

BERKSHIRE COUNTY MOSQUITO  
CONTROL PROJECT  
19 HARRIS ST.  
PITTSFIELD, MA. 01201



SERVICES PROVIDED TO THE  
CITY OF PITTSFIELD  
SHERWOOD GREENS ROAD  
MANAGEMENT DISTRICT  
AND THE TOWNS OF  
CLARKSBURG, HINSDALE,  
LANESBOROUGH, OTIS, RICHMOND,  
SHEFFIELD, TYRINGHAM  
  
2023 ANNUAL REPORT

## **PREFACE**

The 2023 annual report of the Berkshire County Mosquito Control Project has been prepared to provide the citizens and officials of member towns with information pertaining to the project's procedures and related activities.

As you read through this report you will notice that the project is committed to an Integrated Mosquito Management Program, IMM. This approach involves intervention in each stage of the mosquito life cycle using a variety of control techniques and evaluation procedures. When these techniques are properly implemented the process is safe and scientifically proven to reduce mosquito populations before they bite humans. No control effort is undertaken before surveillance data is collected and analyzed. Control decisions are made based on the exact need that exists at each specific site. Environmental considerations are paramount when prescribing various control techniques.

The BCMCP board of commissioners is appointed to represent the interests of each community. The commissioners meet with the superintendent on a regular basis to discuss and formulate policies and to provide their expertise in the operation of the project. The commissioners welcome your input, and we encourage you to contact us or visit the project headquarters.

Copies of this report are distributed to key officials in member towns. The report is also available to the public by contacting the project offices.

Our goal is to provide effective and environmentally sound mosquito control, reducing mosquito annoyance and the potential for the transmission of mosquito borne diseases. Our staff of well- trained, competent employees are known throughout member communities as individuals who take great pride in their work.

Thank You,

Wally Terrill, Chairman

## TABLE OF CONTENTS

Page 4	Organizational Setup
Page 6	Expenditures 2023
Page 7	The Target Pest
Page 8	Operational Overview
Page 11	Mosquito Management Around the Home
Page 12	2023 Mosquito Season Summary
Page 15	Materials Used
Page 17	Clarksburg 2023
Page 18	Hinsdale 2023
Page 19	Lanesborough 2023
Page 20	Otis 2023
Page 21	Pittsfield 2023
Page 22	Richmond 2023
Page 23	Sheffield 2023
Page 24	Sherwood Greens RMD 2023
Page 25	Tyringham 2023
Page 26	References

## **Organizational Setup**

The Berkshire County Mosquito Control Project was created under chapter 454 of the Acts of 1945 and operated under MGL chapter 252 Improvement of Lowland and Swamps.

The project is administered by the State Reclamation and Mosquito Control Board located in Boston, MA. Membership in the project is accomplished by a majority vote at either an annual or special town meeting, or by the majority vote of a city council. The project is funded by an annual assessment which is determined by a formula administered by the Division of Local Services (DOR) and is calculated by equalized valuations. An amount is withheld from the State Cherry Sheet Assessment for each member city or town each fiscal year and is placed in a trust account for the project.

The State Reclamation and Mosquito Control Board (SRMCB) is comprised of three members, one each from The Department of Environmental Protection DEP, Department of Conservation and Recreation (DCR), and the Department of Agricultural Resources (DAR). The representative appointed from the DAR is by default the chair of the SRMCB. The SRMCB is charged with the appointment of the Berkshire County Mosquito Control Project Board of Commissioners. This is a three-member board that meets quarterly at the project office. SRMCB contacts all member towns in the project area when there is an opening on the commission. Commissioners are appointed after an interview with SRMCB where qualifications are reviewed. Each commissioner is appointed to a three-year term. The composition of the board varies and represents a wide range of expertise. Current commissioners include members of boards of health, selectmen, former project superintendents, private citizens, mosquito control industry representatives, and DPW directors or commissioners. The quarterly meeting of the commission is an open public meeting. Notice of each meeting is sent to the office of the Secretary of State. The commission is charged with the appointment of the superintendent, who is charged with the day-to-day operations of the project.

At the quarterly meeting the commission approves the minutes of previous meetings, employee payrolls and all other expenditures. The superintendent outlines the status of operations at the project, and all relevant topics are brought to the attention of the commission for review, discussion and a vote if necessary. All discussions and votes are recorded in the meeting minutes and are considered the official record of the commission.

