

SWOT: Ticked Off & More

NH DES, WMD

Tick-Safe Practices

May 13, 2022 – Virtual training via Zoom

Christin D'Ovidio, JSI/CHI & Tick Free NH





What We Will Talk About Today

- The biology & human health issue
- How to prevent Lyme disease
- Risk factors
- What physical actions create a buffer



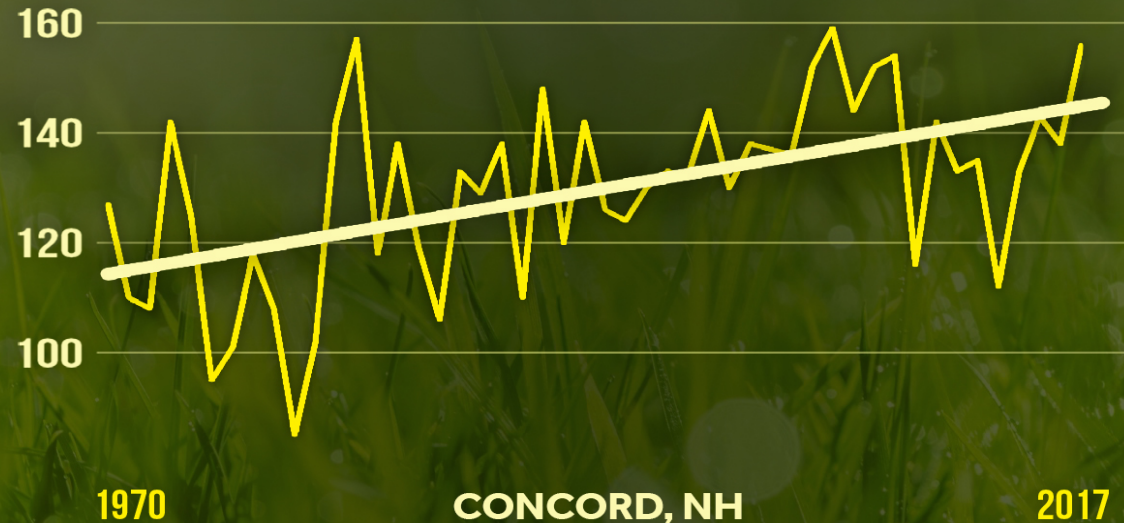
Part 1: Tick Biology & Background



The Role of Climate Change

LONGER GROWING SEASON

Frost-Free Days



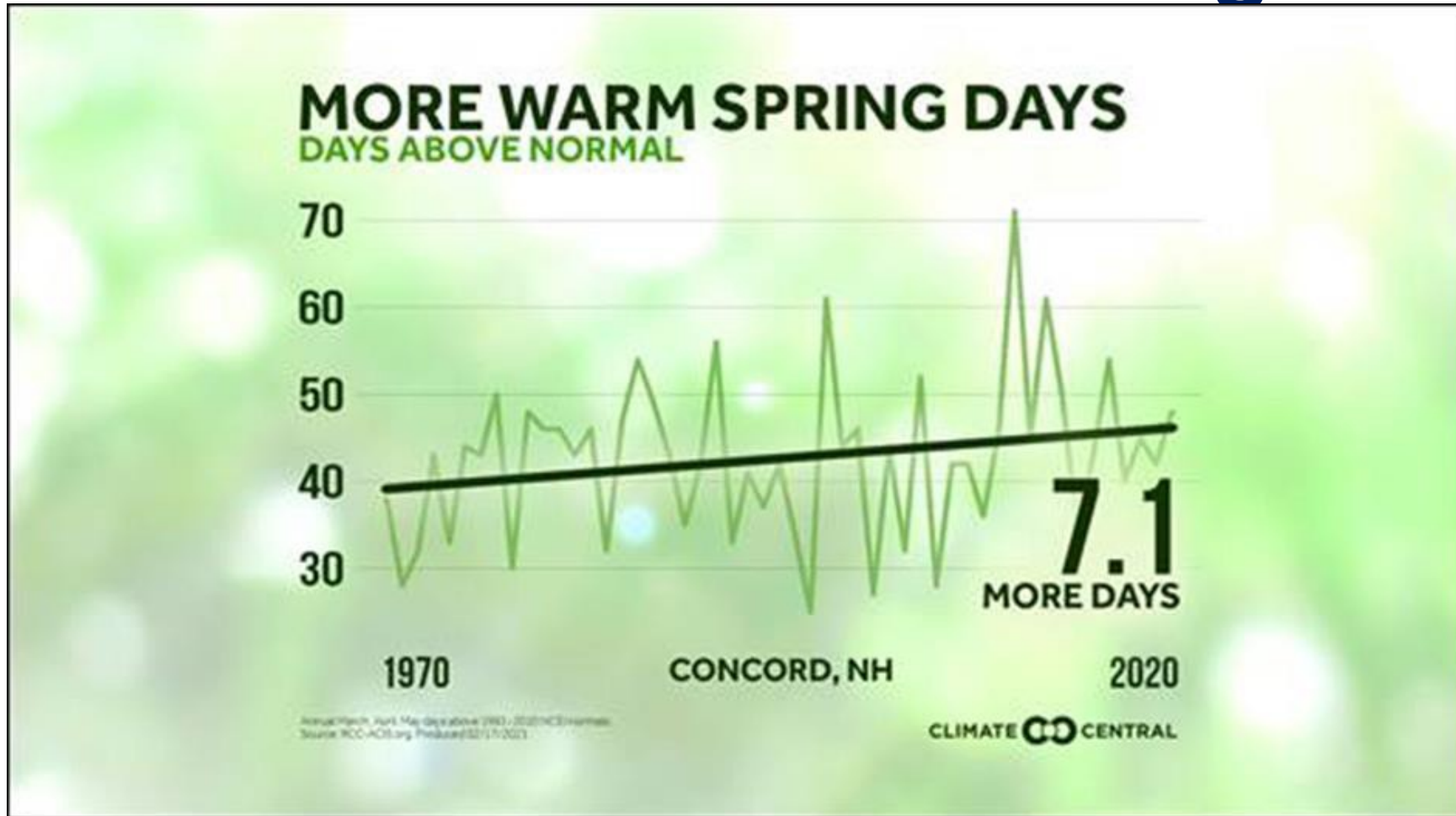
Days between the annual last occurrence and first occurrence of 32°F
Source: Applied Climate Information System

