

MASSACHUSETTS MOSQUITO CONTROL ANNUAL OPERATIONS REPORT



2008 Year of Report

Date of Report: April 3, 2009

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

Address: 140 North Walker Street

City/Town: Taunton

Zip: 02780

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Report prepared by: Wayne N. Andrews, M.S., Priscilla Matton, M.S

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

In conjunction with the belief that mosquito control is an important public health issue, the Bristol County Mosquito Control Project, under the guidance of the State Reclamation and Mosquito Control Board, strives to serve their membership communities by suppressing both nuisance and disease carrying mosquito populations.

Our goal is to bring mosquito populations to tolerable levels using a variety of scientifically effective methodologies consistent with applicable laws. Surveillance, water management, biological and chemical controls are performed in an environmentally sensitive manner to minimize potential effects on people, wildlife and the environment.

It is acknowledged that commissioners live or work in the county and that all decisions be made in a fiscally responsible manner. The Project advocates public outreach and education through cooperative efforts with local officials, school departments and the news media.

ORGANIZATION SETUP:

Please list your Commissioner's names:

Arthur F. Tobin, Chairman

Gregory D. Dorrance

Christine A. Fagan

Joseph Barile

Robert F. Davis

Please list the Supt./Director's name: Wayne N. Andrews

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? No

If yes, please list the web address here: http://

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

Full time: 9

Part time: 15 hours per week

Seasonal: 3

Other: 0 (please describe)

Please break these down into the following areas:

Administrative staff: 1.5

Field staff: 7.5

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

- Public relations Wayne Andrews, Priscilla Matton
- Information technology Priscilla Matton, Wayne Andrews
- Entomologist Priscilla Matton, Wayne Andrews
- Wetland Scientist Priscilla Matton
- Biologist Wayne Andrews, Priscilla Matton
- Education Priscilla Matton, Wayne Andrews
- Laboratory Wayne Andrews, Priscilla Matton
- Operations Stephen Burns
- Facilities Stephen Burns
- Other (please list) GIS- Priscilla Matton

For the year of this report, we maintained:

11 vehicles

2 modified wetland equipment (list type) (2) low ground pressure excavators, (1) low ground pressure mower, (1) trailer to transport

6 ULV sprayers (list type) (2) Beecomist, (4) London Fog (GPS)

0 Larval control equipment (list type)

Other (please be specific):

Comments: _____

How many cities & towns in your service area? 20

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

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

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.

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

Comments: None

LARVAL MOSQUITO CONTROL:

Do you have a larval mosquito suppression program? Yes

If yes, please describe the purpose of this program: To reduce the emergence of adult mosquitoes in areas where larval mosquitoes are present, using biorational techniques. This includes applications to catch basins and storm water structures, primarily to control Culex mosquitoes, a vector of WNV in the area.

Please give the time frame for this program: See Timeline at the end of the document.

Describe the areas that this program is used: Throughout Bristol County in wetlands, salt marshes, catch basins, storm water structures, containers, tires, and any other areas holding water.

Do you use:

- Ground applied (includes hand, portable and/or backpack)
- Helicopter applications

Other (please list):

Comments: None

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

Wetlands: Vectobac G #73049-10

Catch basins: VectoLex WDG #73049-57

Containers: VectoLex WDG #73049-57

Other (please list): Cattail areas: Altosid Pellets #2724-448

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

Wetlands: 2.5 lbs/acre

Catch basins: 0.0041 ozs/catch basin

Containers: 0.000041 ozs/container

Other: 2.5 lbs/acre

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

- Larval dip counts – please list trigger for application: 1+ per 5 dips
- Historical records
- Best professional judgment

Comments: Some mosquitoes, like Cq. perturbans are difficult to sample and applicators use other indicators when making applications.

***Please attach a link to maps of treatment areas if possible. None**

ADULT MOSQUITO CONTROL:

Do you have an adult mosquito suppression program? Yes

If yes, please describe the purpose of this program: Vector Control 85%; Nuisance 15%

Please give the time frame for this program: See Timeline at the end of the document.

Describe the areas that this program is used: Area wide and targeted adulticide.

Do you use:

- Truck applications**
- Portable applications**
- Aerial applications**
- Other (please list):**

Comments: More aerial adulticiding should be done. Culiseta melanura & Cq. perturbans are difficult to control in the larval stage.

