

# Is climate change threatening Arctic lemmings?

By **Derek Neary** - November 29, 2019

While the impact of climate change on polar bears generates many headlines, a few Canadian researchers are looking into how a warming Arctic could impact a rodent that is a food source for numerous animals.

Milder winters are bringing rain after snowfall and more melting and freezing cycles in some Northern zones globally, which can create a crusty surface that is difficult for lemmings to penetrate, says Dominique Fauteux, a mammologist with the Canadian Museum of Nature. Dead lemmings have been found atop the hard snow pack in Norway after being unable to penetrate the icy surface to get to the mosses and willows below that they consume and where they survive and reproduce during the winter, according to Fauteux. He was in Cambridge Bay on Thursday to give a presentation on the research findings from his work and that of colleague Mathilde Poirier, a Ph.D student at Laval University.



*A collared Arctic lemming from a study undertaken by researchers from the Canadian Museum of Nature and Laval University. They're monitoring the rodents on Nunavut's Bylot Island and Victoria Island. photo courtesy of Mathilde Poirier*

They recently simulated the hard, crusty layer atop the snow and watched lemmings in captivity try to pierce it.

"What we observed is that they spend a lot of energy to try to go through it," Fauteux said, adding that the rodents use not only their claws but also their teeth in an attempt to bite through the crusty surface. "They will have to spend more energy digging through the snow and obviously if they have less energy to reproduce – especially the females to take care of the young – their reproduction will be much lower and the populations will decline, which will have strong impacts on the rest of the (wildlife) community."

The lemming population is already known to spike and then collapse over three- to four-year periods. In Nunavut they can be hard to find at the bottom range of the cycle but at their peak they can reach approximately 15 lemmings per hectare in some locations, said Fauteux. Their numbers can explode 100-fold over nine months when they're on the upswing.

Predatory birds, such as snowy owls, foxes and ermines (a short-tailed weasel) all feed on lemmings. Adult brown lemmings in the Arctic are about 150 mm in length, including their tail. Their body weight ranges from 55 grams to approximately 115 grams (about a quarter pound).

Fauteux and Poirier's studies have been conducted on Victoria Island, Bylot Island in the High Arctic and in Salluit, in northern Quebec's Nunavik region. They will continue their research next year, he added.

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Derek Neary has been reporting on developments in the North for 18 years. When he's not writing for Nunavut News, he's working on Northern News Services' special publications such as Opportunities North, NWT & Nunavut Mining, Construction and Degrees of Success. Derek's passion lies in human interest stories and he's indebted to those who share their struggles and triumphs. He has won more than a dozen journalism awards and has a bachelor of journalism degree from the University of King's College.