COMMONWEALTH OF MASSACHUSETTS  
STATE RECLAMATION AND MOSQUITO CONTROL BOARD  
251 CAUSEWAY ST. SUITE 500  
BOSTON, MA 02114  
SRMCB MEMBERS

ASHLEY RANDLE (DAR)

NANCY LIN (DEP)

JAMES STRAUB (DCR)

JENNIFER FORMAN-ORTH, ENVIRONMENTAL BIOLOGIST

ALEX GIANNANTONIO, PROJECTS ADMINISTRATOR

COMMISSIONERS OF BERKSHIRE COUNTY MCP

MR. RYAN GRENNAN  
PITTSFIELD, MA

MR. JAMES MCGRATH  
PITTSFIELD, MA

MR. WALLY TERRILL, CHAIRMAN  
OTIS, MA.

PROJECT SUPERINTENDENT

CHRISTOPHER J. HORTON

## EXPENDITURES 2023

ITEM	COST
PAYROLL	\$ 101,200
COMMISSION	\$ 1,200
RENT	\$ 29,316
HEAT/ELECTRIC	\$ 3,000
HEALTH INS./FRINGE BENEFITS	\$ 28,843
ADMIN CHARGEBACK/INURANCE	\$ 15,300
POSTAGE	\$ 300
AUTO PARTS / REPAIR	\$ 6,500
LAB/PROGRAM EQUIPMENT	\$ 830
FUEL VEHICLES/EQUIPMENT	\$ 4,000
VEHICLE (CAPITOL)	\$ 138,000
PESTICIDES	\$ 60,564
PROFESSIONAL ASSN.	\$ 150
PESTICIDE LICENSES	\$ 450
SOFTWARE / IT LICENSE	\$ 9,500
OFFICE SUPPLIES/PRINTING	\$ 1,000
DPH TESTING	\$ 9,000

## THE TARGET PEST

All mosquitoes found within the project boundaries belong to one of two groups:

-Floodwater mosquitoes lay their eggs on dry ground in areas that are subject to flooding. These eggs lay dormant until inundation when hatching is initiated. Hatching is synchronized and development from egg to blood-feeding adult can occur within 7 days when temperatures are high. Areas within the project that favor the development of floodwater mosquitoes include swamp and marsh margins, roadside ditches, vernal pools, and the floodplains of rivers and brooks. From a nuisance perspective, these are the most prolific and bothersome mosquitoes for member town residents.

-Permanent or semi-permanent water mosquitoes lay their eggs directly on the water surface, either singly or in a cluster called a raft. The developing population is continually being replenished resulting in the constant emergence of new adult mosquitoes. The most important species occurring in the project area are *Anopheles* and *Culex* mosquitoes, which are found in catch basins, stagnant polluted water areas that form the margins of lakes and ponds and in unmounted tires, discarded containers and plugged gutters. *Culex* mosquitoes are considered a major vector in the transmission of West Nile Virus.

## THE TACTICS

Operations of the Berkshire County Mosquito Project are modeled on the principles of Integrated Pest Management. Primary emphasis is placed on the decimation of target pests when they are in their most vulnerable and concentrated stage of development. In the case of mosquitoes this is the larval stage. Principal focus is placed on periodic surveys of the project area to locate permanent and temporary mosquito sources and then to routinely inspect these areas, treating only those sources found to hold mosquitoes. Additional efforts are made to eliminate sources through water management practices whenever possible. Finally, temporary relief can be provided through adult control measures in those areas where surveillance shows a need.

## **OPERATIONAL OVERVIEW**

### **1. Mapping**

An effective mapping system to aid personnel in locating mosquito breeding sites sources is crucial to any mosquito abatement operation. BCMCP implemented an automated mapping system in 2012 which uses ARC Geographic Information System technology to identify, measure, and record surveillance and Treatment data using handheld devices in the field. To date, over 600 breeding locations and 7,962 catch basins are mapped in member towns. Since 2013 all surveillance and treatment data has been recorded using this system. A program in the system automatically calculates application rates for each site based on the size of the site, the product being used, and the terrain type. Reports of work progress and treatment data can easily be generated from the project office.

Another benefit to the use of this system is that schedules for inspection and records of treatment are available in the field through handheld GPS units. Multiple technicians can work in the same zone efficiently. The GIS system Has been upgraded in 2020 to cloud-based technology.

