

# **MASSACHUSETTS MOSQUITO CONTROL ANNUAL OPERATIONS REPORT**

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**2007** Year of Report

Date of Report: 3/14/2008

Project/District Name: **East Middlesex Mosquito Control Project**

Address: 11 Sun St.

City/Town: Waltham

Zip: SRB

Phone: 781-899-5730

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**Report prepared by: *David Henley***

If you have a mission statement, please include it here: The East Middlesex Mosquito Control Commission (the Commission) represents the interests of the participating communities and their residents in providing guidance and oversight to the East Middlesex Mosquito Control Project (the Project). The Commission strives to ensure that the member communities receive services that are consistent with applicable laws and justified by the tenets of public health, vector control, environmental safety and fiscal responsibility. Integrated mosquito management services provided by the Project and approved by the Commission will be based on the State's Generic Environmental Impact Report on Mosquito Control in Massachusetts, the Massachusetts Arbovirus Surveillance and Response Plan and the policies of the State Reclamation and Mosquito Control Board.

The Project's integrated mosquito management program will consist of mosquito surveillance, larval mosquito control of wetlands and catchbasins, adult mosquito control, wetlands management/ ditch maintenance and public education.

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## **ORGANIZATION SETUP:**

Please list your staffing levels for the year of this report:

Full time: 5

Part time: 1

Seasonal: 6 full time seasonal and 1 part time seasonal

Other: (please describe)

Please break these down into the following areas:

Administrative staff: Superintendent and part time Administrative Assistant

Field staff: Assistant Superintendent, Entomologist, Skilled Equipment Operator - Grade 1 and Skilled Equipment Operator - Grade 2, 6 full time seasonal catchbasin applicator and 1 part time seasonal field technician.

Please check off all that apply, and list employee name(s) next to each category:

- Public relations David Henley
- Information technology
- Entomologist Douglas Bidlack, PhD.
- Wetland Scientist
- Biologist
- Education
- Laboratory
- Operations Full time employees include Michael Bryant, Christopher Gagnon and Michael Sweder. Seasonal employees include Thomas Guanci, Daniel Keller, Sean Keller, Charles King, Mathew Mckillop, Thomas O'Brien and Anthony Viola
- Facilities David Henley and Michael Bryant
- Other (please list)

For the year of this report, we maintained:

7 vehicles

1 modified wetland equipment (list type) LinkBelt 75 track mounted excavator

3 ULV sprayers (list type) 1 Clarke Grizzly and 2 Leco ULVs with CVs

Larval control equipment (list type)

Other (please be specific):

**Comments:** \_\_\_\_\_

### **INTEGRATED PEST MANAGEMENT (IPM):**

#### **Definition TBD**

Please check off all of the services that you currently provide to your member cities and towns as part of your IPM program; details of these services are in the next sections.

- Larval mosquito control
- Adult mosquito control
- Source reduction
- Ditch maintenance
- Open Marsh Water Management
- Adult mosquito surveillance
- Education, Outreach & Public education
- Research
- Other (please list):

**Comments:** \_\_\_\_\_

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## LARVAL MOSQUITO CONTROL:

Do you have a larval mosquito suppression program? Yes

If yes, please describe the purpose of this program: Culex larvae are controlled to reduce the number of West Nile Virus vector mosquitoes. Spring and summer floodwater mosquitoes are controlled to reduce the number of mammal biting mosquitoes and to reduce potential human vectors for EEE.

Please give the time frame for this program: The time frame for Culex larval control is June through September. The time frame for spring floodwater mosquitoes is April and May. The time frame for summer floodwater mosquitoes is late May through September.

Describe the areas that this program is used: catchbasins and intermittently flooded wetlands.

Do you use:

**Ground applied (includes hand, portable and/or backpack)**

**Helicopter applications**

**Other (please list):**

**Comments:** \_\_\_\_\_

What products do you use in – (please use product name and EPA#)

**Wetlands:** Vectobac G - EPA #73049-10, Vectobac 12 AS - EPA #275-102

**Catch basins:** Vectolex WSP - EPA #73049-20, Altosid WSP - EPA #2724-448 and Altosid XR Briquets - EPA #2724-421.

**Containers:** Vectolex WSP - EPA #73049-20, Altosid WSP - EPA #2724-448 and Altosid XR Briquets - EPA #2724-421.

**Other (please list):**

Please list the rates of application for the areas listed above:

**Wetlands:** Vectobac G was applied by helicopter at a rate of 5 lbs. per acre. Vectobac 12AS was applied by portable sprayer at rates of 8 oz. of Bti per acre and 12 oz. of Bti per acre.

