

MASSACHUSETTS MOSQUITO CONTROL

ANNUAL OPERATIONS REPORT



Year Report Covers: 2015 Date of Report: 01/19/2016

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

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Report prepared by: *David Henley*

NPDES permit no. **MAG87A020**

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 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 plan will consist of mosquito surveillance, larval mosquito control of wetlands and catchbasins, adult mosquito control, wetlands management/ditch maintenance and public education.

ORGANIZATION SETUP:

Commissioner names:

Executive Committee: Lenny Izzo, Chair, representing Wellesley; Ruth Clay representing Melrose and Wakefield; Gerard Cody, Lexington; Tom Creonte, Waltham; and William Murphy, Sudbury. Other Commission members include Christine Bongiorno, Arlington, Heidi Porter, Bedford; Angela Braun, Belmont; Patrick Maloney, Brookline; Christine Mathis, Burlington; Wendy Robinson, Cambridge; Anthony Kiszewski, PhD, Concord; Chris Webb, Malden; Kelly PawLuczonek, Maynard; Karen Rose, Medford; John McNally, Newton; Deborah Rosati, Watertown; Julia Junghanns, Wayland; Richard Sullivan, Weston; and Jennifer Murphy, Winchester.

Superintendent/Director name: David Henley
Superintendent/Director contact phone number: 781-899-5730
Asst. Superintendent/Director name: Michael Bryant

District/Project website: <http://> <https://sudbury.ma.us/emmc>
Twitter handle: @
Facebook page: <http://www.facebook.com/>

Staffing levels for the year of this report:

Full time: 5

Part time: 1

Seasonal: 6

Other: (please describe)

Of the above, how many are:

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

- Administrative David Henley, Lorna Rabbitt
- Biologist
- Educator
- Entomologist Douglas Bidlack, PhD.
- Facilities David Henley, Michael Bryant
- Information technology
- Laboratory
- Operations Full-time: Michael Bryant, Christopher Gagnon and Michael Sweder. Seasonal: Matthew Ciommo, Leo Cody, Jon Daigle, Cameron Kelley, Konrad Musialowski and Joseph Sandore.
- Public relations
- Wetland scientist
- Other (please describe)

For the year of this report, the following were maintained (enter number in the column to the left):

- 1 Modified wetland equipment (list type) Linkbelt 75 Spin Ace track mounted excavator.
- 8 Larval control equipment (list type) 3 Solo backpack pump sprayers and 5 B&G pump sprayers
- 2 ULV sprayers (list type) Clarke Cougar Smartflow with radar.
- 7 Vehicles

Other (please be specific):

Comments: _____

How many cities and towns are in your service area?* 26

Alphabetical list: Arlington, Bedford, Belmont, Brookline, Burlington, Cambridge, Concord, Everett, Framingham, Lexington, Lincoln, Malden, Maynard, Medford, Melrose, Newton, North Reading, Reading, Sudbury, Wakefield, Waltham, Watertown, Wayland, Wellesley, Weston and Winchester. The East Middlesex Mosquito Control Commission and the Suffolk County Mosquito Control Commission agreed to extend a Memorandum of Agreement to share administrative services.

Were there any changes to your service area this year? No

Cities/towns added:

Cities/towns removed:

***Please attach a map of your service area (or a website link to that map).**

INTEGRATED PEST MANAGEMENT (IPM):

Check off all services that your district/project currently provides to member cities and towns as part of an IPM program (details will be provided in the sections below):

- Adult mosquito control**

- Adult mosquito surveillance**
- Ditch maintenance**
- Education, Outreach & Public education**
- Larval mosquito control**
- Larval mosquito surveillance**
- Open Marsh Water Management**
- Research**
- Source reduction (tire removals)**
- Other (please list): On occasion the Project receives requests to review plans for stormwater runoff at developments planned adjacent to wetlands or for underground stormwater treatment devices.**

Comments: _____

LARVAL MOSQUITO CONTROL:

If you have a larval mosquito control program, please fill out the section below, else skip ahead to the next section.

