Leaving Only Footsteps? Think Again

By CHRISTOPHER SOLOMON **New York Times** FEB. 13, 2015

ONE of the most popular places for backcountry skiing in North America is Teton Pass in Wyoming, high above the adventure playground of Jackson Hole.

This winter, as skiers and snowboarders unload gear for a day of sweat and powder-skiing, the researcher Kimberly Heinemeyer has been moving among them with a clipboard. Dr. Heinemeyer, a senior scientist with the research group Round River Conservation Studies, explains that she's studying the effect of recreation on wolverines. She asks skiers if they will wear a small orange GPS armband for the day that tracks their movement. Most people gladly agree.

Wolverines, famously tough and elusive animals also known as "mountain devils," are in trouble in the region. Roughly 300 are thought to remain in the northern Rockies and Pacific Northwest. Climate change is eroding the late-spring snowpack that the animals depend on to survive. Even so, in August, the United States Fish and Wildlife Service withdrew its proposal to list the animal as a "threatened" species under the Endangered Species Act. Environmental groups are suing.

Over the last five winters, scientists have been trapping and fitting GPS collars to wolverines in Idaho and now in Wyoming while also affixing them to snowmobilers and those backcountry skiers. Then they've tracked the movements. Preliminary findings show that wolverines move faster and more often on weekends when people are playing in their mountain habitat. That may mean trouble for these animals during the brutal winters of the high Rockies, where every calorie counts.

When we think of injuring nature, it is easy to point an accusing finger at mining companies and their strip mines or timber barons and their clear-cuts. But could something as mellow as backcountry skiing or a Thoreauvian walk in the woods cause harm, too?

More and more studies over the last 15 years have found that when we visit the great outdoors, we have much more of an effect than we realize. Even seemingly low-impact activities like hiking, cross-country skiing and bird-watching often affect wildlife, from bighorn

sheep to wolves, birds, amphibians and tiny invertebrates, and in subtle ways.

Impacts from outdoor recreation and tourism are the fourth-leading reason that species are listed by the federal government as threatened or endangered, behind threats from nonnative species, urban growth and agriculture.

Piping plovers and loggerhead turtles have been killed, and their nests disrupted, by beach traffic at Cape Hatteras National Seashore in North Carolina, for instance. Vernal pool fairy shrimp are threatened by humans walking through seasonal wetlands in California and Oregon. The major threat to manatees in Florida is being struck by recreational boats. And the list goes on.

You'd be surprised by the ripples left by a day-hiker's ramble through the woods. In 2008 Sarah Reed, an associate conservation scientist at the Wildlife Conservation Society, and her colleagues found fivefold declines in detections of bobcats, coyotes and other midsize carnivores in protected areas in California that allowed quiet recreation activities like hiking, compared with protected areas that prohibited those activities.

"That is the kind of difference that you don't see often in ecological studies," Dr. Reed said. Dogs, a frequent villain, weren't the issue for these carnivores; people were, according to her research.

Birds get ruffled, too. Researchers who studied trails around Boulder, Colo., found that populations of several species of songbirds, including pygmy nuthatches and Western meadowlarks, were lowest near trails. "There's something about the presence of humans and their pets when they go on hikes that causes a bit of a 'death zone' of 100 meters on either side of a trail," said Prof. Rick Knight of Colorado State University. Running, canoeing, cycling and similar activities negatively affected birds in nearly 90 percent of 69 studies that researchers reviewed in 2011. Reductions were seen in the number of nests built, eggs laid and chicks hatched or fledged.

In Connecticut, wood turtles, labeled a "species of special concern" in the state, vanished from one wildlife preserve over 10 years after the area was opened to activities like hiking, researchers found.

It's tempting for the muscle-powered recreation crowd (of which I'm a proud member) to argue that we're lighter on the ground than those who roar into nature astraddle their growling snowmobiles and churning all-terrain vehicles. Surely motorheads are to blame for any problems in the forest.

The uncomfortable fact is, we're all complicit. In a not-yet-published review of 218 studies about recreation's impacts on wildlife, researchers found more evidence of impacts by hikers, backcountry skiers and their like than by the gas-powered contingent.

Cross-country skiers on the Kenai Peninsula in Alaska, for instance, can be more disturbing to moose than noisy snowmobiles, one recent study found. Grant Harris, a biologist for the Fish and Wildlife Service and the main author of the study, explained that snowmobiles, while a noisy intrusion, announced their presence and then quickly departed. But cross-country skiers can sneak up on an animal without warning and then linger. Worse, animals "don't know where the skiers are going to pop up next," leaving them on edge.

A century ago, nature had elbow room. Now, there's a lot less of it, while recreational activities and nature tourism are growing in most parks, wilderness areas and other protected areas around the world.

The National Park Service has allowed marathons in parks, for instance, and the controversial push by mountain bikers to ride in federal wilderness areas is heating up again. In British Columbia, more than three dozen snowcat skiing and heli-skiing operations and backcountry lodges have opened in the last 20 years in the province's wildlife-rich south.

Today, some kind of recreation is allowed in 99 percent of the protected natural areas in North America.

Conflicts with nature are a result. Still, scientists insist they don't want to lock people out of nature. Spending time on a mountainside, or hip-deep in a trout stream, is tonic for brain and body. Research bears this out. And people who recreate outdoors are among nature's most ardent constituents. Without them, "our landscapes would erode even faster than they are now," said Dr. Heinemeyer, the wolverine researcher.

The challenge is to find a nuanced balance between enjoying nature and protecting it, recognizing that recreation does not necessarily complement conservation or preservation.

Last spring, officials in Banff National Park in Canada closed a section of the Bow Valley Parkway, one of the best places in the park to see wildlife at night. Closing the road allowed wolves, grizzly bears and other wildlife more chances to move along the pinched valley bottom during springtime, a critical period when they have young to feed.

Such restrictions aren't new in the United States or Canada, but we should be prepared to accept more of them. We might also consider allowing more recreation in some parks and natural areas but less in others to achieve conservation goals across a broader landscape.

And in the case of future parks and protected areas, we need to carefully consider the goals for such places and how recreation fits in or doesn't, because once it is allowed, it is tough to restrict. "Whether or not to allow public access is probably the most important decision that gets made," Dr. Reed said.

Of course not all wildlife is the same. Some species flee; others habituate. Some populations might be healthy enough to withstand disturbance; others, too fragile. We now know recreation is having impacts in ways that we hadn't imagined. We must plan accordingly.

Only if nature is healthy will it be able to sustain and support us in the future, when we burst through the door after a long week and hit the trail, looking to lean on its strong shoulders.