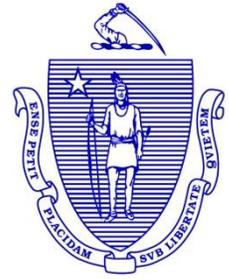


**STATE RECLAMATION AND MOSQUITO CONTROL BOARD
MASSACHUSETTS MOSQUITO CONTROL DISTRICT**
ANNUAL OPERATIONS REPORT



2013 Year of Report

Date of Report: 01/02/2014

Project/District Name: Bristol County Mosquito Control Project

Address: 140 North Walker St

City/Town: Taunton

Zip: 02780

Phone: 508-823-5253

Fax: 508-828-1868

E-mail: Brismosqjd@comcast.net

Report prepared by: Jennifer Dacey

NPDES permit no. MAG87A075

If you have a mission statement, please include it here: To serve the communities by suppressing both nuisance and disease carrying mosquito populations to tolerable levels in the most environmentally sensitive and economical manner. We utilize a variety of methods in such a way to minimize potential effects on people, wildlife and the environment.

ORGANIZATION SETUP:

Please list your Commissioner's names:

Arthur Tobin
Gregory Dorrance
Joseph Barile

Christine Fagan
Robert Davis

Please list the Supt./Director's name: Jennifer Dacey

Please list the Supt./Director's contact phone number: 508823-5253

Please list your Asst. Supt./Asst. Director's name: None

Do you have a website? Yes. If yes, please list the web address here:

<http://www.bristolcountymosquitocontrol.com>

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

Full time: 10

Part time: 0

Seasonal: 1

Other: 1 Employee was full time at start of 2013, however she was laid off in October and the position will become seasonal during the 2014 season.

Please break these down into the following areas:

Administrative staff: 2 Full time, 1 Seasonal (was full time for most of 2013)

Field staff: 8 Full time, 1 Seasonal

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

Public relations (Jennifer Dacey, Priscilla Matton)

Information technology

Entomologist (Priscilla Matton, Jennifer Dacey)

Wetland Scientist (Steven Burns)

Biologist (Priscilla Matton)

Education (Jennifer Dacey, Priscilla Matton)

Laboratory (Priscilla Matton, Katherine Sittig-Boyd)

Operations (Jennifer Dacey, Steven Burns, Drew Bushee, John Moniz, Jon Gibbs, John Raposo, Joshua Nickerson, Matthew Gavaza)

Facilities

Other (please list) Jennifer Dacey (Superintendent), Barbara Johnson (Administrative Assistant), Teri Mederios (Office Clerk), Katherine Sittig-Boyd (Seasonal Mosquito Technician).

For the year of this report, we maintained:

11 vehicles

5 modified wetland equipment (list type) 2 low-ground pressure excavators, 1 mini low-ground excavator, 2 mower attachments for excavators

11 ULV sprayers (list type) 4 London Fog (GPS), 1 Curtis DynaJet (GPS), 2 Guardian (GPS), 4 Beecomist

Larval control equipment (list type)

Other (please be specific): 1 dump truck and flatbed, 1 mobile trailer (to transport equipment and soil erosion materials)

Comments:

How many cities & towns in your service area? 20

Please list: Attleboro, Acushnet, Berkley, Dartmouth, Dighton, Easton, Fairhaven, Fall River, Freetown, Mansfield, New Bedford, North Attleboro, Norton, Raynham, Rehoboth, Seekonk, Somerset, Swansea, Taunton, Westport

Any changes to your service area this year? No

Please list cities/towns added or removed

***Please attach a link to a map of your service area if possible.** See attached map

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.

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

Comments: _____

LARVAL MOSQUITO CONTROL:

Do you have a larval mosquito suppression program? Yes

If yes, please describe the purpose of this program: The larval suppression program is one of our most effective methods to reduce the number of biting mosquitoes by preventing mosquitoes from maturing into adults, protecting human health and improving the quality of life of our residents. We employ larviciding techniques to current and historical mosquito breeding sites.

Please give the time frame for this program: May - September

Describe the areas that this program is used: We target the following areas: freshwater wetlands, saltmarshes, cedar and red maple swamps, catch basins, other permanent and temporary water bodies, and artificial containers that trap water for extended periods of time.

Do you use:

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

Helicopter applications

X Other (please list): We worked in conjunction with Plymouth County Mosquito Control Project conducting a spring aerial larvicide using Plymouth's airplane.

Comments: _____

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

Wetlands: Vectobac G 73049-10, Altosid XR Briquets 2724-421

Catch basins: VectoMax WSP 73049-429

Containers: VectoMax WSP 73049-429

Other (please list): VectoBac12AS 73049-38

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

Wetlands: Vectobac G 73049-10 (2.5 lbs/acre), Altosid XR Briquets 2724-421 (1 Briquet per 100 ft²)

Catch basins: VectoMax WSP 73049-429 (1 pouch per catch basin)

Containers: VectoMax WSP 73049-429 (1 pouch per 50 ft²)

Other: Aerial larvicide: VectoBac 12AS 73049-38 (1 pint per acre)

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

X Larval dip counts – please list trigger for application: 1+ per 5 dips

X Historical records

X Best professional judgment

Comments: All of our larval monitoring sites have GPS coordinates and are mapped for use in the truck computers

***Please attach a link to maps of treatment areas if possible.** See attachment

ADULT MOSQUITO CONTROL:

Do you have an adult mosquito suppression program? Yes

If yes, please describe the purpose of this program: Bristol County's program is designed to decrease the number of vector carrying and nuisance mosquitoes. There has been consistent detection of both West Nile Virus and Eastern Equine Encephalitis in our county. During the 2012 season we had one human case of WNV in Attleboro. During the 2011 season, Bristol County had one human death from EEE. There were no human cases in Bristol County in 2013.

Please give the time frame for this program: June - September

Describe the areas that this program is used: We accept requests for adult mosquito control applications from residents, businesses, town officials and other organizations within our 20 towns. Targeted applications occur in areas where WNV and EEE positives have occurred.

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 ULV, EPA Reg # 1021-1688-8329
- 2). Zenivex E20 EPA Reg # 2724-791
- 3).
- 4).
- 5).
- 6).

Please list your application rates for each product:

- 1). Anvil 10+10 ULV (0.21fluid oz per acre - 0.62 fluid oz per acre)
- 2). Zenivex E20 (0.007 pounds of A.I. per acre = 0.112 fluid ounces per acre)
- 3).
- 4).
- 5).
- 6).

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

Frequency of applications are dependent upon vector control activities, physical characteristics of the area and/or environmental issues. Applications are made in accordance with label directions.

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

Landing rates - please list trigger for application

Light trap data - please list trigger for application (When virus is detected)

Complaint calls - please list trigger for application (Upon resident request)

Arbovirus data

Best professional judgment

Comments: _____

***Please attach a link to maps of treatment areas if possible. See attached**

SOURCE REDUCTION

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

If yes, please describe your program: Our program involves a ditch maintenance program, OMWM and education. We will remove containers, tires and other articles that would be potential breeding sites. We often inspect properties and offer advice to landowners and businesses how to reduce and remove standing water or any other materials that would be conducive to mosquito breeding.

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

Comments: _____

DITCH MAINTENANCE

Do you have a ditch maintenance program? Yes

Please check all that apply:

X Inland/freshwater

X Saltmarsh

If yes, please describe: Our goal is to remove debris, silt and vegetation from drainage ditches throughout our service area, to improve water flow. This includes both hand and mechanized work. Proper water flow will eliminate standing water conducive to larval mosquito development. We use erosion control materials and re-seed to stabilize soils disturbed by our operations.

