

What happens when wildlife species take up residence in densely populated areas?

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Credit: Jason Holley

You'd think it would take a pretty exotic ecosystem to surprise Chris Whittier, V97. He has, after all, treated wild gorillas in six national parks in central Africa.

But when Whittier, now director of the master's in conservation medicine program at Cummings School, used motion-sensing infrared

cameras from his ongoing Africa work to figure out what was digging up the dirt around his lamppost at home, he was stunned. Over just a few evenings, red and gray foxes, a fisher, opossums, [coyotes](#), [deer](#), raccoons, a wild turkey, a woodchuck and a skunk (the actual culprit) all passed through his suburban yard in Grafton, Mass.

"Of course, I knew logically that these animals are around," he says, "but I never expected to see them all here."

In just a few decades, many species of wildlife have relocated to some of the most densely populated regions of the country. Because of development sprawl and the successful restoration of species and forest habitats damaged by human activity, we now routinely encounter wild birds and animals that our parents and grandparents rarely saw. Today, the eastern third of the country has the largest forest in the contiguous U.S. as well as two-thirds of its people, reports Jim Sterba in his 2013 book *Nature Wars*.

Many wild animals don't simply adapt to—but actually thrive in—the artificial habitats we create. Canada geese, raccoons, coyotes, skunks, opossums and deer all seem to prefer the suburbs to more rural areas, says Allen Rutberg, director of the Center for Animals and Public Policy at Cummings School.

"We fertilize and water our yards, creating a super-productive environment for anything that eats plants or eats living things that eat plants," he says. Birdfeeders, pet food, unsecured trash and other features of suburban backyards attract raccoons, skunks, bears, coyotes and other wild visitors.

Perils in Suburbia

Because of the speed of these changes, evolution hasn't exactly equipped

wildlife with the mechanisms to cope with the dangers of the suburban landscape.

"Many of our patients are brought in for trauma resulting from human causes," says Flo Tseng, director of the Wildlife Clinic at Cummings School. Admissions to the clinic have increased 41 percent in just over a decade, mostly due to accidental clashes between animals and people. Cars hit all manner of furry, feathered and scaly creatures. Fences and soccer nets ensnare birds. Nestlings and baby squirrels crash to the ground when homeowners prune trees and shrubs. Lawn mowers chew up rabbit nests.

On a recent day at the Wildlife Clinic, staffers hover around a painted turtle that looks like Humpty Dumpty; its shell was shattered during a run-in with a car. Staff veterinarian Maureen Murray, V03, undertakes the painstaking process of putting the reptile back together again. She inserts a tiny breathing tube to administer anesthesia, and then drills tiny holes around the edges of the fractured shell. She threads fine wire through the holes, pulling it tight.

The shell will heal nicely around the wires, and the turtle will be released when it's deemed healthy.

People who bring animals into the clinic receive a case number for the patient they've delivered—and many of them call back, sometimes daily, for updates. "It's always great to be able to share good news," says Jessica Zorge, the staff assistant who helps triage the 100 to 250 phone calls the clinic receives every day during the busy season from April to August. "Since they took the time to bring an injured animal in, it's satisfying when you can let them know it will return to the wild."

Wild animals are more likely to die from trauma than our pets. A cat or dog attack on a baby bunny might not look severe initially, but Tseng

says that many of these animals are not in great shape by the time people bring them to the Wildlife Clinic. "The stress of the initial injury or illness, followed by captivity, can sometimes be too much, especially for prey species," she says. Wild animals that suffer even a mild gash from a dog or cat's teeth often go into shock and die as a result of nasty infections caused by the bacteria found normally in pets' mouths.

"Treating wildlife is a lot different from treating pets," Tseng says. "In small-animal medicine, you can do a lot more medically and surgically with the patients."

The Wildlife Clinic staff weighs the benefits of giving medications and performing procedures against the potential harm of handling a wild animal too much. "We try to be as hands-off as we can," Tseng says. "Every time we touch a wild animal, it thinks it's going to be eaten. It's like an alien-abduction experience for them."

Wild patients can't get the level of follow-up care that makes the prognosis better for our companion animals. "Our patients have to be pretty perfect to be released," says Tseng. A dog hit by a car may have an owner willing to administer daily pain relievers to keep it comfortable for the rest of its life, she notes. But a coyote with the same injury has to be able to run fast enough to catch its meals.

Deer and Disease

Of course, not only wild animals suffer from living too close to people. We have our own concerns about living in such proximity.

Even if you appreciate that bats eat pest insects and help pollinate plants, you probably don't want them living in your attic, says Linda Huebner, the former assistant director of advocacy at the Massachusetts Society for the Prevention of Cruelty to Animals who oversaw its Living with

Wildlife program for six years. "Although the risk is very small, bats are still the source of nearly all U.S. rabies cases in humans," she says.

