THE UNIVERSITY OF MAINE
Cooperative Extension

Tick Surveillance Program

ANNUAL REPORT

2025

PURPOSE

Ticks and tick-borne diseases pose a significant public health concern in Maine and the United States, with Lyme disease being the most commonly reported vector-borne illness. Anaplasmosis, babesiosis, hard tick relapsing fever, and Powassan virus are also increasing in reported cases. The blacklegged tick (commonly known as the deer tick) is the primary vector for these diseases and has expanded in both population and geographic range in Maine. The state hosts approximately 15 tick species, with the blacklegged, American dog, and woodchuck ticks being the most commonly encountered. Invasive species like the lone star tick and Asian longhorned tick also threaten human, wildlife, and domestic animal health. Combatting these threats requires an integrated approach involving monitoring, habitat reduction, wildlife management, and public education.

This report summarizes the information gathered through the passive surveillance associated with the 2025 UMaine Extension Tick Surveillance Program. Passive surveillance refers to tick specimens found and submitted by members of the public and can potentially result in a bias toward certain geographic locations or uncertainty about where a specific sample was collected. All samples were submitted to the Tick Lab within the UMaine Cooperative Extension Diagnostic & Research Laboratory.

The Tick Lab is not a medical lab and does not provide medical information. The testing of tick samples is intended to provide information on ticks and their associated pathogens in Maine and is not intended to be used in human health assessment or to be interpreted as a medical diagnosis. If you have been bitten by a tick, do not wait until tick testing results are available to consult with your doctor.

This report was prepared by Griffin Dill, Tom Rounsville, Ann Bryant, John Nugent, Olivia Choi, Alaina Woods, Sarah Manning, Alyssa Marini, and Maggie McAuliffe. Questions regarding the report can be directed to tickID@maine.edu. Additional data are available online at ticks.umaine.edu.

TICK LAB

TICK SPECIES IDENTIFICATION

A total of **5,486** ticks were submitted to the UMaine Extension Tick Surveillance Program in 2025, with samples submitted from each of the state's 16 counties and from 411 towns. The majority of the submissions were identified as blacklegged ticks (*Ixodes scapularis*) and American dog ticks (*Dermacentor variabilis*). The Tick Lab also received Maine's first Asian longhorned tick (*Haemaphysalis longicornis*) specimen, a nymph acquired in Cumberland County. Blacklegged tick life stage can be important in the disease transmission cycle, as adults are more likely to be infected with a pathogen, but the smaller immature nymphs can easily go unnoticed for long periods of time while feeding. Most pathogens, with the exception of *Borrelia miyamotoi* and possibly Powassan virus, are not passed from the adult female blacklegged tick through the egg to the larvae.

Tick Species Submitted to the UMaine Extension Tick Lab in 2025

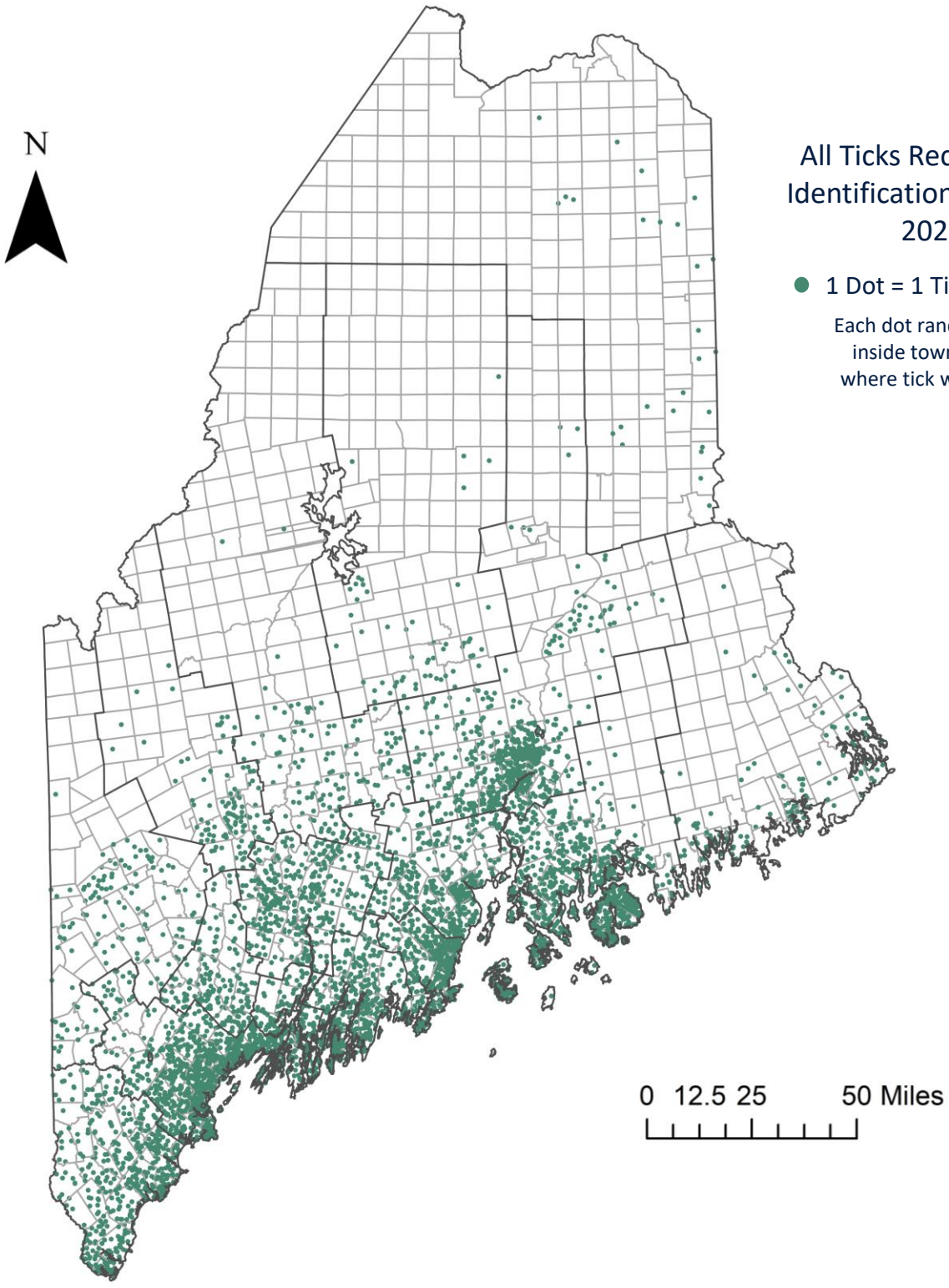
Tick Species	Common Name	Total
Ixodes scapularis	Blacklegged tick (also known as deer tick)	4035
Dermacentor variabilis	American dog tick	1376
Amblyomma americanum	Lone star tick	30
Ixodes cookei	Woodchuck tick	24
Haemaphysalis longicornis	Asian Longhorned tick	1
Ixodes marxi	Squirrel tick	1
Other	Tick species acquired in other states	4
Unknown	Specimens damaged during removal/delivery	15

Blacklegged Tick (*Ixodes scapularis*) Submissions by Life Stage and Feeding Status – 2025

Life Stage	Not Engorged	Partially Engorged	Fully Engorged	Engorgement Undetermined*	Total
Adult Females	197	2762	45	86	3090
Adult Males	-	-	-	-	72
Nymphs	22	772	8	10	812
Larvae	6	44	0	3	53

