

Deadly Chain Reaction

**More ticks on Isle Royale means fewer moose, which means fewer wolves.
Global warming may be to blame.**

August 27, 2007

BY TINA LAM and CHRIS CHRISTOFF, DETROIT FREE PRESS STAFF WRITERS

Scientists who for decades have studied the delicate prey-predator balance between moose and wolves on Lake Superior's Isle Royale believe global warming -- by giving an assist to blood-sucking bugs -- ultimately could deal a deathblow to the national park's wolf population.

Since 2002, the number of moose on the island has declined from 1,100 to 385, following a dramatic increase in winter ticks. The insects infest the moose, suck their blood and weaken them, making them easy prey for wolves.

If warmer temperatures persist -- causing ticks to keep increasing -- the wolves could die out because there won't be enough moose, their main food source, said John Vucetich, a biologist at Michigan Technological University. He spends nearly half the year on Isle Royale studying the creatures.

The island's wolves -- down to 21 from 30 in 2006 -- have faced other challenges over the past quarter century, including parvovirus in the 1980s, which brought their numbers from dozens to 12 within a span of several years. But losing the species' main meal ticket could be fatal.

"The changes are dramatic," Vucetich said. "Humans have made temperatures increasingly hot, which exacerbates the number of ticks."

And there's nothing scientists can realistically do to curb the ticks.

Vucetich's findings are the latest evidence in Michigan of global warming, already implicated for the disruption of species in North America and the Great Lakes states.

Among other changes, opossums and white-footed mice are moving north, migratory birds are arriving earlier, and sugar maple sap is flowing sooner. Lower water levels in the Great Lakes also are believed to be linked to reduced ice cover, leading to greater evaporation.

Isle Royale's 210 square miles, while within Michigan's borders, is closer to the Minnesota and Canadian shorelines. Because the island is so isolated, it has been a mecca for environmental study.

Scientists studying the moose and wolves have determined that as many as 100,000 ticks can infest a single moose. In some cases, the ticks take so much blood the moose dies.

With warmer spring and fall temperatures, more ticks can breed. The moose rub against trees or try to bite the ticks out of their hair, causing hair loss.

With less hair, the animals spend more energy keeping warm.

In summer, the moose also spend less time foraging for food and, weakened from tick bites, more time resting. Those who don't bulk up enough in summer are less prepared for tough winters and wolf

Contact **TINA LAM** at 313-222-6421 or tlam@freepress.com.

attacks. In the first few years after the tick numbers skyrocketed, wolf numbers also rose because so many moose were easy pickings.

Michigan Tech says its research on the island's wolves and moose dates to 1958 and is the longest-running predator-prey study in the world. The number of wolves and moose have fluctuated, but the moose population has never dropped so low.

Despite that, Vucetich said he doesn't think moose will disappear completely from the island.

Moose, ticks and wolves are part of a delicate ecosystem that has evolved on Isle Royale since moose arrived there about 1900, most likely by swimming from Minnesota or Canada. About 50 years later, wolves probably walked across ice from Canada.

Yale professor Os Schmitz, who also studies predator-prey relationships, said in a podcast earlier this month that changes in ecosystems caused by global warming will be hard to undo.

Mainland wolves, which have made a dramatic comeback in the Upper Peninsula over the past decade or so, don't face the same plight because their primary prey is whitetail deer, said Brian Roell, the DNR's wolf coordinator in Marquette. And the wolves are doing especially well in the southern UP, he said.

Roell said 509 wolves were counted in the UP last winter. He said the number likely jumped in the spring, when pups are born. While wolves in Michigan, Minnesota and Wisconsin were taken off the endangered species list last year after their numbers rebounded following three decades of protection, Vucetich said wolves have always lived a precarious existence on Isle Royale.

They also have appeared less fearful of humans, although wolf attacks are rare. Vucetich and fellow researcher Rolf Peterson reported that in 2006, wolves on Isle Royale were seen trailing backpackers and in campgrounds.

Vucetich said there were fewer wolf sightings this summer, but he cautioned visitors to Isle Royale to be careful and not attempt to feed wolves, which is illegal.

"You shouldn't be more worried, but you should be more aware," he said. "Wolves haven't crossed this kind of invisible boundary of touching anybody. That's a big deal. And wolves don't associate people with food."

He added, "That can change at any moment. If you see a wolf, don't try to prolong the interaction. Try to end it."

The last five or six summers have been the hottest since the wolf-moose study began. If that continues, it will be hard for the moose to bounce back and worse for the wolves, Vucetich said.

"I don't see a turnaround anytime soon."



Contact **TINA LAM** at 313-222-6421 or tlam@freepress.com.