

THE COMMONWEALTH OF MASSACHUSETTS
STATE RECLAMATION & MOSQUITO CONTROL BOARD

CENTRAL MASSACHUSETTS MOSQUITO CONTROL PROJECT

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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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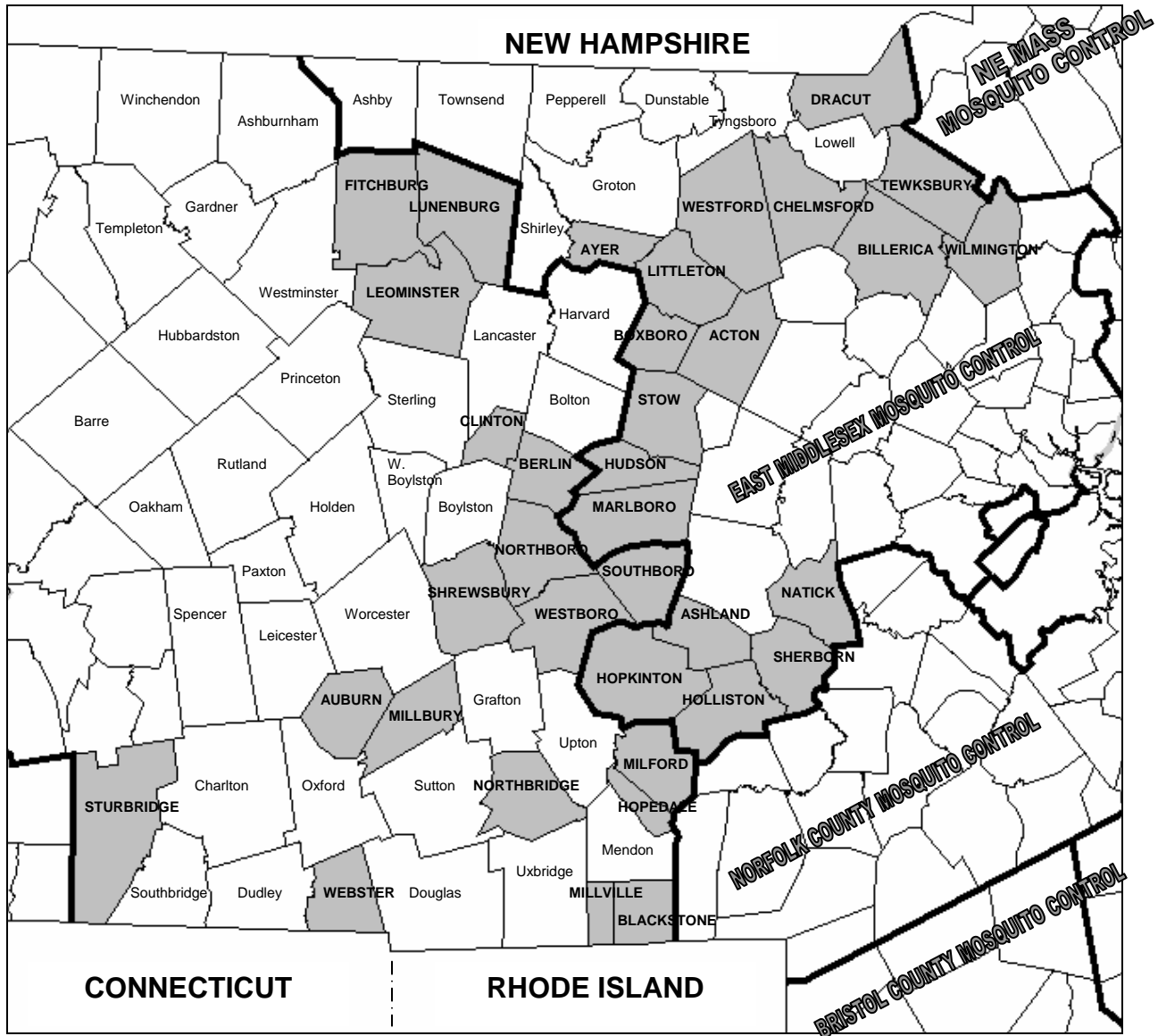
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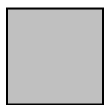
LIST OF MEMBER COMMUNITIES - 2006

<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.

