STATE RECLAMATION AND MOSQUITO CONTROL BOARD
MASSACHUSETTS MOSQUITO CONTROL DISTRICT

ANNUAL OPERATIONS REPORT

2014 Year of Report Date of Report: 01/02/2015

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: 508-823-5253
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: 12
Part time: 0
Seasonal: 2
Other:

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:
X Public relations (Jennifer Dacey, Priscilla Matton)
☐ Information technology
X Entomologist (Priscilla Matton, Jennifer Dacey)
X Wetland Scientist (Steven Burns)
X Biologist (Priscilla Matton)
X Education (Jennifer Dacey, Priscilla Matton)
X Laboratory (Priscilla Matton)
X Operations (Jennifer Dacey, Steven Burns, Drew Bushee, John Moniz, John Pereira, Larry Goss, Anthony Souza, John Raposo, Joshua Nickerson, Matthew Gavaza)
☐ Facilities
X Other (please list) Jennifer Dacey (Superintendent), Barbara Johnson (Administrative Assistant), Susan Crose (Office Clerk), Aaron Zurbis (Seasonal Mosquito Technician).

For the year of this report, we maintained:
13 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
1 Larval control equipment (list type) Backpack sprayer
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 artifical 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, Fourstar CRG 85685-2, Natular XRT 8329-84
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 ft^2), Fourstar CRG 85685-2 (7.5 lbs/acre), Natular XRT 8329-84 (1 tablet per 100 sq ft).
Catch basins: VectoMax WSP 73049-429 (1 pouch per catch basin)
Containers: VectoMax WSP 73049-429 (1 pouch per 50 ft^2)
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 and 2014.

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:
X **Truck applications**
☐ **Portable applications**
☐ **Aerial applications**
☐ **Other (please list):**
Comments: _____

Please list the names of the products used with EPA #:
1). Duet 1021-1795-8329
2). Anvil 10+10 1021-1688-8329
3).
4).
5).
6).

Please list your application rates for each product:
1). Duet: 0.61 fluid ounces per acre
2). Anvil 0.62 fluid ounces per acre
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
X Light trap data - please list trigger for application (When virus is detected)
X Complaint calls - please list trigger for application (Upon resident request)
X Arbovirus data
X 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 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 environmetally 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 = 58,355 linear feet, Reclaimed 59,580 linear feet
Mechanized cleaning: 17,430 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 = 650 linear feet, Reclaimed = 650 linear feet
Mechanized cleaning: 884 linear feet
Other (please list):

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

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 2014. 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	☐ Canopy
X CDC light traps w/CO_2	☐ Canopy
☐ ABC light traps	☐ Canopy
☐ ABC light traps w/CO_2	☐ Canopy
X NJ light traps	☐ Canopy
☐ NJ light traps w/CO_2	☐ Canopy

Other (please describe): BG Sentinel traps, Ovicups for surveillance of *Aedes albopictus.*

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 occuring. 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:

X Ae. albopictus
☐ *Ae. cinereus*
X Ae. vexans
☐ *An. punctipennis*
☐ *An. quadrimaculatus*
X Cq. perturbans
X Cx. pipiens
X Cx. restuans
X Cx. salinarius
X Cs. melanura
X Cs. morsitans
☐ *Oc. abserratus*
X Oc. canadensis
X Oc. cantator
☐ *Oc. excrucians*
☐ *Oc. fitchii*
X Oc. j. japonicus
☐ *Oc. punctor*
X Oc. sollicitans
☐ *Oc. stimulans*
X Oc. taeniorhynchus
X 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:

X West Nile Virus
X Eastern Equine Encephalitis
☐ Other Please list:

Did the above listed diseases cause human or horse illnesses? Yes (mammal).

Please explain: No human cases in Bristol County. A deer tested positive for EEE, it was euthanized.

At what arbovirus risk level did the year begin 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

At what arbovirus risk level did the year end in your area? (If more than one please list)
WNV: All Cities and Towns at Low Risk.
EEE: Low: Westport, Seekonk, Attleboro, North Attleboro, Mansfield, Norton, Taunton
Moderate: Raynham, Easton, Berkley, Dighton, Swansea, Rehoboth, Fall River, New Bedford, Dartmouth, Acushnet, Fairhaven, Somerset
High: Freetown

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, 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: ~2500

Please list some events you participated in for the year of this report:
Taunton Science Fair, NMCA Annual Meeting presentation, AMCA Annual Meeting presentation, Rehoboth Senior Center presentation, Greater New Bedford Gardening Club presentation, Taunton Senior Housing presentation, New Bedford Health Fair (table), New Bedford Health Dept taped PSA, Capron Zoo (table), Mansfield Housing Authority (handouts), Dartmouth Council on Aging presentation, Freetown BOH presentation, Bristol Aggie Advisory Board meeting, Berkley Agricultural Business Day (table), advised Raynham BOH Intern, Attleboro BOH presentation, Buttonwoods Zoo (table), Radio spots with New Bedford BOH on WBSM, Attleboro Farmers Market (table), Seekonk channel 9 (30 minute spot on mosquitoes and ticks), Seekonk Council on Aging presentation, Greater New Bedford Health Alliance Health Fair “Gifts to Give” (table), Spring Expo at Bristol Aggie School (table), New Bedford Senior Spectacular (table), Dighton Community Fair (table), Attleboro Community Fair (table) New Jersey Mosquito Control Association Annual Meeting presentation, Greater New Bedford Health Alliance “Rare Disease Awareness Network” Health Fair (table), Easton Town Crier (announcements).

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:
1. We conducted a Fall application of tracker dye in the Bolton Swamp in Freetown to discover if a liquid application would be effective against Culiseta melanura in their breeding habitat (crypts) and also for open water species.
2. Ovi cup study to determine the presence and range of the invasive species *Aedes* albopictus in southern Bristol County.

Are you involved in any collaboration with academia, industry, environmental groups, etc.? no

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, Chainsaw safety training provided by Stihl, 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.

