

THE COMMONWEALTH OF MASSACHUSETTS
STATE RECLAMATION & MOSQUITO CONTROL BOARD

CENTRAL MASSACHUSETTS MOSQUITO CONTROL PROJECT

111 Otis Street, Northborough, MA 01532-2414

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www.cmmcp.org



ANNUAL REPORT 2006

PREFACE

The 2006 Annual Report of the Central Massachusetts Mosquito Control Project (the Project) has been prepared to provide the citizens and officials of the member cities and towns with information pertaining to the Project's control procedures and related activities.

As you read through this report you will notice that the Project is committed to an Integrated Mosquito Management (IMM) program. IMM utilizes a variety of control techniques and evaluation procedures. All control efforts are undertaken only after surveillance data has been collected and analyzed. This allows control decisions to be made based on the exact need that exists at each specific site. Environmental considerations are paramount when prescribing various control techniques.

The CMMCP Board of Commission is appointed by the State Reclamation and Mosquito Control Board to represent your community's interest. The Commissioners meet with the Executive Director and Director of Operations on a regular basis to discuss and formulate policies, and to provide their expertise in the operation of the Project. The Commissioners welcome your input, and we encourage you to schedule an appointment to visit our Project headquarters.

Copies of this report are distributed to key officials and departments in our member communities, as well as to the public libraries. We would encourage officials to take time from their busy schedule to read this report. Project personnel are available to answer questions you may have, and to meet with you to discuss out procedures and techniques. The Project's website at www.cmmcp.org has extensive information on mosquito control in Central Massachusetts.

The Project's goal is to provide effective and environmentally sound mosquito control, reducing mosquito annoyance and the potential for the transmission of mosquito-borne diseases. Our staff of competent, well-trained employees are known throughout the member communities as individuals who take great pride in their work.

Thank you,

Richard J. Day, Chair
Board of Commissioners
Central Massachusetts Mosquito Control Project

THE COMMONWEALTH OF MASSACHUSETTS

State Reclamation & Mosquito Control Board
251 Causeway Street Suite 500
Boston, Massachusetts 02114

<http://www.mass.gov/agr/mosquito/>

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Mr. Michael Gildesgame (DCR)

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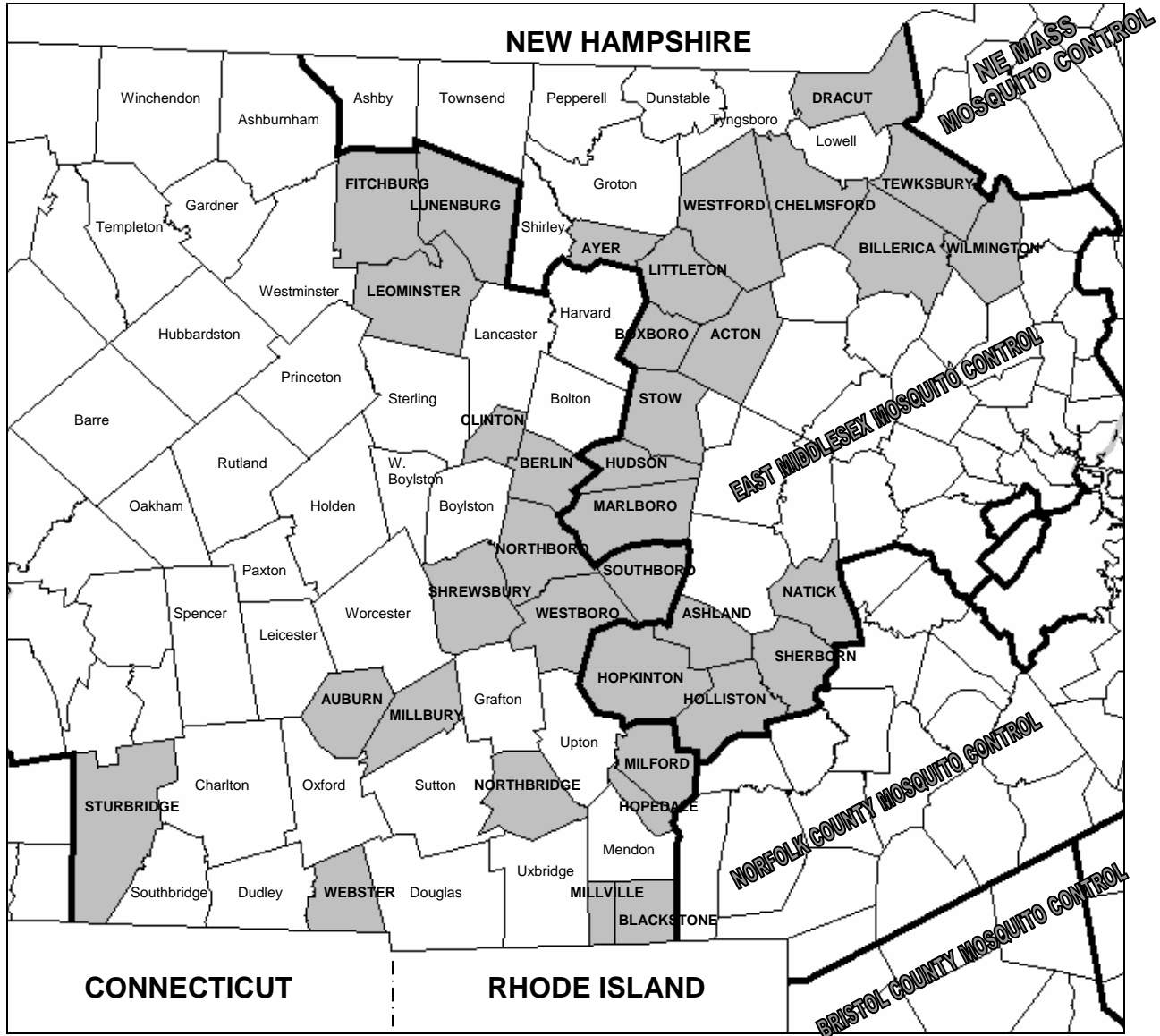
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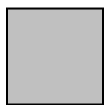
LIST OF MEMBER COMMUNITIES - 2006

