MASSACHUSETTS MOSQUITO CONTROL

ANNUAL OPERATIONS REPORT

Year Report Covers: 2018 Date of Report: 1/29/2019

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

Address: 111 Otis St.

City/Town: Northborough, MA Zip: 01532

Phone: (508) 393-3055 Fax: (508) 393-8492

E-mail: timothy.deschamps@mass.gov

Report prepared by: ***Tim Deschamps***

NPDES permit no. **MAG87B216**

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:

Commissioner names:

Richard Day, Chair
Paul Mazzuchelli
Sam Telford
Dean Mazzarella
Pablo Noguera

Superintendent/Director name: Timothy Deschamps
Superintendent/Director contact phone number: (508) 393-3055 ext. 107
Asst. Superintendent/Director name: Timothy McGlinchy

District/Project website: http://www.cmmcp.org

Twitter handle: @CMassMosquito
Facebook page: http://www.facebook.com/Central.Mass.Mosquito

Staffing levels for the year of this report:
Full time: 21
Part time:
Seasonal: 8
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 Tim Deschamps, Tim McGlinchy, Ellen Holmes
☒ Biologist Frank Cornine III & Dave Mullins
☒ Educator Tim Deschamps, Curtis Best & Frank Cornine III
☒ Entomologist Curtis Best, Frank Cornine III, Dave Mullins & John Briggs
☒ Facilities Tim Welch
☒ Information technology Tim Deschamps
☒ Laboratory Curtis Best
☒ Operations Tim McGlinchy
☒ Public relations Tim Deschamps
☒ Wetland scientist Katrina Proctor
☐ Other (please describe)

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

2 Modified wetland equipment (list type) Link Belt 1600, John Deere 350
4 Larval control equipment (list type) Muryama backpack sprayers
16 ULV sprayers (list type) ProMist HD
31 Vehicles
Other (please be specific): (1) heavy duty trailer, (1) light duty trailer

Comments: _____

How many cities and towns are in your service area?* 42
Alphabetical list: Acton; Ashland; Auburn; Ayer; Berlin; Billerica; Blackstone; Boxborough; Boylston, Chelmsford; Clinton; Dracut; Devens; Fitchburg; Gardner; Holliston; Hopedale; Hopkinton; Hudson; Lancaster; Leominster; Littleton; Lowell; Lunenburg; Marlborough; Milford; Millbury; Millville; Natick; Northborough; Northbridge; Sherborn; Shrewsbury; Southborough; Stow; Sturbridge; Tewksbury; Uxbridge (service ended June 30); Webster; Westborough; Westford; Wilmington; Worcester

Were there any changes to your service area this year? Yes
Cities/towns added: 1
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: To control mosquitoes in the larval stage to prevent mosquito emergence and reduce adulticide use

What months is this program active? March - October

Describe the types of areas where you use this program: Wetlands, catch basins, stormwater structures, containers (i.e. tires, etc.)

Do you use:
☒ **Ground application (hand, portable and/or backpack, etc.)**
☒ **Aerial applications**
☐ **Other (please list):**
Comments: Aerial applications of Bti in large wetlands in Billerica, Boxborough and Chelmsford under supplemental funding.

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	5-10 lbs./acre	hand/backpack	Larvae	☐ Catch basins ☐ Containers ☒ Wetland ☐ Other (please list):	2,367 lbs.
Aquabac 200G	62637-3	5 lbs./acre	helicopter	Larvae	☐ Catch basins ☐ Containers ☒ Wetland ☐ Other (please list):	10,200 lbs.
FourStar microbial briquets 45 day	83362-3	one briquet per basin	hand	Larvae	☒ Catch basins ☐ Containers ☐ Wetland ☐ Other (please list):	7,079 briquets
FourStar microbial briquets 180 day	83362-3	one briquet per 100 sq. ft.	hand	Larvae	☐ Catch basins ☐ Containers ☐ Wetland ☒ Other (please list): swimming pools	96 briquets
Altosid WSP	2724-448	one pouch per basin	hand	Larvae	☒ Catch basins ☐ Containers ☐ Wetland ☐ Other (please list):	90,374 pouches
VectoLex WSP	73049-20	one pouch per 50 sq. ft.	hand	Larvae	☒ Catch basins ☐ Containers ☐ Wetland ☒ Other (please list): swimming pools	2,012 pouches
BVA2 mosquito oil	70589-1	1 gal./acre	pump can	Larvae/pupae	☐ Catch basins ☒ Containers ☒ Wetland ☐ Other (please list):	17.81 gal.