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.
Drew Bushee: MA Pesticide Certification (47), CDL license, Hoisting Engineer license.
John Moniz: Licensed Pesticide Applicator, CDL license, Hoisting Engineer license.
John Raposo: Licensed Pesticide Applicator.
Joshua Nickerson: Licensed Pesticide Applicator, CDL license, Hoisting Engineer License.
Matthew Gavaza: MA Pesticide Certification (47)
Anthony Souza: Licensed Pesticide Applicator
Larry Goss: MA Pesticide Certification (43)
John Pereira: MA Pesticide Certification (43)

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 yearround 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):

X Computers
X GIS mapping
X GPS equipment
X Computer databases
X 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: 941.5 lbs
Comments: _____

Product Name: VectoMax WSP
EPA Reg. #: 73049-429
Application method: Other: Place
Targeted life stage: Larval
Total amount of concentrate applied: 541.43 lbs
Comments: _____

Product Name: Altosid XR Briquets
EPA Reg. #: 2724-421
Application method: Other: Place
Targeted life stage: Larval
Total amount of concentrate applied: 56.56 lbs
Comments: _____

Product Name: Duet
EPA Reg. #: 1021-1795-8329
Application method: ULV
Targeted life stage: Adult
Total amount of concentrate applied: 574.62 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: Anvil 10+10
EPA Reg. #: 1021-1688-8329
Application method: ULV
Targeted life stage: Adult
Total amount of concentrate applied: 22.81 gallons
Comments: _____

Product Name: VectoLex WSP
EPA Reg. #: 73049-20
Application method: Place
Targeted life stage: Larval
Total amount of concentrate applied: 360.73
Comments: _____

Product Name: Fourstar CRG
EPA Reg. #: 85685-2
Application method: Place
Targeted life stage: Larval
Total amount of concentrate applied: 1363.25 lbs
Comments: _____

Product Name: Natular XRT
EPA Reg. #: 8329-84
Application method: Place
Targeted life stage: larval
Total amount of concentrate applied: 44.79 lbs
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 completed work with Franz Inglefinger (MA Division of Ecological Restoration) and the Conservation Commission in Dartmouth on a restoration project for the town.

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 difficluties, we simply ask the school or daycare to update their IPM plan and remind them of the requirements (notifciation, 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: _____

October 14, 2014

Bristol County Mosquito Control Project (BCMCP)
End of the 2014 Season Report

This report is based on data collected from CO_2-baited CDC traps, resting boxes gravid traps and BG Sentinel Traps.

Total Pools Submitted for Testing 2014: 443 Pools
- Total Pools Submitted for Testing 2013: 425 Pools

Total Pools Submitted from Bristol Co. by MA DPH in 2014: 236 Pools
- Total Pools Submitted for Testing 2013: 339 Pools

Total Number of Mosquitoes Tested in 2014: 14,418
- Total Number of Mosquitoes Tested in 2013: 17,220

Total Number of Mosquitoes Tested from Bristol Co. by MA DPH in 2014: 7,342
- Total Number of Mosquitoes Tested in 2013: 11,390
- Total Number of Mosquitoes Tested in 2012: 28,482

Total Number of Non-submitted Mosquitoes 2014: 20,108
- Total Number of Non-submitted Mosquitoes 2013: 53,208

Total Number of Non-submitted Mosquitoes from Bristol Co. by MA DPH 2014: 3,059
- Total Number of Non-submitted Mosquitoes 2013: 8,449

2014 Combined Data:	2013 Combined Data:
Total Pools Tested: 764	Total Pools Tested: 764
Total Mosquitoes Tested: 21,760	Total Mosquitoes Tested: 28,610
Total Non-Submitted: 23,167	Total Non-Submitted: 61,657
Total Collected: 44,927	Total Collected: 90,267

WNV 2014: 8 Pools
- 6 pools of *Cx. pipiens/ restuans* complex
- 2 pools of *Cs. melanura*
- Most WNV positive mosquitoes were collected from gravid traps.

- **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

EEE 2014: 15 Pools

- 14 pools of *Cs. melanura*
- 1 pool of *Cx. pipiens/ restuans* complex
- Most WNV positive mosquitoes were collected from CO_2–baited traps and resting boxes.

- **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 CO_2–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 CO_2 – baited traps.

Mosquito activity/trends for the 2014 Season?
The mosquito season began following average fall and winter temperatures, which were conducive to overwintering. Lack of precipitation and a cooler spring for much of January until April was observed. The spring mosquito species were delayed in our region by approximately 2 weeks due to cooler temperatures. The area also experienced a slight drought where many of the smaller wetlands dried down. At the beginning of May, an aerial larvicide application was made to the Hockomock swamp complex in conjunction with Plymouth County Mosquito Control Project. Bristol saw an efficacy rate between 50%- 90% depending on location. Surveillance for Eastern Equine Encephalitis (EEE) in 2014 began at below normal levels in Bristol County similar to 2013 and 2012. Low numbers of *Cs. melanura* were collected from our traps in areas of past EEE isolations and high late season populations.

Overall it was a very quiet but focal year for EEE with the first isolation from Freetown on July 31st in *Cs. melanura* from resting boxes. This was earlier than the 2013 first isolation on August 12th in *Cs. melanura* from Rehoboth. However, the first isolation in 2012, (which was a very active year) was from Easton on July 9th from *Cs. melanura* and *Cq. perturbans.* Overall populations of *Cs. melanura* were average to below average for all sites within the county, expect for the Freetown/ New Bedford border. The majority of the activity most likely originated from the Bolton Cedar swamp in Freetown and the nearby Acushnet Cedar swamp. Populations remained above average all season from these trap sites and all but 2 of the 15 EEE positive pools originated in this area. Only Westport and Rehoboth had EEE reported this season outside this area. There was no activity in the Raynham/Easton Hockomock Swamp complex compared to last season where it played a major role in EEE activity. EEE was detected just over the border in Plymouth County in the Hockomock region. *Oc. canadensis* was predominate mammal-biting species this season, even *Cq. perturbans* populations were below last year's levels for our region. There were no reported human cases of EEE in Bristol County. A mammal case was reported on August 9th in Freetown, very close to our active trap location in a deer that was euthanized and tested. No further cases were reported.