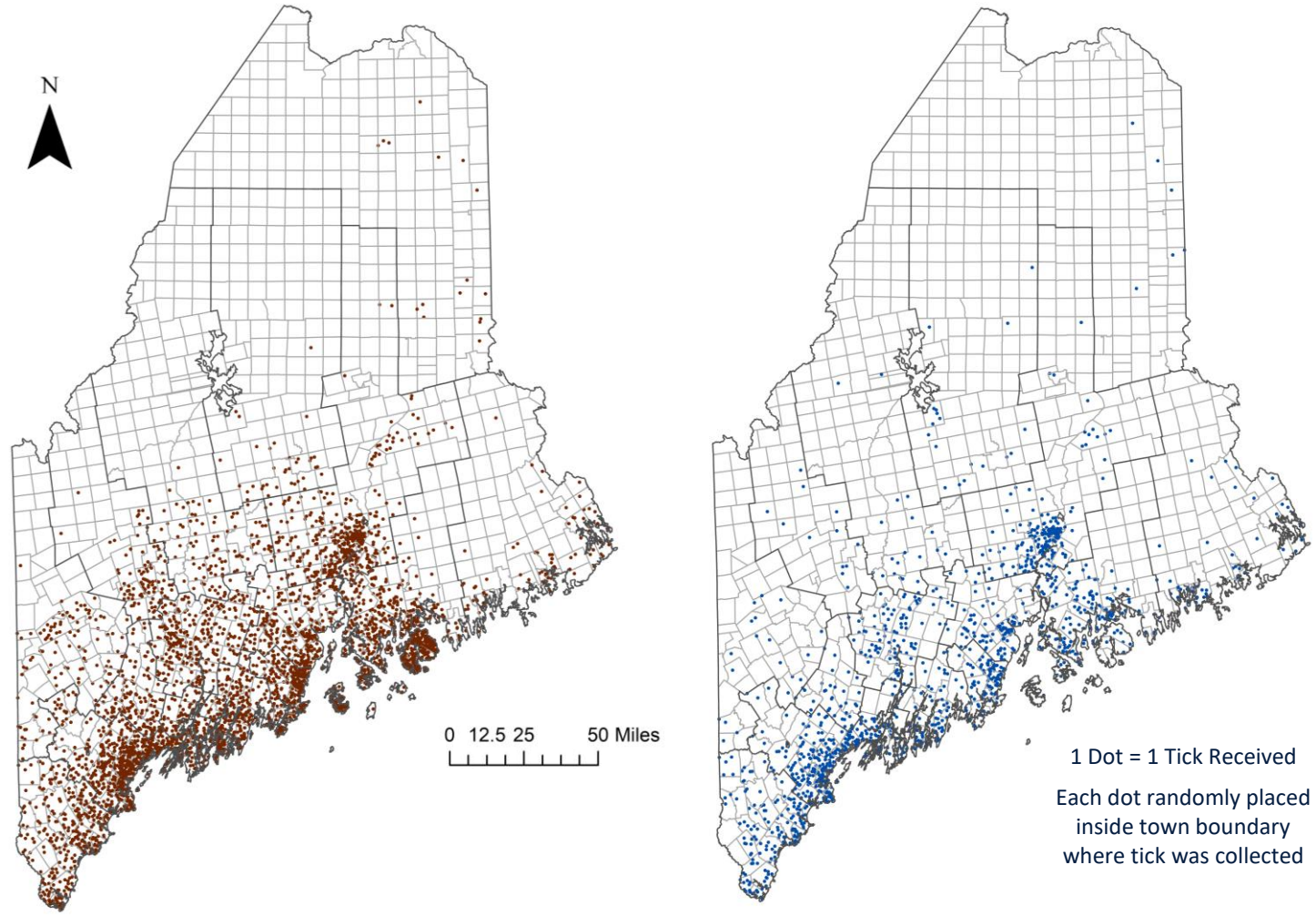
* Some specimens (8) arrived at the lab too damaged to determine feeding status, sex and/or life stage. Though male ticks may feed for brief periods, they do not become engorged.

