

Illinois Department of Public Health
Lyme Disease Prevention and Protection Act
(410 ILCS 450/)
Annual Report 2024

Background

PUBLIC HEALTH

(410 ILCS 450/) Lyme Disease Prevention and Protection Act.

The Lyme Disease Prevention and Protection Act, also known as the Lauryn Russell Lyme Disease Prevention and Protection Law, went into effect on January 1, 2019. The act provided a call for the creation of the Lyme Disease Prevention, Detection, and Outreach Program and the Lyme Disease Task Force.

Lyme Disease Prevention, Detection, and Outreach Program

(410 ILCS 450/10) Sec. 10. Lyme Disease Prevention, Detection, and Outreach Program.

The act states that:

The Department of Public Health shall establish a Lyme Disease Prevention, Detection, and Outreach Program. The Department shall continue to study the population of ticks carrying Lyme disease and the number of people infected in Illinois to provide data to the public on the incidence of acute Lyme disease and locations of exposure in Illinois by county. The Department shall partner with the University of Illinois to publish tick identification and testing data on the Department's website and work to expand testing to areas where new human cases are identified. The Department of Public Health shall establish a Lyme Disease Prevention, Detection, and Outreach Program. The Department shall require health care professionals and laboratories to report acute Lyme disease cases within the time frame required under the Control of Communicable Diseases Code to the local health department. To coordinate this program, the Department shall continue to support a vector-borne disease epidemiologist coordinator who is responsible for overseeing the program. The Department shall train local health departments to respond to inquiries from the public.

The Illinois Department of Public Health Division of Environmental Health Vector Surveillance and Control Program (EH Vector Program) and the Communicable Disease Control Section Vector-Borne Diseases (VBDs) Program have addressed this directive by conducting the following programmatic activities.

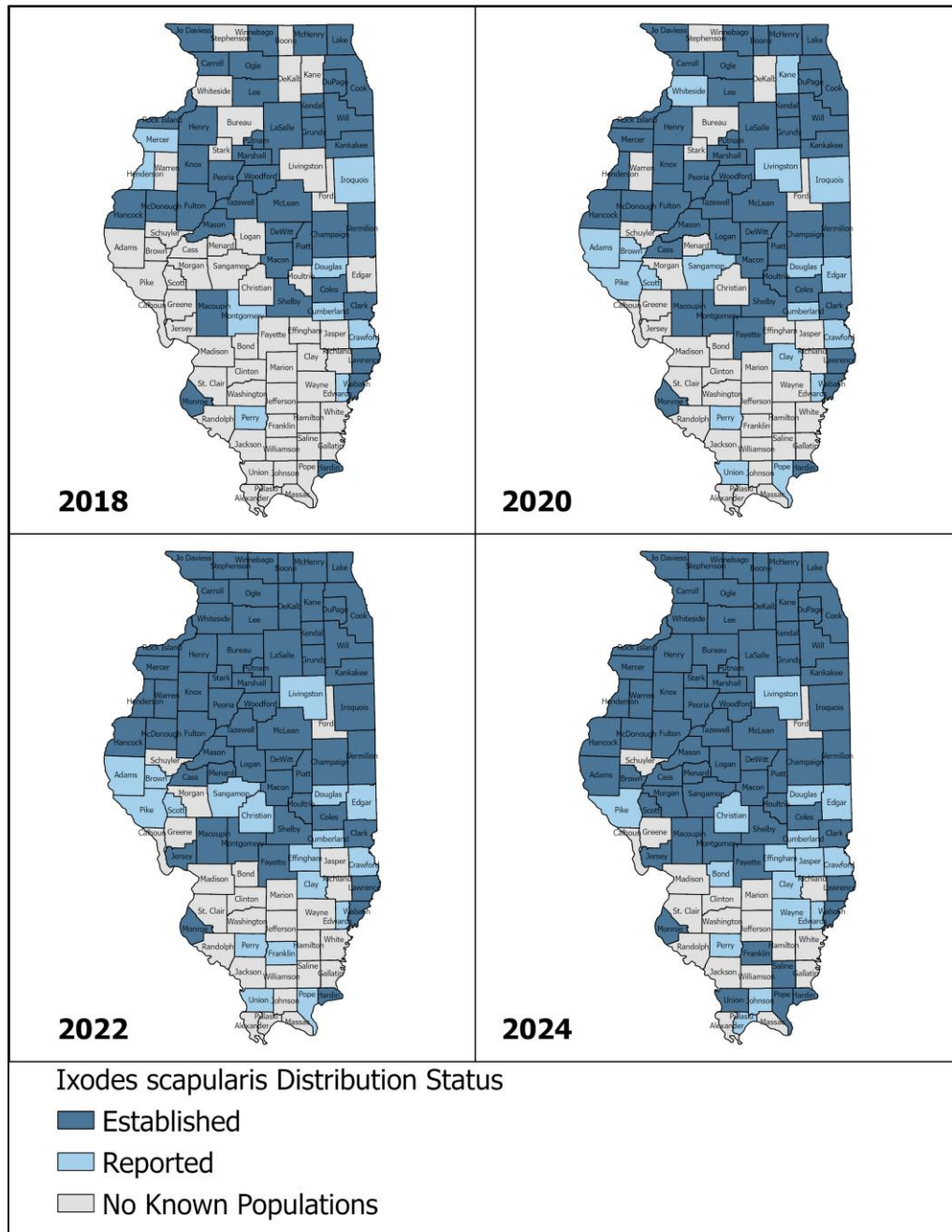
1) Illinois Active Tick Surveillance Program

