MASSACHUSETTS MOSQUITO CONTROL

ANNUAL OPERATIONS REPORT



Year Report Covers: 2020 Date of Report: 1/25/2021

Project/District Name: Suffolk County Mosquito Control Project

Address: 11 Sun St.

City/Town: Waltham

Phone: 781-899-5730

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Report prepared by: Brian Farless

NPDES permit no. MAG87A041

If you have a mission statement, please include it here: The Suffolk County Mosquito Control Commission (the Commission) represents the interests of Boston, Chelsea, and their residents in providing guidance and oversight to the Suffolk County Mosquito Control Project (the Project). The Commission strives to ensure that the member communities receive services that are consistent with applicable law 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 catch basins, adult mosquito control, source reduction, wetlands management/ditch maintenance and public education.

Zip: 02453

Fax:

ORGANIZATION SETUP:

Commissioner names:

<u>Christopher Busch</u> Julien Farland Leslie Karnes

Sam Lipson

Superintendent/Director name: Brian Farless Superintendent/Director contact phone number: 781-899-5730 Asst. Superintendent/Director name:

District/Project website: http://scmcp.webs.com Twitter handle: @ Facebook page: http://www.facebook.com/

Staffing levels for the year of this report:

Full time: 2

Part time:

Seasonal: 3

Other: in addition to above, 2 full time and one part time administrative workers share time between Suffolk County Mosquito Control and East Middlesex Mosquito Control (please describe)

Of the above, how many are:

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

Administrative Brian Farless, Katherine Swan, Dave Henley

____ Biologist

Educator

Entomologist

Facilities Brian Farless, Sean Wilson

Information technology

🔀 Laboratory Brian Farless, Sean Wilson

Operations Brian Farless, Michael Radley, Sean Wilson, Benjamin Gingras, Kelly Palmer,

Wesley Hildebrand

Public relations Brian Farless

Wetland scientist

Other (please describe)

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

0 Modified wetland equipment (list type)

2 Larval control equipment (list type) Solo backpack pump sprayers

1 ULV sprayers (list type) Clarke Smartflow sprayer

4 Vehicles

Other (please be specific): 1 Stihl gas powered backpack mistblower

Comments: _____

How many cities and towns are in your service area?* 2 Alphabetical list: Boston, Chelsea

Were there any changes to your service area this year? No Cities/towns added: 0 Cities/towns removed: 0

*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

X Larval mosquito surveillance

Open Marsh Water Management



Research Source reduction (tire removals) Other (please list):

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, salt marsh and brackish water species and artificial container 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 frequently involved in outdoor activities. The mosquito species, Culiseta melanura, amplifies EEE within the bird population. Culiseta melanura mosquito populations are reduced as a result of the spring larvicide application. Summer floodwater species are controlled because they are aggressive mammal biting species, some of which are human vectors of EEE. Salt marsh mosquitoes are controlled because they bite during the day and are considered very aggressive mammal biting mosquitoes. Salt marsh species can be disease vectors of EEE. Brackish water species are aggressive mammal biting species. The brackish water species, Culex salinarius, is a human vector of EEE and WNV. Culex pipiens/restuans species are controlled because they are the primary vectors for West Nile virus in Massachusetts. They are found in catch basins and other artificial water holding containers, as well as in freshwater wetland habitat.

The Project worked collaboratively with the Boston Public Health Commission to distribute larvicides for use in catch basins to control Culex mosquitoes to municipal departments and large Boston property managers including the Boston Housing Authority, the Franklin Park Zoo and Harvard University.

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. Salt marsh and brackish water mosquito larvae are controlled following high tides from June through October. Culex mosquito larvae are controlled from May through September.

Describe the types of areas where you use this program: Intermittently flooded wetlands, salt marshes, stormwater detention basins, catch basins, 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: _____

Product Name	EPA #	Application	Application	Targeted life	Habitat Type	Total finished
		Rate(s)	Method	stage		product applied
VectoBac 12 AS	73049-38	8 ounces per acre	back pack pump sprayer	Larvae	☐ Catch basins ☐ Containers ⊠ Wetland ☐ Other (please list):	496 ounces
Vectolex WSP	73049-20	1, pouch (10 gram) per catch basin or similar water holding container	hand applied	Larvae	 ☐ Catch basins ☐ Containers ☐ Wetland ☐ Other (please list): 	172,940 grams
Altosid Pellets WSP	2724-448	1 pouch (7 gram) per catch basin or similar water holding container	hand applied	Larvae	 ☐ Catch basins ☐ Containers ☐ Wetland ☐ Other (please list): 	66,479 grams
Vectobac GR	73049-486	5 pounds per acre	helicopter	Larvae	☐ Catch basins ☐ Containers ⊠ Wetland ☐ Other (please list):	360 pounds
Altosid P35	89459-95	9 grams per catch basin	hand applied	Larvae	Catch basins Containers Wetland Other (please list):	3,654 grams
				Choose one	☐ Catch basins ☐ Containers ☐ Wetland ☐ Other (please list):	
				Choose one	Catch basins Containers Wetland Other (please list):	