Please check off all that apply INLAND DITCH MAINTENANCE:

X Hand tools

X Mechanized equipment

X Other (please list): Erosion control materials

Comments: Our project has continued to implement the use of environmentally sensitive silt and erosion control materials to stabilize soils disturbed by our operations. This includes but is not limited to: Straw and coconut blankets, straw bales, jute mats, conservation seed and sedi-stop rolls within the waterway.

Please check off all that apply SALTMARSH DITCH MAINTENANCE:

X Hand cleaning

X Mechanized cleaning

X Other (please list): Erosion control materials

Comments:

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

Hand cleaning: Brush cut = 38,207 linear feet, Reclaimed 47,145 linear feet

Mechanized cleaning: 8,305 linear feet

Other (please list):

Comments: _____

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

Hand cleaning: Brush cut = 2,490 linear feet, Reclaimed = 3,460 linear feet

Mechanized cleaning: 2,250 linear feet

Other (please list):

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

Comments: _____

***Please attach a link to maps of ditch maintenance areas if possible.** Ditch maintenance occurred throughout our county in all 20 towns/cities. Individual maps of specific areas are available on request but are too large to attach.

MONITORING (Measures of Efficacy)

Please describe monitoring efforts for each of the following:

Aerial Larvicide – wetlands: We conducted pre and post application dipping at numerous locations throughout the treatment sites using a standard 350 ml dipper.

Larvicide – catch basins: We utilize a hand made dipper in order to access the catch basins. Samples are taken at random catch basins in a particular town.

Larvicide-hand/small area: We monitor 10% of treatment locations with a standard 350 ml dipper.

Ground ULV Adulticide: We place mosquito traps in locations where a ground ULV application will take place. We trap before and after the application to note efficacy.

Source Reduction: We return to 10% of our source reduction locations to check for new containers or objects blocking water flow that may contribute to breeding.

Open Marsh Water Management: N/A

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): Traps are placed and

mosquitoes collected before and after applications. Results from pre and post applications are analyzed.

OPEN MARSH WATER MANAGEMENT

Do you have an OMWM program? Yes

If yes, please describe: no projects were performed in 2013. However, the goal of our OMWM is to create greater access for mosquito-eating fish to areas on the marsh that support mosquito larval development.

Please give an estimate of total square feet or acreage: None

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

Comments: _____

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

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: 10

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

X Gravid traps

X Resting boxes

X CDC light traps

X CDC light traps w/CO₂

ABC light traps

ABC light traps w/CO₂

X NJ light traps

NJ light traps w/CO₂

Canopy

Canopy

Canopy

Canopy

Canopy

Canopy

Other (please describe): BG Sentinel traps

Please describe the purpose of this program: Our surveillance program is designed to monitor the numbers of nuisance mosquitoes and to assess if any Eastern Equine Encephalitis or West Nile Virus activity is present, what towns it is present in, and at what level it is occurring. We also monitor for the presence, abundance and range of *Aedes albopictus*.

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

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

Sites are chosen based on where virus isolations have occurred (in mosquitoes and humans) and continue to occur throughout the county. We also take the environmental surroundings into consideration. For instance, we trap in or near known breeding habitats of mosquitoes that vector disease (i.e. red maple and white cedar swamps, cattail wetlands, etc.).

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

Oc. excrucians

Oc. fitchii

Oc. j. japonicus

Oc. punctor

Oc. sollicitans

Oc. stimulans

Oc. taeniorhynchus

Oc. triseriatus

Oc. trivittatus

Ps. ferox

Ur. sapphirina

Other (please list):

Do you participate in the MDPH Arboviral Surveillance program? Yes

How many pools did you submit this year? 764

Please check off the arboviruses found in your area **this** year:

West Nile Virus

Eastern Equine Encephalitis

Other Please list:

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

Please explain: A horse was euthanized due to West Nile Virus

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

WNV / EEE: (DPH only provided one map for both viruses at end of 2012 season).
Severe: Easton, Raynham, and Taunton
High: Norton, Rehoboth, Freetown, New Bedford, Acushnet
Moderate: Attleboro, North Attleboro, Mansfield, Westport, Dartmouth, Somerset, Swansea, Seekonk, Berkley, Fairhaven, Dighton, Fall River

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

WNV: Low: Acushnet, Fairhaven, Taunton, Mansfield, Rehoboth, North Attleboro
Moderate: Easton, Raynham, Attleboro, Seekonk, Swansea, Westport, Norton, Freetown, Dighton, Berkley, Somerset, Fall River, New Bedford, Dartmouth
EEE: Low: North Attleboro, Attleboro, Seekonk, Swansea, Somerset, Freetown, Fall River, Fairhaven, Acushnet, Westport, Dartmouth
Moderate: New Bedford, Rehoboth, Dighton, Norton, Mansfield, Berkley
High: Easton, Raynham, Taunton

Comments: _____

***Please attach a link to maps of surveillance areas if possible.** See attached

EDUCATION, OUTREACH & PUBLIC RELATIONS

Do you have an education/public outreach program? Yes

If yes, please describe: Numerous radio, newspaper interviews, attendance at public events, creation of a BCMCP website, twitter account (both the website and Twitter account are used to post relevant information and updates regrading virus isolations). Presentations are given to various organizations (including schools, garden clubs, and senior centers).

Please check off all that apply:

- X School based program
- X Website
- X PR brochures/handout
- X Community events
- X Science fairs
- X Meeting presentations
- X Other (please describe): Twitter, Radio and Newspaper interviews, Presentations to various regional organizations

Please give an estimate of attendance/participants in this program: ~2000

Please list some events you participated in for the year of this report:

Feast of the Holy Ghost Festival in Fall River, Taunton Science Fair, NMCA Annual Meeting presentation, AMCA Annual Meeting presentation, Rehoboth Senior Center presentation, Somerset Gardening Club presentation, Taunton Senior Housing presentation, New Bedford Health Fair (table), Easton Blood pressure Clinics (Easton center on Aging locations), Swansea School Committee meeting, Mosquito Control seminar on Martha's Vineyard presentation, Lyme Disease Awareness for New Bedford Health alliance (table), Residex Mosquito Control Seminar presentations.

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: We conducted an aerial larvicide in the Bolton Swamp in Freetown to discover if a liquid application would be effective against *Culiseta melanura* in their breeding habitat and also open water species.

Are you involved in any collaboration with academia, industry, environmental groups, etc.? Yes

If yes, please elaborate on your collaborations this past year: We were involved with research that was conducted at the CT Agricultural Experiment Station. We collected *Culiseta melanura* larvae for their research to see if virus overwintered in that stage.

Please provide a list of technical reports, white/grey papers, publication in journal or trade magazines, etc. N/A

Does your staff participate in educational opportunities? Yes

If yes, please list the training and education your staff received this year:

NMCA Annual Meeting, NMCA Field Day, In-house Label and Safety Training Class, Dig Safe training seminar (in Taunton), Mosquito Control training seminar sponsored by Clarke (at Central Mosquito Control Project), Mosquito Control training seminar sponsored by UNIVAR (at Bass Pro Shop in Foxboro), EJ Prescott training seminar on soil erosion products and techniques, Beaver Control training (at Central Mosquito Control Project).

Please list the certifications and degrees held by your staff:

Jennifer Dacey: B.S. Wildlife Biology and Management, M.S. Entomology, MA Pesticide Applicator Certification (41, 47), CT Pesticide Applicator Certification (7A, 7D, 7E, 7F).

Priscilla Matton: B.S. Biology, M.S. Entomology, MA Pesticide Applicator Certification (47).

Steven Burns: B.S. in Business Administration, MA Pesticide Applicator Certification (47), CDL, Hoisting License, Chainsaw Certification, FEMA certified.

