



Scenery from Fish River, Alaska

Photo © Johnny-Leo L. Jernsletten

## Reindeer Husbandry in Alaska

### Introduction

This chapter focuses on the reindeer husbandry in Alaska. The historical situation for this industry differs from the other countries in this report. Reindeer were first introduced to Alaska as late as 1891 because of a crash in the caribou herds. It was the Reverend Sheldon Jackson, General agent of education in Alaska, along with Captain Healy on the ship “Bear” that imported 16 reindeer from Siberia to Amaknak Island on the Aleutian Chain. In 1892 Jackson brought the first reindeer to the Seward Peninsula, dropping them off at Port Clarence near Teller, Alaska. Jackson believed that reindeer would provide a stable food supply for Alaska Natives. Between 1892-1898 Alaska Natives were trained by hired Siberian Native herders and later Saami herders.

The entire Baldwin and Seward Peninsulas serve as reindeer pastures, as well as permitted areas near Shaktoolik, Stebbins, and on St. Lawrence Island. There are also herds further to the South on the islands of Nunavak, Umnak, St. Paul and St. George. In addition,

there are also small herds in Palmer, Delta Junction and the Kenai Peninsula.

Under various owners and managers, the population of reindeer has fluctuated. By 1905 there were 10,000 head and by 1932 there were an estimate 640,000 reindeer. In 1985 the number was reduced to 23,000 reindeer in Alaska. Today there are an estimated 17,650 reindeer in Alaska with about 10,000 on the Seward Peninsula.

### Collection of Data

The information about the reindeer industry was collected during a fieldtrip to Alaska. The project visited St. Paul Island and the indigenous corporation TDX has been very helpful in giving the information needed about the reindeer industry on the islands. We also visited Seward Peninsula with a great help from Kawerak Inc. in Nome. We wish to thank the Director of the Reindeer Herders Association (RHA)

Rose Atuk Fosdick who has provided a summary of the situation concerning on National Management, Caribou, and Legislation. In addition to this the State of Alaska, Department of Community & Economic Development have provided the project with statistical information.

The information available about the reindeer industry differs both from Russia and the Scandinavian countries. This means that the chapter about the Alaska reindeer industry also will differ from the other chapters presented in this report. The configuration of the chapter reflects the information available from Alaska.

## National Management of Reindeer Husbandry

Several governmental organizations are found in Alaska: the federal government, state government, city government and tribal government. Although

each of these organisations are interested in reindeer herding and each play a part in reindeer management, the most formal and prevalent involvement is by the federal government.

Management of federal land is the responsibility of the U.S. Department of Interior, Bureau of Land Management (BLM) and the U.S. Department of Interior National Park Service (NPS). Both BLM and NPS have published federal regulations that define the process for reindeer herders to apply for and use federal land for reindeer grazing.

Additionally the State of Alaska has rules, regulations and procedures affecting the use of state owned land for reindeer grazing. They also require herders to register ownership markings and follow regulations for inspection of meat.

Larger private land owners such as regional corporations and village corporations also have rules, regulations and procedures affecting the use of their privately owned lands for reindeer grazing.

City and village governments are interested in reindeer management and routinely make their concerns known to reindeer herders.



Old karal, St. Paul Island

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## Reindeer Herders Association

The Reindeer Herders Association (RHA) was formed to encourage, foster and facilitate the orderly and efficient production, distribution and marketing of reindeer products. RHA provides administrative, logistical, advocacy and field support to its members. Members are owners and managers of reindeer herds. An executive committee of five officers provides direction and recommendations to the staff located in Nome housed under Kawerak, Inc., a regional non-profit corporation. RHA receives support from the Department of Interior Bureau of Indian Affairs.

There are 21 members from the communities of White Mountain, Savoonga, Deering, Buckland, Nome, Teller, Kotzebue, Shishmaref, Stebbins, St. Michael, Wales, Koyuk, Brevig Mission, Mekoryuk. Their by-laws state that reindeer owners can become members of the association.

The staff is composed of a director, specialist and half time administrative assistant.

### *Annual Meeting*

Each year the association holds an annual meeting in Nome in the month of March. Items on the agenda from recent meetings included caribou/reindeer problems, mapping winter ranges, reports on reindeer and caribou surveillance flights, new membership, earmarks, ear tags, elections, Teller Fish and Meats Plant, radio collars, satellite collars, UAF research, updates from Bureau of Indian Affairs, Bureau of Land Management, Natural Resource Conservation Service, National Park Service, Farm Service Agency, Intertribal Agriculture Council and a report from Alaska Department of Fish and Game on the status of the Western Arctic Caribou Herd.

