

Massachusetts Department
of Public Health



2026 Arbovirus Overview

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State Epidemiologist



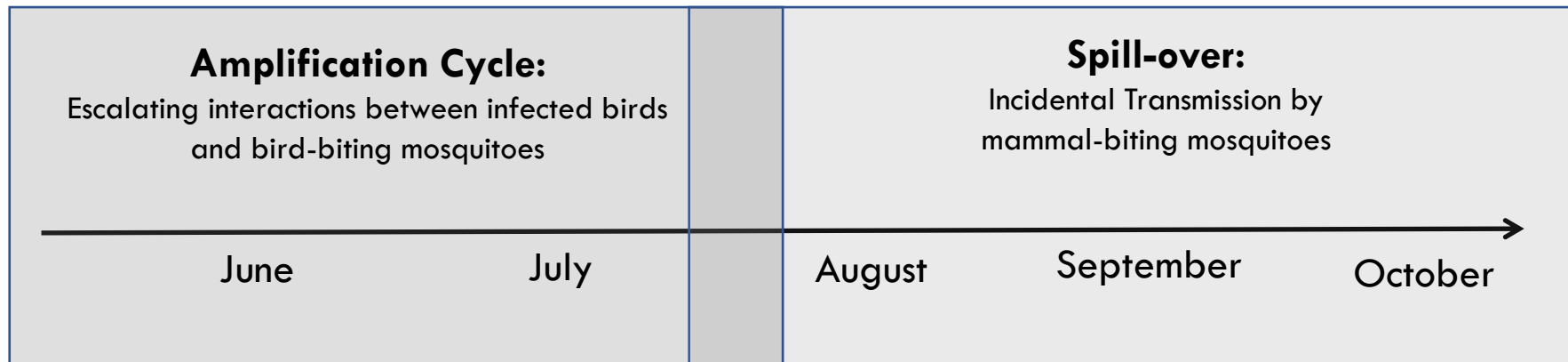
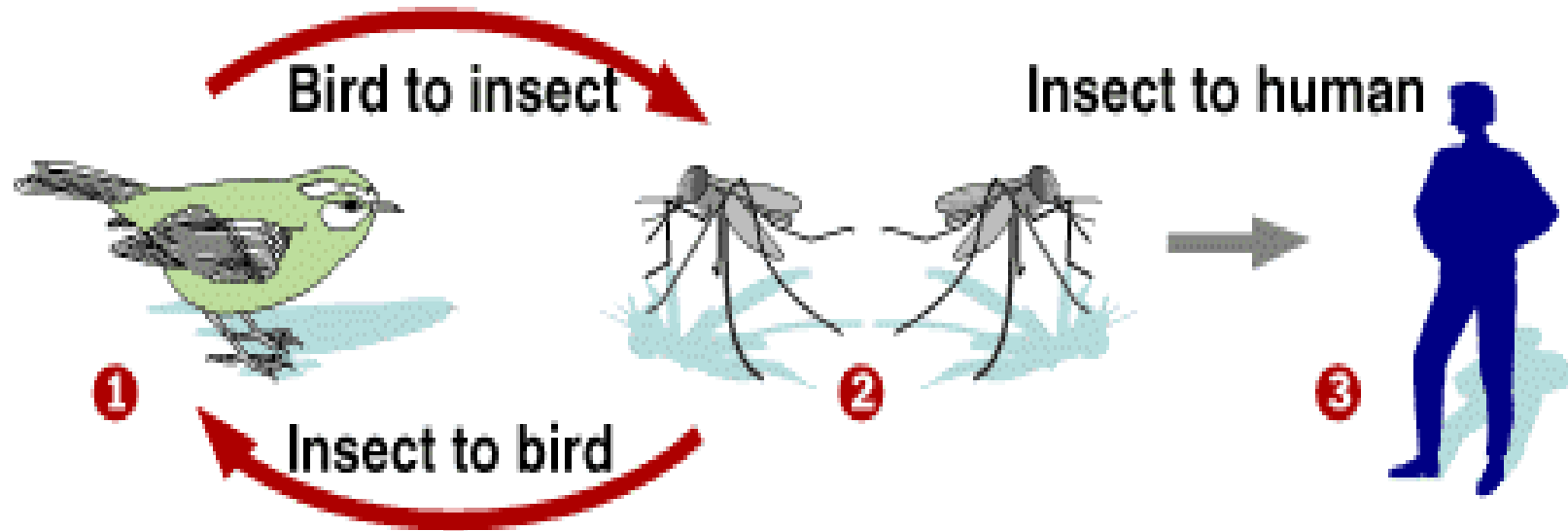
Arbovirus Background: Human Disease

	EEE	WNV
Incubation Period	3-10 days	3-14 days
Symptoms	Often abrupt onset of fever, chills, headache, muscle aches, nausea and vomiting, with progression to seizures, coma	80% Mild and sub-clinical infection 20% Headache, sore throat, fatigue, muscle and joint aches, fever
Severity	30-50% mortality rate for those with symptoms ~80% of those who recover have permanent neurological damage Children: 11/43 (25%) cases (33% mortality) Adults: 32/43 (75%) cases (50% mortality)	Age-related severity <1% Aseptic meningitis, encephalitis, meningoencephalitis

