Ticks and Tick-borne Disease in New York State

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Arthropod-borne Diseases

Arthropod-borne Diseases

- Diseases transmitted by mosquitoes, ticks, fleas, and other insects
- Found worldwide
- A total of 642,602 cases of arthropod-borne disease were reported in the U.S. and its territories from 2004 through 2016*

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*CDC Vital Signs: Trends in Reported Vectorborne Disease Cases — United States and Territories, 2004–2016 May 4, 2018 / 67(17);496–501

Tick-borne Diseases

- Number of reported tickborne disease cases more than doubled from 2004-2016
  - 7 new pathogens were discovered or recognized in the U.S. as being able to infect people

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*CDC Vital Signs: Trends in Reported Vectorborne Disease Cases — United States and Territories, 2004–2016 May 4, 2018 / 67(17);496–501

Tick-borne Diseases

- Why are case numbers increasing?
  - Expansion of areas where ticks are found
  - More pathogens
  - More people at risk (i.e., travelers)
  - Weather, environment, and climate

Tick-borne Diseases in NYS

Tick Talk

~30 species of ticks are found in NYS

10 species commonly bite humans

4 species can potentially transmit diseases **(in New York)**

Deer tick
Ixodes scapularis

American Dog tick
Dermacentor variabilis

Lone Star tick
Amblyomma americanum

Woodchuck tick
Ixodes cookei

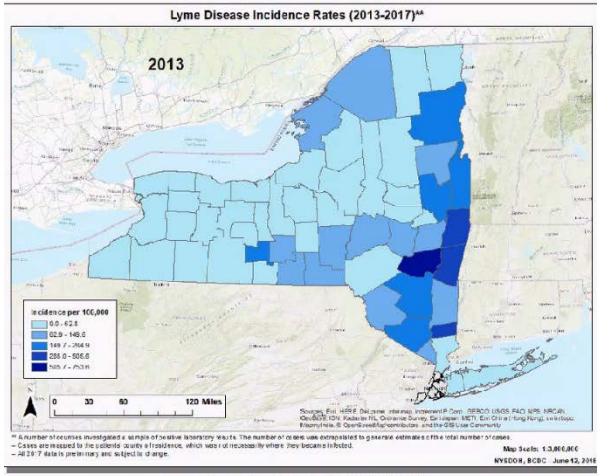
Tick-borne Disease Transmission

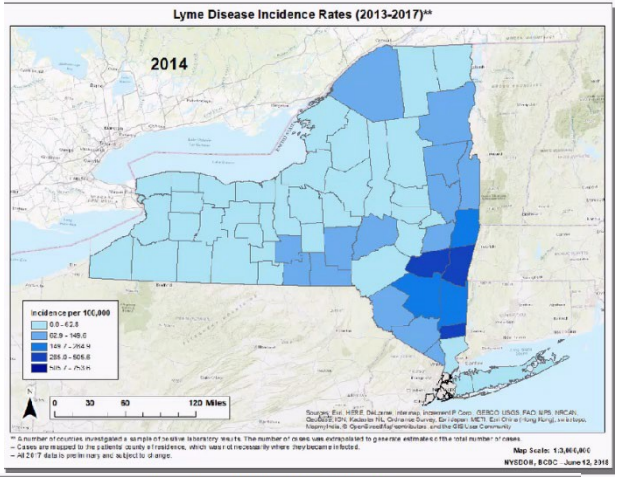
American Dog tick: → Rocky Mountain spotted fever

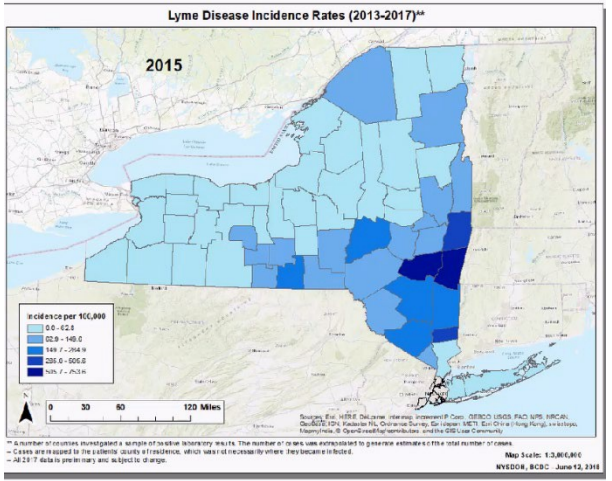
Lone Star tick: → Human Monocytic Ehrlichiosis (HME)