Before 2018, the IDPH primarily conducted tick surveillance through a passive program in which local health departments, clinicians, and citizens could submit ticks to the EH Vector Program for identification. Although this information is beneficial, it does not provide the geographic specificity or granularity of active tick surveillance data needed to direct public health action. In 2019, the EH Vector Program developed the Active Tick Surveillance Program, which monitors the presence, abundance, and infection prevalence of medically important ticks to inform public health actions and educate citizens and clinicians about local risks.

The Active Tick Surveillance Program began with an intergovernmental agreement (IGA) between the IDPH EH Vector Program and the University of Illinois (U of I) Natural History Survey Medical Entomology Laboratory (INHS MEL). The purpose of this IGA is to conduct targeted tick surveillance in areas of disease foci or outbreak locations, establish sentinel sites for recurring tick surveillance over time, and collect, identify, and test ticks for pathogens of public health concern.

participation by local health departments. **Figure 2** illustrates the progress of the Active Tick Surveillance Program in county status since 2018. A current distribution map is also included in **Attachment 1**.

Figure 2: County status for *I. scapularis* in Illinois



The second goal of the Active Tick Surveillance Program is to determine what counties have pathogens of public health concern, specifically *Borrelia burgdorferi* (the Lyme disease-causing bacteria that is transmitted by *Ixodes scapularis*),. Before 2018, limited research had been done in Illinois to define counties with *B. burgdorferi* presence. As of 2024, the Active Tick Surveillance

Program has identified *B. burgdorferi* from *I. scapularis* ticks collected from 47 counties, shown in **Attachment 2**.

Additionally, the Active Tick Surveillance Program is not limited to surveillance of *Ixodes scapularis*. **Table 1** outlines the other disease-causing ticks that have been collected through the program. **Table 2** summarizes all pathogen (bacteria, parasites, and viruses) testing that has been conducted on these ticks.

Table 1. Ticks Collected through Active Tick Surveillance

Tick Species	2019	2020	2021	2022	2023	2024*
<i>Ixodes scapularis</i>	881	340	693	578	145	362
<i>Amblyomma americanum</i>	2,254	1,342	684	1,308	2,290	3844
<i>Amblyomma maculatum</i>	6	774	106	0	0	7
<i>Dermacentor variabilis</i>	149	2,285	1,080	157	180	1,031
Total	3,290	4,741	2,563	2,043	2,615	5,244

Ticks from the 2024 surveillance season may still be in processing

Table 2. Tick Pathogen Detection Status (2022-2024*)

