

MASSACHUSETTS MOSQUITO CONTROL ANNUAL OPERATIONS REPORT



2014 Year of Report

Date of Report: January 12, 2015

Project/District Name: **Central Mass. Mosquito Control Project**

Address: 111 Otis St.

City/Town: Northborough, MA

Zip: 01532

Phone: (508) 393-3055

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E-mail: cmmcp@cmmcp.org

Report prepared by: *Tim Deschamps*

NPDES permit no. **MAG87A023**

If you have a mission statement, please include it here: The objective of the Project is to attain an efficient, economic mosquito control operation which will provide the best results possible and be consistent with all ecological aspects and the best interests of the member towns.

Our goal is to reduce mosquito exposure to the public, and the potential for disease transmission by mosquitoes, by utilizing proven, sound mosquito control techniques. CMMCP believes the best way to accomplish this task is by practicing an Integrated Pest Management (IPM) approach as it relates to mosquito control in Massachusetts. IPM utilizes a variety of control techniques and evaluation procedures. Control efforts are undertaken only after surveillance data has been collected and analyzed. Training, experience and common sense dictate our response in any given situation.

It is our desire and responsibility for this Project to have the best mosquito control for the communities that we serve.

ORGANIZATION SETUP:

Please list your Commissioner's names:

Richard Day, Chair
Dean Mazzarella
Sam Telford

Pablo Noguera
Paul Mazzuchelli

Please list the Supt./Director's name: Tim Deschamps

Please list the Supt./Director's contact phone number: (508) 393-3055

Please list your Asst. Supt./Asst. Director's name: Tim McGlinchy

Do you have a website? Yes If yes, please list the web address here:
<http://www.cmmcp.org>

Please list your staffing levels for the year of this report:

Full time: 21

Part time:

Seasonal: 5

Other: (please describe)

Please break these down into the following areas:

Administrative staff: 2.5

Field staff: 18.5

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

Public relations Tim Deschamps, Curtis Best, Tim McGlinchy, Frank Cornine, Juliana Miller, plus all field staff

Information technology Tim Deschamps

Entomologist Curtis Best, Frank Cornine, Juliana Miller

Wetland Scientist Katrina Proctor

Biologist Frank Cornine

Education Curtis Best, Juliana Miller, Frank Cornine, Tim McGlinchy, Tim Deschamps

Laboratory Curtis Best, Juliana Miller, Frank Cornine

Operations Tim McGlinchy

Facilities Tim Welch

Other (please list) Office Manager, Karen Millet

For the year of this report, we maintained:

28 vehicles

2 modified wetland equipment (list type) Link Belt 1600, John Deere 350

16 ULV sprayers (list type) ProMist HD

5 Larval control equipment (list type) Muryama backpack sprayers

Other (please be specific):

Comments: _____

How many cities & towns in your service area? 40

Please list: Acton; Ashland; Auburn; Ayer; Berlin; Billerica; Blackstone; Boxborough; Boylston, Chelmsford; Clinton; Dracut; Devens; Fitchburg; Holliston; Hopedale; Hopkinton; Hudson; Lancaster; Leominster; Littleton; Lowell (effective July 1) Lunenburg; Marlborough; Milford; Millbury; Millville; Natick; Northborough; Northbridge; Sherborn; Shrewsbury; Southborough; Stow; Sturbridge; Tewksbury; Uxbridge (service ended June 30); Webster; Westborough; Westford; Wilmington

Any changes to your service area this year? Yes
Please list cities/towns added or removed Groton voted in Fall 2013, votes out Spring 2014 (no services rendered).

***Please attach a link to a map of your service area if possible.**
<http://www.cmmcp.org/area.htm>

INTEGRATED PEST MANAGEMENT (IPM):

DEFINITION: a comprehensive strategy of pest control whose major objective is to achieve desired levels of pest control in an environmentally responsible manner by combining multiple pest control measures to reduce the need for reliance on chemical pesticides; more specifically, a combination of pest controls which addresses conditions that support pests and may include, but is not limited to, the use of monitoring techniques to determine immediate and ongoing need for pest control, increased sanitation, physical barrier methods, the use of natural pest enemies and a judicious use of lowest risk pesticides when necessary.

Please check off all of the services that you currently provide to your member cities and towns as part of your IPM program; details of these services are in the next sections.

