

## The Central Massachusetts Mosquito Control Project 2011 Aerial Larvicide Initial Summary

In order to reduce the spring adult mosquito populations, CMMCP organized an aerial larvicide application for three member towns. These aerial applications took place on April 21<sup>st</sup> for the town of Chelmsford and on the following day, April 22<sup>nd</sup>, for both Boxborough and Billerica. North Fork Helicopters was contracted to provide the methods for the actual application, with the towns purchasing the *Bacillus thuringiensis israelensis (Bti)* bacterial product (VectoBac G®; EPA Reg. No. 73049-10), and CMMCP supplying the field staff.

As per the mosquito control Generic Environmental Impact Report (GEIR), dip stations were established in these towns for pre and post treatment monitoring. Dip stations were established in anticipated wetlands for application as well as in wetlands that were not to be treated, creating control sites. Dip stations were sampled prior to the application for the existence of mosquito breeding, again 24 hours after treatment, and then followed by one more site check.

The town of Chelmsford had 553 acres of wetlands treated. Dip stations were established near Smith St, Tuttle Rd, Parkerville Rd, and Bridge St. *Bti* product was found throughout much of the treatment sites, which showed reductions of 100.00%, 76.32%, and 70.59%. The overall reduction in these treatment sites was 81.10%. The uneven coverage in the latter two treatment sites may have been due to high winds experienced during the application, tree cover, or possibly due to other helicopter issues. Our designated control site, where no treatment was applied, was found to have a slight decrease in larvae population, exhibiting a 5.66% decrease from the pre application sampling to final site check. Larval samples from Chelmsford included *Ochlerotatus abserratus* and *Ochlerotatus excrucians* species.

The town of Billerica had 602 acres of wetlands treated. Dip stations were established near Chelmsford Rd, Rangeway Rd, Tomahawk Dr, and Shelburne Ave. The Billerica dip stations seemed to be the most successful of the three towns, and had *Bti* present throughout the sites. At the three treatment area dip stations reduction was observed at rates of 100%, 96.55%, and 94.44%. The overall reduction in the Billerica treatment sites was 96.57%. The control site exhibited a 10.81% increase from the pre-application larval counts. Larval samples from Billerica included *Ochlerotatus abserratus*.

The town of Boxborough had 995 acres of breeding wetlands designated for aerial larvicide treatment. Dip stations for Boxborough were located near Swanson Rd, Depot Rd, Old Harvard Rd, and Massachusetts Ave. A control site was established nearby in an adjacent town. Treated dip stations had observed reduction rates of 100.00%, 92.31%, and 83.33%. Where *Bti* was present at the dip stations, there was a 90.70% observed overall reduction. The designated

control site for Boxborough nearly doubled in larvae, having an increase of 103.39%. Another dip station in Boxborough that did not received any *Bti* product showed an increase of 100% as well. Larval samples from Boxborough included *Aedes cinereus* and *Ochlerotatus abserratus*.

In summary, dip stations where field technicians had visible confirmation of the *Bti* product there was a 90.14% reduction. The control dip stations for all three towns, where no *Bti* product was applied, exhibited a 48.52% increase over pre treatment samples. As always, we will be reviewing this application and making changes if needed to ensure the efficiency and efficacy of future aerial larvicide events.

Respectfully submitted,

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