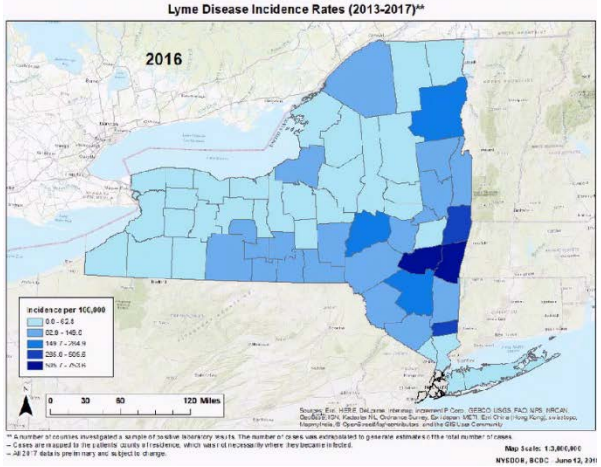
Deer (black-legged) tick: → Lyme disease & Babesiosis, Human Granulocytic Anaplasmosis (HGA), Deer Tick Virus (Powassan)

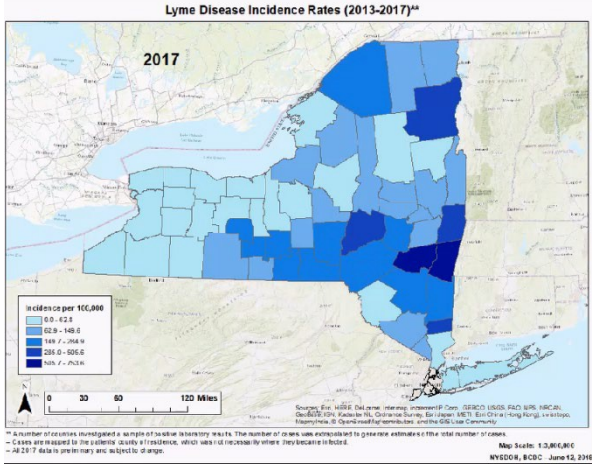
Woodchuck tick: (Groundhog tick) → Powassan (Encephalitis) Virus











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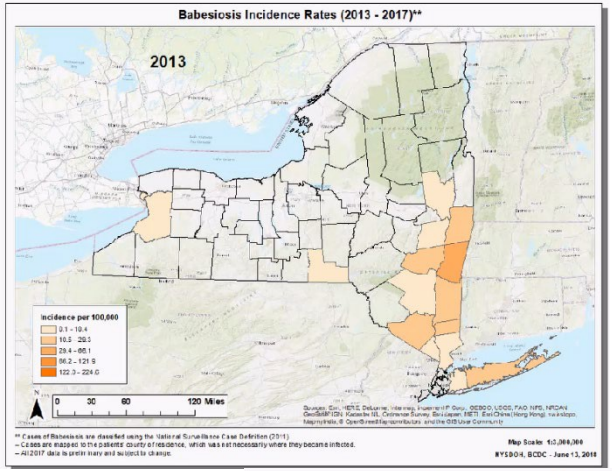

