MASSACHUSETTS MOSQUITO CONTROL

ANNUAL OPERATIONS REPORT

Year Report Covers: 2021 Date of Report: 00/18/2022

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

Address: 19 Harris Street

City/Town: Pittsfield, MA Zip: 01201

Phone: (413) 447-9808 Fax: (413) 447-7185

E-mail: chris@berkshiremosquito.org

Report prepared by: ***Christopher Horton***

NPDES permit no. **MAG87B219**

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

ORGANIZATION SETUP:

Commissioner names:

Wally Terrill	Chairman
James McGrath	Commissioner
Ryan Grennan	Commissioner

Superintendent/Director name: Christopher Horton
Superintendent/Director contact phone number: (413) 447-9808
Asst. Superintendent/Director name: N/A

District/Project website: http://berkshiremosquito.org
Twitter handle: @
Facebook page: http://www.facebook.com/Berkshire County Mosquito Control Project

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
☐ Entomologist
☒ Facilities Christopher Horton
☒ Information technology Christopher Horton
☒ Laboratory Christopher Horton, Heather Morris
☒ Operations Christopher Horton, Heather Morris, Michael Healey, Carl Sangree
☒ 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)
2 ULV sprayers (list type) London Fog XKE, Promist 25HD
6 Vehicles
Other (please be specific):

Comments: _____

How many cities and towns are in your service area?* 9
Alphabetical list: Clarksburg, Hinsdale, Lanesborough, Otis, Pittsfield, Richmond, Sheffield, Sherwood Greens RMD, Tyringham

Were there any changes to your service area this year? Yes
Cities/towns added:
Cities/towns removed: Stockbridge

***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: The larval control program is used to identify and control mosquito population in their most concentrated and vulnerable state.

What months is this program active? April thru October

Describe the types of areas where you use this program: Larval control is used in wetlands, floodplain, catch basins, drainage structures and artificial containers.

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	8-10 lbs. per acre	Hand	Larvae	☒ Catch basins ☒ Containers ☒ Wetland ☐ Other (please list):	1,495 lbs.
Natular G30	8329-83	20 lbs. per acre	Seed Spinner	Larvae	☐ Catch basins ☐ Containers ☒ Wetland ☐ Other (please list):	30 lbs.
Fourstar 90 Briquet	83362-3	1 per basin	hand	Larvae	☒ Catch basins ☐ Containers ☐ Wetland ☐ Other (please list):	3,632 Briquets
				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):	

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	☐ 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: Present
☐ Other (please describe):
Comments: _____

Please attach a map of your service area (or a website link to that map).
https://www.berkshiremosquito.org/

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: The purpose of the adult mosquito program is to reduce the presence of flying mosquitoes in the target area in order to check population increase and reduce the number of vector and potential vector mosquitoes.

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

Describe the types of areas where you use this program: Municipal roads, public and private property with appropriate access.

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**
DUET	1021-1795-8329	.62 oz. per acre	Truck Mounted ULV	174 gal.

Please describe the maximum amounts or frequency used in a particular time frame such as season and areas
Maximum application for DUET is 1 application per week. Application may be increased to label maximum in response to efficacy or public health concerns.

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

☒ Arbovirus data
☒ Best professional judgment
☒ Complaint calls (Describe trigger for application: Verification by landing rate or trap data)
☒ Landing rates (Describe trigger for application 3-5 per minute)
☒ Light trap data (Describe trigger for application 250/set)
Comments: _____

Please attach a map of your service area (or a website link to that map).
https://www.berkshiremosquito.org/

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: BCMCP collects tires for recycling at community events, neighborhood cleanup projects, and locations identified during MCP operations in member communities.

What time frame during the year is this method employed? Source reduction is practiced year round as weather permits.

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: BCMCP performs manual cleaning and maintenance of existing drainage systems and structures in member communities

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	120 ft.
☒ Hand cleaning	7,372 ft.
☐ Mechanized cleaning	
☐ Stream flow improvement	
☒ Other (please list): Beaver Mitigation	Restoration of historical flow at four beaver mitigation sites in member towns.

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?

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: Ground ULV is initiated as needed based on surveillance data.

Larvicide – catch basins: Catch basins are visually inspected as product lifespan expires.

Larvicide-hand/small area Larval surveillance is a continuous process throughout the season. Larval sites are inspected and treated as necessary several times during the course of the season.

Open Marsh Water Management:

Source Reduction: Source reduction sites are monitored throughout the year to verify function. The majority of ditch maintenance occurs after the end of the mosquito surveillance season.

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):
BCMCP relies on surveillance and trap data to determine efficacy. Trap counts, field observations, complaint calls and virus isolations initiate larval and adult mosquito control response. Subsequent surveillance and trap data indicates efficacy and directs future treatment decisions.

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

Research Project	**Details**
Bottle assays	
Efficacy testing	CDC efficacy testing of larval products. No resistance to Bti or L. sphaericus
Other: Field Trial Natular G30 and Vectomax FG	Field trial conducted with Benzon Research, MPAL and NEVBD to determine efficacy of Natular G30 and Vectomax FG in Cs. melanura habitat.
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 adult surveillance program provides data relevant to trends in the mosquito population as well as the presence of arboviruses in the mosquito population.