Describe the purpose of this program: This program is focused on controlling larvae of spring and summer floodwater species and Culex species. Spring floodwater species are controlled because they are aggressive mammal biting species that are active during the late spring and early summer, when residents are commonly involved in youth sports, recreation activities and outdoor maintenance and gardening projects. Summer floodwater species are controlled because they are aggressive mammal biting species and possible EEE human vectors. Culex mosquitoes are controlled because they are considered enzootic and human vectors for West Nile Virus.

What months is this program active? Spring floodwater mosquito larvae are controlled from late March through May. Summer floodwater mosquito larvae are controlled from late May through September. Culex mosquito larvae are controlled from June through mid-September.

Describe the types of areas where you use this program: Intermittently flooded wetlands, stormwater detention basins, catchbasins, neglected swimming pools and other water holding containers.

Do you use:

- Ground application (hand, portable and/or backpack, etc.)**
- Aerial applications**
- Other (please list):**

Comments: _____

List all products that you use for larval mosquito control in the table below (leave blank if not applicable):

Product Name	EPA #	Application Rate(s)	Application Method	Targeted life stage	Habitat Type	Total finished product applied
Altosid Pellets	2724-448	8 grams per catchbasin	hand applied	Larvae	<input checked="" type="checkbox"/> Catch basins <input type="checkbox"/> Containers <input type="checkbox"/> Wetland <input type="checkbox"/> Other (please list):	309 lbs.
Altosid Pellets WSP	2724-448	1 per catchbasin	hand applied	Larvae	<input checked="" type="checkbox"/> Catch basins <input type="checkbox"/> Containers <input type="checkbox"/> Wetland <input type="checkbox"/> Other (please list):	132 lbs.
Altosid Ingot XR Briquets	2724-421	1 per catchbasin	hand applied	Larvae	<input checked="" type="checkbox"/> Catch basins <input type="checkbox"/> Containers <input type="checkbox"/> Wetland <input type="checkbox"/> Other (please list):	449 lbs.
Natular T30	8329-85	1 per container	hand applied	Larvae	<input type="checkbox"/> Catch basins <input checked="" type="checkbox"/> Containers <input type="checkbox"/> Wetland <input type="checkbox"/> Other (please list):	.65 lb.
Spheratax SPH WSP	84268-2	1 packet per catchbasin	hand applied	Larvae	<input checked="" type="checkbox"/> Catch basins <input type="checkbox"/> Containers <input type="checkbox"/> Wetland <input type="checkbox"/> Other (please list):	1 lb.
Vectobac 12AS	275-102	8 oz. per acre, 12 oz. per acre	portable sprayer	Larvae	<input type="checkbox"/> Catch basins <input type="checkbox"/> Containers <input checked="" type="checkbox"/> Wetland <input type="checkbox"/> Other (please list):	12.05 gal.
Vectobac G	73049-10	5 lbs. per acre	aerially applied	Larvae	<input type="checkbox"/> Catch basins <input type="checkbox"/> Containers <input checked="" type="checkbox"/> Wetland <input type="checkbox"/> Other (please list):	11,692 lbs.

List all products that you use for larval mosquito control in the table below (leave blank if not applicable):