TICK SPECIES IDENTIFICATION

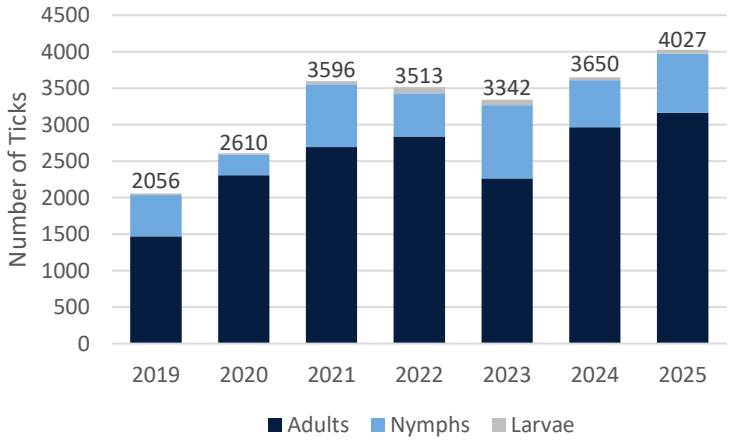


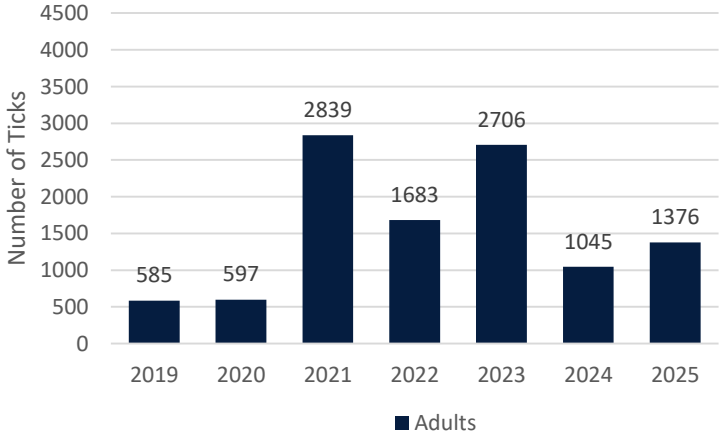
TICK SPECIES IDENTIFICATION

Blacklegged Tick (Left) and American Dog Tick (Right) Submissions – 2025



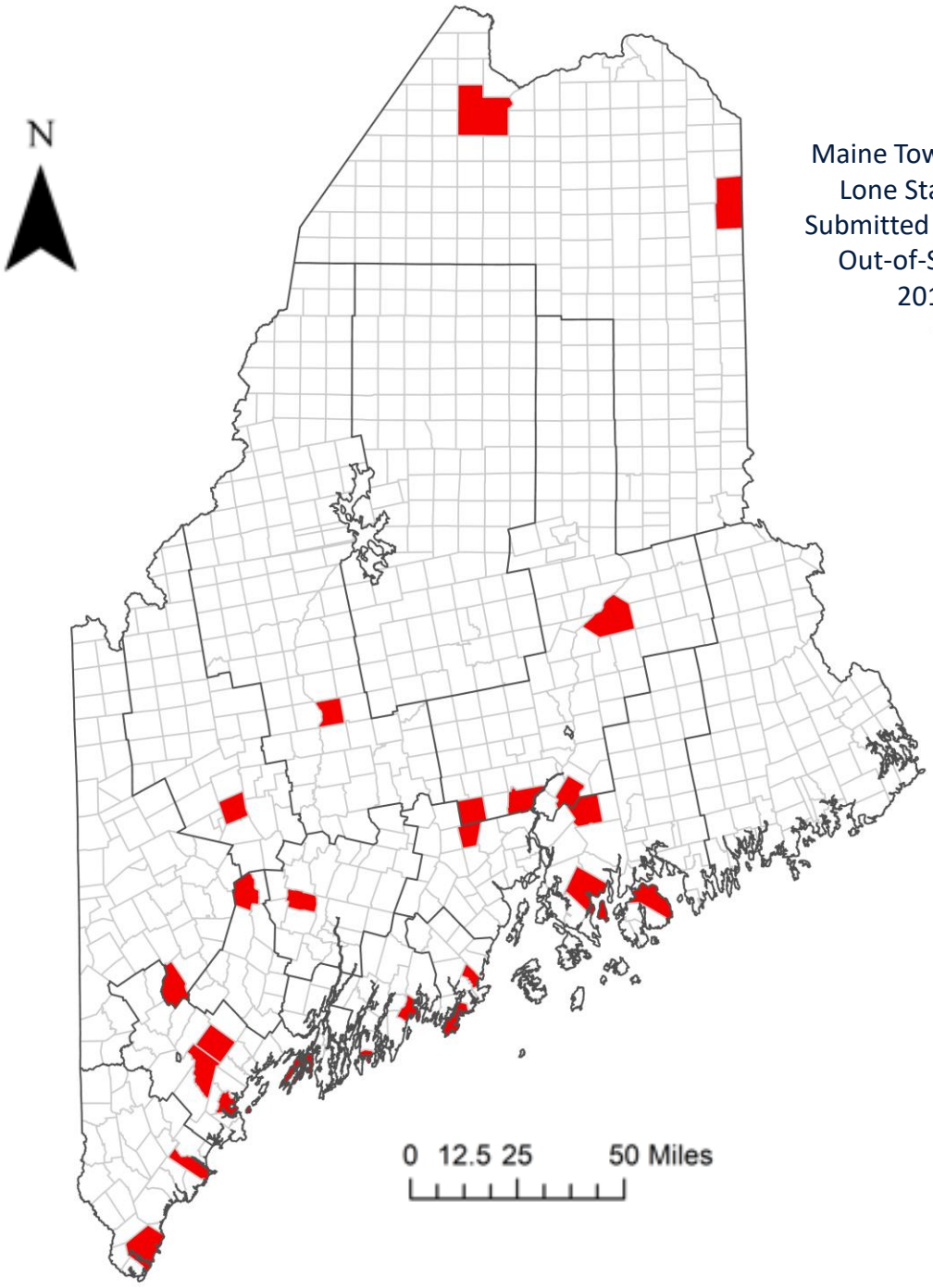
Blacklegged Tick (Left) and American Dog Tick (Right) Submissions – 2019-2025





TICK SPECIES IDENTIFICATION

Lone star ticks (*Amblyomma americanum*) are not known to have established permanent populations in Maine, but are established in other New England states. Of the 30 lone star ticks that were submitted to the program in 2025, six were acquired in Maine without any recent travel outside of the state. The Tick Lab has received 149 lone star ticks since 2019, of which 84 were acquired outside the state of Maine. Of the 65 in-state samples, only 25 were acquired in Maine without any recent travel outside of the state.

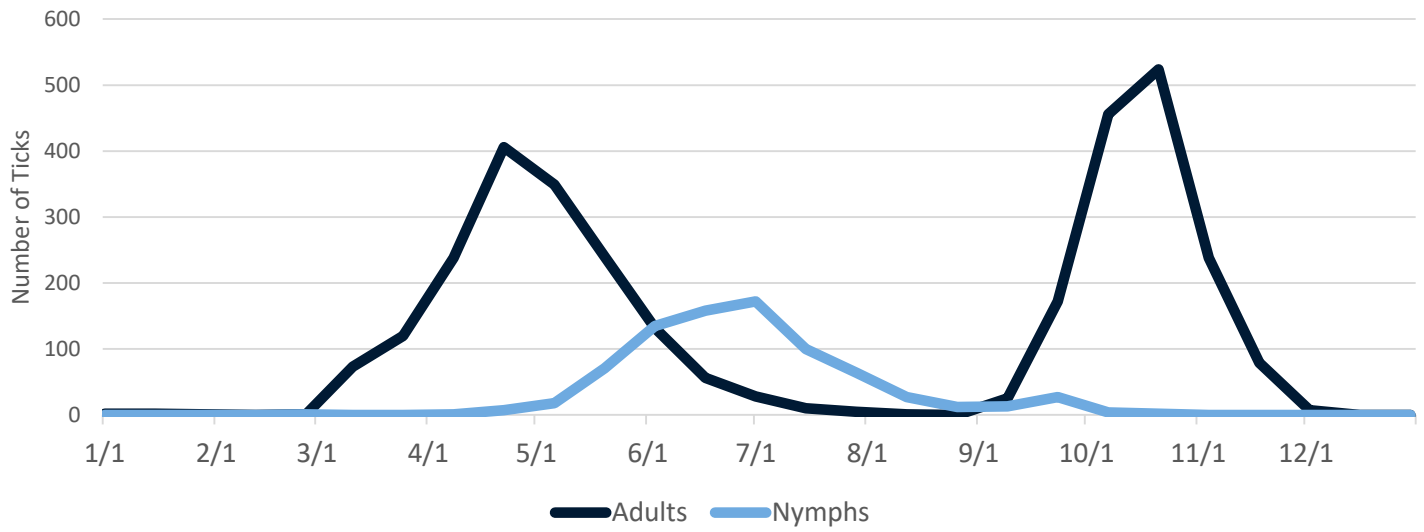


Maine Towns from which Lone Star Ticks were Submitted without Recent Out-of-State Travel – 2019-2025

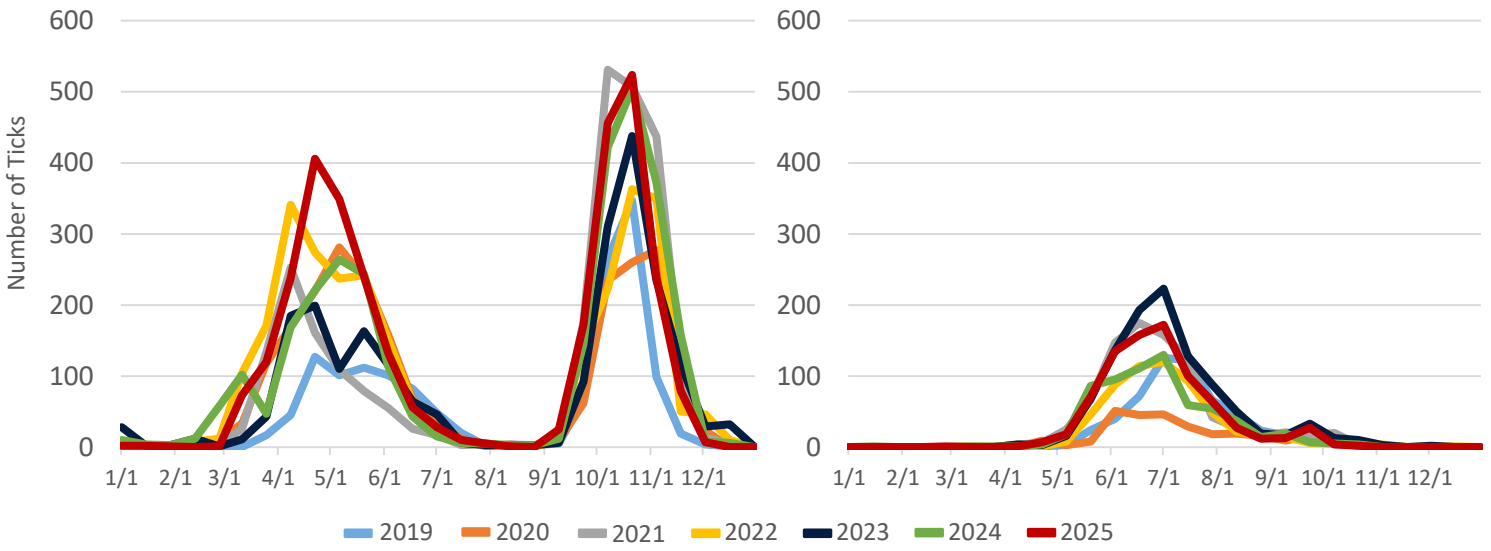
SEASONALITY OF TICK SUBMISSIONS

Tick activity can vary by season, based upon multiple factors including the tick's life cycle, weather, and host availability. While both blacklegged tick adults and nymphs can transmit pathogens, the nymphs play an important role in the disease transmission cycle due to their small size and ability to go unnoticed while feeding. Adult blacklegged ticks are most active from spring to late fall with two peaks, one in April or May and another peak in late October or early November. Nymph numbers usually peak in June and early July. When temperatures permit, blacklegged ticks can be active year round.