Pathogen	# Ticks Tested	# Ticks Positive
<i>Anaplasma phagocytophilum</i> (Anaplasmosis)	437	1
<i>Babesia microti</i> (Babesiosis)	436	0
<i>Borrelia burgdorferi</i> (Lyme disease)	436	116
<i>Borrelia mayonii</i> (Lyme disease)	436	0
<i>Borrelia miyamotoi</i> (Hard tick relapsing fever)	436	13
<i>Ehrlichia chaffeensis</i> (Ehrlichiosis)	2,594	138
<i>Ehrlichia ewingii</i> (Ehrlichiosis)	2,594	139
<i>Ehrlichia muris eauclairensis</i> (Ehrlichiosis)	433	1
<i>Rickettsia parkeri</i> (Spotted fever group rickettsiosis)	5	1
<i>Rickettsia rickettsii</i> (Spotted fever group rickettsiosis)	502	0
<i>Heartland virus</i>	2,025	0

*Some 2024 specimens are still pending test results

2) Program Funding

The IDPH Active Tick Surveillance Program is funded through the Used Tire Fund (Illinois State Special Fund 294) and the Emergency Public Health Fund (Illinois State Special Fund 240).

The IDPH EH Vector Program distributes Vector Surveillance and Control grants to 97 LHDs through the Comprehensive Health Protection Grant bundle. The vector grants are funded through the Emergency Public Health Fund (Illinois State Special Fund 240). Below are the past five-year total funding awards:

Fiscal Year 2021: 2.8 million
Fiscal Year 2022: 2.2 million
Fiscal Year 2023: 2.5 million
Fiscal Year 2024: 2.8 million
Fiscal Year 2025: 2.8 million

The Vector Surveillance and Control Grants are used primarily to fund West Nile virus surveillance and prevention as specified in the statute (415 ILCS 5/55.6a). However, LHDs may utilize up to 20% of their grant award for non-mosquito vectors, such as ticks.

Beginning in FY24 (July 1, 2023 – June 30, 2024), the EH Vector Program developed a new active tick surveillance grant program. As mentioned previously, the initial round of funding totaled \$400,125 and was made available for IDPH Active Tick Surveillance Grants. Seventy-eight LHDs received \$4,125 each to conduct active tick surveillance and provide tickborne disease prevention awareness.

For FY25 (July 1, 2024-June 30,2025), the second year of funding,, the Active Tick Surveillance Grant total was increased to provide each grantee with \$8,000. A total of \$776,000 was awarded to 86 LHDs.

The EH Vector Program also provides an IGA to the University of Illinois INHS MEL for continued tick research. Beginning in FY24, a two-year IGA was executed between IDPH and the University of Illinois, totaling \$249,000. The IGA is to conduct surveillance of invasive plant-tick species combinations in different regions of Illinois that include at least four tick species of public health importance and at least seven widespread invasive plant species. Tick abundance will be evaluated through tick dragging, and this study will highlight how invader mechanisms can represent invader traits and their impact on microclimates. The results of this research will highlight an underappreciated driver of anthropogenic human disturbance, in which plant invasions may indirectly contribute to human tickborne disease risk, mediated by how invasive species alter ecological interactions within the communities they invade. Overall, these efforts will aid in addressing the immediate challenges of plant invasions and human tickborne disease.

The VBD Program epidemiologist and program specialist positions are funded by the CDC Epidemiology and Laboratory Capacity grant. Additional funding opportunities for VBD human surveillance activities have not been identified.

3) Tickborne Disease Incidence Maps

Average 10-year tickborne disease human incidence was calculated by county for the years 2012-2021. Cases were counted based on the county of residence at the time of symptom onset.

Probable and confirmed cases for each disease were included. Case definitions were based on the recommended CDC and Council of State and Territorial Epidemiologists case definitions for the year of symptom onset, providing standardization across the United States and territories. The maps are available on the IDPH website at dph.illinois.gov/ticks.

4) **Illinois Active Tick Surveillance Mapping Application** [<https://arcg.is/15fDSO>]

IDPH created an interactive tick mapping application to report the surveillance findings from the Active Tick Surveillance Program. The mapping application was created and is maintained by the EH Vector Program through ESRI ArcGIS software.