Surveillance for West Nile virus was below normal since lack of rain reduced the number of *Cx. pipiens/ restuans* collected. The virus was more dispersed with only Easton reporting sustained activity. Collections from 6 different cities/towns were reported in 2012 compared with 13 cities and towns in 2013. New Bedford and Fall River trapping locations had little activity this season compared to 2012 were multiple trap locations within the cities had WNV. The only other species to test positive for WNV in Bristol County was *Cs. melanura*. There were no reported human or horse cases of WNV in Bristol County.

We collected 248 Asian Tiger mosquitoes- *Ae. albopictus* from multiple sites in New Bedford using BG Sentinel traps. Trapping with BG Sentinel traps was restricted to 4 locations this season. Most were collected around the primary sites located in close proximity to a tire recycling plant. This was the sixth year in a row that *Ae. albopictus* were collected from these sites. Past collection records for this species was 188 collected in 2013, 169 in 2012, 34 in 2011 and 2 in 2010. One of the 4 locations was a new site this season in hopes of determining distribution within the city. BCMCP did receive its first complaint about this mosquito on September 16th and was followed up by trapping in the location. Five female *Ae. albopictus* were collected and a new location was added to its range.

In addition to BG Sentinel traps, BCMCP utilized ovitraps for the first time in the project's history. Ovitraps were placed in the geographical locations of initial identification and just outside to establish range and distribution throughout the season. The cups were sampled weekly using seed germination paper as an oviposition substrate. Eggs were counted and reared to adults for identification from 8 trapping locations from June to November during the 2014 season. *Ae. japonicus* (449), *Ae. triseriatus* (36) and *Ae. albopictus* (389) were collected from these sites. More information from this study will be available soon.

Virus Interventions:

Overall this was a quiet mosquito virus season, mainly due to the lack of precipitation. 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 occurred mainly in the Freetown/ New Bedford areas were EEE interventions were completed in response to high mosquito populations, virus isolations and residential requests. *Cs. melanura* was the main vector this season and unlike past seasons (2010, 2011, 2012, 2013) *Cq. perturbans* was not the main epizootic vector. WNV in Bristol County has been detected every year since 2001, but no major interventions were necessary. No night-time interventions were conducted.

To date the town of Freetown is in the High risk category for EEE. The towns of Rehoboth, Dighton, Swansea, Somerset, Berkley, Fall River, New Bedford, Acushnet, Dartmouth, Easton and Raynham are in the Moderate-risk category for EEE. All other towns (8) are in the Low-risk category for EEE. To date all 20 cities and towns of Bristol County are in the Low-risk category for WNV.

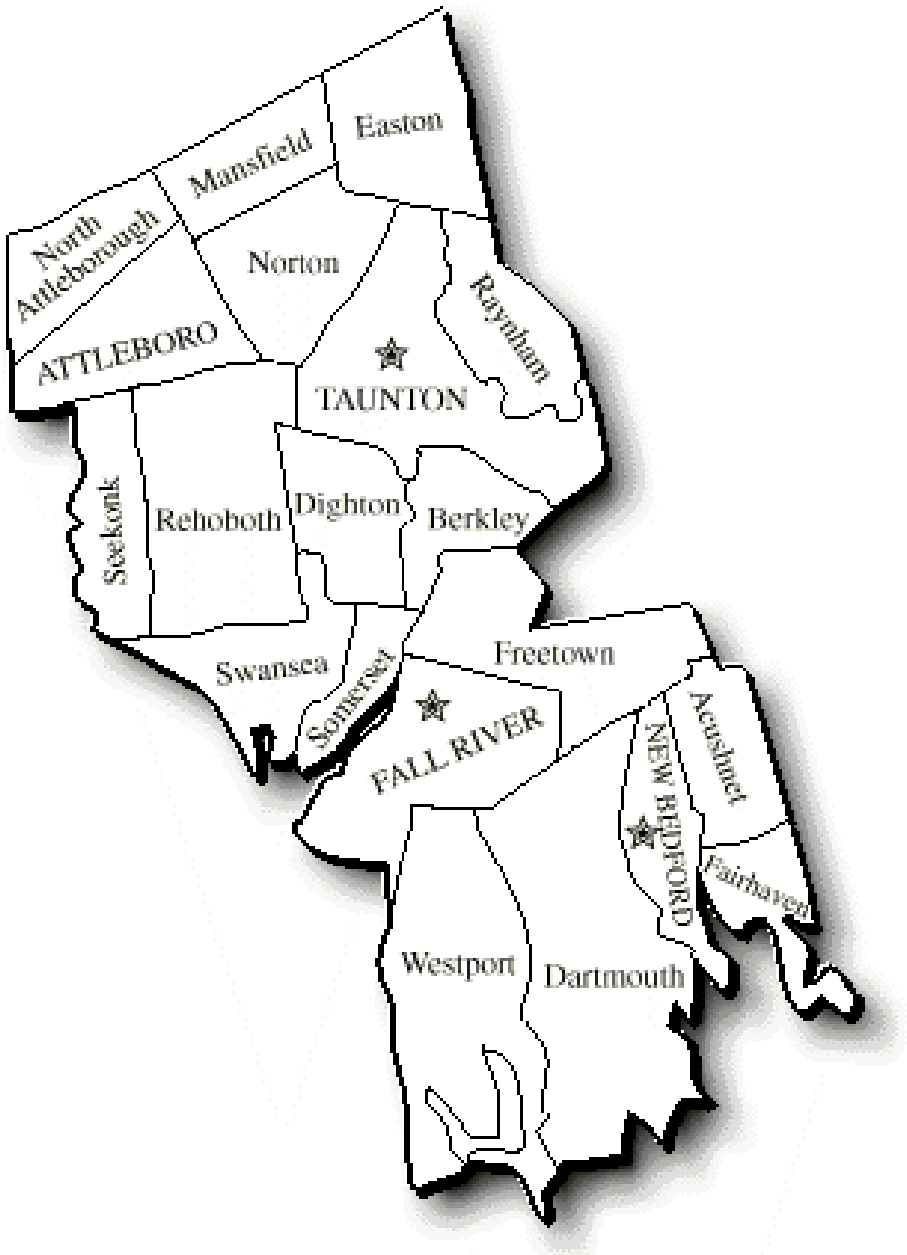
Number of requests for service, is up, down etc:

Year to date Bristol has received 12,971 calls for service as of 10/14/14. We stopped taking residential requests as of 9/12/14. In 2011, Bristol had received 14,320 calls for service, 14,778 in 2012 and 15,792 in 2013.