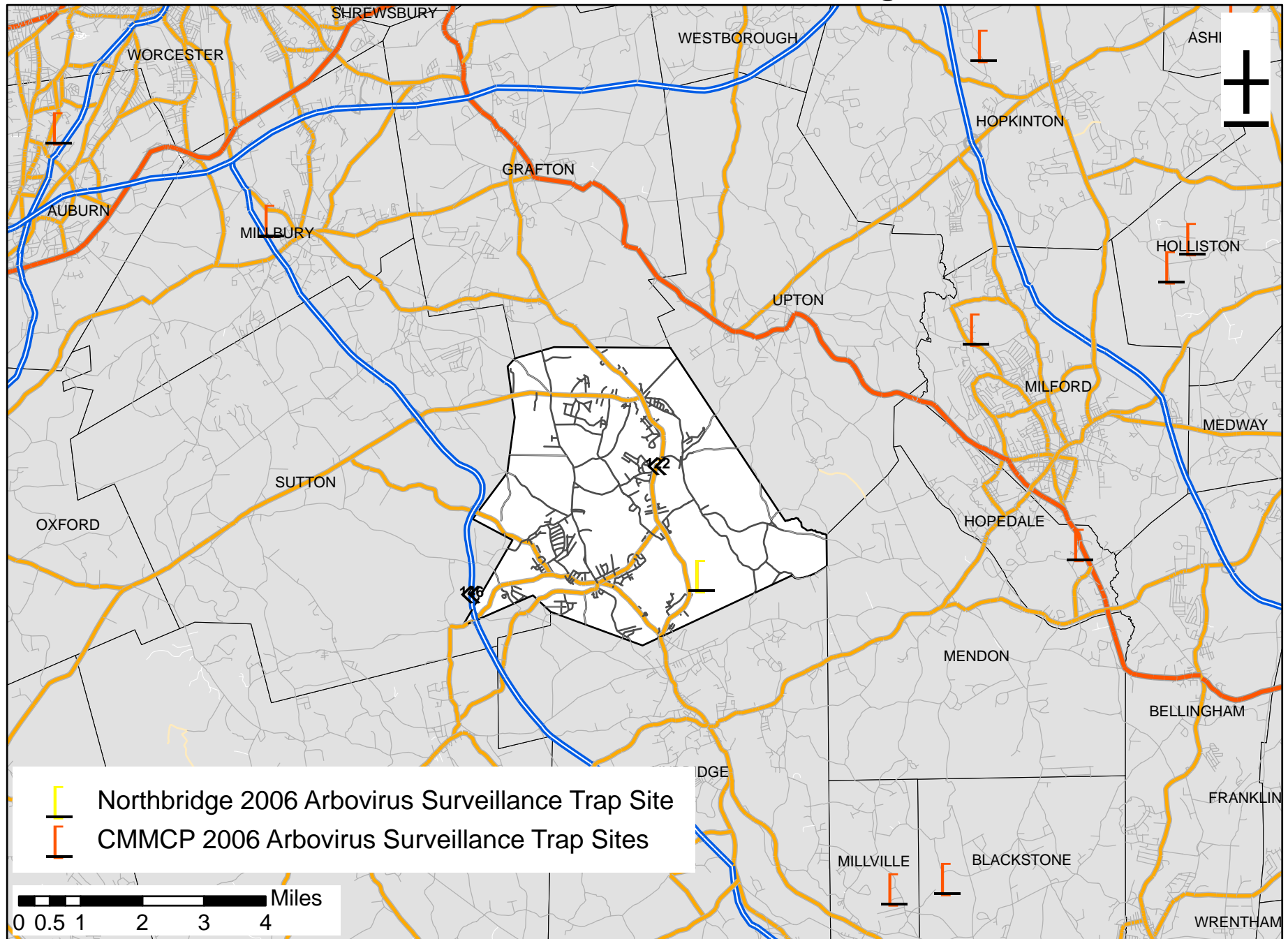
Town	Tested Date	Pool ID	Species	Result	Virus Type
Westborough	9/6/2006	CM06-00835	<i>Culex pipiens/restuans</i>	Positive	WNV positive
Westborough	9/27/2006	CM06-01064	<i>Culiseta melanura</i>	Positive	WNV positive
Leominster	10/4/2006	CM06-01186	<i>Culiseta morsitans</i>	Positive	EEE positive

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 Northbridge Arbovirus Surveillance Program