Jonathan Gibbs: MA Pesticide Applicator Certification (47, 30), CDL license, Hoisting Engineer license, Chainsaw Certification

Drew Bushee: MA Pesticide Certification (47), CDL license, Hoisting Engineer license, Chainsaw Certification

John Moniz: Licensed Pesticide Applicator, CDL license, Hoisting Engineer license, Chainsaw Certification

John Raposo: Licensed Pesticide Applicator, Chainsaw Certification

Joshua Nickerson: Licensed Pesticide Applicator, CDL license, Hoisting Engineer license, Chainsaw Certification

Matthew Gavaza: Licensed Pesticide Applicator

Comments: _____

BIOLOGICAL CONTROL EFFORTS

Do you have a biological control program? Yes

If yes, please describe: We remove blockages that restrict the movement of predatory fish, allowing them to reach mosquito larvae.

Is this program the introduction of mosquito predators or the enhancement of habitat for native predators? 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? The practice of opening waterways occurs October-May, with the intent that in the spring and summer months, predatory fish and invertebrates will have access to mosquito larvae.

Comments: _____

INFORMATION TECHNOLOGY

Does your program use (check all that applies):

Computers

GIS mapping

GPS equipment

Computer databases

Aerial Photography

X Other (please describe): Create posters and maps, PowerPoint, Excel, ArcView, MapPoint. Trucks use handheld and ULV based GPS for pesticide applications.

Please describe your capabilities in these areas: We have staff members that are proficient in PowerPoint, Excel, and MapPoint. Our ArcView and GIS are limited.

Please describe your current GIS abilities: Limited

Give details if possible on your GIS abilities: Limited

Please describe any changes/enhancements in this area from the previous year: None

Comments: In the upcoming year, we plan to increase the skill level of our staff members with ArcView and GIS programs.

REVENUES & EXPENDITURES

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

See attached

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

See attached

Comments: _____

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, mist blower, other (please explain)

Product Name: VectoBac G
EPA Reg. #: 73049-10
Application method: Other: Place
Targeted life stage: Larval
Total amount of concentrate applied: 1162 lbs
Comments: _____

Product Name: VectoMax WSP
EPA Reg. #: 73049-429
Application method: Other: Place
Targeted life stage: Larval

Total amount of concentrate applied: 1065.75 lbs
Comments: _____

Product Name: Altosid XR Briquets
EPA Reg. #: 2724-421
Application method: Other: Place
Targeted life stage: Larval
Total amount of concentrate applied: 1408 lbs
Comments: _____

Product Name: Anvil 10+10
EPA Reg. #: 1021-1688-8329
Application method: ULV
Targeted life stage: Adult
Total amount of concentrate applied: 422.76 gallons
Comments: _____

Product Name: Zenivex E20
EPA Reg. #: 2724-791
Application method: ULV
Targeted life stage: Adult
Total amount of concentrate applied: 27.57 gallons
Comments: _____

Product Name: Vectobac 12AS
EPA Reg. #: 73049-38
Application method: Aerial
Targeted life stage: Larval
Total amount of concentrate applied: 430 gallons
Comments: _____

Product Name:
EPA Reg. #:
Application method:
Targeted life stage: Choose one
Total amount of concentrate applied:
Comments: _____

Product Name:
EPA Reg. #:
Application method:
Targeted life stage: Choose one
Total amount of concentrate applied:
Comments: _____

Product Name:

EPA Reg. #:
Application method:
Targeted life stage: Choose one
Total amount of concentrate applied:
Comments: _____

LARGE AREA EXCLUSIONS

Do you have large areas of pesticide exclusion, such as estimated or priority habitats?
Yes. Canoe River and Hockomock ACEC, and areas of Priority Habitat. Map of areas are attached.

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

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: Extensive work is done with member towns and local government agencies such as the Department of Public Works, local health boards, Conservation Commissions, engineering departments and highway departments.

Have you worked with these departments on long term solutions? Yes

If yes, please elaborate: We have worked clearing waterways, rebuilding culverts, replacing or installing drain pipes, etc. to improve water flow for the long term.

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

If yes, please elaborate: We are in the preliminary stages of working with Franz Ingelfinger (MA Division of Ecological Restoration) and the Conservation Commission in Dartmouth on a restoration project for the town. More work with that project will occur in 2014.

Did you or participate in any **State/Regional/National workgroups or panels or attend any meeting pertaining to the above?** No

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: 265 day cares and 150 locations of private, and public school properties located in our county.

If you have data on compliance with this Act and your program, please list here: We are able to go onto the state website and view the school or daycares IPM plan. If it is not up to date, we inform them of the information they need to add (if applicable) or tell them they simply need to update it to the current year. We will not take a spray request until the IPM plan is up to date. All schools and daycares are listed as no spray zones on our technician's on board computers.

If you had difficulties with implementation of your program due to this law, please elaborate here: No difficulties, we simply ask the school or daycare to update their IPM plan and remind them of the requirements (notification, etc.).

Comments: We confirm that the schools or daycare's IPM plan is up to date by checking it online at the states website. We also require that the facility fill out, sign and fax back to us, a document stating that they are aware they must send out all notifications and adhere to other requirements (posting, etc.) under CFPA.

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: _____



THE COMMONWEALTH OF MASSACHUSETTS
STATE RECLAMATION AND MOSQUITO CONTROL BOARD



BRISTOL COUNTY MOSQUITO CONTROL PROJECT

140 NORTH WALKER STREET, TAUNTON, MA 02780
TEL: (508) 823-5253 FAX: (508) 828-1868

COMMISSIONERS
SUPERINTENDENT
ARTHUR F. TOBIN, CHAIRMAN
GREGORY D. DORRANCE
CHRISTINE A. FAGAN
JOSEPH BARILE
ROBERT F. DAVIS

JENNIFER E. DACEY, M.S.
SUPERINTENDENT

October 30, 2013

Bristol County Mosquito Control Project (BCMCP) End of the 2013 Season Report

This report is based on data collected from CO₂-baited CDC traps, resting boxes and gravid traps.

Total Pools Submitted for Testing 2013: 425 Pools

- Total Pools Submitted for Testing 2012: 423 Pools

Total Pools Submitted from Bristol Co. by MA DPH in 2013: 339 Pools

- Total Pools Submitted for Testing 2012: 958 Pools

Total Number of Mosquitoes Tested in 2013: 17,220

- Total Number of Mosquitoes Tested in 2012: 17,365

Total Number of Mosquitoes Tested from Bristol Co. by MA DPH in 2013: 11,390

- Total Number of Mosquitoes Tested in 2012: 28,482
- Total Number of Mosquitoes Tested in 2011: 6,804

Total Number of Non-submitted Mosquitoes 2013: 53,208

- Total Number of Non-submitted Mosquitoes 2012: 29,855

Total Number of Non-submitted Mosquitoes from Bristol Co. by MA DPH 2013: 8,449

- Total Number of Non-submitted Mosquitoes 2012: 19,612

2013 Combined Data:

Total Pools Tested: 764
Total Mosquitoes Tested: 28,610
Total Non-Submitted: 61,657
Total Collected: 90,267

2012 Combined Data:

Total Pools Tested: 1,381
Total Mosquitoes Tested: 45,847
Total Non-Submitted: 49,467
Total Collected: 95,314

Virus Isolations:

WNV 2013: 79 Pools

- 37 pools of *Cx. pipiens/ restuans* complex
 - 36 pools of *Cs. melanura*
 - 3 pools of *Cq. perturbans*
 - 1 pool of *Ae. vexans*
 - 1 pool of *Oc. canadensis*
 - 1 pool of *Cx. salinarius*
- **WNV 2012: 49 Pools**
 - 7 pools of *Cs. melanura*
 - 42 pools of *Cx. pipiens/ restuans* complex
 - **WNV 2011: 28 Pools**
 - 10 pools of *Cs. melanura*
 - 15 pools of *Cx. pipiens/ restuans* complex
 - 2 pools of *Culex* species, including *Cx. salinarius*
 - 1 pool of *Ae. vexans*

EEE 2013: 29 Pools

- 23 pools of *Cs. melanura*
 - 3 pools of *Cq. perturbans*
 - 1 pool of *Cx. pipiens/ restuans* complex
 - 1 pool of *Ae. vexans*
 - 1 pool of *Cx. salinarius*
 - Most EEE positive mosquitoes were collected from CO₂-baited traps.
- **EEE 2012: 100 Pools**
 - 47 pools of *Cs. melanura*
 - 8 pools of *Cx. pipiens/ restuans*
 - 31 pools of *Cq. perturbans*
 - 4 pools of *Ae. vexans*
 - 8 pools of *Oc. canadensis*
 - 2 pools of *Cx. salinarius*
 - Most EEE positive mosquitoes were collected from CO₂-baited traps.
 - **EEE 2011: 31 Pools**
 - 27 pools of *Cs. melanura*
 - 1 pool of *Cx. pipiens/ restuans*
 - 2 pool of *Cq. perturbans*
 - 1 pool of *Ae. vexans*

Mosquito activity/trends for the 2013 Season?

The mosquito season began following warmer than average fall and winter temperatures, which were conducive to overwintering. Precipitation was below normal for much of January until April. Larval surveys over the winter in the Raynham/Easton Hockomock Swamp did show mosquitoes present and plenty of standing water. Bristol County conducted their first aerial larvicide application in April over the Hockomock Swamp in conjunction with the Plymouth County Mosquito Control Project. However, below average rainfall region wide in the early spring left some areas without standing water and unable to be treated. There were little to no spring species of record this season but summer species appeared earlier than normal. Surveillance for Eastern Equine Encephalitis (EEE) in 2013 began at below normal levels in Bristol County similar to 2012. Low numbers of *Cs. melanura* were collected from our traps in areas of past EEE isolations and high late season populations.

The first EEE isolation was from Rehoboth on August 12th in *Cs. melanura* followed closely by 2 pools of *Cq. perturbans* from Easton on August 13th. The first isolation in 2012, (which was a very active year) was from Easton on July 9th from *Cs. melanura* and *Cq. perturbans*. Compared to 2011, the first isolation from Raynham was on August 1st from *Cs. Melanura*, very similar to 2013. This season the first isolations occurred in both human and bird biting mosquitoes during the same Epi-week (similar to 2012). Activity in the Raynham/Easton Hockomock Swamp complex continued throughout the season, playing a major role in EEE activity. Bristol County's EEE activity was slightly higher than the activity in Plymouth County this season. The swamp complex in Rehoboth, a historical site for EEE, continued to be more active in 2013 than 2012 demonstrating an expansion from the Hockomock complex and shift from east to west. Heavy and repeated rainfall in June resulted in greater than normal collections of flood water and human biting mosquitoes in July. This included *Ae. vexans*, *Oc. canadensis*, *Oc. trivittatus* and *Ps. ferox*. Following multiple and sustained positives in human biting mosquitoes from the Raynham/Easton area, human and horse cases became a real concern. However there were no reported human or horse cases of EEE in Bristol County.

Surveillance for West Nile virus was more comparable to an active WNV season similar to 2012. However, our major cities did not have an active WNV season when compared to 2012. High populations collected from Fall River in June, decreased following truck-based ULV interventions and then held steady throughout the season. In 2013, 4 pools of *Cx. pipiens/restuans* tested positive for WNV from mid-July until the end of August. Fall River did not have any mosquitoes test positive for WNV in 2009 or 2011, 2 pools in 2010 and 7 in 2012. New Bedford's trapping locations had little activity this season compared to last year were multiple trap locations within the city had WNV. One location showed sustained positive collections from early August till early October. Epi-weeks 32 (week ending August 10) and 35 (week ending August 31) were very active times for WNV with positives found in New Bedford, Fall River, Somerset, Easton, Norton, Attleboro, Dighton, Acushnet, Freetown, Raynham, Taunton, Seekonk and Swansea. This activity is comparable to isolations from 2012 and 2010, while 2011 activity peaked in mid-September. *Cs. melanura*, *Cq. perturbans*, *Oc. canadensis* and *Cx. pipiens/restuans* complex tested positive for WNV in Bristol County.

We collected 188 Asian Tiger mosquitoes- *Ae. albopictus* from multiple sites in Bristol County. Most were collected from the primary site located in close proximity to a tire recycling plant.

This was the fifth year in a row that *Ae. albopictus* was collected from this site. Past collection records for the species was 169 collected in 2012, 34 in 2011 and 2 in 2010. On 9/13/2011, the Westport site collected ten *Ae. albopictus*. That collection site was turned over to MA DPH but no additional specimens have been found. This year additional trapping was added to determine location and movement of this species. New sites were established within New Bedford and the town of Fairhaven. These sites had multiple samples collected during the season. Though the population was higher than previous seasons, possibly a result of increased surveillance, BCMCP did not receive any additional complaints or calls for service from the area.

Virus Interventions:

Overall this was an active mosquito virus season. All sites with positive pools were treated with large-scale (2-3 mile radius) pesticide applications. Some sites were treated on a weekly basis and others required applications twice per week due to sustained virus isolations. This was an active WNV season in Bristol County, the virus has been detected every year since 2001. During Epi-weeks 30-39, truck-based interventions around trap sites continued in an attempt to reduce the *Culex* populations in many areas. No night-time interventions were conducted.

Truck-based EEE interventions were completed in response to high mosquito populations, virus isolations and residential requests. This was especially important in areas of Raynham and Easton where positive EEE mosquito activity along the Plymouth border was sustained. One Saturday morning application was completed in response to high *Cq. perturbans* collections and EEE in Easton and Raynham. Many of BCMCP's towns collected positive EEE mosquitoes and applications were made throughout the county using truck-based ULV applications. Similar to the 2010, 2011 and 2012 seasons, *Cq. perturbans* was the main epizootic vector in 2013.

To date the towns of Raynham, Easton and Taunton are in the High risk category for EEE. The towns of Norton, Rehoboth, Berkley, New Bedford and Dighton are in the Moderate-risk category for EEE. All other towns (12) are in the Low-risk category for EEE. To date Raynham, Easton, Norton, Attleboro, Seekonk, Dartmouth, Westport, Swansea, Somerset, Berkley, Freetown, Fall River, New Bedford and Dighton are in the Moderate-risk category for WNV. There was one reported horse cases for WNV located in Dartmouth on September 11th. There was no EEE horse cases reported in the County. There were no human cases of WNV or EEE reported in the County.

Number of requests for service, is up, down etc:

Year to date Bristol has received 15,792 calls for service as of 10/10/13. We stopped taking residential requests as of 9/18/13. In 2009, Bristol had received 15,964 calls for service, 17,508 calls for service in 2010, 14,320 calls for service in 2011 and 14,778 calls for service in 2012.