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

List all prod	ucts that you use	for larval mosquit	o control in the table	below (leave blank if	not applicable):
					net appneable/

Product Name	EPA #	Application	Application	Targeted life	Habitat Type	Total finished
		Rate(s)	Method	stage		product applied
				Choose one	Catch basins Containers Wetland Other (please list):	
				Choose one	Catch basins Containers Wetland Other (please list):	
				Choose one	Catch basins Containers Wetland Other (please list):	
				Choose one	Catch basins Containers Wetland Other (please list):	
				Choose one	Catch basins Containers Wetland Other (please list):	
				Choose one	Catch basins Containers Wetland Other (please list):	
				Choose one	Catch basins Containers Wetland 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: 3 larvae per 10 samples

Other (please describe):

Comments:

Please attach a map of your service area (or a website link to that map). http://www.scmcp.webs.com/

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 mosquitoes and EEE/WNV vector species.

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

Describe the types of areas where you use this program: Truck mounted ULV sprayers are used in suburban residential neighborhoods with a relatively dense configuration of streets. A backpack mistblower is used in areas with high mosquito populations and/or in areas with an elevated disease risk.

Do you use:

Aer	ia	I	apj	plic	atio	ons
 _						

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	Application	Total finished
		Rate(s)	Method	product applied
Anvil 10+10	1021-1688-	0.0024 lbs.	truck mounted ULV	4 gallons
	8329	per acre	sprayer	
Mavrik	2724-478	0.5 fl. oz./ 5	backpack	6.25 ounces
Perimiter		gals water	mistblower	
		per 1000 sq.		
		ft.		

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

For Anvil 10+10, the label states to not treat a site with more than 0.0036 lbs per acre within a 24 hour period. For Mavrik Perimeter, the label states to not treat the same area more than 4 times per month, or 20 times per year.

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 a	pplication)
Light trap data (Describe trigger for a	application at least 200 mosquitoes found in a trap from
one night)	
Comments:	

Please attach a map of your service area (or a website link to that map). http://www.scmcp.webs.com/

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: Check vacant lots and open spaces for discarded tires. These tires are collected and taken to a recycling facility. During 2020, 195 tires were collected and recycled.

What time frame during the year is this method employed? Year round, but mostly during late fall, winter and early spring

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 Spin Ace track mounted excavator or hand tools. When planning ditch maintenance activities, protocols are followed that are contained in the Massachusetts Best Management Practices and Guidance for Freshwater Mosquito Control.

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

Maintenance Type	Estimate of cumulative length of culverts, ditches, swales, etc. maintained (ft)
Culvert cleaning	

Hand cleaning	
Mechanized cleaning	
Stream flow improvement	
Other (please list):	

Comments: _____

For saltmarsh ditch maintenance, check off all that apply:

Maintenance Type	Estimate of cumulative length of ditches maintained (ft)
Hand cleaning	
Mechanized cleaning	
Other (please list):	
_	

Comments:

What time frame during the year is this method employed? Ditch maintenance can be done year round, but most ditch maintenance activities are done between September and the end of March.

Comments:

Please attach a map of ditch maintenance areas (or a website link to that map). http://www.scmcp.webs.com/

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 and post-application larval surveys are conducted. Helicopters apply larvicide to wetlands containing mosquito larvae. ArcView GIS maps of targeted wetlands are prepared prior to the application and then converted for use for the helicopter's Ag-Nav system.

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

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

Larvicide-hand/small area Pre-application surveys are conducted prior to all applications. Random post-application surveys are conducted.

Open Marsh Water Management:

Source Reduction: Inspections of open space areas and vacant lots are done to monitor for the presence of discarded tires.

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 and post-application larval dip counts are undertaken with a minimum of 30 dips per site. In addition, the applicator is supplied with ArcView GIS maps of targeted wetlands that are used in the applicator's AgNav systems. The AgNav maps recorded during the application are reviewed following the application to evaluate the coverage of treated areas. Catch basin water is sampled during early summer to determine when the presence of Culex larvae becomes common. Two water samples using a Landers Ladle are taken at each sampled catch basin. Catch basin larvicide applicators are required to mark each catch basin with water soluble marking paint when larvicide is applied. Monitoring of paint marks left on catch basin grates is conducted to evaluate coverage. Random post applications. For small area wetland larval control, applicators are required to find 3 larvae per 10 dips before a larvicide can be applied. Post-application surveys are carried out at random. Before adult mosquito control is scheduled in any area, CO2 baited CDC light traps are used to monitor mosquito populations in that area. A minimum of 200 mammal biting mosquitoes must be collected at a trap site before spraying will be scheduled.

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. The Project also uses ovitraps to monitor for the presence of Aedes albopictus.