TOWN OF NORTHBRIDGE

<u>DATE</u>	<u>WORK DONE</u>	<u>LOCATION</u>
01-11-06	Brush Cutting 325'	Pine Court
	Stream Cleaning 325'	Pine Court
01-12-06	Brush Cutting 325'	Pine Court
	Stream Cleaning 325'	Pine Court
01-20-06	Brush Cutting 275'	Pine Court
	Stream Cleaning 275'	Pine Court
01-26-06	Stream Survey	Lake Street
	Stream Survey	Fowler Road
	Stream Survey	Highland Street
	Stream Survey	Mahoney Lane
01-27-05	Administrative Contact	Board Of Health
	Public Relations	Union Lane
	Stream Survey	Union Lane
	Stream Survey	Lake Street
	Stream Cleaning 1250'	Mahoney Lane
02-16-06	Stream Cleaning 25'	Main Street
	Stream Cleaning 10'	Prentice Road
	Stream Cleaning 10'	Lake Street
	Stream Cleaning 25'	Lake Street
	Stream Cleaning 25'	Carpenter Road
	Stream Cleaning 20'	Carpenter Road
	Stream Cleaning 15'	Hill Street
	Stream Cleaning 30'	Sutton Street
	Culvert Cleaning (28)	Main Street, Prescott Road, Prentice Road, Carr Road, Burton Street, Purgatory Road, Lake Street, Carole Lane, Samuel Drive, Carpenter Road, Hill Street, Kings North Street, Heights At Hill Street, Sutton Street
02-21-06	Stream Cleaning 150'	Lake Street
	Brush Cutting 150'	Lake Street
02-22-06	Stream Cleaning 150'	Lake Street
	Brush Cutting 150'	Lake Street
02-23-06	Stream Cleaning 100'	Lake Street
	Brush Cutting 100'	Lake Street
02-24-06	Stream Cleaning 130'	Lake Street
	Brush Cutting 130'	Lake Street
02-27-06	Stream Cleaning 75'	Marston Drive
	Stream Cleaning 20'	Kings North Street
	Stream Cleaning 35'	Benson Road
	Stream Cleaning 10'	Highland Street
	Stream Cleaning 35'	Highland Street
	Stream Cleaning 10'	Robin Road
	Culvert Cleaning (40)	Marston Drive, Prospect Street, Quarry Road, Hill Street, Kings North Street, Heights At Hill Street, Benson Road, Olivia Drive, Highland Street, Hillside Drive, Woodside Drive, Marion Drive, Robin Road, Sheryl Drive
03-07-06	Brush Cutting 150'	Lake Street
	Stream Cleaning 150'	Lake Street
03-09-06	Administrative Contact	Town Clerk, Board Of Selectmen, Finance Committee, Board Of Health, Library, Conservation Commission, Department Of Public Works
04-18-06	Larval Survey	Mendon Road, West Hill Road, Quaker Street, Brookway Drive, Macarthur Road, School Street, Shining Rock Drive, Club House Lane, Shining Rock Drive, Violette Drive, Smith Street, Eisenhower Drive, Adams Circle
	Larviciding	Mendon Road, West Hill Road, Quaker Street, Eisenhower Drive
04-27-06	Public Relations	Lea Avenue, Fowler Road
	Larval Survey	Church Street, Sutton Street, Jessica Way, Lea Avenue, Kristen Court, Lincoln Circle, Wilson Street, Sutton Street, Sprague Street, Pollard Road, Fowler Road
	Larviciding	Brian Circle, Jessica Way, Fowler Road
05-02-06	Administrative Contact	Board Of Health
	Stream Cleaning 15'	Jessica Way
	Stream Cleaning 30'	Benson Road
	Stream Cleaning 20'	Cooper Road
	Stream Cleaning 5'	Cooper Road
	Stream Cleaning 10'	Cooper Road
	Stream Cleaning 10'	Woodside Drive

