is deep enough for snowmachine travel, the reindeer are rounded up for the early winter handling. The hides are best at this time of year, and the reindeer are plump from summer's grazing. Some herders round up the reindeer again in late winter for counting, butchering and inoculations.

Reindeer have many adaptations that allow them to survive the long arctic winters in Alaska. Reindeer hair is extremely dense. The outer coat is made up of long, hollow guard hairs at a density of 5,000 per square inch. A woolly undercoat makes an efficient air trap with 13,000 hairs per square inch. Reindeer hoofs are large relative to their body with sharp edges and a concave undersurface. The wide splaying of their hoofs act like snowshoes and helps them to walk on snow. The edges of the hoofs may act as blades and hair extending under the hoofs help when walking on ice. The shovel-like design also helps them dig through the snow for forage.



Corralling the herd for the spring roundup. Antlers are harvested and the herd is vaccinated against brucellosis. A new drug called Ivermectin kills warble fly larvae, prevents scarring and promotes better weight gain.

BLM photo.

History

Reindeer were first introduced to Alaska in 1891. The Eskimo people were dying from epidemics of diseases introduced by Europeans and from starvation due to a decline in caribou and marine mammal populations. The Reverend Sheldon Jackson, general agent for education, wanted to provide a stable food supply for the Eskimos. Jackson imported 1,280 reindeer from Siberia between 1892 and 1902, before the Czarist government forbade exports. Mission church teachers administered the program.

The Bureau of Education invited reindeer herders first from Siberia and later from Lapland to come to Alaska to teach the Eskimos herding techniques. Deer were loaned to Natives who had completed an apprenticeship with the Lapps. These deer were to be returned in five years, but their offspring belonged to the Native herder. The Lapps were paid partly with reindeer and soon owned a large percentage of the deer. They set up their own herds on new grazing areas north of the Seward Peninsula and their herds quickly increased.

In 1905 the Department of the Interior investigated control of education in Alaska and how the missions were administering the reindeer. The Rev. Jackson was asked to resign. A new Bureau of Education policy called for the transfer of more reindeer into Alaska Native ownership. This policy succeeded in getting reindeer into the hands of 1,568 Natives by 1917, but most herds were too small to

be economically viable.

At the turn of the century the gold rush provided a ready market for reindeer meat and skins, and live reindeer for draft animals. Reindeer fairs were promoted by Bureau of Education employee W.C. Shields from 1915 to 1918. Herders from all around gathered at these fairs with their animals to compete in deer races, weight pulls, roping, killing and dressing, harnessing, harness and sled making, sled lashing, marksmanship, fur shows and parades. In the evenings, awards were given, information was shared, and the future of reindeer herding was discussed. The fairs ended in 1918 when Shields died in an epidemic.

When the gold rush ended in 1920, so did the demand for reindeer. With no market for the deer, the herders did not round up their animals as often. The 259,000 deer in Alaska began to overgraze their ranges.

An influenza epidemic in 1918 and 1919 killed about 900 people on the Seward Peninsula. Five out of seven people died in some villages. Many experienced herders died and inheritance questions created confusion about who was responsible for the deer.

By 1922 non-Natives and the government owned about a third of the reindeer. White herd owners, especially the Lomen brothers, were competing with the Natives. The Lomens developed a market and started shipping reindeer meat to the Lower 48. Con-

flicts over competition for markets and grazing areas were inevitable.

In 1929 reindeer administration was transferred from the Bureau of Education to the territorial governor's office. Governor George Parks, appointed by the Secretary of the Interior, hoped to put the Natives in control of the herds and reduce the government's role to an advisory capacity. In 1937 the Reindeer Service was again transferred, this time from the Governor's Office to the Office of Indian Affairs, which later became the Bureau of Indian Affairs.

Conflicts between the Lomens and Native herders led to the passage of the Reindeer Act of 1937. It restricted ownership of reindeer to Alaska Natives, provided government aid to help the herders, and appropriated \$2 million to purchase all reindeer, corrals and equipment owned by non-Natives.

Reindeer numbers declined from 640,000 in 1932 to 25,000 in 1950 because of predation, disease, loss to caribou herds, and neglect. The declining demand for fur during the Depression meant that herders could not supplement their income by trapping while tending the reindeer. Many herders moved into villages, abandoning their herds. Young Natives who fought in World War II did not want to return to reindeer herding after the war. There was renewed interest in reindeer herding in the 1970s and 1980s and herd size began to increase.

In the early 1990s, the Western Arctic Caribou Herd grew to more than 400,000 animals and began to expand its winter range westward onto the Seward Peninsula. Reindeer herds were swallowed up by migrating caribou. At first, only the herders on the eastern end of the peninsula were affected. However, as the caribou continued to expand farther west, more and more reindeer were lost. Some herders lost their entire herds to migrating caribou. Other herds are so small that they are not currently economically viable.

The Alaska Department of Fish and Game monitors caribou locations by radio-collars that link to satellites. In this way, they can closely follow the migration of the herd. Information on the whereabouts of the herd is provided to the Reindeer Herders Association. This gives the herders a chance to move their reindeer to a safe location before the caribou reach their ranges.



Residents of Buckland at 1906 Reindeer Fair.

Photo courtesy of the Lomen Collection (No. 72-154-104), Archives and Manuscripts, Alaska Polar Regions Dept., University of Alaska Fairbanks.