<u>TOWN</u>	<u>SQUARE MILES</u>
DISTRICT ONE	
BILLERICA	25.96
CHELMSFORD	22.70
DRACUT	20.90
LITTLETON	16.60
TEWKSBURY	20.70
WESTFORD	30.60
WILMINGTON	17.12
DISTRICT TWO	
ACTON	20.00
AYER	9.00
BOXBOROUGH	10.40
FITCHBURG	27.80
LEOMINSTER	28.90
LUNENBURG	26.40
STOW	17.60
DISTRICT THREE	
BERLIN	12.90
CLINTON	5.70
HUDSON	11.50
MARLBOROUGH	21.10
NORTHBOROUGH	18.50
SHREWSBURY	20.70
SOUTHBOROUGH	14.10
DISTRICT FOUR	
ASHLAND	12.40
HOLLISTON	18.70
HOPEDALE	5.27
HOPKINTON	26.60
MILFORD	14.60
NATICK	15.10
SHERBORN	16.00
WESTBOROUGH	20.50
DISTRICT FIVE	
AUBURN	15.40
BLACKSTONE	10.90
MILLBURY	15.70
MILLVILLE	4.92
NORTHBRIDGE	17.20
STURBRIDGE	37.40
WEBSTER	12.50
Total Square Miles	642.37

CMMCP SERVICE AREA



≈ 2006 ≈



= member towns



MOSQUITO CONTROL ACTIVITIES

One basic fact of the mosquito's biology is the dependence on still, stagnant water to complete its life cycle from egg to adult. Currently, there are two basic control methods practiced by the Project to disrupt this process. The first and most permanent method is called "*water management, source reduction or wetlands restoration*". This method reduces or eliminates the source of a potential mosquito problem, and consists of cleaning road-side ditches and culverts, removal of brush and accumulated debris from streams, and removal of containers which contain water. All of the above mentioned methods serve to accomplish the same goal - they permit water to flow freely, and reduce the likelihood for stagnant areas, areas in which the mosquito needs to reproduce. Source reduction is practiced year-round, and is done only after extensive examinations, and permission is received by the property owner(s).

There are places where water management is neither practical nor feasible for one reason or another. In these situations, we practice a method called *larviciding*. After a field technician has determined that larval mosquitoes are present, a small amount of environmentally sensitive product is applied to the area according to label directions. This is often a very effective control method, reducing the emergence of the adult mosquito from that area. Larviciding is practiced from late-March to September. Bti is the product of choice for larviciding in wetlands.

A third method is to attempt to control the adult mosquito. The control of adult mosquitoes is done on a *request-only* basis, and the presence of adult mosquitoes is confirmed before any application is done. Adulticiding can be an effective method of *temporary* control, which can be beneficial prior to public gatherings, outdoor events and festivals, or when mosquito populations have been determined to be intolerable. Since this part of the program is done **only upon request**, this allows the individual resident to have the ultimate discretion on mosquito spraying in their area - how much or how little. Exemptions for spraying are handled through the City/Town Clerk and the Project office, and are updated each year. Adulticiding is done from approximately Memorial Day to Labor Day, depending on prevalent mosquito populations and the mosquito-borne disease situation.

All products used by the Project have been extensively tested by manufacturers, the US government and mosquito control agencies for many years. They are registered by the EPA and the Mass. Pesticide Bureau. Labels and fact sheets are available upon request to the public from the Project's office, or from our website.

We operate a full surveillance program in our service area. The landing rates performed by our field staff are brought back to the Project lab to be keyed out to species, allowing us to tailor our larviciding program and reduce future dependence on adulticides. We have a mobile team of specialized mosquito traps, called *gravid traps*, designed to capture virus-bearing mosquitoes. These mosquito collections, called *pools*, are sent into the Mass. Dept. of Public Health (MDPH) laboratory in Jamaica Plain for testing of West Nile Virus, Eastern Equine Encephalitis, and other arboviruses of concern by MDPH. These traps are used in a rotation throughout our service area, and are then concentrated in areas showing arboviral activity to supplement MDPH's collection protocols. Additional trap types are utilized in suspect areas to monitor and evaluate the risk of viral transmission to the local populace.

A comprehensive educational program is offered to area schools and civic groups. The program is aimed towards mosquito biology, mosquito habitat, and efforts citizens can undertake to reduce the potential for mosquito populations in their own neighborhood. This program is tailored to suit the requirements of the individual group, from elementary school children, to high school, to adult groups.

PROGRAM EVALUATION

This is a part of the program which many people involved directly never see. It must begin with a carefully planned program, one designed so that the data obtained during surveys before treatment and the surveys taken after treatment can be analyzed by statistically sound methods. Only by doing this can the value of a mosquito control program be determined. We will then know what type (species) of mosquito we are dealing with; what the population density is; what method(s) of control provide the most economical and efficient results.

Then and only then can we say that we have or have not affected mosquito control on a level that is acceptable to the community.

SEASONAL OUTLINE OF MOSQUITO CONTROL PROGRAM

1. Vehicle and equipment repair and storage - November through March
2. Wetlands Restoration - throughout the year
3. Program Preparation - December through March
4. Map compilation and training - throughout the year
5. Larviciding - May through September
6. Adulticiding - June through September
7. Catch Basin Treatment - May through September

Any mosquito control being done by individual member communities must, by law, be coordinated through the Central Massachusetts Mosquito Control Project.

SERVICES AND ACTIVITIES

The following services and activities are available to those communities participating in the Central Massachusetts Mosquito Control Project:

ADMINISTRATIVE

1. Assess the need for mosquito control within each of the member communities.
2. Plan and organize a mosquito control program for each member community based on the specific needs of that community.
3. Assist member communities to implement mosquito control programs so as to enable the residents of that community to receive maximum benefits from organized mosquito control.
4. Administer new and coordinate existing mosquito control programs.
5. Collect and maintain accurate records of mosquito populations, ascertain prevalent species, and collate pertinent data for each member community.
6. Cooperate with federal, state and local agencies concerned with vector control programs which may be implemented in the community.
7. Prepare annual reports of Project activities, mosquito population density profiles, recommendations, and any other data requested by the member communities.
8. Provide supervision to staff members and encourage policies which lend themselves to effective and efficient mosquito control.