### Pastures

The entire Seward and Baldwin Peninsulas serve as reindeer pastures, as well as permitted areas near Shak-



Vulcano cratre, St. Paul Island, Alaska

Photo © Johnny-Leo L. Jernsletten

toolik, Stebbins, and on St. Lawrence Island. There are also herds further to the South on the islands of Nunivak, Umnak, St. Paul, St. George. In addition there are also small herds in Palmer, Delta Junction and the Kenai Peninsula.

*Reindeer Owners in Alaska*

Herders apply for and receive land use permits from land owners to allow their reindeer to graze on public and private land. On Seward Peninsula each reindeer owner has a Permit area, within which the reindeer are kept. The annual migrations of the herds are kept within each permit area. The degree of herding differs among reindeer owners.

On the islands the situation is different. On St. Paul the reindeer move freely on the whole island as one big herd, and the island is not divided into Permit areas. The reindeer on the island are owned collectively by the Aleut community.

A management plan is developed for St. Paul, which regulates the use of land on the island. To keep the number of reindeer at a sustainable level is one of the main focuses in the plan. Also the use of motorised vehicles and protected areas for birds and seals are regulated by the plan. This is a good example of co-management between the local community and the

federal government, which has had a positive impact on the reindeer industry.

## Economy in Alaska Reindeer Husbandry

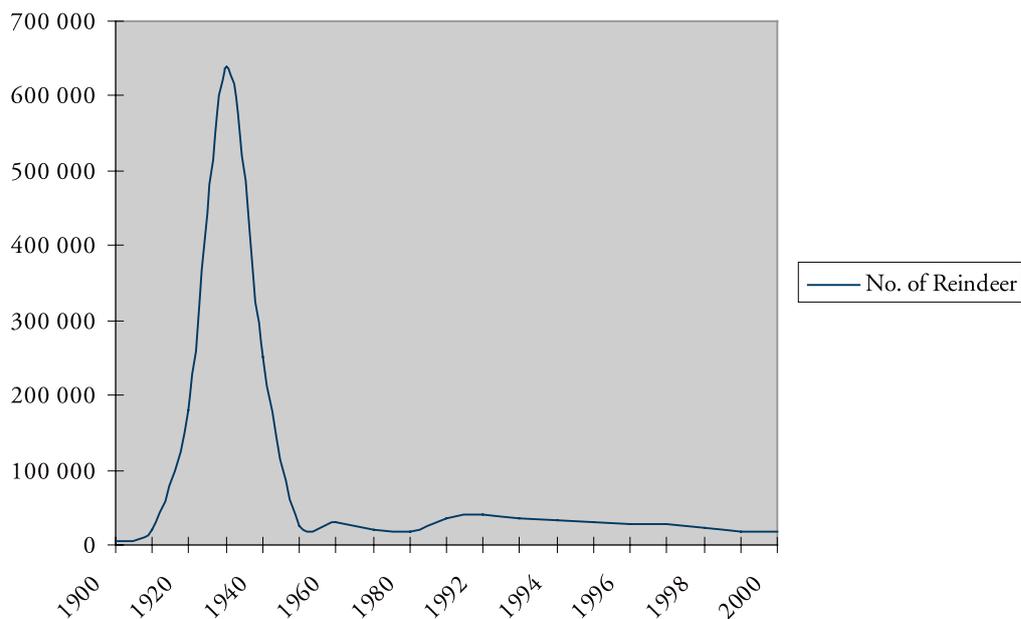
### Introduction

As mentioned in the introduction, reindeer are found on several islands along the west-coast of Alaska and on Seward Peninsula on the mainland. The economy and the economic impact connected to the industry differs between the industry on the islands and the industry on the mainland. The main reindeer husbandry area is on the Seward Peninsula.

### Size of the Herds

Historically the total number of reindeer in Alaska has had tremendous fluctuations during its 100 years of existence. After the introduction of reindeer to Seward Peninsula, Alaska experienced a rapid growth of the herds due to the pristine ranges that provided excellent

Figure 1: The Development of the Total Number of Reindeer in Alaska, 1900 - 2000



grazing as well as competent animal husbandry practices, such as 24-hours herding. The net annual herd increase until in 1934 was estimated to 25-33% yearly. In 1932 the official number of reindeer in Alaska was 641.000, with approximately 130.000 at the Seward Peninsula.

