

Beyond the sleigh: Reindeer and their bonds with Arctic peoples

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The relationship between indigenous peoples in the Arctic region and their herds reveals a rich history and provides clues about how to protect it.

Reindeer prance into the festive spotlight each December, but when Santa's magical sleigh goes empty for another year what does life hold for Rudolph's relatives?

Dr. Roza Laptander has some answers. A linguistic and social anthropologist at the University of Hamburg in Germany, she for years has been inviting the Nenet [reindeer](#) herders of Siberia's Yamal Peninsula to share their spoken history.

Special places

Laptander is uniquely placed to understand their perspective: her family has lived for generations on the Siberian tundra and she herself grew up in an urban settlement in the region.

"The Nenets have so much respect for their animals," she said. "They say that, without reindeer, they don't have life."

Reindeer hold a special place in the spiritual beliefs and traditions of [indigenous peoples](#) including the Nenets. The animals unite families and are symbols of strength and resilience, which connect them to their landscape and to their ancestors.

In Nenet legend, a demiurge called Noom created the first human along with a reindeer herd and a dog and decided that reindeer will be associated with the sky, according to Laptander. She said the region's reindeer herders believe the Nenets' deity is responsible for the wealth of people and the well-being of their reindeer.

Laptander is part of a research project that received EU funding to examine biodiversity and social-ecological systems in the Arctic region.

Named [CHARTER](#), the project runs for four years through July 2024

and looks at the centuries-old relationship between herders and their reindeer. Field work in Yamal has been suspended since Russia's 2022 invasion of Ukraine.

Yamal, which means "end of the land" in the language of the Nenets, extends about 700 kilometers toward the Kara Sea and is covered in snow and ice for nine months of the year. Temperatures reach as low as -60°C.

For the Nenets, who number around 50,000, it's a life that relies on generations of knowledge, skill and experience.

Perfect partners

The 600,000 reindeer of the tundra have evolved into the perfect survival partners. While lacking Rudolph's red shiny nose, they do have wide, flat muzzles packed with blood vessels to warm cold air before it hits their lungs.

The animals' fur features a top layer of long hollow hair that traps air to hold in body heat. Their toes can spread out to act like snowshoes and even their eyesight is adapted to see in the snow.

The reindeer feed on grass in the spring and summer and on mushrooms in the autumn, storing energy for the harsh months ahead. When winter arrives, the animals survive on lichen using the rim of their hooves to scrape through the snow.

The reindeer provide the Nenets with everything they need to live in the Arctic Circle: warm clothing and shelter made from skins and fur; meat to sustain the family; trade to provide income; and transport for a nomadic life.

"Reindeer give people a feeling of well-being," said Laptander.

It's a relationship of give and take. Families nurture herds of several hundred reindeer, bred and handed down through generations, knowing each animal by sight.

Described as "semi-domesticated," the reindeer live freely while benefitting from daily human care—including protection from predators.

Age-old practices

Reindeer herding is also a feature of life in another Arctic area: Fennoscandia, a peninsula that includes parts of Finland, Norway, Sweden and Russia.

Anna-Kaisa Salmi, professor of archaeology at the University of Oulu in Finland, worked with the Sámi people of northern Fennoscandia to learn more about when the relationship with reindeer began and how it has evolved.

She said that reindeer herding began in northern Fennoscandia around 600-800 AD, with a major transition from a mixed hunting-herding livelihood to mobile reindeer pastoralism around the 15th century.

Salmi led a separate EU-funded research project into the domestication of reindeer. Called [DOMESTICATION](#), the project ended in May 2023 after more than five years and made use of archaeological finds, particularly reindeer bones.

Seasoned travelers

The Sámi supplement the diet of their reindeer—a practice that the DOMESTICATION researchers date to the 11th century.

These days the supplementary diet is mainly livestock feed and hay, whereas traditionally it included dried tree branches and grasses collected in the summer, according to Salmi.

By contrast, in Yamal the reindeer are purely grazing animals and finding food for them determines where Nenet families live. The people and their reindeer can travel distances of up to 1,000 km a year in search of fresh pastures.

Spring and autumn migrations in this part of Siberia present a colorful sight when a caravan of sleds sets off across the ice with the rest of the herd following. The draft reindeer have red harnesses and, over their backs, rectangular woven blankets, while the sleds are decorated with bells and tassels.

Combining strength and stamina, the animals can trot at 25 km an hour.

The sleds are piled with entire households—from reindeer-skin tents with wooden frames and cooking equipment to clothes and other belongings.

While modern amenities such as mobile phones, computer screens and snowmobiles are now part of the herders' lives, the core traditions have remained the same for hundreds of years.

The Sámi too have long used reindeer for transport, as attested by the DOMESTICATION team's study of reindeer bones from archaeological sites.

"Reindeer have been used for transportation since the beginning of

reindeer herding 1,000 years ago," said Salmi. "Working leaves traces on the animals' skeleton—stress-related changes to vertebrae, shoulder joints and hooves which we can see in our analysis."

Hazards ahead

It's this rich history that accelerating [climate change](#) caused by human activities—above all the use of energy from fossil fuels and the resulting greenhouse gas emissions—threatens to cut short.

In 2013–2014, Arctic regions had a warmer winter and unprecedented rainfall, which froze to create a crust of thick ice that the reindeer were unable to crack in their effort to find lichen to eat.

Tens of thousands of them died during the winter and many herder families were forced to leave the tundra.

Previously a once-in-a-generation event, the weather pattern is recurring every several years and prompting the Nenets to turn to scientists for help in understanding what's happening.

"The herders asked us what was causing the [extreme weather](#) because its frequency and intensity in recent years is beyond their experience," said Professor Bruce Forbes, an expert in applied ecology in permafrost regions at the University of Lapland in Finland.

Forbes leads CHARTER and has been conducting fieldwork annually in the Arctic for more than 35 years. The project is breaking new ground on climate modeling by incorporating the herders' observations.

The plan is to develop ways to warn herders of extreme weather events days in advance. That way the herders could protect their animals and remain on the tundra.

"We have climate modelers, sea-ice modelers and many different types of experts from nine countries trying to fingerprint the chain of events that lead to hazardous rain on snow events," said Forbes.

Timeless symbol

The herders are determinedly holding onto their identity as they work with the scientific community to protect their way of life.

To illustrate the trust that the Sámi have in their animals, Salmi tells the story of a reindeer named Onni—meaning luck or happiness—whose herder would let it navigate the way home after a long day of tourist safari rides.

"He was such a wise reindeer that the herder could fall asleep in the sledge," she said. "Onni knew the way, he would always stop before crossing a road and the herder would wake when they were safely home."

For their part, the Nenets' view of reindeer could almost be summed up as the more the merrier, according to Laptander.

"If you have enough reindeer, then it means you're a happy person," she said.

More information:

- [CHARTER](#)
- [DOMESTICATION](#)
- [The EU in the Arctic](#)

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