



Snow-dusted mountains, Glacier National Park, Montana © Tim Fitzharris/ Minden Pictures

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Wolverines

of the Northern Rockies

If ever there was an enduring symbol of the wildness of the Rocky Mountains, it would be the wolverine. While wolves and grizzly bears usually come to mind when talk turns to the Rockies' animals that conjure images of the wild, the diminutive wolverine possesses a legendary reputation for toughness, resilience, and, some would say, cantankerousness.

But these solitary creatures, rarely seen due to their typical travels near or above tree line in home ranges that span hundreds of miles, could very possibly be erased from the landscape by climate change.

These opportunistic carnivores once roamed wide and far across the continental United States, with historical populations noted in the coastal mountains of California, Oregon, and Washington, the Rocky Mountains from **Glacier National Park** on the Canadian border all the way south to Taos, New Mexico, east into the Great Lakes region, and even in the Northeast.

Throughout history this 30- to 40-pound ball of tenacity has been known by a smattering of names, and none very



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flattering. There was “skunk bear” and “Indian devil,” and to 19th-century French fur trappers the animal was “carcajou.” That’s how the trappers’ tongues stumbled through the Micmac Nation word “kwi’kwa’ju,” which translates to “evil spirit.” And the trappers no doubt viewed wolverines as evil spirits, for they have a long and well-deserved reputation for not only raiding trap lines but breaking into cabins to forage trappers’ provisions.

And yet, admiration also flows for wolverines. “I wonder if there is another inhabitant of northern wilderness that so excites the imagination,” Olaus Murie, the noted American wildlife biologist and conservationist, once wrote. “Merely

seeing those tracks in the snow made it a red-letter day.”

But those tracks are getting harder to find, because female wolverines den in snowfields, which are shrinking under warmer temperatures. Also, while wolverines have been known to hunt deer, elk, and even moose that founder in deep snows, they also are expert scavengers; in winter and spring they often make meals of wildlife killed by avalanches. Less snow is also reducing the opportunity for easy meals.

During the past four decades, wolverines that were found in the Lower 48 states were spotted in areas with snow cover that usually lasted through the wolverines’ spring

denning season. The females would burrow into the snow, creating networks of insulated dens and tunnels that protect them from predators.

Unfortunately, snowfall not only has been on the decline, but snow that does fall has been disappearing sooner than what once was considered normal. Studies note that nearly one-third of the historical spring snowpack in existing wolverine habitat already has been lost as global temperatures continue to warm, and that that percentage could double by 2090. Without snow, these carnivores could quickly go extinct. Nowhere in the world has a female wolverine been documented to build her den anywhere else but in snow.

Beyond the need for snow, the future of wolverines in the Northern Rockies is clouded, in part, by their low numbers — it is likely that there are no more than 400 wolverines left in the United States, and there could be as few as 218. Most of these scavenger-predators are clustered in Montana, Wyoming, Idaho, and Washington. Their habitats are increasingly shrinking and becoming isolated due to development and roads.

SOLUTIONS

Agreements with private landowners and coordination among public land managers can help to protect wolverines and encourage them to move north to cooler areas as climate change forces them from their current mountain ranges. Wolverines may be able to survive in areas where snowpack remains and perhaps even colonize new territory in more northerly or higher elevation regions, but only if they are able to roam widely across the landscape. Movement corridors and larger refugia where wolverines are protected could help these wild creatures to survive.

Wolverines may also get help holding on from another predator. Studies in **Yellowstone** National Park have shown that leftovers from wolf kills are helping to replace the carrion that wolverines had been able to scavenge in the wake of avalanches. Wolves could also offset an expected reduction in bison, elk, and mule deer killed by cold, snowy winters, as winters warm and snowfalls decline. Without wolves, late-winter carrion in Yellowstone would be expected to drop off by nearly a third in March and two-thirds in April under current climate-change scenarios. However, as long as healthy populations of wolves reside in the park, the amount of carrion in March would only be expected to drop by 4 percent under climate-change scenarios, and by just 11 percent in April.

While ensuring a future for wolverines is not as simple as dropping a wolf pack or two into their neighborhood, it makes sense for public lands managers, including the National Park Service, to determine whether there are missing species that, if returned, might help reduce their ecosystem's vulnerability to climate change. Mitigation and prevention of habitat fragmentation is also necessary, ideally with the creation of protected wildlife corridors. Linking undeveloped areas to protected areas, such as national parks or officially designated wilderness, will make it easier for animals like the wolverine to find habitat and maintain healthy populations.

We Can Safeguard Wolverines from Climate Change

Stop contributing to climate change

Wolverines could be driven from the Rockies and even go extinct if we fail to reduce carbon dioxide pollution and global warming that is decreasing snowpack wolverines need to survive.

Give wolverines freedom to roam

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Adopt "climate smart" management practices

Understanding interactions among species like wolverines and wolves, and acting to restore a balance of native wildlife, could help vulnerable species like the wolverine overcome changing climatic conditions that might otherwise drive them from their ecosystem.