CLIMATE  CENTRAL

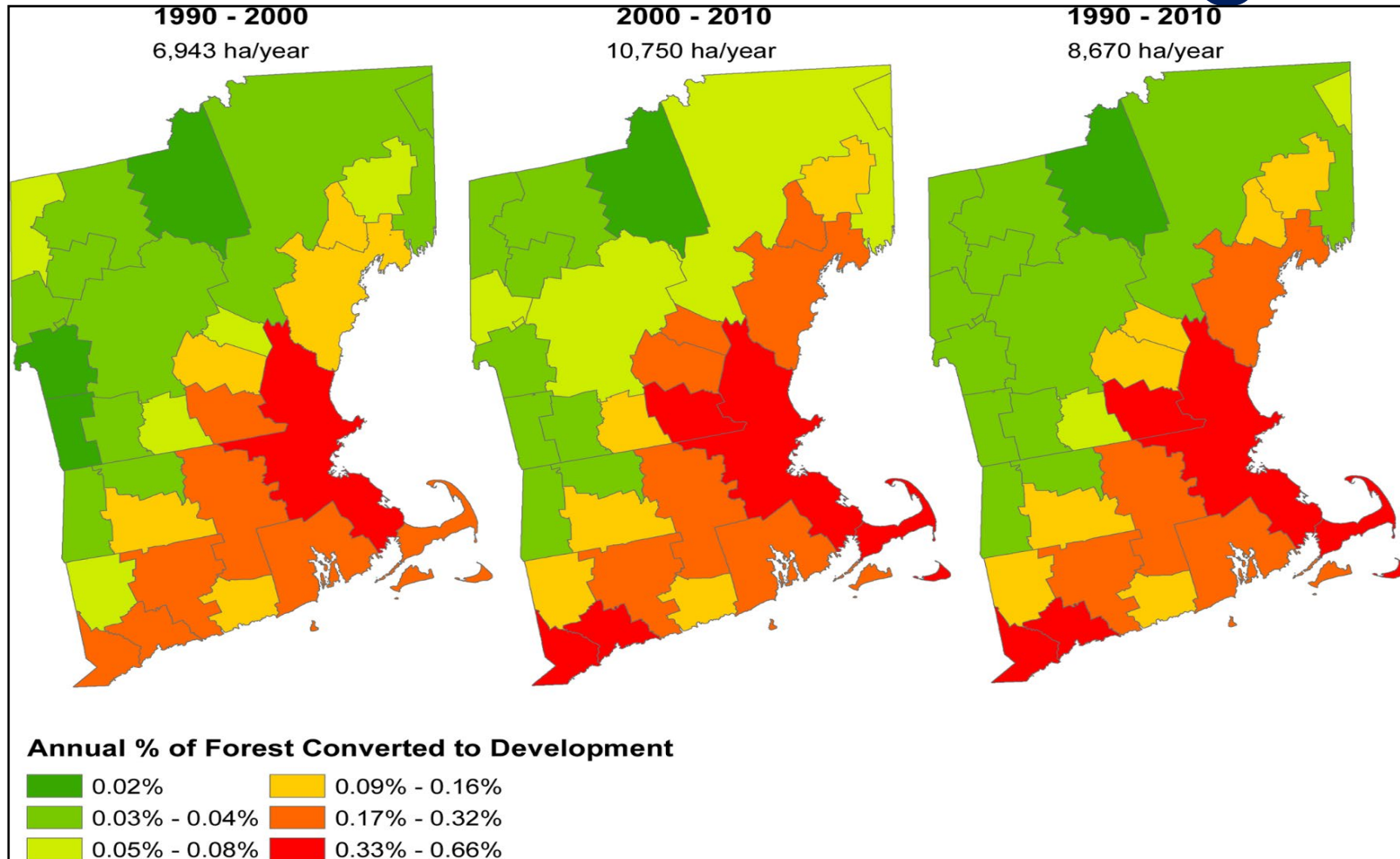
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The Role of Climate Change

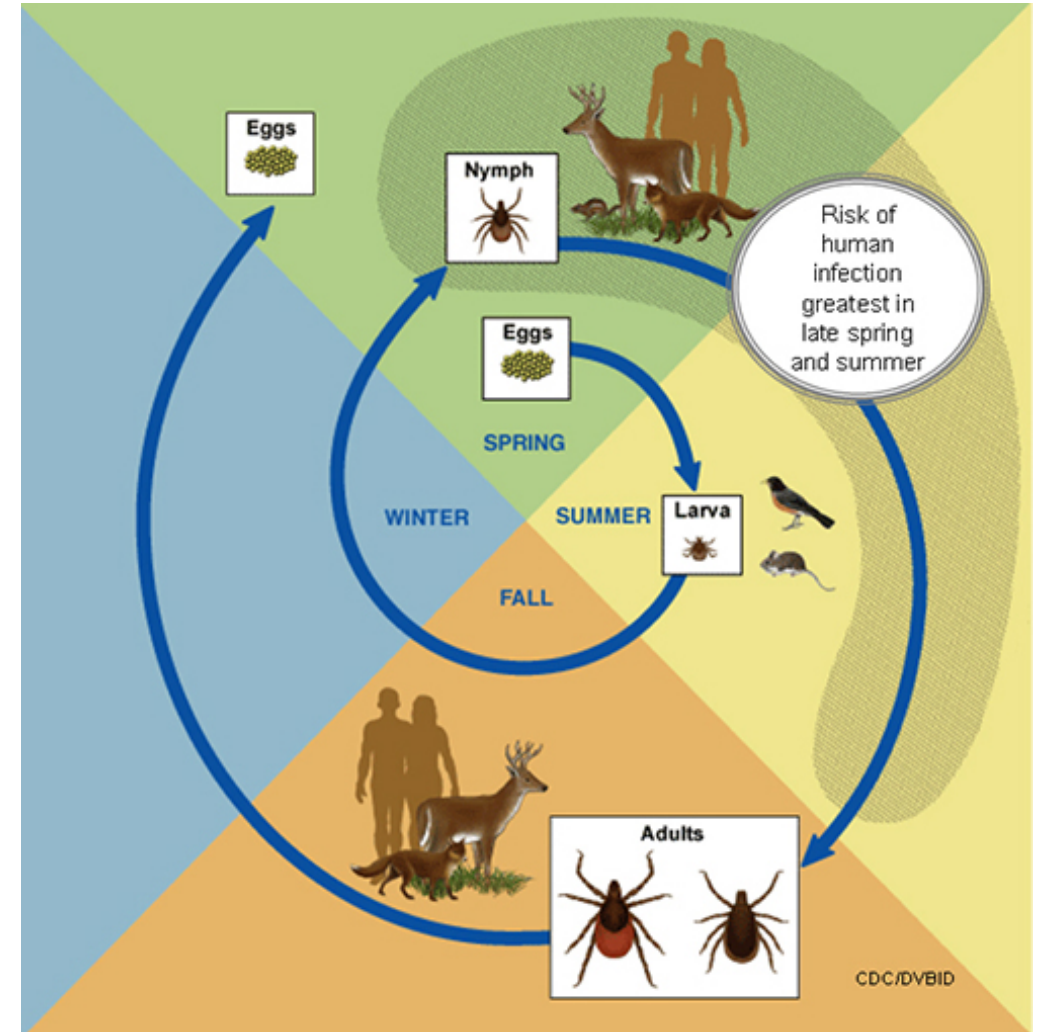


The Role of Land Change



The Role of Wildlife

- ▶ Animals act as a 'reservoir' for germs that ticks pass
- ▶ Rodents – such as mice, shrews, the American Robin and deer
- ▶ Control of wildlife can reduce the risk of disease