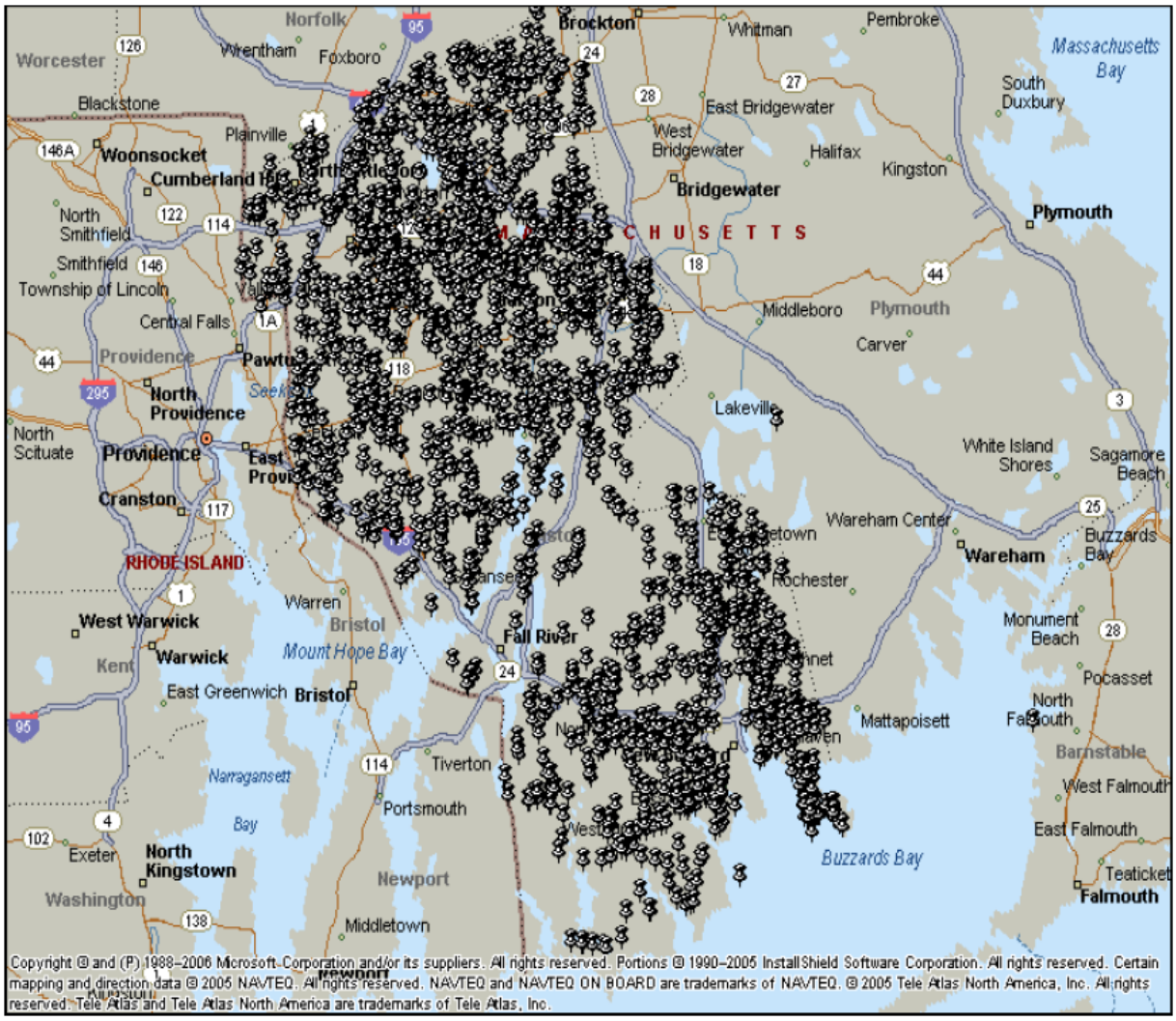
Bristol County Mosquito Control Project's Outreach:

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 updated weekly and provided answers too many of the public's frequently asked questions. Twitter was used extensively to make the public aware of upcoming activities and public health notices.

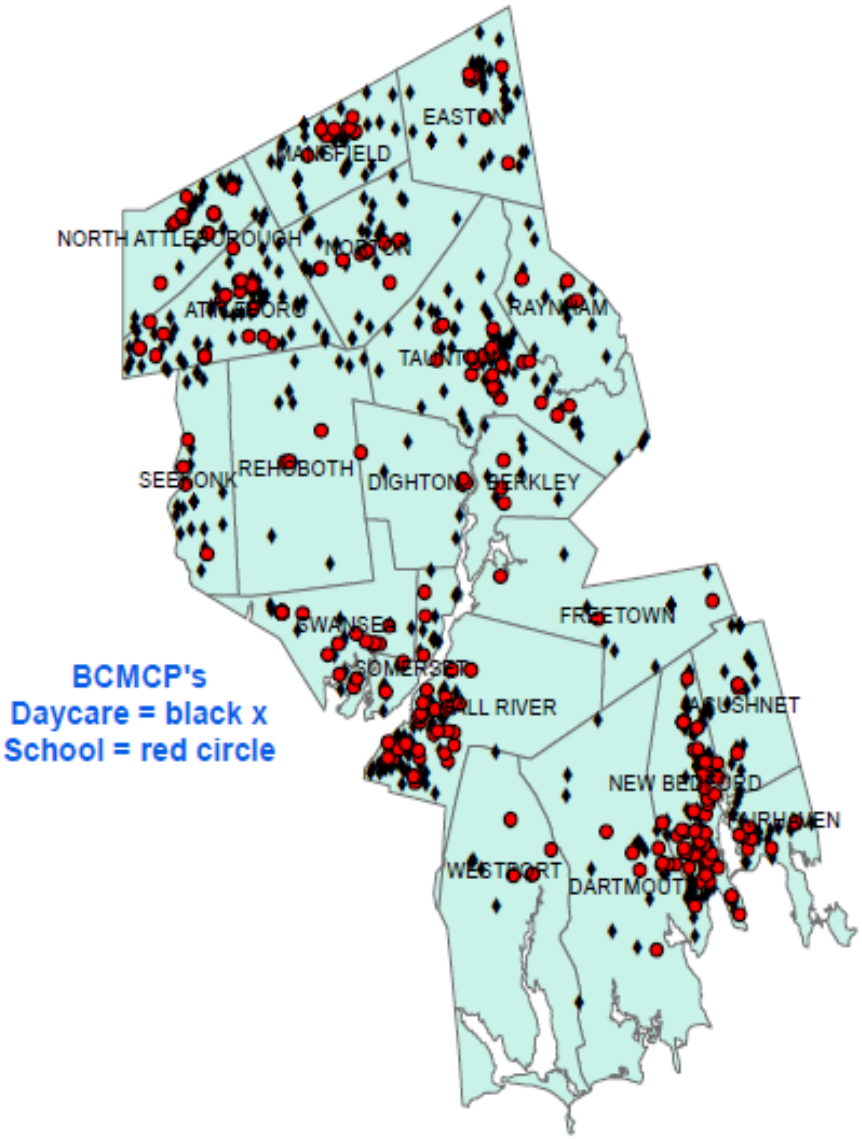
Bristol County Mosquito Control Project
Service and Treatment Area Map