Public Health: 2019 – 2024 EEE Seasons

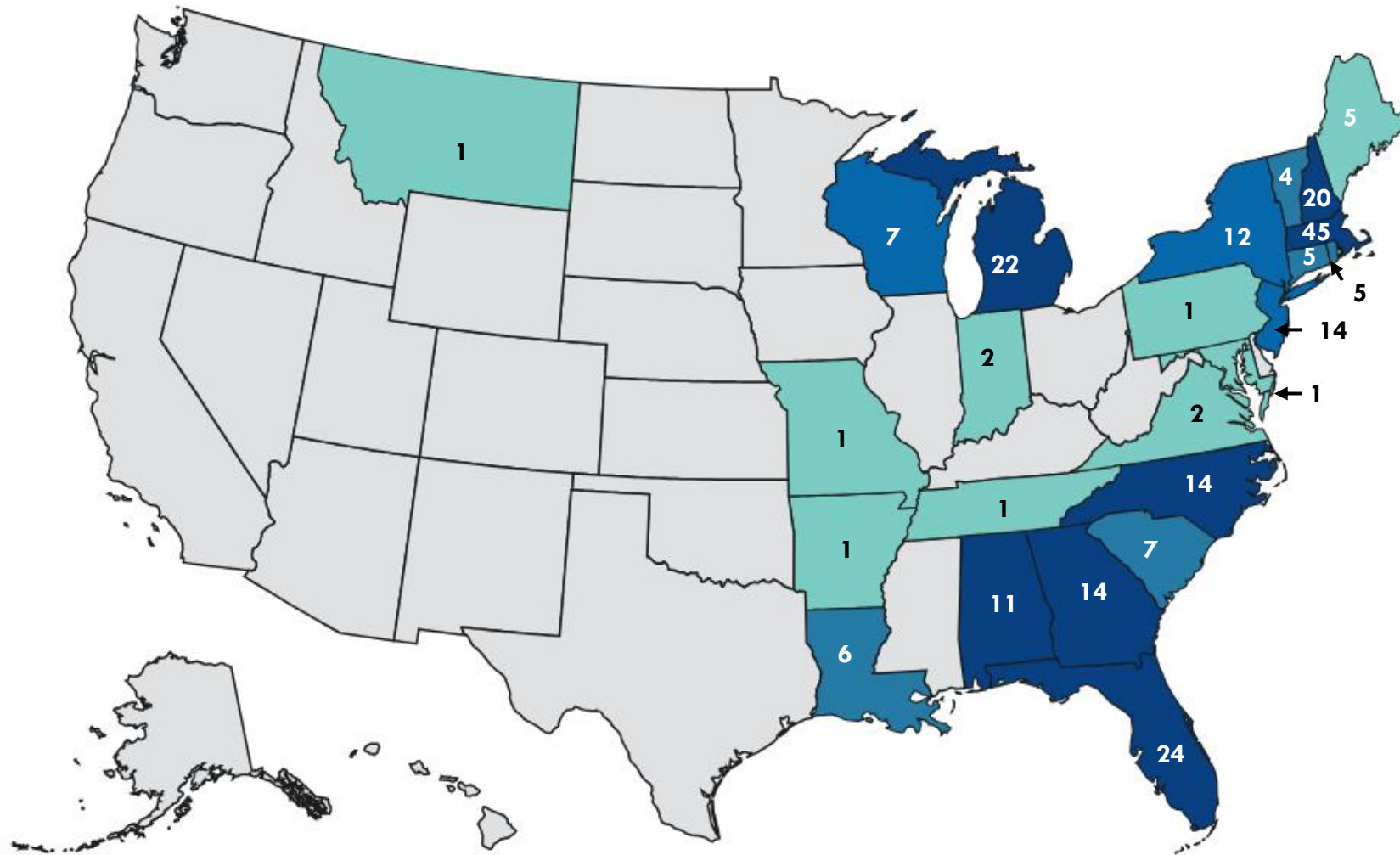
	2019	2020	2021	2022	2023	2024	2025
Overview	<p>First year of EEE outbreak cycle</p> <p>Most active EEE year in MA since the 1950s</p>	Second year of outbreak cycle				First year of EEE outbreak cycle?	
EEE	<p>12 human cases, with 6 deaths</p> <p>9 animal cases</p>	5 human cases, with 1 death	0 human cases	0 human cases	0 human cases	4 human cases, with 1 death	0 human cases
WNV	5 human cases	12 human cases	11 human cases	8 human cases	6 human cases	19 human cases	9 human cases
Emergency Response	6 aerial sprays to reduce EEE risk	1 aerial spray in Plymouth/Bristol County to reduce EEE risk				1 aerial spray in Plymouth County to reduce EEE risk; 1 ground-based spray in four towns in Worcester County	

