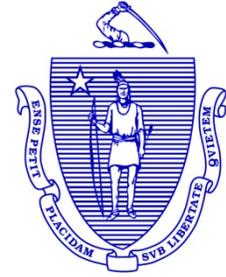


# MASSACHUSETTS MOSQUITO CONTROL

## ANNUAL OPERATIONS REPORT

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Year Report Covers: 2015      Date of Report: 01/14/2016

Project/District Name: **Nantucket Mosquito Control Project**

Address:      188 Madaket Road

City/Town:      Nantucket      Zip: 02554

Phone:      508-228-7244      Fax:

E-mail: nantucket@vdcil.net

**Report prepared by: *Emily Hibbard of Vector Disease Control International. Report reviewed and commented on by Kara Buzanoski, Nantucket Director of Public Works.***

NPDES permit no. **MAG87A139**

If you have a mission statement, please include it here: The goal of VDCI's Nantucket mosquito control program is to identify and treat mosquitoes in the most ecologically responsible manner through continuous monitoring techniques, source reduction, increased sanitation, and the use of lowest risk pesticides when necessary. All mosquito management decisions will be made after conducting surveillance and determining that mosquito populations have reached an action threshold. VDCI will implement a zero tolerance threshold and treat breeding populations in a most environmentally sound manner. Source reduction will be the primary control method and the application of larvicides will only be applied when source reduction is not an option. The approved larvicide used will be species specific and will not harm humans, animals, birds, other insects, fish, shellfish, plants or the environment. Aerial and truck spraying for adults will not be employed. Private property owners will be permitted to opt out of testing and treatment.

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### ORGANIZATION SETUP:

#### Commissioner names:

Kara Buzanoski

Sarah Oktay

Helen Weld

Mark Palmer

Charles Stott

Ken Giles

**Superintendent/Director name:** Kara Buzanoski

**Superintendent/Director contact phone number:** 508-228-7274

**Asst. Superintendent/Director name:** Charles Stott, Chair

**District/Project website:** <http://www.nantucket-ma.gov/240/Mosquito-Control-Advisory-Committee>

**Twitter handle:** @

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

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

Full time: Dr. Daniel Markowski, Emily Hibbard, Cristina Flores, Marc Bellaud

Part time:

Seasonal: Michael Lennon, Matt Salem

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 Emily Hibbard, Cristina Flores, Dan Markowski
- Biologist Marc Bellaud
- Educator Emily Hibbard
- Entomologist Dan Markowski, Emily Hibbard
- Facilities Emily Hibbard
- Information technology Emily Hibbard, Cristina Flores, Dan Markowski
- Laboratory Emily Hibbard
- Operations Emily Hibbard, Matt Salem, Michael Lennon
- Public relations Emily Hibbard, Cristina Flores, Dan Markowski
- 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)
- 3 Larval control equipment (list type) 2 backpack sprayers, 1 hand held spreader
- 0 ULV sprayers (list type)
- 1 Vehicles

Other (please be specific):

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

How many cities and towns are in your service area?\* 1

Alphabetical list: Nantucket

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):**

**Comments:** Link to Map of Service Area: <https://nantucketma.mapgeo.io>

### **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: The purpose of the larval mosquito control program is to manage mosquito populations in Nantucket County below the nuisance level and to protect public health.

What months is this program active? May-September

Describe the types of areas where you use this program: Areas treated are all authorized fresh water and salt water habitats found to contain mosquito larvae through the use of ground applied larvicides by hand and/or portable and backpack equipment.

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
Vectobac G	73049-10	2.5-10lbs/acre	backpack sprayer, hand-held spreader	Larvae	<input type="checkbox"/> Catch basins <input checked="" type="checkbox"/> Containers <input checked="" type="checkbox"/> Wetland <input type="checkbox"/> Other (please list):	36,379. oz
FourStar 180	83362-3	1 briquet/100sq. ft	hand application	Larvae	<input checked="" type="checkbox"/> Catch basins <input type="checkbox"/> Containers <input type="checkbox"/> Wetland <input type="checkbox"/> Other (please list):	3 briquets
				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):	

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
				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):	
				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: 1-10 larvae/dip
- Other (please describe):

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

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

<https://nantucketma.mapgeo.io>

### 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:

Describe the types of areas where you use this program:

What is the time frame for this program?

