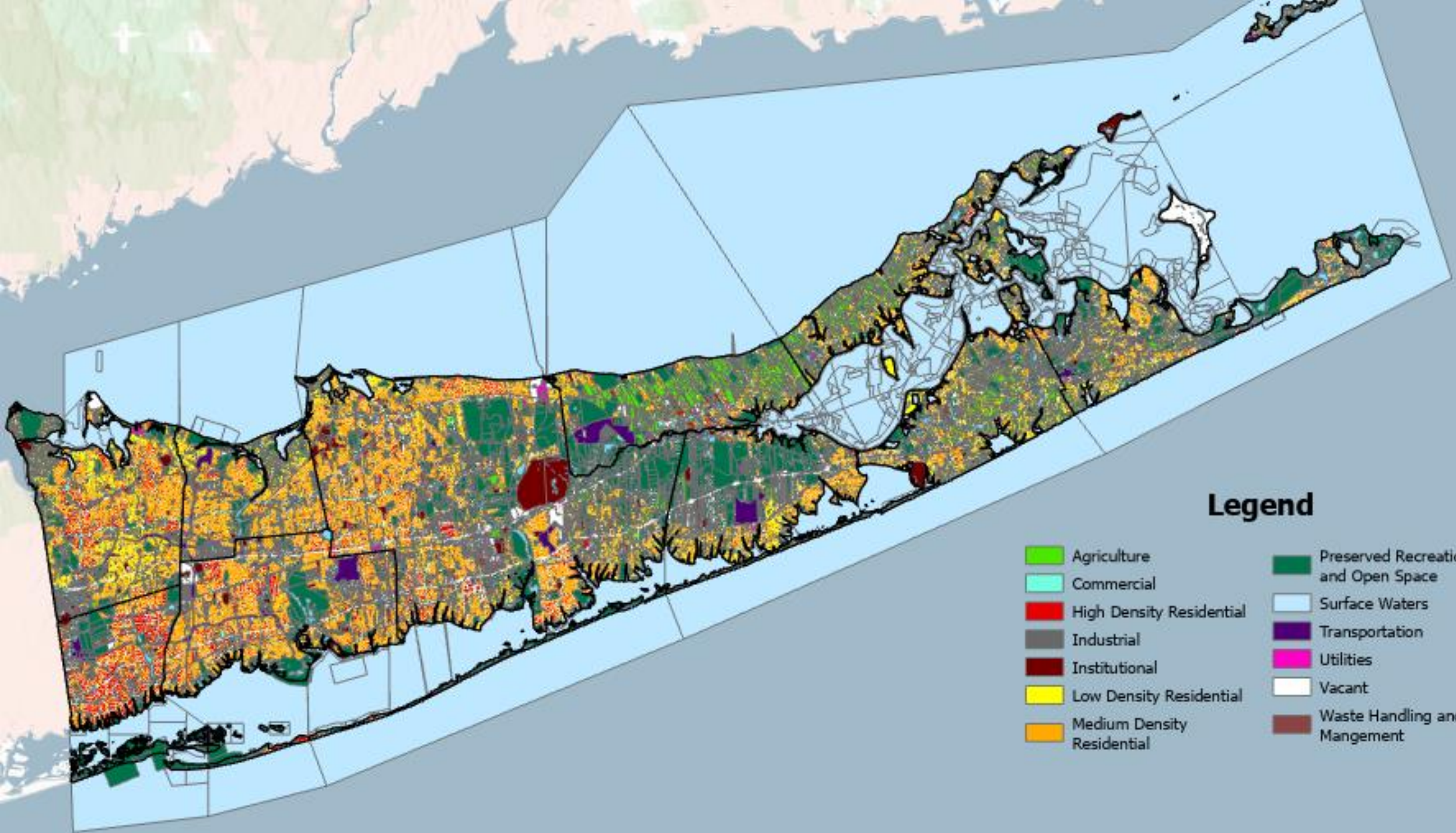


Analysis of Lyme Disease Burden Between Eastern