TOWN OF NORTHBRIDGE

<u>DATE</u>	<u>WORK DONE</u>	<u>LOCATION</u>
05-02-06	Culvert Cleaning (18)	Kelly Road, Jessica Way, Cooper Road, Benson Road, Woodside Drive
05-04-06	Larval Survey	Kelley Road, Cooper Road, Fowler Road, Benson Road, Rumonoski Drive, Trajanowski Avenue, Highland Street, Sean Drive, Susanne Drive, Jon Circle, Highland Street, Hill Street, Marston Road, Samuel Drive
05-09-06	Larviciding Larval Survey	Rumonoski Drive, Sheryl Drive, Hill Street Carpenter Road, Goldwaithe Road, Carole Lane, Main Street, Prentice Road, Purgatory Road, Lake Street, Fletcher Street, Castle Hill Road, Hastings Drive, Cliffe Road, Colonial Drive, Church Street, Linwood Avenue
	Larviciding	Carpenter Road, Prentice Road, Lake Street, Castle Hill Road, Linwood Avenue
05-17-06	Trap Survey	Waste Water Treatment Plant
05-18-06	Larval Survey	Linwood Avenue, Center Street, Union Street, Louisa Drive, East Street, Wing Road, Mahoney Lane, Providence Road, North Tessier Street, Elston Avenue, South Tessier, Love Lace Lane, South Main Street
	Larviciding	Hastings Drive, Union Street, Center Street, Hudson Avenue, South Main Street
05-25-06	Larval Survey	Riverdale Street, Providence Road, Wing Road, Mendon Road
	Larviciding	Providence Road, Mendon Road
05-30-06	Set Trap	Waste Water Treatment Plant
05-31-06	Pick Up Trap	Waste Water Treatment Plant
06-01-06	Administrative Contact Public Relations	Police Department Railroad Street, Nicole Avenue, Union Street, Mendon Street
	Larval Survey	Union Street, Mendon Street, Quaker Street, West Hill Road, Quaker Street
	Larviciding Adulticiding	Mendon Street, West Hill Road Union Street, Mendon Street, Railroad Street, Nicole Avenue
06-06-06	Set Trap	Waste Water Treatment Plant
06-07-06	Administrative Contact	Board Of Health
	Stream Cleaning 20'	Lake Street
	Stream Cleaning 10'	Lake Street
	Stream Cleaning 10'	Samuel Drive
	Stream Cleaning 15'	Kings North Street
	Stream Cleaning 30'	Benson Road
	Culvert Cleaning (18)	Lake Street, Samuel Drive, Carpenter Road, Hill Street, Kings North Street, Benson Road, Kelly Road
	Pick Up Trap	Waste Water Treatment Plant
06-13-06	Set Trap	Waste Water Treatment Plant
06-14-06	Administrative Contact Public Relations Adulticiding	Police Department Union Street, Church Street, Quaker Street, Fowler Road Fowler Road, Church Street, Quaker Street, Union Street
	Stream Cleaning 20'	Quaker Street
	Stream Cleaning 15'	Sutton Street
	Stream Cleaning 20'	Sutton Street
	Stream Cleaning 10'	Sutton Street
	Culvert Cleaning (15)	Quaker Street, School Street, Shining Rock Drive, Gendron Street, Pine Knoll, Sutton Street
	Pick Up Trap	Waste Water Treatment Plant
06-20-06	Set Trap	Waste Water Treatment Plant
06-21-06	Pick Up Trap	Waste Water Treatment Plant
	Administrative Contact Public Relations	Police Department Thomas Street, Alana Drive, Jessica Way, Swift Road, Dover Drive, Fletcher Street
	Landing Count Adulticiding	Fletcher Street, Swift Road, Jessica Way, Thomas Street Fletcher Street, Swift Road, Dover Drive, Swift Road, Jessica Way, Alana Drive, Thomas Street
	Larval Survey	Macarthur Road, School Street, Clubhouse Lane, Shinning Rock Drive, Sutton Street, Violette Circle, Sutton Street, Brian Circle, Smith Street
	Larviciding	Brookway Drive

