MASSACHUSETTS MOSQUITO CONTROL

ANNUAL OPERATIONS REPORT

Year Report Covers: 2019 Date of Report: 1/23/2020

Project/District Name: Suffolk County Mosquito Control Project

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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, wetlands management/ ditch maintenance and public education.

Christopher Busch Julien Farland Leslie Karnes 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: @

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, Cameron Sweeney Information technology Laboratory Brian Farless Operations Full time: Brian Farless, Cameron Sweeney, Michael Radley; Seasonal: Kelly Palmer, Noah Turner, Allison Rittweger 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):
 Modified wetland equipment (list type) Larval control equipment (list type) Solo Backpack Pump Sprayers ULV sprayers (list type) Clarke Smartflow sprayer Vehicles Other (please be specific): 1 Stihl gas powered backpack mist blower
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 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 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 frequently involved in outdoor activities. Summer floodwater species are controlled because they are aggressive mammal biting species and possible human vectors of EEE. Salt marsh mosquitoes are controlled because they bite during the day and are considered very aggressive mammal biting mosquitoes. Brackish water species are aggressive mammal biting species. Culex species are controlled because they are the primary vectors for West Nile virus in Massachusetts.

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, Boston University, 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 mosquito larvae are controlled following full moon 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.

JU	you use.
\times	Ground application (hand, portable and/or backpack, etc.)
\times	Aerial applications
	Other (please list):
Cor	nments:

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

Product Name	EPA#	Application	Application	Targeted life	Habitat Type	Total finished
		Rate(s)	Method	stage		product applied
VectoBac 12 AS	73049-38	8 oz. per acre, 16 oz. per acre	back pack pump sprayer	Larvae	Catch basins Containers Wetland Other (please list):	3 gallons
Vectolex WSP	73049-20	1 pouch per catch basin or similar water holding container	hand applied	Larvae	□ Catch basins □ Containers □ Wetland □ Other (please list):	283.7132 pounds
Altosid Pellets	2724-448	8 grams per catch basin	hand applied	Larvae	□ Catch basins □ Containers □ Wetland □ Other (please list):	55.7858 pounds
Altosid Pellets WSP	2724-448	1 pouch per catch basin	hand appied	Larvae	□ Catch basins □ Containers □ Wetland □ Other (please list):	151.5614 pounds
Vectobac GR	73049-486	5 lbs. per acre	helicopter	Larvae	☐ Catch basins ☐ Containers ☐ Wetland ☐ Other (please list):	360 pounds
				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):

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: Altosid Pellets and Altosid Pellets WSP are applied to catch basins during May and
June as a pre-emergence treatment to control Culex larvae. Altosid Pellets, Altosid Pellets WSP, and Vectolex WSP were used to control Culex larvae in catch basins in July, August and
September.
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 mammal biting 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: 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	0.0024 lbs. per acre	truck mounted ULV sprayer	5 gallons
Mavrik Perimeter	2724-478	0.5 fl. oz./ 5 gals water per 1000 sq. ft.	backpack mistblower	3.25 ounces

Please describe the maximum amounts or frequency used in a particular time frame such as season and areas The least amount of time that Anvil 10+10 was used in the same area was 28 days. The least amount of time that Mavrik Perimeter was used in the same area was 28 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 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. In 2019, 230 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: For **inland/freshwater water management**, check off all that apply. Estimate of cumulative length of culverts, ditches, **Maintenance Type** swales, etc. maintained (ft) Culvert cleaning

75 feet

Hand cleaning

	Mechanized cleaning	
	Stream flow improvement	
	Other (please list):	
	mments: r saltmarsh ditch maintenance, check off a	ll that apply:
Ma	nintenance Type	Estimate of cumulative length of ditches maintained (ft)
	Hand cleaning	
	Mechanized cleaning	
	Other (please list):	
	mments: hat time frame during the year is this meth	od employed?
Со	mments:	
Ple	ease attach a map of ditch maintenance ar	eas (or a website link to that map).
If y	PEN MARSH WATER MANAGEMENT ou have an Open Marsh Water Management progre at section.	am, please fill out the section below, else skip ahead to the
De	scribe the purpose of this program:	
Wl	hat months is this program active?	
Ple	ease give an estimate of total square feet o	r acreage:
Со	mments:	
Ple	ease attach a map of OMWM areas (or a w	rebsite link to that map).
M	ONITORING (Measures of Efficacy)	
De	scribe monitoring efforts for each of the f	ollowing:
Po pre	st-application surveys were conducted at 2	olication larval surveys were conducted at 3 sites. sites. ArcView GIS maps of targeted wetlands are nverted for use for the helicopter's Ag-Nav
tra	• •	ication adult mosquito surveys using CDC light urveys are conducted to determine if additional

