

# MASSACHUSETTS MOSQUITO CONTROL

## ANNUAL OPERATIONS REPORT



Year Report Covers: 2019      Date of Report: 1/31/2020

Project/District Name: **Northeast Mass. Wetlands Mgmt. Mosquito Control**

Address:      118 Tenney St.

City/Town:      Georgetown      Zip: 01833

Phone:      978-352-2800      Fax: 978-352-5234

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**Report prepared by: Kimberly A. Foss, Robyn Januszewski, and William Mehaffey**

NPDES permit no. **MAG87A028**

If you have a mission statement, please include it here: The Northeast Massachusetts Mosquito Control and Wetlands Management District represents the mosquito control and wetland management interests of those communities that choose to subscribe to its services. The prime directive of the District is to protect its citizens from mosquito-borne diseases by targeting precise, measured, and preemptive responses to specific risks as prescribed by the District's annually-revised "Integrated Pest & Vector Management Plan" (IPVMP). To ensure that our citizens quality of life and regional economy is not severely impacted by abundant pestiferous mosquito outbreaks, strategies targeted to reduce dominant mosquito populations are implemented as prescribed by the District's annually-revised "Best Management Practice" (BMP) plans. BMPs are designed to incorporate the District's environmentally sensitive and cost effective mosquito control strategies with the specific needs and concerns of each member community.

### ORGANIZATION SETUP:

#### Commissioner names:

John W. Morris, CHO, Chairman

Paul Sevigny, RS, CHO

Vincent J. Russo, MD, MPH, Vice-Chairman

Rosemary Decie, RS

Joseph Giarrusso, Conservation Officer

**Superintendent/Director name:** Roy Melnick

**Superintendent/Director contact phone number:** 978-352-2800

**Asst. Superintendent/Director name:** William Mehaffey (Operations Manager)

**District/Project website:** <http://www.nemassmosquito.org>

**Twitter handle:** @

**Facebook page:** <http://www.facebook.com/>

**Staffing levels for the year of this report:**

Full time: 11

Part time:

Seasonal: 2

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 Bettijane Morgan, Robyn Januszewski, William Mehaffey, Roy Melnick
- Biologist Robyn Januszewski
- Educator Kimberly Foss, Kelsey Liacos
- Entomologist Kimberly Foss
- Facilities William Mehaffey, Roy Melnick, Barry Noone
- Information technology Robyn Januszewski, Kelsey Liacos (Website Design/Management)
- Laboratory Kimberly Foss
- Operations Kimberly Foss, Timothy Hay, Robyn Januszewski, Katelynn King, Kelsey Liacos, Ross Mehaffey, William Mehaffey, Barry Noone, Andrew Sheehan
- Public relations Kimberly Foss, Robyn Januszewski, Kelsey Liacos, William Mehaffey
- Wetland scientist Katelynn King (Wetland Project Technician)
- Other (please describe) Jake Greeney, Jessica Lambert (Contract Seasonals)

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

Modified wetland equipment (list type) 1987 Kassbohrer PB270DS "PistenBully" Flail Mower; 1986 Kassbohrer PB270D "PistenBully" Flail Mower/Grader/Rotary Ditcher; 1987 Kassbohrer PB270DS "PistenBully" Flail Mower/Grader/Rotary Ditcher; 1990 Kassbohrer PB260DW "PistenBully" Dump Body/Grader; 2013 Kassbohrer "PistenBully" 100 All-Season Flail Mower; 1987 Bombadier "Muskeg" Dump Body/Backhoe; 1999 LinkBelt 1600 Excavator; 1996 Hudson Spray Trailer; 1996 Rokon all-terrain Motorcycle; 1987 ARGO 8 wheel Amphibious ATV; 2012 Starcraft 14' Aluminum Boat; 2012 20hp Mercury Outboard Motor; 2012 EZ-Loader Boat Trailer

Larval control equipment (list type) Maruyama MD300 Backpack Dusters

ULV sprayers (list type) Clarke "Dura Pro" sprayers

Vehicles

Other (please be specific): 1 Leco HD Series D 70001047 (Blower Model: 26-3210) Barrier Sprayer and 1 Leco 1100 (Blower Model: RAI 89D) Barrier Sprayer