Figure 1 shows the historical development in the number of reindeer in Alaska. The general decline of the reindeer population began in 1933, and by 1950 only 25.000 reindeer remained. In the period from 1950 to 1992 the number of reindeer increased to approximately 41.000 animals, but again decreased down to 19.000 in 1999. On the Seward Peninsula the estimated number for 2001 is 9.000 animals and the industry is facing a major crisis at the moment.

The situation for St.Paul is historically more or less the same as for the mainland. After the introduction of 25 reindeer to St.Paul in 1911 the reindeer population experienced a rapid growth with a peak in 1938 with almost 2.100 animals. This situation resulted in the disappearance of lichen and the reindeer did not have adequate winter food reserves. The population collapsed and by 1950 there were only 8 reindeer left. According to a survey in 1979 there were 450-559 reindeer on St.Paul and from the beginning of 1990 to 2001 the number of animals has been stabilized around 600.

## Income Connected to Reindeer Husbandry

The project has not obtained any official statistics over the different incomes of the reindeer owners, but there are some official statistics concerning the value of meat production and other by-products of the reindeer industry in Alaska today.

According to an article of J.D. Swanson & H.W. Barker in *Rangifer* from 1992 the important incomes connected with the reindeer industry can be described as follows:

“Reindeer meat became a normal part of the local diet. During 1928-30, 2.500.000 kg of reindeer meat were shipped to markets in the lower 48 states (Palmer, 1934). By-product markets were developed for antlers, blood and viscera. Canned dog food was retailed. Antlers were exported and used for knife handles. Skin were used locally for making boots, parkas, trousers and sleeping bags (Palmer, 1934).”

The situation has of course changed since then, but it is still the meat production which is the cornerstone of the income to the reindeer industry. According to our data from Alaska, there are approximately 150 local

Figure 2: The Development in Total Number of Reindeer, Alaska and Seward Peninsula, 1988 - 2000

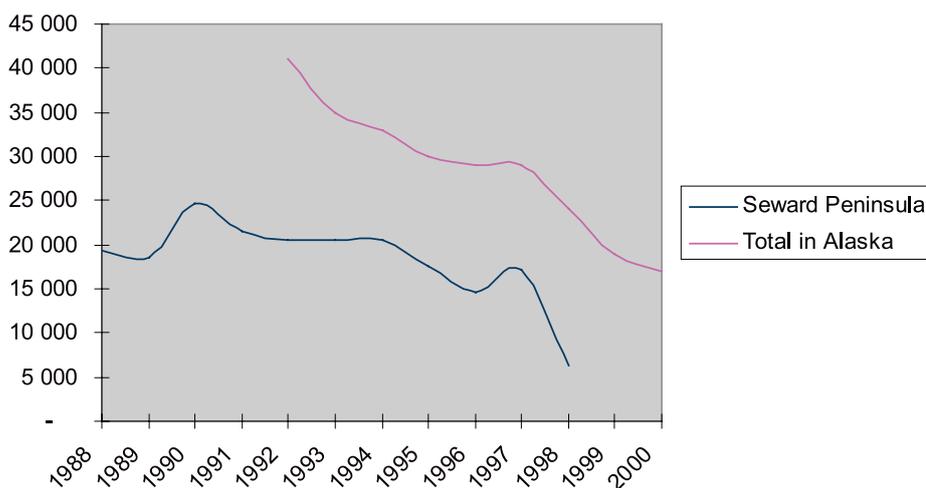
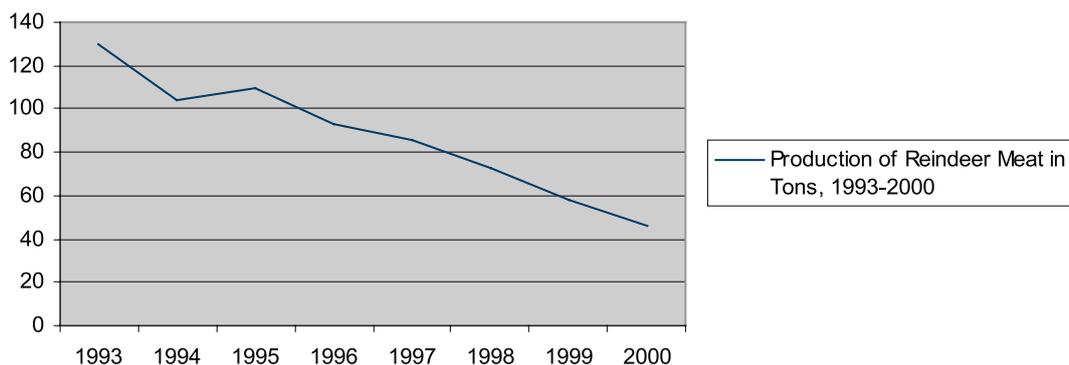