- Larval mosquito control
- Adult mosquito control
- Source reduction
- Ditch maintenance
- Open Marsh Water Management
- Adult mosquito surveillance
- Education, Outreach & Public education
- Research
- Other (please list):

Comments: _____

LARVAL MOSQUITO CONTROL:

Do you have a larval mosquito suppression program? Yes

If yes, please describe the purpose of this program: To control mosquitoes in the larval stage to reduce mosquito emergence and reduce adulticide use

Please give the time frame for this program: March - October

Describe the areas that this program is used: wetlands, catch basins, stormwater structures, containers (i.e. tires, etc.)

Do you use:

Ground applied (includes hand, portable and/or backpack)

Helicopter applications

Other (please list):

Comments: _____

What products do you use in – (please use product name and EPA#)

Wetlands: Vectobac G, EPA# 73049-10; Agnique MMF, EPA #53263-28; BVA2 Larvicide Oil, EPA #70589-1; FourStar Bti CRG EPA #85685-4; Altosid XR briquets, EPA #2724-421

Catch basins: Altosid WSP, EPA#2724-448; FourStar 45 day briquets, EPA#83362-3; Vectolex WSP, EPA#73049-20

Containers: Vectobac G, EPA#73049-10; Agnique MMF, EPA#53263-28; Vectolex WSP, EPA#73049-20

Other (please list):

Please list the rates of application for the areas listed above:

Wetlands: Vectobac G, 5-20lbs/acre; Agnique MMF, 0.2-1 gal./acre; BVA2 oil, 1-5 gal./acre; FourStar Bti CRG, 10lbs./acre; Altosid XR, 1 per 200sq.ft.

Catch basins: Altosid WSP, 1 packet/basin, FourStar 45 day briquets, one/basin

Containers: Vectobac G, 5-20lbs/acre; Agnique MMF, 0.2-1 gal./acre, Vectoloex WSP, one packet per 100sq. ft.

Other:

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

Larval dip counts – please list trigger for application: >1 larvae per 5 dips avg.

Historical records

Best professional judgment

Comments: _____

***Please attach a link to maps of treatment areas if possible. Basin application maps included as standard in town annual reports - check here:**

<http://www.cmmcp.org/about.htm>

ADULT MOSQUITO CONTROL:

Do you have an adult mosquito suppression program? Yes

If yes, please describe the purpose of this program: To supress populations of adult mosquitoes

Please give the time frame for this program: May - October as weather allows

Describe the areas that this program is used: streets, yards, recreational areas, schools (under the Children's Protection Act regulations)

Do you use:

- Truck applications**
- Portable applications**
- Aerial applications**
- Other (please list):**

Comments: _____

Please list the names of the products used with EPA #:

- 1). Anvil 10+10, EPA# 1021-1688-8329
- 2).
- 3).
- 4).
- 5).
- 6).

Please list your application rates for each product:

- 1). Anvil - 0.0012 lbs a.i./acre, 1.9 oz. per minute at 15mph (standard protocol)
- 2).
- 3).
- 4).
- 5).
- 6).

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

as often as necessary; at least 24 hours apart

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

- Landing rates - please list trigger for application >1 per minute*
- Light trap data - please list trigger for application >5 human-biting per night*
- Complaint calls - please list trigger for application >2 per square mile*
- Arbovirus data
- Best professional judgment

Comments: * recommendations from the mosquito control GEIR

***Please attach a link to maps of treatment areas if possible. n/a - street names listed in each annual report & on work reports given to local Board of Health**

SOURCE REDUCTION

Do you perform source reduction methods such as tire/container removal? Yes

If yes, please describe your program: The program consists of four components:

1. Clean-up of large waste tire dumping sites that we have databased and that require repeated larval control measures;
2. Residential waste tire removal (curb-side); and
3. Removal of waste tires discarded on the side of the road.
4. Coordination with community events

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

Comments: 2,646 tires (26.46 tons) recycled in 30 member communities in 2014

DITCH MAINTENANCE

Do you have a ditch maintenance program? Yes

Please check all that apply:

- Inland/freshwater
 Saltmarsh

If yes, please describe: Maintenance of existing ditch systems by removal of accumulated organic debris and other obstructions.