1 Maruyama MM181 Backpack Mistblower

1 Invasive Vegetation Sprayer: Roots ID # 865-105-20 Rears Ag Sprayer S-95-1044

3 Hand operated Solo Backpack Sprayers for Invasive Vegetation Control

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

How many cities and towns are in your service area?\* 33

Alphabetical list: Amesbury, Andover, Beverly, Boxford, Danvers, Essex\*\*, Georgetown, Groveland, Hamilton, Haverhill, Ipswich, Lynn, Lynnfield, Manchester-by-the-Sea, Marblehead, Merrimac, Methuen, Middleton, Nahant, Newbury, Newburyport, North Andover, Peabody, Revere, Rowley, Salem, Salisbury, Saugus, Swampscott, Topsfield, Wenham, West Newbury and Winthrop

\*<https://www.nemassmosquito.org/resident-services/pages/towns-we-serve>

\*\*Essex Subscribes to Northshore Greenhead Fly Program ONLY

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

Cities/towns added: None

Cities/towns removed: None

**\*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): Inspectional services, wastewater and water treatment facility inspections and treatments, greenhead fly control, wetlands management and restoration**

**Comments:** The primary vector species of West Nile Virus, Culex pipiens, typically breeds in highly organic waters such as that found in catch basins and retention/detention ponds. The District routinely inspects and treats known breeding areas and will assess areas of concern as requested by residents and local Boards of Health. Additionally, the District provides inspection services for planned developments upon request from member municipalities to advise on reducing potential mosquito breeding habitat.

### **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: To reduce larval mosquito populations before adult emergence can occur.

What months is this program active? March-October

Describe the types of areas where you use this program: Fresh and salt water wetlands, stormwater control structures, catch basins, and containers

Do you use:

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

**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
Fourstar Bti-CRG	85685-4	7.5-20.0 lbs./acre	Hand or Backpack Sprayer	Larvae	<input type="checkbox"/> Catch basins <input type="checkbox"/> Containers <input checked="" type="checkbox"/> Wetland <input checked="" type="checkbox"/> Other (please list): Saltmarsh	1,600.23 lbs.
VectoBac G	73049-10	2.5-10.0 lbs./acre	Hand or Backpack Sprayer	Larvae	<input type="checkbox"/> Catch basins <input checked="" type="checkbox"/> Containers <input checked="" type="checkbox"/> Wetland <input checked="" type="checkbox"/> Other (please list): Saltmarsh	953.82 lbs.
VectoBac 12AS	73049-38	1 qt. / acre	Aerial by helicopter	Larvae	<input type="checkbox"/> Catch basins <input type="checkbox"/> Containers <input type="checkbox"/> Wetland <input checked="" type="checkbox"/> Other (please list): Saltmarsh	2,790 gals.
Altosid WSP	2724-448	1 pouch/catch basin = 7 gm.	Hand	Larvae	<input checked="" type="checkbox"/> Catch basins <input type="checkbox"/> Containers <input type="checkbox"/> Wetland <input type="checkbox"/> Other (please list):	35,105 pouches = 541.69 lbs.
Altosid XR Briquet	2724-421	1 briquet /100 sq ft = 1.28 oz.	Hand	Larvae	<input type="checkbox"/> Catch basins <input type="checkbox"/> Containers <input type="checkbox"/> Wetland <input checked="" type="checkbox"/> Other (please list): swimming pools	41 briquets = 3.28 lbs.
Fourstar 90-day Briquet	83362-3	1 briquet/catch basin = 20.85 gm.	Hand	Larvae	<input checked="" type="checkbox"/> Catch basins <input type="checkbox"/> Containers <input type="checkbox"/> Wetland <input type="checkbox"/> Other (please list):	720 briquets = 33.09 lbs.
VectoMax WSP	73049-429	1 pouch/catch basin = 10 gm.	Hand	Larvae	<input checked="" type="checkbox"/> Catch basins <input type="checkbox"/> Containers <input type="checkbox"/> Wetland <input type="checkbox"/> Other (please list):	27,217 pouches = 599.96 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
Cocobear	8329-93	3 gals/acre	Hand held Sprayer	Larvae/pupae	<input type="checkbox"/> Catch basins <input type="checkbox"/> Containers <input checked="" type="checkbox"/> Wetland <input type="checkbox"/> Other (please list):	8.11 gals.
Natular DT	8329-602	1 tablet/50 gals.	Hand	Larvae	<input type="checkbox"/> Catch basins <input checked="" type="checkbox"/> Containers <input type="checkbox"/> Wetland <input type="checkbox"/> Other (please list):	2 tablets
				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: >1 per 5 dips average
- Other (please describe): Arbovirus notifications and resident/BOH requests