Confirmed NH Records of Blacklegged Tick

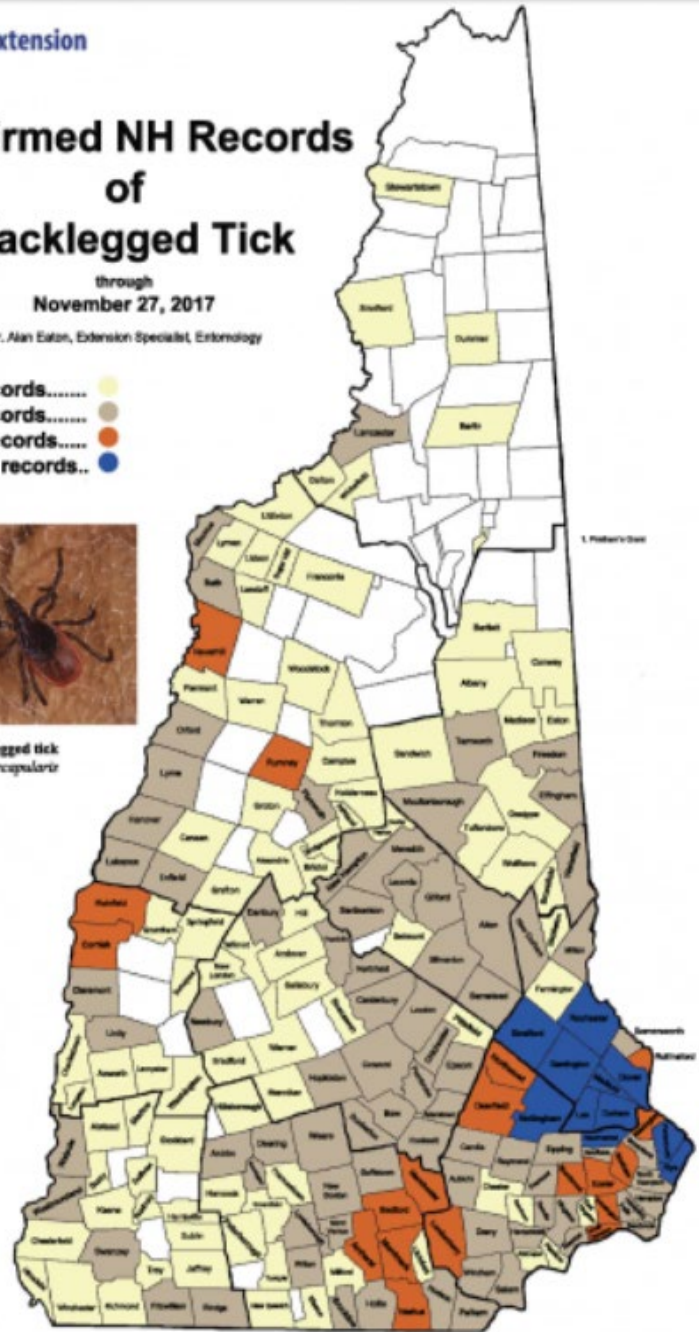
through November 27, 2017

Dr. Alan Eaton, Extension Specialist, Entomology

- 1 - 2 records.....
- 3 - 6 records.....
- 7 - 12 records.....
- over 12 records..



Blacklegged tick
Ixodes ricinus



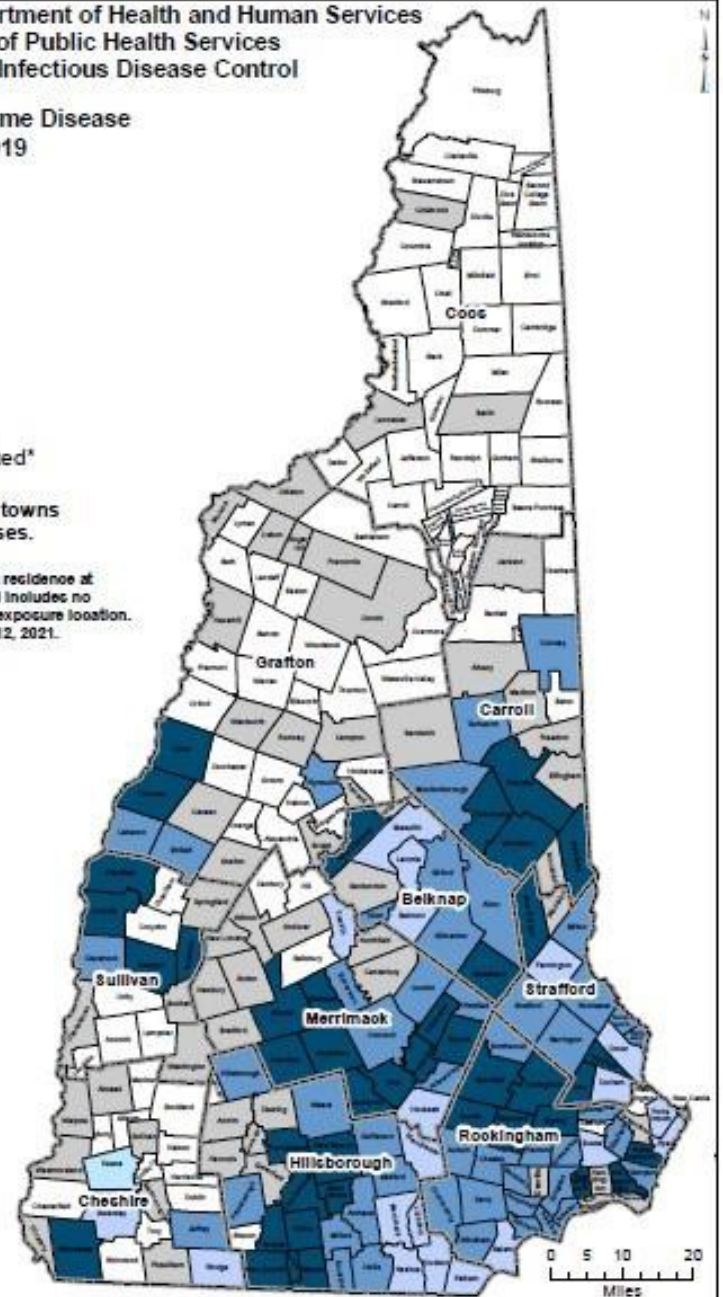
Reported Cases of Lyme Disease in New Hampshire, 2019

Rates per 100,000

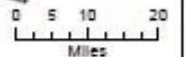
- 0
- 1-49
- 50-99
- 100-199
- ≥200
- Rate not calculated*

*Rates not calculated for towns with between 1 and 4 cases.

Note: County/town is based upon residence at the time of disease diagnosis and includes no additional information regarding exposure location. Data are complete as of January 12, 2021.



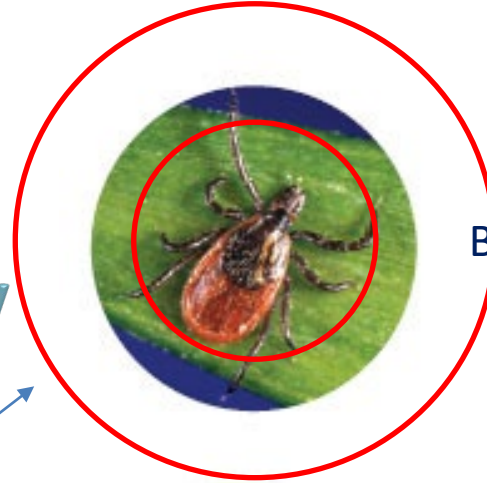
Prepared by: Tylor Young
Geographic Information Systems Analyst
tylor.a.young@dhs.nh.gov



Types of Tick Diseases in NH

- Lyme Disease
- Anaplasmosis
- Babesiosis
- Powassan Virus
- *Borrelia miyamotoi*

