

Climate change affects Swedish reindeer herding and increases tularemia

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In northern Sweden, data from certain weather stations have shown that the snow season has been shortened by over two months in the last 30 years, which has huge effects on reindeer herding. Also, the climate sensitive human infection tularemia has tenfolded over the same period and is much more common now than before. This according to a dissertation at Umeå University in Sweden.

Warmer winters affect reindeer herding

In some places in the north of Sweden, the snow season has been shortened by more than two months between 1978 and 2008, which has dire consequences on life in the North. Data from ten [weather stations](#) in reindeer herding areas, from Frösön in mid-Swedish Jämtland to the very north of Sweden, shows that the coldest days have dwindled the most during the period and that long periods of really cold weather are today much less common than previously.

"Our research shows that climate change in northern Sweden is more extensive than anticipated and that reindeer herding is very vulnerable," says Maria Furberg, doctoral student at the Department of Public Health and Clinical Medicine and the Department of Clinical Microbiology.

Climate change in northern Sweden, indicated by shorter periods of snow for instance, has had negative effects on reindeer herders' livelihood. Reindeer herders' ability to handle the consequences is

weakened further by other circumstances that also affect reindeer herding, such as for instance increased competition from other businesses, continuously shrinking grazing lands, predator policies and poor financial conditions.

Tenfold increase in incidence of tularemia

In her dissertation, Maria Furberg shows that the Swedish national incidence of tularemia, also known as rabbit fever (read more below), has increased significantly both geographically and in number between 1984 and 2012. The cases also seem to be related to watercourses and lakes. A survey of 1,500 randomly selected inhabitants in the two northernmost counties of Sweden, Norrbotten and Västerbotten, completed in 2014, showed that just under three per cent showed signs of having had a tularemia infection. That corresponds to a 16 time increase in comparison to reported cases.

"The massive increase in numbers of reported tularemia cases is startling and the disease seems to be much more common than previously anticipated. This means that our health care needs to improve tularemia diagnostics so that all patients receive the correct treatment. Also, the reasons behind the increase in [tularemia](#) needs to be investigated further with continuous research," says Maria Furberg.

Tularemia is a zoonotic disease, which means that it is transmitted from animals to humans. In Sweden, the disease is often mosquito-borne. The symptoms of the disease are high temperature, ulceration, swelling of lymph nodes and sometimes even severe pneumonia.

More information: Towards the Limits – Climate Change Aspects of Life and Health in Northern Sweden: studies of tularemia and regional experiences of changes in the environment. umu.diva-portal.org/smash/record.jsf?pid=diva2%3A1039580&dswid=-7714

Provided by Umea University

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