Raccoons not only tear apart garbage bags, they also shed a roundworm in their feces that's potentially fatal to humans, she says. And although harmless in most locations, beavers can flood out septic systems and roads with their impressive dams.

Potential problems like these don't just create human-animal conflict—they also spark human-human conflict, says Huebner, who received a master's degree in animals and [public policy](#) from Cummings School in 1996. "You know who always seem to own homes right next to each other? Someone who wants to see wildlife every day—and someone who doesn't," she says.

When it comes to polarizing creatures, perhaps none is as divisive as the white-tailed deer.

"Deer are evil. You can quote me on that," says Sam Telford, an expert on tick-borne diseases and a professor at Cummings School. An animal lover, Telford says he's a public health official at heart—and that Bambi's offenses speak for themselves.

Telford has spent 30 years studying how the deer population is related to the number of ticks present in an area—he's found as many as 300 ticks on a single deer. "That's only one week's accumulation," he says, "and if half of those are female, that's 150 ticks, each enjoying a meal that will allow it to lay another 2,000 eggs."

Deer ticks can carry five different infectious diseases that affect people, Telford says. The alarming growth in Lyme disease cases alone—they nearly doubled between 2004 and 2009, when almost 38,500 people were diagnosed in the U.S.—is reason enough to be grim about ample

deer populations. "Car accidents [involving deer] are a public health issue, too," notes Telford.

Most communities in eastern Massachusetts have about 20 to 25 deer per square mile, according to Telford. Rutberg notes that in the Mid-Atlantic states, including New York, Pennsylvania and Maryland, there can be 30, 40 or more deer per square mile.

To curb the incidence of Lyme disease alone, Telford and Rutberg say the deer population needs to be reduced to five or fewer animals per square mile. This could be best achieved through an increase in hunting, Telford says, because it's a free solution. However, in the densely populated Northeast, fewer and fewer suburbs have land open to hunting with firearms. "Out of two square miles, there might be 50 or 100 acres where you can discharge a gun," putting more than 90 percent of the land off-limits, Rutberg says.

As a result, public discussion in many communities has turned to an expansion of bow hunting. Throughout the eastern U.S., town meetings about deer control draw equally large numbers of hunting supporters and opponents.

Such was the case in Hastings-on-Hudson, N.Y., a small village 16 miles north of Manhattan. As a result, the mayor opted for a radically different approach to reduce the 120-deer herd that has overrun the town's two square miles: the country's first birth-control study of free-roaming deer.

Rutberg will lead a team seeking to inject 40 to 50 does with a contraceptive vaccine over the next two years. The community hopes the vaccines—which work for at least two years with one dose and have no harmful side effects—will reduce the [deer population](#) by 40 percent.

"It won't be easy, but we wouldn't be attempting it if wasn't doable," says

Rutberg, who has studied the effectiveness of birth control in deer and wild horse populations for more than 20 years. "We've shown that we can reduce deer populations in relatively confined spaces" by 30 to 60 percent, he says.

More than 50 residents volunteered to assist with the research project. Children and adults will track the movement of deer in their neighborhoods and report to an online database. Others will monitor whether deer consumption of seedlings declines as a result of the program. The local high school environmental studies class is helping set up fenced areas to assess how deer grazing affects local vegetation.

Rutberg says that he's impressed by the extent to which community members have been involved in the birth-control project. "There's a lot of concern these days about what is known as nature-deficit disorder," he says. The term was coined by the journalist Richard Louv in his 1995 book *Last Child in the Woods*, in which he argues that kids' behavioral problems are on the rise because they're spending less time outdoors. The Hastings-on-Hudson program, Rutberg says, "has provided an extraordinary opportunity for people to get more engaged with wildlife and their own habitat."

Too Close for Comfort

Tips for sharing the picket-fenced jungle

Because we increasingly share the same habitat with wildlife, we can't completely avoid one another. Cummings School experts offer these tips for keeping your family, pets and backyard wildlife safe:

Don't handle wild animals. All wild mammals can carry rabies. Raccoons and skunks also transmit a roundworm parasite that can be fatal to humans.

Avoid inadvertently feeding wild mammals. Many of us love to watch birds at a feeder. But the seed hulls and nuts that fall to the ground can attract nuisance animals like rats. Bird feeders can also tempt bears or other large animals in search of the same high-calorie feed as well as coyotes that hunt seed-eating rodents. Feeding your pets or neighborhood cats outdoors or just inside a pet door also can invite unwanted encounters. Wildlife can smell pet food from afar.