Product Name	EPA #	Application Rate(s)	Application Method	Targeted life stage	Habitat Type	Total finished product applied
Vectolex WSP	73049-20	1 packet per catchbasin. 1 packet per 50 sq. ft.	hand applied	Larvae	<input checked="" type="checkbox"/> Catch basins <input type="checkbox"/> Containers <input type="checkbox"/> Wetland <input checked="" type="checkbox"/> Other (please list): neglected swimming pools	979 lbs.
				Choose one	<input type="checkbox"/> Catch basins <input type="checkbox"/> Containers <input type="checkbox"/> Wetland <input type="checkbox"/> Other (please list):	
				Choose one	<input type="checkbox"/> Catch basins <input type="checkbox"/> Containers <input type="checkbox"/> Wetland <input type="checkbox"/> Other (please list):	
				Choose one	<input type="checkbox"/> Catch basins <input type="checkbox"/> Containers <input type="checkbox"/> Wetland <input type="checkbox"/> Other (please list):	
				Choose one	<input type="checkbox"/> Catch basins <input type="checkbox"/> Containers <input type="checkbox"/> Wetland <input type="checkbox"/> Other (please list):	
				Choose one	<input type="checkbox"/> Catch basins <input type="checkbox"/> Containers <input type="checkbox"/> Wetland <input type="checkbox"/> Other (please list):	
				Choose one	<input type="checkbox"/> Catch basins <input type="checkbox"/> Containers <input type="checkbox"/> Wetland <input type="checkbox"/> Other (please list):	

What is your trigger for larviciding operations? (check all that apply)

- Best professional judgment
- Historical records
- Larval dip counts – please list trigger for application:
- Other (please describe):

Comments: Larval control in wetlands is funded by 25 communities. Helicopter larval control applications are fund by 18 communities. Catchbasin larval control is funded by 22 communities. An additional 2 communities do their own larval control through their public works departments. Larval control at neglected swimming pools is done in cooperation with municipal health departments. Altosid Pellets, Altosid Pellets WSP and Altosid Ingot XR Briquets are applied to catchbasins during the month of June as a pre-emergence treatment to control Culex larvae. Altosid Pellets, Altosid Pellets WSP, Altosid Ingot XR Briquets and Vectolex WSP were used to control Culex larvae in catchbasins in July, August and September. Natular T30 tablets were applied to water holding catchbasin sumps that were being stored above ground during road construction prior to installation.

Please attach a map of your service area (or a website link to that map).

ADULT MOSQUITO CONTROL:

If you have a larval mosquito control program, please fill out the section below, else skip ahead to the next section.

Describe the purpose of this program: To reduce the number of mammal biting mosquitoes, EEE human bridge vector mosquitoes and secondary WNV human bridge vector mosquitoes.

Describe the types of areas where you use this program: Suburban residential neighborhoods with a relatively dense configuration of streets that are situated near wetlands that serve as mosquito habitats.

What is the time frame for this program? Late May through September.

Describe the types of areas where you use this program: see above

Do you use:

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

Comments: _____

For each product used, please list the name, EPA #, and application rate(s):

Product Name	EPA #	Application Rate(s)	Application Method	Total finished product applied
Anvil 10+10	1021-1688-8329	.0024 lbs. per acre	truck mounted aerosol sprayer	80.175 gals.

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

In 2015 the maximum number of times that wide area adult mosquito control occurred in any neighborhood was four times. The shortest interval between wide area spray applications in any neighborhood was 12 days.

What is your trigger for adulticiding operations? (check all that apply)

- Arbovirus data
- Best professional judgment
- Complaint calls (Describe trigger for application:)
- Landing rates (Describe trigger for application)
- Light trap data (Describe trigger for application 100 - 200 mammal biting mosquitoes depending on the norm for that area.)

Comments: Scheduling adult mosquito control applications is based on mosquito population data and whether the community funds adult mosquito control. There are 9 communities that fund adult mosquito control. Spraying in the vicinity of an EEE or West Nile Virus isolation or human case may be done if the community where the isolation occurs supports the application. Citizen requests for control are regarded as supplemental data that may influence the shape of the area where control is scheduled.

Please attach a map of your service area (or a website link to that map).

SOURCE REDUCTION (Tire Removals)

If you practice source reduction methods, such as tire removal, please fill out the section below, else skip ahead to the next section.

Please describe your program: During ditch maintenance activities, tires may be removed from work areas.

What time frame during the year is this method employed? Most ditch maintenance activities are done between September and the end of March.

Comments: _____

WATER MANAGEMENT/DITCH MAINTENANCE

If you have a water management or ditch maintenance program, please fill out the section below, else skip ahead to the next section.

