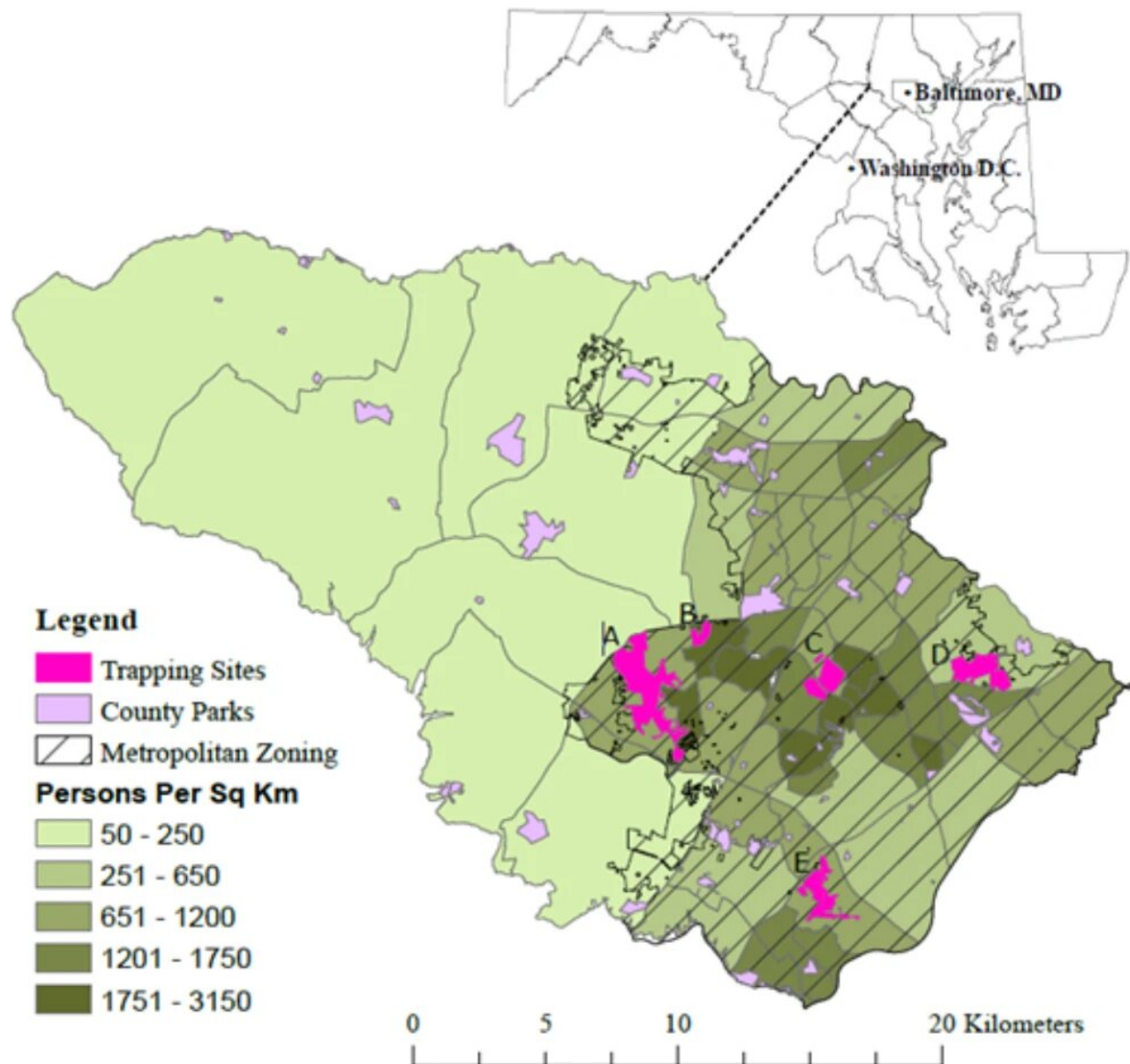


Hey suburbanites, meet the neighbors: Tick-carrying white-tailed deer

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Patterns of white-tailed deer movements in suburban Maryland: implications for

zoonotic disease mitigation. Map of Howard County, Maryland population density by census tract in persons per square kilometer (2017) and metropolitan zone containing the five county parks selected for deer trapping from 2017–2019. Other county parks are depicted as purple polygons. Individual trapping sites are labeled as A: Middle Patuxent Environmental Area, B: Cedar Lane Park, C: Blandair Regional Park, D: Rockburn Branch Park, and E: Wincopin Trails System/Savage Park. Credit: *Urban Ecosystems* (2022). DOI: 10.1007/s11252-022-01270-3

White-tailed deer are heavily overpopulated along the East Coast of the U.S., and they play an important role in spreading and supporting tick populations that transmit diseases like Lyme disease and anaplasmosis. Efforts to control deer populations have long been based on the assumption that deer live mostly in wooded parklands, primarily passing through neighborhoods at night to graze on gardens and landscaped yards.

A new five-year study by University of Maryland and USDA found that [deer](#) in suburban environments often bed down and spend the night within 50 meters of residential properties. It is the first study to reveal the detailed, hourly movements of white-tailed deer at different times of day throughout different seasons. The study was published online on September 19, 2022, in the journal *Urban Ecosystems*.

"We knew deer were in and around neighborhoods, but we didn't realize just how much they were living in the neighborhoods," said Jennifer Mullinax, assistant professor in the UMD Department of Environmental Science & Technology and senior author of the study.

"A big takeaway from this study is that neighborhoods are the home range of suburban [white-tailed deer](#). Agencies monitoring and estimating suburban [deer populations](#) may be missing a huge part of the [population](#)

if they focus their monitoring efforts only on deer in wooded parks and undeveloped areas, because a lot of the deer are actually living in the neighborhoods, especially at night and in winter."

The study results offer important guidance for [suburban communities](#) seeking to reduce the risk of tick-borne illnesses. An abundance of deer in residential areas serves as a reservoir for ticks, increasing their numbers and the risk of human exposure to tick-borne [disease](#). Reducing tick populations, by removing deer or treating areas where deer bed down, for instance, can help to reduce that reservoir and limit the spread of disease.

"We used to think people mostly got Lyme disease when they walked in the woods," Mullinax said, "But recent studies have shown they're getting Lyme disease in their own backyards, and now that we know the deer are living right there too, it makes more sense."

The researchers captured and collared 51 deer from five parks located in the metropolitan area of Howard County, MD. The highly suburban area included residential neighborhoods, schools, businesses, and patches of open space or undeveloped land. The collars contained high-resolution GPS trackers that recorded deer locations every hour for 62 to 116 weeks (1.19 to 2.23 years).

The researchers found that deer tended to avoid residential areas during the day, but moved into residential areas nightly, especially in winter, often sleeping very near the edges of lawns and yards surrounding houses and apartment buildings. On average, 71 and 129 residential properties were found within female and male core ranges, respectively.

Armed with this new, high-resolution data on where deer are during different times of day and at different seasons will help communities reduce deer and tick populations and potentially lower the rates of

human exposure to tick-borne diseases.

More information: P. Roden-Reynolds et al, Patterns of white-tailed deer movements in suburban Maryland: implications for zoonotic disease mitigation, *Urban Ecosystems* (2022). [DOI: 10.1007/s11252-022-01270-3](https://doi.org/10.1007/s11252-022-01270-3)

Provided by University of Maryland

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