

REPORT OF PLYMOUTH COUNTY MOSQUITO CONTROL PROJECT

The Commissioners of the Plymouth County Mosquito Control Project are pleased to submit the following report of our activities during 2019.

The Project is a special district created by the State Legislature in 1957, and is now composed of all Plymouth County towns, the City of Brockton, and the town of Cohasset. The Project is a regional response to a regional problem, and provides a way of organizing specialized equipment, specially trained employees, and mosquito control professionals into a single agency with a broad geographical area of responsibility.

The 2019 efforts were directed at larval mosquitoes starting with the spring brood. The Project treated over 15,000 acres for larval mosquitoes (larviciding). The pesticide used was B.t.i. (an environmentally selective bacterial agent). Upon emergence of the spring brood of mosquitoes, ultra-low volume adulticiding began on June 3rd, 2019 and ended on September 17th, 2019. The Project responded to 17,584 requests for spraying and larval checks from residents covering all of the towns within the district.

Massachusetts Department of Public Health (DPH) has developed an "Arbovirus Surveillance and Response Plan" for the state. The Plan creates a system which estimates the human risk for contracting Eastern Equine Encephalitis and West Nile using several factors including the number of infected mosquitoes. Based on guidelines defined by the Plan, all towns in Plymouth County Mosquito Project were initially at "Low Level Risk" for mammalian infection of West Nile (WNV) and Eastern Equine Encephalitis (EEE). At the end of the season 6 towns (Bridgewater, Halifax, Plympton, Kingston, Middleboro and Carver) were at moderate risk for West Nile, all other towns remained at low risk. At the end of the season the towns of Carver, Lakeville, Middleboro, Marion, Rochester and Wareham were at critical risk for EEE. At high risk for EEE were Bridgewater, East Bridgewater, Halifax, Mattapoissett, Plympton, West Bridgewater and Whitman. The District's remaining towns were at moderate risk for EEE.

West Nile Virus activity in 2019 was significantly less than 2018. However, the district had two human cases of WNV. Mosquito surveillance is a coordinated effort between PCMCP and DPH. The District submitted 696 samples containing 23,300 mosquitoes to DPH for testing and 4 samples were positive for WNV. The positive samples were in Middleboro, Pembroke and Whitman. The Department of Public Health (DPH) also detected WNV in their mosquito samples. They had a total of 16 WNV isolations from the towns of Carver, Halifax, Lakeville and Kingston. As part of our West Nile Virus control strategy a total of 53,248 catch basins were treated with larvicide in all of our towns.

The United States saw historic activity of Eastern Equine Encephalitis Virus (EEEV). Nationwide there were 38 human cases of EEE in 10 states. Massachusetts had 12 human infections of EEEV, the most of any state. There was extensive EEEV activity within the district. One human case of EEE occurred within the district. PCMCP submitted 23,300 mosquitoes grouped into 696 mosquito samples for testing and 72 were positive for EEEV. The isolations were from Bridgewater, Cohasset, Duxbury, Hanson, Lakeville, Marion, Mattapoissett, Middleboro, Norwell, Pembroke, Rochester and Scituate. DPH also detected EEEV in 92 of their 551 samples tested. Those detections were in the towns of Carver, Duxbury, East Bridgewater, Halifax, Kingston, Lakeville, Marion, Mattapoissett, Rochester, Wareham, West Bridgewater and Whitman.

The Commonwealth of Massachusetts responded to the EEEV activity by conducting wide scale aerial adulticiding. In all, 6 applications occurred. Three of these applications were

in the district. Applications of this kind are complex and involve a large number of state agencies including DPH, The Department of Agriculture and The State Reclamation and Mosquito Control Board. The Project assisted with these applications in a number of ways, including supplying equipment and helping to document efficacy of the application.

PCMCP followed the “Arbovirus Surveillance and Response Plan” and responded to the EEEV by increasing our adulticiding and mosquito surveillance. The Project conducted wide area applications by truck in locations where EEE was detected. We also submitted for testing more than 247 extra mosquito samples.

The Health threat of EEEV and WNV continues to ensure cooperation between the Plymouth County Mosquito Control Project, local Boards of Health and the Massachusetts Department of Public Health. In an effort to keep the public informed, EEE and WNV activity updates are regularly posted on Massachusetts Department of Public Health website.

In conjunction with the MDPH we have been monitoring *Aedes albopictus* expansion in the state. *Ae. albopictus* is an introduced mosquito that has the potential to become a serious pest and a vector of disease. The mosquito has been present in Massachusetts since 2009. The larvae live in containers and are closely linked with human activity. They are especially associated with used tires. We conducted surveillance at 8 sites in Plymouth, Wareham, Brockton, Pembroke, Middleboro, Rockland and Whitman. This year we did not detect the mosquito. The Project began a tire recycling program in October 2017. During the 2019 season we recycled 2,494 tires bringing us to a total of 9,290 tires for the program.

The figures specific to the town of Pembroke are given below. While mosquitoes do not respect town lines the information given below does provide a tally of the activities which have had the greatest impact on the health and comfort of Pembroke residents.

Insecticide Applications: Our greatest effort has been targeted at mosquitoes in the larval stage, which can be found in woodland pools, swamps, marshes and other standing water areas. Inspectors continually gather data on these sites and treat with highly specific larvicides when immature mosquitoes are present. In Pembroke 786 larval sites were checked.

During the summer 2111 catch basins were treated in Pembroke to prevent the emergence of *Culex pipiens*, a known mosquito vector in West Nile Virus transmission.

Our staff treated 1304 acres using truck mounted sprayers for control of adult mosquitoes. More than one application was made to the same site if mosquitoes reinvaded the area. The first treatments were made in June and the last in September.

Water Management: During 2019 crews removed blockages, brush and other obstructions from 3385 linear feet of ditches and streams to prevent overflows or stagnation that can result in mosquito production. This work, together with machine reclamation, is most often carried out in the fall and winter.

Mosquito Survey: Our surveillance showed that the dominant mosquitoes throughout the district were generally *Coquillettidia peturbans* and *Cs. melanura*. In the Town of Pembroke the three most common mosquitoes were *Cq. peturbans*, *Cs. melanura* and *Cx. species*

Education and Outreach: We continue to reach out to residents in a variety of ways. Our website has been recently updated and includes web pages for meetings and the annual budget. It also includes educational handouts to provide more information and better describe all the Project’s services.

We encourage citizens or municipal officials to visit our website at www.plymouthmosquito.org or call our office for information about mosquitoes, mosquito-borne diseases, control practices, or any other matters of concern.

Stephen Gillett
Superintendent

Commissioners:
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