### **2. Larval Control**

Once an accurate mapping system has been established a routine inspection and treatment program can be implemented to control mosquitoes while concentrated, relatively immobile and accessible in the larval stage. Larval control is a major component of the BCMCP program and requires approximately fifty percent of our manpower during the breeding season. We strive to inspect each potential breeding site on a seven-to-ten-day interval. Only those sites found to harbor mosquito larvae are treated. All sites inspected and treated are recorded each day and are on file at the project headquarters.

### **3. Adult Control**

To determine the necessity for adult control, the project utilizes a procedure known as the “landing count” to determine the number of adult mosquitoes present at a particular location. (Adult mosquitoes are counted over a fixed interval at a specific location.) Placement of mosquito traps in areas that have the potential to produce large mosquito populations provide general population trends and are also a source of species information. Service requests from residents in member towns are also a valuable tool in determining where



adult mosquito control may be necessary. The decisions to initiate adult control measures are based on information collected from all these sources. Adult mosquito control is a vital component of Integrated Mosquito Management and accounts for approximately thirty percent of our manpower during the breeding season.

When WNV or EEE are detected in a particular area, an immediate adulticide response is recommended. Follow up surveillance measures and continued adulticide applications are used to limit virus amplification and exposure of human populations to viral agents. When virus is detected landing counts are curtailed and trapping data is used to evaluate mosquito populations.

#### 4. Source Reduction

Source reduction involves habitat manipulation to eliminate or modify places that support adult mosquitoes. When source reduction methods are used appropriately they provide the most effective and long-lasting mosquito control of all methods of management. In addition, source reduction is the least expensive method in the long term despite higher initial costs because it need not be repeated frequently. Source reduction usually consists of maintenance of existing drainage systems to restore traditional flow patterns by removing accumulated debris and obstructions. All work performed for source reduction by the project is done in a manner designed to cause minimal disturbance to the existing environment. We use only hand tools and all work is done in compliance to established best management practices. Source reduction projects are usually carried out in the fall months after the mosquito breeding season has ended.

#### 5. Arbovirus Surveillance

The mosquito is considered the most important disease carrying vector on earth. Until the early part of the twentieth century little was known about the existence of mosquito borne diseases and their effects on human populations. Fortunately, most of these diseases are not prevalent in our area. There are however, two diseases that have become cause for concern in Massachusetts, and more recently in Berkshire County; West Nile Virus, WNV and Eastern Equine Encephalitis, EEE. The Massachusetts Department of Public Health administers a statewide program to monitor mosquito populations for the presence of WNV and EEE, establish risk levels for local communities and disseminate information to the public and local boards of health concerning mosquito borne disease. The BCMCP participated in this program in 2023. The arbovirus surveillance season began on May 30, 2023 and continued to October 20, 2023 in Berkshire County. Each week 15 to 20 gravid mosquito traps and 10 to 12 CO<sub>2</sub> baited light traps were

deployed at locations throughout member towns to collect mosquito samples that were prepared and shipped to MDPH labs for analysis. A total of 589 samples were tested from Berkshire County in 2023. There were 15 isolations of West Nile Virus and no isolations of Eastern Equine Encephalitis in Berkshire County in 2023.

Both West Nile Virus and Eastern Equine Encephalitis follow cyclical Patterns of prevalence. Surveillance data for 2023 suggests that Berkshire County is in a quiet interval in this cycle although West Nile Virus activity showed significant increase from 2022. The 2017 and 2018 seasons showed record levels of WNV in the environment. Continued vigilance in the areas of surveillance and response are necessary to ensure that when WNV comes into the community it does not amplify which can lead to human or animal infection. Additional trapping to target *Culiseta melanura* and *Coquillettidia perturbans* became a priority in 2014 after Eastern Equine Encephalitis was found in both of these species in 2013. This is of particular concern in that EEE has been found in *C. perturbans* which is considered a bridge vector for EEE and could spread the disease to mammals (humans). Surveillance will remain a high priority for 2024 and future years to identify the presence of mosquito borne disease and to effectively target potential disease vectors.

## 6. Public Outreach

The goal of public outreach is to increase understanding and cooperation among constituents. The goal of Integrated Mosquito Management (IMM) is to improve the health and quality of life of our human community. It is important that as many people as possible know the basics of mosquito biology, the diseases that mosquitoes can potentially carry and transmit, and the methods and materials that we use to control them. Our challenge is to have the public understand that IMM is a unified process that is scientifically developed to ensure adequate results while simultaneously protecting the safety of humans and the natural world around us. We use every opportunity available, such as media interviews, public events, or even personal contacts made while in the field to describe our activities.