**Catch basins:** Vectolex WSP and Altosid WSP were applied to catchbasins at the rate of 1 packet per catchbasin. Altosid XR Briquets were applied to catchbasins at the rate of 1 XR Briquets per catchbasin.

**Containers:**

**Other:**

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**Comments:** Larval control in wetlands is funded by 24 communities that participate in the Project. Larval control in catchbasins is funded by 19 communities that participate in the Project.

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### **ADULT MOSQUITO CONTROL:**

Do you have an adult mosquito suppression program? Yes

If yes, please describe the purpose of this program: To reduce the number of mammal biting and EEE vector mosquitoes.

Please give the time frame for this program: Late May through September

Describe the areas that this program is used: Suburban neighborhoods located near wetland areas

Do you use:

- Truck applications**
- Portable applications**
- Aerial applications**
- Other (please list):**

**Comments:** The adult mosquito control program is funded by 9 of the communities that participate in the Project.

Please list the names of the products used with EPA #:

- 1). Anvil 10+10 ULV, EPA reg. # 1021-1688-8329
- 2).
- 3).
- 4).

Please list your application rates for each product:

- 1). Anvil 10+10 ULV applied at .0024 lbs. per acre
- 2).
- 3).
- 4).

Please describe the maximum amounts or frequency used in a particular time frame such as season and areas

In 2007 the maximum number of times that adult mosquito control occurred in any neighborhood was five applications. In 2007 applications were scheduled with a minimum of 2 weeks between applications.

**Comments:** Scheduling adult mosquito control applications is based on mosquito population data.

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## SOURCE REDUCTION

Do you perform source reduction methods such as tire/container removal? No

If yes, please describe your program:

Comments: \_\_\_\_\_

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## DITCH MAINTENANCE

Do you have a ditch maintenance program? Yes

Please check all that apply:

- Inland/freshwater  
 Saltmarsh

If yes, please describe: Ditch maintenance is done using either a LinkBelt 75 track mounted excavator or with hand tools. The Project has been using the draft Best Management Practices when planning excavator work in fresh water wetlands.

Please check off all that apply INLAND DITCH MAINTENANCE:

- Hand tools  
 Mechanized equipment  
 Other (please list):

Comments: \_\_\_\_\_

Please check off all that apply SALTMARSH DITCH MAINTENANCE:

- Hand cleaning  
 Mechanized cleaning  
 Other (please list):

Comments: \_\_\_\_\_

Please give an estimate of cumulative length of ditches maintained from the list above INLAND:

Hand cleaning 1,774 linear feet  
Mechanized cleaning 7,549 linear feet  
Other (please list):  
Comments: \_\_\_\_\_

Please give an estimate of cumulative length of ditches maintained from the list above  
SALTMARSH:

**Hand cleaning**  
**Mechanized cleaning**  
**Other (please list):**

**Comments:** \_\_\_\_\_

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### OPEN MARSH WATER MANAGEMENT

Do you have an OMWM program? Choose one

If yes, please describe:

Please give an estimate of total square feet or acreage:

**Comments:** \_\_\_\_\_

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### ADULT MOSQUITO SURVEILLANCE

Do you have an adult mosquito surveillance program? Yes

Please check off all that apply:

- |   |                                 |
|---|---------------------------------|
| <input checked="" type="checkbox"/> Gravid traps                      |                                 |
| <input type="checkbox"/> Resting boxes                                |                                 |
| <input type="checkbox"/> CDC light traps                              | <input type="checkbox"/> Canopy |
| <input checked="" type="checkbox"/> CDC light traps w/CO <sub>2</sub> | <input type="checkbox"/> Canopy |
| <input type="checkbox"/> ABC light traps                              | <input type="checkbox"/> Canopy |
| <input type="checkbox"/> ABC light traps w/CO <sub>2</sub>            | <input type="checkbox"/> Canopy |
| <input type="checkbox"/> NJ light traps                               | <input type="checkbox"/> Canopy |
| <input type="checkbox"/> NJ light traps w/CO <sub>2</sub>             | <input type="checkbox"/> Canopy |

Other (please describe):

Please describe the purpose of this program: This program is intended to measure mammal biting mosquito populations and EEE and West Nile vector populations. The data is used to evaluate the need for control. In addition some collections are submitted to the Dept. of Public Health to be tested for EEE and West Nile Virus.

