



BEBOP LABS

Newsletter

SPRING 2019



BeBop Labs' Mission

BeBop Labs' mission is to research, gather, and disseminate scientific data and knowledge to the public on impacts to health and the environment. We are seeking nonprofit 501(c)(3) status to accomplish this.

BeBop Labs' 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.

BeBop Labs' Current Project

One of our projects is to gather information on ticks and tick-borne diseases in NH. To do this, we innovatively crowd source for ticks. Getting individuals involved aligns with our vision. That means if you find a tick, you can send it to us along with the supporting data.

How to Save a Tick for Public Health Research

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

Dr. Kaitlyn Morse
Tick Collection
PO Box 183
Ashland, NH 03217



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)

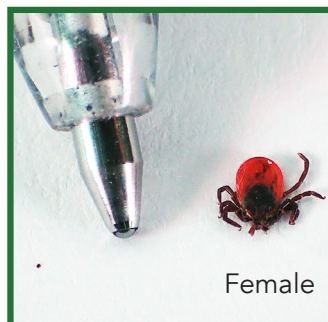
Tick **BITING** or **CRAWLING**.

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

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

Identifying Ticks

Blacklegged Ticks*
(aka Deer Ticks)



Female

Dog Ticks



Female

*Watch out for these ticks—they carry many diseases.

If you find a tick biting and you are worried about contracting a disease then please send it to our partner Ticknology at www.ticknology.org. BeBop Labs does test ticks for disease, free of charge but cannot guarantee a quick turnaround due to lack of funding. Please note that testing a tick is not diagnostic for disease. If a tick tests positive, see your healthcare professional for additional screening. Find out more about which ticks carry diseases at www.BebopLabs.org.

Citizen Science

By saving a tick you directly participate in the collection of the data which makes finding answers to your questions and the results possible.

Funding

We volunteer and use personal funds to accomplish our mission and vision. If you believe that this information is important, please consider a tax-exempt donation. Donations can be made at BebopLabs.org/donate. **Your donations will help support a faster turnaround time for tick testing.**

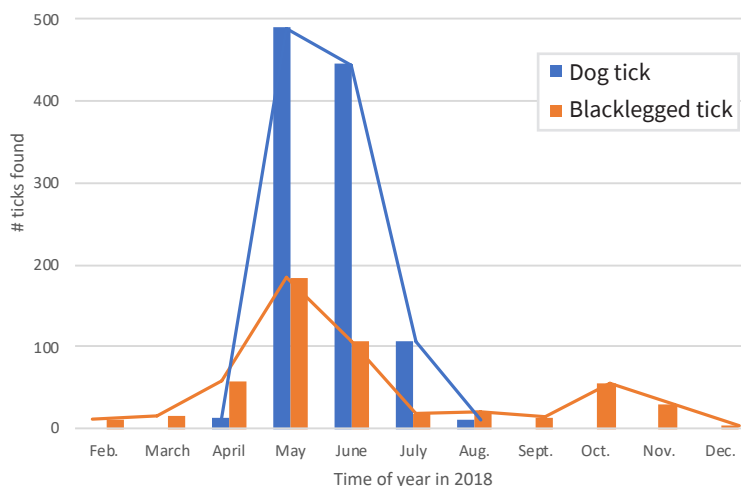


BeBop Labs Recent Data

In conjunction with other labs in 2018, we collected 1,654 ticks, 822 were tested for disease. Of which 100 were tested and funded by BeBop Labs personal funds. There were 554 blacklegged ticks (deer ticks) and 1,100 dog ticks. Our goal is to provide information and data about your risk or diseases and other impacts to your health so you can make informed decisions.

What Time of Year Do You Find Ticks?*

There are two seasons for blacklegged ticks (deer ticks): Spring and Fall.