Types of Ticks to Identify



Blacklegged



Lone Star



American dog



Brown dog



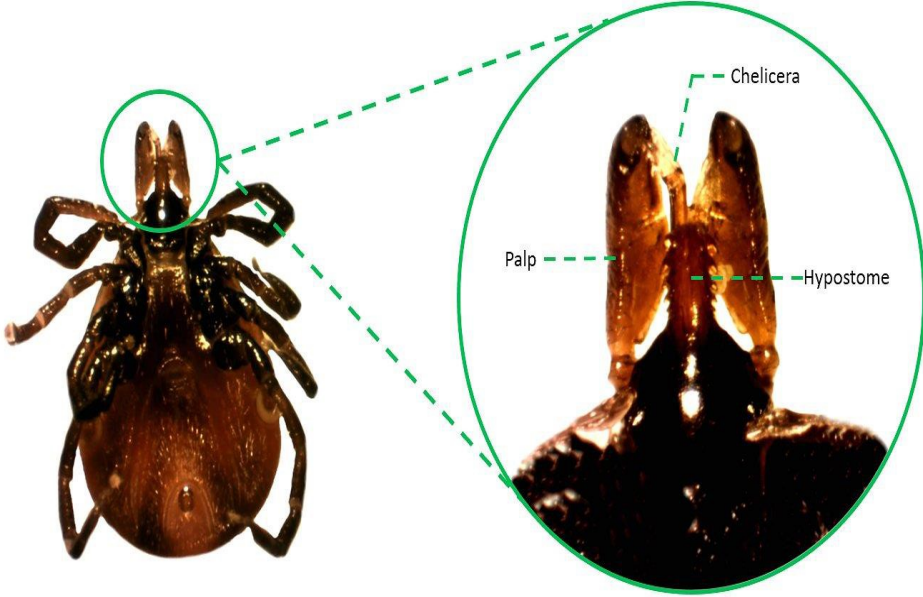
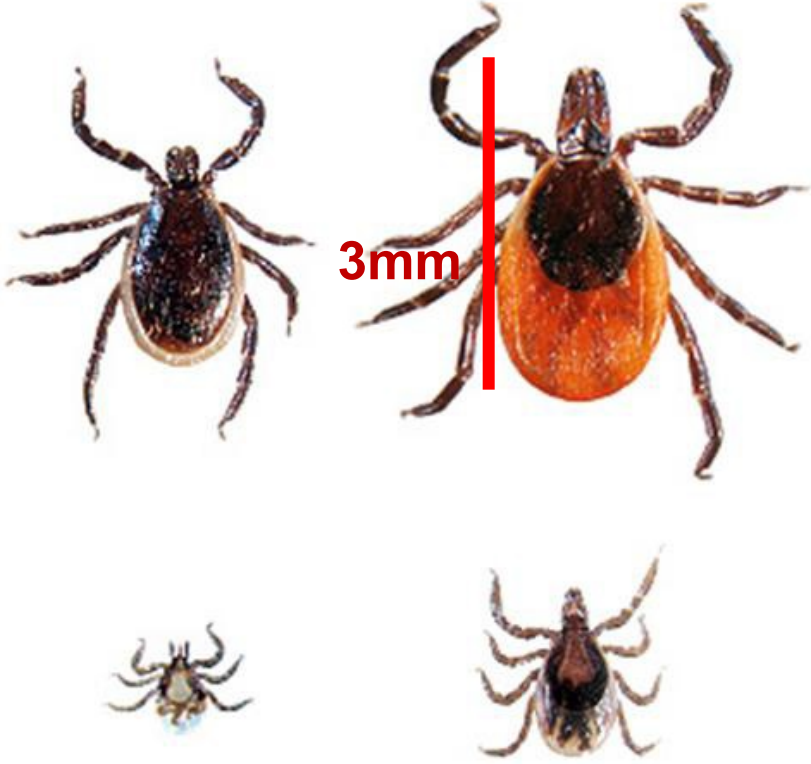
The Blacklegged Tick



[cdc.gov/lyme](https://www.cdc.gov/lyme)



The Blacklegged Tick



Griffin Dill



Lyme & erythema migrans (rash)



**Not
Erythema
Migrans rash.**



Summary of Tick Biology



Part 2: Tick Habitat & Avoidance



Educational Objectives

- Know the habitats and active seasons of ticks that are vectors for disease
- Build skills to identify and avoid places that are higher risk for tick activity
- Know how to effectively reduce ticks around your home or other places that your family may be outdoors
- Know how to protect your pets from ticks, and how to avoid getting ticks from your pets

What Do Ticks Love?



What Do Ticks Hate?

- Ticks hate hot, dry, or sunny conditions
- Ticks hate cold, dry or winter conditions
- Ticks hate big temperature swings, like hot days and cold nights as they dry out easily
- Tick don't like places where there are few rodents and birds (i.e. they can't bite anyone and get a blood meal)
- Ticks don't like places that are very dry:
 - Deserts, sand, gravel, sandy beaches, pine barrens, deep snow cover, etc.

Lower and Higher Risk Areas



Prevention via IPM

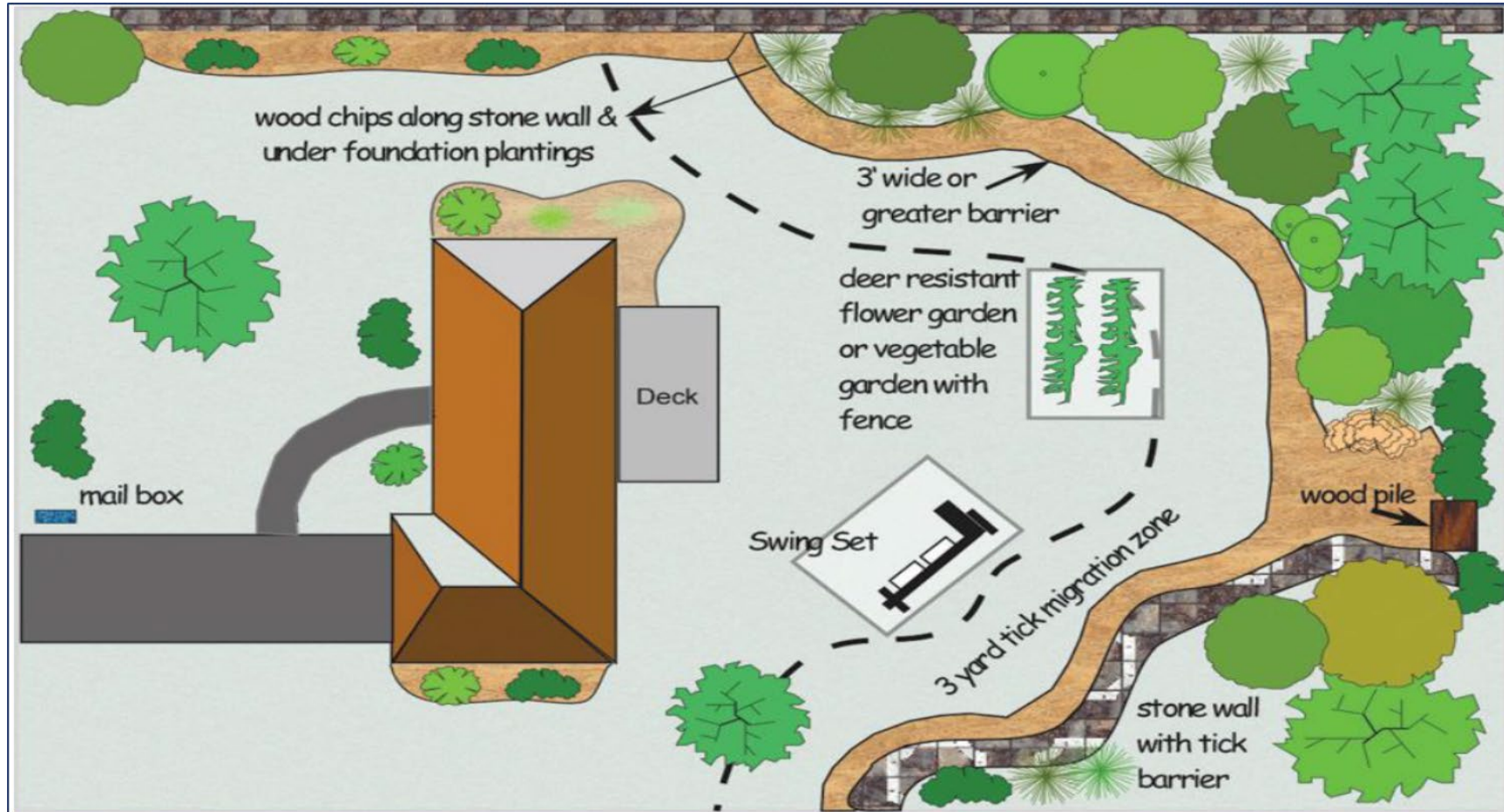
Integrated Pest Management (IPM) aims to address the conditions that support pests, and reduce the use of pesticides to the minimum

- Identify any pests and risk levels
- Change landscape design and practices
- Treat the host animal
- Treat the vegetation

Identify the Tick Habitat



Change the Landscape



Treat the Animal Habitats

- Consider use of cotton-filled tubes with a tick pesticide (e.g. permethrin) for mice who build nests.
- Consider removal of the animal host via trapping or culling