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

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

<https://www.nemassmosquito.org/resident-services/pages/towns-we-serve>

**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 adult mosquito populations in response to virus positive mosquito pools and nuisance mosquito complaints

What is the time frame for this program? June through October, end date depends on virus activity and weather.

Describe the types of areas where you use this program: Residential streets, schools (per Children's Protection Act), and parks and recreational areas (per Municipal office request)

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
Zenivex E4RTU	2724-807	1.0 fl.oz/acre	truck mounted ULV sprayer	245.8 gals.
Duet	1021-1795-8329	0.64 fl.oz/acre	truck mounted ULV sprayer	24.5 gals.
Suspend SC	432-763	1.0 fl. oz : 1.0 gal water. 1.0 gal / min.	truck mounted barrier sprayer	6.625 gals.

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

Zenivex E4 RTU & Duet: No more than 1 application per site per week or 25 applications per site per year. (ULV applications)

Suspend SC: No more than 1 application per site within a two week period. (Barrier applications)

\*Applications are made in accordance with product label directions.

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

- Arbovirus data
- Best professional judgment
- Complaint calls (Describe trigger for application: Upon resident and/or BOH requests)
- Landing rates (Describe trigger for application : \*Not performed due to the threat of WNV and/or EEE)
- Light trap data (Describe trigger for application : Increasing amount of disease carrying vectors )

**Comments:** All applications on school property must be in compliance with Massachusetts Children and Families Protection Act.

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

<https://www.nemassmosquito.org/resident-services/pages/towns-we-serve>

### **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: District personnel coordinate with local municipalities to remove tires at community events, such as Hazardous Waste Days, large tire dump sites, and tires discarded at road-side and/or wetland sites.

Total Tires Removed in 2019: 313

What time frame during the year is this method employed? January-December

**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: Maintenance and restoration of both freshwater and salt marsh ditches to increase flow and reduce mosquito breeding habitat.

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

<b>Maintenance Type</b>	<b>Estimate of cumulative length of culverts, ditches, swales, etc. maintained (ft)</b>
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<input checked="" type="checkbox"/> Culvert cleaning	238
<input checked="" type="checkbox"/> Hand cleaning	11,854
<input checked="" type="checkbox"/> Mechanized cleaning	
<input type="checkbox"/> Stream flow improvement	
<input type="checkbox"/> Other (please list):	

**Comments:** NEMMC did not have a Wetlands Project Coordinator for over a year, until October 2019 when we hired a new person to fill this position. We expect to see an increase in mechanized projects, many that require permitting, now that this position has been filled.

For **saltmarsh ditch maintenance**, check off all that apply:

Maintenance Type	Estimate of cumulative length of ditches maintained (ft)
<input checked="" type="checkbox"/> Hand cleaning	
<input checked="" type="checkbox"/> Mechanized cleaning	
<input checked="" type="checkbox"/> Other (please list): Phragmites australis mowing to allow access for larval treatments	42 acres

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

What time frame during the year is this method employed? Year round for hand cleaning of ditches. Mechanized cleaning, typically larger projects, are usually performed from Fall to early Spring.

**Comments:** See comment above

**Please attach a map of ditch maintenance areas (or a website link to that map). Maps available upon request**

## 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:** Although Northeast MA Mosquito Control does not hold a current OMWM permit, previously constructed/permitted OMWM sites will be reviewed and maintained as necessary and in compliance with current OMWM regulations.