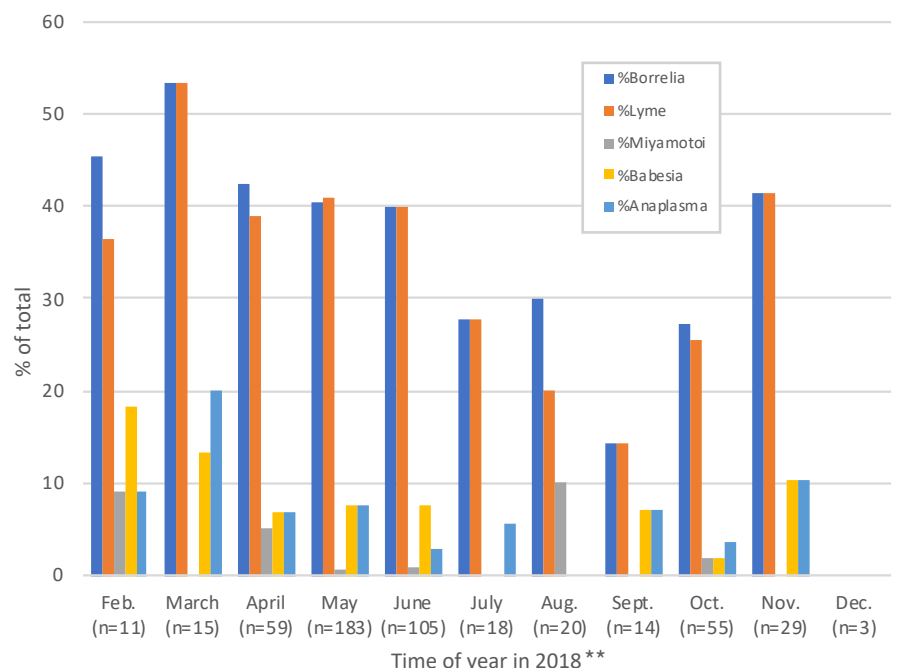
The orange bars, representing blacklegged ticks (deer ticks), make two peaks, one in the spring and one in the fall. The blue bars, dog ticks, has one major spike in the spring. This means that there are two seasons for blacklegged tick (deer ticks), spring and fall, and only one season for dog ticks in the spring. So don't be fooled in the spring by pesky dog ticks, look carefully for these blacklegged ticks (deer ticks) when you check yourself for ticks.

*Data pooled from BeBop Labs, Ticknology and UMass Amherst Lab of Medical Zoology public database, NH 2018.

What Time of Year Do We Find Tick-Borne Diseases in NH?*

Despite having 2 seasons for blacklegged ticks (deer ticks), the tick-borne diseases are steady all year round!

Looking at the blue and orange bars together for % Lyme disease and % Borrelia disease the bars stay high throughout the year. The other tick borne diseases in gray, yellow, and blue bars are lower than Borrelia, but also remain constant and around less than 10% throughout the year, with a slight decline in July. Thus, tick-borne diseases occur all year round and there is no real trend with our data from 2018.



*Data pooled from BeBop Labs, Ticknology and UMass An Lab of Medical Zoology public database, NH 2018.

**n is the total # of tested ticks for that month.

**Tick-Borne Diseases found by County in NH from 2018***

NH County**	%Borrelia#	%Lyme	%Babesia	%Anaplasmosis	%Miyamotoi
Belknap (n=19)	47	47	0	5	0
Carroll (n=34)	47	47	0	6	0
Cheshire (n=40)	17.5	17.5	0	5	0
Coos (n=3)	0	0	0	0	0
Grafton (n=60)	40	38	2	3	5
Hillsborough (n=173)	42	42	9	9	0.5
Merrimack (n=48)	52	50	12.5	4	2
Rockingham (n=85)	25	25	12	6	1
Strafford (n=39)	46	38.5	5	8	8
Sullivan (n=13)	23	23	0	0	0
State of NH (n=514)	38	37	7	6	2

*Data pooled from BeBop Labs, Ticknology and UMass Amherst Lab of Medical Zoology public database, NH 2018.

**n represents total # test ticks for the county.

#Percentages of blacklegged ticks (deer ticks) rounded to the nearest percent.

Lyme Disease

Lyme disease is the most common tick-borne infection in the United States and it is caused by *Borrelia burgdorferi*. There are early onset and late stage symptoms. Symptoms include, but not limited to: flu-like symptoms, headache, stiff neck, mild fever, muscle aches, and fatigue.

