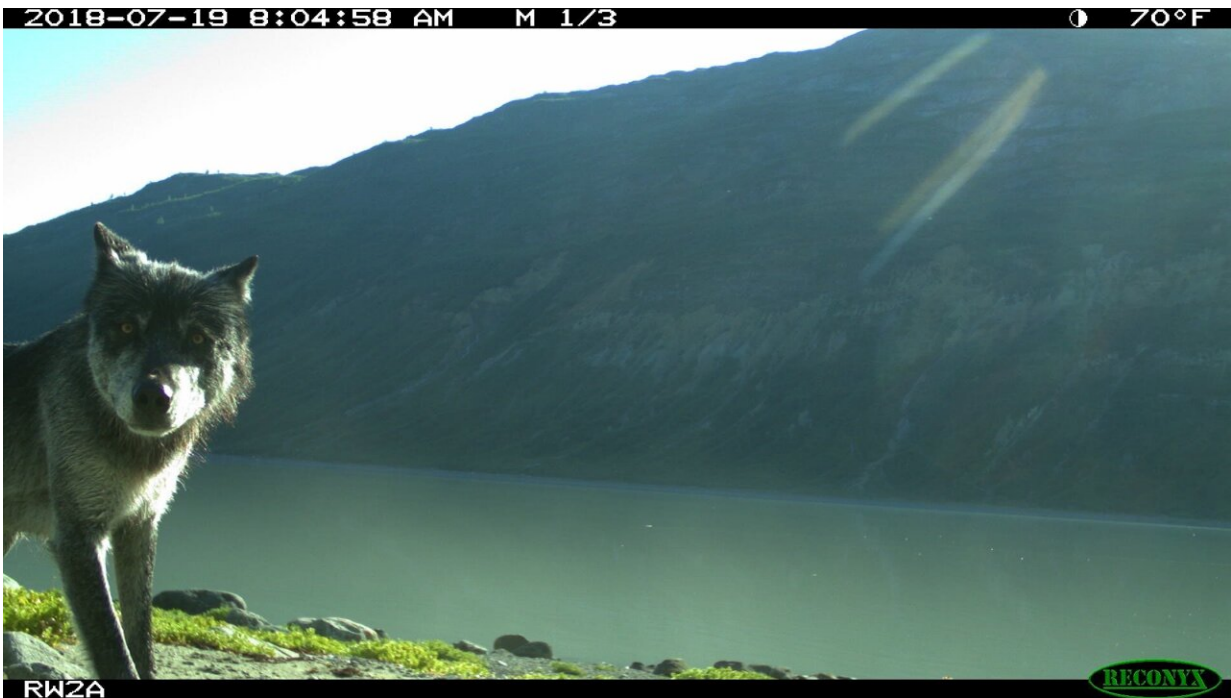


# Animals in national parks are affected by even just a few people

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A wolf seen on a motion-activated camera in Glacier Bay National Park, Alaska.  
Credit: Mira Sytsma

People often visit U.S. national parks to catch a glimpse of wildlife. But how does our presence affect the animals we hope to see?

National park traffic has grown steadily over the past decade, and popular parks like Yosemite and Yellowstone can easily see over a

million visitors a year. In these heavily used areas, one might expect animals to change their behavior to avoid humans.

But a new University of Washington-led study has found that even in remote, rarely visited national parks, the presence of even just a few humans impacts the activity of [wildlife](#) that live there. Nearly any level of human activity in a protected area like a national park can alter the behavior of animals there, the study found. The research was published Oct. 13 in the journal *People and Nature*.

"There's been increasing recognition of how much just the presence of humans in these places, and our recreating there, can impact wildlife," said senior author Laura Prugh, associate professor in the UW School of Environmental and Forest Sciences. "These results are striking in showing that really any level of human activity can have an effect on wildlife."

