

'Stash your trash,' say rat researchers

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Rats. Can't live with them, can't live without them—or so it seems in a city like Chicago. Researchers from Lincoln Park Zoo's Urban Wildlife Institute and Davee Center for Epidemiology and Endocrinology set out to understand why. The findings are published Nov. 28 in *Frontiers in Ecology and Evolution*.

Rats are a unique species in that they have a global distribution and are consistently in close proximity to humans. This combination makes for possible risks to public health as well as damage to property. Nearly 46,000 rat complaints were made from April 2017—April 2018 in Chicago and researchers sought to see if complaints are accurate indicators of rat prevalence.

"At Lincoln Park Zoo we are continually trying to understand human-wildlife conflict and find solutions to mitigate stress on both humans and animals alike," said Wildlife Disease Ecologist Maureen Murray, Ph.D. "Rats—whether or not we like it—are a part of our ecosystem. They are a fascinating species that we actually have relatively little research available on and we aim to change this."

Murray has teamed up with Landmark Pest Management, a research-based pest management firm, for the ongoing study.

"Every city and urban property owner is required to manage [rats](#), so our discoveries about rats in Chicagoland may be applicable to help wildlife managers and urban planners in other cities as well," said Rebecca Fyffe, director of research at Landmark Pest Management.

Landmark tested whether areas with more rat complaints also had more rats by trapping rats across 13 community areas in Chicago. Then, researchers from the zoo compared rates of rat trapping success (or the number of rats trapped per night) as a measure of rat abundance compared to publicly available data on rat complaints, incomes, rental properties, and land cover. Amount of garbage, harborage (clutter), and structural integrity of buildings adjacent to the trapping sites were also measured to see if these increased rat problems at a more local scale.

The results? Rat complaints are indeed indicators of rat abundance. Areas with higher [complaint](#) rates did have an increased trap rate of rats.

In addition, the availability of uncontained garbage was a clear indicator of rat abundance—even more so than other attractants such as clutter or access points. Surprisingly, another outcome rose to the surface—neighborhoods with a high rate of rental units (vs. owned) had an increase of rats whereas vacant or abandoned lots showed a decrease in rats.

"This discovery is quite interesting," said Murray. "Additional research would need to be conducted but it seems that neighborhoods with high rental rates also had increased garbage and potential rat access points in alleyways, presumably due to the responsibility of maintenance being on the property owner rather than the tenant."

The study between Lincoln Park Zoo and Landmark Pest Management is ongoing. Future research questions include stress levels in rats and disease prevalence and indicators of risks to public health.

The moral of the story, "Stash your trash," says Murray. "The easiest way to ensure rats stay at bay is to secure trash in closed bins."

More information: Maureen H. Murray et al, Public Complaints Reflect Rat Relative Abundance Across Diverse Urban Neighborhoods, *Frontiers in Ecology and Evolution* (2018). [DOI: 10.3389/fevo.2018.00189](https://doi.org/10.3389/fevo.2018.00189)

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