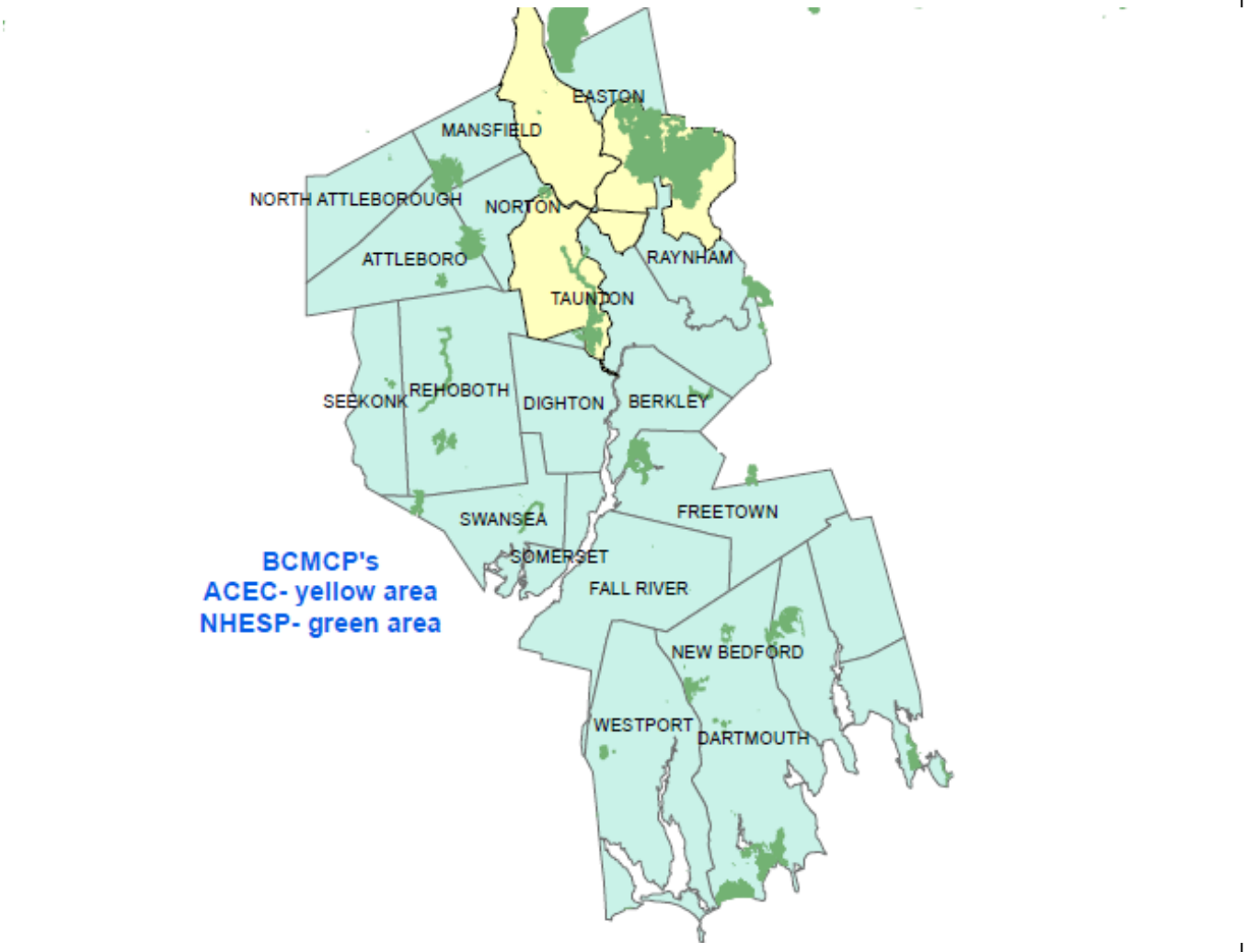
BCMCP's Computerized GPS Larval Sites

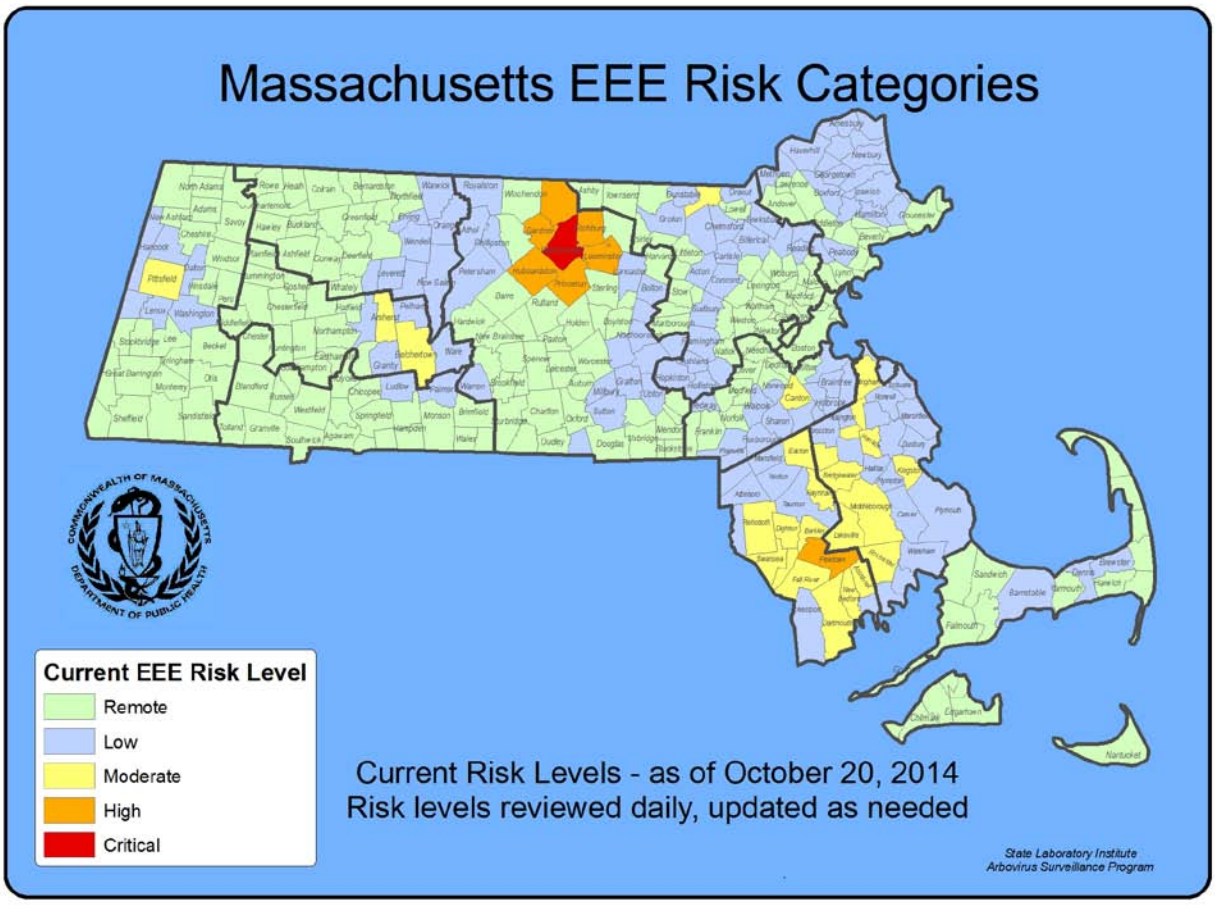


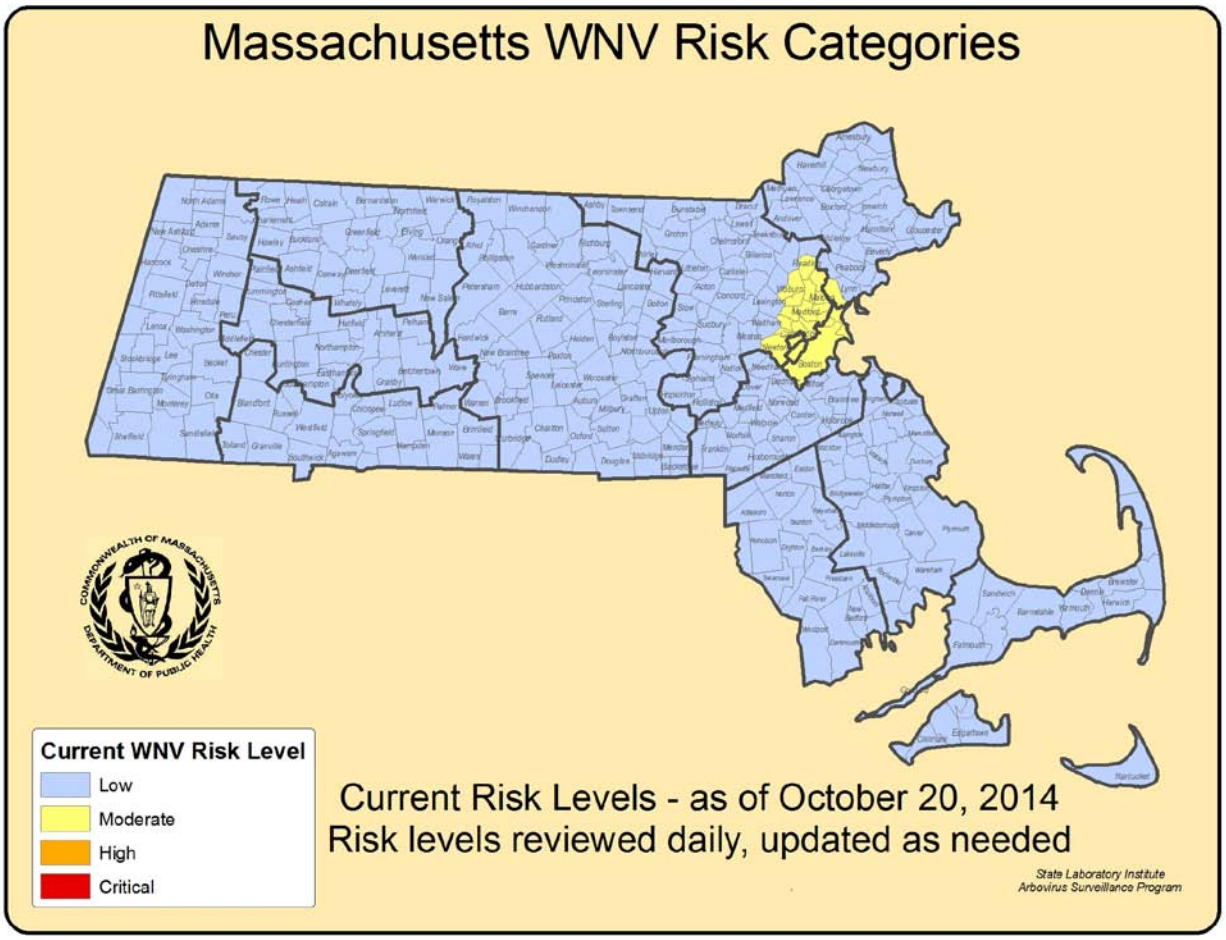
Bristol County Schools and Daycares



Bristol County Priority Habitat Map




Massachusetts EEE Risk Categories
Current EEE Risk Level
Remote
Low
Moderate
High
Critical
Current Risk Levels - as of October 20, 2014
Risk levels reviewed daily, updated as needed
State Laboratory Institute
Arbovirus Surveillance Program