and Western Suffolk County

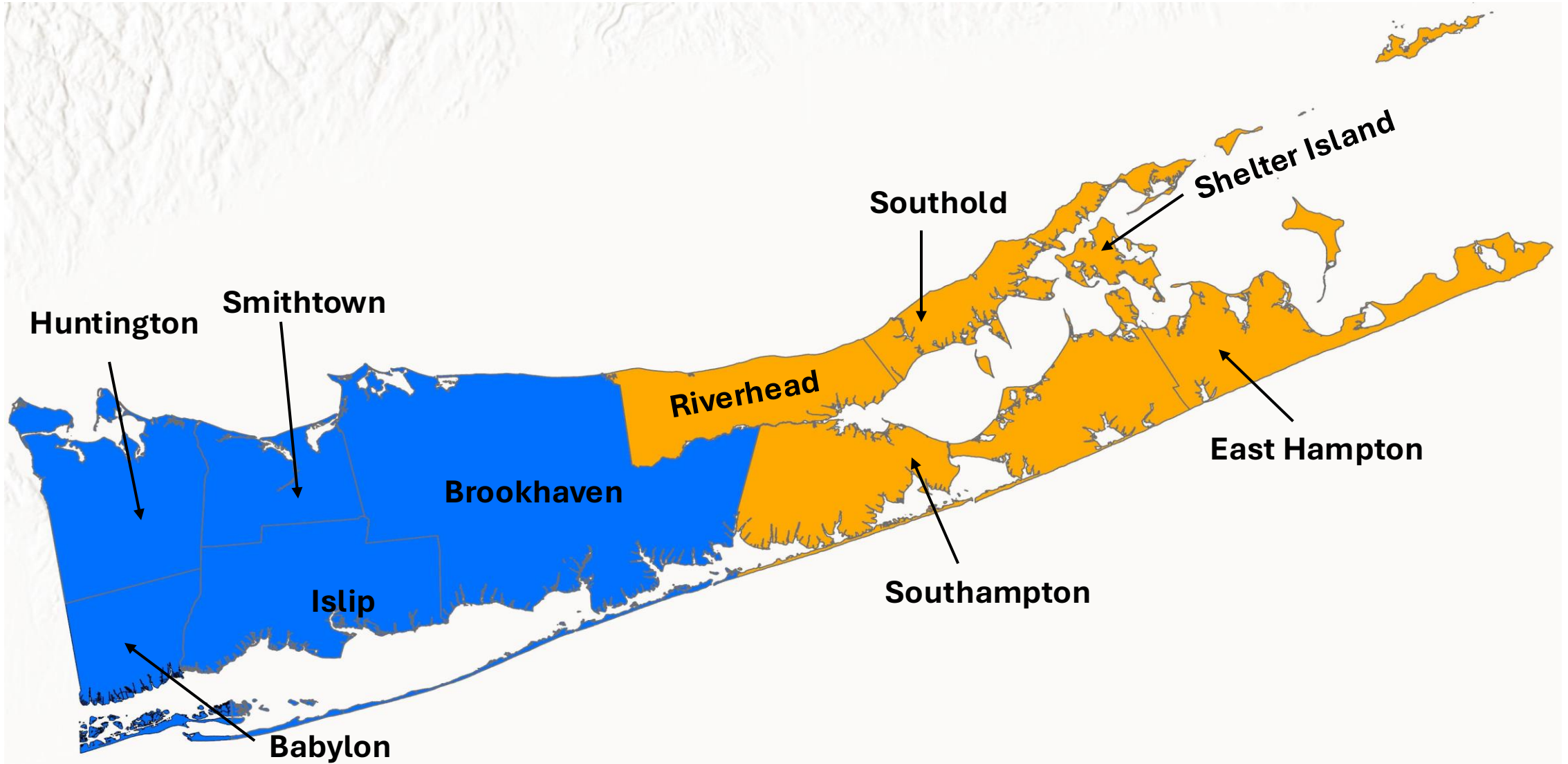
Abhishek Pandey M.S.