What months is this program active? June thru October

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

Trap Type	**Canopy?** (check box for yes)	**Number of traps** (leave blank if zero)
☐ ABC light trap	☐	
☐ ABC light trap w/CO_2	☐	
☐ CDC light trap	☐	
☒ CDC light trap w/CO_2	☐	5
☒ Gravid trap		15
☐ Landing rate test		
☐ NJ light trap	☐	
☐ NJ light trap w/CO_2	☐	
☐ Ovitrap		

☐ Resting box		
☒ Other (please describe): BG Counter with C02 and light		2
☐ Other (please describe):		
☐ Other (please describe):		

Do you maintain long-term trap sites in any of your areas? Yes
If yes, how many:
30

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*
☐ Others (please list):

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

Number of adult mosquitoes collected this season (whether submitted to DPH or not): 15,000+
Number of adult mosquito pools collected this season (submitted and unsubmitted): 840
Number of ovitrap collections this season, if any:
Any other trap collections of note (please describe): BG Counter data collected in real time (4 nights)

Do you participate in the MDPH Arboviral Surveillance program? Yes
Total number of adult mosquito pools submitted to DPH this past season: 298
How many pools do you submit weekly on average? 20

Number of traps in your service area **placed by MDPH**: 30
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**
☐ Eastern Equine Encephalitis (EEE)			
☒ West Nile Virus (WNV)	3		
☐ 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	Low

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: Outreach is used to increase the public understanding of relevant mosquito related issues and to engage the population in measures aimed at reducing risk of mosquito borne disease and improving quality of life 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: Several thousand.
Comments: Difficult to guage the number of viewers at televised events.

List your program's top 3 education/outreach activities for this year:
1. Pittsfield Board of Health review of municipal mosquito control.
2. Stockbridge Annual Town Meeting
3. Berkshire Community College STEM event.
4. _____

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.) NEVBD/MPAL
☐ Environmental groups
☐ Industry

List any training/education your staff received this year: Continuing Ed. credits AMCA Annual Meeting and NMCA Annual Meeting. NEVBD Annual Meeting

Please list the certifications and degrees held by your staff: Bachelor Biology, Bachelor Animal Science, Master Chemistry.

Comments: _____

INFORMATION TECHNOLOGY (IT)

Does your program use (check all that apply):
☐ Aerial Photography
☒ Databases
☒ Dataloggers (monitoring for temperature, etc.)
☒ GIS mapping (Describe: Fieldseeker (Frontier Precision))
☐ GPS equipment
☒ Smartphones
☒ Tablets/Toughbooks
☐ Other (please describe):

Describe any changes/enhancements in IT from the previous year: We are in the process of developing a system of remote, real time, mosquito surveillance.

Describe any difficulties your program had with IT software/equipment this year:

Comments: _____

REVENUES & EXPENDITURES

Please enter your approved budgets for the current, previous, and future fiscal years.

	Date of Fiscal Year	**Approved Budget**	**Notes**
Previous	2021	$295,582	
Current	2022	$259,219	Stockbridge Withdrawn
Future	2023	$266,373	

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):

Code	Town	District	SRB	Total
063	Clarksburg	$5,133	$220	$5,353
132	Hinsdale	$12,434	$532	$12,966
148	Lanesborough	$16,389	$702	$17,091
225	Otis	$25,331	$1,084	$26,415
236	Pittsfield	$147,143	$6,299	$153,442
249	Richmond	$16,957	$726	$17,683
267	Sheffield	$27,578	$1,181	$28,759
302	Tyringham	$8,254	$353	$8,607

Comments: Total $270,316.

SERVICE REQUESTS

How many service requests did you receive this season? 308
How many were for larviciding? 8
How many were for adulticiding? 308

Was this an increase or decrease over last season? Increase

Comments:

EXCLUSIONS

How many exclusion requests did you receive this season? 79

Was this an increase or decrease over last season? Decrease

Do you have large areas of pesticide exclusion, such as estimated or priority habitats? No

If yes, please explain, and attach maps or a web link if possible.

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 work with local wastewater facilities to address mosquito issues.

- ☒ 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 address or report any issues related to drainage in member towns. We also work with DPW departments to address mosquito breeding issues.

- ☒ Work with groups as described above on long term solutions?

  Describe: We coordinate with local DPW agencies to increase efficiency and focus of mosquito control operations. Mainly related to source reduction and catch basin treatments.

- ☒ Conduct or participate in any cooperative research or restoration projects?

  Describe: Completed field trials with NEVBD/MPAL of new larvicide products to determine efficacy in Cs. melanura habitat.

- ☒ Participate in any state/regional/national workgroups or panels, or attend any meeting pertaining to the above?

  Describe: AMCA Annual Meeting, EEE regional meeting, NMCA Annual Meeting NEVBD Annual Meeting and periodic research seminars.

- ☒ Work on any biological control projects, such as enhancement of habitat for native predators, release of predatory fish or invertebrates, etc.?

  Describe: Source reduction and ditch cleaning projects focus on improving water quality with the goal of increasing fish access to encourage natural predation of developing mosquito larvae.r

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 member towns.

If you have data on compliance rates with the CFPA within your program area, please list here: We have two schools that file IPM plans for mosquito control.

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: _____