

Livestock risks from Wisconsin wolves localized, predictable

June 1 2011

It's an issue that crops up wherever humans and big predators — wolves, bears, lions — coexist.

"It's just hard to live alongside large carnivores. They damage crops, they kill livestock and pets, they threaten people's safety," says University of Wisconsin-Madison professor Adrian Treves. And the sheer presence of a wolf nearby has typically been enough to make farmers fear for their animals, he adds. "Wherever there were carnivores, people thought there was risk."

But Red Riding Hood and the Three Little Pigs notwithstanding, not all wolves are big and bad. Even as Wisconsin's wolf population grows, intensifying the potential for conflicts with people, Treves' research is revealing that one of the most visible types of conflict — attacks on livestock — is highly localized and may be predictable.

Treves, head of the Carnivore Coexistence Laboratory in the UW-Madison Nelson Institute for Environmental Studies, works in partnership with the Wisconsin Department of Natural Resources to understand and mediate human-carnivore conflicts with an eye toward reducing the threat to both people and animals.

When problems arise, Treves says, "people traditionally respond by retaliating, either by clearing wildlife habitat or by killing the carnivores."

It's an approach that simply isn't sustainable, he says, noting that top carnivores are linchpin species in many ecosystems and among the most endangered species on the planet. "How do you balance people's need for safety and their livelihoods — livestock and [crops](#) — how do you balance that human need with the global imperative to conserve nature?"

Their research on the topic has now yielded a risk map of wolf attacks on livestock in Wisconsin, which identifies areas of high and low risk throughout the state. The study, co-authored with Adrian Wydeven and Jane Wiedenhoft of the Wisconsin DNR and Kerry Martin of UW-Madison, appears in the June issue of the journal *BioScience*.

Risk mapping is already used in a wide range of settings, from police activity to outbreaks of infectious disease, as a way to mobilize and manage resources. It's a very common-sense approach, Treves says, based on identifying characteristics that distinguish affected sites from neighboring unaffected sites.

"If we can isolate the factors that make them different, we should be able to predict where those attacks will happen in the future and we can target our prevention to the highest-risk areas," he says.

Their analysis, using 133 documented livestock attacks between 1999 and 2006, highlighted three variables that predicted higher risk of wolf attacks: higher percentage of pasture, grassland or hayfield; closer proximity to the nearest wolf pack; and greater distance from forest.

Of the parts of Wisconsin within 100 kilometers of a wolf pack (most of the state, excluding the southern and southeastern-most regions), only one-third of the study area was found to be at risk of wolf attacks on livestock. The highest-risk areas comprise just 10.5 percent, concentrated in the northwest and a few pockets near Lake Superior.

The researchers also verified their model using data from 2007-09 and found that their risk map correctly predicted the vast majority (88 percent) of those incidents.

Treves says it's a good start to help farmers and resource managers target prevention efforts on those high-risk hotspots, distribute limited resources as efficiently and effectively as possible and, hopefully, reduce livestock attacks.

"Prediction promotes prevention," he says. "Every single wolf pack in Wisconsin has access to people or pets or [livestock](#)," but with only a handful implicated in attacks each year, "the majority of the [wolf](#) population is not causing problems."

More information: A map predicting the risk of grey wolf attacks on livestock in Wisconsin is available at www.news.wisc.edu/newsphotos/greywolfriskmap.html

Provided by University of Wisconsin-Madison

Citation: Livestock risks from Wisconsin wolves localized, predictable (2011, June 1) retrieved 26 April 2024 from <https://phys.org/news/2011-06-livestock-wisconsin-wolves-localized.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.