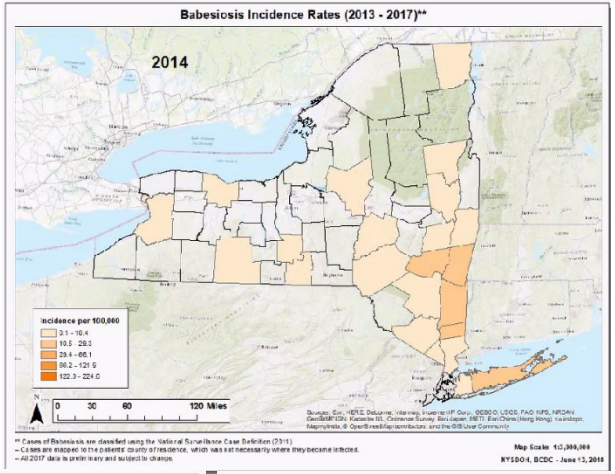

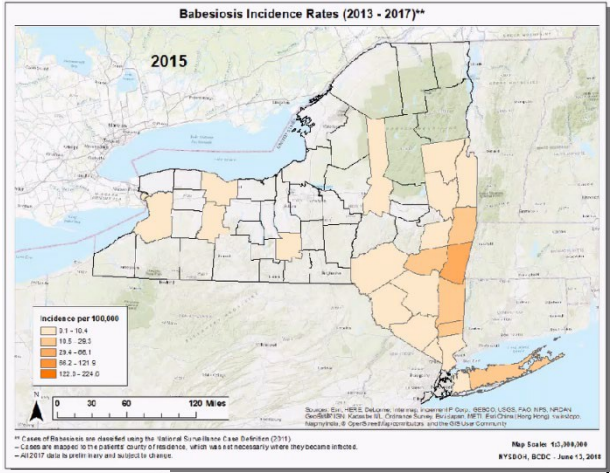

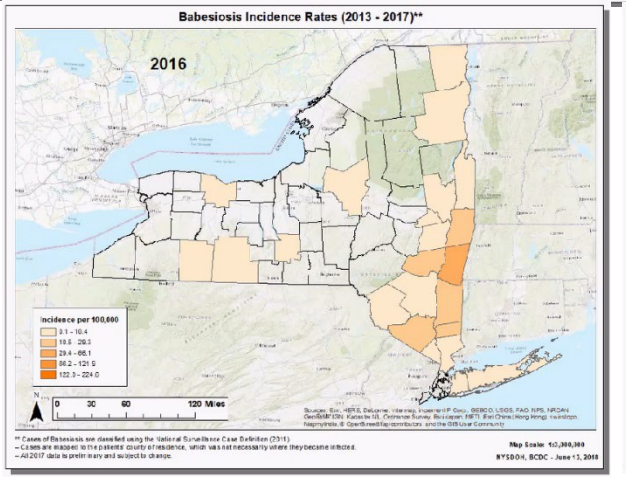

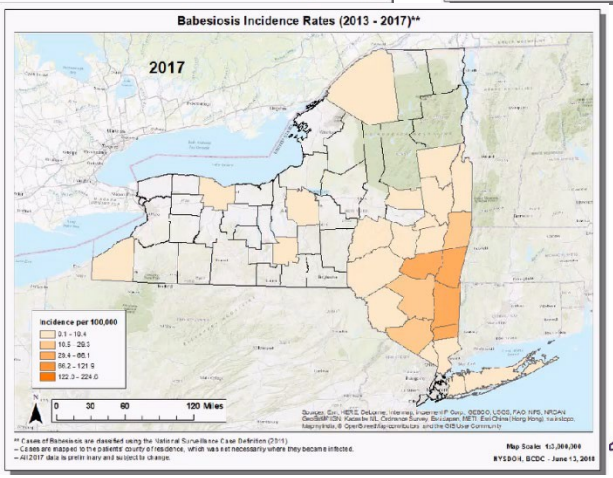

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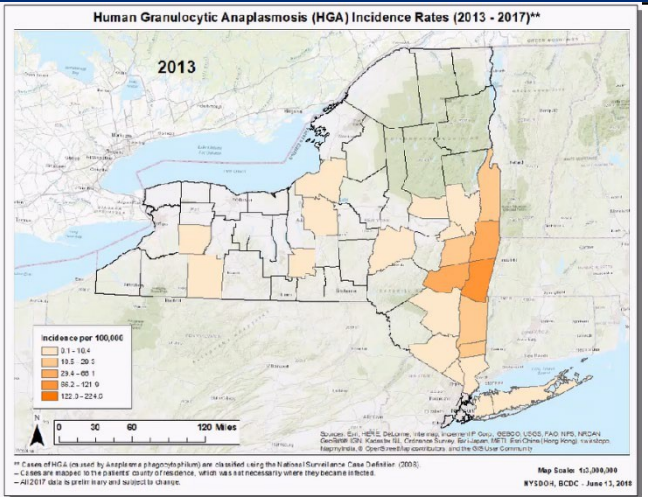