Blacklegged Tick (*Ixodes scapularis*) Submissions by Date they were Found – 2025



Blacklegged Tick Submissions (Left: Adults, Right: Nymphs) by Date they were Found – 2019-2025



TICK PATHOGEN TESTING

Pathogen testing was conducted on blacklegged ticks and related species for the causative agents of Lyme disease (*Borrelia burgdorferi*), anaplasmosis (*Anaplasma phagocytophilum*), babesiosis (*Babesia microti*), hard tick relapsing fever (*Borrelia miyamotoi*), and Powassan virus. We tested 3,001 adult blacklegged ticks and 779 nymphs. Of the 28 Powassan virus detections, all were lineage II (deer tick virus). We also tested 52 larval blacklegged ticks and detected no pathogens.

Infection Prevalence in Submitted Blacklegged Ticks (*Ixodes scapularis*) (Adults & Nymphs) – 2025

Pathogen	% of nymphs infected	% of adults infected	% of ticks infected
Borrelia burgdorferi	25.0%	45.2%	41.0%
Anaplasma phagocytophilum	6.9%	10.2%	9.5%
Babesia microti	6.4%	14.2%	12.6%
Borrelia miyamotoi	1.4%	1.4%	1.4%
Powassan Virus	0.0%	0.9%	0.8%
Borrelia + Anaplasma	3.3%	4.7%	4.4%
Borrelia + Babesia	3.3%	8.1%	7.1%
Anaplasma + Babesia	0.4%	0.5%	0.5%
Borrelia + Anaplasma + Babesia	0.9%	2.2%	1.9%

Non-*Ixodes* tick species, including the American dog tick and lone star tick were tested for the causative agents of Rocky Mountain spotted fever (*Rickettsia ricketsii*), ehrlichiosis (*Ehrlichia* spp.), tularemia (*Francisella tularensis*), and Heartland virus.

Infection Prevalence in American Dog Ticks and Lone Star Ticks – 2025

Pathogen	American Dog Ticks (*Dermacentor variabilis*)	Lone Star Ticks (*Amblyomma americanum*)
Rickettsia rickettsii	0/1137 (0%)	0/30 (0%)
Ehrlichia spp.	0/1137 (0%)	0/30 (0%)
Francisella tularensis	0/1137 (0%)	0/30 (0%)
Heartland Virus	0/1137 (0%)	0/30 (0%)

TICK PATHOGEN TESTING

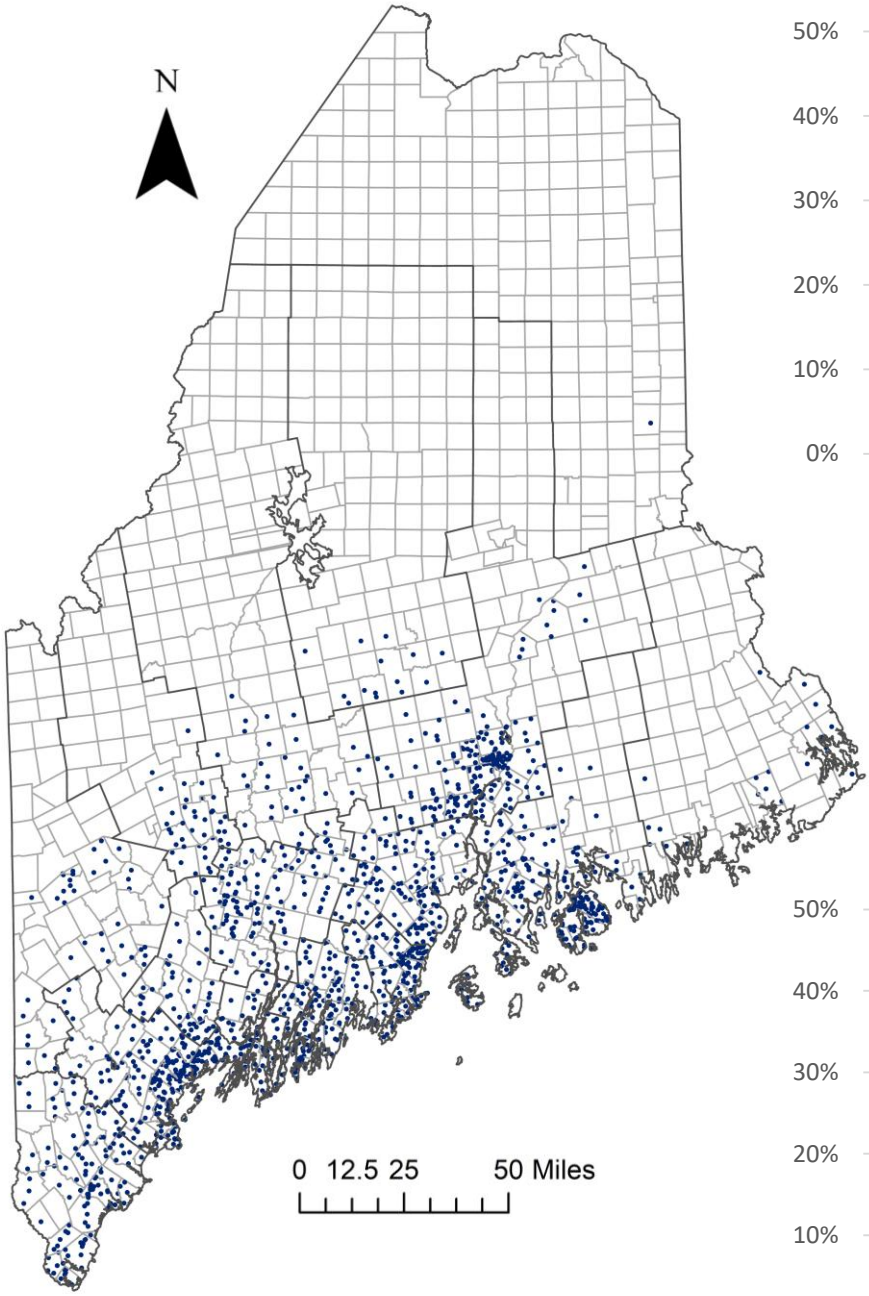
Tick populations and infection rates can vary over both large and small geographic distances. The numbers in the following table represent the number of blacklegged ticks that tested positive from each county. The percentage indicates the number of ticks that tested positive divided by the total number of blacklegged ticks that were tested from that county. Submissions testing positive for each pathogen are mapped on the following three pages. In addition to the information listed below, another 91 samples were submitted from locations outside of Maine or from undetermined locations.