Please check off all that apply INLAND DITCH MAINTENANCE:

- Hand tools
 Mechanized equipment
 Other (please list):

Comments: _____

Please check off all that apply SALTMARSH DITCH MAINTENANCE:

- Hand cleaning
 Mechanized cleaning
 Other (please list):

Comments: no salt marsh in our service area

Please give an estimate of cumulative length of ditches maintained from the list above
INLAND:

Hand cleaning 212,999 ft.
Mechanized cleaning 2,930 ft.
Other (please list):

Comments: _____

Please give an estimate of cumulative length of ditches maintained from the list above
SALTMARSH:

Hand cleaning n/a
Mechanized cleaning n/a
Other (please list):

What time frame during the year is this method employed? n/a

Comments: _____

***Please attach a link to maps of ditch maintenance areas if possible. n/a**

MONITORING (Measures of Efficacy)

Please describe monitoring efforts for each of the following:

Aerial Larvicide – wetlands:	one dip station per 250 acres
Larvicide – catch basins:	
Larvicide-hand/small area checks in 2014	as many as time & manpower allow - 385
Ground ULV Adulticide: 2014	evaluation of vector control spraying in
Source Reduction:	as directed in the BMP
Open Marsh Water Management:	
Other (please list):	adverse effects for NPDES monitoring were done when technicians revisited a treated area - notations were made on their work reports (no adverse effects noted in 2014)

Provide or list standard steps, criterion, or protocols regarding the documentation of efficacy, (pre and post data) and resistance testing (if any): **2007: To test the efficacy of the CMMCP standard adulticide procedure, two sites were chosen per week for seven weeks with mosquito collections made for both sites every weekday evening. One of these sites was selected to be sprayed in the standard manner while the other is not sprayed and is used as the control site. Collections were made for each site Monday through Friday with the experimental site being**

adulthood on Wednesday evenings. Test sites were chosen from service requests received, while the control sites were selected from nearby areas that the residents were informed that their property would be treated as an exclusion area for that week. Of the seven weeks of trials, four were at residential sites, two at recreational locations, and one was at a transfer station. 2008: A local collection of recreational fields was selected as the site for this project based primarily on layout and dense barrier foliage, ideal for this type of application. The treatment and control sites were on separate fields towards the opposite ends of the complex. Once established, pre-application surveillance began at the two sites using model 512 CDC miniature light traps baited with CO₂ (500ml/min), along with model 1512 collection bottle rotators. These traps were placed in the recreational field away from the foliage so that in order for the host-seeking mosquitoes to reach the traps, they would have to travel through the treated foliage. Bottle assays (2007, 2008, 2009, 2010, 2011, 2012, 2013 & 2014): The bottle assay procedure used by CMMCP was modeled after the CDC method where a baseline for resistance was established using specimens collected from an area without any historical adulticide exposure. This data could then be plotted against data from mosquito populations in areas where our records show past insecticide usage has occurred. This will determine if any degree of resistance has developed to our current adulticide product.

OPEN MARSH WATER MANAGEMENT

Do you have an OMWM program? No

If yes, please describe:

Please give an estimate of total square feet or acreage:

What time frame during the year is this method employed?

Comments: _____

***Please attach a link to maps of OMWM areas if possible.**

ADULT MOSQUITO SURVEILLANCE

Do you have an adult mosquito surveillance program? Yes

Please list the number (not location) of MDPH traps in your service area: 2-5 depending on season & budget/personnel restrictions

Please check off all the types of surveillance that apply to your program:

Gravid traps

- | | |
|---|--|
| <input checked="" type="checkbox"/> Resting boxes | <input type="checkbox"/> Canopy |
| <input type="checkbox"/> CDC light traps | <input checked="" type="checkbox"/> Canopy |
| <input checked="" type="checkbox"/> CDC light traps w/CO ₂ | <input type="checkbox"/> Canopy |
| <input type="checkbox"/> ABC light traps | <input type="checkbox"/> Canopy |
| <input type="checkbox"/> ABC light traps w/CO ₂ | <input type="checkbox"/> Canopy |
| <input type="checkbox"/> NJ light traps | <input type="checkbox"/> Canopy |
| <input type="checkbox"/> NJ light traps w/CO ₂ | <input type="checkbox"/> Canopy |

Other (please describe):

Please describe the purpose of this program: Monitor for species density, population trends and virus isolations

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

If yes, please describe how you chose these long-term sites. Prior virus isolations, geography and collection data