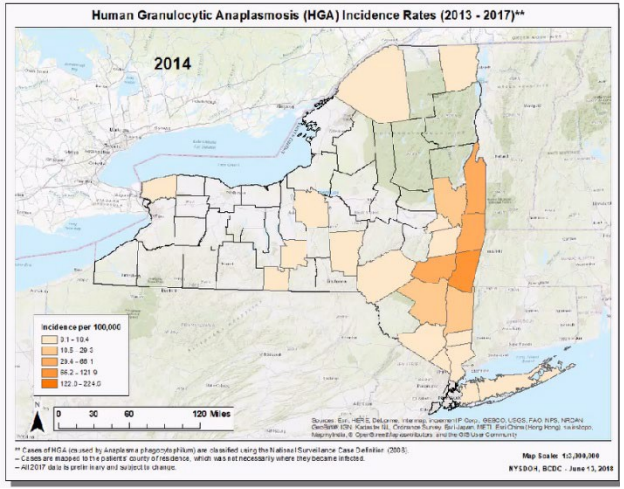

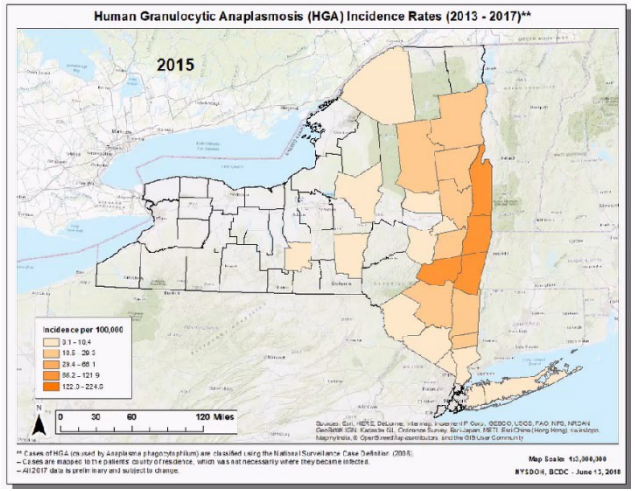

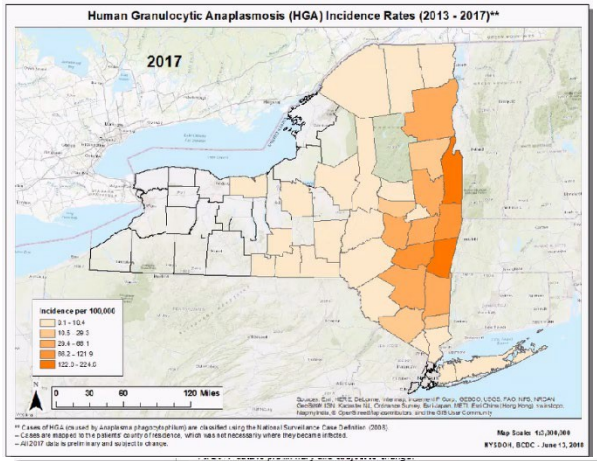

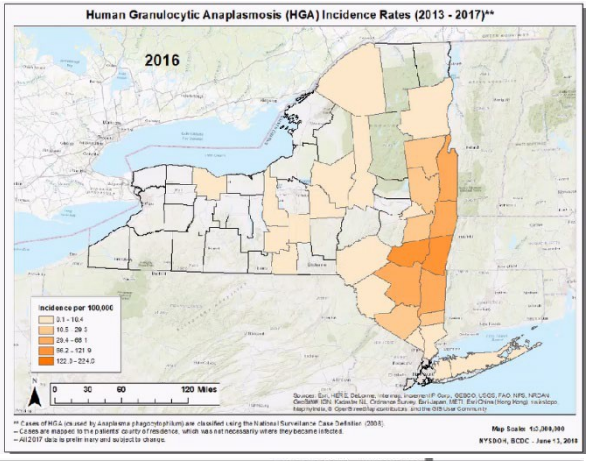

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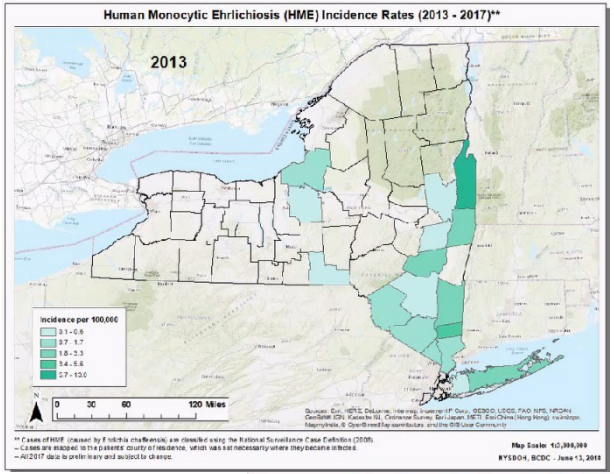

