

Avoid Places Coyotes Roam

 Night image of cat with mouse in its mouth

Cat and Mouse: This camera trap image of a cat with a mouse in its mouth is one of millions captured by students and citizen scientists as part of the project.

For Immediate Release

June 30, 2015

Domestic cats might be determined hunters, but they stick mostly to residential areas instead of venturing into parks and protected areas where coyotes roam. That's the key finding from a North Carolina State University analysis of more than 2,100 sites—the first large-scale study of free-ranging cats in the U.S. published in the *Journal of Mammalogy*.

Why is it important to know where 74 million pet cats spend their time away from home?

"Domestic cats are estimated to kill billions of birds and small mammals each year," says lead author Roland Kays, a zoologist with NC State's College of Natural Resources and the N.C. Museum of Natural Sciences. "Knowing where they hunt helps assess the risk to wildlife."

Kays and his colleagues used camera trap data collected by hundreds of students and citizen scientists in six Eastern states. They analyzed millions of images from motion-sensitive cameras located in 32 protected sites and the urban neighborhoods of Raleigh, North Carolina.

Cats were concentrated in residential areas and small urban forests, such as those along Raleigh's greenway trails.

"We detected cats 300 times more often in residential yards, where coyotes are rare, than in parks," Kays says.

The more coyotes in an area, the less likely cats were to venture nearby. The one area where both cats and coyotes overlapped was small urban woodlots.

"Most parks had no cats at all," Kays says. "Our cameras photographed a single cat at some parks, but we only found evidence for more than one cat in two of the 32 parks we surveyed."

Another interesting finding: Cats that did venture into nature preserves kept the same nocturnal schedule as coyotes, while those in residential areas were diurnal.

The study is part of the eMammal project, which enables citizen scientists to collaborate with researchers at the Smithsonian Institution and NC State University to document animal activity. Co-author Robert Costello is with the Smithsonian National Museum of Natural History. Tavis Forrester, Megan C. Baker and William McShea are with the Smithsonian Conservation Biology Institute. Arielle W. Parsons works with the North Carolina Museum of Natural Sciences. Elizabeth L. Kalies and Joshua J. Millspaugh are with the University of Missouri. George Hess is with NC State University.

This research was funded by National Science Foundation grants 1232442 and 1319293, the VWR Foundation, the U.S. Forest Service, the N.C. Museum of Natural Sciences and the Smithsonian Institution.

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Note: An abstract of the paper follows.

"Cats are rare where coyotes roam"

Authors: Roland Kays, Robert Costello, Tavis Forrester, Megan C. Baker, Arielle W. Parsons, Elizabeth L. Kalies, George Hess, Joshua J. Millspaugh, William McShea

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Abstract: Domestic cats (*Felis catus*) have caused the extinction of many island species and are thought to kill many billions of birds and mammals in the continental United States each year. However, the spatial distribution and abundance of cats, and their risk to our protected areas remains unknown. We worked with citizen scientists to survey the mammals at 2,117 sites in 32 protected areas and one urban area across six states in the Eastern USA using camera traps. We found that most protected areas had high levels of coyote (*Canis latrans*) activity, but few or no domestic cats. The relative abundance of domestic cats in residential yards, where coyotes were rare, was 300 times higher than in the protected areas. Our spatial models of cat distribution show the amount of coyote activity and housing density are the best predictors of cat activity, and that coyotes and cats overlap the most in small urban forests. Coyotes were nocturnal at all sites, while cats were nocturnal in protected areas, but significantly more diurnal in urban sites. We suggest that the ecological impact of free-ranging cats in the region is concentrated in urban areas or other sites, such as islands, with few coyotes. Our study also shows the value of citizen science for conducting broad-scale mammal surveys using photo-vouchered locations that ensure high data quality.

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3 RESPONSES ON "WHERE THE WILD THINGS AREN'T: CATS AVOID PLACES COYOTES ROAM"

Jenny says:

July 8, 2015 at 10:01 pm

Hooray! I am both a cat lover and wild bird lover and a lifelong birder. I know there is a strong negative reaction from the Audubon community against house cats because of their recently published study regarding cats killing birds. Could your new study mean that most of the bird-killing that is attributed to cats occur in our yards, and thus, would probably be robins, cardinals, house sparrows, etc., in other words, the common and highly abundant (and frequently non-native) bird species, NOT the highly endangered and rarer bird species? Also, does that billion killed figure also include animals like mice, rats, moles, voles, bunnies, squirrels, and even lizards, snakes, turtles, etc.? This could mean really good news if disseminated widely, for the much maligned felis catus!!

Thanks for the study!

Reply

Troi Perkins says:

July 9, 2015 at 3:04 pm

Hey Jenny!

Glad to see you are interested in the study!

NC State and the Museum of Natural Sciences also have another study that focuses specifically on pet outdoor cat movements across different landscapes. The study is a citizen science project called Cat Tracker (<http://cats.yourwildlife.org/>) in which the public can participate by tracking their pet outdoor cats with small GPS units that record where cats travel and gives owners a map of their cat's trip. This allows the public to become directly involved in research and also allows cat owners to see exactly where their cats travel when they are outside. So far we have tracked over 130 cats from across the US, Canada, and now Europe!

Our preliminary results show that cats are not venturing as far as we originally thought in the US and are instead sticking mostly to urban residential areas. This could change however if cats were in an environment where there is an absence of larger predators which is why we are currently seeking participants in Long Island, NY where there isn't an established population of coyotes yet.

As far as your question about what cats are killing specifically, we are trying to investigate that as well. We have a new study in which participants can send us their cats' hair and dry cat food so that we can run some stable isotope analysis on it and see if the isotope signatures of the hair match the cat food or if they are snacking on wildlife. While we can't tell for sure what exact animals cats are eating, we can at least tell a rough estimate of how much of their diet is composed of wildlife versus their cat food. Keep in mind though that cats sometimes kill without eating their prey!

The billion number came from a recent paper by Loss et al and is specifically talking about birds and mammals. They did say that 258 and 822 million reptiles and between 95 and 299 million amphibians could be killed by cats in the contiguous United States each year.

If you are interested in learning more about Cat Tracker and where cats go, please visit our website at <http://cats.yourwildlife.org/>.

Reply

Jenny says:

July 9, 2015 at 10:37 pm

Hi Troi!

Thanks for your response! It sounds like a fascinating study! I can see how difficult it would be to try and determine what the cats are actually eating. Stool samples, maybe? I would love to participate in it, but I keep all 4 of my cats indoors only (keeps them much safer and healthier), so I'm afraid all you'd find is kibble in their diet!

I visited the Cat Tracker website you mention and I am so glad that you are conducting this study of cats, their movements and diets. We really don't know where they go, do we? They are intriguing, intelligent, and beautiful animals. It is just a shame that there are so many millions of feral cats out there.

I saw something on TV recently that tracked a particular cat's movements through its neighborhood (in Britain, maybe?) with GPS and a collar camera that I thoroughly enjoyed. In fact, maybe that was Cat Tracker?!

I will continue to visit your website because I am so fascinated with all things-cat!

GO BACK!!!

Reply

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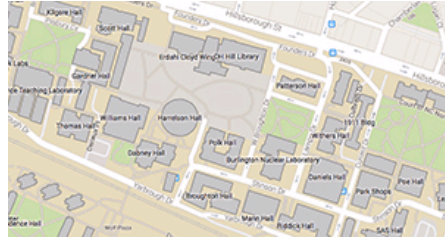
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