Please list the names of the products used with EPA #:

- 1). Anvil 10+10 ULV, EPA Reg # 1021-1688-8329
- 2).
- 3).
- 4).
- 5).
- 6).

Please list your application rates for each product:

- 1). 1/2 fluid oz per acre
- 2).
- 3).
- 4).
- 5).
- 6).

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

It is application rate dependent and only applied every other day in the same area.

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 5 per trap
- Complaint calls - please list trigger for application 2 per square mile
- Arbovirus data
- Best professional judgment

Comments: None

***Please attach a link to maps of treatment areas if possible. None**

SOURCE REDUCTION

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

If yes, please describe your program: Containers and tire removal from problem areas, sometimes in conjunction with town programs. Property inspections are an important component in source reduction.

What time frame during the year is this method employed? See Timeline at the end of the document.

Comments: Source reduction is an important component of an IPM plan, however source reduction does not equal permanent control.

DITCH MAINTENANCE

Do you have a ditch maintenance program? Yes

Please check all that apply:

- Inland/freshwater
- 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 through the areas. This includes both hand and mechanized work. Proper water flow will eliminate standing water conducive to larval mosquito development.

Please check off all that apply INLAND DITCH MAINTENANCE:

- Hand tools
- Mechanized equipment
- Other (please list):

Comments: None

Please check off all that apply SALTMARSH DITCH MAINTENANCE:

- Hand cleaning
- Mechanized cleaning
- Other (please list):

Comments: None

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

Hand cleaning 56,654 ft
Mechanized cleaning 8,476 ft
Other (please list): Footage checked- 17,044 ft

Comments: _____

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

Hand cleaning 5,300 ft
Mechanized cleaning 3,465 ft
Other (please list):

What time frame during the year is this method employed? See Timeline at the end of the document.

Comments: We have created a Best Management Practice document to better explain how and why we perform water management. We work closely with the member towns to find sites that will benefit the communities. MA MCDs wetlands coordinators meet regularly to discuss issues and techniques used in our water management projects.

***Please attach a link to maps of ditch maintenance areas if possible.**

OPEN MARSH WATER MANAGEMENT

Do you have an OMWM program? Yes

If yes, please describe: No work was completed in 2008. However the goal of the program 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? See Timeline at the end of the document.

Comments: Participating with MA Coastal Zone Management and other MCDs with OMWM programs to establish new standards.

***Please attach a link to maps of OMWM areas if possible. None**

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: 12

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

- | | |
|---|--|
| <input checked="" type="checkbox"/> Gravid traps | <input type="checkbox"/> Canopy |
| <input checked="" type="checkbox"/> Resting boxes | <input checked="" type="checkbox"/> Canopy |
| <input checked="" type="checkbox"/> CDC light traps | <input type="checkbox"/> Canopy |
| <input checked="" type="checkbox"/> CDC light traps w/CO ₂ | <input type="checkbox"/> Canopy |
| <input type="checkbox"/> ABC light traps | <input type="checkbox"/> Canopy |
| <input type="checkbox"/> ABC light traps w/CO ₂ | <input type="checkbox"/> Canopy |
| <input checked="" type="checkbox"/> NJ light traps | <input type="checkbox"/> Canopy |
| <input type="checkbox"/> NJ light traps w/CO ₂ | <input type="checkbox"/> Canopy |

Other (please describe): UV light trap with and without CO2

Please describe the purpose of this program: There are two reasons to do surveillance: to monitor mosquito populations and virus levels in these mosquitoes. We work in conjunction with the MA Department of Public Health for testing of samples that are collected. This helps us monitor the EEE and WNV activity in the local mosquito populations. With this information we make application, public outreach and water management decisions. Participate in an annual collection survey for *Cs. melanura* with MA DPH, to estimate the population and risk of EEE.

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

If yes, please describe how you chose these long-term sites. Originally based on EEE human cases in these areas.

