

Who will lead Santa's sleigh as reindeer decline?

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Conservation scientist Jeff Wells says global warming and industrial development pose serious threats to the caribou population.

Rudolph, Donner, Blitzen and their caribou cousins might not be around much longer if global warming and industrial development in their boreal forest homes continues.

So says conservation scientist Jeff Wells, M.S. '92, Ph.D. '95, who warns that the beloved animals of Christmas folklore are in severe decline and worries that their numbers will continue to fall unless their habitat is protected.

Circling the northern latitudes of the Earth, caribou, as [reindeer](#) are known in North America, thrive in cold climates.

"It's no wonder they are attributed with the power of flight in Christmas stories," said Wells, a visiting fellow at the Cornell Lab of Ornithology. "They have hooves that allow them to easily walk on snow and ice, unlike deer and moose. Their hollow hairs give them extra insulation from the extreme cold and allow them to easily float when swimming across rivers and lakes."

They are tough, adaptable creatures that can survive in winter by eating only lichens. But when the health of their habitats is threatened, so too is the health of the herd. While some caribou live in large migratory groups, many remain year-round within the Canadian boreal, the world's largest remaining intact forest.

Wells, also a science adviser for Pew Environment Group's International Boreal Conservation Campaign who received his Ph.D. in the field of ecology, said the species that once roamed the northeastern United States and Canadian Maritime Provinces was already a memory in many places by the beginning of the last century.

By the early 1900s, caribou disappeared from the U.S. side of the Great Lakes and most of the Rocky Mountains, Wells said. In Ontario, the species range has retracted at a rate of two miles a year, resulting in the loss of half of the province's woodland caribou range; 60 percent has been lost in Alberta, and 40 percent in British Columbia. More recently, massive declines in the numbers of the barren-ground, long-distance migratory caribou have been recorded, some herds dropping by as much as 90 percent. Wells attributes much of the decline in caribou populations to industrial development, but many scientists also point to global warming as a culprit.

Wells wrote a guest column/blog entry for National Geographic in November about caribou declines, prompted by a caribou conference he attended recently in Canada, which also attracted representatives from

the hundreds of Canada's indigenous communities. Considering that indigenous peoples have coexisted with the animals for so long and so successfully, their knowledge and experience should be a primary part of any conservation strategies, Wells said.

"Traditional Western science might be helpful in determining which herds might be most susceptible or resilient, but may fail to incorporate the needs of local communities," Wells added. "Many of these communities have historical knowledge of the herds that extends far beyond recent studies, having been passed down verbally for millennia."

And since setting aside large tracts of land free from industrial development is the best chance for caribou survival in many regions, supporting the rights of indigenous people to determine the future use of their lands should be a key solution, he said.

Protecting caribou habitats would also combat climate change, he added, noting that his research, published in the report "The Carbon the World Forgot" (2009) and in the Forestry Chronicle (July/August 2010, 86:4), finds that the Canadian boreal stores more than 208 billion tons of carbon -- 26 years' worth of global carbon emissions from the burning of fossil fuels.

More information: To find out how to help protect the area, visit caribouandyou.ca/action/ or www.interboreal.org

Provided by Cornell University

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