Describe the types of areas where you use this program:

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

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

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 \_\_\_\_\_ )

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

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: Source reduction efforts involve the removal, dumping, drilling holes, or filling of any containers that would create a larval habitat for mosquitoes including but not limited to trash/recycling bins, birdbaths, buckets, wheelbarrows, children’s pools, puddles, ditches, etc.

What time frame during the year is this method employed? May- September

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.

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

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

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

What time frame during the year is this method employed?

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

**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:

Ground ULV Adulticide:

Larvicide – catch basins:

Larvicide-hand/small area

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):

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 purpose is to sample adult mosquito populations to assess efficacy of the larval control measures and to monitor for the presence of arboviruses. All adults collected are counted and identified to species.

What months is this program active? May-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 <sub>2</sub>            | <input type="checkbox"/> Canopy |
| <input type="checkbox"/> CDC light traps                              | <input type="checkbox"/> Canopy |
| <input checked="" type="checkbox"/> CDC light traps w/CO <sub>2</sub> | <input type="checkbox"/> Canopy |
| <input 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 <sub>2</sub>             | <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:

These sites were determined based on historical mosquito collection data. Gravid Traps are placed in locations where there are high Culex populations and/or locations where mosquitoes pose a high threat to human health. CDC light traps with CO<sub>2</sub> are placed in a variety of habitats known to have high population densities. These locations include sites where larviciding is not permitted

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

- |   |   |
|---|---|
| <input type="checkbox"/> <i>Ae. albopictus</i>            | <input checked="" type="checkbox"/> <i>Cx. pipiens</i>    |
| <input checked="" type="checkbox"/> <i>Ae. cinereus</i>   | <input checked="" type="checkbox"/> <i>Cx. restuans</i>   |
| <input checked="" type="checkbox"/> <i>Ae. vexans</i>     | <input checked="" type="checkbox"/> <i>Cx. salinarius</i> |
| <input type="checkbox"/> <i>An. punctipennis</i>          | <input checked="" type="checkbox"/> <i>Cs. melanura</i>   |
| <input type="checkbox"/> <i>An. quadrimaculatus</i>       | <input type="checkbox"/> <i>Cs. morsitans</i>             |
| <input checked="" type="checkbox"/> <i>Cq. perturbans</i> | <input checked="" type="checkbox"/> <i>Oc. abserratus</i> |

*Oc. canadensis*

*Oc. cantator*

*Oc. j. japonicus*

*Oc. sollicitans*

*Oc. taeniorhynchus*

Other (please list):

*Oc. triseriatus*

*Oc. trivittatus*

*Ps. ferox*

*Ur. sapphirina*

Do you participate in the MDPH Arboviral Surveillance program? No

How many pools do you submit weekly on average? In 2015 a total of 25 pools (482 mosquitoes) were tested for WNV using PCR assays at VDCI's private laboratory and all results were negative. VDCI maintains a cold-chain shipping process in its laboratory testing policies.

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 type="checkbox"/> Eastern Equine Encephalitis (EEE)			
<input type="checkbox"/> West Nile Virus (WNV)			
<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		
WNV		

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 purpose of this program is to engage the public in personal personal protection methods as wells as education on mosquito biology and public health threats. VDCI corresponded regularly with the Nantucket Mosquito Control Advisory Board, the Madaket Conservation Foundation, the Wauwinet Landowners Association, the Board of Health, the Nantucket Civic League, and the Department of Public Works. VDCI conducts school based educational programs in the spring as well as an information tables throughout the season at community events.

What time frame during the year is this method employed? May-September

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): \_\_\_\_\_

Estimate the audience reached this year using the education/outreach methods above: 10,000  
Comments:

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

1. Educational presentation at Nantucket Middle School
2. Updates in Madaket Conservation Foundation's monthly newsletter
3. Table at Nantucket County Fair

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
- Another state agency (DCR, DPH, etc.)
- Environmental groups
- Industry

List any training/education your staff received this year:

Please list the certifications and degrees held by your staff:

**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:

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

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):

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

### SERVICE REQUESTS

How many service requests did you receive this season? 0

How many were for larviciding?

How many were for aducliding?

Was this an increase or decrease over last season? Decrease

**Comments:**

### EXCLUSIONS

How many exclusion requests did you receive this season? 0

Was this an increase or decrease over last season? Choose one

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. Nantucket Conservation Foundation Properties, TTOR properties

## 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:
- 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: VDCI annual operations and pesticide training workshop, Nashville TN
- 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? No

If yes, please explain:

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: \_\_\_\_\_