

Got Ticks?

Pennsylvania Integrated Pest Management Program

Penn State Entomology



Ticks



Larva



Nymph



Adult Male



Adult Female

Blacklegged ticks, formerly known as Deer ticks (*Ixodes scapularis*)

Actual size, adult 1/8"; larva 1/32" (Images: Tick Resource Center)

More PA ticks...



JIM OCCI, BUGPICS,
BUGWOOD.ORG

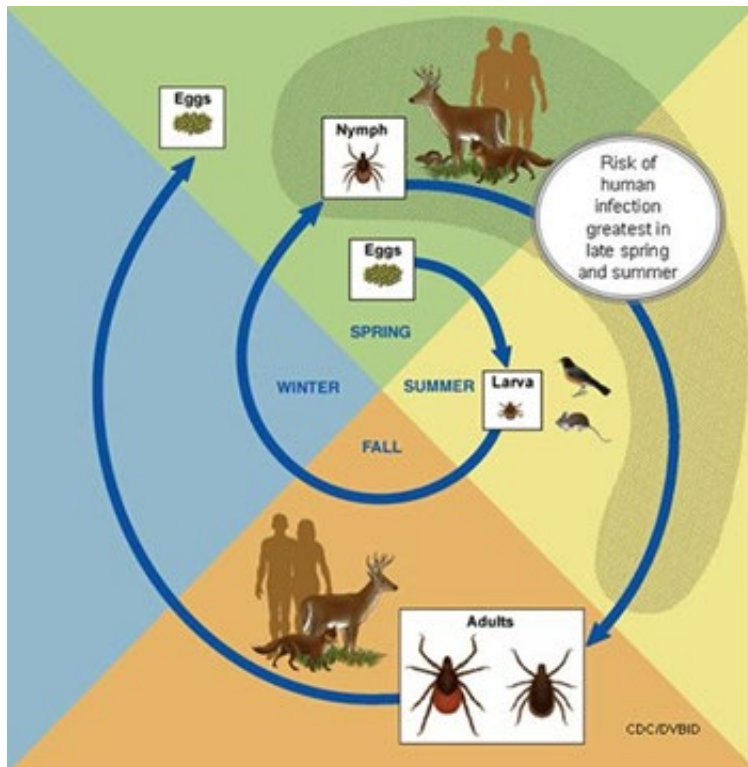
American dog tick adults and nymphs
Vectors: Erlichiosis



MAT POUND, USDA AGRICULTURAL RESEARCH SERVICE,
BUGWOOD.ORG

Lone star tick adults
Rocky Mtn. Spotted Fever

Life Cycle of the Blacklegged Tick

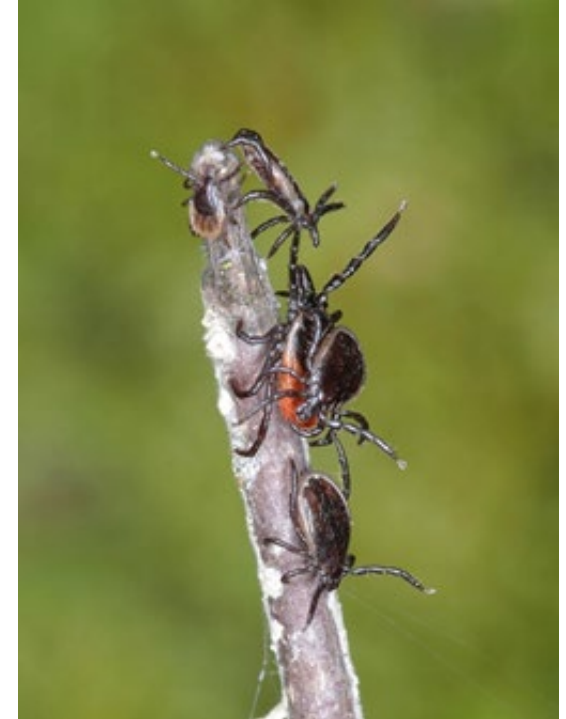


- Complex – 1-1/2 year cycle
 - Active in winter if sunny & over freezing
- 3000 eggs laid – hatch 7-14 weeks
- Larva – *6-legged!* Feed only once
 - White-footed/Deer mouse, chipmunks
 - Must ingest virus from host: small mammal
- Nymphs – feed once – mice, deer, raccoons, squirrels, skunks...
 - More chances to ingest virus: *highest risk*
 - 25-56 days to adult
- Adults – white-tail deer main host
 - Female must feed to lay eggs
 - Male tick dies after mating

How do you get ticks?