PUBLIC EDUCATION

1. Inform the general public, as well as professional groups, of the mosquito control activities intended for each member community through news releases, speakers for community and professional organizations, special educational and training programs (including seminars for environmental interest groups), integration of proposed vector control programs with other organizations, agencies and institutions with similar goals.
2. Offer educational programs to the public school system within the member cities and towns. Programs will be aimed toward mosquito biology, mosquito habitat, and efforts which citizens can undertake to reduce mosquito populations in their neighborhoods.
3. Keep the member communities informed of changes and advancements in mosquito control technology and legislation.

MEDICAL ENTOMOLOGY LABORATORY REPORT, 2006

The mission of the Medical Entomology Laboratory is to refine and maximize the CMMCP's ongoing effort to control mosquitoes. During 2006 Medical Entomology Laboratory personnel carried forward this mission in the following ways:

- Medical Entomology Laboratory personnel made educational presentations about mosquito biology and mosquito control practices before elementary school students.
- The CMMCP's adulticiding practices were evaluated for efficacy.
- The Medical Entomology Laboratory's physical capabilities were improved during 2006 by the acquisition of ten New Standard Miniature Light Traps with Photocell-Controlled CO₂ Release.

A New Standard Miniature Incandescent Light Trap uses a small incandescent light bulb to attract mosquitoes. Cleaner collections may be made by not using the light bulb and adding CO₂ gas released from a cylinder. Mosquitoes are attracted by the CO₂ to the trap. The addition of CO₂ gas also results in larger collections of mosquitoes. The trap has a small precision pneumatic valve which is controlled by an internal photo switch that turns on and off the release of CO₂ with the light level. Therefore the release of gas is taking place when mosquitoes are most likely to be active in the area being monitored.

During 2006 three interns were employed for part of the season to operate the mosquito surveillance traps. CMMCP staff also participated in the operation of surveillance traps. Using their knowledge of mosquito behavior and the local terrain, these skilled and experienced personnel monitored the adult mosquito population. New Standard Miniature Light Traps with Photocell-Controlled CO₂ Release were used to monitor the adult mosquito population for Eastern Equine Encephalitis. Modified Reiter Gravid Traps were used to monitor the adult mosquito population for West Nile virus. Modified Reiter Gravid Traps are attractive to the mosquito species thought most likely to have a role in the maintenance and spread of West Nile virus in the United States of America.

CMMCP personnel made 1,528 collections of mosquitoes this season. The collections contained 39,506 adult mosquitoes. Adult mosquitoes of species known to play a role in the transmission of disease were tested for the presence of West Nile virus and Eastern Equine Encephalitis virus. Two collections tested positive for West Nile virus. One collection tested positive for Eastern Equine Encephalitis virus. The surveillance indicates that these pathogens were circulating in the local environment during 2006. Mosquito control efforts were augmented in the areas where these infected mosquitoes were collected. Further surveillance did not provide any additional positive findings. The data from these collections was shared with the Massachusetts Department of Public Health. A mosquito surveillance report was uploaded each week during the collection season on the CMMCP website at this link: www.cmmcp.org/06summary.htm. These reports listed mosquito collections and virus results for each week. Graphs showing mosquito population trends compared to historical data were also included, as well as detailed summaries by town of mosquito collections submitted to MDPH.

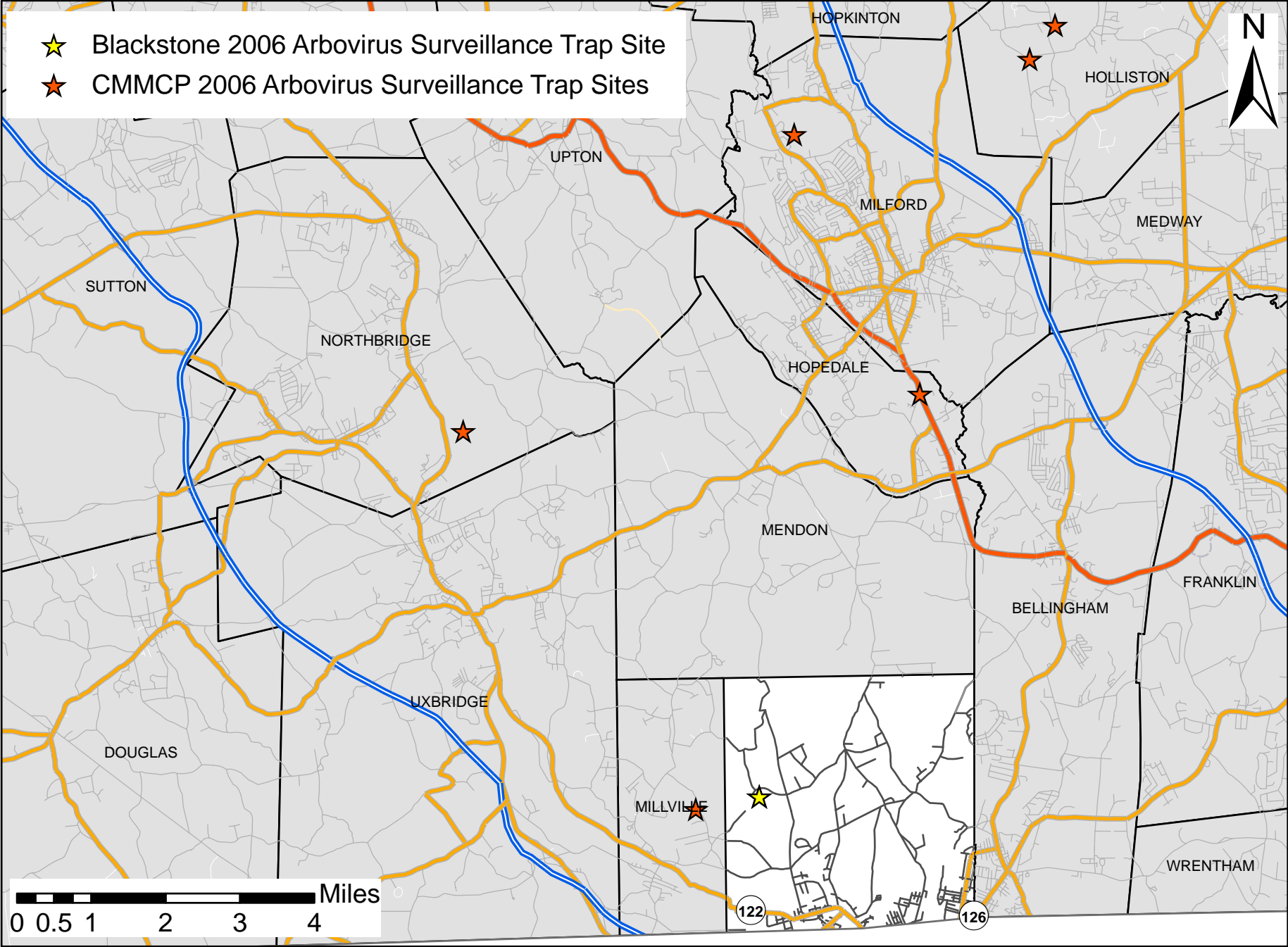
Town	Tested Date	Pool ID	Species	Result	Virus Type
Westborough	9/6/2006	CM06-00835	<i>Culex pipiens/restuans</i>	Positive	WNV positive
Westborough	9/27/2006	CM06-01064	<i>Culiseta melanura</i>	Positive	WNV positive
Leominster	10/4/2006	CM06-01186	<i>Culiseta morsitans</i>	Positive	EEE positive