The Illinois Tick Surveillance Mapping Application is divided into tabs for each of the five ticks of public health importance: blacklegged tick, Lone Star tick, Gulf Coast tick, American dog tick, and the newly discovered Longhorned Tick. In each tick species tab are additional tabs showing the current tick's distribution map in Illinois, along with any pathogens that have been tested for in that tick. Counties on the map may be selected to see a detailed description of ticks collected and tested in that county. The application is updated at least twice a year, but updates are also made more frequently when data is available.

5) **Data Reporting**

Tick Data

Tick collection, identification, and pathogen testing data is displayed on the interactive Illinois Active Tick Surveillance Mapping Application. Additionally, data are reported to the CDC through the ArboNET data reporting platform.

Human Data

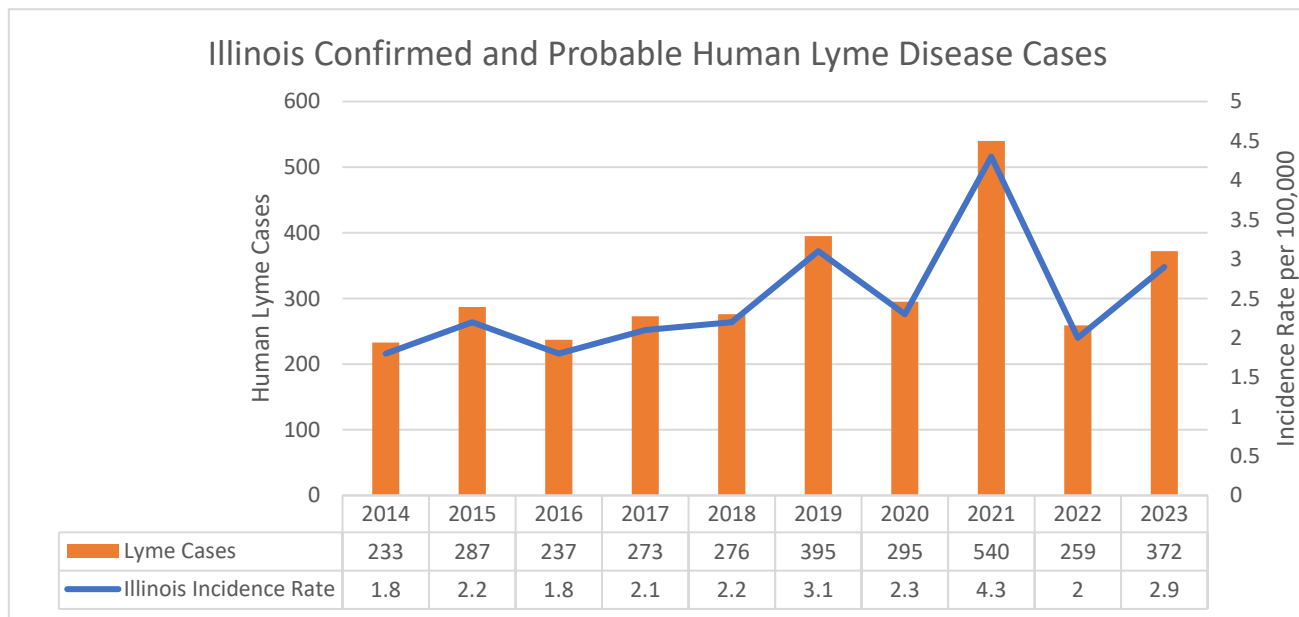
The VBD Program is managed by a VBD epidemiologist program manager who conducts human surveillance on 22 mosquito- and tickborne diseases. Surveillance is the ongoing, systematic collection, analysis, and interpretation of health-related data essential for planning, implementing, and evaluating public health practices. IDPH conducts human VBD surveillance through electronic reporting via the Illinois National Electronic Disease Surveillance System (I-NEDSS). I-NEDSS is an electronic platform that imports suspected human VBD cases with positive laboratory reports from commercial and private laboratories for patients residing in Illinois. Some cases may be manually entered into I-NEDSS by IDPH or the local health department (LHD if the laboratory is not enrolled in electronic reporting via I-NEDSS). The program epidemiologist utilizes I-NEDSS to monitor the VBD data that is imported, to ensure the LHD is conducting an investigation in a timely manner for each suspect case in their respective jurisdiction, and to create daily, weekly, and quarterly reports by querying data to identify areas that require additional follow up as follows:

- Daily review of new laboratory and provider reports in I-NEDSS for 22 VBDs, involving monitoring for cases that are new or unusual to Illinois.
- Weekly review of six reports for all 22 tick- and mosquito-borne illnesses to identify data gaps. Variables queried include clinical symptoms, laboratory reports, serotype,

treatment, exposure history, where the disease was acquired, death information, case classification, and cases that have been open for more than 30 days.