What months is this program active? May through October

Тгар Туре	Canopy?	Number of traps
	(check box for yes)	(leave blank if zero)
ABC light trap		
ABC light trap w/CO ₂		
CDC light trap		
CDC light trap w/CO2		101
🔀 Gravid trap		82
Landing rate test		
🗌 NJ light trap		
☐ NJ light trap w/CO₂		
🔀 Ovitrap		100
Resting box		
Other (please describe):		
Other (please describe):		
Other (please describe):		

Do you maintain long-term trap sites in any of your areas? Yes If yes, how many:

36

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

- \times Ae. albopictus \times Ae. cinereus \times Ae. vexans \times An. punctipennis \times An. quadrimaculatus \times Cq. perturbans \times Cx. pipiens \times Cx. restuans \times Cx. salinarius Cs. melanura \times Cs. morsitans Others (please list): **Ps. ciliata**
- \times Oc. abserratus
 - imes Oc. canadensis
 - Oc. cantator
 - Oc. j. japonicus
 - \times Oc. sollicitans
 - \times Oc. taeniorhynchus
 - imes Oc. triseriatus
 - imes Oc. trivittatus
 - \times Ps. ferox
 - Ur. sapphirina

Number of adult mosquitoes collected this season (whether submitted to DPH or not): 18,976 Number of adult mosquito pools collected this season (submitted and unsubmitted): 205 Number of ovitrap collections this season, if any: 100 Any other trap collections of note (please describe):

Do you participate in the MDPH Arboviral Surveillance program? Yes Total number of adult mosquito pools submitted to DPH this past season: 205 How many pools do you submit weekly on average? 13.67

Number of traps in your service area **placed by MDPH**: 26 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
Eastern Equine Encephalitis (EEE)			
🔀 West Nile Virus (WNV)	14	0	0
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	remote
WNV	low	moderate

Comments: _____

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):)

 \boxtimes Media outreach (interviews for print or online media sources, press releases, etc.)

imes Presentations at meetings

School-based programs, science fairs, etc.

] Tabling at events (local events, annual meetings, etc.)

🛛 Website

Other (please describe): Public notification is coordinated through the Boston Public Health Commission prior to helicopter applications of Bti to wetland areas to control mosquito larvae and prior to neighborhood truck mounted aerosol applications of Anvil 10 + 10 to control adult mosquitoes

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:

- <u>Coordinate with the Boston Public Health Commission (BPHC) to notify residents,</u> interested groups, City departments and the media of planned helicopter Bti larval control applications and neighborhood truck mounted aerosol applications of Anvil to control adult mosquitoes.
- 2. Daily phone calls from residents.
- 3. Interviews with the media.

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

Another mosquito control district/project The Project shared administration with the East Middlesex Mosquito Control Project.

Another state agency (DCR, DPH, etc.) The Project collaborated with DPH to monitor for Aedes albopictus by submitting mosquito eggs collected in ovitraps.

Environmental groups

] Industry

List any training/education your staff received this year: One employee took a Diversity Disability class. One employee took a Domestic Violence and Sexual Assault class. One employee took a Preventing Workplace Violence class. Three employees took a Conflict of Interest Law class. Three employees took a Preventing Workplace Harrassment class. One employee took a Paid Family and Medical Leave for Supervisors and Managers class.

Please list the certifications and degrees held by your staff: Brian Farless, Michael Radley and Kelly Palmer are Licensed Pesticide Applicators. Benjamin Gingras and Wesley Hildebrand are Permitted Catch Basin Applicators. Brian Farless has a B.S. in Communication. Michael Radley has a B.S. in Resource Economics. Kelly Palmer has a B.S. in Biology. Sean Wilson has a B.S. in Environmental Science and Policy. Sean also has a certificate in Geographic Information Systems.

Comments:

INFORMATION TECHNOLOGY (IT)

Does your program use (check all that apply):

- Aerial Photography
- 🛛 Databases

Dataloggers (monitoring for temperature, etc.)

GIS mapping (Describe: Create maps using ESRI ArcGIS software for media purposes, in-

house use and for the helicopter company that handles our aerial applications)

GPS equipment

Smartphones

_____ Tablets/Toughbooks

Other (please describe):

Describe any changes/enhancements in IT from the previous year:

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

Comments:

REVENUES & EXPENDITURES					
Please enter your approved budgets for the current, previous, and future fiscal years.					
	Date of Fiscal	Approved Budget	Notes		
	Year				
Previous	2020	289,860.16			
Current	2021	289,860.16			
Future					

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): Boston - \$278,626.29; Chelsea - 11,233.87

Comments: _____

SERVICE REQUESTS

How many service requests did you receive this season? 27 How many were for larviciding? 7 How many were for adulticiding? 20

Was this an increase or decrease over last season? Increase

Comments: The Suffolk County 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.

EXCLUSIONS

How many exclusion requests did you receive this season? 5

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. Massachusetts Audubon, Boston Nature Center and Wildlife Sanctuary

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:

• 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: The Project coordinated catch basin applications with the Boston and Chelsea Public Works Department catch basin 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 care 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 CFPA, please elaborate here:

Comments:

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT PROGRAM

Did your program report any adverse incidents during this reporting period? Choose one

If yes, please list any corrective actions here: _____

GENERAL COMMENTS

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