Massachusetts WNV Risk Categories
COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF PUBLIC HEALTH
Current WNV Risk Level
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Current Risk Levels - as of October 20, 2014
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 MOSQUIT CONTROL PROJECT
140 NORTH WALKER STREET, TAUNTON, MA 02780
TEL:(508) 823-5253 FAX: (508) 828-1868

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

SUPERINTENDENT
JENNIFER E. DACEY M.S.

NOTICE OF PUBLIC MEETING TO PRESENT AND DISCUSS ITS PRELIMINARY PROPOSED BUDGET FOR F/Y 2016

Notice is hereby given that the Bristol County Mosquito Control Project (the "District") will hold an informational public meeting following a 7 a.m. Commission meeting at the time and place indicated below in order to present and discuss the District's preliminary proposed budget for F/Y 2016, and to receive comments and answer questions from the public and local public officials in connection therewith.

Date: December 3, 2014
Time: 8:00 a.m. – 9:00 a.m.
Location: North Attleboro Town Hall
43 South Washington St.
North Attleboro, MA

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 2016 and for the fiscal year immediately preceding are as follows: Level Funding.

F/Y 2015 = $1,322,814.00
F/Y 2016 = $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 by April 15th.

(*Revised 3/4/10; 10/27/10; 12/-14/11; 2/3/14; 10/22/14)*

Form SRB-1

Page 1 of 2

BRISTOL COUNTY MOSQUITO CONTROL PROJECT

NOTICE OF PUBLIC MEETING TO PRESENT AND DISCUSS
ITS PRELIMINARY PROPOSED BUDGET FOR FY2016

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 **FY2016**, and to receive comments and answer questions from the public and local public officials in connection therewith.

1. Date: December 3, 2014

2. Time: 8 AM

3. Location: North Attleboro Town Hall 43 South Washington St. North Attleboro, MA

4. A copy of the District's preliminary proposed budget is available for inspection during regular business hours at the following location(s):

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 FY2016 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 FY2016.**

A. District Name	B. Number of Employees	C. FY2016 Preliminary Proposed Budget Amount	D. FY2016 % Increase towards Operating Budget	E. FY2016 % Increase towards Capital Budget	F. FY2016 Total % Increase Over Certified FY2015 Budget (Add D + E)	G. FY2015 Estimated Balance Forward /Rollover Amount	H. FY2015 Actual Budget Revenues	I. FY2016 Total Funding Available in Trust Account (Add C + G)
BCMCP	12	$1,322,814	100%	0%	0%	$50,000	$1,595,484	$1,372,814

BRISTOL COUNTY MOSQUITO CONTROL PROJECT
FY2016 Proposed Cherry Sheet Assessments Estimates
Based on the preliminary proposed District budget
(2014 Equalized Valuations)

Name of Municipality	% of Total Budget	BCMCP Project Share Amount	State Reclamation Mosquito Control Board Share Amount	Total Assessment Estimate
ACUSHNET	2.61%	34,481	1,276	35,757
ATTLEBORO	6.05%	80,007	2,960	82,967
BERKLEY	2.18%	28,870	1,068	29,938
DARTMOUTH	10.11%	133,776	4,950	138,726
DIGHTON	2.79%	36,915	1,366	38,281
EASTON	5.26%	69,634	2,576	72,210
FAIRHAVEN	2.87%	38,018	1,406	39,424
FALL RIVER	7.73%	102,215	3,782	105,997
FREETOWN	4.36%	57,621	2,132	59,753
MANSFIELD	4.73%	62,601	2,316	64,917
NEW BEDFORD	6.84%	90,491	3,348	93,839
NORTH ATTLEBORO	4.83%	63,903	2,365	66,268
NORTON	4.49%	59,372	2,196	61,568
RAYNHAM	3.50%	46,258	1,712	47,970
REHOBOTH	5.63%	74,492	2,756	77,248
SEEKONK	3.48%	46,098	1,706	47,804
SOMERSET	3.04%	40,220	1,489	41,709
SWANSEA	3.79%	50,095	1,854	51,949
TAUNTON	8.49%	112,281	4,154	116,435
WESTPORT	7.22%	95,467	3,532	98,999
20 Members	100.00%	1,322,815	48,944	1,371,759

State Reclamation and Mosquito Control Board
Budget Notification and Compliance Certification Policy

DECLARATION OF SUPPORT OR NO SUPPORT OF MOSQUITO CONTROL FUNDING FOR FY16

Declaration

I, _____the chief executive officer of Town/City of _____
(Print Name/ and Sign Name) (Please Print)
hereby designate_____to sign this declaration.
(Print Name)

(Please check applicable box below)

☐ Support
☐ Do Not Support

the preliminary mosquito control budget proposed and this municipality's estimated proportionate share thereof, expressed both as a percentage and as a dollar amount as provided to this municipality in compliance with the State Reclamation and Mosquito Control Board Budget Notification and Compliance Certification Policy .

