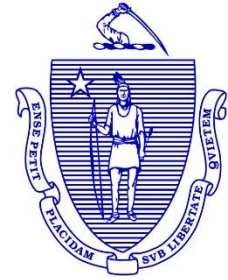


# MASSACHUSETTS MOSQUITO CONTROL

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## ANNUAL OPERATIONS REPORT



Year Report Covers: 2017      Date of Report: 00/09/2018

Project/District Name: **Berkshire County Mosquito Control Project**

Address:            19 Harris Street

City/Town:        Pittsfield, MA

Zip: 01201

Phone:            (413) 447-9808

Fax: (413) 447-1875

E-mail: berkmc@bcn.net

**Report prepared by: Christopher Horton**

NPDES permit no. **MAG 87A026**

If you have a mission statement, please include it here:

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### ORGANIZATION SETUP:

**Commissioner names:**

Wally Terrill

Chairman

James McGrath

Member

Ryan Grennan

Member

**Superintendent/Director name:** Christopher Horton

**Superintendent/Director contact phone number:** (413) 447-9808

**Asst. Superintendent/Director name:**

**District/Project website:** <http://>

**Twitter handle:** @

**Facebook page:** [http://www.facebook.com/Berkshire County Mosquito Control Project](http://www.facebook.com/BerkshireCountyMosquitoControlProject)

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

Full time: 1

Part time:

Seasonal: 3

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 Christopher Horton
- ☐ Biologist
- ☒ Educator Christopher Horton
- ☐ Entomologist
- ☒ Facilities Christopher Horton
- ☒ Information technology Christopher Horton
- ☒ Laboratory Christopher Horton, Daniel Dermody, Patrice Dermody, Mollie Dimise
- ☒ Operations Christopher Horton, Daniel Dermody, Patrice Dermody, Mollie Dimise
- ☒ Public relations Christopher Horton
- ☐ 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)
  - 3  ULV sprayers (list type) 2 London fog 10-20, 1 Becomist Electric
  - 5  Vehicles
- Other (please be specific):

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

How many cities and towns are in your service area?\* 8

Alphabetical list: Clarksburg, Hinsdale, Otis, Pittsfield, Richmond, Sheffield, Stockbridge, Tyringham, Sherwood Greens RMD (Becket, MA)

Were there any changes to your service area this year? Yes

Cities/towns added: Lanesboro, MA (proposed)

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: \_\_\_\_\_

#### **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 control mosquito populations before emergence.

What months is this program active? March thru October

Describe the types of areas where you use this program: Any areas in the Project area that are accessible for surveillance and support mosquito breeding (wetlands, drainage systems, containers etc.)

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	4-10 lbs./per acre	Hand	Larvae	<input checked="" type="checkbox"/> Catch basins <input checked="" type="checkbox"/> Containers <input checked="" type="checkbox"/> Wetland <input type="checkbox"/> Other (please list):	6,507.73 lbs
FourStar90	83362-3	1 briquet per basin	Hand	Larvae	<input checked="" type="checkbox"/> Catch basins <input type="checkbox"/> Containers <input type="checkbox"/> Wetland <input type="checkbox"/> Other (please list):	4608 briquet
				Larvae	<input type="checkbox"/> Catch basins <input type="checkbox"/> Containers <input type="checkbox"/> Wetland <input type="checkbox"/> Other (please list):	
				Larvae	<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 per dip  
☐ Other (please describe):

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

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

### **ADULT MOSQUITO CONTROL:**

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

Describe the purpose of this program: To reduce adult mosquito populations to a tolerable level and to reduce threat of mosquito borne disease.

Describe the types of areas where you use this program: Adult mosquito control is used in areas where adult mosquito populations have been determined to be in excess of nuisance levels or where surveillance has indicated a threat of mosquito borne disease.

What is the time frame for this program? June thru October

Describe the types of areas where you use this program: Generally areas accessible by road. Or areas accessed by portable application.

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):

<b>Product Name</b>	<b>EPA #</b>	<b>Application Rate(s)</b>	<b>Application Method</b>	<b>Total finished product applied</b>
Duet	1021-1795-8329	.65 oz. per acre	Truck mounted ULV sprayer	231.33 gal.
Flit 10EC	8329-67	17.5 oz per acre	Backpack Blower Mist	2.5 gal.
Mavrik	2724-478	8.0 oz per acre	Backpack Blower Mist	24 oz.

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

Application frequency is surveillance driven. Maximum amount applied not to exceed label instructions.

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 3-5 per minute)
- ☒ Light trap data (Describe trigger for application 250 mammal biting species)

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: We collect tires as a service to member towns. Usually in conjunction with neighborhood, community, or river cleanups.

What time frame during the year is this method employed? Year round

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: We provide member towns ditch maintenance on existing drainage.

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

Maintenance Type	Estimate of cumulative length of culverts, ditches, swales, etc. maintained (ft)
<input checked="" type="checkbox"/> Culvert cleaning	16,404 ft.
<input checked="" type="checkbox"/> Hand cleaning	
<input type="checkbox"/> Mechanized cleaning	
<input checked="" 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):	

**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: Mosquito trap counts, landing rates, and reports during larval surveillance are used to determine ground ULV efficacy.