Infection Prevalence in Submitted Blacklegged Ticks (*Ixodes scapularis*) (Adults & Nymphs) by County – 2025

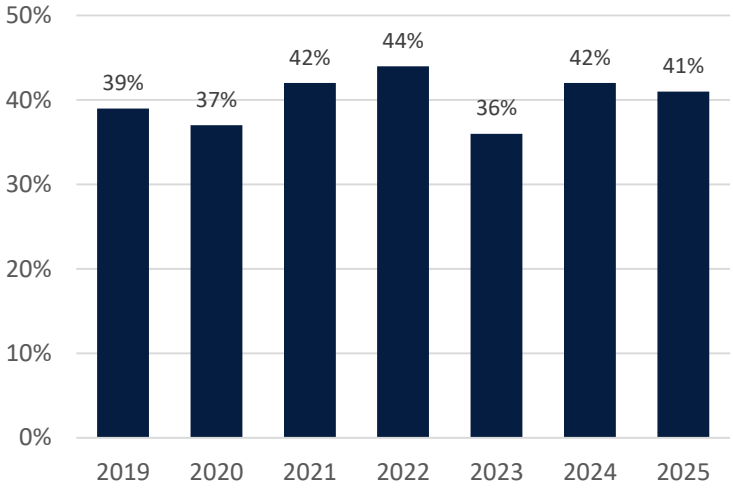
County	Ticks Submitted	Ticks Tested	*Borrelia burgdorferi*	*Anaplasma phagocytophilum*	*Babesia microti*	Powassan Virus
Androscoggin	137	131	50 (38.2%)	13 (9.9%)	20 (15.3%)	1 (0.8%)
Aroostook	17	15	1 (6.7%)	2 (13.3%)	0 (0.0%)	0 (0.0%)
Cumberland	645	627	249 (39.7%)	50 (8.0%)	71 (11.3%)	5 (0.8%)
Franklin	95	85	40 (47.1%)	4 (4.7%)	13 (15.3%)	0 (0.0%)
Hancock	603	589	216 (36.7%)	67 (11.4%)	56 (9.5%)	2 (0.3%)
Kennebec	277	275	115 (41.8%)	24 (8.7%)	38 (13.8%)	1 (0.4%)
Knox	344	338	135 (39.9%)	35 (10.4%)	52 (15.4%)	4 (1.2%)
Lincoln	293	288	137 (47.6%)	32 (11.1%)	51 (17.7%)	3 (1.0%)
Oxford	112	109	44 (40.4%)	5 (4.6%)	9 (8.3%)	1 (0.9%)
Penobscot	420	405	190 (46.9%)	39 (9.6%)	50 (12.3%)	3 (0.7%)
Piscataquis	35	35	14 (40.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Sagadahoc	130	124	45 (36.3%)	5 (4.0%)	14 (11.3%)	3 (2.4%)
Somerset	98	94	32 (34.0%)	9 (9.6%)	10 (10.6%)	0 (0.0%)
Waldo	275	272	127 (46.7%)	40 (14.7%)	49 (18.0%)	2 (0.7%)
Washington	84	75	23 (30.7%)	9 (12.0%)	4 (5.3%)	0 (0.0%)
York	326	318	133 (42.0%)	25 (7.9%)	39 (12.3%)	4 (1.3%)
TOTAL	**3891**	**3780**	**1551 (41.0%)**	**359 (9.5%)**	**475 (12.6%)**	**29 (0.8%)**

BORRELIA BURGDORFERI (CAUSATIVE AGENT OF LYME DISEASE)

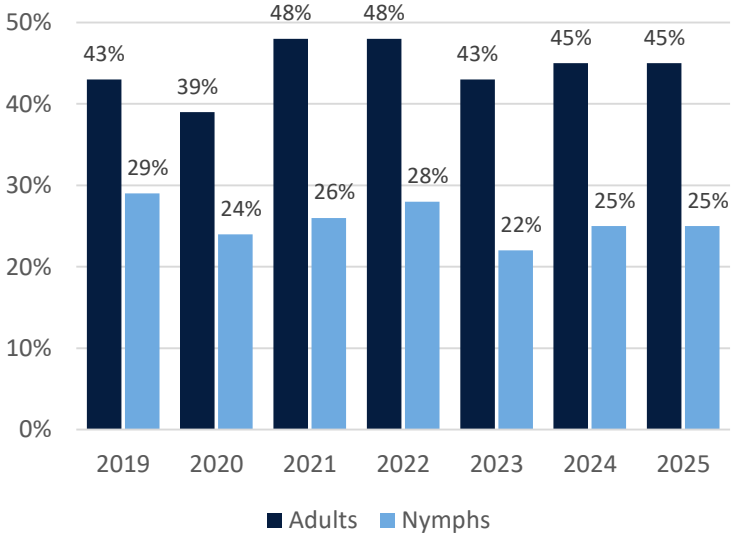
Blacklegged Ticks *(Ixodes scapularis)* Positive for *Borrelia burgdorferi* – 2025



Borrelia burgdorferi Infection Prevalence in Submitted Blacklegged Ticks – 2019-2025

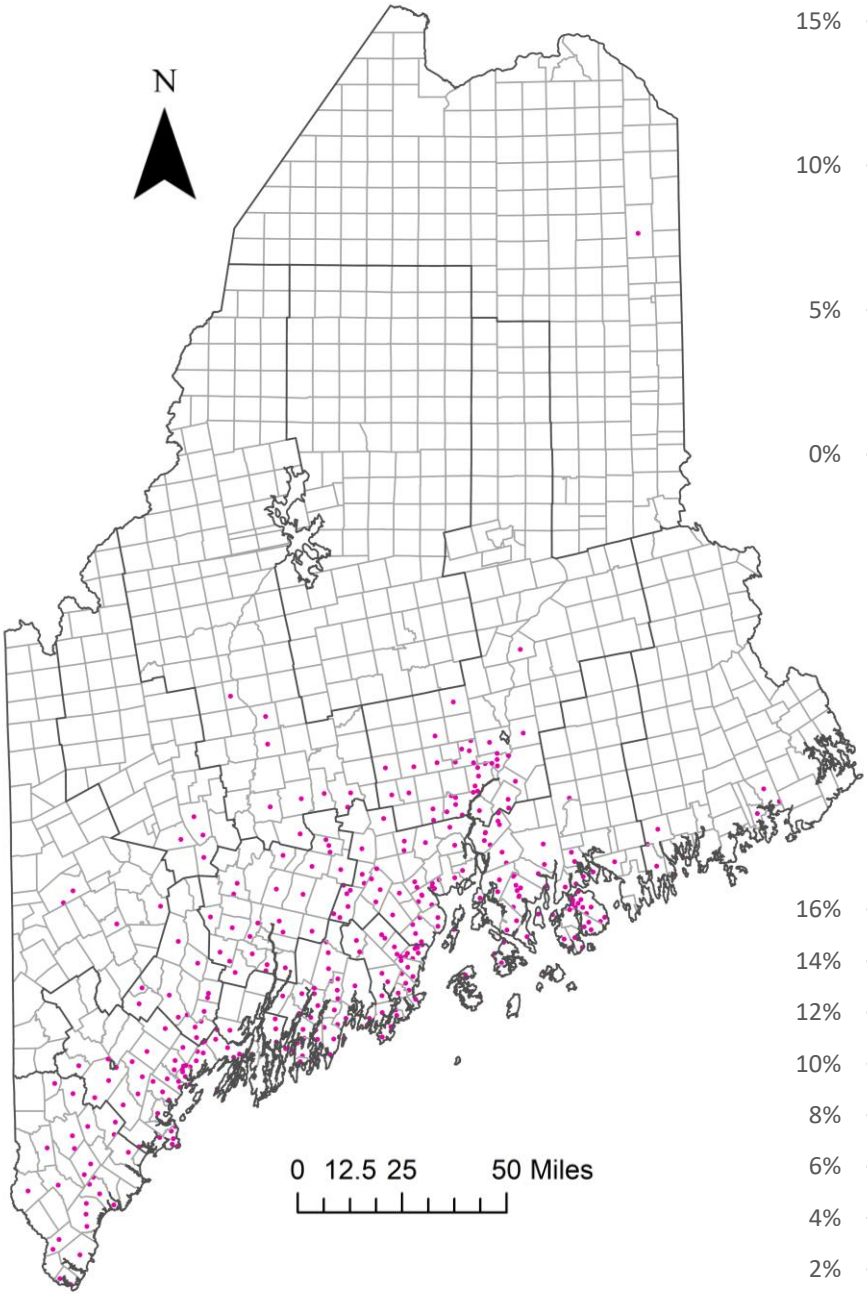


Borrelia burgdorferi Infection Prevalence by Life Stage in Submitted Blacklegged Ticks – 2019-2025