The Medical Entomology Laboratory is committed to the advancement of mosquito control practices by the application of the scientific method. Such a commitment will further enable the Central Massachusetts Mosquito Control Project to provide its member communities with quality mosquito control for comfort and health.

WNV Surveillance Summary - <u>Statewide</u>	2006
Dead Birds Reported	4,261
Birds Submitted for Testing	320
Birds Tested	313
Birds Positive	57
Mosquito Pools Positive	43
Horses Positive	0
Humans Positive	3

EEE Surveillance Summary - <u>Statewide</u>	2006
Mosquito Pools Positive	157
Horses Positive	6
Humans Positive	5
** A llama from Scituate in Plymouth County (onset 9/7/06) and a harbor seal from Fall River in Bristol County (onset 9/21/06) also tested positive for EEE virus in 2006.	
CMMCP Surveillance Summary	2006
Mosquito Pools Submitted for testing	1,276
Mosquito Pools (total)	3,594
Mosquito Pools Positive WNV	2 (both Westboro)
Horses Positive	0
Humans Positive	2 (Billerica & Webster)
Pools Positive EEE	1 (Leominster)
Horses Positive	0
Humans Positive	0

Town of Blackstone Arbovirus Surveillance Program



TOWN OF BLACKSTONE

<u>DATE</u>	<u>WORK DONE</u>	<u>LOCATION</u>	
01-06-06	Stream Cleaning 10'	Frederick J. Stone Drive	
	Stream Cleaning 10'	Mendon Street	
	Stream Cleaning 10'	Mendon Street	
	Stream Cleaning 10'	Lincoln Street	
	Stream Cleaning 20'	Lincoln Street	
	Stream Cleaning 10'	Lincoln Street	
	Stream Cleaning 15'	Lincoln Street	
	Stream Cleaning 10'	Orchard Street	
	Stream Cleaning 10'	Orchard Street	
	Stream Cleaning 10'	Milk Street	
	Stream Cleaning 15'	Lincoln Street	
	Stream Cleaning 5'	Milk Street	
	Stream Cleaning 10'	Union Street	
	Stream Cleaning 10'	Union Street	
	Culvert Cleaning (33)	Frederick J. Stone Drive, Summer Street, Residential Lane, Mendon Street, Church Street, Lincoln Street, Orchard Street, Milk Street, Chad Michael Court, Milk Street, Mendon Street, Union Street	
	01-30-06	Stream Cleaning 20'	Blackstone Street
		Stream Cleaning 30'	Pickering Road
Stream Cleaning 5'		Parks Street	
Stream Cleaning 40'		Parks Street	
Stream Cleaning 15'		Elm Street	
Stream Cleaning 10'		Elm Street	
Stream Cleaning 20'		Bellingham Road	
Stream Cleaning 10'		Marie Drive	
Stream Cleaning 15'		Summer Street	
Stream Cleaning 35'		Summer Street	
Stream Cleaning 10'		Farm Road	
Stream Cleaning 5'		Blackstone Street	
Stream Cleaning 25'		Elm Street	
Culvert Cleaning (33)		Blackstone Street, Summer Street, Farm Street, Paul Drive, Pickering Road, Parks Street, Elm Street, Marie Drive, Lakeshore Drive, Bellingham Road, Autumn Lane, Blackstone Street, Carol Lane	
03-01-06	Stream Cleaning 10'	Blackstone Street	
	Stream Cleaning 30'	Blackstone Street	
	Stream Cleaning 5'	Mendon Street	
	Stream Cleaning 40'	Milk Street	
	Stream Cleaning 20'	Milk Street	
	Stream Cleaning 35'	Milk Street	
	Stream Cleaning 120'	Lincoln Street	
	Stream Cleaning 25'	Orchard Street	
	Stream Cleaning 5'	Roberta Road	
	Stream Cleaning 30'	Blackstone Street	
	Culvert Cleaning (31)	Blackstone Street, Milk Street, Mendon Street, Union Street, Chestnut Street, Lincoln Street, Orchard Street, Roberta Road	
03-09-06	Administrative Contact	Town Clerk, Board Of Selectmen, Finance Committee, Board Of Health, Library, Conservation Commission, Department Of Public Works	
03-16-06	Administrative Contact	Assessors Office	
	Stream Survey	Bellingham Street	
	Stream Survey	Summer Street	
	Stream Survey	Farm Street	
	Stream Survey	Florance Street	
	Stream Survey	Elm Street	
	Stream Survey	Old Elm Street	
	Culvert Cleaning (1)	Elm Street	
03-23-06	Public Relations	Blackstone Street	
	Stream Survey	Michelle Lane	
	Stream Survey	Summer Street	
	Stream Survey	Blackstone Street	
	Stream Survey	Carol Lane	
04-05-06	Stream Survey	Milk Street	
	Stream Cleaning 10'	Devlin Circle	
	Stream Cleaning 20'	Rocco Drive	
	Stream Cleaning 40'	Federal Street	