Figure 3: Production of Reindeer Meat, Dry Weight, in Tonns, 1993 - 2000



people on different locations on the peninsula who are directly involved in the industry, in addition the industry gives opportunities for employment in the small communities in Alaska connected to processing of reindeer products.

Figure 3 shows the trend in the production of reindeer meat in Alaska between 1993 and 2000. The figure corresponds closely the development of the size of the reindeer herds shown in figure 2.

The peak income to the industry on Seward Peninsula was in the early 1990's with 1.5 mill. USD when 15 herds were in operation. Today the industry suffers direct losses of 1 mill. USD annually due to the caribou problems and the soft antlers prices. Alaska's total reindeer meat sales in 1992 were 150 tons (330.000

pounds) dry weight with a value of 662.000 USD. The reindeer meat sales in 1999 dropped to 48 tons (105.000 pounds) with a value of 295.000 USD. This development is also shown in figure 4.

Figure 4 indicates that the price of meat is permanent in spite of the decrease in the production of reindeer meat. According to this figure the price of the reindeer meat has been almost unchanged since 1993. During this period the price for one kilogram of meat has been 2,4 USD.

It is difficult to explain this development, but one explanation is a market for reindeer meat not working according to the general economic laws of supply and demand. Expectedly, with a normal working market for reindeer meat within Alaska, or in the lower 48,

Figure 4: The Value of Reindeer Meat in USD, 1993 - 2000

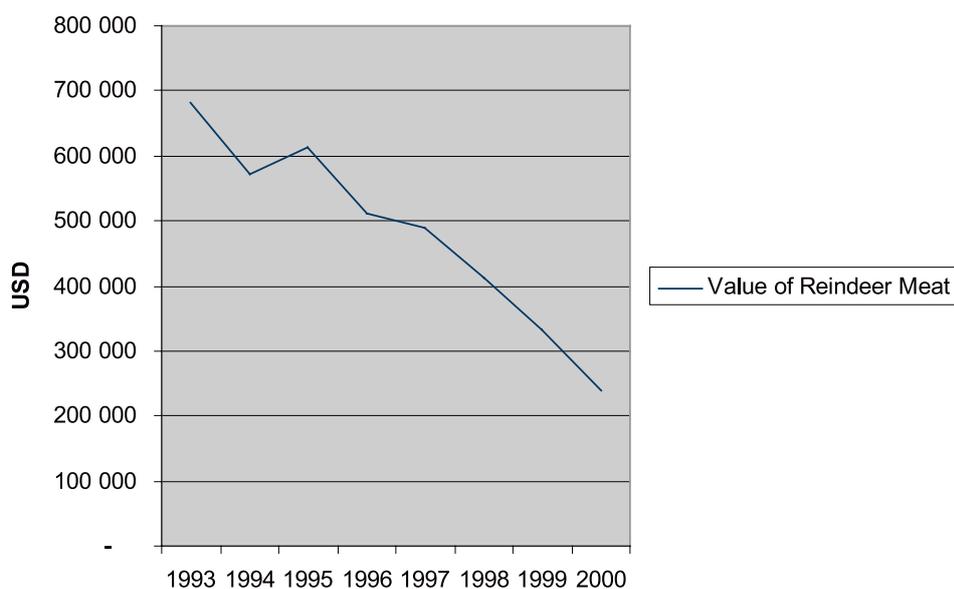
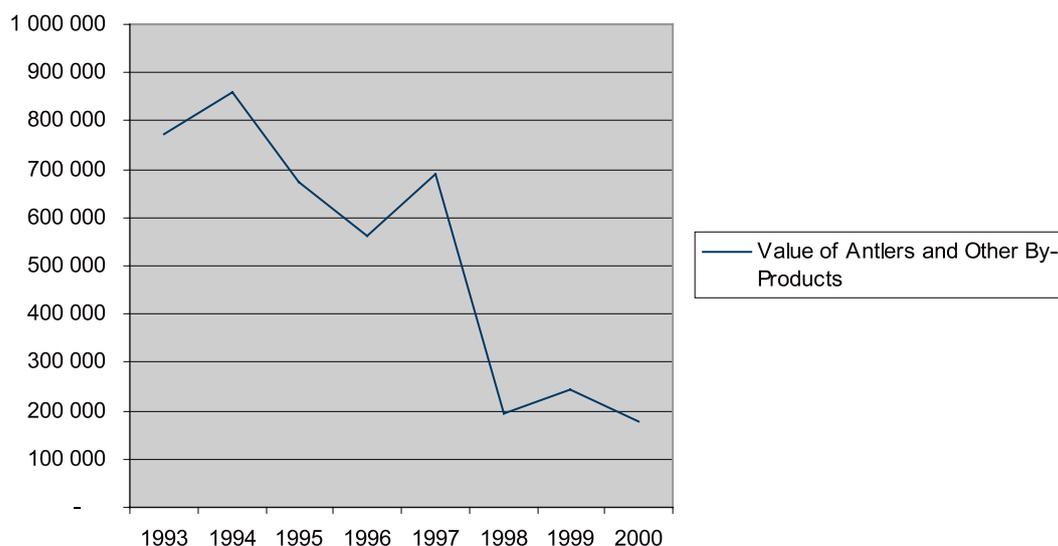