## **MOSQUITO MANAGEMENT AROUND THE HOME**

There are several ways that homeowners can minimize the number of biting mosquitoes around the house. One of the easiest ways to manage mosquitoes is to eliminate standing water where mosquitoes can lay eggs.

Some common breeding sites are:

-Artificial containers (pails, paint cans, discarded tires, open cesspools or septic tanks, boats, pool covers, bird baths, and wading pools)

Without standing water mosquitoes cannot reproduce. Old containers should be disposed of or recycled. Swimming pool filter systems should be maintained and in good working order. Openings to water sources can be sealed as in rain barrels or septic tanks. Rotten tree holes or stumps should be filled with sand. Old tires should be disposed of or stacked and covered to prevent rainwater from collecting inside. Ornamental pools and aquatic gardens can also breed mosquitoes if the water is allowed to stagnate. Water should be changed regularly, or an aerator should be installed. Biological control can be achieved by stocking fish that will eat mosquito larvae.

There are also ways that the homeowner can minimize the annoyance of adult mosquitoes. Mosquitoes must rest in shady calm areas and will avoid breezy or sunny locations. Removing trees and mowing tall grass will reduce the number of places where mosquitoes can rest. Mosquitoes are most active in the hours around dusk and dawn. Simply avoiding outdoor activity during these times of peak activity can minimize contact with mosquitoes.

For more information on mosquito control techniques or the products used by the Berkshire County Mosquito Control Project please call or email us.

Berkshire County Mosquito Control Project  
(413) 447-9808  
[chris@berkshiremosquito.org](mailto:chris@berkshiremosquito.org)