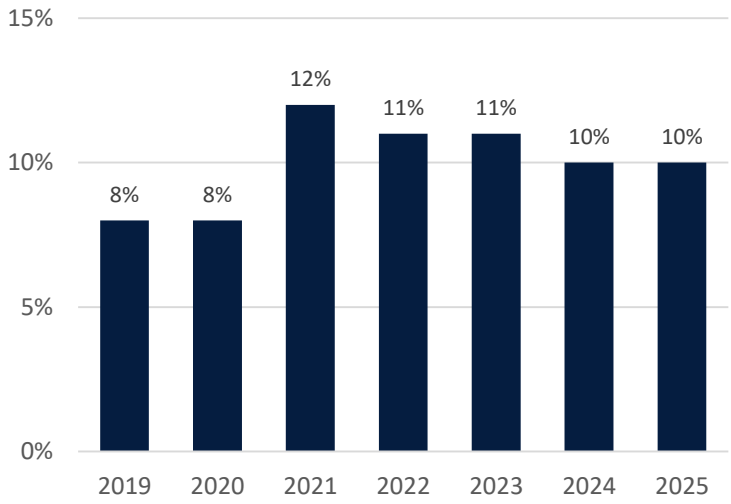


ANAPLASMA PHAGOCYTOPHILUM (CAUSATIVE AGENT OF ANAPLASMOSIS)

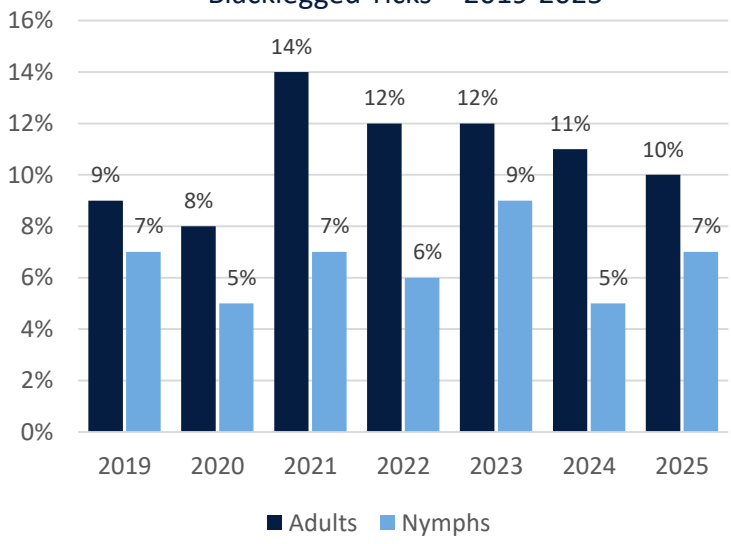
Blacklegged Ticks *(Ixodes scapularis)* Positive for *Anaplasma phagocytophilum* – 2025



Anaplasma phagocytophilum Infection Prevalence in Submitted Blacklegged Ticks – 2019-2025

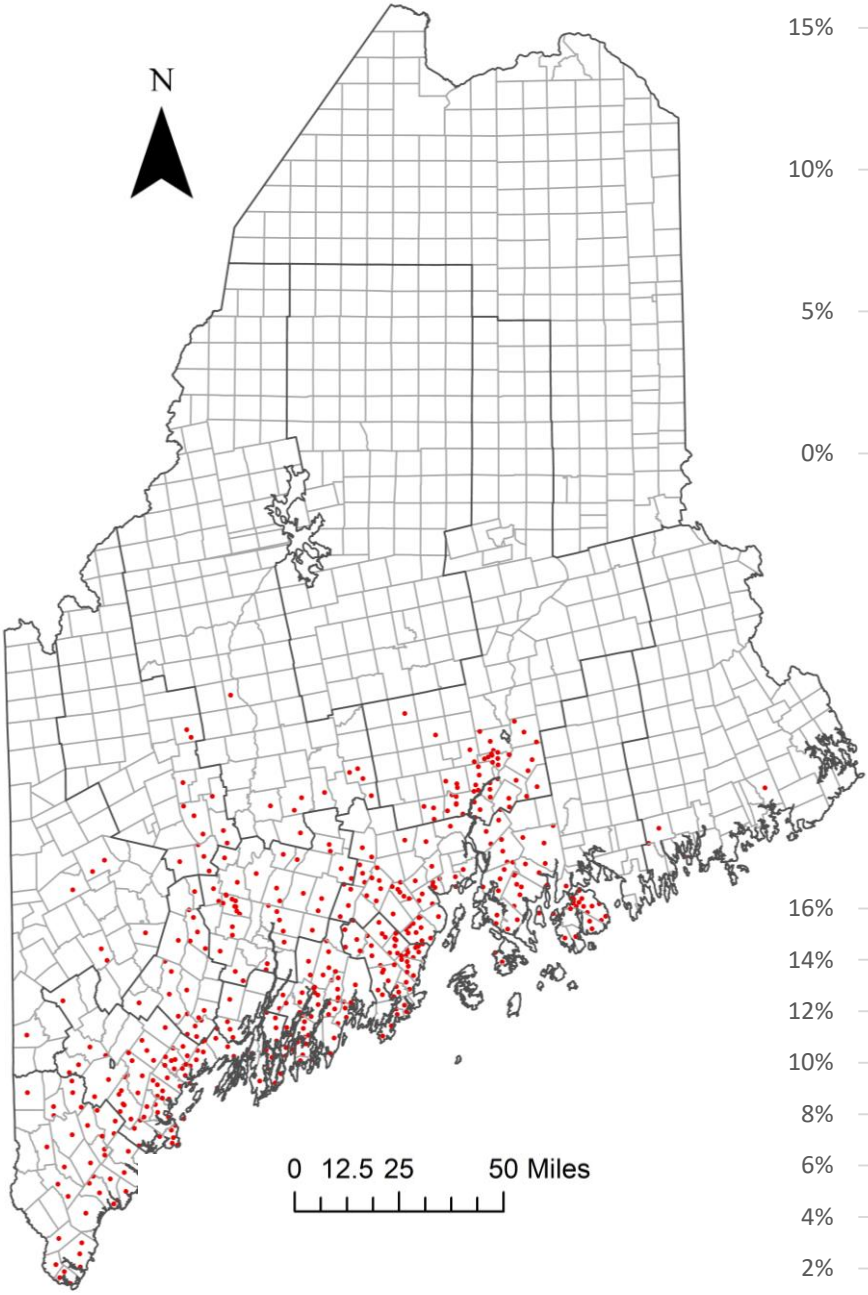


Anaplasma phagocytophilum Infection Prevalence by Life Stage in Submitted Blacklegged Ticks – 2019-2025

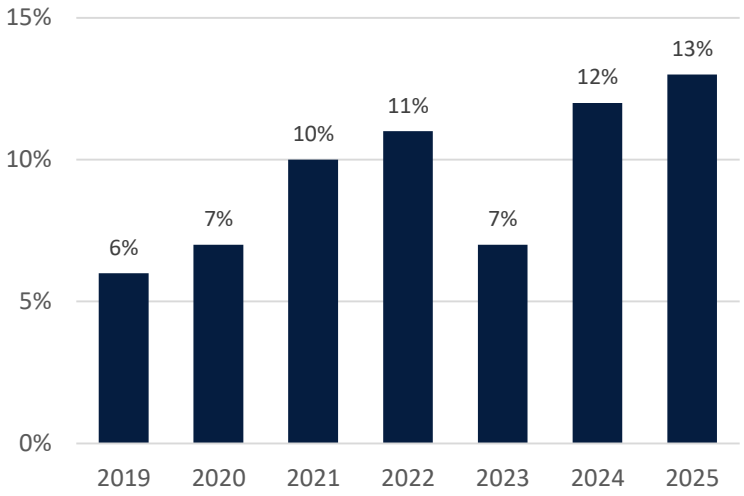


BABESIA MICROTI (CAUSATIVE AGENT OF BABESIOSIS)

