



We proudly display our district logo, as it represents our devotion to balancing environmental stewardship and protecting residents within our District from public health issues related to mosquitos. Together we can spread the word about how NEMMC can help reduce mosquito populations in your town!

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FIGHT THE BITE!

Itching to know more?

The sixth issue of “Fight the Bite” was created as a way to keep readers informed about mosquito operations in their area. NEMMC works with 32 communities in Essex County in a regional approach to control these dangerous pests. Questions on what we did in your community last year? Check out the [reports tab](#) on our website and read your BMP.

Springing into Action: The Return of Mosquitoes

Spring brings warmer weather, blooming flowers, and longer days, but it also marks the return of mosquitoes. Warmer temperatures wake them up after spending the winter in hibernation. Spring rains and snowmelt play a major role in mosquito population growth. Even small collections of water on your lawn, woodland pockets, puddles, old tire ruts, and ditches can become breeding grounds for spring mosquitoes.

Contrary to popular belief, not all mosquitoes feed on blood. Most female mosquitoes bite because they need the nutrients from blood to produce eggs. After feeding, female mosquitoes search for stagnant water, such as puddles or ponds, see image 1, where they can lay their eggs. These eggs hatch into larvae, which grow into the next generation of mosquitoes. Male mosquitoes survive on nectar from flowers.

Some mosquito species lay eggs the previous season, or even many years before. These eggs are found in the soil along low-water marks of areas affected by snowmelt and flooding. When the areas flood in the spring, millions of eggs hatch into larvae. This is troublesome for people in rural, wooded, or riverside areas, who tend to experience more mosquito bites in the spring. In Massachusetts, many of these mosquitoes disappear as their winter nurseries fade by summer, but their bites can still be painful. Some species are even named after the irritation they cause, such as [*Aedes stimulans*](#) (which makes you want to run!), [*Aedes provocans*](#) (which arouses anger), and [*Aedes excrucians*](#) (whose bite is excruciating). Even animals like moose will run into roads to escape the discomfort from swarms of spring mosquitoes.

Some mosquitoes spend the winter in sheltered spots, such as catch basins, homes, trees, caves, or subway tunnels. [*Culex pipiens*](#), also known as the northern house mosquito, becomes dormant in the fall and wakes up on warm, sunny days. That’s why you might find mosquitoes buzzing around your windows after a warm thaw—they are coming out of dormancy and trying to find a way out.



Image 1. Snowmelt pocket

Spring Fling: Ditches, Larviciding, and Mosquito Protection

Spring rains and snowmelt fuel mosquito growth, turning small water collections into breeding grounds. That's why our team begins larviciding efforts in mid-March to control those mosquito numbers. We also clear ditches and culverts to increase water flow, see image 2 & 3, reducing potential breeding sites. Other ways to [prevent mosquitoes](#) include using insect repellent, installing window screens, and avoiding outdoor activities at dawn and dusk, when mosquitoes are most active.

While mosquitoes are often seen as a nuisance, they play an important role in the ecosystem. They provide food for birds, bats, fish, and amphibians, and some species even help pollinate flowers. However, mosquito bites can cause secondary skin infections, allergic inflammatory reactions and carry diseases like [West Nile Virus \(WNV\)](#) and [Eastern Equine Encephalitis \(EEE\)](#), making it important to control their population for both comfort and health. Understanding their [life cycle](#) and being proactive can help reduce their impact during the spring season.



Image 2. Water flow slowed and backed up.



Image 3. Cleared and freely flowing.

I've Excluded my Property...What Happens Now?

In the past, property owners would exclude their property from pesticide applications by securing an aluminum plate along their property boundaries and/or calling the District to request that their property be excluded. Many still post signs on their front lawn that say, "Do Not Spray" and depict wildlife on them.

The problem with these methods is that mosquito control districts only have an address and no way of knowing how large the property really is, or they don't see the posted plates while spraying at night.

Today, the [Massachusetts Department of Agriculture \(MDAR\)](#) and mosquito control districts have made the process more efficient and more effective. Residents who wish to exclude their property from area wide area applications submit their [request online](#) to the MDAR, who log it and send it to the appropriate mosquito control district.

The request goes into effect within 14 days of submission and expire on December 31 of that calendar year. Residents receive confirmation from MDAR that their exclusion request has been received.

The District enters these requests into our mapping database each week, and the excluded property is highlighted in our FieldSeeker program, see image 4, alerting our field crew when they are working in that area. The exclusions appear immediately in the mobile phones used in the field during the day and are synced with the tablets used for adulticiding once each week.

Residents receive a second email at this point, letting them know that their request has been mapped.

The mobile maps show the extent of the excluded property, allowing our field technicians to avoid the entire parcel. To make sure our field technicians are aware of excluded properties when adulticiding at night, there is an alarm that alerts them to the upcoming property, giving them the opportunity to shut the sprayer off if needed.



Image 4. Yellow parcels are properties that are excluded from pesticide applications.

