

# Wolves may aid recovery of Canada lynx, a threatened species

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As wolf populations grow in parts of the West, most of the focus has been on their value in aiding broader ecosystem recovery – but a new study from Oregon State University also points out that they could play an important role in helping to save other threatened species.

In research published today in *Wildlife Society Bulletin*, scientists suggest that a key factor in the Canada lynx being listed as threatened under the Endangered Species Act is the major decline of snowshoe hares. The loss of hares, the primary food of the lynx, in turn may be caused by coyote populations that have surged in the absence of wolves. Scientists call this a "trophic cascade" of impacts.

The increase in these secondary "mesopredators" has caused significant ecosystem disruption and, in this case, possibly contributed to the decline of a [threatened species](#), the scientists say.

"The increase in mesopredators such as coyotes is a serious issue; their populations are now much higher than they used to be when wolves were common in most areas of the United States," said William Ripple, a professor in the Department of Forest Ecosystems and Society at OSU.

"Before they were largely extirpated, wolves used to kill coyotes and also disrupt their behavior through what we call the 'ecology of fear,'" Ripple said. "Coyotes have a flexible, wide-ranging diet, but they really prefer rabbits and hares, and they may also be killing lynx directly."

Between the decline of their central food supply and a possible increase in attacks from coyotes, the Canada lynx has been in serious decline for decades and in 2000 was listed as a threatened species. It also faces pressure from habitat alteration, the scientists said, and perhaps climate change as lower snow packs further reduce the areas in which this mountain species can find refuge.

In numerous studies in recent years, researchers have documented how the presence of wolves and other large predators helps control populations of grazing ungulates including deer and elk, and also changes their behavior. Where wolves have become established, this is allowing the recovery of forest and stream ecosystems, to the benefit of multiple plant and animal species.

Lacking the presence of wolves or other main predators in both terrestrial and marine environments, populations of smaller predators have greatly increased. Other studies have documented mesopredator impacts on everything from birds to lizards, rodents, marsupials, rabbits, scallops and insects. This includes much higher levels of attacks by coyotes on some ranch animals such as sheep, and efforts attempting to control that problem have cost hundreds of millions of dollars.

Scientists have concluded that exploding mesopredator populations can be found in oceans, rivers, forests and grasslands around the world.

"In the absence of wolves, coyote densities and distributions generally expanded in the U.S., into the Midwest, to the northeast as far as Newfoundland, and as far northwest as Alaska," the researchers wrote in their report.

Where wolves recovered, as in Yellowstone National Park, coyote populations were initially reduced by 50 percent, Ripple said. Although more sampling will be required, early evidence indicates that a snowshoe

hare recovery may be taking place.

As these issues are factored into decisions about how to manage [wolves](#), the researchers said, it's also important to maintain what they call "ecologically effective" [wolf populations](#), the researchers wrote in their study. The full value of these top predators, and the numbers of them it takes to achieve a wide range of ecological goals, should be more thoroughly researched and better understood, they said.

Provided by Oregon State University

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