Do you maintain long-term trap sites in any of your areas? Yes

If yes, please describe how you chose these long-term sites. Long term sites were chosen based on their proximity to the following:

1. Productive mosquito habitats located near residential neighborhoods.
2. *Cs. melanura* habitats.
3. Locations near properties of residents who contracted EEE and West Nile Virus.
4. Geographic spacing in urban areas to monitor *Culex* mosquitoes and West Nile Virus.

Please check off the species of concern in your service area:

- |  |   |
|--|---|
| <input type="checkbox"/> <i>Ae. albopictus</i>                 | <input checked="" type="checkbox"/> <i>Oc. cantator</i>     |
| <input checked="" type="checkbox"/> <i>Ae. cinereus</i>        | <input checked="" type="checkbox"/> <i>Oc. excrucians</i>   |
| <input checked="" type="checkbox"/> <i>Ae. vexans</i>          | <input checked="" type="checkbox"/> <i>Oc. fitchii</i>      |
| <input checked="" type="checkbox"/> <i>An. punctipennis</i>    | <input checked="" type="checkbox"/> <i>Oc. j. japonicus</i> |
| <input checked="" type="checkbox"/> <i>An. quadrimaculatus</i> | <input checked="" type="checkbox"/> <i>Oc. punctor</i>      |
| <input checked="" type="checkbox"/> <i>Cq. perturbans</i>      | <input type="checkbox"/> <i>Oc. sollicitans</i>             |
| <input checked="" type="checkbox"/> <i>Cx. pipiens</i>         | <input type="checkbox"/> <i>Oc. stimulans</i>               |
| <input checked="" type="checkbox"/> <i>Cx. restuans</i>        | <input type="checkbox"/> <i>Oc. taeniorhynchus</i>          |
| <input checked="" type="checkbox"/> <i>Cx. salinarius</i>      | <input checked="" type="checkbox"/> <i>Oc. triseriatus</i>  |
| <input checked="" type="checkbox"/> <i>Cs. melanura</i>        | <input checked="" type="checkbox"/> <i>Oc. trivittatus</i>  |
| <input checked="" type="checkbox"/> <i>Cs. morsitans</i>       | <input checked="" type="checkbox"/> <i>Ps. ferox</i>        |
| <input checked="" type="checkbox"/> <i>Oc. abserratus</i>      | <input type="checkbox"/> <i>Ur. sapphirina</i>              |
| <input checked="" type="checkbox"/> <i>Oc. canadensis</i>      |   |

Other (please list):

Do you participate in the MDPH Arboviral Surveillance program? Yes

How many pools do you submit weekly on average? 25

Please check off the arboviruses found in your area in the past 5 years:

- West Nile Virus  
 Eastern Equine Encephalitis  
 Other Please list:

Did the above listed diseases cause human or horse illnesses? Yes

Please explain: In the past 5 years there have been 12 human WNV cases and 1 EEE horse case. The following provides the breakdown of cases by year and by community.  
 2007 - 2 WNV cases in Arlington and Medford.

2006 - 1 WNV case in Arlington.

2005 - 4 WNV cases in Cambridge, Newton (2 cases) and Watertown. One EEE horse in Concord.

2004 - No human or horse cases.

2003 - 5 WNV cases in Arlington, Brookline, Medford, Newton and Watertown.

At what arbovirus risk level did the year begin in your area? (If more than one please list)

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**WNV:** The communities in the eastern portion of the district began the year at a moderate risk level. The communities in the center part of the district began the year at a low risk level. The communities in the western part of the district began the year at a remote risk.

**EEE:** Brookline began the year at a low risk level. The remainder of the district began the year at a remote risk level.

At what arbovirus risk level did the year end in your area? (If more than one please list)

**WNV:** Arlington and Medford were at a high risk level. The remaining communities in the eastern part of the district had a moderate level of risk. The communities in the western part of the district had a low level of risk.

**EEE:** Brookline ended the year at a low risk level. The remaining communities had a remote level of risk.

**Comments:** Each of the WNV cases that have occurred in the East Middlesex Project between 2002 and 2007 has occurred in communities with a minimum population density of 4,000 people per square mile.

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## **EDUCATION, OUTREACH & PUBLIC RELATIONS**

Do you have an education/public outreach program program? Yes

If yes, please describe: The Project's public education program is designed to develop awareness within the public and the private sectors as to their roles in mosquito control. The Project serves as a resource to residents, municipal officials and the local media on controlling mosquitoes, larval mosquito habitats, and mosquito borne diseases.