TOWN OF NORTHBRIDGE

<u>DATE</u>	<u>WORK DONE</u>	<u>LOCATION</u>
06-27-06	Set Trap	Waste Water Treatment Plant
06-28-06	Pick Up Trap	Waste Water Treatment Plant
	Administrative Contact	Police Department
	Public Relations	Quaker Street, S. Tessier Street, Lea Avenue, Jessica Way, Hill Street, Ebon Chamberlain Road, Goldwaithe Road, Walker Street, Dover Street, Michael Lane, Union Street, Union Lane, Arthur Drive, Prunier Street, McEndy Street
	Adulticiding	McEndy Street, Prunier Street, Arthur Drive, Union Street, Walker Street, Dover Drive, Michael Lane, Hill Street, Ebon Chamberlain Road, Lea Avenue, Jessica Way, S. Tessier Street, Quaker Street
	Larviciding	S. Tessier Street
07-06-06	Administrative Contact	Police Department
	Public Relations	School Street, Hill Street, Green Meadow Court, Highland Street, Piedmont Street, Church Street, Clover Hill Road, Union Street, Nolet Street
	Adulticiding	School Street, Green Meadow Court, Hill Street, Highland Street, Church Street, Clover Hill Road, Union Street, Nolet Street, Piedmont Street
07-11-06	Set Trap	Waste Water Treatment Plant
07-12-06	Pick Up Trap	Waste Water Treatment Plant
	Catch Basin Larviciding [121]	Chipper Hill Road, Jefferson Avenue, Adams Circle, Brian Circle, Alana Drive, June Street, Rose Avenue, Kristen Court
07-18-06	Set Trap	Waste Water Treatment Plant
07-19-06	Pick Up Trap	Waste Water Treatment Plant
	Administrative Contact	Police Department
	Public Relations	Cooper Road, Jefferson Avenue, Hill Street, Green Meadow, Nicole Avenue, Goldthwaite Road, Dover Street, Michael Lane, North Main Street, Theresa Circle, Elm Street, Union Street, Plummer Avenue, Nolet Street, Jon Circle, Fowler Road, Providence Road
	Adulticiding	Fowler Road, Cooper Road, Jefferson Avenue, Green Meadow Court, Hill Street, Goldthwaite Road, Dover Street, North Main Street, Theresa Circle, Elm Street, Union Street, Nolet Street, Providence Road, Plummer Avenue, Jon Circle
	Catch Basin Larviciding [103]	Nicole Avenue, Danielle Lane, Jessica Way, Lea Avenue, Brenda Drive, Brian Circle, Green Meadow Court
07-25-06	Set Trap	Waste Water Treatment Plant
07-26-06	Pick Up Trap	Waste Water Treatment Plant
	Administrative Contact	Police Department
	Public Relations	Nicole Avenue, Lea Avenue, Chipper Hill Road, Green Meadow Court, Hill Street, Goldwaithe Road, Dover Drive, Swift Road, Church Street, Elm Street, Fletcher Street, Union Lane, Quaker Street, Piedmont Street, Sean Drive
	Adulticiding	Lea Avenue, Nicole Avenue, Chipper Hill Road, Green Meadow Court, Hill Street, Goldwaithe Road, Dover Drive, Swift Road, Elm Street, Fletcher Street, Church Street, Quaker Street, Piedmont Street, Sean Drive
	Catch Basins [311]	Woodside Avenue, Sean Drive, Keryn Court, Susanne Drive, Sheryl Drive, Robin Road, Freedoms Way, Olivia Drive, Carpenter Road, Delwin Barnes Drive, Samuel Drive, Shannon Drive, Quaker Ridge, Heights Of Hill Street, Kingsnorth Street, Gill Court, Swift Road, Walker Street, Tracey Drive, Dover Drive, Kern Lane, Michael Lane, Acorn Road, Hickory Lane, Carole Lane, Rachel Lane, Conservation Drive, Mason Road
08-01-06	Set Trap	Waste Water Treatment Plant
08-02-06	Pick Up Trap	Waste Water Treatment Plant
08-02-06	Administrative Contact	Police Department
	Public Relations	Quaker Street, Union Street, Nolet Street, Dover Drive
	Adulticiding	Quaker Street, Union Street, Nolet Street, Dover Drive, West Hill Park
	Catch Basins [192]	Highland Street, Chestnut Street, Prescott Road, Stoney Brook Drive, Oriole Drive, Ivy Lane, Theresa Drive, Windsor Ridge, Cliff Road, Clover Hill Road, Dublin Way, Tipperary Drive, Cohen Mill Apartment, Brookway Drive, Beech Street, Mac Arthur Road, Allyn Road, Hastings Drive