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. At catch basins, sampling using a Landers Ladle is conducted during the early summer to determine when the presence of Culex larvae becomes common. Two samples using a Landers Ladle are taken at each sampled catch basin. 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 application sampling is conducted to determine the efficacy of Bacillus sphaericus 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, CO2 baited light traps are used to monitor mosquito populations in the neighborhood. A minimum of 200 mammal biting mosquitoes must be collected at a trap site before spraying will be scheduled in that neighborhood. 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 at that time.

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 used ovitraps to monitor for the presence of Aedes albopictus.

What months is this program active? May through October

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

Trap Type	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/CO ₂		61
Gravid trap		84
Landing rate test		
NJ light trap		
☐ NJ light trap w/CO₂		
		77
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:

🔀 Ae. albopictus	🔀 Cs. morsitans
igthereom Ae. cinereus	🔀 Oc. abserratus
🔀 Ae. vexans	igstyle igstyle Oc. canadensis
🔀 An. punctipennis	🔀 Oc. cantator
igthered An. quadrimaculatus	🔀 Oc. j. japonicus
🔀 Cq. perturbans	$igthered{igwedge}$ Oc. sollicitans
igthered Cx. pipiens	igtimes Oc. taeniorhynchus
igthered Cx. restuans	🔀 Oc. triseriatus
🔀 Cx. salinarius	🔀 Oc. trivittatus
igthered Cs. melanura	🔀 Ps. ferox

☐ Ur. sapphirina☑ Others (please list): Ps. ciliata
Number of adult mosquitoes collected this season (whether submitted to DPH or not): 14,287 Number of adult mosquito pools collected this season (submitted and unsubmitted): 95 Number of ovitrap collections this season, if any: 77 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: 95 How many pools do you submit weekly on average? 5.9

Number of traps in your service area **placed by MDPH**: 7 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)	10		
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	low
WNV	low	moderate

Co	m	me	nt	c.	
				Э.	

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):
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): 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:
Comments.
List your program's top 3 education/outreach activities for this year:
1. Coordinate with the Boston Public Health Commission (BPHC) to notify residents,
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. Provided mosquito larvae and information to the BPHC
outreach coordinator, who staffed a table at local events.
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
igspace 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 twaining of divertism value stoff we asked this years. One ample was attended the Newthern

List any training/education your staff received this year: One employee attended the Northeast Mosquito Control Association (NMCA) Field Day Workshop. Two employees attended the NMCA three day conference. One employee attended a pesticide resistance workshop ran by the Northeast Regional Center for Excellence in Vector-Bourne Diseases.

Please list the certifications and degrees held by your staff: Brian Farless, Cameron Sweeney, Michael Radley, and Kelly Palmer are Licensed Pesticide Applicators. Noah Turner and Allison Rittweger are Permitted Catch Basin Applicators. Brian Farless has a B.S. in Communication.

	•		tal Conservation/Ecology and Forestry. Michael ly Palmer has a B.S. in Biology.
Comment	s:		
INFORMA	TION TECHNOL	.OGY (IT)	
Aerial Databa Datalo GIS ma house use GPS ed Smartp Tablet Other	Photography ases ggers (monitor apping (Describ and for the he quipment bhones s/Toughbooks (please describ	licopter company the	e, etc.) og ESRI ArcGIS software for media purposes, in- nat handles our aerial applications)
Describe a	iny changes/en	hancements in IT fr	om the previous year:
Describe a	nny difficulties y	our program had w	rith IT software/equipment this year:
Comment	s:		
REVENUE	S & EXPENDITU	IRES	
Please ent		ed budgets for the	current, previous, and future fiscal years.
	Date of Fiscal Year	Approved Budget	Notes
Previous	2019	281,417.63	
Current	2020	289,860.16	
Future			
dollar amo	ount, for the cu		ne corresponding (cherry sheet) funding assessment provide a web link to this information):
Comment	s:		
SERVICE R	EQUESTS		

How many service requests did you receive this season? 26 How many were for larviciding? 11 How many were for adulticiding? 11

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? 12

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. Massachusetts Audubon, Boston Nature Center and Wildlife Sanctuary

SP

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? No

If yes, please list any corrective actions here: _____

GENERAL COMMENTS

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