## 2023 MOSQUITO SEASON SUMMARY

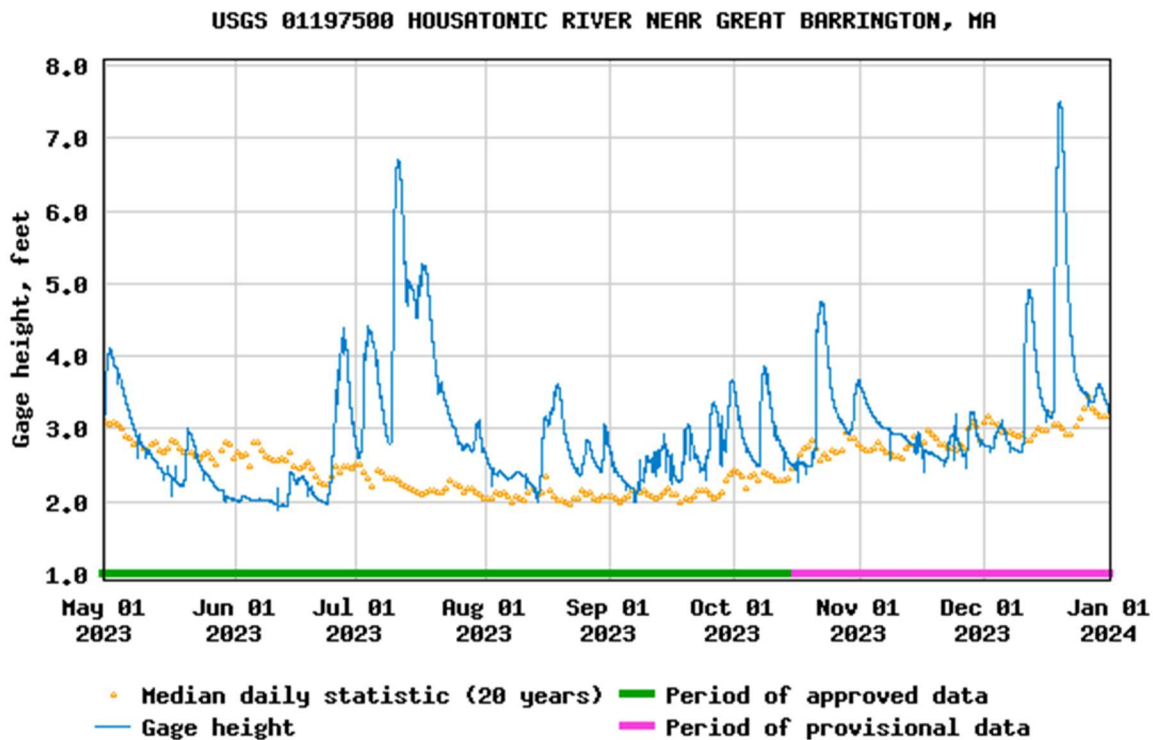


Figure 1. USGS 01197500 Housatonic River Near Great Barrington

The Berkshire County Mosquito Control Project began operations in early April 2023 with surveillance of over 500 known breeding sites in the member towns. Figure 1 clearly represents the overall pattern of precipitation for the 2023 season. This graph represents measurements of river flow on the Housatonic River at Great Barrington. (The dotted line indicates the median. When the Gage height in Figure 1 exceeds 5 ft. the Housatonic begins to flood the low fields in Great Barrington and Sheffield.) The season began with average precipitation and above average soil moisture. Spring larval treatments were able to address much of a robust spring brood. *Culex* populations increased gradually through June and the seasonal emergence of *Coquilleltidia perturbans* was observed in late June and was of average. Persistent precipitation events began during the last week of June and continued throughout the month of July. More than eleven inches of rainfall was recorded. Significant surface water was observed in floodplains and woodland pools after over 2.5 inches of rain fell on July 19<sup>th</sup>. Additional rain events bolstered this surface water which resulted in large hatches of *Aedes vexans*, *Ochlerotatus trivittatus* and *Psorofora ferox*. All species benefitted from this expansive

breeding habitat and this was reflected in the diverse collections from CO<sub>2</sub> baited light traps. Larval control continued throughout the season in wetlands, catch basins, and man-made drainage structures that are known to breed mosquitoes. Mosquito abundance remained high through August and soils remained at or near saturation. *Culex pipiens/restuans* remained numerous until the second week of September when seasonal decline was noted.

Surveillance trapping for West Nile Virus and Eastern Equine Encephalitis began May 30<sup>th</sup> 2023. All trap locations that have a history of isolations for WNV or EEE are considered permanent trap locations with samples being tested weekly. Gravid traps which capture egg bearing mosquitoes are used to sample *Culex pipiens/restuans* which are vectors for WNV, while CO<sub>2</sub> baited light traps are used to collect *Culiseta melanura* which is known to be the species responsible for EEE transmission in birds. These traps are also capable of capturing other species of mosquito that are known to be vectors of EEE. Following years of record levels of WNV and EEE in Massachusetts, efforts focused on collecting and testing as many possible vector mosquitoes as possible. BCMCP staff trapped and submitted 589 samples from member towns during 2023. Berkshire County saw fifteen mosquito isolations of WNV in 2023 in the towns Otis, Pittsfield, Richmond, Sheffield and Tyringham. There were no isolations of EEE in Berkshire County in 2023.

The events related to the EEE outbreak of 2019 demonstrate the importance of an effective system of surveillance and control to protect populations from mosquito borne disease. This disease threat was detected early, determined to be critical and a rapid commensurate response of communication and vector control was initiated to protect public health. The 2018 mosquito season saw the highest threat levels of WNV ever seen in Massachusetts and 2019 likely saw highest threat levels of EEE ever seen. It is important that we remain prepared for future challenges.

Source reduction is a term used to describe work performed in wetlands and drainage systems to reduce breeding habitat for mosquitoes. The process involves cleaning and maintenance of ditches and waterways to prevent flooding and backups which would favor mosquito breeding. This process improves water quality, increasing the distribution of natural predators, (fish) which feed on larvae and provide natural and long-term control. Mosquito control districts in the state of Massachusetts have statutory authority to work in wetland environments through exemptions granted through the Wetlands Protection Act. The Berkshire County Mosquito Control Project does, however, consult with the Natural Heritage and Endangered Species Program when work is performed in high priority Natural Heritage areas. All work is performed using hand tools according to accepted “best management practices” which are designed to accomplish project goals while minimizing disturbance to the environment. BCMCP

Currently maintains over 17,000 linear feet of ditch to reduce breeding habitat. In addition, Berkshire County Mosquito Control Project worked with cities and towns in



Figure 2. Native Brook Trout

(Morris)

2023 at several locations where beaver activity had caused drainage problems by restoring beaver exclusion devices, removing debris and restoring water flow.

Education and outreach are essential to the mission of mosquito control especially when mosquito borne disease is present. Employees of the Berkshire County Mosquito Control Project are always encouraged to interact with the public whenever possible to explain our work, to describe our methods, the products we use and explain how they work.