Please check all that apply:

- Inland/freshwater

Saltmarsh

Please describe your program: Ditch maintenance is done using either a LinkBelt 75 track mounted excavator or hand tools. When planning ditch maintenance activities, the protocols contained in the Massachusetts Best Management Practice and Guidance for Freshwater Mosquito Control are followed.

For inland/freshwater water management, check off all that apply.

Maintenance Type	Estimate of cumulative length of culverts, ditches, swales, etc. maintained (ft)
<input checked="" type="checkbox"/> Culvert cleaning	
<input checked="" type="checkbox"/> Hand cleaning	6,339 ft.
<input checked="" type="checkbox"/> Mechanized cleaning	3,076 ft.
<input type="checkbox"/> Stream flow improvement	
<input type="checkbox"/> Other (please list):	

Comments: Separate lengths of maintenance for culvert clearing are not recorded during hand cleaning and mechanized cleaning.

For saltmarsh ditch maintenance, check off all that apply:

Maintenance Type	Estimate of cumulative length of ditches maintained (ft)
<input type="checkbox"/> Hand cleaning	
<input type="checkbox"/> Mechanized cleaning	
<input type="checkbox"/> Other (please list):	

Comments: _____

What time frame during the year is this method employed? Most inland ditch maintenance is done from September through March.

Comments: Because of the historic levels of snow from late January through March, ditch maintenance activities in 2015 continued into April and May.

Please attach a map of ditch maintenance areas (or a website link to that map).

OPEN MARSH WATER MANAGEMENT

If you have an Open Marsh Water Management program, please fill out the section below, else skip ahead to the next section.

Describe the purpose of this program:

What months is this program active?

Please give an estimate of total square feet or acreage:

Comments: _____

Please attach a map of OMWM areas (or a website link to that map).

MONITORING (Measures of Efficacy)

Describe monitoring efforts for each of the following:

Aerial Larvicide – wetlands: Pre-application surveys were conducted at 93 sites. Post-application surveys were conducted at 23 sites. ArcView GIS maps of targeted wetlands are prepared prior to the application. Ag-Nav maps recorded during the application are reviewed to determine coverage.

Ground ULV Adulticide: Pre-application adult mosquito surveys using CDC light traps are done to determine whether control is needed. Post-application surveys using CDC light traps are conducted to determine if additional ground ULV adulticiding is needed.

Larvicide – catch basins: Pre-application larval surveys using a Landers Ladle are done in June to determine the appropriate time to begin using *Bacillus sphaericus*. Random pre-application and post-application larval surveys using a Landers Ladle are undertaken during July, August and September. Random monitoring of paint marks on catchbasins left by applicators is conducted to evaluate the coverage of treated areas.

Larvicide-hand/small area Pre-application surveys are conducted prior to each application. Random post-application surveys are conducted to monitor efficacy.

Open Marsh Water Management:

Source Reduction:

Other (please list):

Provide or list standard steps, criterion, or protocols regarding the documentation of efficacy (pre and post data), and resistance testing (if any):

For aerial larval control, pre-application larval dip counts are undertaken with a minimum of 30 dips per site. Random post-application dip counts are done with a minimum of 30 dips. The helicopter applicator is supplied with Arc-View GIS maps of targeted wetlands that are used in the helicopter's AgNav system. The completed AgNav maps recorded during the application are reviewed following the application to evaluate the coverage of treated areas.

At catchbasins, sampling using a Landers ladle is conducted during the early summer to determine when the presence of *Culex* larvae in untreated catchbasins becomes common. Two collections using a Landers ladle are taken at each sampled catchbasin. Applicators are required to mark each catchbasin grate with a spot of water soluble marking paint, when they apply a larvicide. Monitoring of paint marks left on catchbasin grates by applicators is conducted to evaluate coverage. The efficacy of *Bacillus sphaericus* applications is monitored by random sampling using a Landers Ladle.

