

## 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 2013.

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 in Norfolk County. 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.

As a result of a winter with average snow cover, the 2013 season began with dry conditions and below average number of spring mosquitoes. Detection and treating larval mosquitoes was limited with the spring brood, because of the low water table, lack of larvae. Over 10,000 acres were aerial laticided using the Project plane and ground larviciding using B.t.i., an environmentally selective bacterial agent. Upon emergence of the spring brood of mosquitoes, ultra-low volume adulticiding began on May 31, 2013 and ended on September 20, 2013. The Project responded to 13,692 spray requests for service from residents. As part of our West Nile Virus control strategy a total of 69,712 catch basins were treated with larvicide in all of our towns to prevent West Nile Virus (WNV).

In response to the continued threat of mosquito borne diseases in the district, we increased our surveillance trapping and ground larviciding, and adult spraying in areas of concern to protect public health.

The first virus isolations identified, in Plymouth County was on June 25, 2013, by the Massachusetts Department of Public Health State Lab, a *Culex pipiens/restuans* complex, a bird biting species was found to have West Nile Virus (WNV) in the town of Whitman. The first isolate of Eastern Equine Encephalitis virus (EEEV) from a *Culex pipiens/restuans* complex, in the town of Hanover on July 29, 2013. The 2013 season had a total of 20 EEE positive pool (50 or less mosquitoes) isolates, and 48 WNV positive pools trapped in Plymouth County as follows:

WNV 48 positive pools

| WNV_city/towns_2013 |               |                   |
|---------------------|---------------|-------------------|
| CITY_TOWN           | WNV_pos_pools | MOSQUITO DISTRICT |
| ABINGTON            | 2             | Plymouth          |
| BRIDGEWATER         | 11            | Plymouth          |
| BROCKTON            | 1             | Plymouth          |
| CARVER              | 1             | Plymouth          |
| HALIFAX             | 5             | Plymouth          |
| HANOVER             | 1             | Plymouth          |
| HANSON              | 1             | Plymouth          |
| HINGHAM             | 1             | Plymouth          |
| LAKEVILLE           | 4             | Plymouth          |
| MARION              | 2             | Plymouth          |

| WNv_city/towns_2013                  |               |                                    |
|--------------------------------------|---------------|------------------------------------|
| CITY_TOWN                            | WNv_pos_pools | MOSQUITO DISTRICT                  |
| MIDDLEBORO                           | 3             | Plymouth                           |
| PEMBROKE                             | 1             | Plymouth                           |
| PLYMOUTH                             | 1             | Plymouth                           |
| ROCHESTER                            | 2             | Plymouth                           |
| ROCKLAND                             | 2             | Plymouth                           |
| WAREHAM                              | 1             | Plymouth                           |
| WEST BRIDGEWATER                     | 3             | Plymouth                           |
| WHITMAN                              | 3             | Plymouth                           |
| <b>2013 PCMCP TOTAL CITIES/TOWNS</b> | <b>18</b>     | <b>48 CONFIRMED POSITIVE POOLS</b> |

EEE 20 positive pools

| EEE_city/towns_2013                  |               |                                    |
|--------------------------------------|---------------|------------------------------------|
| CITY_TOWN                            | EEE_pos_pools | MOSQUITO DISTRICT                  |
| CARVER                               | 1             | Plymouth                           |
| KINGSTON                             | 1             | Plymouth                           |
| HALIFAX                              | 2             | Plymouth                           |
| HANOVER                              | 3             | Plymouth                           |
| HANSON                               | 2             | Plymouth                           |
| HINGHAM                              | 2             | Plymouth                           |
| PLYMPTON                             | 1             | Plymouth                           |
| ROCKLAND                             | 2             | Plymouth                           |
| MATTAPOISETT                         | 1             | Plymouth                           |
| WEST BRIDGEWATER                     | 3             | Plymouth                           |
| WHITMAN                              | 2             | Plymouth                           |
| <b>2013 PCMCP TOTAL CITIES/TOWNS</b> | <b>11</b>     | <b>20 CONFIRMED POSITIVE POOLS</b> |

Based on guidelines defined by the Massachusetts Department of Public Health's "Vector Control Plan to Prevent WNV and EEE in Massachusetts", the season began with all 28 Plymouth County Mosquito Control towns at "Low Risk Level " for WNV. The season ended with eleven Plymouth County towns, Abington, Brockton, Rockland,

Whitman, Hingham, West Bridgewater, Bridgewater, East Bridgewater, Hanson, Plympton, Kingston, and Halifax. Marshfield and Carver at the "Moderate Level" for WNV.