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

- | | |
|--|---|
| <input type="checkbox"/> <i>Ae. albopictus</i> | <input type="checkbox"/> <i>Oc. cantator</i> |
| <input checked="" type="checkbox"/> <i>Ae. cinereus</i> | <input checked="" type="checkbox"/> <i>Oc. excrucians</i> |
| <input checked="" type="checkbox"/> <i>Ae. vexans</i> | <input checked="" type="checkbox"/> <i>Oc. fitchii</i> |
| <input checked="" type="checkbox"/> <i>An. punctipennis</i> | <input checked="" type="checkbox"/> <i>Oc. j. japonicus</i> |
| <input checked="" type="checkbox"/> <i>An. quadrimaculatus</i> | <input type="checkbox"/> <i>Oc. punctor</i> |
| <input checked="" type="checkbox"/> <i>Cq. perturbans</i> | <input type="checkbox"/> <i>Oc. sollicitans</i> |
| <input checked="" type="checkbox"/> <i>Cx. pipiens</i> | <input type="checkbox"/> <i>Oc. stimulans</i> |
| <input checked="" type="checkbox"/> <i>Cx. restuans</i> | <input checked="" type="checkbox"/> <i>Oc. taeniorhynchus</i> |
| <input type="checkbox"/> <i>Cx. salinarius</i> | <input checked="" type="checkbox"/> <i>Oc. triseriatus</i> |
| <input checked="" type="checkbox"/> <i>Cs. melanura</i> | <input checked="" type="checkbox"/> <i>Oc. trivittatus</i> |
| <input type="checkbox"/> <i>Cs. morsitans</i> | <input checked="" type="checkbox"/> <i>Ps. ferox</i> |
| <input checked="" type="checkbox"/> <i>Oc. abserratus</i> | <input checked="" type="checkbox"/> <i>Ur. sapphirina</i> |
| <input checked="" type="checkbox"/> <i>Oc. canadensis</i> | |

Other (please list):

Do you participate in the MDPH Arboviral Surveillance program? Yes

How many pools do you submit weekly on average? 50-100

Please check off the arboviruses found in your area in the past 5 years:

- West Nile Virus
- Eastern Equine Encephalitis
- Other Please list: Powassan, Chikungunya

Did the above listed diseases cause human or horse illnesses? Yes

Please explain: 1 isolation of WNV in Culex. EEE horse death in Westminster (non-member town). 1 isolation of EEE in Culex. No human cases of EEE or WNV.

At what arbovirus risk level did the year begin in your area? (If more than one please list)

WNV: low-moderate

EEE: low-moderate

At what arbovirus risk level did the year end in your area? (If more than one please list)

WNV: low -moderate

EEE: low-moderate (high near Westminster)

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

Comments: _____

***Please attach a link to maps of surveillance areas if possible. Mosquito trap locations included as standard in town annual reports - check here: <http://www.cmmcp.org/about.htm>**

EDUCATION, OUTREACH & PUBLIC RELATIONS

Do you have an education/public outreach program program? Yes

If yes, please describe: Letters sent out to all school Superintendents regarding our program each year. Program describes mosquito biology and ways to minimize mosquito breeding from containers. Letters also sent to all Senior Centers regarding new educational program geared towards seniors.

Please check off all that apply:

- School based program
- Website
- PR brochures/handouts
- Community events
- Science fairs
- Meeting presentations
- Other (please describe): health fairs, Arbor Day, Earth Day

Please give an estimate of attendance/participants in this program: 3,992+/-

Please list some events you participated in for the year of this report: too numerous to list, please call for details

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

Have you performed any research projects, efficacy, bottle assays, etc.? Yes

If yes, please elaborate on your research projects: Details on our website here: <http://www.cmmcp.org/research.htm>

Are you involved in any collaboration with academia, industry, environmental groups, etc.? Not at this time

If yes, please elaborate on your collaborations this past year:

Please provide a list of technical reports, white/grey papers, publication in journal or trade magazines, etc. Details on our website here: <http://www.cmmcp.org/research.htm>

Does your staff participate in educational opportunities? Yes

If yes, please list the training and education your staff received this year: Clarke seminar; NMCA meeting; CPR/AED training, internal training, beaver mgmt, excavator safety

Please list the certifications and degrees held by your staff: Curtis Best, B.A. in Entomology; Frank Cornine, B.A. in Biology completed Masters in Public Health; Juliana Miller, B.A. in Biology; Tim McGlinchy, MS non-profit mgmt. Katrina Proctor certifications in wetland science; Tim Deschamps, numerous licenses and certifications

Comments: _____

BIOLOGICAL CONTROL EFFORTS

Do you have a biological control program? No

If yes, please describe:

Is this program the introduction of mosquito predators or the enhancement of habitat for native predators?

Please check off all that apply:

- Predatory fish
- Predatory invertebrates
- Other (please describe):

What time frame during the year is this method employed?