TOWN OF BLACKSTONE

<u>DATE</u>	<u>WORK DONE</u>	<u>LOCATION</u>
04-05-06	Stream Cleaning 15'	Federal Street
	Stream Cleaning 50'	Federal Street
	Stream Cleaning 10'	Federal Street
	Stream Cleaning 25'	Farm Street
	Stream Cleaning 40'	Elm Street
	Stream Cleaning 20'	Elm Street
	Stream Cleaning 5'	Bellingham Road
	Stream Cleaning 60'	Fox Hill Road
	Stream Cleaning 20'	Elm Street
	Stream Cleaning 15'	Elm Street
	Stream Cleaning 30'	Carol Lane
	Culvert Cleaning (39)	Ledge Brook Circle, Castle Hill Way, Ledge Devlin Circle, Rocco Drive, Federal Street, Summer Street, Farm Street, Paul Drive, Park Street, Summer Street, Elm Street, Lakeshore Drive, Bellingham Road, Marie Drive, Fox Hill Road, Carol Lane
04-10-06	Public Relations	Mendon Street, Union Street
	Larviciding	Orchard Street, Mendon Street, Crestwood Drive, Union Street
	Larval Survey	Lincoln Street, Mendon Street, Crestwood Drive, Union Street
04-24-06	Larval Survey	Chestnut Street, Milk Street, Blackstone Street, Spruce Street
	Larviciding	Chestnut Street, Milk Street, Blackstone Street
04-28-06	Public Relations	Handy Road, Farm Street
	Larval Survey	Ingrid Drive, Handy Road, Carol Lane, Elm Street, Farm Street, Castagnaro Way, Hop Brook Lane, Summer Street, Auburn Lane
	Larviciding	Blackstone Street, Carol Lane, Farm Street, Hop Brook Lane, Summer Street
05-04-06	Larval Survey	Chestnut Street
05-08-06	Larval Survey	Summer Street, Bellingham Road, Fox Hill Road, Elm Street, Rathbun Street, King Street, Elmwood Street, Carter Avenue, Montcalm Avenue, Miller Street, Farm Street, Pickering Road
05-11-06	Public Relations	Union Street
	Stream Cleaning 15'	Milk Street
	Stream Cleaning 35'	Milk Street
	Stream Cleaning 10'	Mendon Street
	Stream Cleaning 10'	Mendon Street
	Stream Cleaning 15'	Union Street
	Stream Cleaning 15'	Chestnut Street
	Stream Cleaning 5'	Milk Street
	Stream Cleaning 10'	Lincoln Street
	Stream Cleaning 5'	Lincoln Street
	Culvert Cleaning (26)	Milk Street, Mendon Street, Union Street, Lincoln Street, Chestnut Street, Orchard Street, Chad Michael Court, Summer Street, Residential Lane
05-17-06	Trap Survey	Milk Street
05-19-06	Stream Cleaning 10'	Roberta Road
	Stream Cleaning 20'	Blackstone Street
	Stream Cleaning 10'	Summer Street
	Stream Cleaning 15'	Federal Street
	Stream Cleaning 10'	Federal Street
	Culvert Cleaning (28)	Blackstone Street, Florence Drive, Robert Road, Frederick Stone Drive, Blackstone Street, Summer Street, Autumn Lane, Federal Street, Rocco Drive, Farm Street, Carol Lane
05-24-06	Public Relations	Devlin Road, Roberta Road, Federal Street
	Culvert Cleaning	Federal Street
	Larval Survey	Castle Hill Road, Devlin Circle, Ledgebrook Drive, Michelle Lane, Blackstone Road, Alice Avenue, Roberta Road, Florance Drive, Mendon Street, Farm Street
	Larviciding	St. Paul Street, Ascension Street, Michelle Lane, Dawes Street, Nancy Court, Federal Street
05-25-06	Public Relations	JFK Elementary School - Lincoln Street

TOWN OF BLACKSTONE

<u>DATE</u>	<u>WORK DONE</u>	<u>LOCATION</u>
05-30-06	Set Trap	Milk Street
	Administrative Contact	Police Department
	Public Relations	Hop Brook Lane, Farm Road, Fox Hill Lane, Mendon Street
	Adulticiding	Hop Brook Lane, Farm Road, Mendon Street
05-31-06	Public Relations	A.F. Maloney Elementary School - 200 Lincoln Street
	Pick Up Trap	Milk Street
06-05-06	Administrative Contact	Police Department
	Public Relations	Spruce Street, Main Street, Fox Hill Road, Rennie Drive, Blackstone Street
	Adulticiding	Spruce Street, Main Street, Fox Hill Road, Rennie Drive, Blackstone Street, Joseph Early Village
	Larval Survey	Main Street, Spruce Street
06-06-06	Set Trap	Milk Street
	Pick Up Trap	Milk Street
06-12-06	Administrative Contact	Police Department
	Public Relations	Blackstone Street, Farm Street, Main Street, Orchard Street
	Adulticiding	Main Street, Orchard Street, Blackstone Street
	Larval Survey	Farm Street
06-13-06	Set Trap	Milk Street
06-14-06	Administrative Contact	Police Department
	Public Relations	Mendon Street
	Adulticiding	Mendon Street
	Pick Up Trap	Milk Street
06-19-06	Administrative Contact	Police Department
	Public Relations	Spruce Street, Blackstone Street, Farm Street, Union Street
	Adulticiding	Spruce Street, Union Street, Farm Street, Summer Street
	Larval Survey	Spruce Street
06-20-06	Set Trap	Milk Street
06-21-06	Pick Up Trap	Milk Street
06-26-06	Administrative Contact	Police Department
	Public Relations	Farm Street, Hop Brook Lane, Rennie Drive, Windsor Road, Ascension Street, Nancy Court, Orchard Street, Lincoln Street, Liberty Hill Drive, Mendon Street, Mendon Street, Windsor Road, Farm Street
	Landing Count	Mendon Street, Liberty Hill Drive, Lincoln Street, Orchard Street, Ascension Street, Windsor Road, Rennie Drive, Farm Street
	Adulticiding	
06-27-06	Set Trap	Milk Street
06-28-06	Pick Up Trap	Milk Street
07-03-06	Administrative Contact	Police Department
	Public Relations	Blackstone Street, Dawes Street, Nancy Court, Union Street
	Adulticiding	Blackstone Street, Nancy Court, Union Street, Nancy Court
07-10-06	Administrative Contact	Police Department
	Public Relations	Bellingham Road, Fox Hill Road, Farm Street, Blackstone Street, Milk Street, Union Street
	Adulticiding	Bellingham Road, Fox Hill Road, Farm Street, Blackstone Street, Milk Street, Union Street
07-11-06	Set Trap	Milk Street
07-12-06	Pick Up Trap	Milk Street
07-17-06	Administrative Contact	Police Department
	Public Relations	Blackstone Street, Farm Street, Hop Brook Lane
	Adulticiding	Blackstone Street, Farm Street, Hop Brook Lane
07-18-06	Set Trap	Milk Street
07-19-06	Pick Up Trap	Milk Street
07-24-06	Administrative Contact	Police Department
	Public Relations	Mendon Street, Rocco Drive, Rennie Drive, Hop Brook Lane, Blackstone Street, Fox Hill Road, Farm Street
	Adulticiding	Mendon Street, Rocco Drive, Black Stone Street, Farm Street, Hop Brook Lane, Ronnie Drive, Fox Hill Road
07-25-06	Set Trap	Milk Street
07-26-06	Pick Up Trap	Milk Street