Bristol County Mosquito Control Project's Outreach:

Public outreach is an important part of our program. Educating people on how they can protect themselves and reduce mosquito breeding on their property is an effective, proactive step to combat virus transmission. Coordination between BCMCP and the local Boards of Health was ongoing relative to control/surveillance options in the vicinity of WNV and EEE positive mosquito pools. We participated in a variety of public outreach projects including radio,

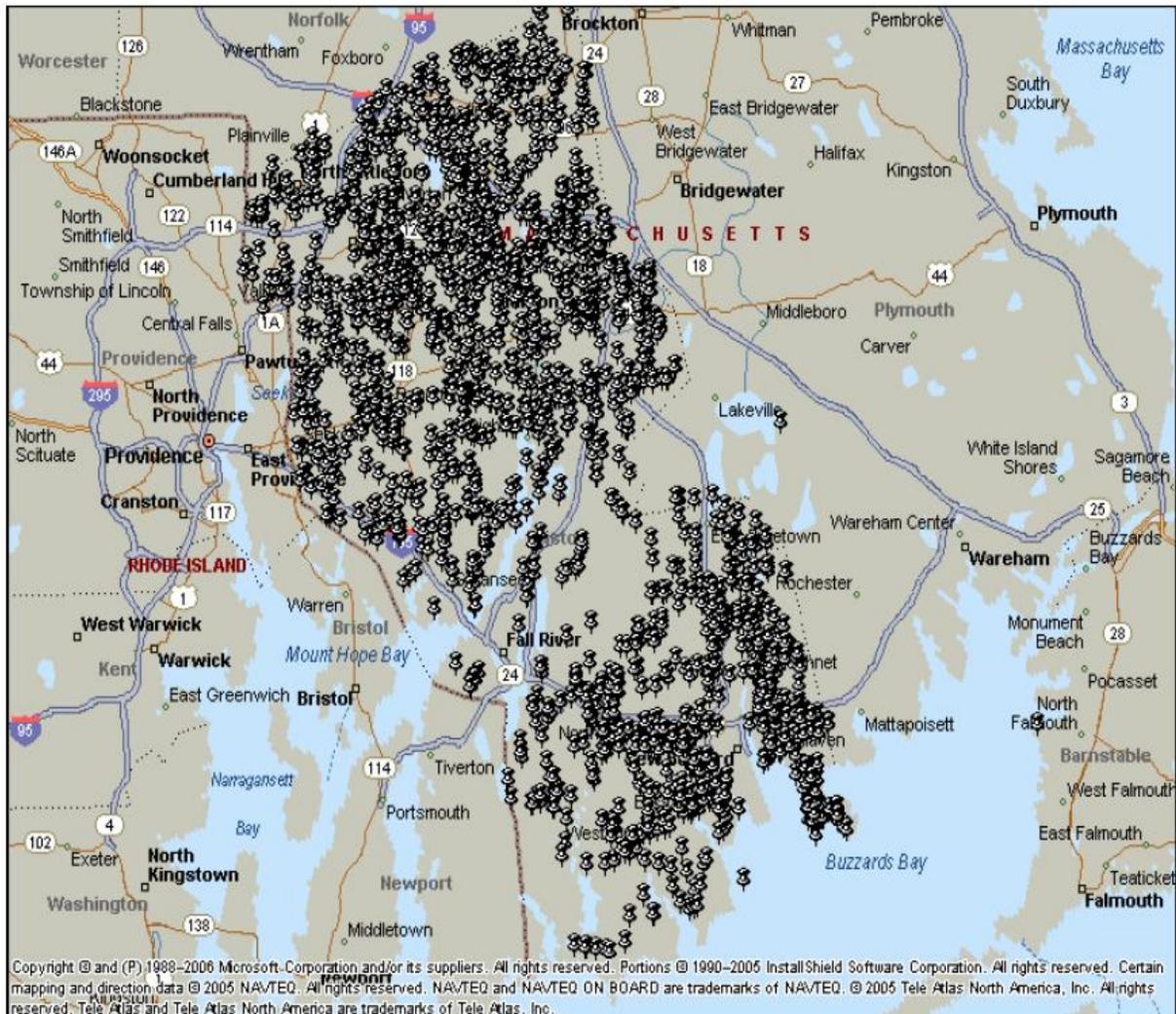
newspaper, and television interviews. Educational materials were provided to public and private entities and we began a campaign to post laminated informational sheets at state parks and local recreational areas. The Project's website was developed and unveiled at the beginning of the season which was updated weekly and provided answers to many of the public's frequently asked questions.

Bristol County Mosquito Control Project Service and Treatment Area Map

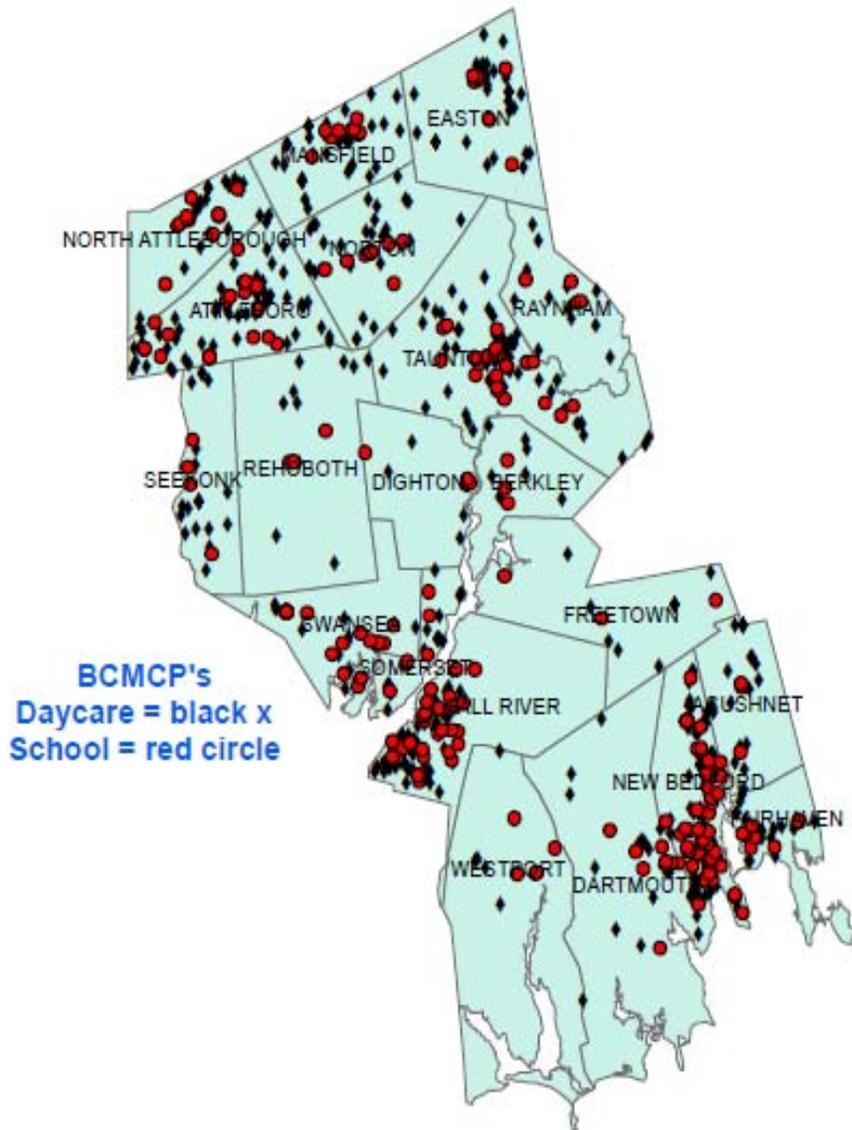
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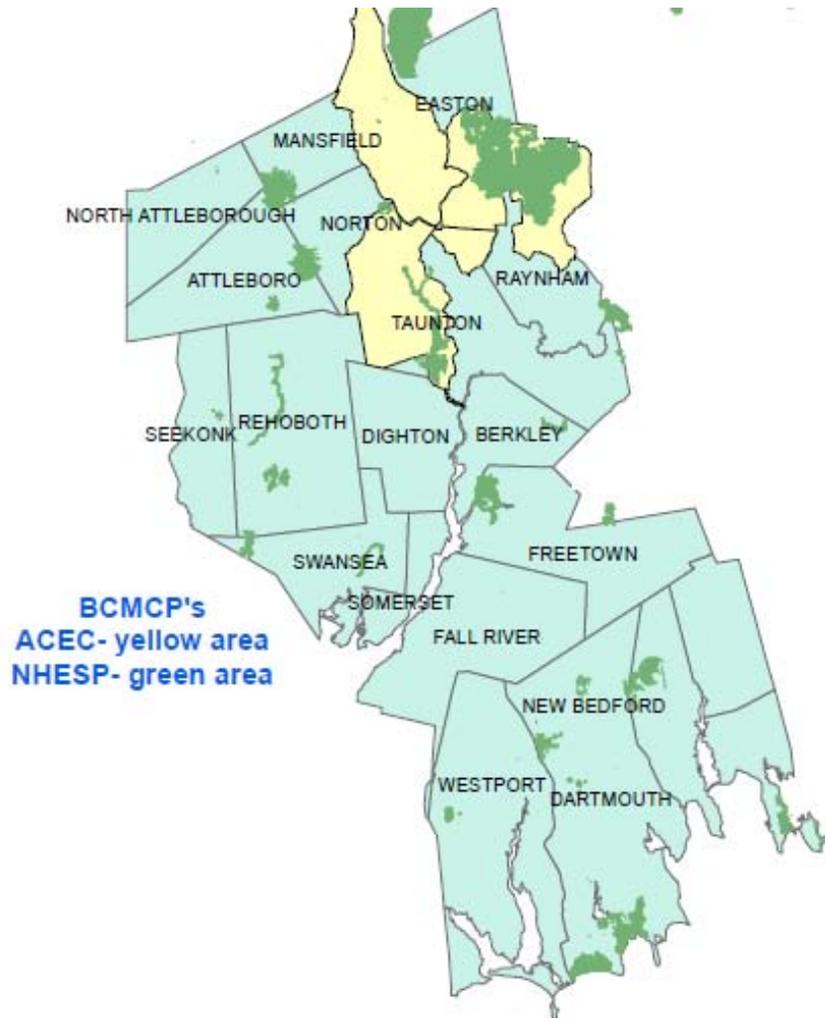
BCMCP's Computerized GPS Larval Sites