Anaplasmosis

Anaplasmosis is the most prevalent tick-borne disease world-wide and it is caused by *Anaplasma phagocytophilum*. Causing symptoms including, but not limited to: headaches, chills, fever, and general weakness.

Babesiosis

Babesiosis is caused by the protozoa *Babesia microti* and usually the infected do not have symptoms.

B. miyamotoi

Borrelia miyamotoi is the cause of tick-borne relapsing fever and relatively newly discovered. Infection by *B. miyamotoi* causes Lyme-like symptoms including but not limited to fatigue, headache, muscle pain, and loss of appetite.

Participate in our Survey

You can also help us collect data on your behaviors and understandings by taking our survey. Available on our website through a link or a printable PDF that can be mailed. This will help us direct the research and educational fliers so we answer your questions. www.BeBopLabs.org/tick-survey



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BEBOP LABS TICK PREVENTION

BeBop Labs Prevention Tips

Now you know your risk of tick-borne diseases in your area. Try these proven prevention methods.

1

Wear long sleeve shirt and pants.

2

Spray clothes and shoes with permethrin spray.

3

Wear white or light-colored clothes to see ticks easier.

4

Wear shoes/boots instead of sandals or barefeet.

5

Tie back long hair and wear a hat.

6

Walk in the middle of the trail, away from vegetation, where ticks quest.

7

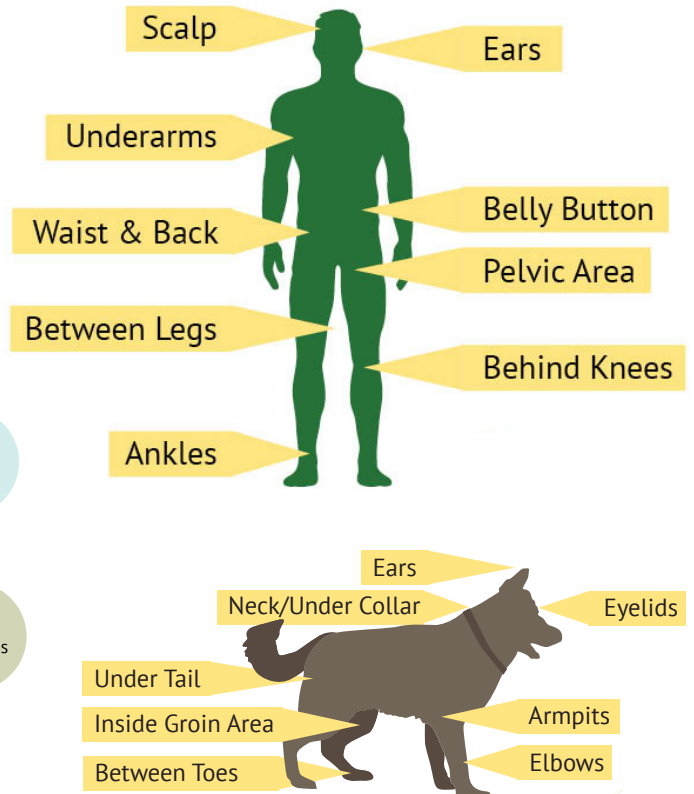
Tuck shirt into pants and pants into socks or boots to help keep ticks away from your skin.

8

Perform daily tick checks. Send us any ticks you find. Instructions at Bebop-Labs.com/sendticks.



Perform Daily Tick Checks



Tick Removal

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. You want to make sure you get the mouth.

Step 2: Pull upward with steady, even pressure. Don't twist or jerk the tick, as this can cause the mouth-parts to break off and remain in the skin.

Step 3: After removing the tick, thoroughly clean the bite area and your hands with rubbing alcohol or soap and water.

Step 4: Do not discard your tick. Place the tick in a sealed bag/container, fill out the questionnaire and mail to BeBop Labs.



↑ Pull straight up.

Dr. Kaitlyn Morse | Tick Collection | PO Box 183 | Ashland, NH 03217



BebopLabs.org



BebopLabsNH@gmail.com

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