Please check off all that apply:

School based program

Website

PR brochures/handouts

Community events

Other (please describe): The Project sends out press releases to community and regional newspapers related to aerial Bti applications, ground based adult mosquito control applications, personal protection from mosquitoes and preventative actions that homeowners can take to reduce mosquito development on their property. Notices on the pesticide exclusion process and notices on ground based adult mosquito control are regularly posted on municipal websites. Memos and reports on mosquito control activities and items of interest are sent to municipal officials of each participating community. The Superintendent attends municipal Board of Health, Finance Committee and Conservation Commission meetings upon request. Project representatives are periodically interviewed by newspaper and television reporters. An episode of the PBS

program Curious George that includes Project representatives describing mosquito biology to Newton elementary school students was aired several times in 2007.

Please give an estimate of attendance/participants in this program:

Please list some events you participated in for the year of this report: The Superintendent participated in a training event at the Boston Public Works Commission for municipal workers to become Licensed catchbasin applicators. At a meeting of Brookline municipal workers who participate in catchbasin applications to control Culex mosquito larvae, a Project representative provided updates on West Nile Virus and discussed catchbasin applications. The Superintendent attended meetings of the Reading Board of Health, the Wakefield Board of Health and the Watertown Conservation Commission and provided information on mosquito biology, mosquito control and mosquito borne disease.

Please list training events your staff attended: Five employees attended the Northeastern Mosquito Control Association meeting. The Entomologist attended a wetlands delineation training session and a GIS training session. The Entomologist visited the Norfolk County MCP and the Plymouth County MCP for GIS training. The Assistant Superintendent and a Skilled Equipment Operator attended a wetlands plant identification training session. The Superintendent and the Entomologist attended an Arbovirus Conference held at the UMass Medical Center.

**Comments:** \_\_\_\_\_

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## **BIOLOGICAL CONTROL EFFORTS**

Do you have a biological control program? Yes

If yes, please describe: Bacillus sphaericus used to control Culex mosquitoes in catchbasins is a live bacteria that recycles in the water of catchbasins.

Is this program the introduction of mosquito predators or the enhancement of habitat for native predators? No

Please check off all that apply:

- Predatory fish
- Predatory invertebrates
- Other (please describe): Bacillus sphaericus

**Comments:** \_\_\_\_\_

## INFORMATION TECHNOLOGY

Does your program use (check all that apply):

- Computers
- GIS mapping
- GPS equipment
- Computer databases
- Aerial Photography
- Other (please describe):

Please describe your capabilities in these areas: Databases are maintained on adult mosquito populations, mosquito habitats, larval mosquito control, pesticide usage and ditch maintenance. ArcView is used as our GIS mapping software. The Project uses handheld GPS devices to record locations of some of our activities.

Please describe your current GIS abilities: Intermediate

Give details if possible on your GIS abilities: Planning maps for spring aerial larval control are on file. Our helicopter contractor uses shape files and swath guidance software during aerial larval control applications. Maps of ground larval control sites are maintained. Maps depicting the adult mosquito trap sites are on file. The Project is developing maps of ditch maintenance sites where an excavator was used.

Comments: \_\_\_\_\_

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## REVENUES & EXPENDITURES

Please give a concise statement of revenues & expenditures for the prior fiscal year ending June 30.

FY 2007 regular and supplemental appropriations: \$570,957  
FY 2007 expenditures: \$574,786.

Comments: \_\_\_\_\_

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## PESTICIDE USAGE

Please total your pesticide usage with information from your Mass. Pesticide Use Report, WNV Larvicide Use records and contracted pesticide applications. Applications methods include; hand/backpack, aerial, ULV, mistblower, other (please explain)

Product Name: Vectobac G  
EPA Reg. #: 73049-10

Application method: Helicopter application  
Targeted life stage: Larvae  
Total amount of concentrate applied: 11,293 lbs.  
Comments: \_\_\_\_\_

Product Name: Vectobac 12AS  
EPA Reg. #: 275-102  
Application method: portable hand held sprayer  
Targeted life stage: Larvae  
Total amount of concentrate applied: 20.25 gals.  
Comments: \_\_\_\_\_

Product Name: Vectolex WSP  
EPA Reg. #: 73049-20  
Application method: hand applied  
Targeted life stage: Larvae  
Total amount of concentrate applied: 33,267 packets  
Comments: \_\_\_\_\_