Name: _____
(*Please Print*)

Signature: _____

Position: _____

Date: _____

Both a copy and the original declaration should be submitted to the district who will forward all member communities' declarations to the State Reclamation and Mosquito Control Board no later than April 15th

Bristol County Mosquito Control Project

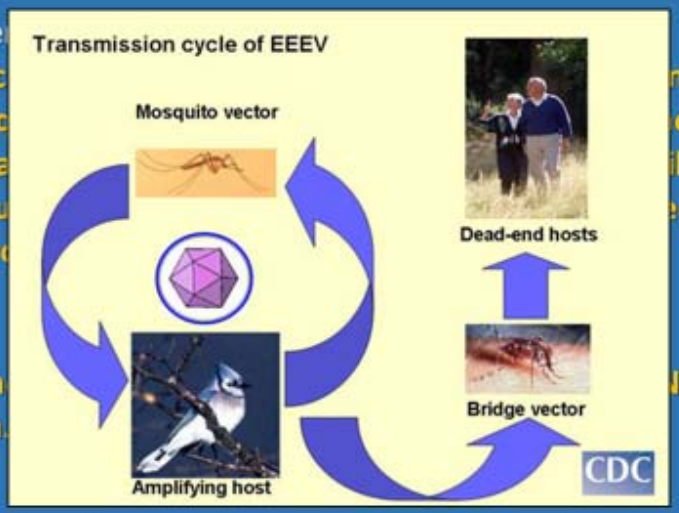
Seasonal Findings 2014
2016 Budget

Why do we have mosquito control?

Mission State

To serve the c nd disease carrying mosc ost environmenta ilize a variety of methods in su eople, wildlife and the envir

Eastern Equin IV) are our main concern.



Spring Larviciding

2nd Aerial Larvicide by BCMCP (in conjunction with Plymouth MCP)

- Hockomock Swamp
- Dead Swamp
- Pine Swamp

3,440 acres were treated.

We will conduct aerial larviciding again in 2014, with an additional location added (Bolton Swamp).

Bolton Swamp Research

- Habitat of *Culiseta melanura* (EEE mosquito).
- Wanted to see if larvicide could make it into *Cu. Melanura* breeding sites (cyrpts).
- Aerial application of Tracker dye performed in October (Fall application).
- Overall goal is to try and find a more effective method of controlling *Cu. melanura*.
- No cost to Project.

Historical Breeding Areas around Bristol County.



940 acres were treated throughout the county.

42,483 Catch Basins

Surveillance and Virus Testing

BCMCP

Number of mosquito pools tested: 764

Number of mosquitoes tested: 21,760

State of MA:

EEE: 33 positives (mosquito pools)

WNV: 56 positives

Mammals: 1 horse for EEE, euthanized (Westminster), 1 Deer (EEE)

Humans: 6 (WNV): 5 in Middlesex County and 1 in Essex County

No deaths

	EEE	WNV		EEE	WNV
Acushnet	1		New Bedford	4	
Attleboro		1	N. Attleboro		
Berkley			Norton		
Dartmouth			Raynham		
Dighton		1	Rehoboth	1	
Easton		3	Seekonk		
Fairhaven			Somerset		
Fall River		1	Swansea		
Freetown	8	1	Taunton		
Mansfield		1	Westport	1	

Surveillance of *Aedes albopictus*

- Vector of Chikungunya, Dengue Fever, capable of transmitting other viruses including EEE and WNV.
- Found in New Bedford in 2000, 2009 on…
- This year we extended traps locations and began ovicup collections to determine species distribution in Bristol County.

2014 Spray Requests

Total number of spray requests completed = **12,926**

Acushnet	290	New Bedford	501
Attleboro	1034	N. Attleboro	306
Berkley	377	Norton	665
Dartmouth	1002	Raynham	1328
Dighton	389	Rehoboth	544
Easton	1192	Seekonk	857
Fairhaven	830	Somerset	76
Fall River	79	Swansea	264
Freetown	796	Taunton	94
Mansfield	883	Westport	569

Water Management, now year round.

As of 12/1/2013:

Brush (by hand): 44,265'

Reclaim (by hand): 45,490'

Tractor Ditch: 16,025'

Tractor Brush: 12.77 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.

Public Education / Outreach

Handouts: Pamphlets, Posters

Laminated informational sheets at Parks and Rec areas

Presentations: Senior centers, Elderly Housing

Attendance at local events

Communicate and coordinate with local Boards of Health

Social Media: Twitter @ BCMCPMOSQ

Website www.bristolcountymosquitocontrol.com

Going Forward…

- **Surveillance and Testing** to monitor what's occurring in county.

- **Continue Research Efforts**

  a. Monitor for *Aedes albopictus* populations and distribution.

  Through trapping and Ovicups.

  Continue to encourage MA DPH to test for emerging viruses.

  b. Discover a more effective method for controlling *Cu. melanura*.

  Future work at Bolton Swamp.

- **Aerial larvicide** of Hockomock Swamp and other large water bodies (Bolton Swamp, Pine Swamp and Dead Swamp).

- **Larvicide and adulticide programs** to keep mosquito populations to a minimum.

- **Water management / source reduction efforts**, year round to reduce the number of breeding locations in spring and summer.

- **Continue public education and outreach** – Key to preventing additional breeding sites and virus transmission.

Any Questions?

2016 BCMCP Proposed Budget

Level Funded, No Increase

Object Class	BRISTOL COUNTY MOSQUITO CONTROL PROJECT PROPOSED BUDGET FOR FY2016	SA FY2016 Maintenance Estimate
AA	PAYROLL	741,000
BB	TRAVEL, TRAINING & MEMBERSHIP, CLOTHING ALLOWANCE, JOB RELATED EXPENSES	6,688
CC	CONTRACTED SEASONAL EMPLOYEES	20,000
DD	FRINGE BENEFITS, WORKERS' COMP, PENSION & INSURANCE EXPENSES	261,412
EE	OFFICE/POSTAGE/PRINTING, ADVERTISING FEES, FINES, LICENSES, PERMITS, VEHICLE INSURANCES	30,487
FF	LAB SUPPLIES, PARTS TO MAINTAIN & REPAIR MOTOR VEHICLES IN HOUSE	9,600
GG	RENT, ELECTIC, FUEL FOR HEAT, FUEL FOR VEHICLES	83,500
JJ	TEMPORARY HELP, AUXILIARY SERVICES	19,000
KK	MOTORIZED & HEAVY EQUIPMENT PURCHASES	200
LL	MOTORIZED & HEAVY EQUIPMENT REPAIRS AND MAINTENANCE	8,500
MM	PESTICIDES, GARDEN/FIELD TOOLS AND SUPPLIES, FACILITY INFRASTRUCTURE MAINTENANCE & REPAIR TOOLS	164,000
NN	Information Technology Professionals, Telecommunication Services Data and Voice, Information Technology Equipment	28,427
ZZ	OTHER	0
Totals		1,372,814