Larvicide – catch basins: Product lifespan and weather conditions are used to determine catch basin efficacy. Catch basins are not monitored after treatment.

Larvicide-hand/small area Efficacy for small larval treatments is determined at during the next round of larval surveillance or through adult surveillance.

Open Marsh Water Management:

Source Reduction: Water management areas are monitored during surveillance to determine efficacy.



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):

**Efficacy is not recorded, however all surveillance and treatment is logged in the GIS system.**

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: To determine areas where mosquito populations exceed nuisance thresholds and to detect mosquitoes infected with WNV and EEE.

What months is this program active? June thru October

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 checked="" 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 checked="" type="checkbox"/> Ovitraps                                 |                                 |
| <input type="checkbox"/> Resting boxes                                       |                                 |
| <input checked="" type="checkbox"/> Other (please describe): Power aspirator |                                 |

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

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

Sites that have produced isolations of arbovirus are maintained as permanent trap sites.

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

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> <i>Ae. albopictus</i> | <input type="checkbox"/> <i>Ae. cinereus</i> |
|---|--|

- ☒ *Ae. vexans*  
☒ *An. punctipennis*  
☒ *An. quadrimaculatus*  
☒ *Cq. perturbans*  
☒ *Cx. pipiens*  
☒ *Cx. restuans*  
☐ *Cx. salinarius*  
☒ *Cs. melanura*  
☐ *Cs. morsitans*  
☐ *Oc. abserratus*  
☐ Other (please list):

- ☒ *Oc. canadensis*  
☐ *Oc. cantator*  
☒ *Oc. j. japonicus*  
☐ *Oc. sollicitans*  
☐ *Oc. taeniorhynchus*  
☐ *Oc. triseriatus*  
☒ *Oc. trivittatus*  
☒ *Ps. ferox*  
☐ *Ur. sapphirina*

Do you participate in the MDPH Arboviral Surveillance program? Yes  
 How many pools do you submit weekly on average? 35

Number of traps in your service area **placed by MDPH**: 4  
 Were these long-term trap sites or supplemental trapping sites? supplemental

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

Arbovirus	Positive Mosquito Pools	Equine Cases	Human Cases
<input type="checkbox"/> Eastern Equine Encephalitis (EEE)	0	0	0
<input checked="" type="checkbox"/> West Nile Virus (WNV)	30	0	0
<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	Low	Low
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: To engage our constituents in measures that can be used to prevent arbovirus infections in humans and animals and to reduce mosquito annoyance in member communities.

What time frame during the year is this method employed? Year round.

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: 40,000  
Comments:

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

1. Presented at "Third Thursday" events in downtown Pittsfield with DPH Bitelab June, July, August.
2. Presented at Pittsfield Farmers Market with Bitelab.
3. Met with Berkshire Beekeepers Association to discuss mosquito control and pollinator issues.

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 Participated jointly with Norfolk MCP, on Clarke Natular field trials.
- ☒ Another state agency (DCR, DPH, etc.) Coordinated the use of Bitelab with DPH in Western Massachusetts.
- ☒ Environmental groups Worked with MSPCA and local CONCOM to determine sites for beaver mitigation.
- ☒ Industry Research project initiated with Clark Mosquito Control used in conjunction with seasonal staff independent study curriculum

List any training/education your staff received this year: Staff participated applicator continuing education events and NMCA field day.

Please list the certifications and degrees held by your staff: Bachelors Biology/ Natural Science.

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

## INFORMATION TECHNOLOGY (IT)

Does your program use (check all that apply):

- ☐ Aerial Photography
- ☒ Databases
- ☐ Dataloggers (monitoring for temperature, etc.)
- ☒ GIS mapping (Describe: Sentinel GIS Larvicide, Adulticide, Service Request Modules.)
- ☒ GPS equipment
- ☒ Smartphones
- ☐ Tablets/Toughbooks
- ☐ Other (please describe):

Describe any changes/enhancements in IT from the previous year: We have added a smart phone.

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
2017	249,358
2018	253,031

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):

Clarksburg	\$4,523.
Hinsdale	\$12,055.
Otis	\$25,835.
Pittsfield	\$137,492.
Richmond	\$15,890.
Sheffield	\$25,641.
Stockbridge	\$ 34,345.
Tyringham	\$7,724.
SGRMD (Becket)	\$1,800.

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

## SERVICE REQUESTS

How many service requests did you receive this season? 147

How many were for larviciding?

How many were for adulticiding? 147

Was this an increase or decrease over last season? Increase

**Comments:**

## EXCLUSIONS

How many exclusion requests did you receive this season? 107

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. We have three Massachusetts Audubon Society properties that have requested spray exclusion.

## 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: We have ongoing relationships with sewage treatment facilities in the Project area.
- ☒ 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: We have worked with DPW departments to identify and manage areas of concern.
- ☐ 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: Much of our ditch maintenance work improved water quality and expanded fish access to areas that previously had restricted access or water quality below levels that would support fish life.

#### **CHILDREN AND FAMILIES PROTECTION ACT (CFPA)**

Is your program impacted by the CFPA? Yes

If yes, please explain: We have several schools and listed daycare facilities in our project area. These properties are maintained as no spray areas.

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: The only difficulty would be gaps in spray applications.

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: We are currently investigating development of a project website.