Product Name: Altosid WSP  
EPA Reg. #: 2724-448  
Application method: hand applied  
Targeted life stage: Larvae  
Total amount of concentrate applied: 18,453 packets  
Comments: \_\_\_\_\_

Product Name: Altosid XR  
EPA Reg. #: 2724-421  
Application method: hand applied  
Targeted life stage: Larvae  
Total amount of concentrate applied: 3,941 XR briquets  
Comments: \_\_\_\_\_

Product Name: Anvil 10+10 ULV  
EPA Reg. #: 1021-1688-8329  
Application method: truck mounted aerosol sprayer  
Targeted life stage: Adult  
Total amount of concentrate applied: 85.9 gals.  
Comments: \_\_\_\_\_

Product Name:  
EPA Reg. #:  
Application method:  
Targeted life stage: Choose one  
Total amount of concentrate applied:  
Comments: \_\_\_\_\_

Product Name:  
EPA Reg. #:  
Application method:  
Targeted life stage: Choose one  
Total amount of concentrate applied:  
Comments: \_\_\_\_\_

Product Name:  
EPA Reg. #:  
Application method:  
Targeted life stage: Choose one  
Total amount of concentrate applied:  
Comments: \_\_\_\_\_

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### **LARGE AREA EXCLUSIONS**

Do you have large areas of pesticide exclusion, such as estimated or priority habitats?  
Yes

If yes, please explain, and include maps if possible. Great Meadows National Wildlife Refuge and the Assabet River National Wildlife Refuge manage substantial wetland acreage in Bedford, Concord, Lincoln, Maynard, Sudbury and Wayland that is excluded from larval and adult mosquito control pesticide applications except when a permit is issued during periods of imminent risk from mosquito borne diseases. The Sudbury Valley Trustees, a private land trust that owns wetlands in Concord, Framingham, Sudbury and Wayland has excluded their property from pesticide applications. Maps of the wildlife refuges and the SVT property will be sent under separate cover.

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### **SPECIAL PROJECTS**

Do you perform any inspectional services such as inspections at sewage treatment facilities or review sub division plans? Yes

If yes, please elaborate Subdivision plans are occasionally sent by municipal officials for review and comment. Typically reviews occur when developments are planned adjacent to wetland areas or when detention ponds are in the plans.

Do you work with DPW departments or other local or state officials to address stormwater systems, clogged culverts or other areas that you have identified as man-made mosquito problem areas? Yes

If yes, please elaborate: Municipal officials including DPW, Health and Conservation Commission Administrators have requested that the Project inspect waterways that are obstructed with sand and sediment.

Have you worked with these departments on long term solutions? No

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### **CHILDREN AND FAMILIES PROTECTION ACT**

Is your program impacted by the Children and Families Protection Act? Yes

If yes, please explain: Per the provisions of the Act, the East Middlesex Mosquito Control Project excludes schools, day care centers and school age child care programs from mosquito control pesticide applications.