Arbovirus Transmission

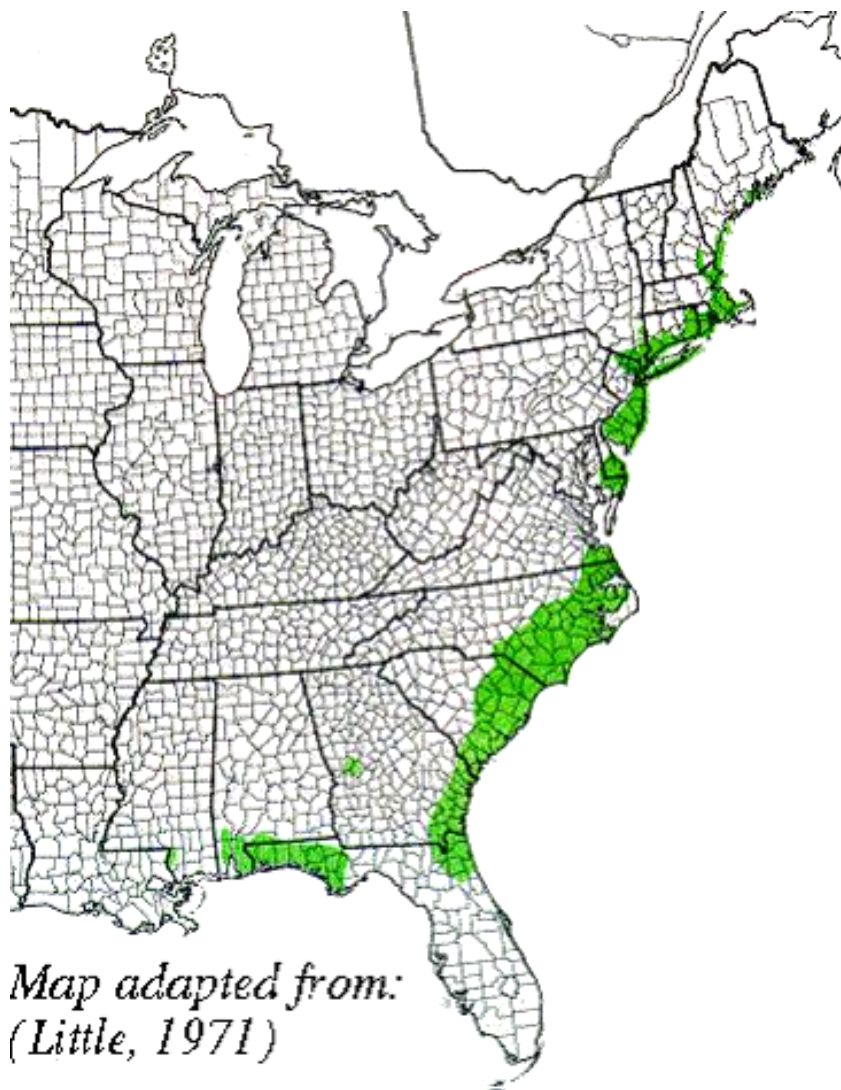


Opportunity for adult mosquito control interventions; includes ground-based and aerial