Treat the Vegetation

- Consider a spray on the vegetation or edge habitat with an approved pesticide that will kill the tick
- Synthetic products
 - Bifenthrin, Cyfluthrin, Deltamethrin, etc.
- Natural products:
 - Plant oils, Essentria IC3 tested well
 - Fungus-based Acaracides. Met 52 tested well.
 - Flower Pyrethrins, limited efficacy
- Others

Treat the Pets

- Start by consulting with a veterinarian
- Know the multiple tick control products, including:
 - Tick and flea baths, Tick collars, Tick treatment on fur
 - Immunizations
- Perform a tick checks on pets after being outdoors
- Avoid allowing pets onto the same furniture or beds that you use



Tick ID and Testing



Summary of Tick Habitat

- Ticks survive well in warm and moist areas, and die off in cold and dry areas
- High risk habitats include tall grasses, dense shrubs, and edge habitats between forest and lawns
- You can reduce the risk of a tick bite by:
 - Changing your landscapes at home, work or school
 - Treat or control deer and mice
 - Treat the vegetation
 - Treat your pets
- You can have a tick identified or tested, if needed

Learning Objectives

- Knowledge of tick check & bathing behaviors
- Demonstrate skills for a tick check
- Knowledge of tick removal
- Demonstrate how to remove & preserve a specimen
- Knowledge of clothing & safe use of repellants
- Knowledge of repellent efficacy & safety (EPA)
- Demonstrate safe use of PPE, build a tick 6-pack

Types of Personal Actions that Reduce Lyme Disease

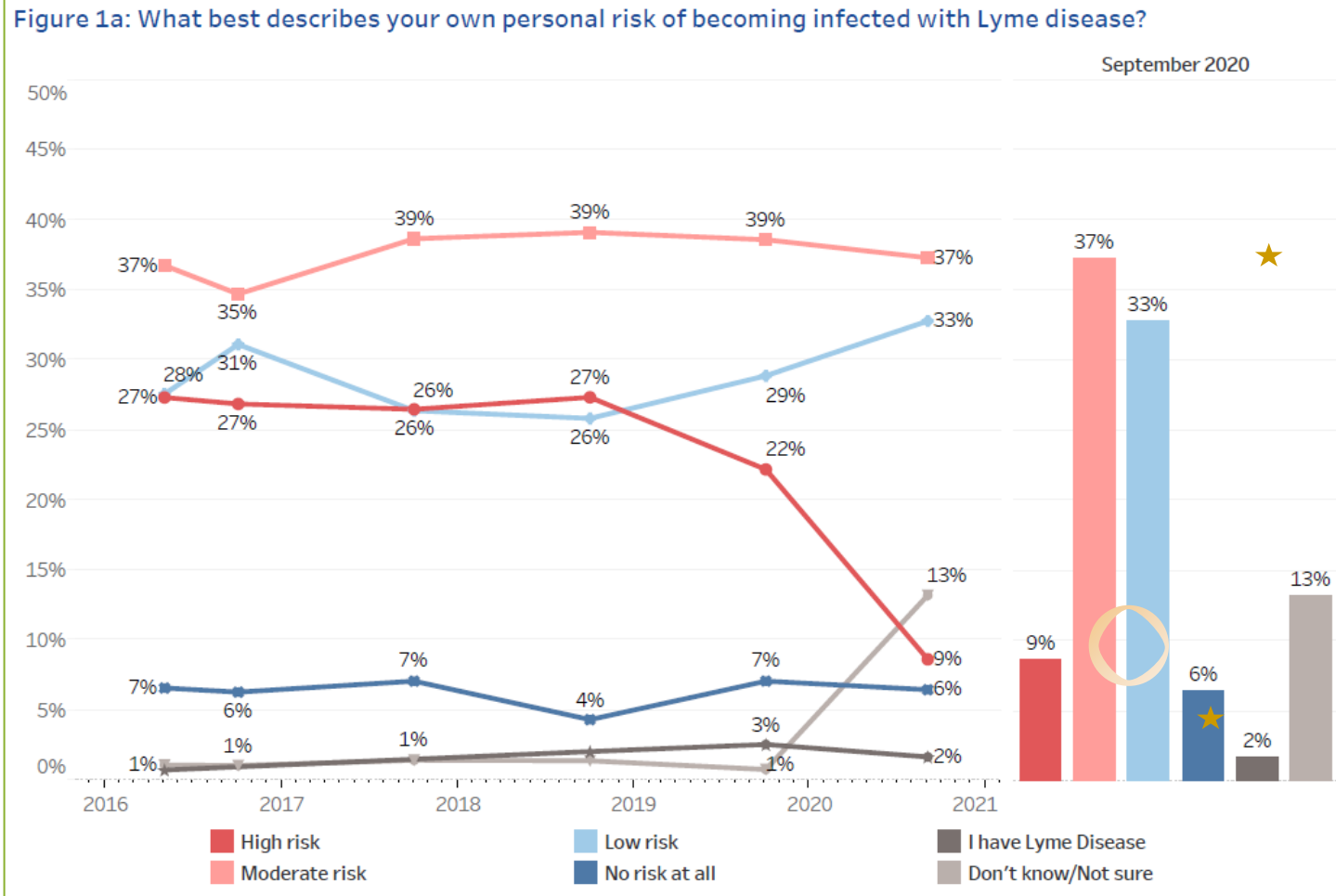
- Personal protection
 - Tick checks & bathing, tick removal, protective clothing, repellants
- Other interventions
 - Education
 - Landscape strategies
 - Host reduction (deer & mouse)
 - Vaccination

Source: “Interventions to prevent Lyme disease in humans: A systematic review.”
M. Richardson et al. Preventive Medicine Reports 13 (2019) 16–22.