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**
Natular G	8329-80	9 lbs./acre	hand	Larvae	☐ Catch basins ☐ Containers ☒ Wetland ☐ Other (please list):	25.5 lbs
Natular G30	8329-83	10 lbs./acre	hand	Larvae	☐ Catch basins ☐ Containers ☒ Wetland ☐ Other (please list):	110 lbs.
Aquabac 200G	62637-3	5 lbs./acre	hand	Larvae	☐ Catch basins ☐ Containers ☒ Wetland ☐ Other (please list):	52 lbs.
Altosid XR	2724-421	one briquet per basin	hand	Larvae	☒ Catch basins ☐ Containers ☐ Wetland ☐ Other (please list):	3,111 briquets
FourStar microbial briquets 90 day	83362-3	one briquet per basin	hand	Larvae	☒ Catch basins ☐ Containers ☐ Wetland ☐ Other (please list):	1,631 briquets
FourStar Bti CRG	85685-4	7.5-10 lbs./acre	hand	Larvae	☐ Catch basins ☒ Containers ☐ Wetland ☐ Other (please list):	2.77 lbs.
FourStar CRG	85685-2	7.5-10 lbs./acre	hand	Larvae	☐ Catch basins ☒ Containers ☐ Wetland ☐ Other (please list):	0.5 lbs.

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 larvae per 5 dips avg.
☐ Other (please describe):
Comments: _____

Please attach a map of your service area (or a website link to that map).
https://www.cmmcp.org/about-us/pages/service-area-2018

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 supress populations of adult mosquitoes and reduce risk from mosquitoes and mosquito-borne diseases

What is the time frame for this program? May through October as weather conditions allow

Describe the types of areas where you use this program: streets, yards, recreational areas, schools (only per the Children's Protection Act regulations)

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	0.0012 lbs a.i./acre	truck mounted ULV	128.76 gal.
Zenivex E4	2724-807	0.00175 lbs a.i./acre	truck mounted ULV	844.66 gal.

Please describe the maximum amounts or frequency used in a particular time frame such as season and areas
Less than one application at highest label rate in 24 hours

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

☒ Best professional judgment
☒ Complaint calls (Describe trigger for application: >2 per square mile*)
☒ Landing rates (Describe trigger for application >1 per minute*)
☒ Light trap data (Describe trigger for application >5 human-biting per night*)
Comments: * recommendations from the mosquito control GEIR

Please attach a map of your service area (or a website link to that map).
https://www.cmmcp.org/about-us/pages/service-area-2018

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: 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? all year round

Comments: 3,431 tires (34.31 tons) recycled in 35 member communities in 2018. Total to date, 28,972 tires (289.72 tons).

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: Maintenance of existing ditch systems by removal of accumulated organic debris and other obstructions.

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

Maintenance Type	**Estimate of cumulative length of culverts, ditches, swales, etc. maintained (ft)**
☒ Culvert cleaning	3,531
☒ Hand cleaning	204,285
☒ Mechanized cleaning	3,615
☐ Stream flow improvement	
☐ Other (please list):	

Comments: _____

For **saltmarsh ditch maintenance**, check off all that apply:

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

Comments: _____

What time frame during the year is this method employed? year round as weather and staffing permits

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:	one dip station per 250 acres with per and post collections
Ground ULV Adulticide:	light traps deployed pre and post application when possible
Larvicide – catch basins:	visual inspections when possible
Larvicide-hand/small area	recheck after applications when possible
Open Marsh Water Management:	
Source Reduction:	
Other (please list):	pesticide resistance