Eastern Equine Encephalitis Virus Human Neuroinvasive Disease Cases 2003-2025

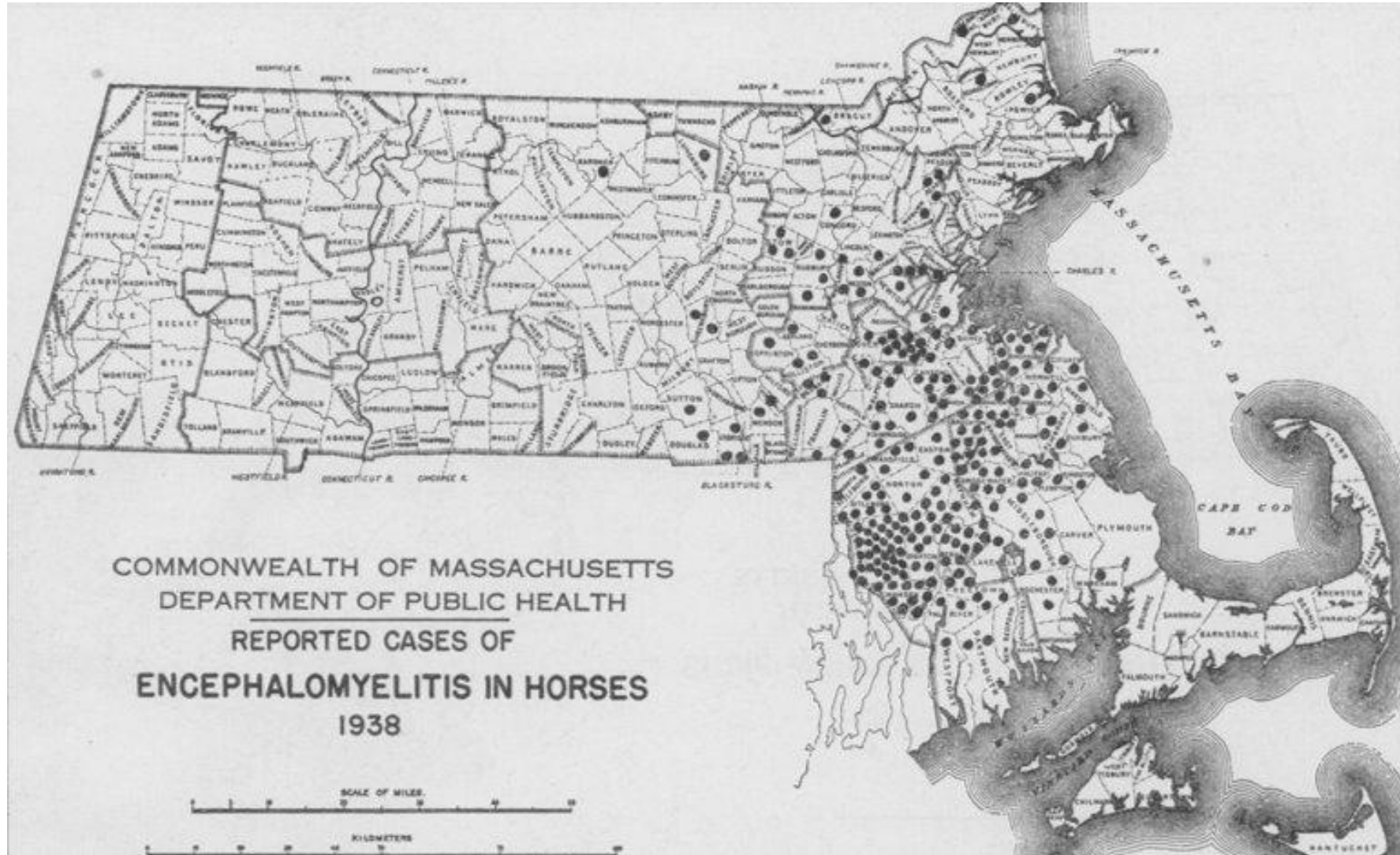


Distribution of Atlantic White Cedar



*Map adapted from:
(Little, 1971)*

EEE Horse Case Distribution in 1938



EEE Vectors and Habitat



Culiseta melanura



White Cedar and Red Maple

EEE Vectors and Habitat

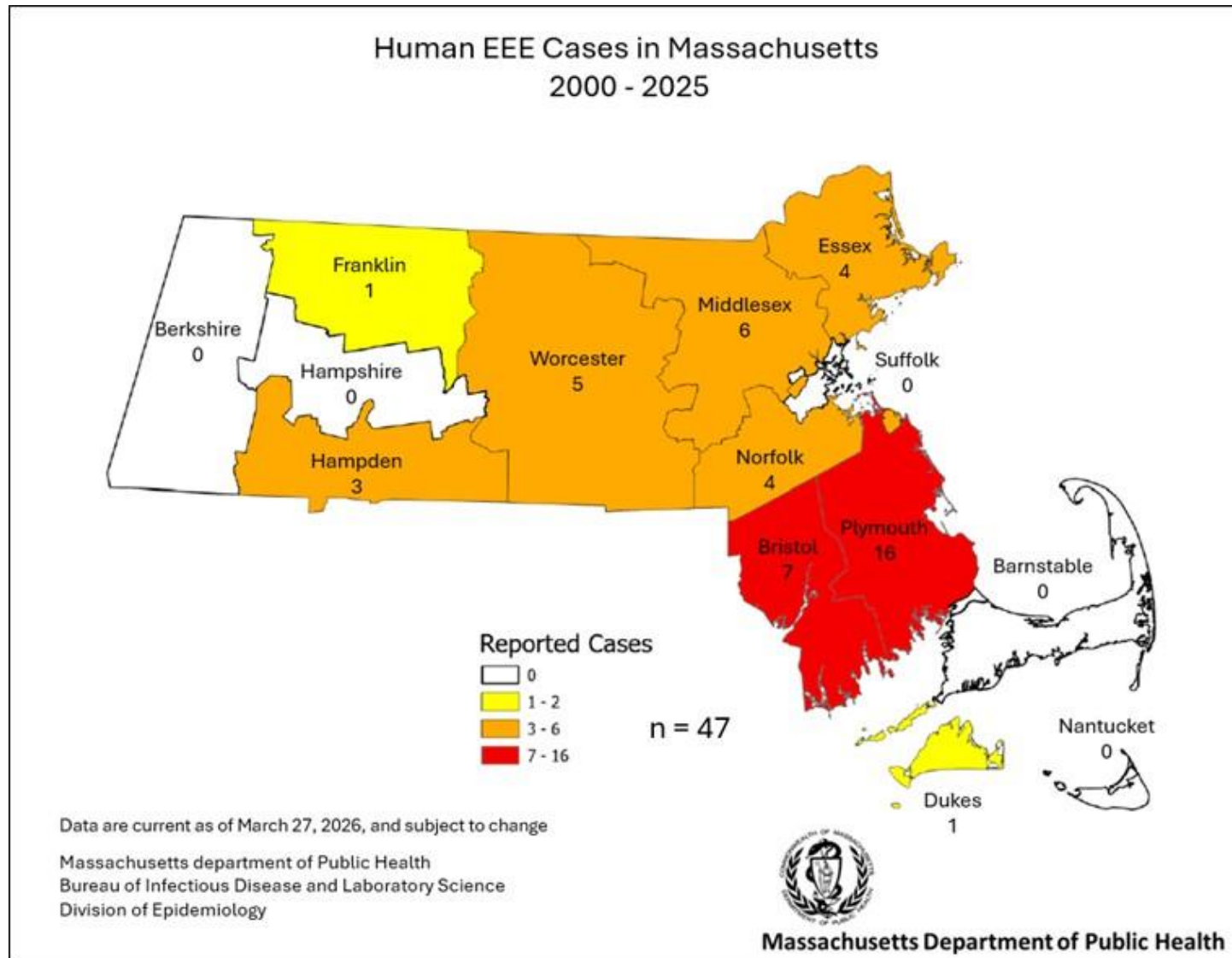


Coquillettidia perturbans

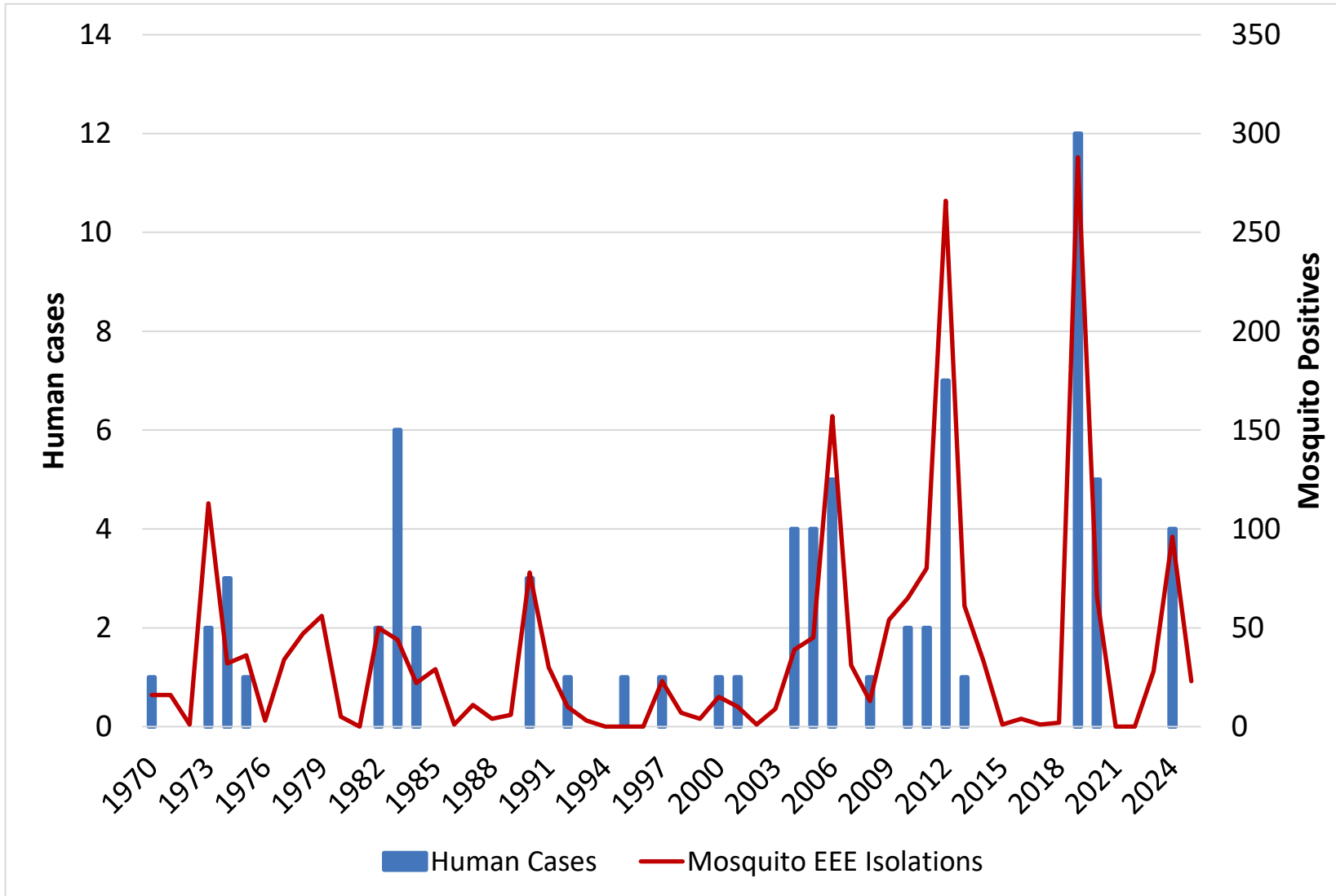


Cattail Marsh

EEE Human Cases by County of Residence, 2000-2025



Human and Mosquito EEE, 1970-2025



Multi-agency Arbovirus Surveillance and Response

- Executive Office of Health and Human Services
 - Department of Public Health
- Executive Office of Energy and Environmental Affairs
 - State Reclamation and Mosquito Control Board
 - Department of Agricultural Resources
 - Department of Conservation and Recreation
 - Department of Environmental Protection
- Local Mosquito Control Districts
- Local Health Departments