- Review of death certificates in the Illinois Vital Records Reporting System for people who expired to determine if the cause of death was attributed to the illness or complications from the illness.
- Cases found to have incomplete or gaps in data are returned to the LHD conducting the investigation and followed up with an email to the LHD requesting further follow-up and completion of the report before it can be closed.
- For cases open for more than 30 days, an email is sent to LHDs notifying them their case investigations need to be completed so the case can be closed.
- Respond to CDC questions regarding case investigation data that has been submitted to them.
- Monitor cases who have tested positive for a VBD and have received or donated blood and received or donated organs/tissue for transplant into another person. When a case such as this has been identified, further follow up and collaboration with the CDC, the LHD, the blood and/or organ/tissue donor facility, and potentially another state public health department must be done for testing of the donor and/or recipient for the pathogen in question.

Below is a summary of human Lyme disease cases reported in Illinois through the I-NEDSS system over the last 10 years, along with the statewide incidence rate based on these cases.



6) Educational Outreach Trainings



Figure 4: Illinois State Fair Photos

2024 Illinois Tickborne Disease Conference

On October 22, 2024, IDPH hosted the first Illinois Tickborne Disease Conference in partnership with the Illinois Lyme Association and SIU School of Medicine. The event was held at the I Hotel and Illinois Conference Center in Champaign, and was also available virtually. The conference was free and offered 6.75 continuing education credits for medical doctors, doctors of osteopathic medicine, physician assistants, nurse practitioners, nurses, social workers, clinical psychologists, professional counselors/clinical counselors, nursing home administrators, dietitians/nutrition counselors, and licensed environmental health practitioners.

The conference included five medical providers, three CDC speakers, and three Doctor of Philosophy experts. The topics included:

- Tick habitat, distribution, and prevention
- Tick surveillance and pathogen detection
- Tickborne disease diagnosis and treatment
- Lyme disease
- Rickettsial diseases
- Alpha-gal

The conference was attended by 524 participants, comprising 161 in-person attendees and 363 virtual participants (**Figure 5**). The attendance included 233 LHD employees, 125 medical professionals, 39 university professionals, and 37 state employees. The SIU School of Medicine provided continuing education credits to 174 nurses, 43 physicians, 18 nurse practitioners, and five physician assistants.