For small area wetland larval control, applicators are required to do a minimum of 10 dips and find a minimum of 3 larvae per 10 dips. Random post-application surveys are conducted by the Operations Manager.

Before adult mosquito control is scheduled, three to five co2-baited light traps are used to monitor mosquito populations in a community. A minimum of 100 to 200 mammal biting mosquitoes must be collected at a trap site before spraying will be scheduled in neighborhoods near a trap site. The variation in the minimum trap collection size to justify spraying is related to the normal mosquito collections found at a site. Trap collections below the minimum number result in a determination that spraying does not need to be scheduled in that neighborhood or re-scheduled if the neighborhood has recently been sprayed.

Check the boxes below, indicating if your program has performed any of the following:

Research Project	Details
Bottle assays	
Efficacy testing	
Other:	
Other:	

ADULT MOSQUITO SURVEILLANCE

If you have an adult mosquito surveillance program, please fill out the section below, else skip ahead to the next section.

Describe the purpose of this program: The primary purposes are to measure populations of mammal biting species and populations of species considered enzootic or bridge vectors for West Nile Virus and EEE. The data is used to evaluate the need for control. As funding is available, Culex species, Cs. melanura and other potential human bridge vector species are submitted to DPH for virus testing.

What months is this program active? late May through September.

Check off all trap types currently in use by your program:

- | | |
|---|---------------------------------|
| <input type="checkbox"/> ABC light traps | <input type="checkbox"/> Canopy |
| <input type="checkbox"/> ABC light traps w/CO ₂ | <input type="checkbox"/> Canopy |
| <input type="checkbox"/> CDC light traps | <input type="checkbox"/> Canopy |
| <input checked="" type="checkbox"/> CDC light traps w/CO ₂ | <input type="checkbox"/> Canopy |
| <input checked="" type="checkbox"/> Gravid traps | |
| <input type="checkbox"/> Landing rate tests | |
| <input type="checkbox"/> NJ light traps | <input type="checkbox"/> Canopy |
| <input type="checkbox"/> NJ light traps w/CO ₂ | <input type="checkbox"/> Canopy |
| <input type="checkbox"/> Ovitrap | |
| <input type="checkbox"/> Resting boxes | |
| <input type="checkbox"/> Other (please describe): | |

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

If yes, please describe how you chose these long-term sites:

In most municipalities there are 3 to 5 trap sites. In municipalities with significant wetland acreage, light trap sites are located in yards that are in close proximity to major mosquito habitats for spring and summer floodwater mosquitoes, *Cq. perturbans* and *Cs. melanura*. In densely populated areas without significant wetland acreage, gravid trap sites are placed in yards or municipal properties with the goal of providing geographic spacing within the community. Light traps and gravid traps are also located near properties where people or horses are believed to have contracted EEE or West Nile Virus in the past.

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

- | | |
|--|---|
| <input type="checkbox"/> <i>Ae. albopictus</i> | <input checked="" type="checkbox"/> <i>Oc. abserratus</i> |
| <input checked="" type="checkbox"/> <i>Ae. cinereus</i> | <input checked="" type="checkbox"/> <i>Oc. canadensis</i> |
| <input checked="" type="checkbox"/> <i>Ae. vexans</i> | <input checked="" type="checkbox"/> <i>Oc. cantator</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 type="checkbox"/> <i>Oc. sollicitans</i> |
| <input checked="" type="checkbox"/> <i>Cq. perturbans</i> | <input type="checkbox"/> <i>Oc. taeniorhynchus</i> |
| <input checked="" type="checkbox"/> <i>Cx. pipiens</i> | <input checked="" type="checkbox"/> <i>Oc. triseriatus</i> |
| <input checked="" type="checkbox"/> <i>Cx. restuans</i> | <input checked="" type="checkbox"/> <i>Oc. trivittatus</i> |
| <input checked="" type="checkbox"/> <i>Cx. salinarius</i> | <input checked="" type="checkbox"/> <i>Ps. ferox</i> |
| <input checked="" type="checkbox"/> <i>Cs. melanura</i> | <input type="checkbox"/> <i>Ur. sapphirina</i> |
| <input checked="" type="checkbox"/> <i>Cs. morsitans</i> | |
| <input type="checkbox"/> Other (please list): | |