MA State Plans: DPH & MDAR/SRMCB

- **Department of Public Health: 2025 Massachusetts Arbovirus Surveillance and Response Plan**
 - Critical Tool
 - Outlines public health response to mosquito, animal, and human surveillance data
 - WNV and EEE
 - <https://www.mass.gov/doc/2026-arbovirus-surveillance-and-response-plan/download>
- **Department of Agricultural Resources / State Reclamation and Mosquito Control Board: Massachusetts Emergency Operations Response Plan for Mosquito-Borne Illness**
 - Critical tool
 - Outlines the SRMBC response when an emergency response is needed.
 - <https://www.mass.gov/massachusetts-emergency-operations-response-plan-for-mosquito-borne-illness>

DPH Arbovirus Program Overview

- **Surveillance**
 - Set and collect traps
 - Collaborate with Mosquito Control Districts
 - DPH long-term trap sites in southeastern MA
 - Trap sites in areas without Mosquito Control Districts
- **Laboratory Testing and Correlation with Patient Information**
 - Test specimens for EEE/WNV infection
 - Mosquitoes, suspect animal & human specimens
- **Risk Analysis and Communication**
 - Identify areas at risk for human disease
 - Communicate findings with local health agents, MCP's and the public
 - Provide information to guide the control actions to reduce the risk of disease

Mosquito-Borne Disease Surveillance



**CDC-Miniature
Light Trap** with Light
and CO₂ Attractant

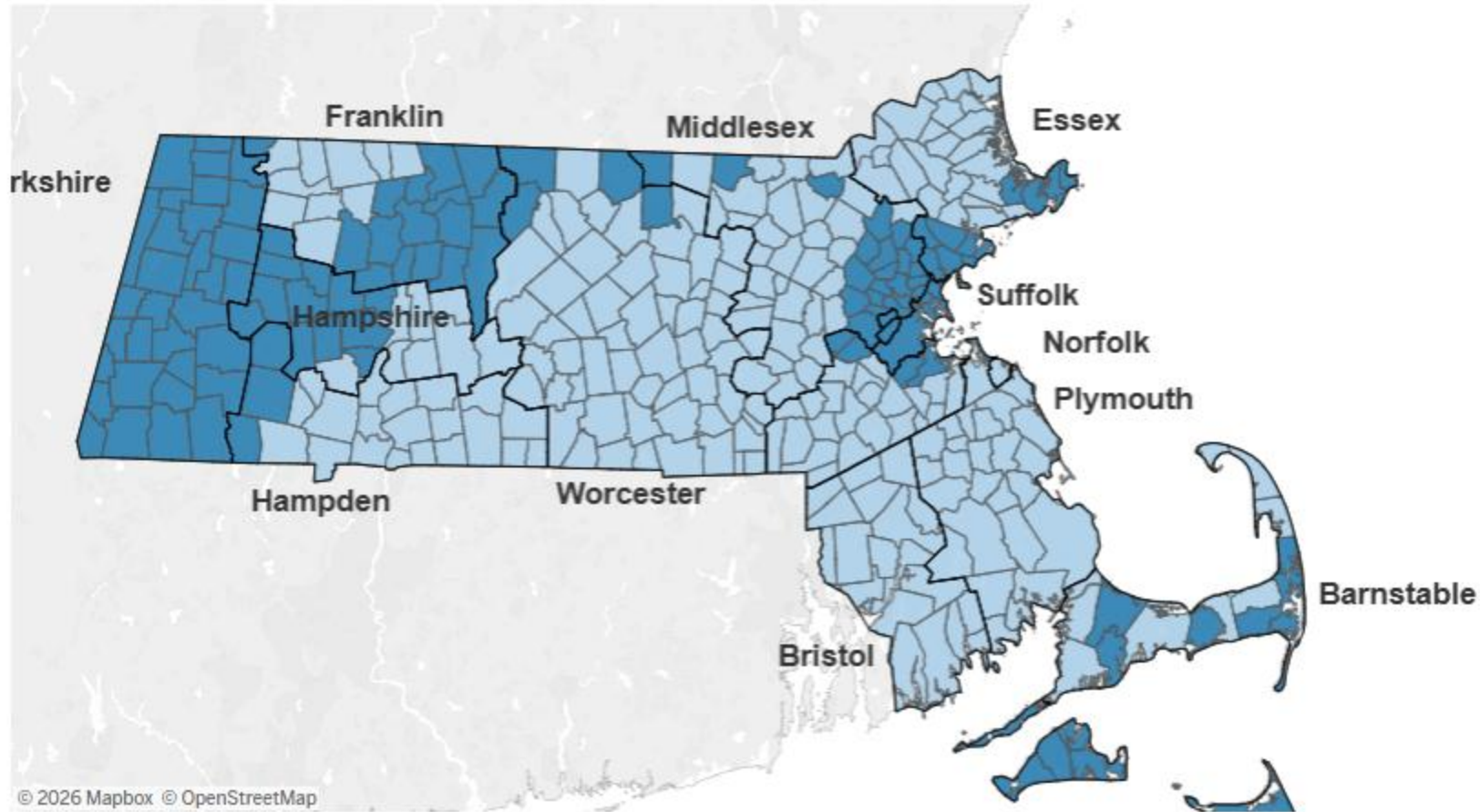
BG Sentinel Trap with Human
Scent Attractant