Public Health Fellow II

SCDHS Arthropod-Borne Disease
Laboratory



The Regions: East Vs. West

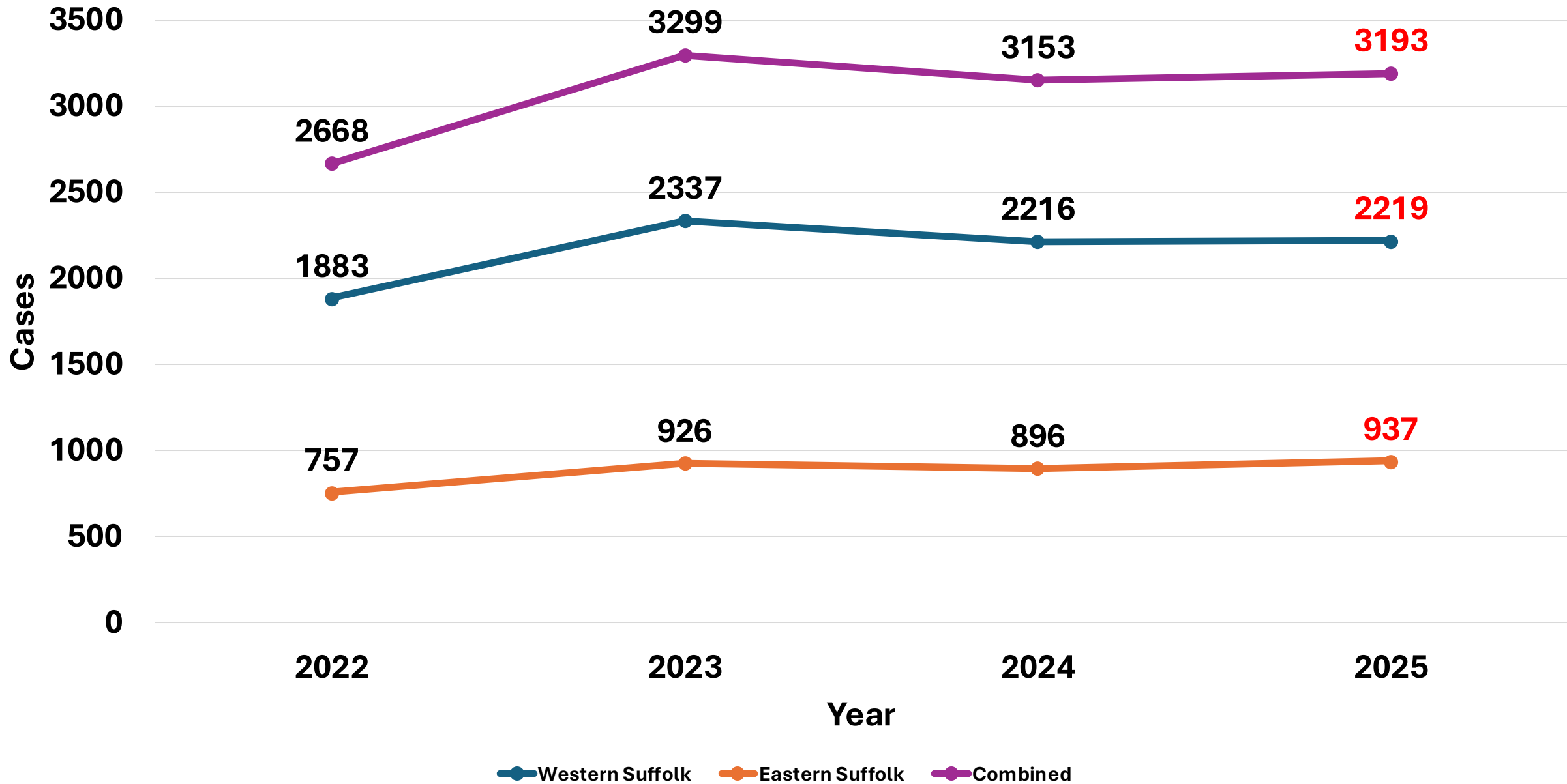


Goals of this analysis

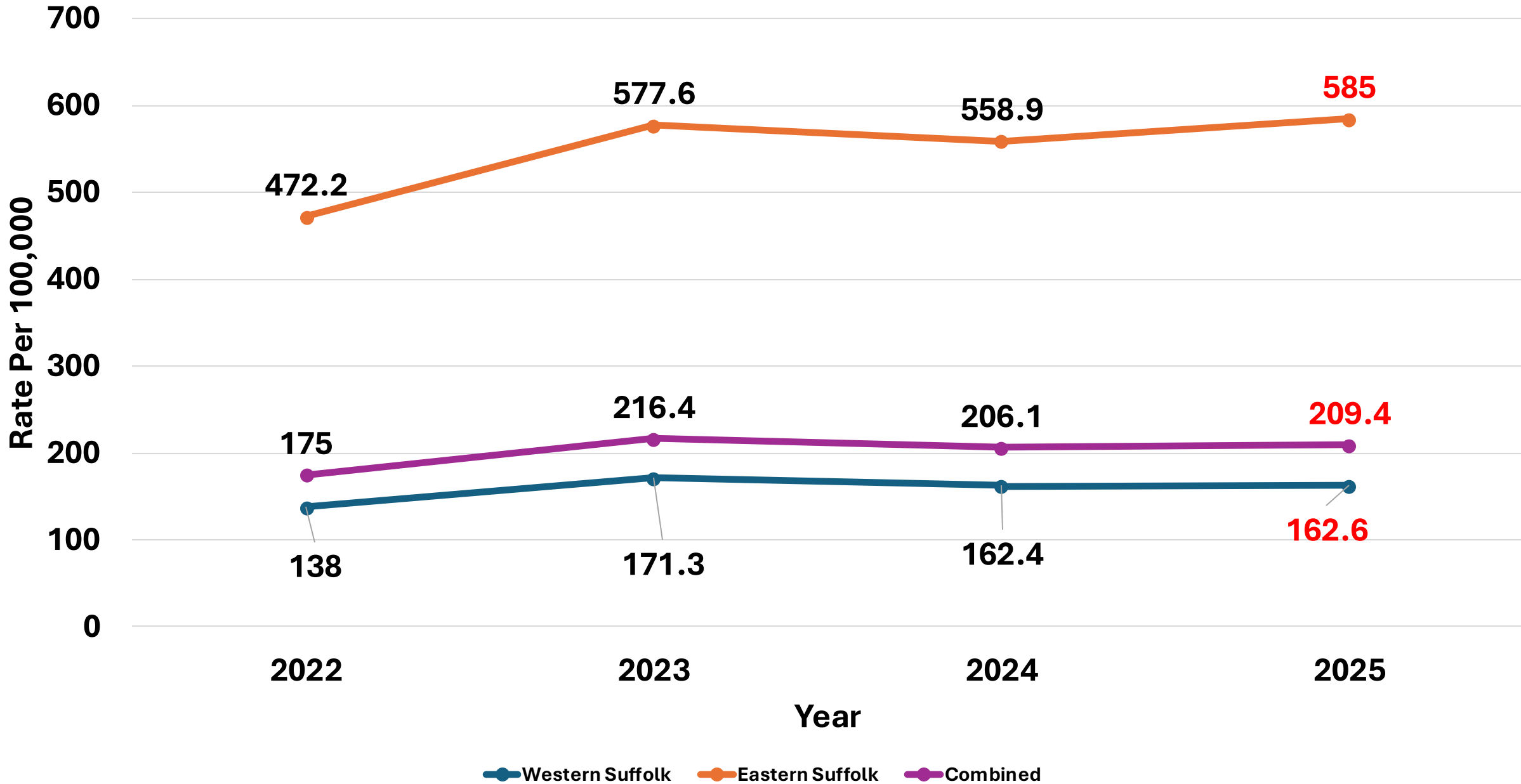
- Analyze geographic and ecological differences in tick-borne disease burden.
- Evaluate spatial and temporal trends in tick-borne diseases.
- Identify limitations and challenges in vector-borne disease surveillance.