Provide or list standard steps, criterion, or protocols regarding the documentation of efficacy (pre and post data), and resistance testing (if any):
please see www.cmmcp.org/research.htm

Check the boxes below, indicating if your program has performed any of the following:

Research Project	Details
Bottle assays	X
Efficacy testing	X
Other: field trials	Natular G & Natular G30
Other: Ovitrap egg collections	Monitor for Ae. albopictus

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: Monitor for species density, population trends and virus isolations

What months is this program active? May through October

Check off all trap types currently in use by your program:

- ☐ ABC light traps
- ☐ ABC light traps w/CO_2
- ☒ CDC light traps
- ☒ CDC light traps w/CO_2
- ☒ Gravid traps
- ☒ Landing rate tests
- ☐ NJ light traps
- ☐ NJ light traps w/CO_2
- ☒ Ovitraps
- ☒ Resting boxes
- ☐ Other (please describe):

- ☐ Canopy
- ☐ Canopy
- ☐ Canopy
- ☐ Canopy
- ☐ Canopy
- ☐ Canopy

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:

- ☒ *Ae. albopictus*
- ☒ *Ae. cinereus*
- ☒ *Ae. vexans*
- ☒ *An. punctipennis*
- ☒ *An. quadrimaculatus*
- ☒ *Cq. perturbans*

☒ *Cx. pipiens*
☒ *Cx. restuans*
☐ *Cx. salinarius*
☒ *Cs. melanura*
☒ *Cs. morsitans*
☒ *Oc. abserratus*
☒ *Oc. canadensis*
☐ *Oc. cantator*
☐ Other (please list):

☒ *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? 100

Number of traps in your service area **placed by MDPH**: 0-5 depending on season & budget/personnel restrictions
Were these long-term trap sites or supplemental trapping sites? both

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)	159	0	5
☐ Other (please list):			

Comments: all vector control spraying coordinated with local Boards of Health

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	remote/low
WNV	remote/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: Educating the public about mosquitoes and their biology is an important aspect of the Project's program. We offer a comprehensive program geared towards school-aged children from Kindergarten to High School in member communities. This program is tailored to meet the needs of intended audience. The Project produces public relations handouts, and all member Town Halls are stocked with information on CMMCP, our programs, and how the homeowner can reduce mosquito populations in their own area.

Project staff is available to meet with civic organizations, town/city boards, and to participate in Health Fairs.

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): program aimed at senior citizens

Estimate the audience reached this year using the education/outreach methods above: 3,000
Comments:

List your program's top 3 education/outreach activities for this year:
1. _____
2. _____
3. _____

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.) MDPH - monitoring for Aedes albopictus
☐ Environmental groups
☐ Industry

List any training/education your staff received this year: NMCA annual meeting, UMASS pesticide education, hoist license continuing education

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

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: All trucks now have GIS based adulticide operations, all operations will go electronic by the end of 2019.

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
FY/18	$2,266,843
FY/17	$2,171,306

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): http://www.mass.gov/dor/local-officials/municipal-databank-and-local-aid-unit/cherry-sheets/2018-cherry-shets/

Comments: _____

SERVICE REQUESTS

How many service requests did you receive this season? 19,495
How many were for larviciding? 634
How many were for adulticiding? 18,861

Was this an increase or decrease over last season? Increase

Comments: significant WNV resulted in increased adulticide applications

EXCLUSIONS

How many exclusion requests did you receive this season? 540

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. SVT, Audubon areas

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:

- ☐ 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: Incomplete compliance by schools regarding our products, including larval control products

If you have data on compliance rates with the CFPA within your program area, please list here: approx. 85-90% compliance

Describe any difficulties you have had with the implementation of your program due to the CFPA, please elaborate here: We have sent letters and hand delivered information packets to the School Superintendents' offices for 10+ years now, compliance is slowly rising.

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: _____