**Reiter-Cummings Gravid
Mosquito Trap** with Bait
Infusion Water

Current EEE Risk Levels by Town

EEE Risk Level by Town



Map selections

Click on or hover your mouse over a town to see the current EEE risk level with steps you can take to prevent EEE infection. You can also select a county or town from the menu below to zoom to that area.

EEE Risk Level

- Remote 
- Low 
- Moderate 
- High 
- Critical 

[More on Risk Levels](#)

Select county

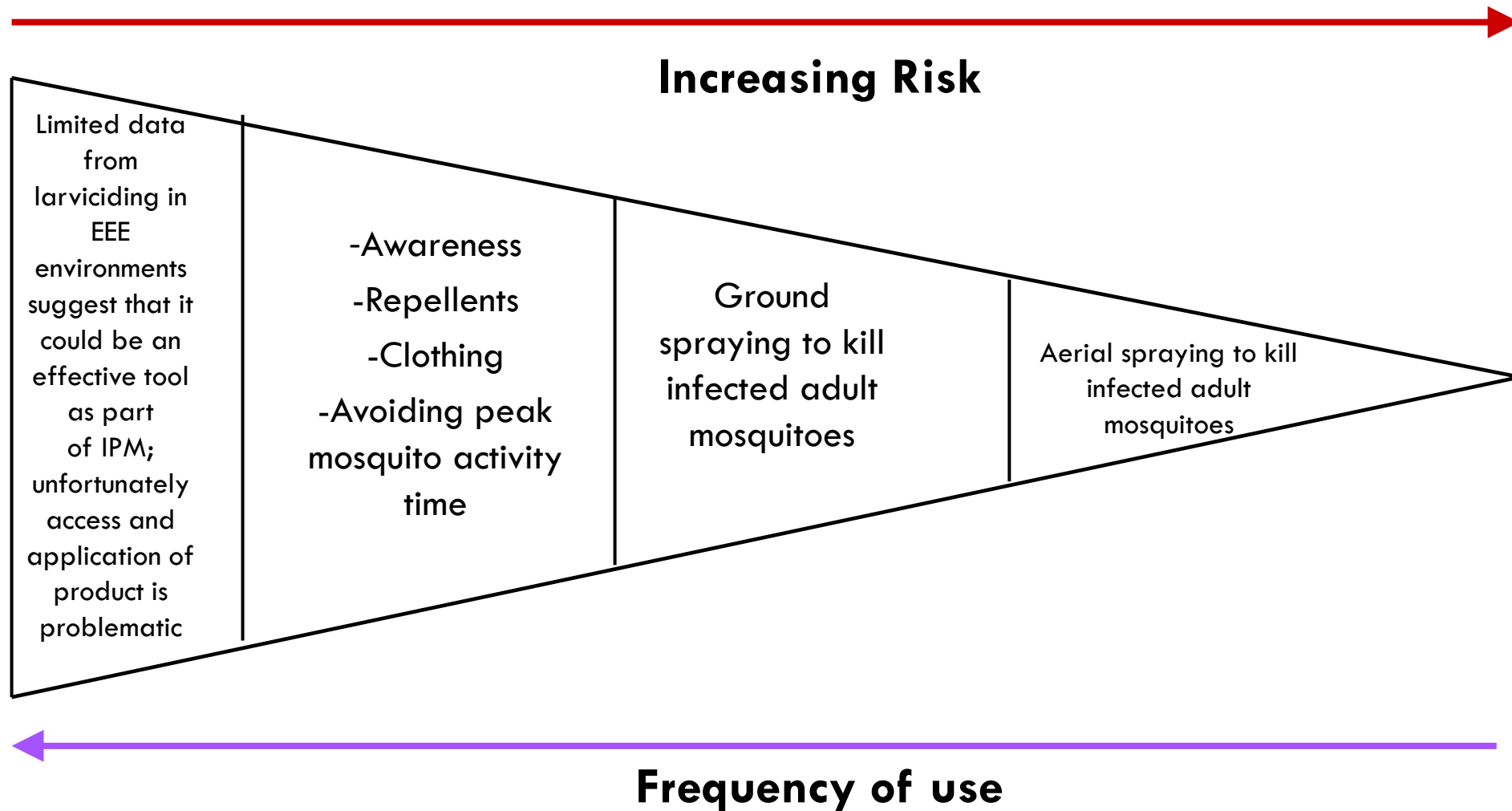
(All) 