TOWN OF BLACKSTONE

<u>DATE</u>	<u>WORK DONE</u>	<u>LOCATION</u>
07-31-06	Administrative Contact Public Relations Adulticiding	Police Department Blackstone Street, Rennie Drive, Windsor Road Blackstone Street, Rennie Drive, Windsor Road, Rathbun Street
	Catch Basin Larviciding [45]	Chad Michael Court, Mandy Drive, Tee Jay Lane, Reilly Avenue, Mark Drive, Nancy Court
08-01-06	Set Trap	Milk Street
08-02-06	Pick Up Trap	Milk Street
08-07-06	Administrative Contact Public Relations	Police Department Union Street, Blackstone Street, Brook Lane, Fox Hill Road, Rennie Drive, Farm Street, Milk Street, Union Street, Mendon Street, Federal Street
	Adulticiding	Blackstone Street, Farm Street, Rennie Drive, Union Street, Mick Street, Mendon Street, Federal Street
	Larval Survey	Union Street, Fox Hill Road, Hop Brook Lane, Blackstone Street
	Catch Batch Larviciding [230]	Edgewater Drive, Carter Avenue, Dorena Drive, David Drive, Fox Hill Road, Windsor Road, Woodcrest Lane, Rennie Drive, Hop Brook Lane, Castagnaro Way, Carol Lane, Ingrid Drive, Spruce Street, Laurel Road, Liberty Hill Drive, Centennial Drive, Crestwood Drive, Susan Drive, Autumn Lane, Residential Lane, Roberta Road, Early Village Drive, Michelle Lane, Austin Street, Fox Brook Manor, County Street, Rocco Drive, Monica Lane
08-08-06	Set Trap	Milk Street
08-09-06	Pick Up Trap	Milk Street
08-14-06	Administrative Contact Public Relations Adulticiding	Police Department, Board Of Health Union Street, Farm Street, Fox Hill Road Union Street, Farm Street, Fox Hill Road
	Catch Basin Larviciding [154]	Paul Street, Rhode Island Avenue, Powers Street, Mayboro Street, Connecticut Avenue, Rayner Street, May Street, Dawn Street, Patricia Drive, Blackstone Street, Mendon Street, Dawes Street, Main Street
08-15-06	Set Trap	Milk Street
08-16-06	Pick Up Trap	Milk Street
	Catch Basin Larviciding [101]	Windsong Drive, Summer Street, Federal Street, Elizabeth Avenue, Mill Street, Canal Street, Farm Street, Miller Avenue, Rathbun Street
08-18-06	Stream Survey	Blackstone Street
08-21-06	Administrative Contact Public Relations Adulticiding	Police Department Spruce Street, Blackstone Street Blackstone Street, Spruce Street
08-22-06	Set Trap Catch Basin Larviciding [75]	Milk Street Castle Hill Way Butler Street, Devlin Circle, Putters Lane, Hoyle Circle, Ledgebrook Circle, Ascension Street, Hill Street, Kelly Lane, Alice Avenue, Early Village Drive, Florence Drive, Roberta Road, Fox Brook Manor, Austin Street, Prospect Street, Howard Street, Mason Street, Oak Street, Pleasant Street, Butler Street, Duncan Street, Tupperware Drive, Ives Street, Washington Drive, Goddard Street, Carrington Street, County Street, Dawes Street, Wilbur Street, Orchard Street, Park Street, Bellingham Road, Marzalkowski Street, Marcel Lane, Handy Road, Elm Street, Union Street
08-23-06	Pick Up Trap	Milk Street
08-28-06	Administrative Contact Public Relations Larval Survey	Police Department Orchard Street, Blackstone Street, Ronnie Drive Castle Hill Road, Main Street, Rathbun Street, Elmwood Street, Carter Avenue, Mont Calm Avenue
08-29-06	Set Trap	Milk Street
08-30-06	Pick Up Trap	Milk Street
09-05-06	Set Trap Administrative Contact Public Relations Adulticiding Larval Survey	Milk Street Police Department, Board Of Health Orchard Street, Blackstone Street, Rennie Drive Orchard Street, Blackstone Street, Rennie Drive Federal Street, Elm Street, Mendon Street, Summer Street, Bellingham Road
09-06-06	Pick Up Trap	Milk Street