PERSONAL PROTECTION VIA VISUAL CHECKS AND BATHING



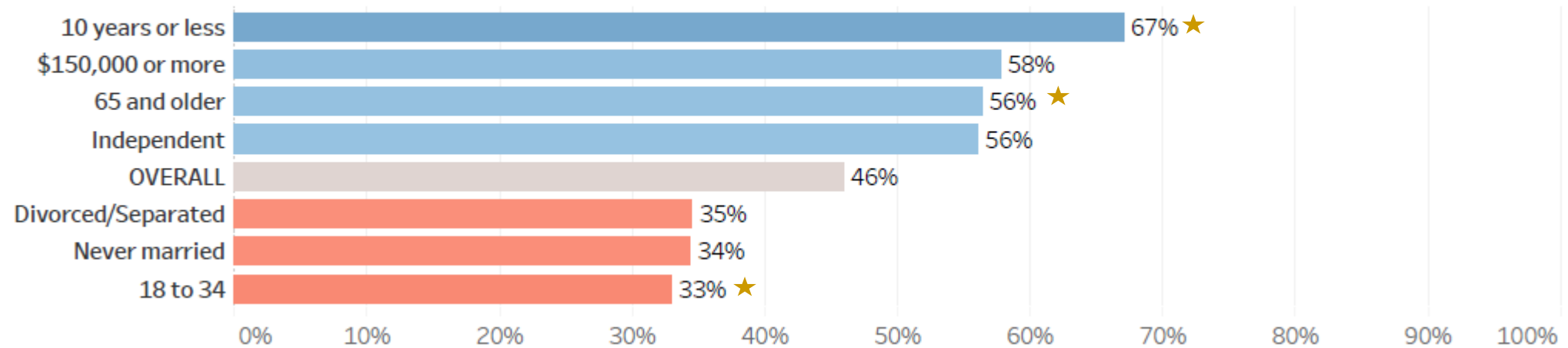
Granite State Survey September Risk



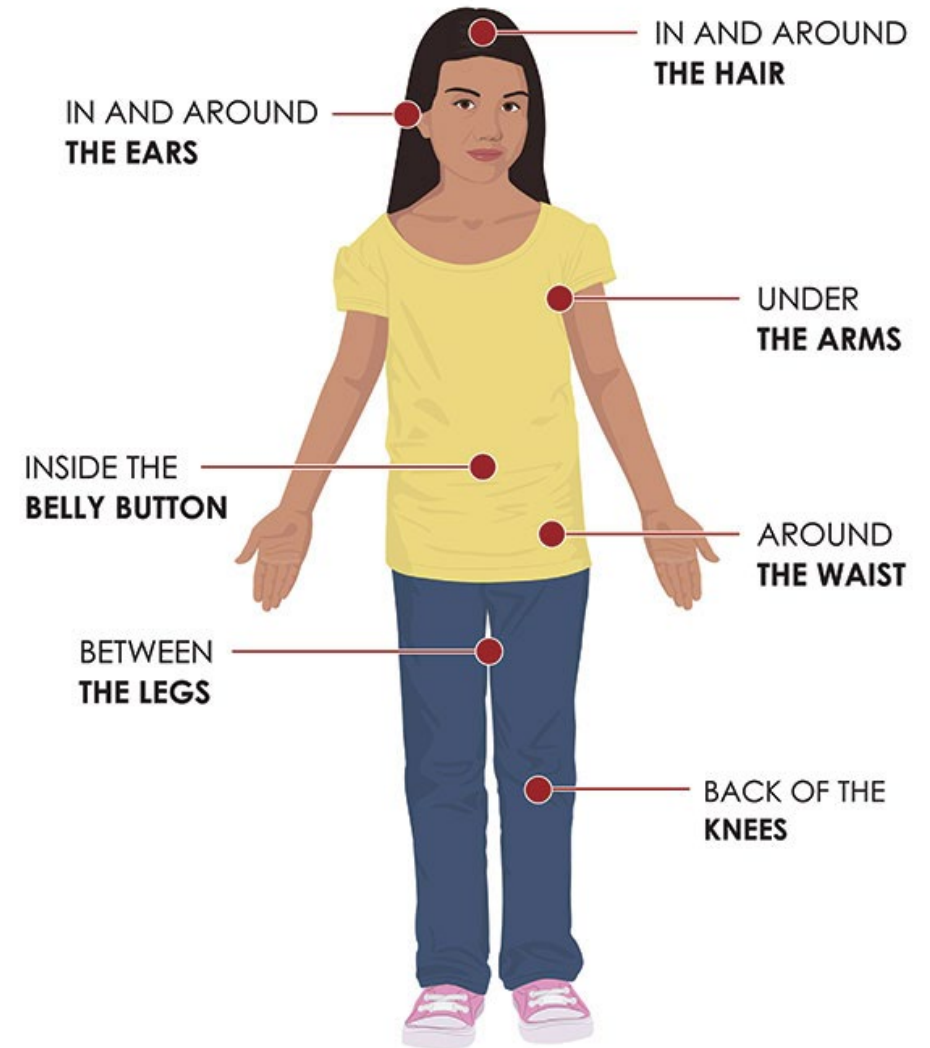
Granite State Survey September Risk

Figure 1b: What best describes your own personal risk of becoming infected with Lyme disease? - By Demographics

High or moderate risk

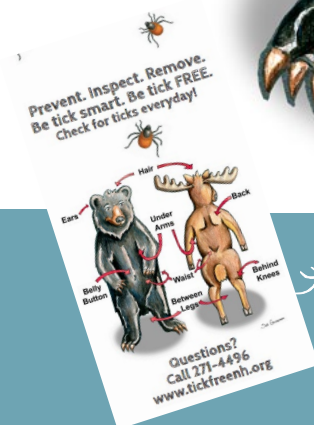
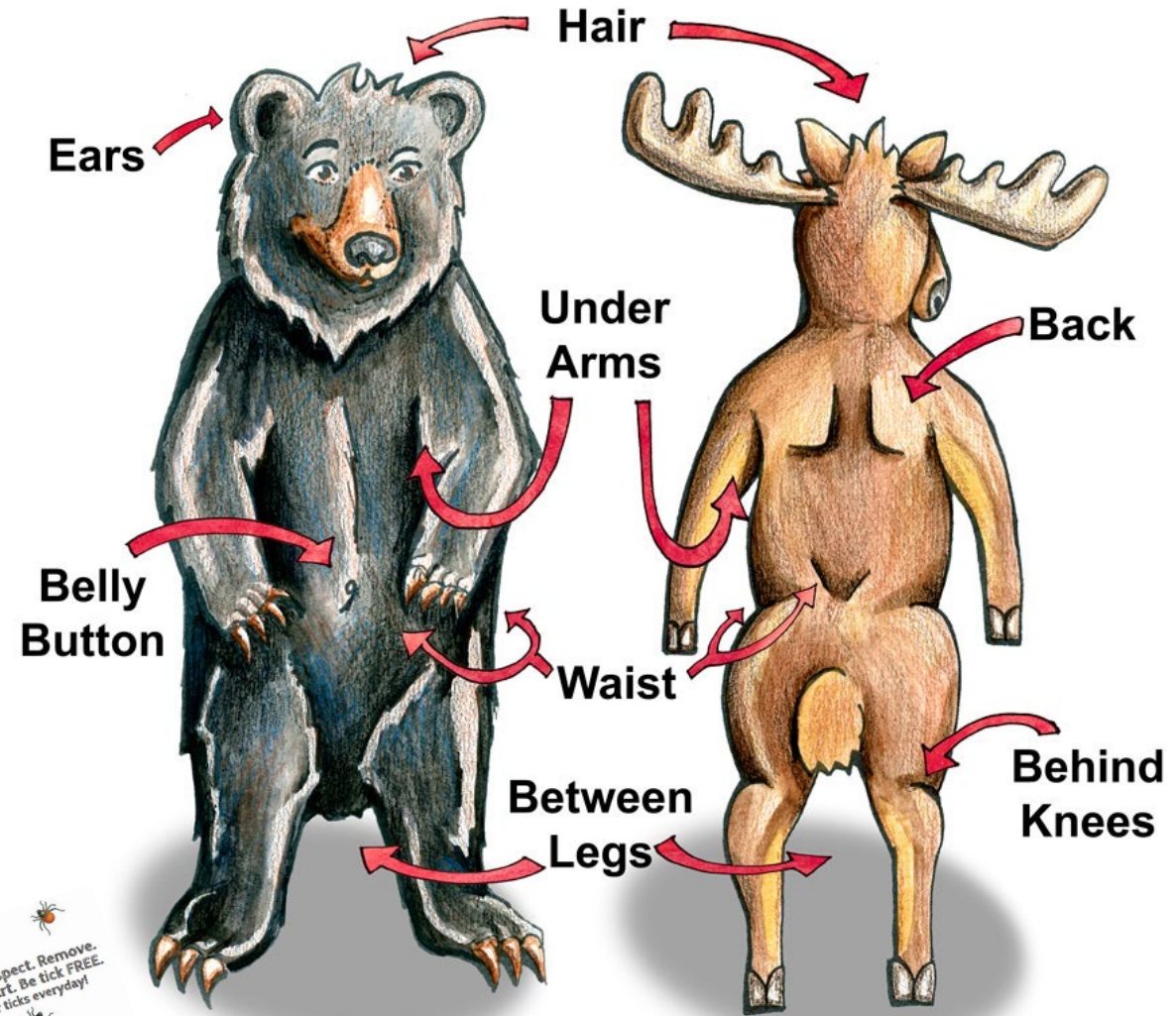


Visual Tick Checks



Bathing Tick Check

- Showering within two hours of coming indoors has been shown to reduce your risk of getting Lyme disease.
- Shower or bath may help in many ways by removing clothing, wash off ticks.



Suzi Grossman

Which Is Better?

Visual Tick Check

vs.