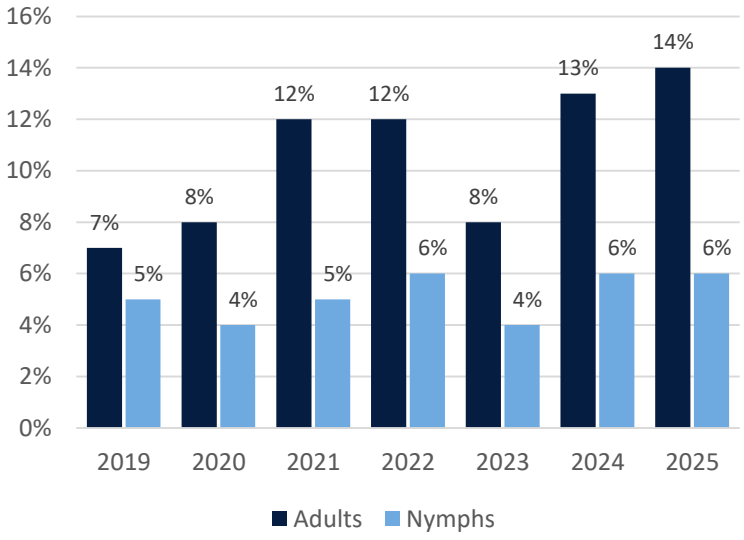
Blacklegged Ticks *(Ixodes scapularis)* Positive for *Babesia microti* – 2025



Babesia microti Infection Prevalence in Submitted Blacklegged Ticks – 2019-2025



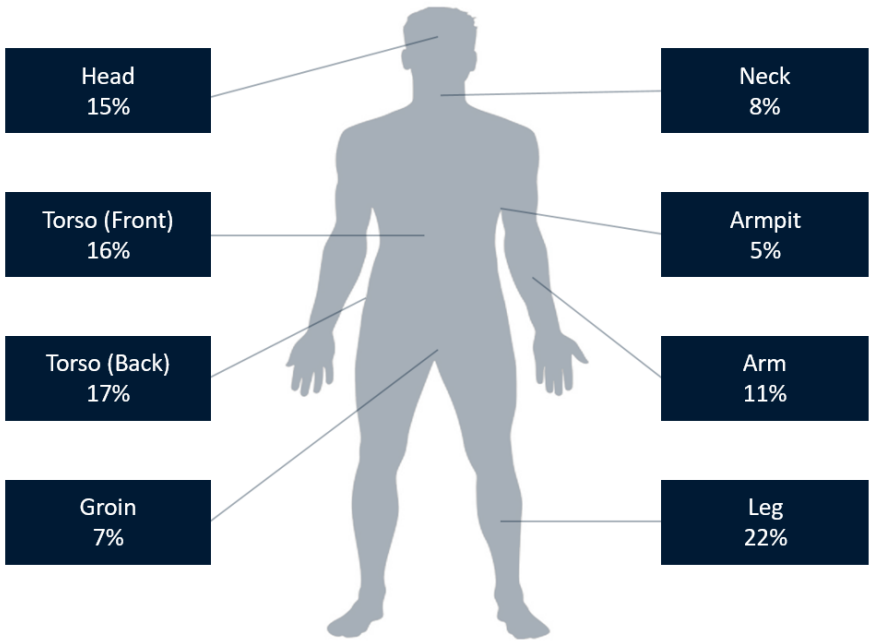
Babesia microti Infection Prevalence by Life Stage in Submitted Blacklegged Ticks – 2019-2025



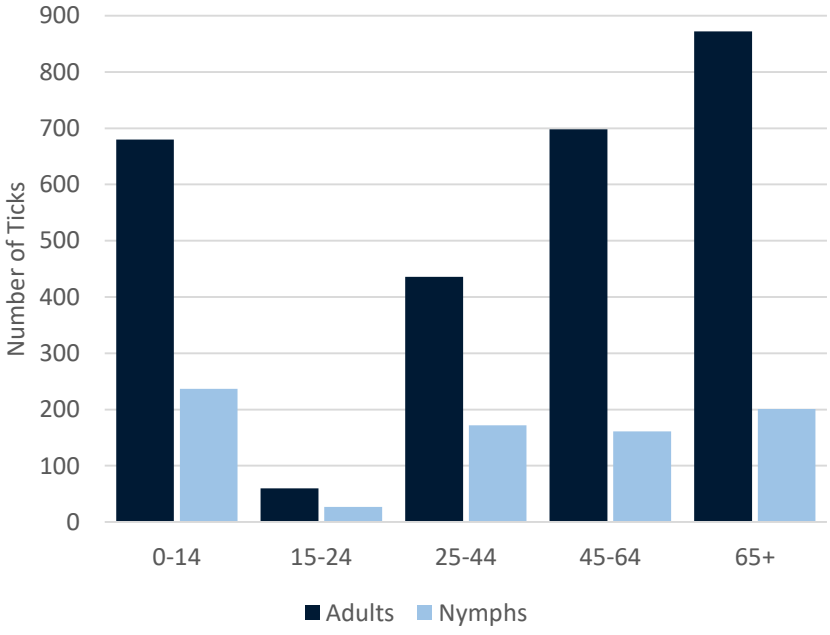
HOST ASSOCIATIONS

The ticks submitted to the UMaine Tick Lab were overwhelmingly found on humans (89%), with dogs (8%), cats and (1%) other hosts (2%) making up the remaining submissions. Once the tick is on a host it may immediately attach and start feeding or it may wander around before settling on a spot. The majority of ticks submitted from human hosts were discovered while attached and feeding (94%). Feeding sites were fairly evenly distributed across the body, with blacklegged ticks most commonly found on the legs and torso. There were some slight differences in attachment site between tick life stages with nymphs more frequently attached to the legs (31%) than adults (19%) likely due to the different heights at which each life stage quests in the vegetation.

Ixodes scapularis Attachment Sites – All Ages



Blacklegged Tick (*Ixodes scapularis*) Submissions By Human Age Group – 2025

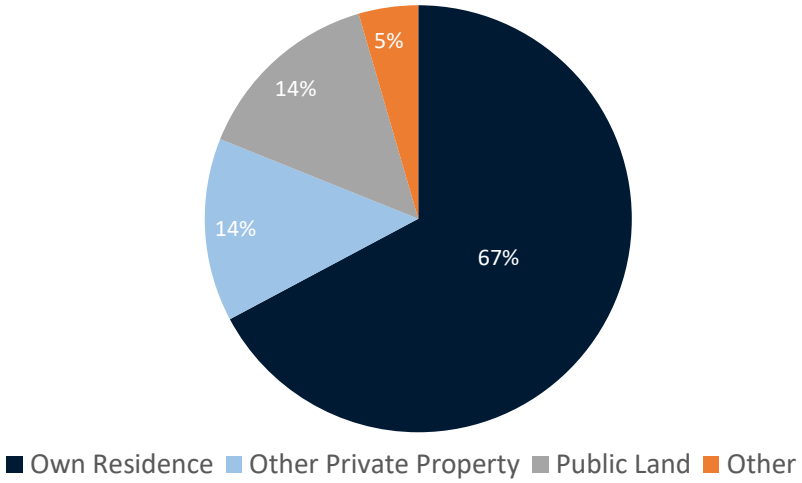


Tick submissions can vary based upon human age, with ticks frequently found attached to those over the age of 45 and under the age of 15. During 2025, blacklegged tick nymph submissions were highest from children under the age of 15 and were relatively evenly distributed across adult age groups. Submissions of adult blacklegged ticks were most commonly submitted by those over the age of 45. Adolescents between the ages of 15 and 24 are consistently the age group with the fewest submissions.