NEMMC did not have a Wetlands Project Coordinator for over a year, until October 2019 when we hired a new person to fill this position. Now that this position has been filled, OMWM projects will be monitored and maintained.

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: Salt marsh: Pre and Post dips at up to ten dip stations per participating municipality

Ground ULV Adulticide: Surveillance and supplemental traps set in all member municipalities

Larvicide – catch basins: Random basins in each municipality checked post treatment as needed

Larvicide-hand/small area Pre-treatment dips with >1 larvae present in 5-dip average; post treatment dips as necessary

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):

**Note 1- Aerial Larvicide- wetlands: Salt marsh, pre and post dips at up to ten dip stations per participating municipality**

**Note 2- Larvicide-catch basins: post treatment dip counts as needed and/or collection of larvae to be reared.**

**Note 3- Larvicide-hand/small area: post treatment dip counts as needed**

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

Research Project	Details
Bottle assays	
Efficacy testing	See Notes Above
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: To monitor species, particularly vector species, for management of populations and testing for arboviruses. From Introduction to "Best Management Plans" and as outlined in our Integrated Pest and Vector Management Plan (IPVMP): The District focus is to collect a representative sample of mosquitoes in a city or town on a regular basis. Historical collection stations are in areas where substantial portions of municipality residents reside to determine arboviral risk. Supplemental trapping is initiated after WNV/EEE positives are detected from historical surveillance trap sites.

What months is this program active? May-October

Check off all trap types used this past season by your program:

Trap Type	Canopy? (check box for yes)	Number of traps (leave blank if zero)
<input type="checkbox"/> ABC light trap	<input type="checkbox"/>	
<input type="checkbox"/> ABC light trap w/CO <sub>2</sub>	<input type="checkbox"/>	
<input type="checkbox"/> CDC light trap	<input type="checkbox"/>	
<input checked="" type="checkbox"/> CDC light trap w/CO <sub>2</sub>	<input type="checkbox"/>	35
<input checked="" type="checkbox"/> Gravid trap		37
<input type="checkbox"/> Landing rate test		
<input type="checkbox"/> NJ light trap	<input type="checkbox"/>	
<input type="checkbox"/> NJ light trap w/CO <sub>2</sub>	<input type="checkbox"/>	
<input checked="" type="checkbox"/> Ovitrap		30 +-
<input checked="" type="checkbox"/> Resting box		160
<input type="checkbox"/> Other (please describe):		
<input type="checkbox"/> Other (please describe):		
<input type="checkbox"/> Other (please describe):		

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

If yes, how many:

54

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

- |  |   |
|--|---|
| <input checked="" 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 checked="" type="checkbox"/> <i>Oc. sollicitans</i>    |
| <input checked="" type="checkbox"/> <i>Cq. perturbans</i>  | <input checked="" 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 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 checked="" type="checkbox"/> Others (please list): <b>Spring pest species: <i>Oc. punctor</i>, <i>Oc. excrucians</i>/<i>stimulans</i>/<i>fitchii</i> complex.</b> |   |

Number of adult mosquitoes collected this season (whether submitted to DPH or not): 88,881  
 Number of adult mosquito pools collected this season (submitted and unsubmitted): 4,463  
 Number of ovitrap collections this season, if any: 18  
 Any other trap collections of note (please describe): 47 Supplemental CDC CO2/Light traps set (total collections included above)

Do you participate in the MDPH Arboviral Surveillance program? Yes  
 Total number of adult mosquito pools submitted to DPH this past season: 793  
 How many pools do you submit weekly on average? 50

Number of traps in your service area **placed by MDPH**: 0  
 Were these long-term trap sites or supplemental trapping sites? Choose one

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 checked="" type="checkbox"/> Eastern Equine Encephalitis (EEE)	11	1	1
<input checked="" type="checkbox"/> West Nile Virus (WNV)	5	0	0
<input type="checkbox"/> Other (please list):			

**Comments:** 2019 season data

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	low-remote	Critical, High, Moderate
WNV	low	low

