

Research suggests social factors important for human-wildlife coexistence

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Credit: University of Montana

In bear country, it's normal to find bruins munching down on temptations left out by humans—from a backyard apple tree to leftovers in the trash bin—but these encounters can cause trouble for humans and bears alike. One method to reduce human-bear conflicts is to secure attractants like garbage and livestock feed.

While effective when implemented, this approach requires people to change their behavior, and that makes things a little more complicated.

University of Montana researchers recently published a new study in the *Journal of Wildlife Management* analyzing why landowners do or don't secure attractants in bear country. The results suggest that collective or socially motivated factors may be a missing and important piece of the puzzle for encouraging voluntary steps to secure attractants and improve [wildlife](#)-human coexistence. The researchers also offer suggestions for how wildlife managers might help increase these behaviors through improved messaging and outreach.

Social scientists in UM's Human Dimensions Lab, housed in UM's W. A. Franke College of Forestry and Conservation, classify human-wildlife interactions as a public-good, collective-action problem—a problem where solutions require contributions from many people and where people's actions affect others. For the study, they applied this theory in Montana's black bear and grizzly bear ranges to investigate how individual and collective factors work together to influence whether landowners secure bear attractants on their land.

"A collective-action problem requires the efforts of two or more individuals to solve," said Holly Nesbitt, a doctoral candidate in the

College of Forestry and Conservation and the study's lead author. "We're arguing that securing bear attractants—that coexistence with wildlife—is a collective-action problem because you need multiple people—land owners specifically—to pull it off. Their actions protect themselves and their neighbors."

Nesbitt and her coauthors analyzed data from a 2018 survey of Montana landowners meant to understand their attitudes and behaviors related to bears. Among other questions, the survey asked people about their willingness to secure different attractants, like using bear-resistant garbage bins and removing bird feeders.

Researchers found that the most important factor in determining if a landowner would secure attractants was whether that landowner had talked to a wildlife professional.

"We think that landowners who have talked to a wildlife professional have received information more easily than those who haven't," Nesbitt said. "In theory, they have reduced the time costs of securing attractants, so we think that's why they are more likely to use bear-proof garbage cans, for example."

Other collective factors, like whether their neighbors secure attractants, and the existence of discussion networks (for example, how much social influence an individual has) were equally as important as individual factors like beliefs, age or gender.

"The fact that this is a collective-action problem—that we're in it together, that it needs all of us to solve it, that our behavior has impact on our neighbors, too—leads us to the conclusion that what people are doing around us matters and influences our own behavior," says UM Assistant Professor Alex Metcalf, a coauthor on the study.

The researchers hope the results help wildlife managers reimagine how they communicate with landowners.

For example, wildlife managers and outreach coordinators could potentially increase attractant securing behavior by emphasizing collective factors in addition to individual factors.

"With any sort of outreach or messaging to landowners, there's maybe another opportunity to lean on these other collective factors and include more normative messaging. It might be more effective," Nesbitt said. "Instead of saying, 'Bears are dangerous. Secure your attractants,' say, 'It's really important to your neighbors that you secure your attractants. Your neighbor is doing it, too.' Our data suggests that kind of messaging is likely to be more effective at promoting voluntary behaviors."

The researchers also say, based on the findings, that wildlife agencies would be justified in increasing their efforts to connect with landowners in person, as well as with members of the public who play an important role in discussion networks.

"Our wildlife professionals are critical in connecting with the public, playing an integral role in educating, listening and empowering landowners," said co-author Libby Metcalf, UM's Joel Meier Distinguished Professor of Wildland Management.

While large carnivore populations are decreasing across most of the globe, grizzly and black bear populations are increasing in Montana, offering a unique locale to study how humans and wildlife interact. Nesbitt and her co-authors say understanding how to manage conflict with large carnivores has never been more pressing.

"We need a more comprehensive understanding of how people behave in these situations, and it's often not as simple as we think," Alex Metcalf

said.

More information: Holly K. Nesbitt et al, Collective Factors Reinforce Individual Contributions to Human-Wildlife Coexistence, *The Journal of Wildlife Management* (2021). [DOI: 10.1002/jwmg.22061](https://doi.org/10.1002/jwmg.22061)

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