TOWN OF BLACKSTONE

<u>DATE</u>	<u>WORK DONE</u>	<u>LOCATION</u>
09-11-06	Administrative Contact Public Relations Adulticiding	Police Department Blackstone Street Blackstone Street
09-12-06	Set Trap	Milk Street
09-13-06	Pick Up Trap	Milk Street
09-14-06	Administrative Contact Stream Survey	Board Of Assessors Bellingham Road
09-19-06	Set Trap	Milk Street
09-20-06	Pick Up Trap	Milk Street
09-26-07	Set Trap	Milk Street
09-27-06	Pick Up Trap	Milk Street
10-04-06	Clear Trap Site	Milk Street
10-23-06	Stream Cleaning 10'	Lincoln Street
	Stream Cleaning 40'	Lincoln Street
	Stream Cleaning 20'	Lincoln Street
	Stream Cleaning 10'	Orchard Street
	Stream Cleaning 20'	Orchard Street
	Stream Cleaning 20'	Orchard Street
	Stream Cleaning 25'	Orchard Street
	Stream Cleaning 50'	Orchard Street
	Stream Cleaning 10'	Lincoln Street
	Stream Cleaning 10'	Lincoln Street
	Stream Cleaning 20'	Lincoln Street
	Stream Cleaning 25'	Lincoln Street
	Stream Cleaning 15'	Milk Street
	Stream Cleaning 45'	Milk Street
	Stream Cleaning 10'	Chestnut Street
	Stream Cleaning 30'	Chestnut Street
	Stream Cleaning 20'	Chestnut Street
	Stream Cleaning 20'	Union Street
	Stream Cleaning 20'	Union Street
	Stream Cleaning 10'	Union Street
	Stream Cleaning 10'	Union Street
	Stream Cleaning 20'	Union Street
	Stream Cleaning 15'	Mendon Street
	Stream Cleaning 20'	Mendon Street
	Culvert Cleaning (29)	Lincoln Street, Chad Michael Court, Orchard Street, Mendon Street, Milk Street, Chestnut Street, Union Street
12-06-06	Brush Cutting 350'	Blackstone Street
	Stream Cleaning 350'	Blackstone Street
12-07-06	Brush Cutting 250'	Blackstone Street
	Stream Cleaning 250'	Blackstone Street
12-08-06	Brush Cutting 390'	Blackstone Street
12-11-06	Brush Cutting 300'	Florence Drive
12-13-06	Brush Cutting 405'	Blackstone Street

2006 Mosquito Surveillance Data
BLACKSTONE

#	Town	Date	Pool ID	# of Traps	Trap Site	Pool Size	Species	Result	Virus Type
1	Blackstone	5/31/2006	CM06NS-00007	2	86R Milk St	2	<i>Ochlerotatus aurifer</i>	N/S	
2	Blackstone	5/31/2006	CM06NS-00008	2	86R Milk St	1	<i>Ochlerotatus canadensis</i>	N/S	
3	Blackstone	5/31/2006	CM06NS-00009	2	86R Milk St	1	<i>Ochlerotatus excrucians</i>	N/S	
4	Blackstone	5/31/2006	CM06NS-00010	2	86R Milk St	1	<i>Ochlerotatus japonicus</i>	N/S	
5	Blackstone	6/7/2006	CM06NS-00107	2	86R Milk St	1	<i>Aedes cinereus</i>	N/S	
6	Blackstone	6/7/2006	CM06NS-00108	2	86R Milk St	7	<i>Aedes vexans</i>	N/S	
7	Blackstone	6/7/2006	CM06NS-00109	2	86R Milk St	1	<i>Ochlerotatus trivittatus</i>	N/S	
8	Blackstone	6/14/2006	CM06NS-00177	2	86R Milk St	1	<i>Aedes cinereus</i>	N/S	
9	Blackstone	6/14/2006	CM06NS-00178	2	86R Milk St	15	<i>Aedes vexans</i>	N/S	
10	Blackstone	6/14/2006	CM06NS-00179	2	86R Milk St	2	<i>Ochlerotatus canadensis</i>	N/S	
11	Blackstone	6/14/2006	CM06NS-00180	2	86R Milk St	3	<i>Ochlerotatus japonicus</i>	N/S	
12	Blackstone	6/14/2006	CM06NS-00181	2	86R Milk St	2	<i>Ochlerotatus sticticus</i>	N/S	
13	Blackstone	6/21/2006	CM06-00109	2	86R Milk St	1	<i>Culiseta melanura</i>	Negative	
14	Blackstone	6/21/2006	CM06NS-00411	2	86R Milk St	2	<i>Aedes vexans</i>	N/S	
15	Blackstone	6/21/2006	CM06NS-00412	2	86R Milk St	1	<i>Coquillettidia perturbans</i>	N/S	
16	Blackstone	6/21/2006	CM06NS-00413	2	86R Milk St	1	<i>Ochlerotatus canadensis</i>	N/S	
17	Blackstone	6/21/2006	CM06NS-00414	2	86R Milk St	3	<i>Ochlerotatus japonicus</i>	N/S	
18	Blackstone	6/21/2006	CM06NS-00415	2	86R Milk St	2	<i>Ochlerotatus sticticus</i>	N/S	
19	Blackstone	6/21/2006	CM06NS-00416	2	86R Milk St	2	<i>Ochlerotatus triseriatus</i>	N/S	
20	Blackstone	6/21/2006	CM06NS-00417	2	86R Milk St	1	<i>Orthopodomyia signifera</i>	N/S	
21	Blackstone	6/28/2006	CM06-00180	2	86R Milk St	5	<i>Culex pipiens</i>	Negative	
22	Blackstone	6/28/2006	CM06NS-00574	2	86R Milk St	1	<i>Aedes vexans</i>	N/S	
23	Blackstone	6/28/2006	CM06NS-00575	2	86R Milk St	1	<i>Coquillettidia perturbans</i>	N/S	
24	Blackstone	6/28/2006	CM06NS-00576	2	86R Milk St	1	<i>Ochlerotatus canadensis</i>	N/S	
25	Blackstone	6/28/2006	CM06NS-00577	2	86R Milk St	9	<i>Ochlerotatus triseriatus</i>	N/S	
26	Blackstone	7/12/2006	CM06-00307	2	86R Milk St	38	<i>Culex pipiens</i>	Negative	
27	Blackstone	7/12/2006	CM06-00308	2	86R Milk St	12	<i>Culex restuans</i>	Negative	
28	Blackstone	7/12/2006	CM06NS-00866	2	86R Milk St	2	<i>Ochlerotatus canadensis</i>	N/S	
29	Blackstone	7/12/2006	CM06NS-00867	2	86R Milk St	1	<i>Ochlerotatus japonicus</i>	N/S	
30	Blackstone	7/12/2006	CM06NS-00868	2	86R Milk St	3	<i>Ochlerotatus triseriatus</i>	N/S	
31	Blackstone	7/19/2006	CM06-00384	2	86R Milk St	15	<i>Culex pipiens</i>	Negative	
32	Blackstone	7/19/2006	CM06-00385	2	86R Milk St	2	<i>Culex restuans</i>	Negative	
33	Blackstone	7/19/2006	CM06-00386	2	86R Milk St	3	<i>Culiseta melanura</i>	Negative	
34	Blackstone	7/19/2006	CM06NS-00990	2	86R Milk St	8	<i>Coquillettidia perturbans</i>	N/S	
35	Blackstone	7/19/2006	CM06NS-00991	2	86R Milk St	2	<i>Ochlerotatus japonicus</i>	N/S	
36	Blackstone	7/19/2006	CM06NS-00992	2	86R Milk St	2	<i>Ochlerotatus triseriatus</i>	N/S	
37	Blackstone	7/26/2006	CM06-00471	2	86R Milk St	8	<i>Culex pipiens/restuans</i>	Negative	
38	Blackstone	7/26/2006	CM06NS-01160	2	86R Milk St	2	<i>Anopheles punctipennis</i>	N/S	
39	Blackstone	7/26/2006	CM06NS-01161	2	86R Milk St	2	<i>Coquillettidia perturbans</i>	N/S	
40	Blackstone	7/26/2006	CM06NS-01162	2	86R Milk St	1	<i>Ochlerotatus canadensis</i>	N/S	
41	Blackstone	7/26/2006	CM06NS-01163	2	86R Milk St	10	<i>Ochlerotatus triseriatus</i>	N/S	
42	Blackstone	8/2/2006	CM06-00545	2	86R Milk St	1	<i>Culex species</i>	Negative	