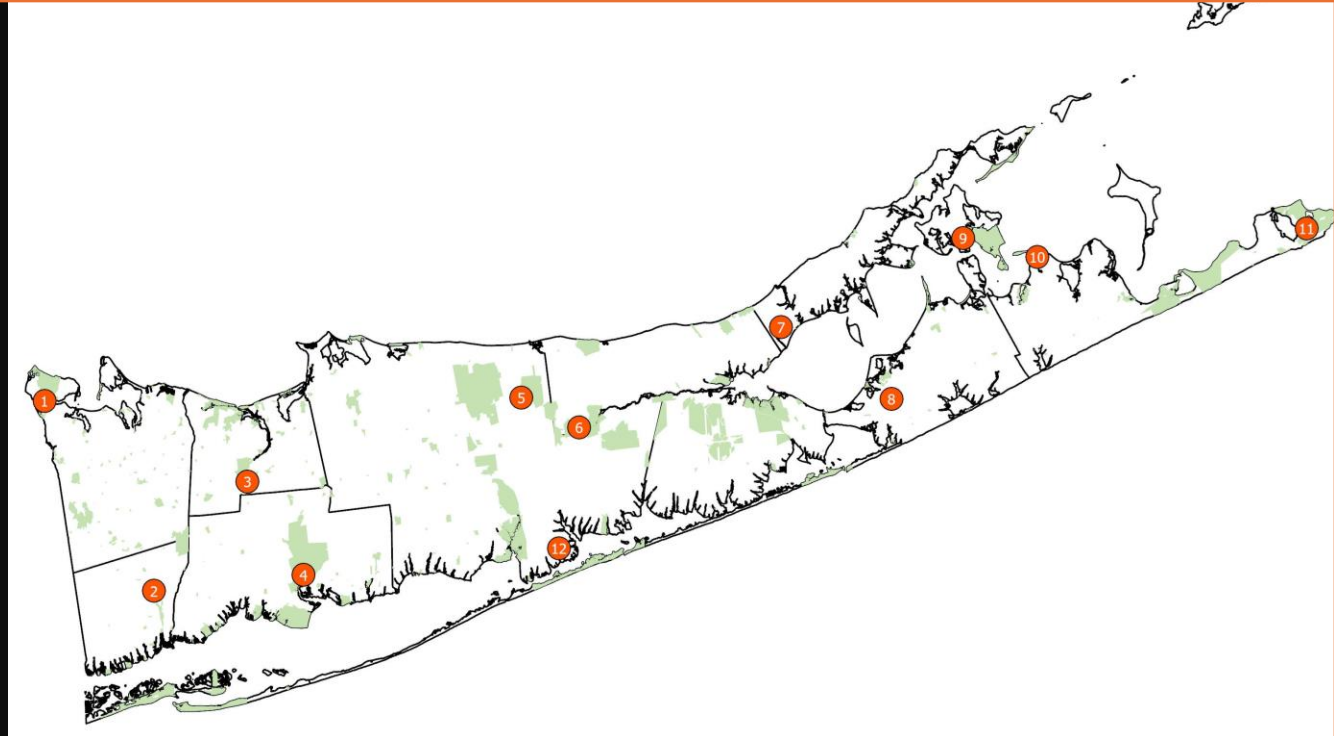
Lyme Disease Cases



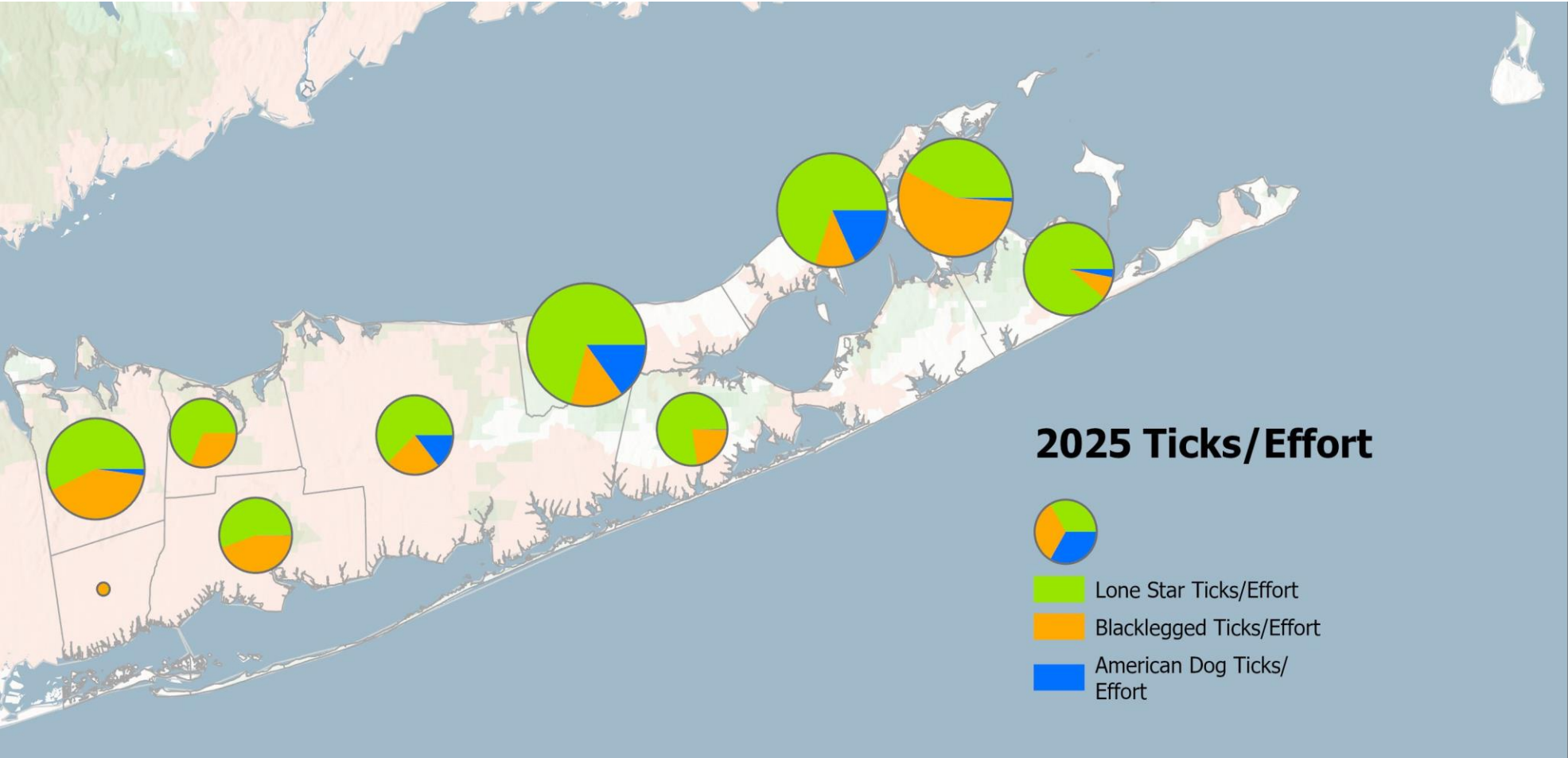
Lyme Disease Rate Per 100,000



Fieldwork



Number of Ticks Collected in 2025



Entomological Risk Index

- Entomological Risk Index (ERI) is a metric used in vector-borne disease surveillance to estimate the risk of human exposure to infected vectors (such as ticks).