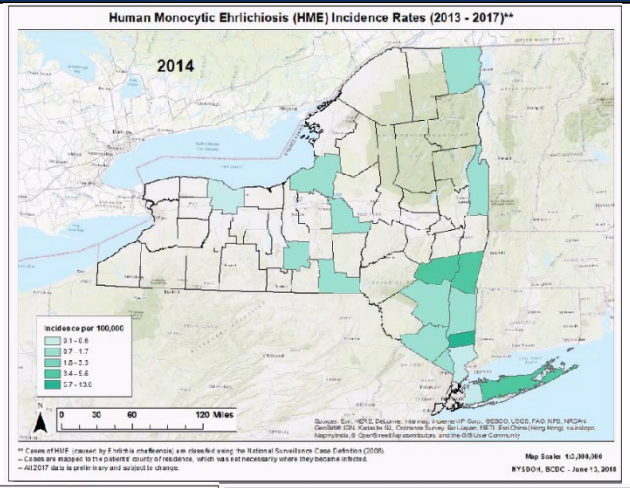

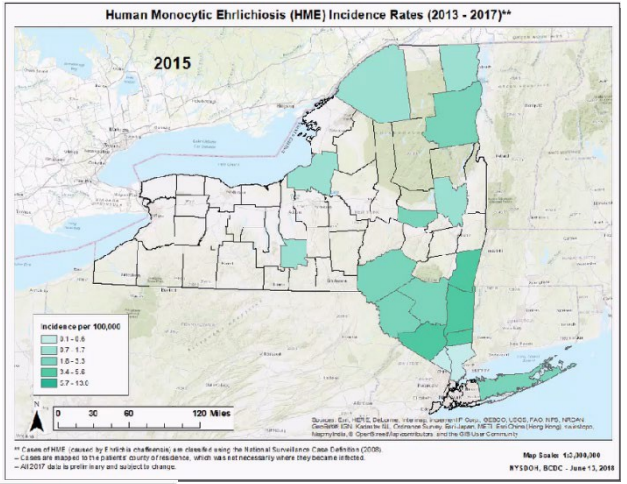

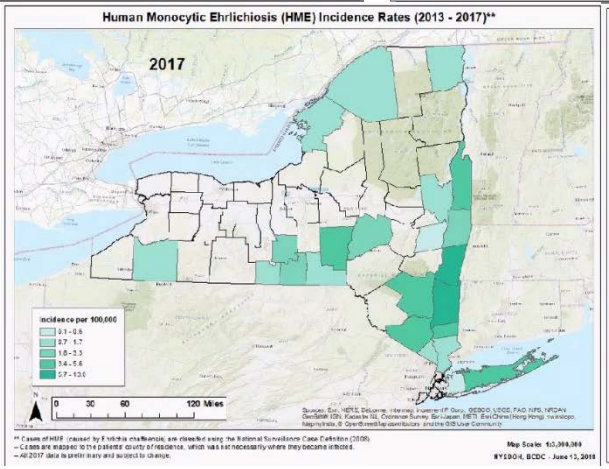

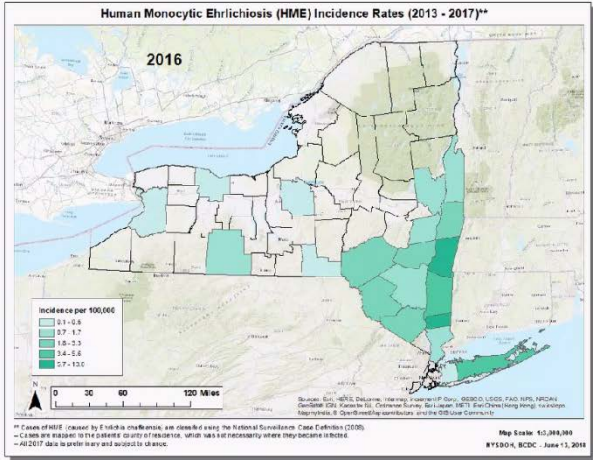

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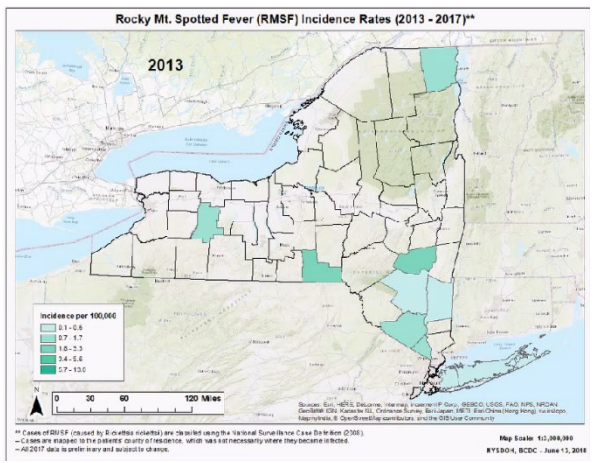

