Infected deer ticks moving into New York City

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There has been an "unprecedented increase in locally acquired cases in New York City," writes VanAcker in the journal *Emerging Infectious Diseases*. [2] In response, VanAcker and colleagues launched a study to determine tick densities and *B. burgdorferi* infection prevalence in nymphal deer ticks (*I. scapularis*) in New York City's public parks.

They also examined the effect of landscape composition and configuration on tick populations and infection rates.

Investigators collected 560 ticks from 24 parks throughout all 5 boroughs, which included Staten Island (13), Manhattan (2), Brooklyn (2), Bronx (3) and Queens (4).

"At least 1 *I. scapularis* nymph [tick] was found at 17 of 24 parks surveyed throughout NYC," the authors explain.

Meanwhile, 10 of the 17 parks had more than 6 nymphs and were considered to have established deer tick populations. All of these parks were on Staten Island (with the exception of Pelham Bay Park in the Bronx).

At each park, between 8% - 40% of the ticks tested positive for *B. burgdorferi*. The average nymphal infection prevalence was 26.6%.

Interestingly, the parks which did not have established tick populations also did not have many deer. This "indicates a strong link between deer and presence of *I. scapularis* ticks in NYC parks," the authors write.

> **"We found forested parks with vegetated buffers and increased connectivity had higher nymph densities," VanAcker writes, "and the degree of park connectivity strongly determined *B. burgdorferi* nymphal infection prevalence."**

According to the authors, this study challenges the belief that tick-borne diseases are merely a risk to those living in suburban regions and natural settings.

So, why are ticks migrating into New York City? VanAcker and colleagues suggest:

- "Green space design affects vector and host communities in areas of emerging urban tick-borne disease."
- "Locally dispersing or migrating passerine birds play a role in moving immature ticks longer distances."

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References:

1. Daskalakis DC. Department of Health and Mental Health. Advisory #14: tick-borne disease advisory. New York City, NY, 2017. [cited 2019 Jan 15].
2. VanAcker MC, Little EAH, Molaei G, Bajwa WI, Diuk-Wasser MA. Enhancement of Risk for Lyme Disease by Landscape Connectivity, New York, New York, USA. Emerg Infect Dis. 2019;25(6):1136-1143.