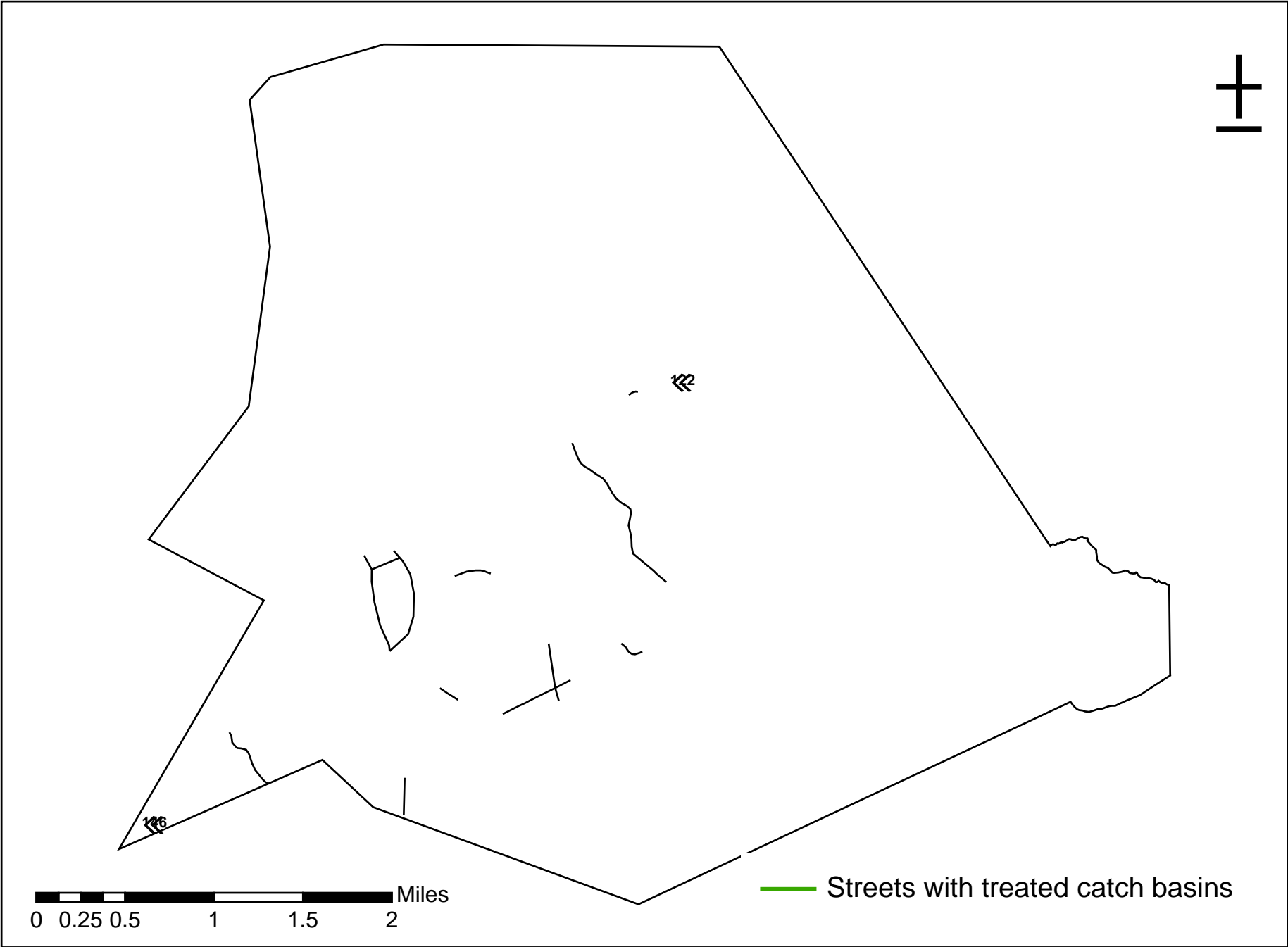
TOWN OF NORTHBRIDGE

<u>DATE</u>	<u>WORK DONE</u>	<u>LOCATION</u>
08-08-06	Set Trap	Waste Water Treatment Plant
08-09-06	Pick Up Trap	Waste Water Treatment Plant
	Administrative Contact	Police Department
	Public Relations	Green Meadow Court, Dover Drive, West Street, Louisa Drive, Jon Circle, Fowler Road, Hill Street
	Adulticiding	Green Meadow Court, Dover Drive, West Street, Louisa Drive, Jon Circle
	Catch Basin Larviciding [304]	Louisa Drive, Devon Drive, Ebon Chamberland Road, Wilson Street, St. Camilias Health Center, Washington Street, Kennedy Circle, Woodland Street, Colonial Drive, Cottage Street, Country Club Drive, Prospect Street, Nathaniel Drive, Marston Street, Morgan Road, Hillcrest Road, Rumonoski Drive, Lovelace Lane, South Tessier Street, Waller Way
08-15-06	Set Trap	Waste Water Treatment Plant
08-16-06	Pick Up Trap	Waste Water Treatment Plant
	Administrative Contact	Police Department
	Public Relations	Sprague Street, Hill Street, Green Meadow Court, Dover Drive, Swift Road, Fletcher Street, Union Street
	Adulticiding	Sprague Street, Hill Street, Green Meadow Court, Dover Drive, Swift Road, Fletcher Street, Union Street
08-22-06	Set Trap	Waste Water Treatment Plant
08-23-06	Pick Up Trap	Waste Water Treatment Plant
	Administrative Contact	Police Department
	Public Relations	Green Meadow Court, Quaker Street, McEndy Street, Prunier Street, Dover Drive, Kenny Lane