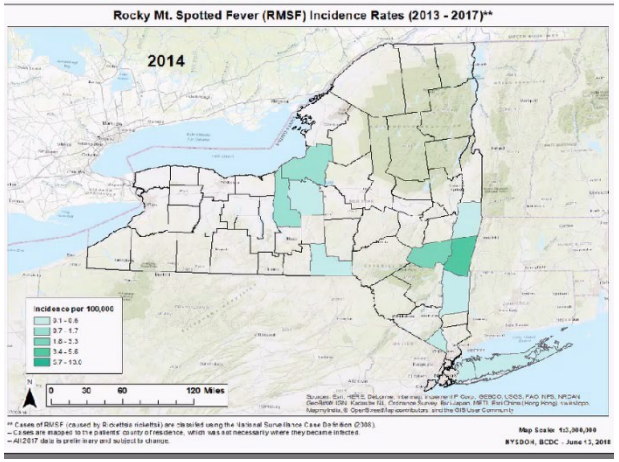

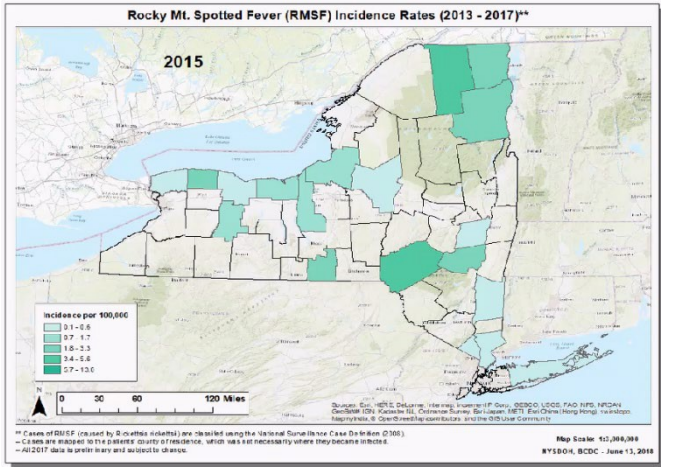

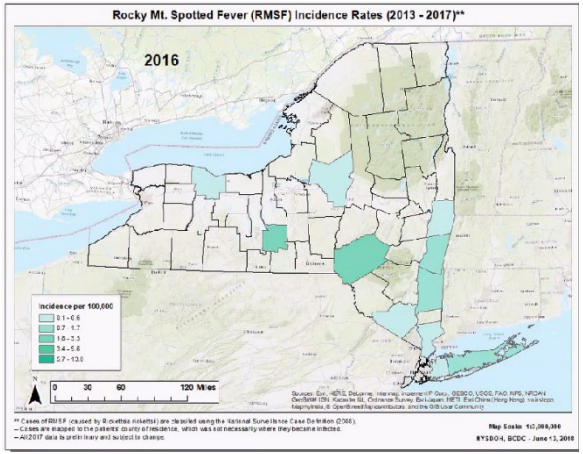

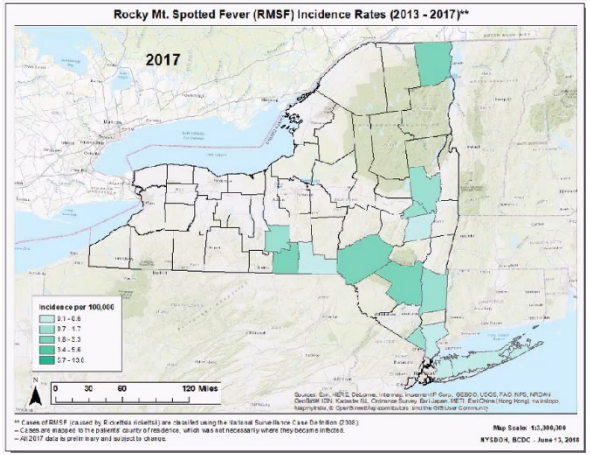

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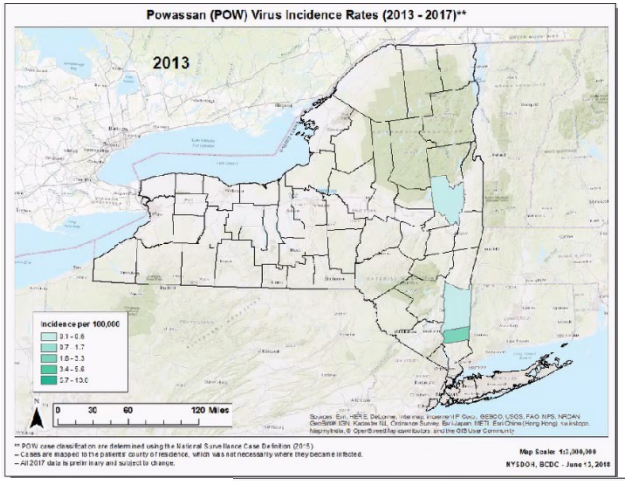