By being outside!

- Ticks climb brush to seek hosts
- Wait with claws open – “questing”
- Check exposed skin, ears & scalp
 - Armpits, inside knees, waistline
- Check children head-to-toe!



<http://atlasofscience.org>

What's the Harm?

- Ticks #2 disease vector (after mosquitoes)
- Tick borne diseases
 - Lyme Disease – 40% of ticks infected; 24 hours to infect
 - Post-Treatment LD Syndrome (PTLDS)
 - Babesiosis – 5%; nymphs - probably only hours to infect; fatal 5%+
 - Erlichiosis - 5%; Lone-star ticks; fatal 1.8%
 - Powassan Virus – 50 cases/10 year (US); 1 PA death in 2018!
 - Rocky Mtn. Spotted Fever – Dog ticks; fatal 3-5%
- Ticks & diseases expanding range

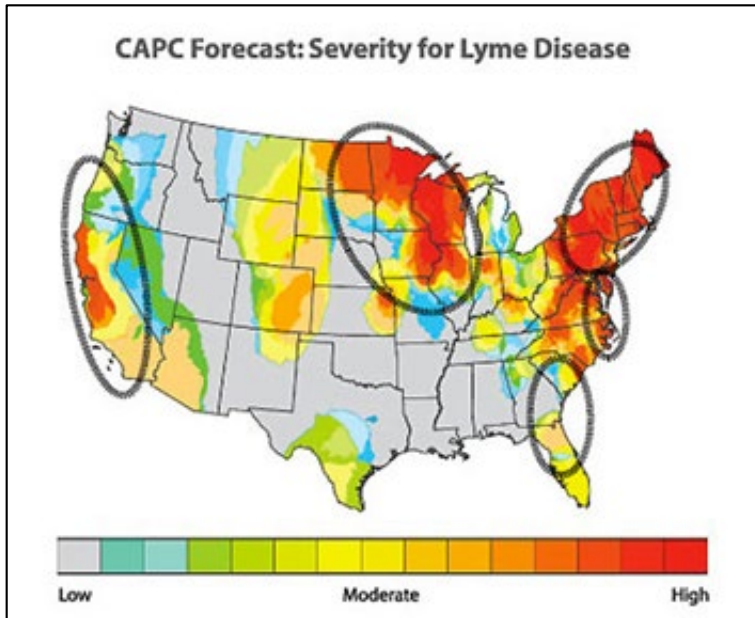
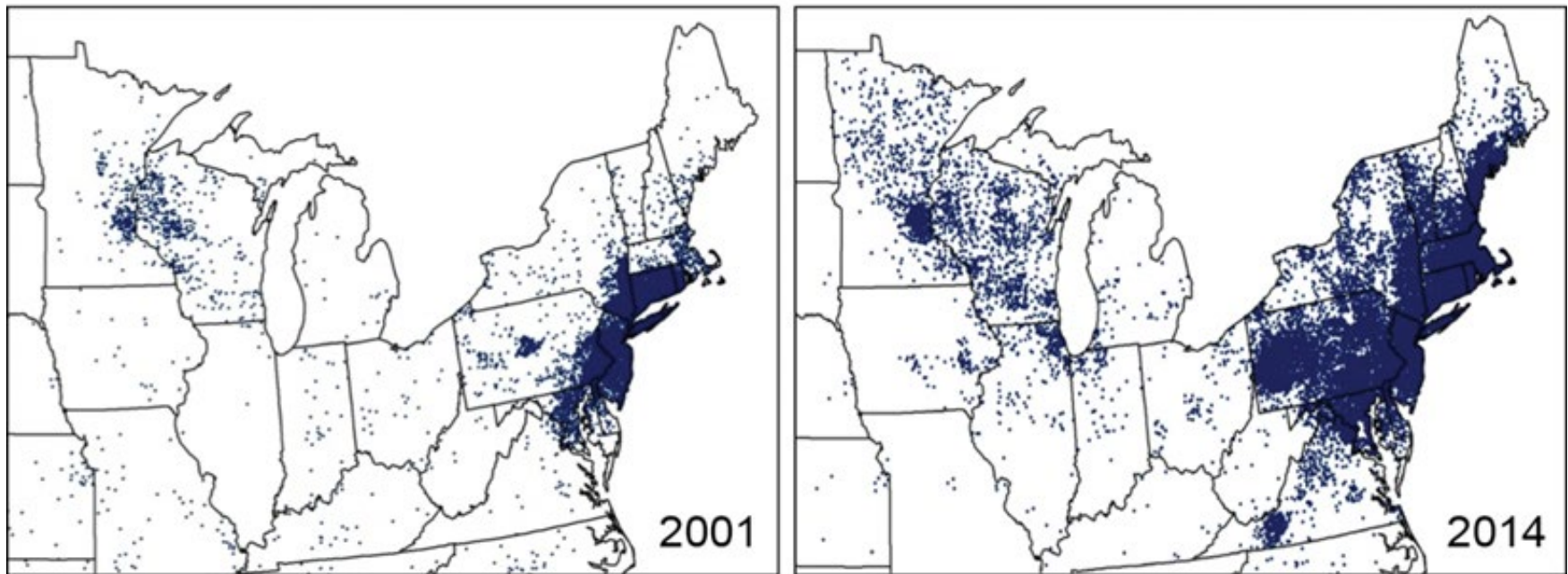