	Adulticiding	McEndy Street, Prunier Street, Quaker Street, Green Meadow Court, Dover Drive
	Larval Survey	Eisenhower Road, Lincoln Circle, Sprague Street, Sutton Street, Jessica Way
	Larviciding	Adams Circle, Pollard Street
08-29-06	Set Trap	Waste Water Treatment Plant
08-30-06	Pick Up Trap	Waste Water Treatment Plant
	Administrative Contact	Police Department, Board Of Health
	Public Relations	Swift Road, Kenny Lane, Union Street, Church Street, Dover Street
	Adulticiding	Church Street, Dover Drive, Swift Road, Union Street, Nolet Street
	Larval Survey	Jessica Way, Lea Avenue, Kingsnorth Street, Heights Of The Hill, Fowler Road
09-05-06	Set Trap	Waste Water Treatment Plant
09-06-06	Pick Up Trap	Waste Water Treatment Plant
09-07-06	Administrative Contact	Police Department
	Public Relations	Union Street, Nolet Street, Dover Drive, Kerry Lane
	Adulticiding	Union Street, Nolet Street, Dover Drive
	Larval Survey	Fletcher Street
	Larviciding	Castle Hill Road, Hastings Drive
09-12-06	Set Trap	Providence Road
09-13-06	Pick Up Trap	Providence Road
	Administrative Contact	Police Department, Board Of Health
	Public Relations	Piedmont Street
	Adulticiding	Piedmont Street
	Larval Survey	West Hill Road, Linwood Avenue
09-19-06	Set Trap	Providence Road
09-20-06	Pick Up Trap	Providence Road
09-26-06	Set Trap	Providence Road
09-27-06	Pick Up Trap	Providence Road
10-04-06	Clear Trap Site	Providence Road