## MATERIALS USED

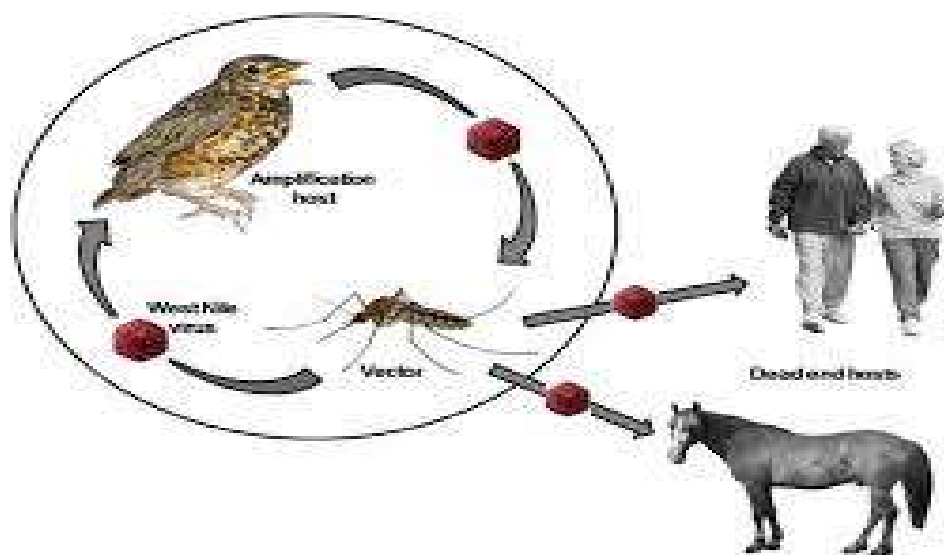


Figure 3. The Enzootic cycle of West Nile Virus

The most effective way to deal with mosquitoes is to control the population in the larval stages, before they become flying adults that cause annoyance and can possibly spread disease. For larval control the Berkshire County Mosquito Control Project uses three organic larvicides, Vectobac, which is a *formulation* of the bacteria *Bacillus thuringiensis*, is extremely effective against larval populations. The product is introduced directly into the water column where it is ingested by mosquito larvae. The active ingredient interrupts the gut lining of the mosquito larvae causing them to stop feeding and die within hours. This product does not affect species other than mosquitoes, black flies, and midges and does not accumulate in the environment. Vectomax, which is a formulation of *Bacillus thuringiensis* and *Bacillus sphaericus*, uses a similar mode of action. The product can have a residual effect for a time when successive generations of larvae ingest toxins contained in decaying larvae from the initial treatment. Natular is a formulation of *Saccharopolyspora spinosa*, a naturally occurring soil bacteria. This product uses a different mode of action which causes paralysis in the mosquito larvae. The formulation has a time release effect which provides up to thirty days of larval control. Another product which became available recently is Fourstar CRG which is a new formulation of Bti which is also effective for 30 days of larval control. For catch

basin larval treatments in 2023, BCMCP used Fourstar 90-day Bti briquets which provide a time release application of Bti. BCMCP also used Metalarv XRP packets with Methoprene offering 90 days of protection with an alternate active ingredient which prevents metamorphosis of larvae and pupae.

In 2023 the Berkshire County Mosquito Control Project applied 805 lbs. of Vectobac G, 370 lbs. of Vectomax FG and 191 lbs. Natular G30 and 130.9 lbs. Fourstar CRG to 149.7 acres of larval habitat in member towns. Larval control continues throughout the season and breeding areas are treated each time surveillance indicates larval development. BCMCP treated a total of 5,788 catch basins in the months of June, July, and August.

Unfortunately, all mosquito breeding sites are not able to be treated because of either size or accessibility issues. From time to time the populations of adult mosquitoes present a public health risk or increase above tolerable levels and adult treatments become necessary. The tolerance of individuals to mosquito annoyance varies throughout the population but research has shown that if from three to five mosquitoes land on a person at a particular location over the course of one minute intervention is warranted. When surveillance indicates this condition is present, adulticide applications are in order. For adult mosquito control the Berkshire County Mosquito Control Project uses Duet which is a formulation of Prallethrin and Sumithrin which are synthetic pyrethroids. These chemicals are synthetic versions of the natural insecticides found in chrysanthemum flowers. Duet is an advanced product that has been shown to be extremely effective at controlling adult mosquito population across the globe. The combination of Prallethrin and Sumithrin cause a condition known as “benign agitation” in which mosquitoes are drawn from their resting state allowing greater control of the population. In addition to Duet, BCMCP also used Merus 3.0 in certain areas during the 2023 season. This product is an organically certified product made from botanical extracts and is water based. Our experience with Merus 3.0 indicates that it is effective and can provide adult mosquito control in areas that require organic certification. These products kill mosquitoes by interrupting neural transmissions causing paralysis. These products are chosen because of their very low toxicity to humans and mammals and rapid breakdown in the environment. These products do have the potential, however, to impact non target organisms such as fish and honeybees. To prevent adverse effects on the environment and species other than mosquitoes, applications are made only when necessary and strictly according to label instructions prescribed by the Environmental Protection Agency. These label instructions provide wide margins of safety for humans and the environment. The project applied 121 gal. Duet in 2023 over an area of 24,980 acres. An additional 3,250 Acres were treated with 17.6 gal. Merus 3.0.