Economics and Politics

Today, there are 12 active herds on the Seward Peninsula, ranging in size from 150 to 5,000 animals each. The herders market meat, hides and antlers. Antlers are cut from the live reindeer before the antler hardens to bone, while it is still covered in velvet. They are used in traditional Oriental medicine to restore and strengthen the body, and to treat problems including convulsions, hemorrhaging and bladder stones. Most antler products are sold to South Koreans. An adult, female deer may produce an average of two pounds of antler a year. Antler prices have fluctuated over time, ranging from \$5 to \$50 a pound.

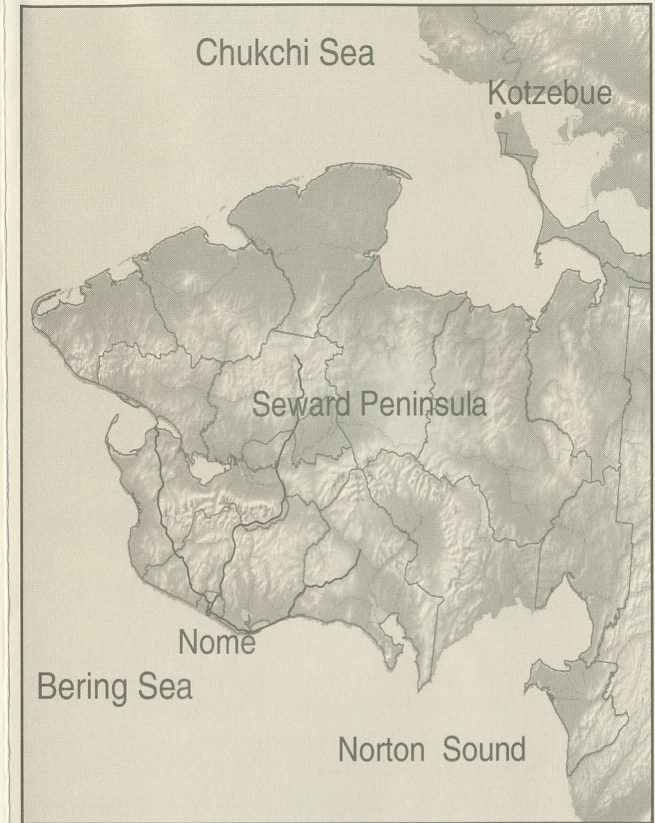
Each female reindeer has a value that can be determined on the basis of its potential production in annual velvet antler and fawn crop. The value of a single female reindeer has been estimated to range from \$500 to \$3,300 depending upon its age, and the current price of meat, antlers and fawns. In addition, the herds are a source of employment for people in the area. Many workers are paid in meat. There are two slaughtering and processing facilities, one in Nome and one in Teller.

The herders sell reindeer meat to village residents directly or through the village stores. Some meat is sold in regional centers in Nome, Kotzebue, Bethel and Barrow, and as a specialty meat or sausage in the Lower 48.

The market for hides has been limited because of infestations of warble fly larvae. The warble fly lays eggs on the hair of the reindeer's legs where they hatch. The larvae burrow through the skin and migrate to the back, then chew a hole in the reindeer skin to breathe. In June the larvae tunnel out and drop to the ground and transform into flies, starting the cycle over again. The breathing hole heals, leaving a scar on the hide. Broad spectrum wormers, such as Ivermectin, kill warble larvae and other parasites, preventing the scars and also promoting better weight gain for the reindeer.

Reindeer are also subject to brucellosis. Brucellosis causes undulant fever in humans and is common to many domestic stock animals and wildlife. A University of Alaska research project has developed a vaccine against brucellosis that has been used successfully for more than a decade. Other research is taking place in husbandry, physiology, metabolism and parasites in reindeer.

The University of Alaska is only one of many institutions involved with the reindeer herding industry. The Alaska Department of Natural Resources, Bureau of Land Management, National Park Service and Native village and regional corporations grant permits for grazing on their land. The Natural Resources Conservation Service assists the BLM and other landowners in monitoring range condition. They also assist reindeer herders in the development of range management plans aimed at maintaining or improving range conditions. The Bureau of Indian Affairs provides some funds to the Reindeer Herders Association, provides loans of deer to start new herds, and coordinates the funding for range improvements. The Alaska Department of Fish and Game manages populations of wildlife such as caribou, grizzly bears and wolves, species that can cause problems for reindeer herders. The department also provides reindeer herders with information on caribou migration so herders can keep their animals separate from the caribou.



Reindeer grazing ranges on the Seward Peninsula.

The Future

The future of the industry is uncertain because of the expansion of the Western Arctic Caribou Herd, losses of reindeer to caribou, and changes in the economy (antler market).

The Bureau of Indian Affairs is currently working on options to preserve the remaining trust reindeer to serve as seed stock for future herds. Reindeer herders are working with each other and the agencies to identify reindeer "safe areas" where reindeer may be temporarily held while caribou migrate through the area. Despite these challenges, reindeer grazing remains a practice unique in North America and Alaska reindeer herders remain optimistic about the future.



Reindeer have been herded on the Seward Peninsula for more than 110 years. The Rev. Sheldon Jackson first introduced reindeer from Siberia to Alaska in 1891 to feed the Eskimos who were starving due to declining caribou herds. They were also used to pull sleds.

Photo courtesy of the Lomen Collection, Accession No. 72-71-2213, Archives and Manuscripts, Alaska Polar Regions Department, University of Alaska Fairbanks.

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The mission of the Bureau of Land Management is to sustain the health, diversity and productivity of the public lands for use and enjoyment of present and future generations.



*(above) Applying an ear tag to a young reindeer.
(cover) Reindeer congregate in a holding pen.*

Photos courtesy of the Reindeer Research Program, University of Alaska Fairbanks.

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