Comments: _____

INFORMATION TECHNOLOGY

Does your program use (check all that applies):

- Computers
- GIS mapping
- GPS equipment
- Computer databases
- Aerial Photography
- Other (please describe):

Please describe your capabilities in these areas: Beginning to use GIS systems; all computers networked

Please describe your current GIS abilities: Intermediate

Give details if possible on your GIS abilities:

Please describe any changes/enhancements in this area from the previous year:
Addition of larval habitats and treatments in ArcView; Sentiel GIS being integrated

Comments: _____

REVENUES & EXPENDITURES

Please give a concise statement of revenues & expenditures for the prior fiscal year ending June 30.

\$1,986,933 \$237,681.48 surplus.

List each **member municipality along with the corresponding (cherry sheet) funding assessment** dollar amount for the prior fiscal year.

Comments: Please check this link: http://www.cmmcp.org/14cherry_sheets.htm

PESTICIDE USAGE

Please total your pesticide usage with information from your Mass. Pesticide Use Report, WNV Larvicide Use records and contracted pesticide applications. Applications methods include; hand/backpack, aerial, ULV, mistblower, other (please explain)

Product Name: Vectobac G
EPA Reg. #: 73049-10
Application method: hand/backpack
Targeted life stage: Larvae
Total amount of concentrate applied: 4,755lbs.
Comments: _____

Product Name: Vectobac G
EPA Reg. #: 73049-10
Application method: helicopter
Targeted life stage: Larvae
Total amount of concentrate applied: 10,010 lbs.
Comments: 3 towns - Billerica, Boxborough & Chelmsford

Product Name: Agnique MMF
EPA Reg. #: 53263-28
Application method: pump can
Targeted life stage: Larvae/pupae
Total amount of concentrate applied: 52.53 gal.
Comments: _____

Product Name: Altoside WSP
EPA Reg. #: 2724-448
Application method: hand
Targeted life stage: Larvae
Total amount of concentrate applied: 965.71 lbs.
Comments: catch basins only - 62,577 basins at 7 grams/basin

Product Name: FourStar Microbial day briquets
EPA Reg. #: 83362-3
Application method: hand
Targeted life stage: Larvae
Total amount of concentrate applied: 4,313 briquets
Comments: used as pre-emptive treatments in catch basins in prior year WNV areas. Also used on abandoned swimming pools.

Product Name: Vectolex WSP
EPA Reg. #: 73049-20
Application method: hand
Targeted life stage: Larvae
Total amount of concentrate applied: 670 grams.
Comments: abandoned swimming pools & catch basins

Product Name: Anvil 10+10
EPA Reg. #: 1021-1688-8329

Application method: truck (ulv)
Targeted life stage: Adult
Total amount of concentrate applied: 262 gal (10% solution)
Comments: _____

Product Name: Altosid XR briquets
EPA Reg. #: 2724-421
Application method: hand
Targeted life stage: Larvae
Total amount of concentrate applied: 4,778 briquets
Comments: _____

Product Name: BVA2 oil
EPA Reg. #: 70589-1
Application method: pump can
Targeted life stage: Larvae/pupae
Total amount of concentrate applied: 5 gal. 75 oz.
Comments: _____

LARGE AREA EXCLUSIONS

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. Only a few ACEC's, Sudbury Valley Trustees Property, and Assabet River National Refuge

SPECIAL PROJECTS

Do you perform any inspectional services such as inspections at sewage treatment facilities or review sub division plans? No

If yes, please elaborate

Do you work with DPW departments or other local or state officials to address stormwater systems, clogged culverts or other areas that you have identified as man-made mosquito problem areas? Yes

If yes, please elaborate: On a requested, as needed basis

Have you worked with these departments on long term solutions? No

If yes, please elaborate:

Did you conduct or participate in any cooperative research or restoration projects?

If yes, please elaborate:

Did you or participate on any **State/Regional/National workgroups or panels or attend any meeting pertaining to the above?**

If yes, please elaborate:

CHILDREN AND FAMILIES PROTECTION ACT

Is your program impacted by the Children and Families Protection Act? Yes

If yes, please explain: Incomplete compliance by schools regarding our products, including larval control products

If you have data on compliance with this Act and your program, please list here: approx. 85% compliance

If you had difficulties with implementation of your program due to this law, please elaborate here: We have sent letters and hand delivered information packets to the School Superintendents' offices for 9+ years now, compliance is slowly rising.

Comments:

NPDES SECTION

Did your program note any adverse incidents during this reporting period? No

If yes please list any corrective actions here: _____

GENERAL COMMENTS

Please list any comments not covered in this report: CMMCP was awarded an EPA Environmental Merit Award for pesticide reduction in our tire recycling program.