Town of Blackstone Catch Basin Larvicide Program



2006 SUMMARY

The Central Massachusetts Mosquito Control Project (the Project) currently provides its services to 36 cities and towns throughout Middlesex and Worcester Counties. The Project's headquarters is located at 111 Otis Street, Northboro, MA. Tours of the headquarters or visits to field work sites may be arranged by calling the office in advance. Please call (508) 393-3055 during business hours for more information. The Project practices Integrated Mosquito Management (IMM), blending state of the art methods and techniques with expertise, experience, and scientific research to provide our member communities with environmentally sound and cost effective mosquito control.

During 2006 the Project received eight thousand and fifty five (8,455) requests for service from town residents and officials. A total of over six thousand (6,000) pounds of Bti (*Bacillus thuringiensis israelensis*) was applied by helicopter in 2 towns, Chelmsford & Billerica, and five thousand, nine hundred and fifty nine (5,959) pounds by hand throughout our service area were applied to area wetlands to reduce the emergence of adult mosquitoes. This represents over one thousand, one hundred and ninety one (1,191) acres of wetland that was treated with this mosquito-specific bacterium, significantly reducing adult mosquito populations in these areas. Thirty three thousand, nine hundred and eighteen (33,918) catch basins were treated with larvicidal product to control the mosquitoes that seek out these cool dark wet areas to breed, including the *Culex* mosquito, a major target for West Nile Virus transmission. Seven thousand, three hundred and ninety three (7,393) culverts were cleaned in an attempt to eliminate unnecessary standing water and reduce mosquito breeding. This work was done in conjunction with cleaning, clearing, and digging of one hundred and seventy six thousand, one hundred and eighty one (176,181) feet of streams, brooks and ditches. This represents over thirty three (33) miles of waterways which were cleaned and improved by Project personnel in 2006.

The Mosquito Awareness Program which we offer to elementary schools and other civic organizations in our district has become very popular. Project staff meets with students, teachers or concerned residents to discuss mosquito biology, mosquito habitat, and control procedures. Much of the presentation is directed towards what children and their families can do to prevent mosquitoes from breeding around their homes. Slides, videos, coloring books and other handouts make this an interesting program. This program is tailored to meet the needs of the specific audience. Two thousand, two hundred and fifty (2,250) students attended these programs.

As part of our effort to reduce the need for pesticides we continue to expand our wetlands restoration program. By cleaning clogged and overgrown waterways, mosquito breeding can be reduced and drainage areas are restored to historic conditions.

Bti mosquito larvicide is used to treat areas where mosquito larvae are found. We routinely check known breeding sites kept in our database, but also encourage the public to notify us of any areas they suspect could breed mosquitoes. Our field crews will investigate all such requests and treat the area only if surveillance gathered at the time shows an imminent threat of mosquito emergence.

Our goal is to manage all mosquito problems with education, wetlands restoration or larviciding, but we recognize that there are times when adult mosquito spraying is the only viable solution. In such cases specific areas are treated with either hand-held or pickup truck mounted sprayers if surveillance gathered at the time exceeds a pre-determined threshold to warrant an application. This program is offered on a **request-only** basis, and the exclusion process allows residents and/or town officials to exclude areas under their control from this or any part of our program.

The Project's surveillance program monitors adult mosquito and larval population density, and is the backbone for prescribing various control techniques. Specialized mosquito traps are deployed throughout the Project's service area to sample for mosquitoes that may be transmitting mosquito-borne diseases. In conjunction with the Mass. Dept. of Public Health we sample in areas suspected of harboring WNV and other viruses. One thousand, five hundred and twenty eight (1,528) pools (collections) of mosquitoes totaling thirty nine thousand, five hundred and six (39,506) specimens were tested for mosquito-borne viruses this year. One (1) pool of *Cs. morisitans* in Leominster was confirmed to be infected with the EEE virus late in the season. Two (2) pools of West Nile Virus were confirmed, both in Westborough in the *Culex* species. Two (2) human cases were identified with WNV, one in Billerica and one in Webster. No human cases of EEE were identified, and there were no cases of WNV or EEE in horses in our service area.

Educational pamphlets are available to anyone interested in learning about mosquito control and the services provided by the Project, and these items are routinely stocked in member Town/City Halls and libraries. Display boards with information on our program are rotated through area Town Halls throughout the year. We also have a website, www.cmmcp.org that has extensive information on mosquito biology, our control procedures, etc. This website has become a model for other Mosquito Projects and has been widely used throughout our service area and beyond.

We would like to thank you for your support during 2006 and we look forward to helping you and your community with its mosquito problems in 2007 and beyond.