2006 Mosquito Surveillance Data
NORTHBRIDGE

#	Town	Date	Pool ID	# of Traps	Trap Site	Pool Size	Species	Result	Virus Type
1	Northbridge	5/31/2006	CM06-00004	2	Providence St. Treatment Plant	6	<i>Culex pipiens</i>	Negative	
2	Northbridge	5/31/2006	CM06-00005	2	Providence St. Treatment Plant	3	<i>Culex salinarius</i>	Negative	
3	Northbridge	5/31/2006	CM06-00006	2	Providence St. Treatment Plant	9	<i>Culex restuans</i>	Negative	
4	Northbridge	5/31/2006	CM06NS-00011	2	Providence St. Treatment Plant	1	<i>Ochlerotatus excrucians</i>	N/S	
5	Northbridge	5/31/2006	CM06NS-00012	2	Providence St. Treatment Plant	16	<i>Aedes vexans</i>	N/S	
6	Northbridge	6/7/2006	CM06-00043	2	Providence St. Treatment Plant	7	<i>Culex restuans</i>	Negative	
7	Northbridge	6/14/2006	CM06-00059	2	Providence St. Treatment Plant	1	<i>Culex salinarius</i>	Negative	
8	Northbridge	6/14/2006	CM06-00060	2	Providence St. Treatment Plant	12	<i>Culex pipiens</i>	Negative	
9	Northbridge	6/14/2006	CM06NS-00183	2	Providence St. Treatment Plant	4	<i>Aedes cinereus</i>	N/S	
10	Northbridge	6/14/2006	CM06NS-00184	2	Providence St. Treatment Plant	68	<i>Aedes vexans</i>	N/S	
11	Northbridge	6/14/2006	CM06NS-00185	2	Providence St. Treatment Plant	3	<i>Ochlerotatus abserratus</i>	N/S	
12	Northbridge	6/14/2006	CM06NS-00186	2	Providence St. Treatment Plant	1	<i>Ochlerotatus canadensis</i>	N/S	
13	Northbridge	6/14/2006	CM06NS-00187	2	Providence St. Treatment Plant	1	<i>Ochlerotatus excrucians</i>	N/S	
14	Northbridge	6/14/2006	CM06NS-00188	2	Providence St. Treatment Plant	1	<i>Ochlerotatus cantator</i>	N/S	
15	Northbridge	6/14/2006	CM06NS-00189	2	Providence St. Treatment Plant	22	<i>Ochlerotatus trivittatus</i>	N/S	
16	Northbridge	6/21/2006	CM06-00108	2	Providence St. Treatment Plant	17	<i>Culex species</i>	Negative	
17	Northbridge	6/21/2006	CM06NS-00428	2	Providence St. Treatment Plant	97	<i>Mixed Species</i>	N/S	
18	Northbridge	6/28/2006	CM06-00181	2	Providence St. Treatment Plant	1	<i>Culex restuans</i>	Negative	
19	Northbridge	6/28/2006	CM06-00182	2	Providence St. Treatment Plant	16	<i>Culex pipiens</i>	Negative	
20	Northbridge	6/28/2006	CM06-00183	2	Providence St. Treatment Plant	1	<i>Culiseta minnesotae</i>	Negative	
21	Northbridge	6/28/2006	CM06NS-00578	2	Providence St. Treatment Plant	1	<i>Aedes cinereus</i>	N/S	
22	Northbridge	6/28/2006	CM06NS-00579	2	Providence St. Treatment Plant	6	<i>Aedes vexans</i>	N/S	
23	Northbridge	6/28/2006	CM06NS-00580	2	Providence St. Treatment Plant	1	<i>Ochlerotatus excrucians</i>	N/S	
24	Northbridge	6/28/2006	CM06NS-00581	2	Providence St. Treatment Plant	1	<i>Ochlerotatus sticticus</i>	N/S	
25	Northbridge	6/28/2006	CM06NS-00582	2	Providence St. Treatment Plant	1	<i>Ochlerotatus triseriatus</i>	N/S	
26	Northbridge	6/28/2006	CM06NS-00583	2	Providence St. Treatment Plant	1	<i>Ochlerotatus trivittatus</i>	N/S	
27	Northbridge	7/12/2006	CM06-00334	2	Providence St. Treatment Plant	10	<i>Culex pipiens</i>	Negative	
28	Northbridge	7/12/2006	CM06-00335	2	Providence St. Treatment Plant	16	<i>Culex restuans</i>	Negative	
29	Northbridge	7/19/2006	CM06-00391	2	Providence St. Treatment Plant	50	<i>Culex pipiens</i>	Negative	
30	Northbridge	7/19/2006	CM06-00392	2	Providence St. Treatment Plant	50	<i>Culex pipiens</i>	Negative	
31	Northbridge	7/19/2006	CM06-00393	2	Providence St. Treatment Plant	56	<i>Culex pipiens</i>	Negative	
32	Northbridge	7/19/2006	CM06-00394	2	Providence St. Treatment Plant	50	<i>Culex pipiens</i>	Negative	
33	Northbridge	7/19/2006	CM06-00395	2	Providence St. Treatment Plant	4	<i>Culex restuans</i>	Negative	
34	Northbridge	7/19/2006	CM06NS-00999	2	Providence St. Treatment Plant	1	<i>Aedes cinereus</i>	N/S	
35	Northbridge	7/19/2006	CM06NS-01000	2	Providence St. Treatment Plant	12	<i>Aedes vexans</i>	N/S	
36	Northbridge	7/19/2006	CM06NS-01001	2	Providence St. Treatment Plant	2	<i>Anopheles punctipennis</i>	N/S	
37	Northbridge	7/19/2006	CM06NS-01002	2	Providence St. Treatment Plant	22	<i>Coquillettidia perturbans</i>	N/S	
38	Northbridge	7/19/2006	CM06NS-01003	2	Providence St. Treatment Plant	1	<i>Ochlerotatus sticticus</i>	N/S	
39	Northbridge	7/19/2006	CM06NS-01004	2	Providence St. Treatment Plant	1	<i>Ochlerotatus triseriatus</i>	N/S	
40	Northbridge	7/26/2006	CM06-00472	2	Providence St. Treatment Plant	51	<i>Culex pipiens/restuans</i>	Negative	
41	Northbridge	7/26/2006	CM06-00473	2	Providence St. Treatment Plant	2	<i>Culiseta melanura</i>	Negative	
42	Northbridge	7/26/2006	CM06NS-01164	2	Providence St. Treatment Plant	2	<i>Aedes vexans</i>	N/S	
43	Northbridge	7/26/2006	CM06NS-01165	2	Providence St. Treatment Plant	2	<i>Coquillettidia perturbans</i>	N/S	
44	Northbridge	7/26/2006	CM06NS-01166	2	Providence St. Treatment Plant	2	<i>Ochlerotatus japonicus</i>	N/S	

Town of Northbridge 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.