



BEBOP LABS

Newsletter

SPRING 2022

BEBOP LABS



OUR MISSION

BeBop Labs has nonprofit 501(c)(3) status to research, gather, and disseminate scientific data and knowledge to the public on impacts to health and environment, and supply public access to a collaborative science laboratory to educate, invent, and empower local individuals.

OUR VISION

BeBop Labs' vision is to create and foster a scientifically-minded community that actively works together to tackle issues affecting human health and our environment.

OUR IMPACT

We are currently gathering information on ticks and tick-borne disease throughout NH. We typically engage 80,000 people on social media, and 14,000+ people have used our interactive map on our website.

DONATIONS

BeBop Labs is a volunteer run organization. Throughout the year we apply for grants and ask for donations to make our testing services free: tick testing and hopefully soon water testing. 100% of donations go directly to supporting our purpose. Your donation is tax deductible.

Donate online at
BebopLabs.org/products
or mail checks to BeBop Labs
PO Box 183, Salisbury NH 03268.



WATER TESTING



BeBop Labs is looking to increase knowledge and access to quality drinking water. By disseminating water quality information, we hope to help reduce environmental impacts on your health.

We aim to test public drinking water and along hiking trails. BeBop Labs is looking for a testing lab partner. If you are interested in working with us, please contact us at info@BebopLabs.org.

TICK PROJECT

Tick-borne diseases (TBD) have been increasing in New England at alarming numbers, but surveillance efforts do not yield enough information to understand the local distribution of tick vectors and their disease burden, patterns and trends. Human-tick and pet-tick interactions are crucial to consider when assessing the risk of TBD and the changes due to climate change.

BeBop Labs works to transform the way people monitor and understand their health and encourages them to make choices to improve it. Using citizen scientists we tracked ticks and TBD aiming to get location specific risks, create maps and statistically significant trends that help predict future problems.





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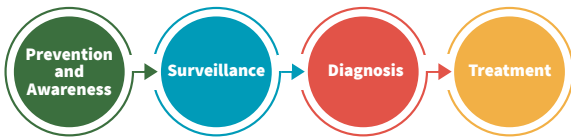
SPRING 2022

CITIZEN SCIENCE

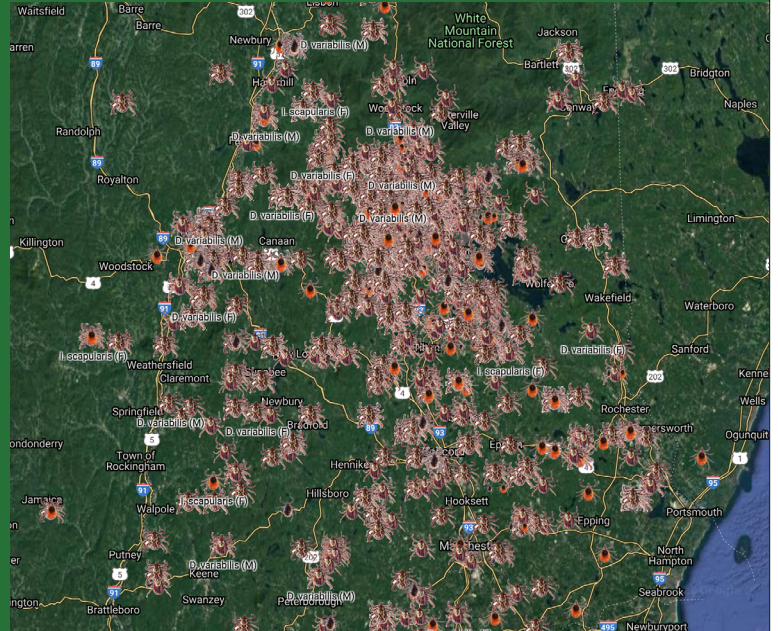
Citizen scientists collect ticks from NH through a free program since 2018. People just mail in ticks along with a questionnaire.

We prioritize testing Blacklegged (deer) ticks because they carry more diseases than Dog ticks.

BeBop Labs is the only organization in NH that tracks ticks and tick-borne diseases. Thus our organization is part of Prevention and Awareness, and Surveillance. All of our efforts are because of the help of citizen scientists. With the changing climate it is now a necessity to continually track our risk of tick-borne diseases especially in our northern and under-served state of New Hampshire.



INTERACTIVE MAP



BebopLabs.org/mapping-ticks-and-diseases

TICK REMOVAL



 Pull Straight Up

According to the Center of Disease Control:

Step 1: Use fine-tipped tweezers or your fingers to grasp the tick as close to the skin's surface as possible. Make sure to get the mouth.

Step 2: Pull upward with steady, even pressure. Don't twist or jerk the tick, so that the tick remains in tact.

Step 3: Do not discard tick. Place tick in sealed bag and send to BeBop Labs for the citizen science project.