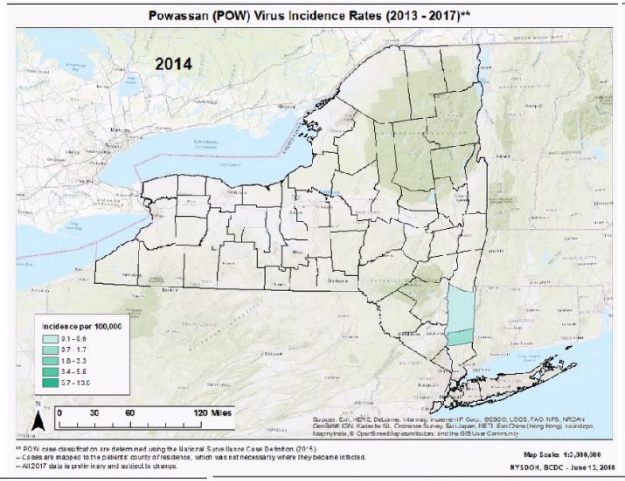

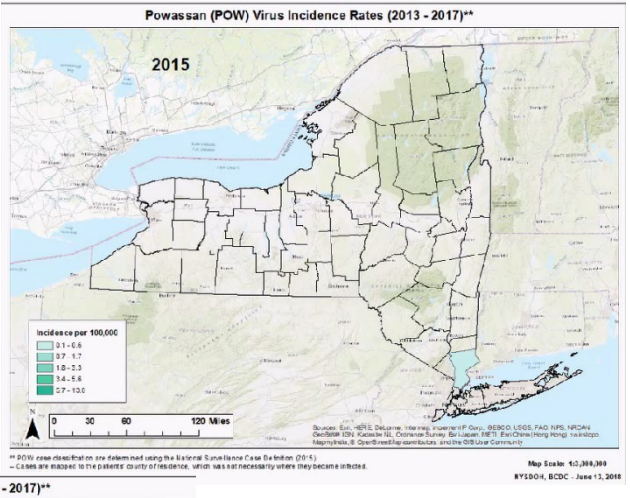

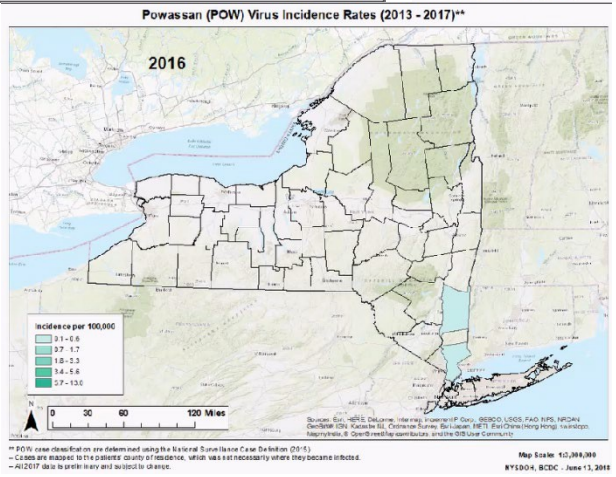

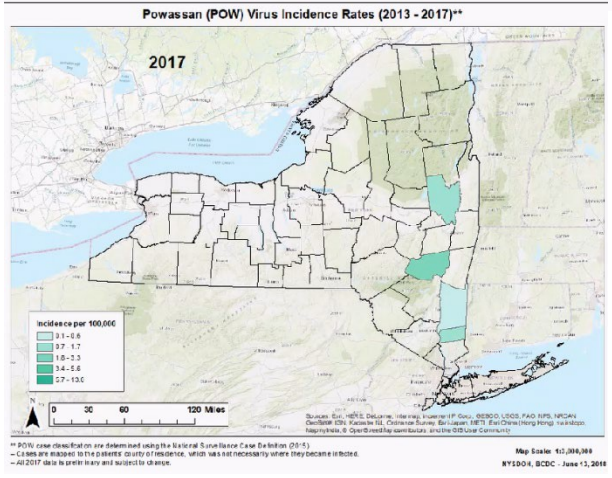

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Statewide Tick-borne Pathogen Surveillance Initiative

- NYSDOH has conducted *Ixodes scapularis* monitoring across NY since 2008
  - Standardized dragging and flagging surveys
  - Some locations sampled annually, some rotationally (every 2-5 years)
  - Every county sampled from 2008-2016
  - Up to 50 ticks per life-stage tested per location
  - Nearly 70,500 individual ticks tested 2008-2016

- Results shared with LHDs, other State agencies, medical providers, veterinarians, and general public

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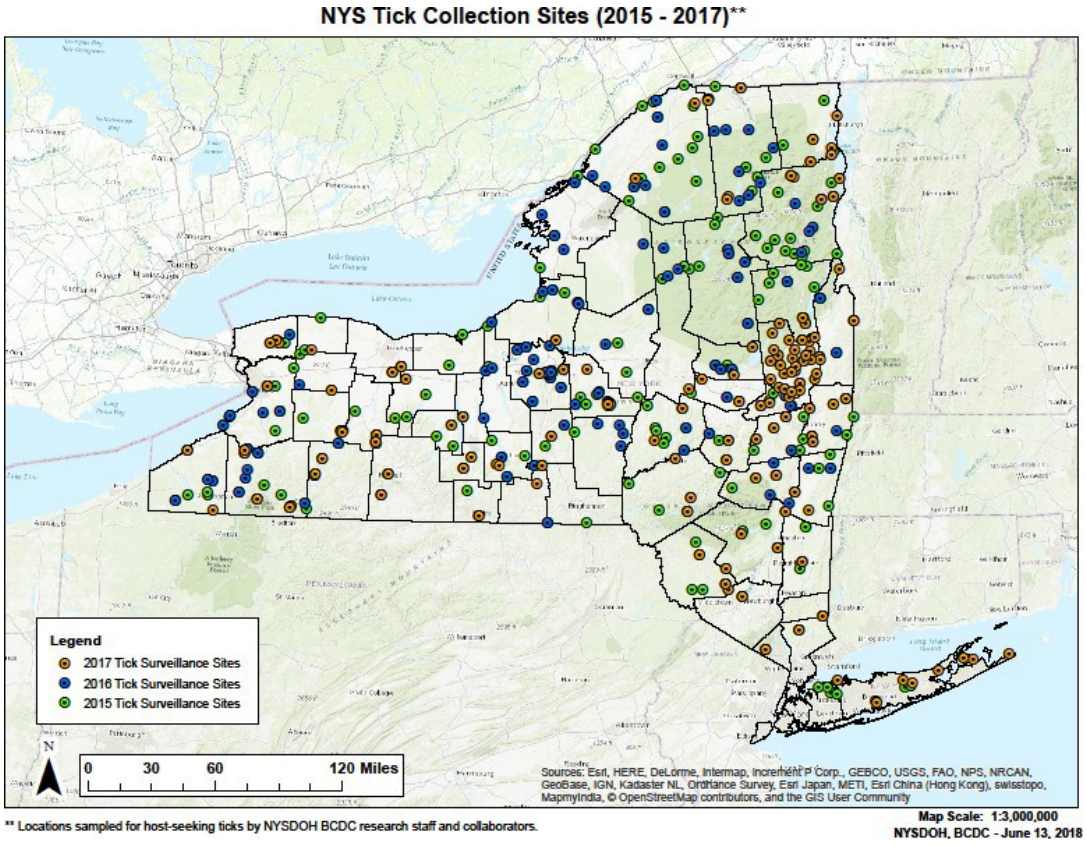