Do you participate in the MDPH Arboviral Surveillance program? Yes
 How many pools do you submit weekly on average? 19 pools per week

Number of traps in your service area **placed by MDPH:** 13
 Were these long-term trap sites or supplemental trapping sites? long-term

Which arboviruses were found in your area during the previous mosquito season? Enter the number of pools/cases below:

Arbovirus	Positive Mosquito Pools	Equine Cases	Human Cases
<input type="checkbox"/> Eastern Equine Encephalitis (EEE)	0	0	0
<input checked="" type="checkbox"/> West Nile Virus (WNV)	69	0	1
<input type="checkbox"/> Other (please list):			

Comments: _____

For each arbovirus listed below, please list the risk levels in your project area at both the start and end of the season (if more than one, please list all):

Arbovirus	Start of Season	End of Season
EEE	Remote and Low	Remote and Low
WNV	Low	High, Moderate and Low

Comments: For EEE, the following communities started and ended the year at low EEE risk: Concord, Framingham, North Reading, Reading and Sudbury. The following communities started and ended the year at remote EEE risk: Arlington, Bedford, Belmont, Brookline, Burlington, Cambridge, Everett, Lexington, Lincoln, Malden, Maynard, Medford, Melrose, Newton, Wakefield, Waltham, Watertown, Wayland, Wellesley, Weston and Winchester. For West Nile Virus, all communities started the year at low WNV risk. The following communities ended the year at high WNV risk: Brookline, Cambridge, Everett and Watertown. The following communities ended the year at moderate WNV risk: Arlington, Bedford, Belmont, Burlington, Lexington, Malden, Medford, Melrose, Newton, Reading, Wakefield, Waltham, Wellesley, Weston and Winchester. The following communities ended the year at low WNV risk: Concord, Framingham, Lincoln, Maynard, North Reading, Sudbury and Wayland.

EDUCATION, OUTREACH & PUBLIC RELATIONS

If you have an education/outreach program, please fill out the section below, else skip ahead to the next section.

Describe the purpose of this program: The Project's public education program is designed to develop awareness within the public and 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.

What time frame during the year is this method employed? It is an ongoing program that is active throughout the year.

Check off all education/outreach methods that were performed by your program this year:

- Development/distribution of brochures, handouts, etc.
- Door-to-door canvassing (door hangers, speaking to property owners, etc.)
- Facebook page, Twitter, or other social media
- Mailings (Describe target audience(s): Each person who excluded their property from pesticide applications in 2014, received a letter and exclusion form in February 2015. Each person who allowed the Project to put a survey trap on their property in 2014 received a letter informing them of the 2014 results on their property and requesting that the Project be allowed to use their property for surveillance in 2015.)
- Media outreach (interviews for print or online media sources, press releases, etc.)
- Presentations at meetings
- School-based programs, science fairs, etc.
- Tabling at events (local events, annual meetings, etc.)
- Website
- Other (please describe):

Estimate the audience reached this year using the education/outreach methods above:
Comments:

List your program's top 3 education/outreach activities for this year:

1. Presentations were given to Health Officials in Belmont, Cambridge, Framingham, North Reading, Sudbury and Watertown regarding the mosquito control program in their respective communities.
2. A presentation on mosquitoes was given to children attending a day camp at the Harvard Museum of Natural History.
3. _____

Were you involved in any collaborations with the following partners this year? Provide details below, including a list of technical reports, white/grey papers, journal publications, trade magazine articles, etc:

Academia The Project collaborated with Sujaya Rao, PhD., an Oregon State researcher, who is investigating the causes of bumble bee mortality under certain tree species such as lindens and Japanese pagodas during their flowering period. The Project collaborated with Brandeis researchers, Lawrence Wangh, PhD. and Eric Olson, Ph.D., who are doing research on developing a portable device that would genetically analyze a collection of mosquitoes or ticks to determine species identification and the amount and type of virus or parasites. The Project provided information to Harvard researchers, Angie Boyce, PhD. and Joyce Klein Rosenthal, PhD. on changing perspectives on mosquitoes and ticks due to urban development and climate change.