Select town(s)

(All) 

<https://www.mass.gov/info-details/massachusetts-arbovirus-update>

Prevention Tools

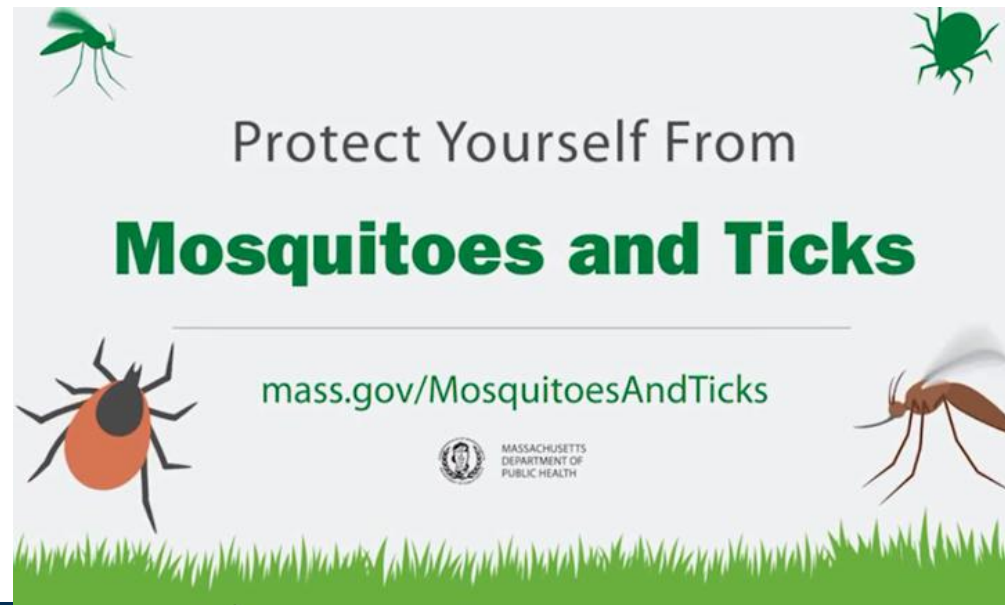


2026 Public Communications Campaign

- Designated website: www.mass.gov/mosquitoesandticks
- Press release on summer safety: mosquito/tick safety awareness
- Video assets with Dr. Brown
- Stakeholder-specific calls, fact sheets



Public Communications – Sample Materials



Precautions

- Apply insect repellent when outdoors. Use a repellent with an EPA-registered ingredient (DEET, permethrin, picaridin, oil of lemon eucalyptus)
 - <https://www.epa.gov/insect-repellents>
 - <http://npic.orst.edu/ingred/ptype/repel.html>
- Reduce exposed skin. Wear long-sleeves, long pants and socks when outdoors.
- Avoid peak mosquito hours. The hours from dusk to dawn are peak biting times for many mosquitoes. Consider rescheduling outdoor activities.
- Reduce mosquito breeding. Dump standing water; stagnant water is used by mosquitoes to lay their eggs. (useful for WNV not EEE as much)

Truck-based spraying

- Only routinely available in municipalities that belong to Mosquito Control Districts
- Conducted in response to evidence of virus
- Spraying done along roads;
 - Optimally, spray can reach about 300 feet from road
 - May be less depending on vegetation and building
- Does not address areas where EEE activity is generated (swamps)
- Does reduce mosquito populations and kills infected mosquitoes where people are

Aerial Spray Decision Making

- Mosquito abundance – how large are the populations of concern?
- Mosquito infection rates – how much EEE virus is in the populations?
- Geography – is risk widespread +/- occurring in areas where truck-based mosquito control is not available or unlikely to be effective due to habitat?
- Weather
- Time of season

Aerial spray decision-making inputs:

- DPH – risk assessments and geographic distribution of virus
- MDAR/State Reclamation & Mosquito Control Board – pesticide regulation and subject matter expertise
- Mosquito Control Districts – field condition awareness and mosquito control expertise
- Mosquito Advisory Group – mosquito control expertise advisory group

2026 Prediction: Historical Indicators of Risk

- ✘ Above-average rainfall in the prior fall and current spring
- ✘ Mild winters with insulating snow cover
- ✘ EEE activity in the previous year
 - During the season
 - Any EEE virus isolations from mosquitoes prior to July 1,
 - Isolation of EEE virus from a mammal-biting species of mosquitoes
 - Infection of a human prior to late August
 - Higher than average summer temperatures
 - Accelerates the mosquito reproductive and development cycle
 - Shortens the time interval between a mosquito becoming infected with EEE virus and when it becomes capable of transmitting the virus.

Questions and Discussion

Thank you!

Current Eastern Equine Encephalitis (EEE) and West Nile Virus (WNV) information in
Massachusetts

<https://www.mass.gov/info-details/massachusetts-arbovirus-update>



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