The research team based its study in Glacier Bay National Park, a [coastal area](#) in southeast Alaska that is accessible only by boat or plane. Most visitors arrive on cruise ships, but the boats don't dock on shore, and the park has very little human foot traffic. Because so few people visit each year—only about 40,000 but increasing—the park was an ideal place to locate this study, Prugh explained.

"Glacier Bay is a great park to explore what the lower limits are where humans start to affect wildlife behavior," Prugh said.

The researchers worked with the national park's staff to design and implement an experiment that compared wildlife activity in areas used frequently by humans to areas where people were absent. They installed 40 motion-activated cameras across 10 sites to capture detections of people and four [animal species](#)—wolves, [black bears](#), [brown bears](#) and moose—over two summers. By controlling where and when people could

access certain areas of Glacier Bay and then measuring wildlife responses to the differing levels of human activity, the researchers identified two important thresholds.

First, if humans were present in an area, the cameras detected fewer than five animals per week across all four species studied. In most cases, this likely meant that animals avoided areas where humans were present. Second, in backcountry areas, wildlife detections dropped to zero each week once outdoor recreation levels reached the equivalent of about 40 visitors per week.

The researchers were surprised by the apparent low tolerance wildlife had for the presence of people nearby.

"It was eye-opening to see the number of wildlife sightings we are 'missing' just by recreating in backcountry areas of Glacier Bay," said lead author Mira Sytsma, who completed this work as a UW graduate student. "I was surprised that for all four species, wildlife detections were always highest when there wasn't any human activity. So many people visit national parks for the chance to view wildlife, and that desire alone may reduce the chance of it happening."



A wolf seen on a motion-activated camera in Glacier Bay National Park, Alaska.  
Credit: Mira Sytsma



A moose seen on a motion-activated camera in Glacier Bay National Park, Alaska. Credit: Mira Sytsma

Though all four species showed some change in activity due to humans, wolves were most likely to disappear from cameras when people were around. Brown bears were the least impacted by human presence. Moose, however, were more active during the times of day and locations where people were seen. The researchers hypothesize that moose might be using humans as a protective shield from predators, opting to align their active hours with humans to avoid becoming prey.

The researchers expect that in parks where animals are more accustomed to seeing people, at least some individual animals won't react as strongly to humans as in Glacier Bay. But the findings do shed light on a reality that's likely playing out at national parks and wilderness areas across the country: More people are visiting these areas than ever before, and the presence of humans is almost certainly impacting the behavior of animals that live there.



A brown bear seen on a motion-activated camera in Glacier Bay National Park, Alaska. Credit: Mira Sytsma



A brown bear seen on a motion-activated camera in Glacier Bay National Park,

Alaska. Credit: Mira Sytsma

"I expect that similar results could be found in other national parks, particularly those with relatively low visitation. I wouldn't be surprised if more and more people seek out less popular [national parks](#) to explore, which will have interesting and important implications for park management and wildlife," Sytsma said.

National parks and [wilderness areas](#) aren't just seeing more visitors during the high season. More people are opting to use the trail systems during less-busy times to avoid crowds. Additionally, some parks are expanding their trail networks to accommodate more visitors.

The authors hope this study can help park managers consider different approaches to making parks accessible both to humans and animals. For example, managers could consider concentrating trails and [human use](#) in certain areas to reduce their total footprint, or put restrictions on the time of year or days in which people can visit.

"Our findings lend support to concentrating human activities in some areas, because if you're going to go above zero human activity and it's going to have an impact, you might as well go way above zero in some areas and then have other areas where you have almost no human activity," Prugh said. "In those areas, then, wildlife can live their natural lives unaffected by people."

Co-authors are Beth Gardner at the UW and Tania Lewis at Glacier Bay National Park and Preserve.

**More information:** Low levels of outdoor recreation alter wildlife behavior, *People and Nature* (2022). [dx.doi.org/10.1002/pan3.10402](https://doi.org/10.1002/pan3.10402)

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