Figure 5: The Value of Antlers and Other By-Products. 1993 - 2000



the price would have increased when the production was decreasing. But as the figure indicates, this is not the case. According to the statistics this means that in practice there is a fixed price on reindeer meat.

Sale of reindeer meat is not the only source of income for the industry. Historically, soft antlers, blood and the fur provided important income for the reindeer owners. Figure 5 shows that the value of antlers and other by-products from 1993 to 2000 is declining. The sale of soft antlers to the Asian market has been an important part of the income, but since Korea banned import of soft antlers, this income has rapidly decreased.

If we look closer at the figures, the value of antlers and other by-products is actually higher than the value of meat production. This gives us an indication of the differences between prices on meat and soft antlers, and it shows that the soft antlers market was very important for the economy of the reindeer owners in Alaska.

## Costs Connected to Reindeer Husbandry

The project has not obtained any statistics showing the costs connected to the industry. This part of the chapter is therefore based on interviews with some of the reindeer owners, organisations and other representatives from the industry.

In many ways the costs connected to the industry do not differ greatly from the other countries in the project. One of the major costs is connected with the use and maintenance of technical equipments like snow mobiles, four wheelers, cars, etc. This equipment is part of the daily work for the reindeer owners in Alaska, and especially for the reindeer owners on Seward Peninsula. The pastures (Permit areas) are huge and according to the owners one needs these technical equipments to be able to follow the herds.

The situation on St. Paul differs since the island is relatively small, and there is strictly regulated off-road traffic. The herd has not been rounded up in the coral in 4 years, and most of the harvesting of the herd is done through hunting. No ordinary herding is done on St. Paul today.

The future profitability of the industry on the islands is connected to the assignment of pasture areas on the islands Umniak and Unalaska. The pasture on these islands has an estimated carrying capacity of 10-11.000 reindeer. For processing the meat slaughtering plants and docking facilities are required. The TDX corporations expects that the meat can be brought from these islands to St. Paul for value-adding production. The corporation has purchased a US marine wessel with a large freezer capacity in order to reduce the costs of transportation.

On Seward Peninsula the use of helicopters are used to collect the herds for a round-up twice a year. According to some of the reindeer owners the use of

helicopters is extremely expensive, but necessary to be able to collect the herds from the huge pasture areas.

## External Conditions

### Caribou

The greatest impact to the viability of the reindeer industry is the Western Arctic Caribou Herd (WACH). It is currently estimated to 440.000 animals, which might be an underestimation of the actual situation. The caribou migrate in the spring and fall between Norht Slope and Unalakleet. Thousands of reindeer have followed the caribou as they migrate though reindeer pastures on the Seward Peninsula. The herd is penetrating further and further into the peninsula, and the conflict with the permit areas is rapidly increasing.