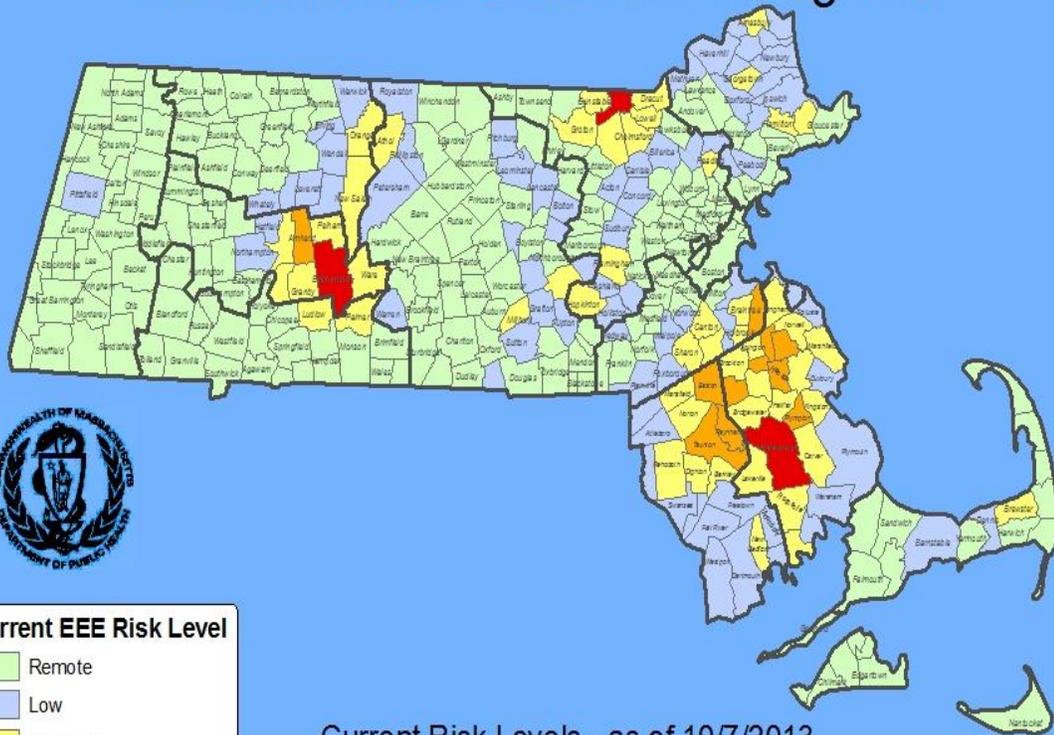
Bristol County Schools and Daycares



Bristol County Priority Habitat Map



Massachusetts EEE Risk Categories

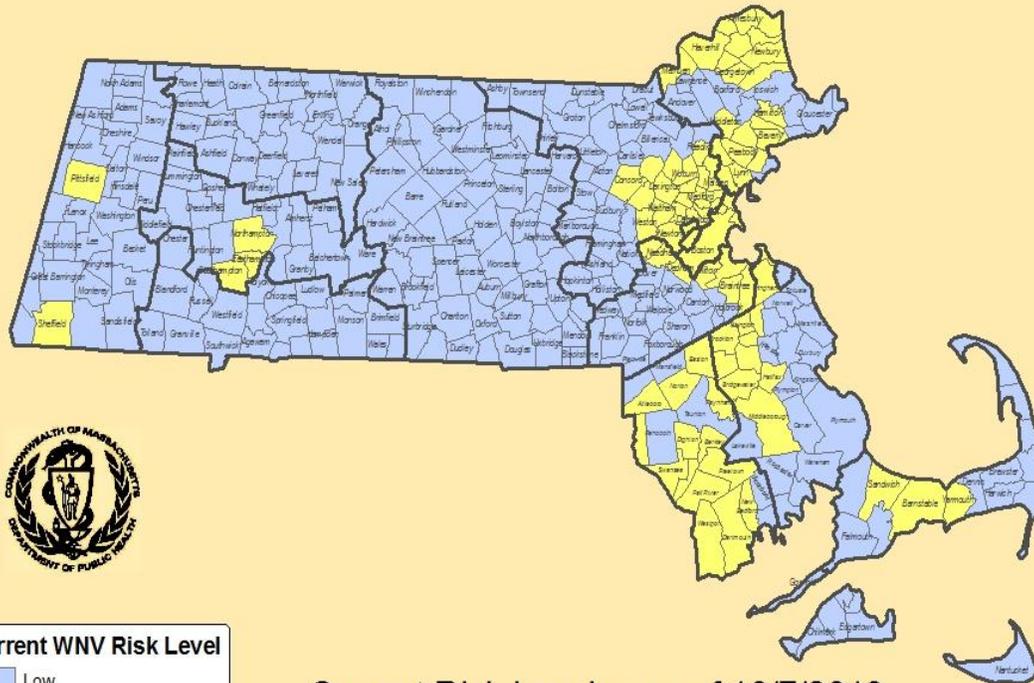


Current EEE Risk Level	
	Remote
	Low
	Moderate
	High
	Critical

Current Risk Levels - as of 10/7/2013
 Risk levels reviewed daily, updated as needed.