The season began with eleven towns at the "Moderate Risk Level" for EEE virus, West Bridgewater, Bridgewater, Middleboro, Lakeville, Rochester, Mattapoisett, Plympton, Kingston, Halifax, Marshfield and Carver. The season ended with one town, Middleboro at "Critical Risk" level and eight towns at "High Risk" level, Hanover, Rockland, Whitman, Hanson, Plympton, Halifax, and West Bridgewater. The towns of Norwell, Pembroke, East Bridgewater, Bridgewater, Kingston, Carver, Lakeville, Brockton, Abington, Hingham, and Mattapoisett end the season at "Moderate Risk" level for EEE virus.

There was no aerial intervention to reduce human biting bridge vector mosquitoes and enzootic transmission of EEE in the state this year. There were two confirmed human cases of West Nile virus in Plymouth County. There was a fatal EEE human case in Norfolk County that had a travel history in Plymouth County, in the town of Whitman. One fatal EEE horse case was reported in Middleboro with an onset date of 18 September 2013. PCMCP ended its trapping program on 16 September and DPH finished trapping on 9 October.

The Project conducted a joint research project with Bristol County Mosquito Control Project. The goal of this project was to study ways to improve the effectiveness of spring larvicide applications through the use of some new techniques that have been recently developed. The research involved using a combination of the insecticides B.t.i. and B.s., both chemicals environmentally selective bacterial agent. The research was very successful and we were able to demonstrate improved efficacy.

The public health problem of EEE and WNV continues to ensure cooperation between the Plymouth County Mosquito Control Project, local Boards of Health, Massachusetts State Reclamation and Mosquito Control Board and the Massachusetts Department of Public Health. In an effort to keep the public informed, EEE and WNV activity updates are regularly posted on The Plymouth County Mosquito Control Project website [www.plymouthmosquito.org](http://www.plymouthmosquito.org) and the Massachusetts Department of Public Health website at [www.state.ma.us/dph/wnv/wnv1.htm](http://www.state.ma.us/dph/wnv/wnv1.htm).

The figures specific to the Town of Mattapoisett 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 Mattapoisett residents.

**Insecticide Application.** 1,300 acres were treated 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.

During the summer 865 catch basins were treated to prevent the emergence of *Culex pipiens*, a known mosquito vector in West Nile Virus transmission.

**Water Management.** During 2013 crews removed blockages, brush and other obstructions from 675 linear feet of ditches and streams to prevent overflows or stagnation that can result in mosquito breeding. This work, together with machine reclamation, is most often carried out in the fall and winter.

**Machine Reclamation.** 900 linear feet of saltmarsh ditch was reconstructed in Mattapoisett using the Project's track driven excavator.

Aerial Application. Larviciding woodland swamps by airplane before the leaves come out on the trees continues to be very effective. In Mattapoisett this year we aerially larvicided 390 acres.

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.

Finally, we have been tracking response time, which is the time between notice of a mosquito problem and response by one of our inspectors. The complaint response time in the Town of Mattapoisett was less than three days with more than 382 complaints answered.

Mosquito Survey. Our surveillance showed that the dominant mosquitoes throughout the district were generally *Culiseta melanura* and *Coquillettidia perturbans*. In the Town of Mattapoisett the three most common mosquitoes were *Ae. vexans*, *Cs. melanura* and *Oc. taeniorhynchus*.

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

Anthony Texeira  
Superintendent

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