Formula:


$$\frac{\textit{Total Black Legged Ticks (Nymph or Adult) collected at location}}{\textit{Total distance travelled at location (m}^2\textit{)}} \times \textit{(Infection Rate of tested ticks at location)}$$

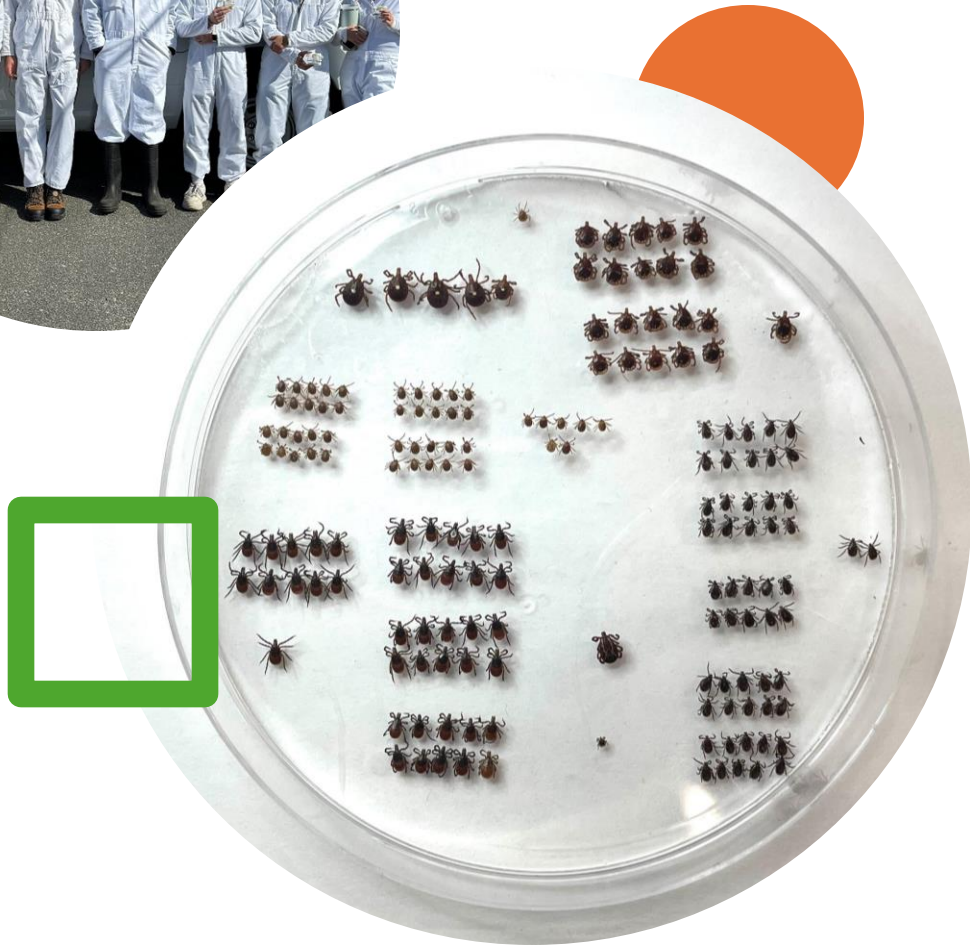
Investigation of ERI Between Eastern and Western Suffolk County

- East has a higher nymphal ERI but weakly linked to incidence (borderline).
- Adult ERI strongly tracks incidence in the east.
- Interaction test confirms regional effect modification for adult ERI.



ERI Between Eastern and Western Suffolk County Cont.

- **Biology:** Adult ticks are more abundant and infected in the east; nymphs matter more in the west.
 - **Environmental:** East has more wooded habitats. West is more urban.
 - **Ecology:** Deer density and host structure may favor adult ticks in the East.
- 



Thank You For Listening!

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