

THE COMMONWEALTH OF MASSACHUSETTS

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MOSQUITO CONTROL PROJECTS & DISTRICTS

Berkshire County Mosquito
Control Project

Bristol County Mosquito
Control Project

Cape Cod Mosquito
Control Project

Central Massachusetts
Mosquito Control Project

East Middlesex Mosquito
Control Project

Norfolk County Mosquito
Control District

Northeast Massachusetts
Mosquito & Wetland
Management District

Pioneer Valley Mosquito Control
District

Plymouth County Mosquito
Control Project

Suffolk County Mosquito
Control Project

Massachusetts Mosquito Control Project Services

Under the oversight of the State Reclamation and Mosquito Control Board (“SRMCB”), which sits within the Massachusetts Department of Agricultural Resources (“MDAR”), there are currently nine (9) operational Mosquito Control Districts (“Districts”) that have been created in accordance with enabling legislation and M.G.L. c. 252.¹ These Districts are tasked with mosquito control, disease surveillance, and public education, throughout more than 200 member communities. These Districts use an Integrated Pest Management Approach (IPM) to make the best decisions about the mosquito management methods needed to reduce the risk of mosquito-borne illness and provide residents with relief from nuisance levels of biting mosquitoes. Services are tailored to the member communities’ unique geographical makeup, needs of their residents, and are determined in consultation with local municipal officials, including boards of health.

The IPM methods currently employed by the Districts address each stage of the mosquito life cycle while following applicable federal, state, and local statutes, regulations, and guidance regarding proper pesticide application and wetlands and wildlife protections. Any treatments that are made are done in accordance with applicable pesticide statutes and regulations and label directions. These methods, endorsed by the Centers for Disease Control and Prevention (“CDC”), Department of Public Health (“DPH”) and the Environmental Protection Agency (“EPA”), include five key components:

Water Management: Water management is an important tool in reducing mosquito populations. It involves the clearing of sediment, debris, or other blockages from existing waterways (drainage ditches, culverts, streams, swales, ponds, etc.) in order to eliminate stagnant water conditions that allow mosquito larvae to thrive. Districts typically work with municipalities to identify and target areas where sediments and other debris accumulate as a result of road sanding efforts, storm damage, or other natural or unnatural processes that inhibit proper drainage in these environments. Districts also conduct joint water management and wetland/stream/salt marsh restoration

¹ The Nantucket Mosquito Control Project does not have funding, staff, or provide services. The SRMCB recently created the Pioneer Valley Mosquito Control District, which is in the beginning stages of obtaining funding, staff, and operations.

projects in cooperation with State Agencies, United States Army Corps of Engineers, and others.

Source Reduction: Mosquito management recognizes that certain environments can become sources that result in an increase in mosquito habitat. For example, used tires and other containers that hold water can become areas that support larval mosquito development. During the course of one season, hundreds or even thousands of mosquitoes can emerge from a single tire. The removal or draining of these containers will prevent mosquito eggs from hatching or prevent larvae from becoming adult mosquitoes. Several Districts offer free tire recycling to their member municipalities, and work with those municipalities to assess and manage areas with significant artificial container habitats, from industrial properties to houses with abandoned swimming pools.

Education and Outreach: Educating the public about mosquitoes and mosquito-borne illness is an important aspect of integrated mosquito control. Districts produce educational outreach materials, give presentations to the public, and bring outreach materials to public events, in order to teach people about the “personal protection” required to prevent mosquito-borne illness. Several Districts also offer comprehensive programs to their member communities that are geared towards K-12 audiences.

Larval Mosquito Treatment: Treatment of mosquitoes in their larval stage is one of the key parts of integrated mosquito management. Since mosquito larvae are restricted to aquatic habitats, larval treatments can be targeted to specific areas. Districts typically treat larval habitats with biological pesticides (bacterial products, such as *Bacillus thuringiensis israelensis* (Bti) and *Bacillus sphaericus* (Bsph), that have a limited non-target host range), but may use other chemical products such as methoprene to target certain mosquito species. The applications are made using ground based equipment or aircraft. All treatments are made in accordance with applicable pesticide statutes and regulations and label directions.

Adult Mosquito Treatment: While it is preferable to manage mosquitoes in the larval stage, before they can bite humans or produce more offspring, larval treatments are not always feasible. Larvae may be located in habitats which are difficult to access and treat, or where treatment with larvicide is restricted by State and/or Federal regulations. Districts may respond to localized areas with high levels of mosquitoes known to carry disease, or to resident complaints about nuisance levels of mosquitoes, by treating with adulticides. Adulticiding is an important tool for public health mosquito control programs. Before treatment occurs, Districts use mosquito surveillance, along with their local knowledge of the geography and history of their member communities, to verify the mosquito species that are present. They also work with DPH to determine whether these mosquitoes

are carrying mosquito-borne illnesses. If treatment is deemed necessary, it is typically done using ultra-low volume (ULV) truck spraying or backpack sprayers. The pesticides used during treatment are those that have been reviewed and registered by the EPA and Massachusetts Pesticide Sub Committee, and are applied by skilled licensed applicators at dusk or dawn, when mosquito activity is at a peak (and other insect activity is limited). The licensed applicators are trained on how to make these types of applications and attend continuing education trainings relative to pesticide use.

In rare cases, the presence of mosquito-borne disease reaches a level where a declaration of a public health emergency is made by the Commonwealth. When there is a significant risk of humans contracting a mosquito-borne illness, the SRMCB, working with other state agencies including DPH, may then deem it is necessary to perform a wide-area aerial spray of adulticide, in response to a public health emergency. In these cases, the SRMCB works closely with the District(s) in the area where the emergency was declared to conduct appropriate mosquito control operations.

The decision to treat mosquito larvae or adult mosquitoes in a particular area is backed by mosquito surveillance and disease testing, mapping of land use and habitat types, and a biological understanding of the mosquito species that reside there.

Besides the 5 key components used by the Districts, they meet with the SRMCB, MDAR, and DPH regularly to discuss mosquito issues. They participate in trainings about the latest in mosquito control practices, and receive guidance from DPH, to ensure that the decisions they make about mosquito management will have a minimal impact on the residents and environment of their member towns and cities. This collaborative network of state and local officials is critical in protecting the public from mosquito-borne illness.