State Laboratory Institute
 Arbovirus Surveillance Program

Massachusetts WNV Risk Categories



Current WNV Risk Level	
■	Low
■	Moderate
■	High
■	Critical

Current Risk Levels - as of 10/7/2013
 Risk levels reviewed daily, updated as needed

State Laboratory Institute
 Arbovirus Surveillance Program



THE COMMONWEALTH OF MASSACHUSETTS
STATE RECLAMATION AND MOSQUITO CONTROL BOARD



BRISTOL COUNTY MOSQUITO CONTROL PROJECT

140 NORTH WALKER STREET, TAUNTON, MA 02780
TEL: (508) 823-5253 FAX: (508) 828-1868

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ASSISTANT SUPERINTENDENT
STEPHEN BURNS

November 14, 2013

NOTICE OF PUBLIC MEETING TO PRESENT AND DISCUSS ITS PRELIMINARY PROPOSED BUDGET FOR F/Y 2015

Notice is hereby given that the Bristol County Mosquito Control Project (the “District”) will hold an informational public meeting at the time and place indicated below in order to present and discuss the District’s preliminary proposed budget for F/Y 2015, and to receive comments and answer questions from the public and local public officials in connection therewith.

Date: December 5, 2013

Time: 7:00 p.m. – 8:00 p.m.

Location: Bristol County Agricultural High School
135 Center St.
Dighton, MA 02715

A copy of the District’s preliminary proposed budget is available for inspection during regular business hours at the following location:

Bristol County Mosquito Control Project
140 North Walker Street
Taunton, MA 02780

The total dollar amount of the District’s preliminary proposed budget for F/Y 2015 and for the fiscal year immediately proceeding are as follows:

F/Y 2014 = \$1,290,550.00

F/Y 2015 = \$1,322,814.00

The member municipalities within the District together with each municipality’s estimated proportionate share thereof, expressed both as a percentage and as a dollar amount, is as set forth on Form SRB-1, Page 2. As of the date of this notice, the District is comprised of 20 municipalities as listed on Form SRB-1, Page 2. If the composition of the District changes because one or more municipalities join or withdraw from the District, the total preliminary budget will be adjusted pro rata.

Copies of the preliminary proposed budget will be available for inspection at the meeting, at which

reasonable time will be accorded to those in attendance to ask questions and to offer comments. Comments may also be sent directly to the State Reclamation and Mosquito Control Board via the Executive Director or Project Administrator by April 15th.

Form SRB-1

Page 1

The Bristol County Mosquito Control Project

*NOTICE OF PUBLIC MEETING TO PRESENT AND DISCUSS
ITS PRELIMINARY PROPOSED BUDGET FOR F/Y 15*

Notice is hereby given that the Bristol County Mosquito Control Project (the “District”) will hold an informational public meeting at the time and place indicated below in order to present and discuss the District’s preliminary proposed budget for F/Y 15, and to receive comments and answer questions from the public and local public officials in connection therewith.

1. Date: December 5, 2013
2. Time: 7:00 PM
3. Location: Bristol County Agricultural High School 135 Center Street, Dighton, MA 02715
4. A copy of the District’s preliminary proposed budget is available for inspection during regular business hours at the following location:

Bristol County Mosquito Control Project (BCMCP): 140 North Walker Street Taunton, MA 02780

5. The total preliminary dollar amount that the District is proposing for F/Y 15 is \$ 1,322,814. The chart found below highlights the preliminary budget request by the district for the coming year with pertinent budget information that fully describes the total trust fund account budget amount available for the District to expend in FY 15.

A.	B.	C.	D.	E.	F.	G.
District Name	Number of Employees	FY 15 Preliminary Proposed Budget \$ Amount	Percent increase over approved FY 2014 budget	Estimated Balance Forward/ Rollover amount from FY 2014	FY 2014 Actual Budget Revenues	FY 2015 Actual Total Funds Available in Trust Account to Expend (Column C+E)
BCMCP	11	\$1,322,814	2.5%		\$1,553,527	\$1,322,814

Form SRB-1

Rev. 3-4-10

Page 2

The below chart lists the estimated cherry sheet assessments for F/Y 15 based on the preliminary Proposed District budget.

Name of Municipality	Percentage of Total Budget	Dollar Amount to be Deducted from Local Aid Distribution
ACUSHNET	2.65 %	35,054.57
ATTLEBORO	5.99 %	79,236.56
BERKLEY	2.16 %	28,572.78
DARTMOUTH	10.16 %	134,397.90
DIGHTON	2.76 %	36,509.67
EASTON	5.10 %	67,463.51
FAIRHAVEN	2.79 %	36,906.51
FALL RIVER	7.90 %	104,502.31
FREETOWN	4.35 %	57,542.41
MANSFIELD	4.65 %	61,510.85
NEW BEDFORD	6.85 %	90,612.76
NORTH ATTLEBORO	4.87 %	64,421.04
NORTON	4.48 %	59,262.07
RAYNHAM	3.47 %	45,901.65
REHOBOTH	5.55 %	73,416.18
SEEKONK	3.35 %	44,314.27
SOMERSET	2.97 %	39,287.58
SWANSEA	3.87 %	51,192.90
TAUNTON	9.02 %	119,317.82
WESTPORT	7.06 %	93,390.67

**BCMCP 2013
Expenditures**

														YTD
	APPROP.	JULY	AUG	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	TOTAL
SUB AA														
PAYROLL (contract seasonal) CC	606785	46075	46173	42655	41017	41028	41246	41246	41246	65249	44662	31916	78745	561257
	6600													
SUB BB														
EXPENSES, TRAVEL	5260	94.18	353.7	388.4	43.96	529.53	989.56	392.7	77.18	293.7	256	153.9	202.3	3775.04
SUB AMTS														
COMMISSIONERS	5600	900	800	500	500	1000	500	700	400	500	400		1100	7300
SUB DD														
RET.; INS.; TAXES	304284	98065	7128	7276	7208	8253	8109.5	8562	13721	8603	9372	9181	24795	210274
SUB EE														
OFFICE EXPENSES	26770	15.69	436.6	746.4	487.2	2971.5	19733	400.4	894	1030	787	3201	1924	32626.9
SUB FF														
VEHICLE MAINT- REPAIR	26300	239.54	1339	1518	2307	2236.9	469.32	86	365	37.12	1956	4285	6337	21175.2
SUB GG														
RENT; FUEL; UTILITIES	64900	6780.1	7010	3088	6494	5384.6	920.37	7488	6000	5689	6570	5058	6613	67096.2
SUB HH														
CONSULTANT SERV.									1058				340	1397.94
SUB JJ														
OPERATIONAL SERV.	11100	53	53	53								9750	53	9962
SUB KK														
EQUIPMENT	66000	285.84					1437.9						96500	98223.8
SUB LL														
LEASE-PURCHASE	9600			432.6								374.3	19947	20754
SUB NN														
INSECTICIDES FACILITY-MAINT & REPAIR	197200	178.72	11649			46764	46684			20635	16092	2666	4000	14030.3
	10800	184.98	75.52	696	1410	104.95	2100	856.7	850.2	658.3	482.1	2471	4246	14135.8
SUB UU														
INFORMATION TECH	34950	207.44	1681	9383	1754	749.04	922.05	2863	3385	3579	2770	2038	24648	53979.8
SUB ZZ OTHER	2872													0
	1379021	153080	76699	66736	61221	109022	29743	62595	67997	65004	83348	71093		1115988

Bristol County Mosquito Control Project

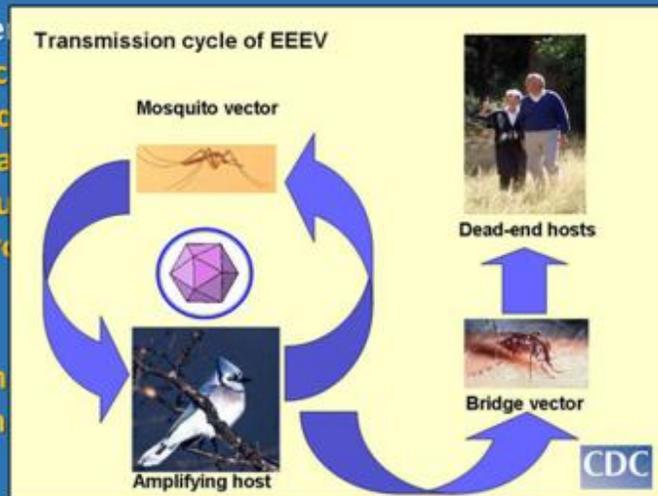
Budget and Seasonal Findings 2013



Why do we have mosquito control?