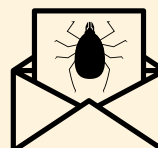
Step 4: If you're worried about contracting a disease, send tick to MedZu (TickReport.com), a testing center that provides quicker results.

TICK COLLECTION

BeBop Labs is a nonprofit organization that gathers information on ticks and tick-borne diseases in NH. We innovatively crowd source for ticks.

Put tick in zip-lock bag or tape and mail it with the following info to:

BeBop Labs
PO Box 183
Salisbury, NH 03268



TICK COLLECTION QUESTIONS

DATE tick was found.

NUMBER of ticks found.

LOCATION tick was found.

ACTIVITY during tick discovery.

On **WHOM** tick was found (human/pet)

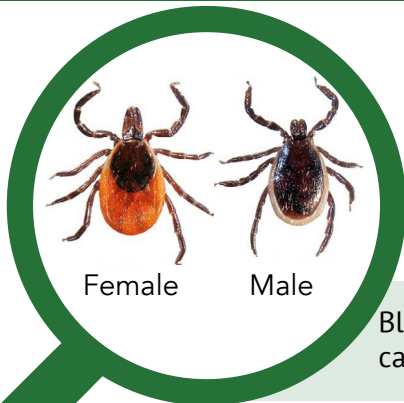
Tick **BITING** or **CRAWLING**.

If **BITING**, where on person/pet.

If **BITING** human, age of person.



BLACKLEGGED TICK
Ixodes scapularis



Actual Size



Female

Male

Blacklegged ticks can carry Lyme Disease.



TWO SEASONS:

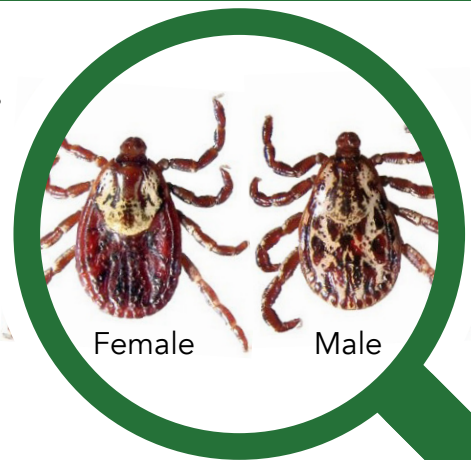
- Spring season peaks in May
- We see BLT as early as March
- Fall season peaks in October



DOG TICK
Dermacentor variabilis



Actual Size



Female

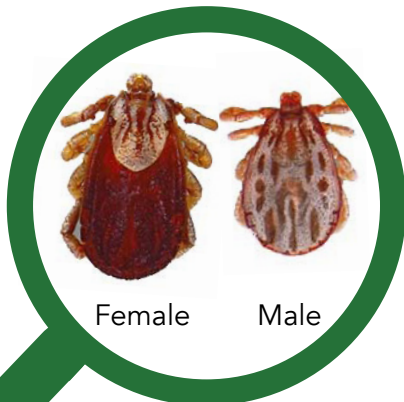
Male



ONE SEASON:

- Spring-summer
- Peaks in June

WINTER TICK
Dermacentor albipictus



Female

Male



ONE SEASON:

- Fall-winter



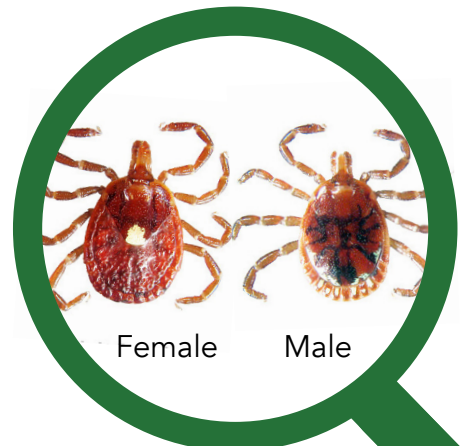
Winter ticks preferred hosts are moose and other ungulates, including deer, elk, and caribou, and occasionally horses and cattle. Heavy infestations on an individual can result in severe anemia, skin irritation, hair loss, and distraction from feeding, and ultimately results in death.

LONE STAR TICK
Amblyomma americanum



ONE SEASON:

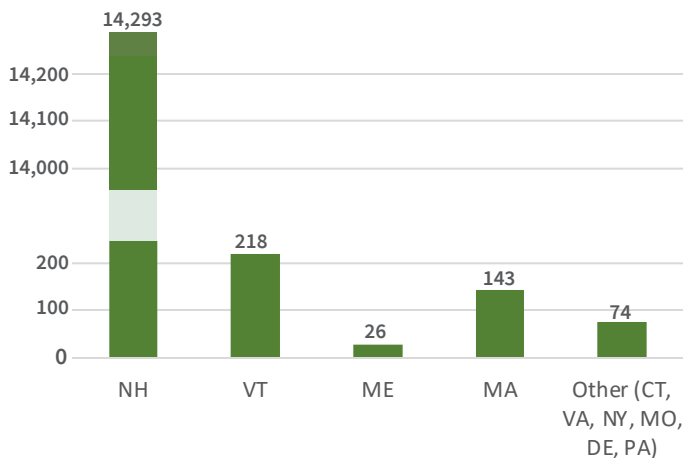
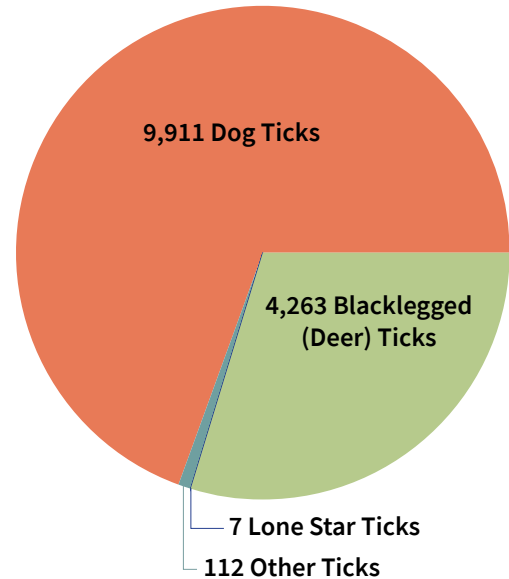
- Summer
- Peaks in May-July



Female

Male

Lone star ticks can carry and transmit several pathogens that make people and animals sick. Diseases that lone star can carry include Ehrlichiosis, Alpha-Gal (meat allergy), Southern Tick Associated Rash Illness, and Heartland Virus.

**NUMBER OF TICKS COLLECTED****Number of Ticks BeBop Labs found from 2018-2022****Species of Ticks found in NH from 2018-2022**

BeBop Labs collects most of its ticks from New Hampshire, but we have access to other states as well. We see a consistent and significant amount of ticks from year to year.

In New Hampshire, we see 50% less blacklegged (deer) ticks than dog ticks. Blacklegged ticks can carry Lyme disease. NH does have some Lone Star ticks (7 ticks collected in the past 4 years).

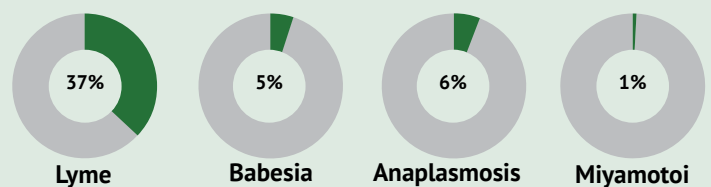
SPRING 2022 PREDICTION

Our prediction is that we will see more Blacklegged ticks (aka deer ticks) this spring.

Analyzing our data from the past 4 years, BeBop Labs has seen an increase of blacklegged ticks (aka deer ticks) in fall 2021 compared to spring 2021. Usually there are more ticks in the spring than fall, but 2021 was different. That influx of ticks last fall meant more

mating opportunities, which leads us to believe there will be more nymphs in this spring.

Compare a nymph tick, adult tick, and engorged tick, pictured left.

**DISEASE DATA****Tick-Borne Diseases found in NH from 2019-2021**

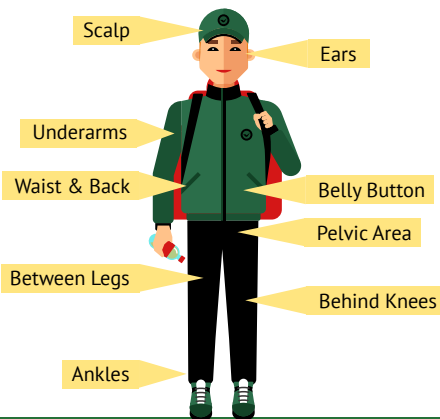
Out of over 2,500 Blacklegged ticks (aka deer ticks) tested, 38% carried pathogens from the genus *Borrelia*, which is the bacteria that causes Lyme Disease.



TICK PREFER

- Tall grass
- The area between a field and a forest
- Leaf debris
- Areas heavy with mice or other small rodents
- People who are hot, hairy, and breathe heavy

TICK CHECKS



PREVENTION TIPS



TICK-SAFE ZONE THROUGH LANDSCAPING

- 1 Mow Lawn** — Keep your lawn mowed.
- 2 Rake Leaves** — Keep leaves raked and in a pile away from traffic. Leaves are where ticks lay their eggs.
- 3 Wood Pile** — Put tick tubes on wood piles and stone walls where there are a lot of small rodents for ticks to feed on.
- 4 Wood Chips** — Make a perimeter with wood chips (cedar is best or pine) or use a spray like bifenthrin to protect the tick-free zone. But sprays also kill our bees.
- 5 Keep Ferns** — Leave ferns because they have a natural pesticide.



Thank you for your support! Please feel free to ask questions & make suggestions.