**Comments:** Critical- Methuen; High-Andover, Lawrence, Ipswich, Topsfield; Moderate-North Andover, Haverhill, Beverly, Danvers, Hamilton, Manchester, Middleton, Newbury, Newburyport, Wenham, Salisbury, Amesbury, Merrimac, West Newbury, Groveland, Georgetown, Rowley, Boxford

## 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 District provides educational outreach on vector-borne disease, personal protection, residential source reduction, storm water management, habitat restoration, invasive species, and environmental science primarily relevant to mosquitoes. This information is made available to schools, civic organizations, not for profit organizations, public access TV, the general public, as well as state, federal, and municipal officials upon request and / or during the course of routine operations. District personnel are available to meet at government and community meetings (i.e. Conservation Commissions, US

Army Corps, Public Works Departments, Boards of Health, Board of Selectmen, or other) to provide information related to all of the above.

The District's website ([www.nemassmosquito.org](http://www.nemassmosquito.org)) provides information about operational strategies, procedures, equipment and materials, links to other websites, including the Massachusetts Department of Public Health, regarding disease/virus information and prevention as well as seasonal activity summaries.

Other Media: The District has various hand-outs, posters, presentations, and DVDs which are available to the public upon request.

Outreach Programs: The District creates educational programs tailored to the specific needs of schools, civic organization, and public officials.

What time frame during the year is this method employed? January-December

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): )
- 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): Board of Health (BOH) PowerPoint presentations in Salsibury, Newburyport, Methuen, Manchester, and North Andover. Methuen BOH/Local TV collaborative educational television program about mosquitoes, IPM, arbovirus. North Andover BOH/Local TV collaborative PSA- Mosquito and Public Prevention.

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

~800,000

Comments:

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

1. Meeting/ Presentations/PSA
2. Website
3. Property owner outreach

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 NASA Earth Science Education Collaborative-GLOBE-

Institute for Global Environmental Strategies, Beyond the Bite Publication: GLOBE Mission Mosquito Disease Guide [www.globe.gov](http://www.globe.gov)

- Another mosquito control district/project
- Another state agency (DCR, DPH, etc.)
- Environmental groups/Pesticide Environmental Stewardship Program
- Industry

List any training/education your staff received this year: TRAINING:

All District employees are trained annually in accordance with the Commonwealth's PACE Program. Additionally some of the District's staff have attended the following: M.U.S.T. Excavation Safety Seminar, Northeastern Mosquito Control Association (NMCA) Annual Meeting.

Please list the certifications and degrees held by your staff: Various scientific and environmental degrees including Associates, Bachelors, Masters, and Doctoral degrees. District certifications and licensing include MA Pesticide Core License, Commercial Certification Category 47 (Public Health, Mosquito and Biting Fly), Category 39 (Aquatic Pests), and Category 40 (Right of Way), MA Hoisting Engineer Class 2A and 1C, MA Commercial Driver's license - Class A & B, and Massachusetts Trappers Certification.

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

### INFORMATION TECHNOLOGY (IT)

Does your program use (check all that apply):

- Aerial Photography
- Databases
- Dataloggers (monitoring for temperature, etc.)
- GIS mapping (Describe: \_\_\_\_\_ )
- GPS equipment
- Smartphones
- Tablets/Toughbooks
- Other (please describe): \_\_\_\_\_

Describe any changes/enhancements in IT from the previous year: The District upgraded the data collection tablets used in field operations.

Describe any difficulties your program had with IT software/equipment this year: There were unanticipated issues with the rollout of the data collection program upgrade. These were addressed throughout the spring and summer to resolve the issues.

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

### REVENUES & EXPENDITURES

Please enter your approved budgets for the current, previous, and future fiscal years.