Please check off the species of concern in your service area:

- | | |
|---|---|
| <input checked="" type="checkbox"/> <i>Ae. albopictus</i> | <input checked="" type="checkbox"/> <i>Oc. cantator</i> |
| <input type="checkbox"/> <i>Ae. cinereus</i> | <input type="checkbox"/> <i>Oc. excrucians</i> |
| <input checked="" type="checkbox"/> <i>Ae. vexans</i> | <input type="checkbox"/> <i>Oc. fitchii</i> |
| <input type="checkbox"/> <i>An. punctipennis</i> | <input checked="" type="checkbox"/> <i>Oc. j. japonicus</i> |
| <input type="checkbox"/> <i>An. quadrimaculatus</i> | <input type="checkbox"/> <i>Oc. punctor</i> |
| <input checked="" type="checkbox"/> <i>Cq. perturbans</i> | <input checked="" type="checkbox"/> <i>Oc. sollicitans</i> |
| <input checked="" type="checkbox"/> <i>Cx. pipiens</i> | <input type="checkbox"/> <i>Oc. stimulans</i> |
| <input checked="" type="checkbox"/> <i>Cx. restuans</i> | <input checked="" type="checkbox"/> <i>Oc. taeniorhynchus</i> |
| <input checked="" type="checkbox"/> <i>Cx. salinarius</i> | <input checked="" type="checkbox"/> <i>Oc. triseriatus</i> |
| <input checked="" type="checkbox"/> <i>Cs. melanura</i> | <input type="checkbox"/> <i>Oc. trivittatus</i> |
| <input checked="" type="checkbox"/> <i>Cs. morsitans</i> | <input type="checkbox"/> <i>Ps. ferox</i> |
| <input type="checkbox"/> <i>Oc. abserratus</i> | <input type="checkbox"/> <i>Ur. sapphirina</i> |
| <input checked="" type="checkbox"/> <i>Oc. canadensis</i> | |

Other (please list):

Do you participate in the MDPH Arboviral Surveillance program? Yes

How many pools do you submit weekly on average? 45-60

Please check off the arboviruses found in your area in the past 5 years:

- West Nile Virus
- Eastern Equine Encephalitis
- Other Please list: Highlands J

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

Please explain: We have had more EEE activity in our County in the last 5 years or 50 years than any other mosquito control program in the US. We have collected over 100 isolations from both WNV and EEE in the past 5 years. We had 6 reported WNV human cases and 2 EEE human cases.

2008 Horse case- Freetown

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

WNV: 2

EEE: 2

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

WNV: 4

EEE: 4- New Bedford, Acushnet, Freetown, Berkley

3- Raynham, Taunton, Dighton, Somerset, Fall River, Dartmouth

What time frame during the year is this method employed? See Timeline at the end of the document.

Comments: Several towns were in risk category 4 for both EEE and WNV. We met DPH guildlines for Risk Category 5 in New Bedford but the level was never changed. This may be related to the late season activity, however we did have sustained EEE isolations from Oc. canadensis, a human biting mosquito and a horse case in the area. Attached a copy of the MA DPH risk map for late season 2008.

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

EDUCATION, OUTREACH & PUBLIC RELATIONS

Do you have an education/public outreach program program? Yes

If yes, please describe: Numerous radio, TV and newspaper events.

Please check off all that apply:

- School based program
- Website
- PR brochures/handouts
- Community events
- Science fairs
- Meeting presentations
- Other (please describe): At the request of organizations, Boards of Health, schools and Town/City officials.

Please give an estimate of attendance/participants in this program: 1,500+

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

American Mosquito Control Association Annual Meeting, Reno, NV, March 2008

Washington Day Conference, Washington, D.C., May 2008

Northeast Mosquito Control Association Annual Meeting, Providence, RI, December 2008

Radio Talk Show with residential call in, covering several towns within our membership area.

Filmed a Public Service Announcement for the member town of Dighton, which was played on their Public Access Channel and town's website.

Participated on a Federal EPA-IPM grant proposal committee.

Allens Pond Association with members of Mass Audubon, Town Officials and residents.
Beekeepers Association

Pulaski Elementary School, New Bedford- presentation to all students in the school (over 600) in small groups over a 2 day period in October.

Large public outreach during a WNV outbreak during Fall River Celebrates America which included handouts and personal interaction.

What time frame during the year is this method employed? See Timeline at the end of the document.

Have you performed any research projects, efficacy, bottle assays, etc.? Yes

If yes, please elaborate on your research projects:

Determining the susceptibility of *Culiseta melanura* to *Bacillus sphaericus* (Serotype H5a5b Strain 2362) in a laboratory bioassay. Work was completed at the Project's laboratory in conjunction with Valent BioSciences Corporation.

Bat study in conjunction with Dr. Kuntz at Boston University to determine how many and what types of mosquitoes are consumed by bats.

Aedes albopictus survey in member towns to check for new introduction and establishment.