Another mosquito control district/project The Project worked cooperatively with the Suffolk County Mosquito Control Project. The cooperation included shared administration, training on adult mosquito surveillance, mechanical repair of sprayers, helicopter larval control and outreach efforts.

Another state agency (DCR, DPH, etc.) David Henley developed training information for the catchbasin larvicide permit exam with Steve Antunes Kenyon from MDAR. Douglas Bidlack, PhD. participated in an Asian Tiger Mosquito (ATM) Surveillance Working Group to create a Standard Operating Procedure for ATM surveillance.

Environmental groups

Industry David Henley attended several meetings of a Pollinator Stewardship Discussion Group hosted by the Mass. Farm Bureau with the goal of producing a document that will provide recommended standards and initiatives that will improve pollinator health in Massachusetts.

List any training/education your staff received this year: Four employees attended the annual meeting of the Northeastern Mosquito Control Association (NMCA). Three employees attended the annual NMCA Field Day. David Henley attended a symposium at UMass Amherst entitled "Pollinator Health for Agriculture and Landscapes". David Henley attended a Walden Forum event where Sam Telford, PhD of Tufts University gave a presentation entitled, "Can we prevent Lyme Disease?" Six employees completed the following classes offered through PACE (Performance and Career Enhancement): Slips, Trips and Falls; Safe Lifting; and Hazard Communication.

Please list the certifications and degrees held by your staff: Mike Bryant, Chris Gagnon, David Henley and Mike Sweder are Certified Pesticide Applicators. Matthew Ciommo, Leo Cody, Jon Daigle, Cameron Kelley, Konrad Musialowski and Joseph Sandore are Licensed Pesticide

Applicators. Chris Gagnon has a 2A/1C Hoist Operator's License. David Henley has a B.B.A. in Management. Mike Bryant has an A.B. in Turf Management. Doug Bidlack has a Ph.D. in Entomology, an M.S. in Entomology and Plant Pathology and a B.S. in Biological Sciences. Chris Gagnon has a B.S. in Wildlife Biology. Mike Sweder has a M.S. in Environmental Health and Safety and a B.S. in Entomology.

Comments: _____

INFORMATION TECHNOLOGY (IT)

Does your program use (check all that apply):

- Aerial Photography
- Databases
- Dataloggers (monitoring for temperature, etc.)
- GIS mapping (Describe: ArcView shape files are prepared that delineate wetlands, which are scheduled for larval control by helicopters equipped with Ag Nav swath guidance systems.)
- GPS equipment
- Smartphones
- Tablets/Toughbooks
- Other (please describe):

Describe any changes/enhancements in IT from the previous year: 1 new Dell computer was purchased.

Describe any difficulties your program had with IT software/equipment this year:

Comments: _____

REVENUES & EXPENDITURES

Please provide the amounts for your approved budgets for the current, previous, and future fiscal years. Please note if the budget for the next fiscal year is an estimate, or put "n/a" if it is not yet available.

Fiscal Year	Approved Budget
FY 2015	\$689,840
FY 2016	\$719,226

List each member municipality, along with the corresponding (cherry sheet) funding assessment dollar amount, for the current fiscal year (or provide a web link to this information):

The following are the regular appropriations for FY 2016 from the cities and towns of the East Middlesex MCP: Arlington-\$19,500, Bedford-\$38,504, Belmont-\$17,250, Brookline-\$12,758, Burlington-\$41,236, Cambridge-\$27,328, Concord-\$20,000, Everett-\$12,000, Framingham-\$51,503, Lexington-\$26,018.16, Lincoln-\$10,125, Malden-\$20,154, Maynard-\$13,050, Medford-\$23,122, Melrose-\$11,771, Newton-\$42,160, North Reading-\$48,462, Reading-\$38,000,

Sudbury-\$47,257, Wakefield-\$18,488, Waltham-\$33,800, Watertown-\$15,874, Wayland-\$23,412, Wellesley-\$19,132.75, Weston-\$38,558 and Winchester-\$15,814.