Since 1991 six herds in the Eastern part of the Sewart Peninsula are wiped out with a loss estimated

at 9.000. Since 1999 five other herds near the interior of the Seward Peninsula are devastated with a loss estimated at over 4.000.

The main problem connected to the caribou herd is the problem with “run-off” from the domesticated reindeer herd. In a situation with a mix-up between domesticated reindeer and caribou, the reindeer will follow the caribou herd on its migration.

Several efforts to stop the mix-up between reindeer and caribou have been tested without results. The reindeer owners have tried to drive with snow mobiles forth and back ahead of the caribou herd in an effort to scare it away. They have succeeded to delay the movement of the herd into the permit areas, but after some hours away for refueling the snow mobile, the caribou herd has moved into the permit areas. They have also tried to use helicopters with the same results. The use of fencing is not an alternative because of the huge area under impact. It will be impossible to maintain such a fence in order to keep the caribou away.

In a effort to try to save the remaining reindeer at the peninsula, the reindeer are moved from the differ-



Road between Nome and Teller, Seward Peninsula

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ent permit areas into so-called “safe areas”. This means areas further to the west on the peninsula where the natural boundaries have so far kept the caribou from migrating. The move of the reindeer herds has to some extent been successful, but this operation raises important legal aspects because private owned reindeer are moved into the permit areas of other reindeer owners. The results are more grazing, trampling, and mix-up with the other reindeer in this permit area.

Loss of pasture is also a problem connected to the caribou herd. The economic value of the pasture resources throughout the peninsula is being devastated, and once depleted it will take many years to recover.

The reindeer herders and the RHA staff have learned, from the devastation to the reindeer industry, that it is imperative to know the movements of caribou during the time caribou are on the reindeer pastures. The RHA grants funds to purchase radio collars and monitor locations of both reindeer and caribou through tracking flights.

## Predators

On the islands predators are a non-existent problem for the reindeer industry. The project has not been able to collect information on the numbers of predators on Seward Peninsula. According to interviews with the owners, the predators tend to follow the migrating caribou herd into the reindeer pastures. When the caribou migrate out again, the predators often remain within the permit areas.

Thus, the impact of the predators represent an extra pressure on the industry on the Seward Peninsula.

## Access to market

The reindeer industry had its peak around 1928-30 when 2.500 tons of reindeer meat were shipped to markets in the lower 48 states. During this period slaughtering plants, underground storage tunnels and shipping facilities were constructed throughout the



Slaughtered Reindeer in Cold Storage.

Photo © Johnny-Leo L. Jernsletten

reindeer areas. This era ended in 1937. The reason given for this is:

“By 1929, the non-native, profit-driven Lomen Corporation asserted much influence over the industry. The Corporation's prominence, combined with a change from subsistence to profit-driven motives, prompted congressional investigations from 1927-1938. On September 1, 1937, Congress passed the Alaska Reindeer Act, which excluded non-native ownership of reindeer. All reindeer, range grazing rights, equipment and handling facilities were transferred to a government trust.”

The situation today is characterized by a decrease in number of reindeer and consequently a decrease in the production of reindeer meat shown in figure 4.

There is huge potential local market for reindeer meat within Alaska. The meat is perceived as clean, ecological, arctic food, and is demanded in the Alaskan restaurant market. There is also a great potential in the high-end restaurant market in the lower 48. In an interview the owner of an Alaska meat company emphasized that there is not enough reindeer meat on the Alaska market today, and in order to cover the demand for reindeer products, his company had to import meat from Canada. As long as the meat has undergone a veterinary control, the slaughtering facilities are authorized and the meat is of excellent quality, the market is willing to pay a high price for this product.

Alaska covers a huge area, and there are great distances from the production sites to different markets. Transport costs were mentioned in the interviews as one of the main reasons why the industry has had problems with profitability. It is just too expensive to bring the meat out to the market.

In addition to transport costs, access to different kinds of infrastructure like abattoirs and docking facilities on the islands are factors that prevent the industry from developing further. The potential for an increased market for reindeer meat and other products is great both within Alaska and in the lower 48 states. There is also a favorable response when it comes to price. This means that if these obstacles are overcome the reindeer industry could be of major importance for the future economic development in the local communities in the reindeer areas.