Keep your pets indoors or supervise them outside. You don't want your cat or dog interacting with native critters that carry diseases or parasites. Domesticated animals are also easy prey for coyotes, fishers, great horned owls and other predators. Free-roaming cats and loose dogs also kill and injure large numbers of birds and small mammals.

Don't try to save animal babies. Young animals often appear to be abandoned, but that's usually because their mother is limiting her visits to the nesting area to prevent predators from finding them. A young animal's best chance for survival is with its parents. If you know the young are injured or the mother is dead, a licensed wildlife rehabilitator can advise you about how best to proceed. Search for a rehabilitator by state and species, using the resources listed at nrawildlife.org/content/finding-rehabilitator, or call the Cummings School Wildlife Clinic staff at 508.839.7918.

Make your home and yard a conflict-free zone. To prevent wild animals from setting up shop where you don't want them, pay attention to home maintenance. Keep your yard free of brush piles, trim branches away from the roof, cap the chimney and plug any holes in the foundation. If you hear or see signs of an animal around your home, the MSPCA has an interactive website that can help you identify the culprit and solve the problem humanely: mspca.org/intruderexcluder.

Don't relocate wildlife. Moving an animal from your yard is illegal in

many states, and also inhumane. Imagine if someone threw you in the back of a van and dropped you off someplace without your family, food or shelter? Moving a [wild animal](#) can also promote disease transmission. The raccoon rabies strain now widespread in the eastern U.S. can be traced to 1978, when Virginia hunters imported raccoons from Florida and Georgia, where the disease had previously been confined.—GR

Opinion Gaps

Women and pet owners are more likely to oppose lethal methods for controlling wildlife

Wildlife policy traditionally has focused on two groups of stakeholders: farmers who want to keep pests and predators from hurting their crops and livestock, and game enthusiasts who seek ample populations for hunting and fishing. Now that more and more wild animals have moved into our backyards, those with far more varied perspectives want a say in how conflicts and conservation are handled.

Public opinion gatherers, however, continue to disregard a significant number of stakeholders—namely women, says Jennifer Jackman, an associate professor of political science at Salem State University in Massachusetts who holds a master's in animals and public policy from Cummings School. Most polling about these issues relies on published telephone numbers to gather feedback—roughly 70 percent of which are listed under a man's name, she says.

The lack of a female voice hurts public policy because "gender is one of the most significant factors when it comes to attitudes on wildlife issues," Jackman says. Research shows that women are far more likely than men to oppose hunting, trapping and lethal methods to manage wildlife, she says. Women also favored animal-protection measures

more than men in 11 state ballot initiatives, including ones that banned dove hunting in Michigan (2006), cockfighting in Oklahoma (2002) and body-gripping traps in Massachusetts (1996).

To gather more balanced data for her own research, Jackman used voter lists—typically 53 percent of registered voters are women—when she surveyed attitudes about coyotes on Cape Cod in 2005 and 2012. She chose Cape Cod for her research because it was one of the last areas in the Northeast to be colonized by coyotes and because human-coyote interactions frequently occur in this fragmented, semi-urban habitat.

Coyotes Not So Ugly

Both surveys sought to assess public support, fears and other attitudes about Cape coyotes. The surveys included questions about pet ownership and care.

"Both the 2005 and 2012 surveys found a significant gender gap on policy issues, with women far less likely to support policy using lethal interventions," says Jackman. "But overall, in both men and women, there was a growth in acceptance and tolerance of coyotes over the seven-year period."

Results from both surveys also revealed a statistically significant "pet gap" in attitudes. Although harm to pets was the biggest source of complaints related to coyotes, pet owners were still more supportive and less fearful of coyotes—and more opposed to lethal interventions—than those without pets, she says.

Owners' perceptions of their pets may offer clues about how human behavior contributes to the escalation or resolution of conflicts with coyotes. Jessica Bridgers, who received her master's in animals and public policy from Cummings School in February, analyzed interviews

with 73 survey respondents to explore that notion as part of her coursework.

Her research, which was supported by a grant from the Elizabeth A. Lawrence Endowed Fund, found that owners who view their pets as "wild"—describing a dog as "cunning" or cats as "little tigers," for example—are more likely to let their animals outside unattended.

"These owners believe their pets have the right to be interacting with wildlife and the natural environment," Bridgers says. Other owners don't view their pets as having a rightful place in the natural world. "As a result," she notes, "they're more likely to keep pets separate from nature, either indoors, fenced in or on a leash."

Given that pets are the biggest source of conflicts with coyotes in urbanized areas, Jackman and Bridgers believe data like theirs can help local officials develop better solutions to manage the wild animals. "As we craft policies to address nuisance [wildlife](#) in the suburbs," Jackman says, "it's important to know if people are changing their own behaviors."

Provided by Tufts University

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