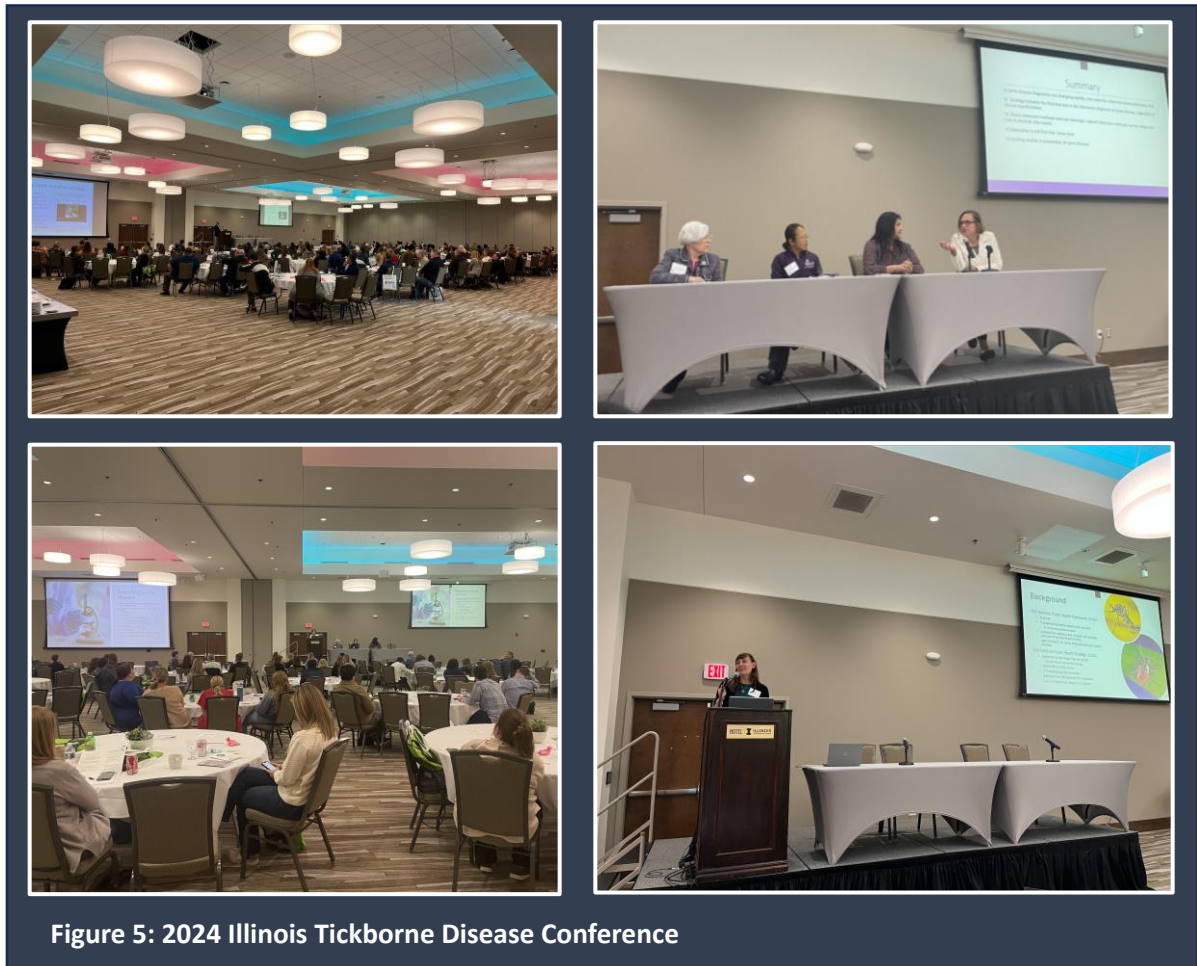


Figure 5: 2024 Illinois Tickborne Disease Conference

7. Dedicated Educational Web Page

The IDPH website for Lyme disease can be found at : <https://dph.illinois.gov/topics-services/diseases-and-conditions/tickborne-illnesses/lyme-disease.html>.

The content includes the prevention, detection, and treatment of Lyme disease, Lyme disease publications, data and statistics, continuing education options, and resources for clinicians. The website also contains peer-reviewed articles, state and federal Lyme disease documents, and information on the Lyme Disease Task Force.

In 2024, the IDPH also created a vanity URL (dph.illinois.gov/ticks) to provide easy access to all tick information.

8. Lyme Disease Task Force

The Illinois Lyme Disease Task Force (LDTF) meets quarterly on the third Thursday of the month from 10 a.m. – 11 00 a.m. LDTF meeting dates in 2024 were January 18, April 18, July 18, and October 17.

- Meeting Topics:
 1. Changing distributions of vectors and pathogens attributed to climate change.
 2. Local health department and active tick surveillance grant updates.

3. EH Vector Program updates.
4. Legislation updates.
5. 2024 Illinois Tickborne Disease Conference updates.
6. IDPH Lyme disease webpage additions.
7. Education materials for schools.

Additionally, task force members collaborated on school-based tick prevention and education materials. As a result, four educational materials were developed and posted to the IDPH website.