## National Legislation

The Reindeer Act of 1937 is the one-important act for Alaska, restricting ownership of reindeer to the native peoples of Alaska. The special provisions of the Reindeer Act gave Alaska Natives an opportunity to make a living and contribute to the well-being of rural Alaska.

In addition to the Reindeer Act of 1937 other regulations like the Alaska Native Claims Settlement Act of 1971 and the Alaska National Interest Lands Conservation Act of 1980 govern the relationship between the U.S. Department of the Interior and the reindeer industry.

The federal regulations stemming from the Reindeer Act, authorize or require:

- Establishment of a reindeer industry
- Secretary of Interior to acquire reindeer
- Non-Alaska Natives to file claims of title
- Establishment of a revolving loan fund
- Secretary of Interior to distribute reindeer, property, profits to Natives
- Administrative powers to be granted to Natives organizations
- Secretary to promulgate rules and regulations
- Natives to be appointed to administer the industry
- Defined “Natives of Alaska”
- Appropriation of funds to carry out the Act.

The rights restricting ownership of reindeer to the native peoples of Alaska is now under pressure. A person has imported living reindeer from Canada to use the meat for sale to the high-end restaurant market in the lower 48. According to the last verdict in the court system of Alaska, this is a legal act because the Reindeer Act of 1937 only grants the Alaska Natives exclusive right to reindeer husbandry of within the State of Alaska, and does not apply to imported reindeer.

To secure the future of the reindeer industry as a foundation for economic activity in the local communities in the reindeer areas, it is important that an agreement is made between the indigenous reindeer

owners organisations and the government concerning the continuation of the exclusivity to conduct reindeer husbandry for the Native peoples of Alaska.

## Summary

The reindeer industry in Alaska, and especially the industry at Seward Peninsula, is facing major problems.

The growing caribou herd represents a major threat to the reindeer industry in Alaska. The caribou has a devastating impact on the pasture areas; they attract predators when they migrate into the pasture areas; and the caribou bring the domesticated reindeer along when they migrate through the permit areas.

There is a huge potential in the market for reindeer meat and other products both within Alaska and in

the lower 48. To be able to develop this market the industry depends on access to abattoirs and other essential infrastructure. But the main disadvantage for the development of the industry is the high transport costs. Concerning the size of the potential market for reindeer products, the profitability of the industry could be increased if the above mentioned problems are solved.

The reindeer industry on the islands of Alaska have several advantages that can be utilized. There is no problem with caribou or predators, but to be able to realise the potential the industry needs proper infrastructure like abattoirs, transport and docking facilities.

The Reindeer Act from 1937 is under threat, and the securing of these rights will give the native peoples of Alaska an opportunity to make a living out of reindeer husbandry within their areas.

## References

- Fosdick, R. A. (2002): Management of reindeer herds in Alaska, background information prepared for the project "Sustainable Reindeer Husbandry", Kawerak Reindeer Herders Association, Nome, Alaska
- Greenber, J.(2001): Short summary of the regional economic impact of the reindeer industry, School of Agriculture and Land Resource Management, University of Alaska Fairbanks.
- Palmer, L.J. (1934): Raising reindeer in Alaska, USDA, Washington, D.C. Misc.Pub. No.. 207.
- Pearson, R.W. and M. Hermans (2000): Alaska in Maps. A Thematic Atlas, University of Alaska Fairbanks.
- Postell, A. (1990): *Where Did the Reindeer Come From? Alaska Experience, the First Fifty Years*, Amaknak Press, Portland, Oregon
- Swanson, J.D and M.H.W. Barker (1992): "Assessment of Alaska reindeer populations and range conditions", in: *Rangifer*, 12(1):33-43.
- Swanson, J.D, Michelle E. Schuman, Peter C. Scorup, Julie L. Sharp (1984): "Seward Peninsula range survey and the reindeer range program", Paper presented at the Inventorying Forest and Other Vegetation of the High Latitude and High Altitude Regions International Conference, Fairbanks, Alaska.
- Alaska Community Database (2002) Information about the communities in Alaska, Alaska Department of Community and Economic Development, Anchorage.
- Alaska Economic Information System (2002): Information about the economic activities in Alaska, Alaska Department of Community and Economic Development, Anchorage.
- Reindeer Grazing on - Alaska National Wildlife Refuges, information from National Wildlife Refuge System, Alaska