Bathing/Shower

- Need training or guidance
- Need good lighting
- Need good eyesight or a partner to help
- Need flexibility or a partner to view hidden body parts
- Need privacy to remove clothes
- May not be able to see nymphs

- Need a shower or bath
- Can be done alone
- May need a 2-hr timer
- Touching the body may help you find a tick

Visual Tick Checks

Bathing Tick Check

“Performing tick checks within 36 hours after spending time in the yard reduces risk (OR 0.55; CI 0.32, 0.94) and bathing within 2 hours after spending time in the yard reduces risk (OR) 0.42; CI 0.23, 0.78) and remained significantly protective...against Lyme disease” Connally, et al, 2009.

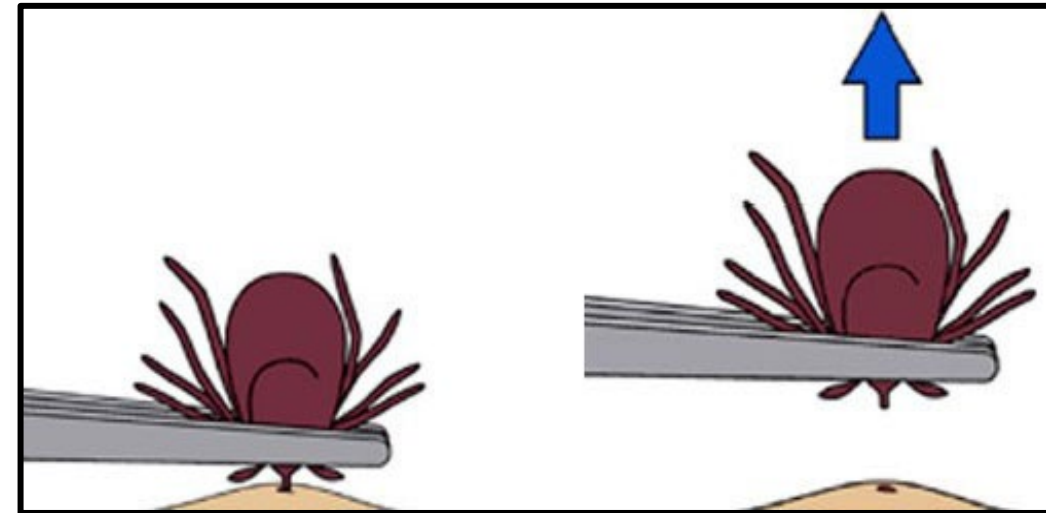


PROTECTION VIA TICK REMOVAL & SAVING THE SAMPLE



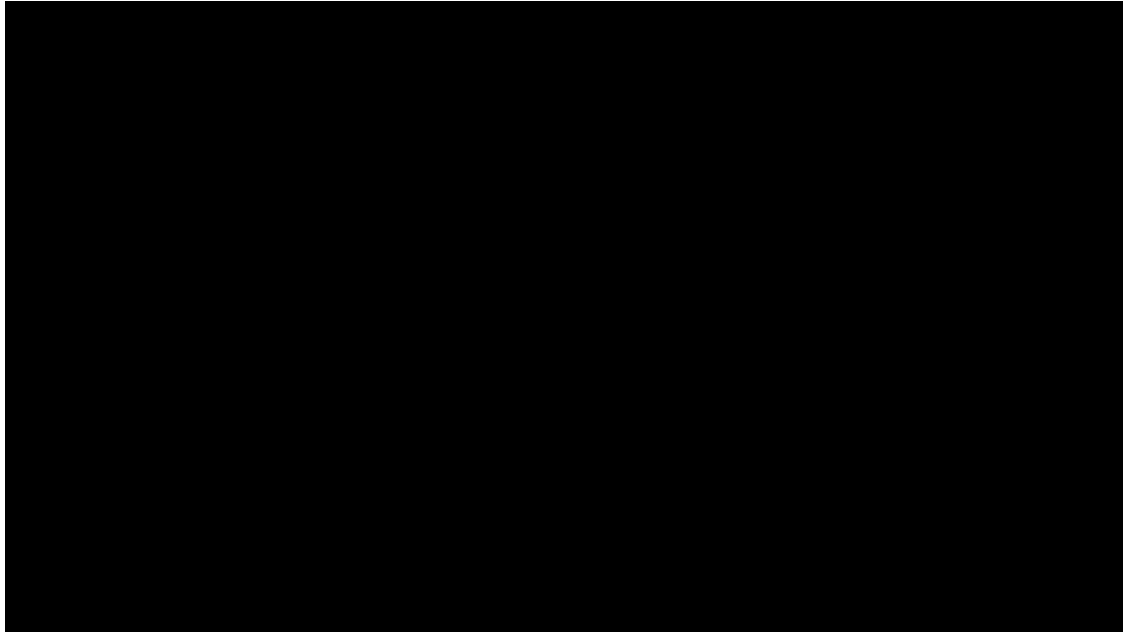
Demonstrate a Tick Removal

- Use fine-tipped tweezers to grasp the tick as close to the skin's surface as possible.
- Pull upward with steady, even pressure.
- Don't twist or jerk the tick; this can cause the mouthparts to break off and remain in the skin.
- After removing the tick, thoroughly clean the bite area and your hands with rubbing alcohol or soap and water.
- Decide to save or dispose of the tick.
 - Save it in alcohol or vial
 - Save it in a sealed bag/container
 - Dispose via wrapping in tape
 - Dispose via flush down the toilet