Mission Statement
To serve the community by carrying mosquito control through environmental methods in such a way that the environment and the environment

Eastern Equine Encephalitis (EEEV) is our main concern



and disease
most
utilize a variety of
people, wildlife

(V) are our

Spring Larviciding

1st Aerial Larvicide by BCMCP (in conjunction with Plymouth MCP)

- Hockomock Swamp
- Dead Swamp
- Pine Swamp
(attempted, conditions too dry)

3,440 acres were treated.



We will conduct aerial larviciding again in 2014, with additional locations added (water bodies near 2013 positive findings).

Bolton Swamp Larvicide

- **Habitat of *Culiseta melanura*.**
- Wanted to see if larvicide was making it through the canopy and affecting *Cu. Melanura* breeding sites (crypts).
- **Made it to the ground but not into crypts.**
- Overall goal is to try and find a more effective method of controlling *Cu. melanura*.
- **No cost to Project, Valent BioSciences.**



Historical Breeding Areas around Bristol County.



894 acres were treated throughout the county.



33,370 Catch Basins

Surveillance

1. Discovers the extent and location of mosquito populations.
2. Enables us to track virus activity.
3. Enables our project to better plan treatment areas.

Methods: Trapping
Larval dipping



CDC Light Trap



Gravid Trap

Surveillance of *Aedes albopictus*

- Vector of Dengue Fever, capable of transmitting other viruses.
- Found in New Bedford in 2000, 2009 on...
- This year we extended traps locations to see if they have expanded their range.
- Trapped in Fairhaven.
- Good news: It doesn't travel far.
- Bad news: Dengue contracted locally by 50 year old man in Long Island, NY.



Mosquito Testing

BCMCP

Mosquito pools submitted: **425**

Number of mosquitoes tested: **17,220**

MA DPH

Mosquito pools collected: **958**

Number of mosquitoes tested: **11,390**

Total number of mosquitoes tested = **28,610**

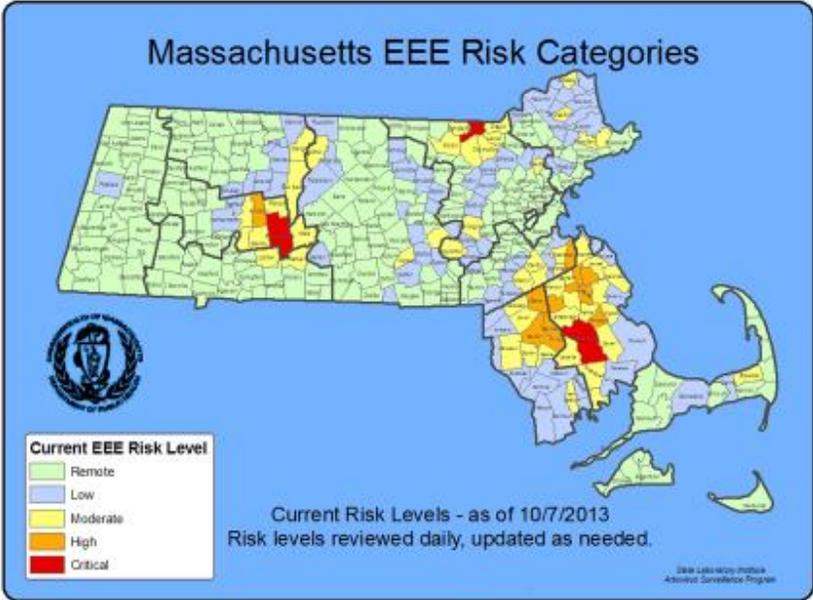
EEE = **29** WNV = **79**

State of MA: EEE = **61** WNV = **335**



	<u>EEE</u>	<u>WNV</u>		<u>EEE</u>	<u>WNV</u>
Acushnet		1	New Bedford	2	7
Attleboro		2	N. Attleboro		2
Berkley			Norton	1	8
Dartmouth		3	Raynham	4	13
Dighton	6	6	Rehoboth	3	1
Easton	10	8	Seekonk		5
Fairhaven			Somerset		2
Fall River		4	Swansea		5
Freetown	2	8	Taunton		2
Mansfield	1		Westport		2

- High:**
 - Easton
 - Raynham
 - Taunton
- Moderate:**
 - Mansfield
 - Norton
 - Rehoboth
 - Dighton
 - Berkeley
 - New Bedford
- Low:**
 - North Attleboro
 - Attleboro
 - Swansea
 - Somerset
 - Fall River
 - Westport
 - Seekonk
 - Dartmouth
 - Acushnet
 - Fairhaven
 - Freetown



Moderate:

Norton
Easton
Attleboro
Raynham
Dighton
Berkeley
New Bedford
Freetown
Attleboro
Swansea
Somerset
Fall River
Westport
Dartmouth

Low:

Rehoboth
Taunton
Mansfield
North Attleboro
Acushnet
Fairhaven



2012 Spray Requests

Total number of spray requests completed = **15,792**

Acushnet	264	New Bedford	183
Attleboro	1010	N. Attleboro	504
Berkley	553	Norton	1599
Dartmouth	952	Raynham	1640
Dighton	444	Rehoboth	721
Easton	1738	Seekonk	892
Fairhaven	1152	Somerset	130
Fall River	113	Swansea	353
Freetown	604	Taunton	1404
Mansfield	1073	Westport	463

Fall / Winter **Water Management**

As of 12/4/2013

Brush 34,652 acres

Reclaim 39,080 acres

Tractor Ditch 8,380 acres

Tractor Brush 3,450 acres

Individual city/town Reports (detailing the amount of work completed in their city/town) will be sent out after the first of the year.



Video of work with excavator.

Public Education / Outreach

Pamphlets

Posters

Laminated informational sheets at Parks and Recreational areas

Presentations: Senior centers, Elderly Housing

Newspaper / radio interviews

Website: www.bristolcontymosquitocontrol.com

Our Entomologist is a mentor to student(s) every year for Taunton Science Fair

Going Forward...

- **Surveillance and testing** to monitor what's occurring in county.
- **Continue Research Efforts**
 - a. **Monitor for *Aedes albopictus* populations, extend trapping range.** Encourage MA DPH to work with CT Agricultural Station to test for emerging viruses.
 - b. **Discover a more effective method for controlling *Cu. melanura*.**
- **Aerial larvicide** of Hockomock Swamp and other large water bodies where virus was consistently found throughout the county in 2013.

- **Larvicide programs** (to smaller bodies of water and catch basins) to keep mosquito populations to a minimum.
- **Water management / source reduction efforts**, in order to monitor to reduce the number of breeding locations.
- **Year round water management**, instead of only in winter.
- **Extend public education and outreach** – Key to preventing additional breeding sites and virus transmission.

www.bristolcountymosquitocontrol.com

Any Questions?