HUMAN ACTIVITY

One of the goals of UMaine Extension's Tick Surveillance Program is to identify potential risk factors for contacting ticks. Certain habitats and human activities may increase this potential for contact and subsequently lead to increased risk of contracting a tick-borne illness. Approximately, 67% of those who submitted blacklegged ticks encountered them on their own property, with yardwork/gardening being the most commonly reported activity at the time of encounter. The table below summarizes the human activities associated with the blacklegged ticks that were submitted to the UMaine Tick Lab in 2025.

Property Type Where Blacklegged Ticks Were Encountered – 2025

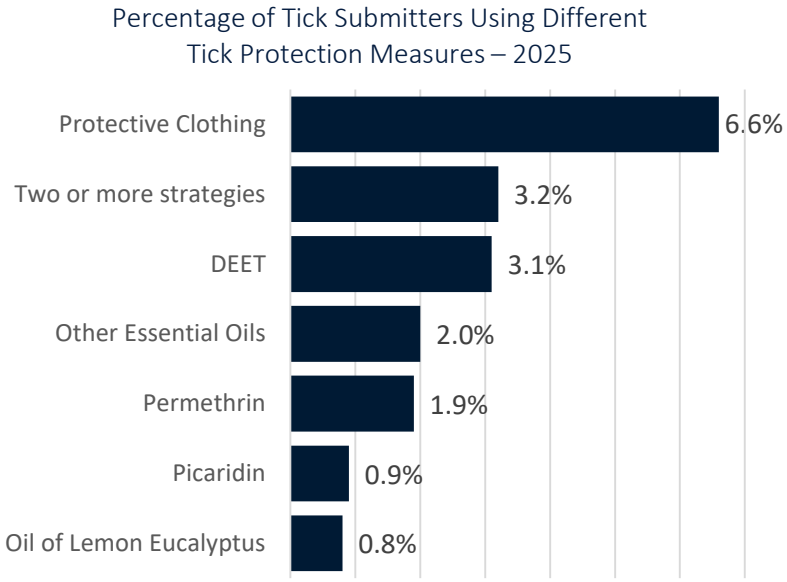


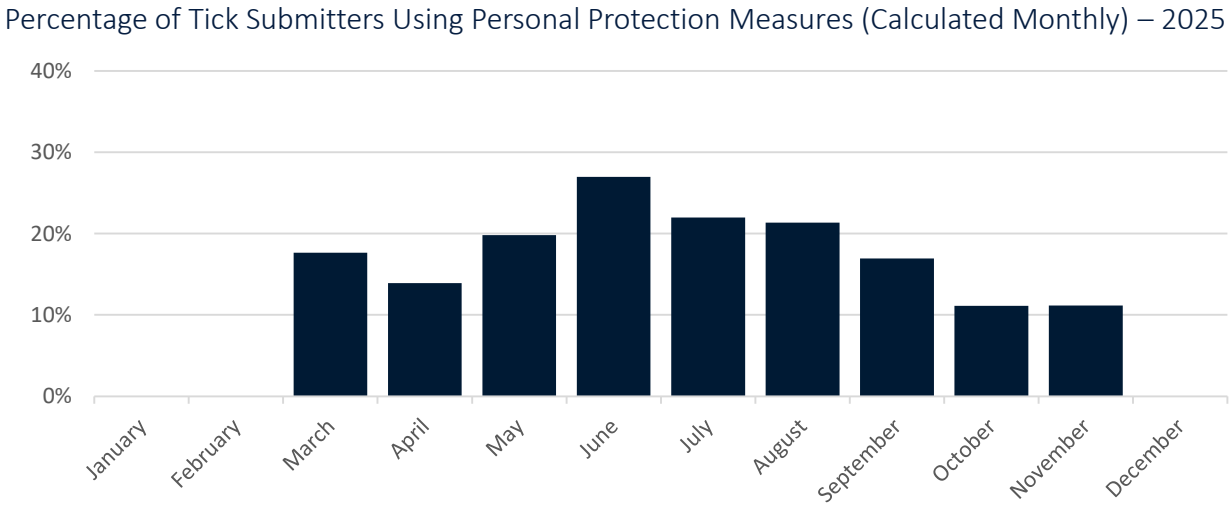
Human Activity at the Time of Blacklegged Tick (*Ixodes scapularis*) Encounter – 2025

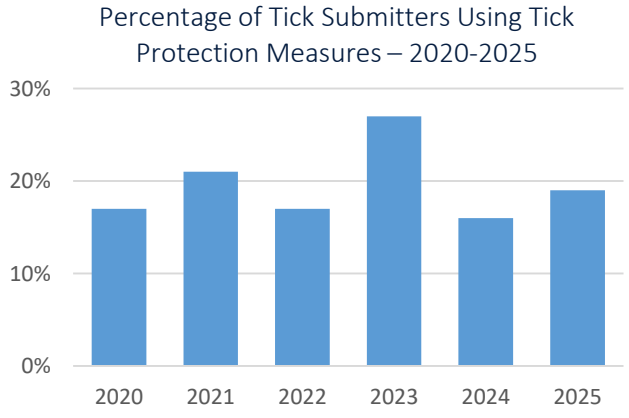
Activity	Adults	Nymphs	Total
Yardwork/Gardening	861	257	1118 (31.3%)
Playing Outside	542	213	755 (21.2%)
Walking	410	106	516 (14.5%)
Pet Related	302	41	343 (9.6%)
Hiking	246	75	321 (9.0%)
Other	157	44	201 (5.6%)
Occupational - Other	67	11	78 (2.2%)
Hunting / Trapping	59	2	61 (1.7%)
Playing Sports	31	6	37 (1.0%)
Occupational - Agriculture	30	4	34 (1.0%)
Camping	11	22	33 (0.9%)
Occupational - Forestry/Logging	18	6	24 (0.7%)
Bicycling	17	3	20 (0.6%)
Fishing	12	5	17 (0.5%)
Running	7	3	10 (0.3%)

PERSONAL PROTECTION

Managing tick populations can be a challenge, thus the use of personal protection strategies is important in reducing tick encounters. Avoiding tick habitat, wearing appropriate clothing, and using tick repellents can significantly reduce exposure to ticks. Of those who submitted ticks to the Tick Lab in 2025, approximately 19% reported using some type of personal protection measure at the time of their tick encounter, with protective clothing being the most commonly used (6.6%). The use of personal protection peaked at 27% in June and remained low (10 - 20%) during the spring and fall peaks in adult blacklegged tick activity.







The proportion of tick submitters using different tick protection measures has been relatively stable since 2020, with individuals reporting the use of DEET ranging from 2.3 – 3.1% and permethrin ranging from 1.8 - 2.2%. The use of protective clothing has fluctuated more widely with 6.7% of submitters reporting its use in 2020 and 16.1% in 2023.

LIMITATIONS OF THE DATA

The information in this report is preliminary as of December 31, 2025. Tick samples collected in 2025 that are submitted after this date will be added to the data set and included in future reports. This report provides a general summary of the data collected and does not attempt to draw specific conclusions. Each tick is counted individually, but multiple ticks may be submitted from a single host or person, which can thus impact the interpretation of geographic data. Towns without tick submissions or positive test results should not be interpreted as not having tick populations or tick-borne disease. The data in this report is generated from passive surveillance (tick specimens found and submitted by members of the public) and can potentially result in a bias toward certain geographic locations or uncertainty about where a specific sample was collected.

ACKNOWLEDGEMENTS

Special thanks to the Tick Lab's student research assistants, as well as all those who submitted ticks to the program, the Maine state government, and the people of Maine for supporting this program.

The Tick Lab is part of the Pest Management Unit within the University of Maine Cooperative Extension Diagnostic and Research Laboratory. The Diagnostic and Research Lab is coordinated by Jim Dill and combines veterinary diagnostics, pest management, and aquatic animal health research under one roof.

SUBMIT A TICK

If you would like to submit a tick for identification and/or testing, complete the online submission form at our website **ticks.umaine.edu** and mail your sample to the Tick Lab at 17 Godfrey Drive, Orono, ME 04473.

TICK LAB