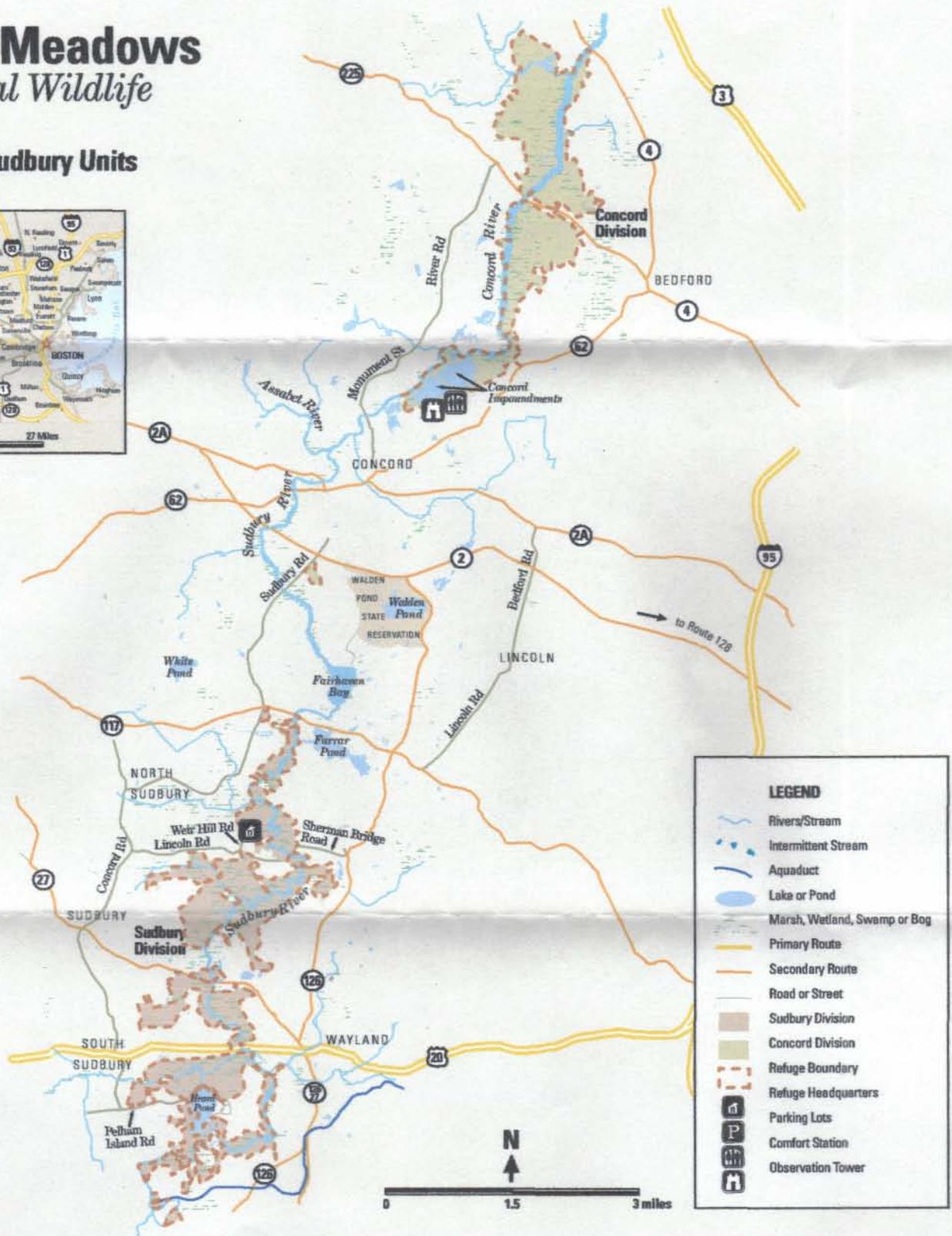
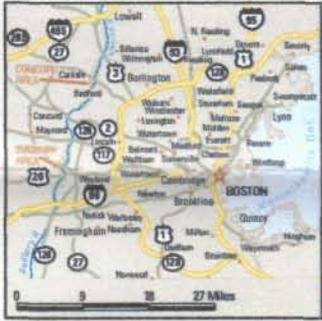
If you have data on compliance with this Act and your program, please list here:

If you had difficulties with implementation of your program due to this law, please elaborate here:

### **GENERAL COMMENTS**

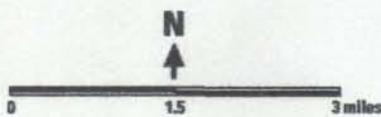
Please list any comments or concerns not covered in this report:

# Great Meadows National Wildlife Refuge Concord/Sudbury Units



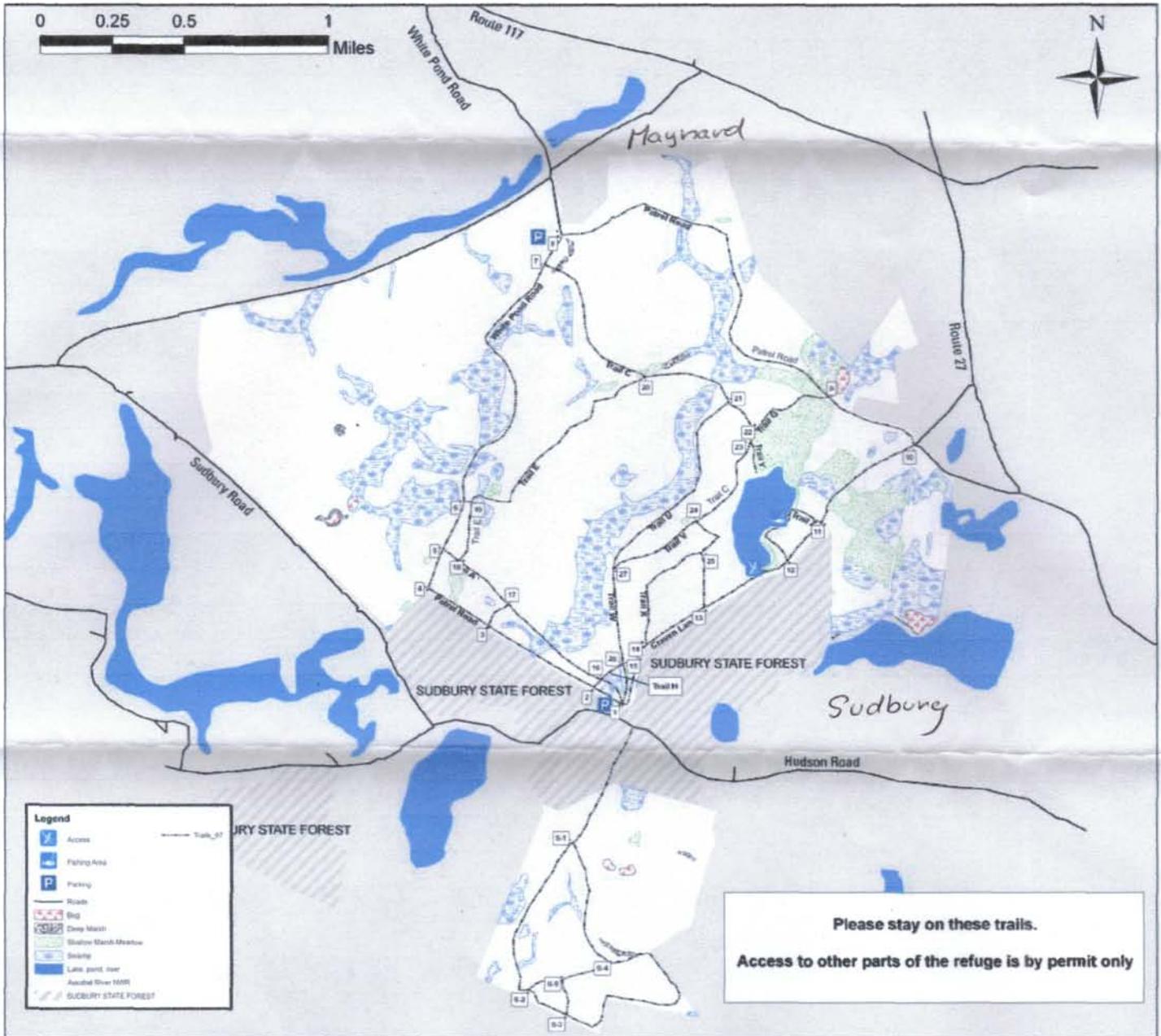
**LEGEND**

- Rivers/Stream
- Intermittent Stream
- Aquaduct
- Lake or Pond
- Marsh, Wetland, Swamp or Bog
- Primary Route
- Secondary Route
- Road or Street
- Sudbury Division
- Concord Division
- Refuge Boundary
- Refuge Headquarters
- Parking Lots
- Comfort Station
- Observation Tower





# Assabet River National Wildlife Refuge



# SUDBURY VALLEY TRUSTEES

[Home](#) | [Who We Are](#) | [Protecting the Land](#) | [Participate](#) | [How to Help](#) | [Publications](#) | [Store](#)