The Bug Buffer

What is a [barrier treatment](#)? A pesticide application aimed at controlling mosquitoes on a property for weeks at a time. This treatment is applied to non-blooming shrubby vegetation, particularly around the edge or perimeter of the property. The goal? Imagine a dense line of shrubs as a barrier or a 'wall', with very few mosquitoes able to cross without landing on the plants and coming into contact with the treatment, see image 5.

However, areas with little to no vegetation are not ideal for barrier treatments, as there's nothing for the mosquitoes to land on, see image 6. The effectiveness of these treatments depends largely on the quality of the vegetation used. We use truck-mounted sprayers that can reach up to 70 feet vertically and 130 feet horizontally to apply the pesticide, see Image 7 & 8.

Where do we typically apply barrier treatments? These treatments are commonly found at schools, parks, fairgrounds, cemeteries, and public event spaces. They are typically requested by community health boards or [school IPM](#) coordinators. NEMMC collaborates with both groups, organizing all requested areas to be treated in a single evening. This approach maximizes efficiency, ensuring that staff can treat the next town. Residential properties, however, aren't treated with this method by NEMMC. Barrier treatments are a great way to keep mosquitoes at bay, especially in areas with public use during virus time and fewer applications needed.



Image 5. 👍 Note the 'wall' of vegetation surrounding the field making it difficult for mosquitoes to enter without landing.



Image 6. 🐜 Sporadic vegetation, with plenty of open space for mosquitoes to enter.



Image 7. Barrier treatment into the tree line.



Image 8. Barrier sprayer that will be mounted on the truck

NMCA (What even is this?)

The NMCA ([Northeast Mosquito Control Association](#)) is a non-profit educational organization comprising nearly 250 mosquito research and control professionals from New England, New York, New Jersey, and Pennsylvania, including Northeast MA Mosquito. The association has been hosting annual meetings for over 70 years. The primary goals of the NMCA are to enhance the effectiveness of mosquito abatement and related activities through the promotion of research, the development of best practices, and the exchange of valuable information.

NEMMC has been attending these annual meetings since the 1950s, gaining insight into new mosquito control techniques, upcoming legislative changes, and networking opportunities with other agencies and exhibitors to learn about new products and developments in the field. The meetings also provide a platform for us to present and educate others about our work and the services we offer to municipalities. Additionally, these events allow our staff to earn continuing education credits for their various licenses.

The NMCA also supports the Northeast Young Professionals Group, which offers a chance for new attendees to connect with field technicians, entomologists, lab technicians, and graduate students from across the region to exchange ideas and experiences. The three-day event features updates from states in the northeastern U.S., along with contributions from the [AMCA](#), [NJMCA](#), [CDC](#), and various centers of excellence. Vendors showcase their exhibits, and the event concludes with a banquet and a fun photo salon, featuring diverse pictures taken by members throughout the year.

Overall, the NMCA provides an invaluable resource for mosquito control districts, offering opportunities for learning, networking, and professional development.



Northeast
Mosquito
Control
Association
mosquito control for health and comfort



U.S. CENTERS FOR DISEASE
CONTROL AND PREVENTION

Stuck in the Muck: How a Clogged Ditch Became Mosquito Central

NEMMC received a request from a local municipality to clear a heavily clogged ditch that serves as an outflow for a wetland. The ditch, obstructed by fallen trees and years of sediment buildup, had caused significant flooding of a field and associated wetland, creating ideal conditions for mosquito breeding, see image 9.

The ditch stretches approximately 300 feet with approximately a 3-foot drop in grades. Once a pathway was cleared, the crew established elevation grades to determine how much material needed to be removed. They marked every 50 feet to set the necessary depth required to achieve a slope to align with the bottom of the inlet and outflow culverts. With grades established, the team proceeded to remove sediment and reshape the ditch to its original form, see image 10, with the town providing dump trucks for off-site disposal.

As a result of these efforts, the wetland is expected to remain stable during spring thaw and heavy rainfall, preventing roadway flooding and minimizing standing water. Several neighboring property owners expressed their satisfaction with the project and graciously allowed access for equipment.



Image 9. Heavily clogged and obstructed ditch.



Image 10. Ditch cleared and water moving.

Stay Ahead of the Breakdowns!

Wintertime creates a lot of diversity in tasks here at NEMMC. We get a lot of jokes about how we kill mosquitoes in the middle of the winter.

Along with the source reduction activities we conduct in the winter, wintertime activities can include anything from fixing / building greenhead traps, fleet maintenance, maintenance on surveillance traps, and a wide range of other activities. Given the environment we work in, equipment from time to time gets damaged and we have become semi experts performing in house fabrications and repairs over the years.

This season the ditcher on the excavator needed some TLC. The stabilizing arms had rusted out, and the gear oil needed to be changed out, see images 11-13.

Staff fabricated, welded, and painted new stabilizing arms, then replaced the gear oil. Being an expensive attachment to replace, it is good to keep it in running order.



Image 11. Corroded and broken



Image 12. Repaired with welding



Image 13. Functionality is back



Seasonal Field Technicians

Are you passionate about working outdoors? Do you enjoy exploring by land, water, and air? We have the perfect opportunity for you!

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