2017 By The Numbers

- **Locations Sampled: 302**
- **Counties Sampled: 55 (of 62)**
- **I. scapularis ticks collected: 24,916**
- **Total I. scapularis tested by qPCR quadplex: 8,267**
- **Total I. scapularis tested for POW/DTV: 16,649**

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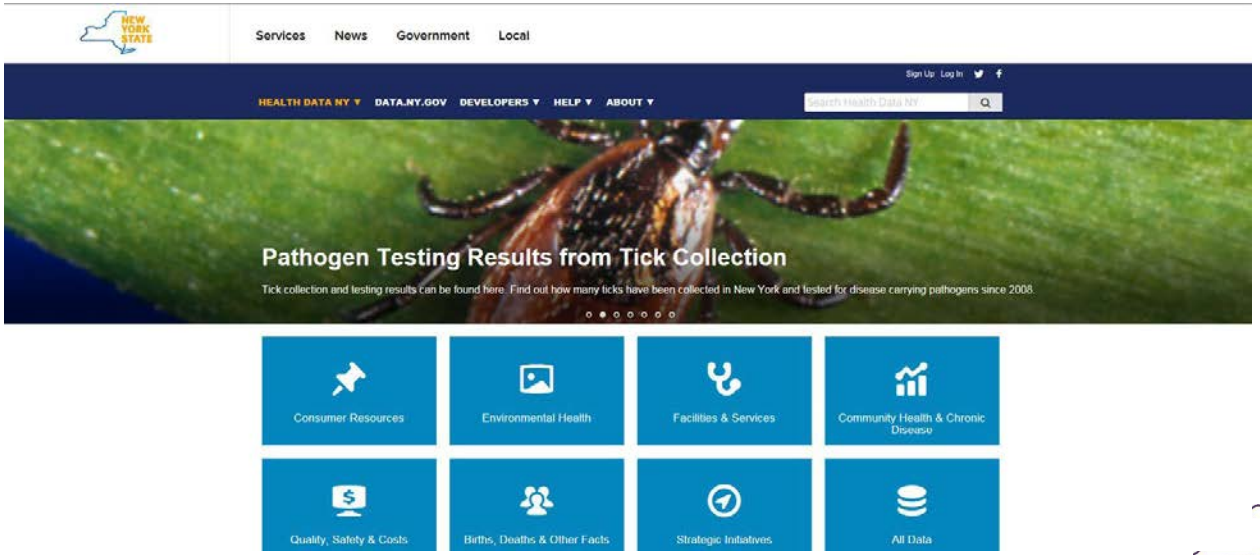
Active Tick Surveillance– Results

Health Data NY

https://healthdata.ny.gov/



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Health Data NY

- Dataset provides the results from collecting and testing black-legged (deer) ticks
- Used to educate people that there is a risk of coming in contact with ticks and tick-borne diseases
- Data only provide tick infections at a precise location and at one point in time. Both measures, tick population density and percentage, can vary greatly within a very small area and within a county
    - Data should not be used to broadly predict disease risk for a county

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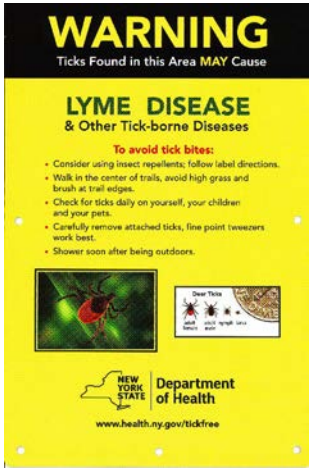
Education and Outreach- Highlights

- On-line media campaigns
  - ‘How to safely remove a tick’ video
  - Video series on NYSDOH
- Distribution of educational materials
  - Warning signs for public lands
  - ‘How to safely remove a tick’/ ID tri-fold cards
- Collaboration with NYS Education Department
  - Development and distribution of a ‘Tick and Tick-borne Disease Education in Schools Toolkit’



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Prevention Messaging

- Dress appropriately for outdoor activities
- Frequent tick checks; shower after coming indoors
- Consider using repellents
  - DEET, picaridin, or IR3535
  - Use only what and how much you need for your situation
- Prompt and proper removal of attached ticks
  - Fine-tipped tweezers!!
  - https://www.youtube.com/watch?v=oGrK4ZKUfhQ

Contact Information

Vector-borne Disease Unit
Bureau of Communicable Disease Control
NYSDOH
518.473.4439
bcdc@health.ny.gov

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