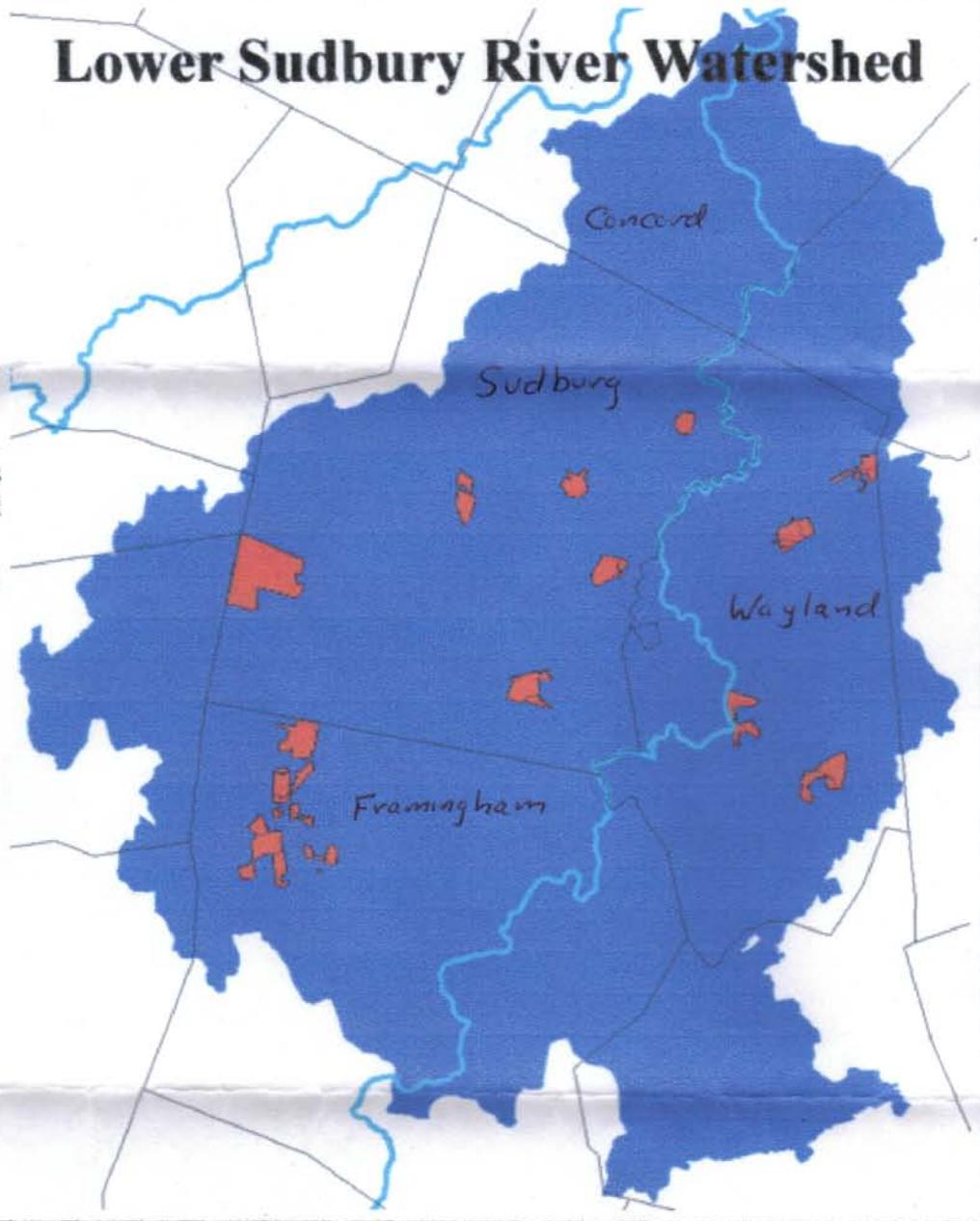
**Directions:**

To find the property you are looking for, place your mouse over the different properties. When you find the correct one, click on it.

As noted on the watershed map, only properties that have trail maps are shown on this sub-watershed map. In addition to SVT properties, individual towns have conservation land, and we urge you to visit those towns to get information on maps on other conserved land in our area.

[Back to Main Map Page](#)

## Lower Sudbury River Watershed



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Arlington  
Bedford  
Belmont  
Brookline  
Burlington  
Cambridge  
Concord  
Framingham  
Lexington  
Lincoln  
Malden  
Maynard  
Medford

THE COMMONWEALTH OF MASSACHUSETTS  
STATE RECLAMATION & MOSQUITO CONTROL BOARD

**EAST MIDDLESEX MOSQUITO CONTROL PROJECT**

11 Sun Street, Waltham, MA 02453-4101  
Phone: 781-899-5730 Fax: 781-647-4988  
[www.town.sudbury.ma.us/services/health/emmcpc](http://www.town.sudbury.ma.us/services/health/emmcpc)  
[emmcp.ma@verizon.net](mailto:emmcp.ma@verizon.net)

Melrose  
Newton  
North Reading  
Reading  
Sudbury  
Wakefield  
Waltham  
Watertown  
Wayland  
Wellesley  
Weston  
Winchester

March 14, 2008

Mark Buffone  
Reclamation & Mosquito Control Board  
251 Causeway St., Suite 500  
Boston, MA 02114-2151

Mark,

Attached are maps of Great Meadows National Wildlife Refuge, the Assabet River National Wildlife Refuge and the Sudbury Valley Trustees. These maps represent large area exclusions and should be included with the East Middlesex Mosquito Control Project's 2007 Annual Operations Report that was sent by email on 3/14/2008.

Yours truly,



David M. Henley  
Superintendent