## CLARKSBURG 2023

Crews from the Berkshire County Mosquito Control Project began larval surveillance in The Town of Clarksburg on 5/11/23 on the known breeding areas in the town. A total of 162 catch basins were treated in 2023. Arbovirus surveillance began on 6/5/23 and was concluded on 10/5/23.

.

The following materials were used for larval control.

VECTOMAX FG	16.4 POUNDS	1.7 ACRES
NATULAR G30	2 POUNDS	.2 ACRES
FOURSTAR 90 BRIQUETS	162 BRIQUETS	

Larval Control:

BREEDING SITE INSPECTIONS	57	TREATMENTS	11
CATCH BASIN INSPECTIONS	162	TREATMENTS	162

DPH Arbovirus Surveillance:

POOLS SUBMITTED	48	NO ISOLATIONS WNV OR EEE
-----------------	----	--------------------------

## HINSDALE 2023

Crews from the Berkshire County Mosquito Control Project began larval surveillance on 6/7/23. Arbovirus surveillance began on 6/12/23 and was concluded on 9/20/23.

The following materials were used for larval control.

NATULAR G30	5 LBS.	.5 ACRES
-------------	--------	----------

Larval Control:

BREEDING SITE INSPECTIONS	22	TREATMENTS	2
---------------------------	----	------------	---

DPH Arbovirus Surveillance:

POOLS SUBMITTED	20	NO ISOLATIONS WNV OR EEE
-----------------	----	--------------------------

The following materials were used for adult control between 7/7/23 AND 8/4/23.

DUET	6.0 GAL.	1,310 ACRES
------	----------	-------------

## LANESBOROUGH 2023

Crews from the Berkshire County Mosquito Control Project began larval surveillance on 5/11/23. A total of 487 catch basins were treated during the breeding season. Arbovirus surveillance began in the town on 6/5/23 and was concluded on 9/20/23.

The following materials were used for larval control.

VECTOBAC G (BTI)	2 LBS.	.2 ACRES
NATULAR G30	3.6 LBS.	.4 ACRES
VECTOMAX FG	21.0 LBS.	2.0 ACRES
FOURSTAR 90 BRIQUETS (CATCH BASIN)		68 BRIQUETS
METALARV XRP (CATCH BASIN)		419 PACKETS

Larval Control:

BREEDING SITE INSPECTIONS	16	TREATMENTS	9
CATCH BASIN INSPECTIONS	487	TREATMENTS	487

DPH Arbovirus Surveillance:

POOLS SUBMITTED	53	NO ISOLATIONS WNV OR EEE
-----------------	----	--------------------------

## OTIS 2022

Crews from the Berkshire County Mosquito Control Project began larval surveillance on 5/8/23. Arbovirus surveillance began 6/5/23 and concluded 9/20/23.

The following materials were used for larval control.

VECTOBAC G (BTI)	22.5 LBS.	2.3 ACRES
NATULAR G30	32.0 LBS.	3.2 ACRES

Larval Control:

BREEDING SITE INSPECTIONS	35	TREATMENTS	13
---------------------------	----	------------	----

DPH Arbovirus Surveillance:

POOLS SUBMITTED	44	WNV ISOLATION (MOSQUITO)	8/24/23
		NO ISOLATION	EEE

The following materials were used for adult control between 6/21/23 and 8/30/23.

DUET	21 GAL.	4,945 ACRES
------	---------	-------------

## PITTSFIELD 2023

Crews began surveillance on the known breeding sites in the city on 4/3/23. A total of 5,780 catch basin were treated with larvicide during the breeding season. Arbovirus surveillance began on 5/30/23 and concluded on 10/5/23.

The following materials were used for Larval Control.