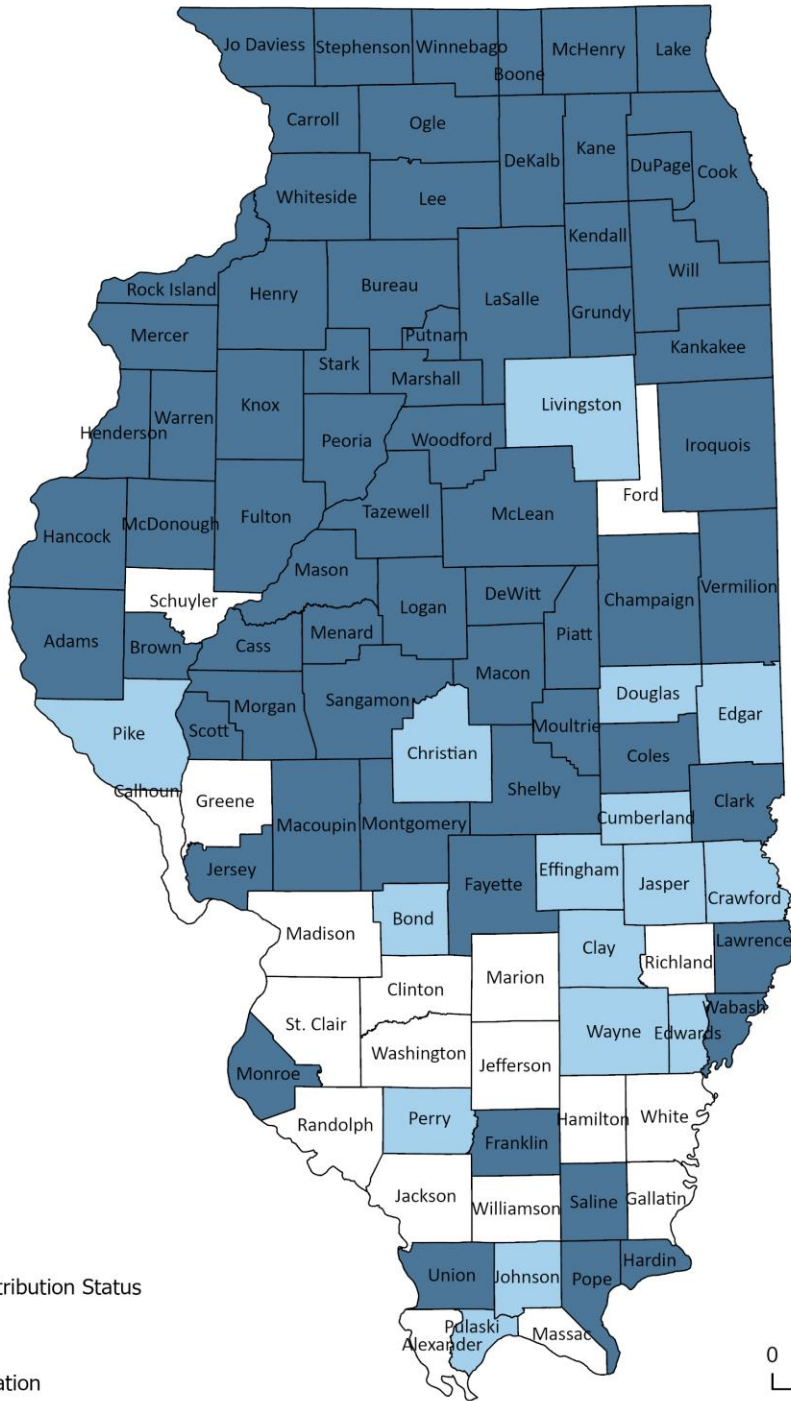
- Educational Materials
 1. Tick and Mosquito Prevention Camper Checklist
 2. Illinois Tick Detectives Workbook
 3. Notification of Field Trip Tick Alert
 4. Notification to Parent/Guardian of Tick Found on Student

9. Concluding Summary

The IDPH Active Tick Surveillance Program has seen significant growth since its inception in 2019. Over the past two years, active tick surveillance has strategically expanded, with nearly 90% of the state's local health departments participating. Enhanced analytical and surveillance tools have been used to develop interactive tick surveillance maps for public awareness. The program has intensified educational outreach through a successful inaugural Tickborne Disease Conference in 2024 and targeted educational materials for schools.

Attachment 1

2024 Blacklegged Tick (*Ixodes scapularis*) Distribution



Blacklegged Tick Distribution Status

- Established
- Reported
- No Known Population