Image: Companion Animal Parasite Council

Ticks are rapidly expanding Range

Changes in Lyme Disease Case Report Distribution

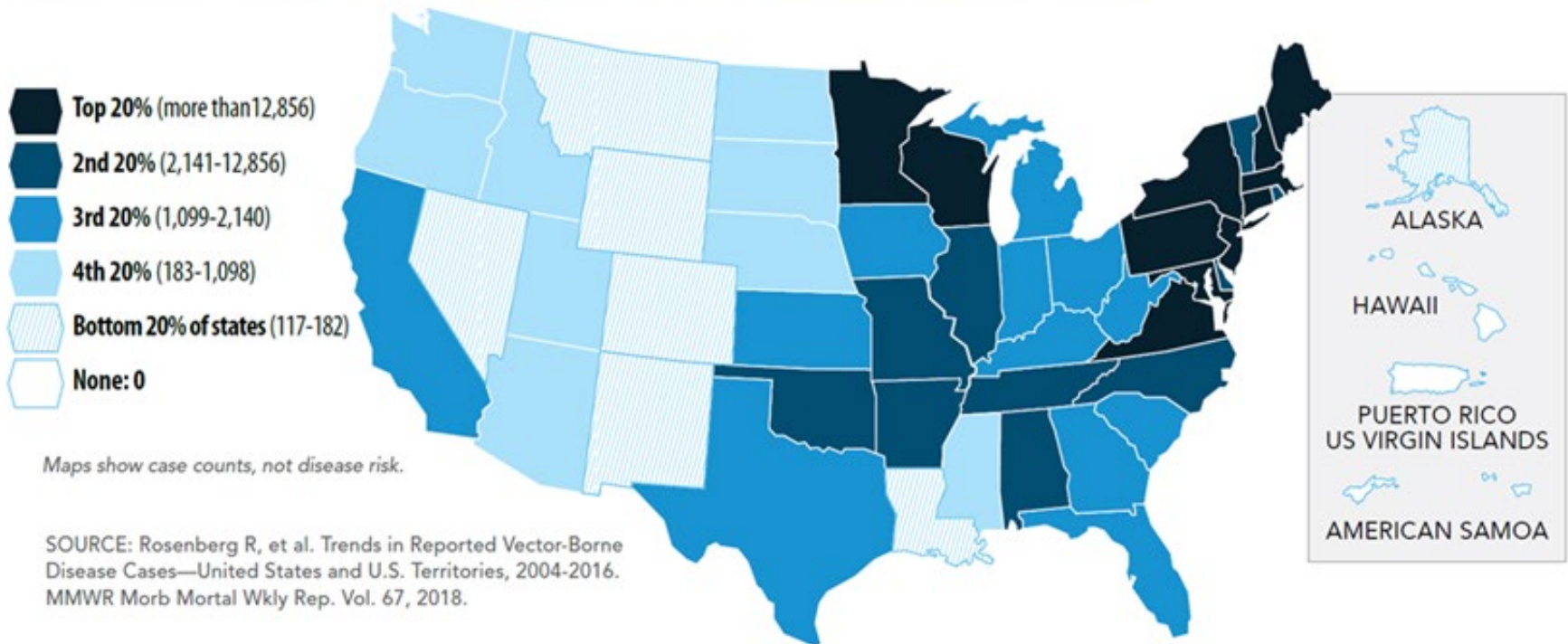


Warmer winters and increased precipitation favor ticks

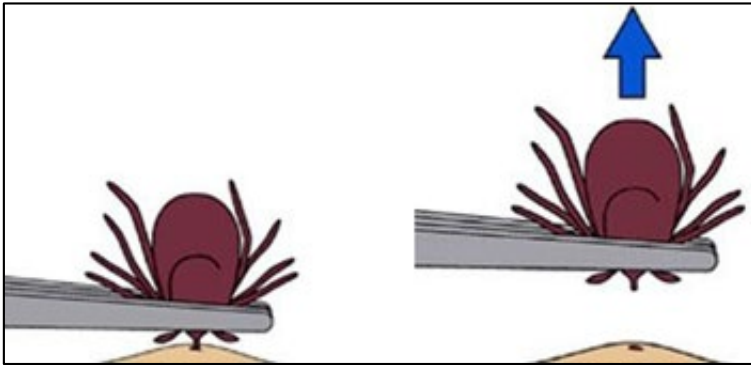
PA #1 in Nation for Ticks & Lyme Disease



DISEASE CASES FROM TICKS (2004-2016, REPORTED)



Removing Ticks



- Pull straight out with tweezers, or use tool (TickKey, TickedOff, etc.)
- Don't crush body
- Don't twist
- Don't burn or paint
- If head remains, pull it out
- Save tick in alcohol for testing
 - East Stroudsburg University

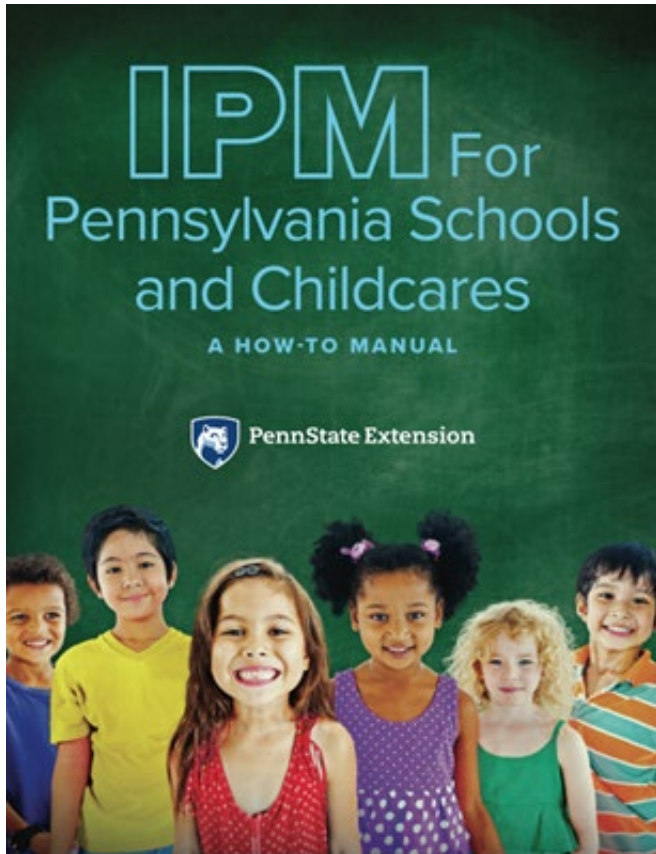
<https://www.ticklab.org/>

Controlling Ticks

- Spraying is largely ineffective
- Better to reduce vegetation near people-areas
 - Cut back high brush (over 18")
 - Create “rough” buffer zone (6-12” high, 3’ wide)
- Reduce mouse population
 - Increase predators – fox, hawks, owls, etc.
- Reduce ticks on mice
 - Tick Tubes reduce ticks on mice, etc.
 - Tick Boxes more effective
- Reduce deer access & habitat
 - Fence; plant deer-resistant plants



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References

- CDC (Centers for Disease Control and Prevention). 2015. Lyme disease data and statistics. www.cdc.gov/lyme/stats/index.html
- CDC 5/2018. Vital Signs: Illness on the rise from mosquito, tick, and flea bites. <https://www.cdc.gov/vitalsigns/pdf/vs-0518-vector-borne-H.pdf>



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Sources as noted on slides and in References

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This work is supported by EIP grant # 2014-70006-22563 from USDA National Institute for Food & Agriculture (NIFA).



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