Comments: The East Middlesex MCP also receives supplemental appropriations for excavator work or for the purchase of catchbasin larvicides, if funding for those services and products is not included within the regular appropriation.

SERVICE REQUESTS

How many service requests did you receive this season? 275

How many were for larviciding? 98

How many were for adulticiding? 103

Was this an increase or decrease over last season? Decrease

Comments: The East Middlesex Mosquito Control Project will respond to residents who request that an adjacent or nearby wetland be checked for mosquito larvae or to investigate obstructions in waterways. Decisions on adult mosquito spraying are based on mosquito and arbovirus surveillance data. A citizen request for adult mosquito spraying is considered supplemental information, which may influence the shape of the area where wide area spraying has been planned based on mosquito and arbovirus surveillance.

EXCLUSIONS

How many exclusion requests did you receive this season? 96

Was this an increase or decrease over last season? Decrease

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

If yes, please explain, and attach maps or a web link if possible. Great Meadows National Wildlife Refuge and the Assabet River National Wildlife Refuge manage large tracts of wetland acreage in Bedford, Concord, Lincoln, Maynard, Sudbury and Wayland that is excluded from larval and adult mosquito control pesticide applications. The only exception occurs when the Refuge Manager determines that there is an imminent risk from mosquito borne disease and issues a permit. The Sudbury Valley Trustees, a private land trust, that owns wetlands in Concord, Framingham, Sudbury and Wayland has excluded their property from larval and adult mosquito control pesticide applications.

Assabet River National Wildlife Refuge, topo map: www.farnwr.org/maps1.html

Great Meadows National Wildlife Refuge, map:

www.fws.gov/refuge/great_meadows/map.html

Sudbury Valley Trustees, trail maps: <http://www.sudburyvalleytrustees.org/maps>

SPECIAL PROJECTS

Did your program perform any of the following special projects? Check all that apply.

- Inspectional services (inspections at sewage treatment facilities, review of subdivision plans, etc.)

Describe: Periodically municipal officials will request that plans for subdivision stormwater runoff be reviewed to determine the likely impact on mosquito development.

- Work with DPW departments or other local or state officials to address stormwater systems, clogged culverts, or other areas identified as man-made mosquito problem areas

Describe: Municipal officials have requested that we identify and remove excess sedimentation and debris that is obstructing waterways and culverts. The Project coordinated catchbasin larvicide applications with public works department catchbasin cleaning programs.

- Work with groups as described above on long term solutions?

Describe:

- Conduct or participate in any cooperative research or restoration projects?

Describe:

- Participate in any state/regional/national workgroups or panels, or attend any meeting pertaining to the above?

Describe:

- Work on any biological control projects, such as enhancement of habitat for native predators, release of predatory fish or invertebrates, etc.?

Describe:

CHILDREN AND FAMILIES PROTECTION ACT (CFPA)

Is your program impacted by the CFPA? Yes

If yes, please explain: Per the provisions of the Act, the Project excludes schools, group day centers and school age child care programs from adult mosquito control pesticide applications unless the pre-requisites for spraying are fulfilled.

If you have data on compliance rates with the CFPA within your program area, please list here:

Describe any difficulties you have had with the implementation of your program due to the CFPDA, please elaborate here:

Comments:

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT PROGRAM

Did your program report any adverse incidents during this reporting period? No

If yes, please list any corrective actions here: _____

GENERAL COMMENTS

Please add any comments here for topics not covered elsewhere in this report: _____