	Date of Fiscal Year	Approved Budget	Notes
Previous	2019	1,751,183.00	
Current	2020	1,777,453.00	
Future	2021	1,884,100.18	Estimate

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):

Municipality                      Total Assessment

Amesbury	\$ 47,083.00
Andover	\$128,932.00
Beverly	\$ 78,778.00
Boxford	\$ 80,804.00
Danvers	\$ 61,537.00
Georgetown	\$ 44,893.00
Groveland	\$ 31,268.00
Hamilton	\$ 51,138.00
Haverhill	\$128,570.00
Ipswich	\$111,636.00
Lynn	\$ 64,980.00
Lynnfield	\$ 44,424.00
Manchester-by-the-Sea	\$ 38,601.00
Marblehead	\$ 38,835.00
Merrimac	\$ 29,493.00
Methuen	\$ 91,829.00
Middleton	\$ 51,296.00
Nahant	\$ 7,468.00
Newbury	\$ 80,509.00
Newburyport	\$ 43,677.00
North Andover	\$101,777.00
Peabody	\$ 82,072.00
Revere	\$ 42,767.00
Rowley	\$ 61,569.00
Salem	\$ 46,601.00
Salisbury	\$ 54,244.00
Saugus	\$ 52,755.00
Swampscott	\$ 21,453.00
Topsfield	\$ 44,712.00
Wenham	\$ 26,921.00
West Newbury	\$ 45,177.00
Winthrop	\$ 15,728.00

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

## SERVICE REQUESTS

How many service requests did you receive this season? 1,369

How many were for larviciding? 40

How many were for adulticiding? 1,329

Was this an increase or decrease over last season? Decrease

**Comments:**

## EXCLUSIONS

How many exclusion requests did you receive this season? 470

Was this an increase or decrease over last season? Increase

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. US Fish & Wildlife/Parker River Wildlife Refuge (Newbury, Rowley, Ipswich), The Trustees of Reservations and MA Audubon

## 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: Inspections and treatments at District sewage treatment facilities
- 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: NEMMC works closely with local DPWs to coincide catch basin treatments with each municipality's cleaning schedule in order to use the most effective larvicide product in catch basins and stormwater structures.
- Work with groups as described above on long term solutions?  
Describe:
- Conduct or participate in any cooperative research or restoration projects?  
Describe: Worked with Parker River National Wildlife Refuge to plan the alterations of several OMWM ditch plugs. Because of sea-level rise, some of the salt marsh areas within or between each site are starting to breed mosquitoes because the water cannot drain off between tides.



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

Describe: NMCA annual meeting, MA DPH surveillance meetings, Regional EEE meeting with local Boards of Health and MA DPH and The Great Marsh Revitalization Task Force meeting.

- 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: Pesticides used by the District are required to be listed on a school's Integrated Pest Management (IPM) plan to allow the District to treat the school property. In recent years, the District has been asked by local Boards of Health to spray town fields including school properties for adult mosquitoes, particularly in the event of virus outbreaks. Schools that do not include mosquito control as part of their IPM plan reduce the District's ability to provide proactive and emergency mosquito control in those municipalities. This may lead to the possibility of increased virus for the surrounding towns and increased costs to the District.

If you have data on compliance rates with the CFPA within your program area, please list here: The compliance rates for schools with updated IPM plans are as follows: 32.1% of all educational facilities (Public schools, 12.7%; Private schools, 4.2%; Daycare facilities, 15.2%; Family daycare facilities, 0.1%). A plan is considered complete if all pesticides used by the District are included in the plan. The compliance rate for schools with complete IPM plans is as follows: Public schools, 3.4%; Private schools, 0.2%; Daycare facilities, 0.7%; Family daycare facilities, 0%. A plan is considered partially complete if some of the pesticides used by the District are included. This creates problems with being able to efficiently and effectively treat school properties, and leaves large gaps in the overall treatment of many municipalities. The compliance rate for schools with partial IPM plans is as follows: Public schools, 7.2%; Private schools, 1.4%; Daycare facilities, 0.3%; Family daycare facilities, 0%.

Describe any difficulties you have had with the implementation of your program due to the CFPA, please elaborate here: The District is often asked by local Boards of Health to spray town properties, including schools, for adult mosquitoes, particularly during times of virus outbreaks. Schools that do not include mosquito control as part of their IPM plan reduce the District's ability to provide proactive and emergency mosquito control in those municipalities. This may lead to the possibility of increased virus for the surrounding towns and increased costs to the District.

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: \_\_\_\_\_