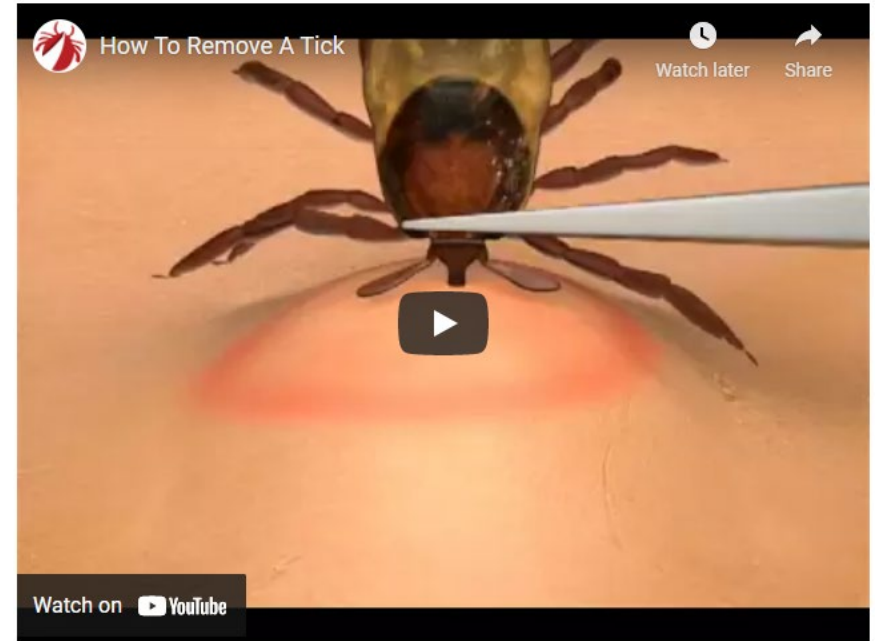


https://www.cdc.gov/ticks/removing_a_tick.html

Proper Tick Removal



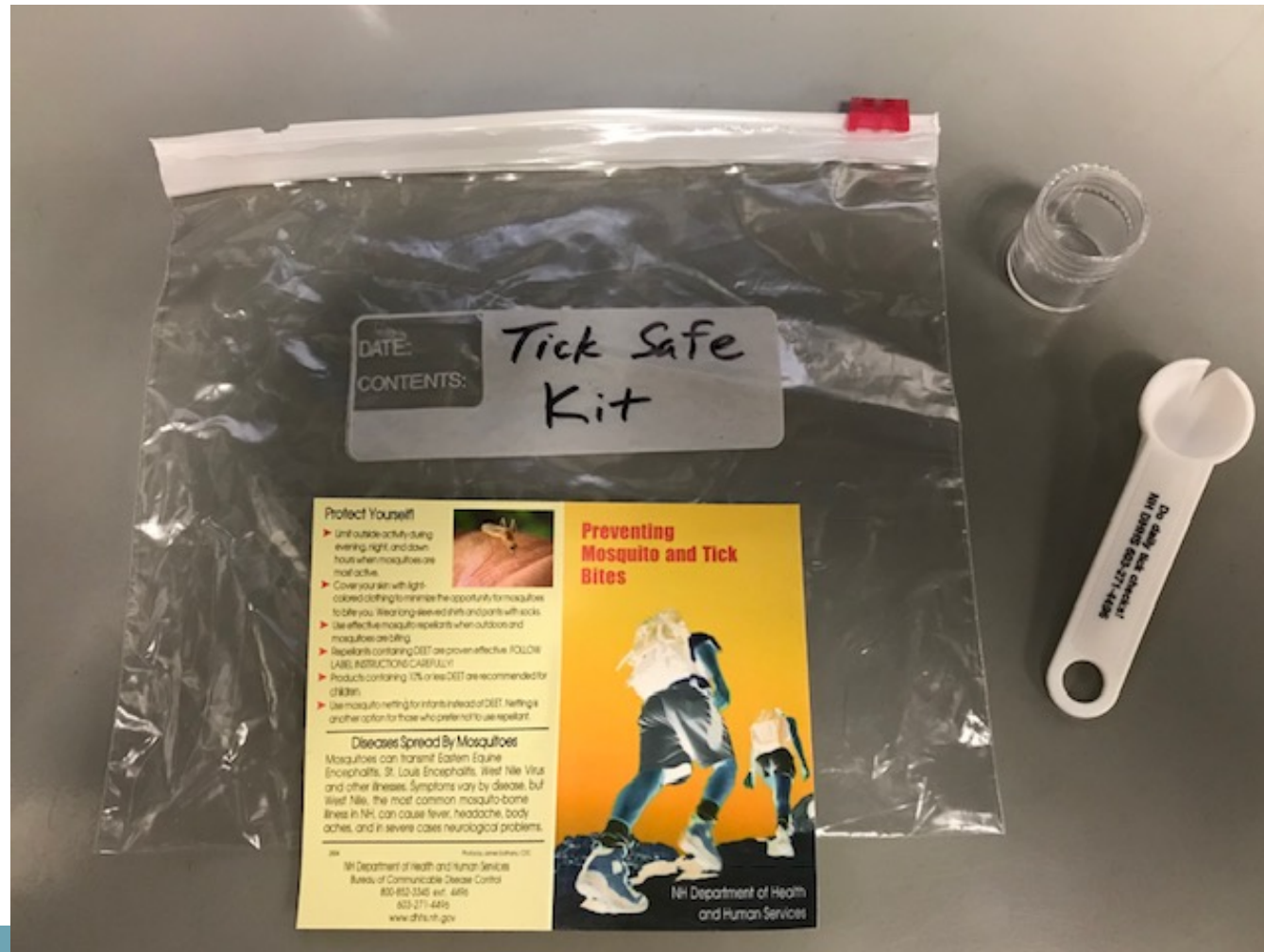
University of Maine Cooperative Extension



Tick Encounter Resource Center URI

<https://tickfreenh.org/remove/>

Materials for Tick ID and Removal



Tick Identification

American Dog Tick



American Dog Tick (*Dermacentor variabilis*)



Larva



Nymph



Adult Male



Adult Female

Blacklegged (Deer) Tick



Blacklegged Tick or Deer Tick (*Ixodes scapularis*)



Larva



Nymph



Adult Male



Adult Female



PROTECTION VIA CLOTHING AND REPELLANTS



Use of Clothing for Protection

- Long pants and shirts work best
- Can tuck into socks for added benefit
- Treated clothing also works well



3X protection

from ticks latching onto hands or arms and crawling under t-shirt*

5X protection

from ticks latching onto legs and crawling under shorts*



74X protection

from ticks latching onto shoes and crawling up leg

* Most ticks attached under treated clothing were dead

How to Choose the Right Repellent?

- Know why people use them, and don't
 - Review the main reasons from UNH Survey
- Look for products that protect against **both** ticks and mosquitos
 - DEET, Picaridin, Lemon Eucalyptus
- Provide multiple choices, allowing adults to decide
- Emphasize the safety record of EPA approved repellants, and the uncertainty of 'natural' products
- Use and reference trusted sources
 - EPA, CDC, Univ. RI, Consumer Reports, etc.

Look for symbols on the insect repellents:

Use an EPA-registered insect repellent with these active ingredients:

- DEET
- Picaridin
- Oil of Lemon Eucalyptus
- IR3535, para-menthane-diol



Web tool: <https://www.epa.gov/insect-repellents/find-repellent-right-you>

Tips to Prevent Tick Bites

- Keep ticks away from exposed skin by wearing long-sleeved shirts, long pants, and high socks or boots.
 - Tuck shirts into pants and pants into socks to cover gaps
 - Wear light-colored clothing to be able to see ticks more easily
- Check the entire body for ticks, or use bath/showers to remove them.
 - If found; promptly remove attached ticks without squeezing them.
- Use an EPA-approved repellent, and offer multiple choices
 - Use one that protects from both ticks and mosquitos
 - Promote the use of short and long-term repellants
- Consider a written policy at work, school or camp
 - Include these prevention points & the use of safe & effective repellants



Review of Personal Practices That Work

- Tick repellents and protective clothing may be associated with a lower incidence of Lyme disease. Also, Permethrin-treated clothing may reduce the # of tick bites
- Effects were mixed for the association between tick checks and incidence of LD. Bathing within 2 hours of being outside may be associated with a lower incidence of Lyme disease
- Education strategies have mixed results

Source: "Interventions to prevent Lyme disease in humans: A systematic review." M. Richardson et al. Preventive Medicine Reports 13 (2019) 16–22.

Resources from Tick Free NH



PREVENT LYME DISEASE

 <p>Wear protective clothing, including long pants and long sleeves with tucked-in cuffs. Stay on the center of the path when hiking.</p>	 <p>Treat your clothing and shoes with Permethrin. Spray treated items will repel or kill ticks. Never use more than 0.5% DEET on children.</p>	 <p>Always check yourself and your pets for ticks after spending time in tall grass, wooded or brushy areas. Take a shower after returning outdoors to wash off any unattached ticks.</p>
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TICK IDENTIFICATION

BLACKLEGGED TICKS
Early Life Stages



REMOVE TICKS IMMEDIATELY

- Using tweezers, grasp the tick close to the skin
- Pull upward with steady, even pressure (Do not twist or yank the tick as this can cause tick parts to remain in your skin)
- After removing the tick, thoroughly clean bite area
- Dispose of a live tick by putting it in alcohol, placing it in a sealed bag container, wrapping it tightly in tape, or flushing it down the toilet
- Call your Doctor, if you have been bitten by a tick

Questions? Call 271-4496

  tickfreeh.org


NEW HAMPSHIRE TICK DETECTIVE WORKBOOK FOR KIDS




BE A TICK DETECTIVE NEW HAMPSHIRE

tickfreeh.org

Prevent, Inspect, Remove.
Be tick smart. Be tick FREE.
Check for ticks everyday!



Questions? Call 271-4496
www.tickfreeh.org



TickFreeNH.org

Many of these slides are the product of
a collaboration between:

Tick Free NH & the NH Climate Health Program

and members of the Tick Free NH Council:

UNH Cooperative Extension

NH DPHS, Bureau of Infectious Disease Control

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Thank you!

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