VECTOBAC G (BTI)	544.4 LBS.	55 ACRES
VECTOMAX FG	240.8 LBS.	24 ACRES
NATULAR G30	50 LBS.	5 ACRES
FOURSTAR CRG	3.6 LBS.	.4 ACRES

FOURSTAR 90 (CATCH BASIN)	5,780 BRIQUETS
---------------------------	----------------

Larval Control:

BREEDING SITE INSPECTIONS	94	TREATMENTS	51
CATCH BASIN INSPECTIONS	6,412	TREATMENTS	5,780

DPH Arbovirus Surveillance:

POOLS SUBMITTED	280	WNV ISOLATIONS (MOSQUITO)
		7/21, 7/28, 8/10, 8/17, 9/7(2), 9/21
		NO ISOLATION EEE

## RICHMOND 2023

Crews began larval surveillance in Richmond 5/26/23. Arbovirus surveillance began on 6/13/23 and concluded on 9/14/23.

The following materials were used for larval control.

FOURSTAR CRG	26.2	2.6 ACRES
NATULAR G30	7.0	.7 ACRES
VECTOMAX FG	.8	.1 ACRES

Larval Control:

BREEDING SITE INSPECTIONS	8	TREATMENTS	6
---------------------------	---	------------	---

DPH Arbovirus Surveillance:

POOLS SUBMITTED	41	WNV ISOLATIONS(MOSQUITO):
		8/17, 9/7
		NO ISOLATION EEE

The following materials were used for adult control on 8/21/23.

DUET	3.3 GAL.	739 ACRES
------	----------	-----------

## SHEFFIELD 2023

Crews from the Berkshire County Mosquito Control Project began larval surveillance in the Town of Sheffield on 4/4/23. Arbovirus surveillance began on 5/31/23 and was completed on 10/6/23.

The following materials were used for larval control:

VECTOBAC G (BTI)	200 LBS.	20.7 ACRES
FOURSTAR CRG	101.3 LBS.	9.9 ACRES
VECTOMAX FG	42.5 LBS.	4.3 ACRES
NATULAR G30	80 LBS.	12.4 ACRES

Larval Control:

BREEDING SITE INSPECTIONS	28	TREATMENTS	23
---------------------------	----	------------	----

MAPH Arbovirus Surveillance:

POOLS SUBMITTED	62	WNV ISOLATIONS (MOSQUITO):
		8/31(2), 9/7, 10/6
		NO ISOLATION EEE

The following materials were used for adult control from 6/15/23 to 8/31/23.

DUET	91.7 GAL.	18,932 ACRES
MERUS 3.0	17.6 GAL.	3 633 ACRES

## SHERWOOD GREENS ROAD MANAGEMENT DISTRICT 2023

Berkshire County Mosquito Control Project began larval surveillance at Sherwood Greens Road Management District in Becket, MA on 5/11/23. Arbovirus surveillance began on 6/12/23 and concluded on 8/23/23.

The following materials were used for larval control:

VECTOBAC G	36 LBS.	3.7 ACRES
NATULAR G30	12 LBS.	2.5 ACRES
VECTOMAX FG	6.8 LBS.	.7 ACRES

Larval control:

BREEDING SITE INSPECTIONS	56	TREATMENTS 25
---------------------------	----	---------------

DPH Arbovirus Surveillance:

POOLS SUBMITTED	32	NO ISOLATIONS WNV OR EEE
-----------------	----	--------------------------



## TYRINGHAM 2023

Crews from the Berkshire County Mosquito Control Project began larval surveillance in the town of Tyringham on 6/12/23. A total of 5 catch basins were treated during the breeding season. Arbovirus surveillance began on 6/12/23 and was completed on 9/20/23.

The following materials were used for larval control:

VECTOMAX FG	42LBS.	4.2 ACRES
FOURSTAR 90 BRIQUETS (CATCH BASIN)		5 BRIQUETS

Larval Control:

BREEDING SITE INSPECTIONS	3	TREATMENTS	1
CATCH BASIN INSPECTIONS	5	TREATMENTS	5

DPH Arbovirus Surveillance:

POOLS SUBMITTED	12	WNV ISOLATION: 8/24
		NO ISOLATION EEE

Adult Control:

The following materials were used for adult control between 6/21/23 and 8/30/23.

DUET	10.6 GAL.	2,198 ACRES
------	-----------	-------------

## REFERENCES CITED

-USGS (United States Geological Survey) 2014 National Water Information System: Web Interface, USGS water resources, USGS01197500 Housatonic River Near Great Barrington, MA.