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

If yes, please elaborate on your collaborations this past year:

Culiseta melanura Blood Meal Identification with The Connecticut Agricultural Experiment Station, New Haven, CT- on going

Determining the susceptibility of *Culiseta melanura* to *Bacillus sphaericus* (Serotype H5a5b Strain 2362) in a laboratory bioassay. Work was completed at the Project's laboratory in conjunction with Valent BioSciences Corporation.

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

Does your staff participate in educational opportunities? Yes

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

Clarke Mosquito Training, Central, MA, April 2008 for CEUs

American Mosquito Control Association Annual Meeting, Reno, NV, March 2008

Washington Day Conference, Washington, D.C., May 2008

Northeast Mosquito Control Association Annual Meeting, Providence, RI, December 2008

Please list the certifications and degrees held by your staff:

Wayne Andrews- M.S. in Entomology, Certified Pesticide Applicator

Stephen Burns- B.S. in Business Management, Certified Pesticide Applicator, CDL license, Hoisting Engineer License, FEMA certified

Priscilla Matton- M.S. in Entomology, Certified Pesticide Applicator

Jonathan Gibbs- Certified Pesticide Applicator, CDL license, Hoisting Engineer License

Drew Bushee- Certified Pesticide Applicator, 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

Edward Onley- Licensed Pesticide Applicator

Comments: Participated in Science Fairs in member towns as judges and mentors.
Mentor a student from Taunton High School as part of a student internship program.

BIOLOGICAL CONTROL EFFORTS

Do you have a biological control program? Yes

If yes, please describe: Ditch maintenance to allow fish to reach mosquito larvae.

Is this program the introduction of mosquito predators or the enhancement of habitat for native predators? Enhancement of habitat

Please check off all that apply:

Predatory fish

Predatory invertebrates

Other (please describe):

What time frame during the year is this method employed? See Timeline at the end of the document.

Comments: _____

INFORMATION TECHNOLOGY

Does your program use (check all that apply):

- Computers
- GIS mapping
- GPS equipment
- Computer databases
- Aerial Photography
- Other (please describe): Create maps and posters

Please describe your capabilities in these areas: Handheld and adulticide based GPS

Please describe your current GIS abilities: Advanced

Give details if possible on your GIS abilities: ArcMap

Please describe any changes/enhancements in this area from the previous year:
Purchased 2 large format printer to create maps and posters for member towns and outreach programs.

Comments: _____

REVENUES & EXPENDITURES

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

See Fiscal Year Spreadsheet at the end of the document.

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, mistblower, other (please explain)

Product Name: Anvil 10+10 ULV
EPA Reg. #: 1021-1688-8329

Application method: Truck- Based GPS

Targeted life stage: Adult

Total amount of concentrate applied: 296.01 gal

Comments: There has been a major reduction in the amount used since introducing variable flow into our spray program, even though there has been a substantial increase in service requests.

Product Name: VectoBac G

EPA Reg. #: 73049-10

Application method: Hand

Targeted life stage: Larvae

Total amount of concentrate applied: 2,370.34 lbs

Comments: None

Product Name: VectoLex WDG

EPA Reg. #: 73049-57

Application method: Hand or Pump

Targeted life stage: Larvae

Total amount of concentrate applied: 84.79 ozs

Comments: _____

Product Name: Altosid Pellets

EPA Reg. #: 2724-448

Application method: Hand

Targeted life stage: Larvae

Total amount of concentrate applied: 399.7 lbs

Comments: For Cq. perturbans control

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: _____

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

If yes, please explain, and attach maps or a weblink if possible. Map of Canoe River and Hockomock ACEC's and areas of Priority Habitat.

SPECIAL PROJECTS

Do you perform any inspectional services such as inspections at sewage treatment facilities or review sub division plans? Yes

If yes, please elaborate Perform entomological work when requested by member towns.

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 governmental agencies.

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

If yes, please elaborate: Developed long term solutions and control strategies for city and towns.

CHILDREN AND FAMILIES PROTECTION ACT

Is your program impacted by the Children and Families Protection Act? Yes

If yes, please explain: We have 265 day cares and 150 locations of private, parochial and public school properties.

If you have data on compliance with this Act and your program, please list here: Most of our schools have an IPM plan on file with the state, however less than 50% contain any mosquito control language. Only schools and daycares the request larviciding or adulticiding from Bristol County Mosquito Control have the proper compliance language.

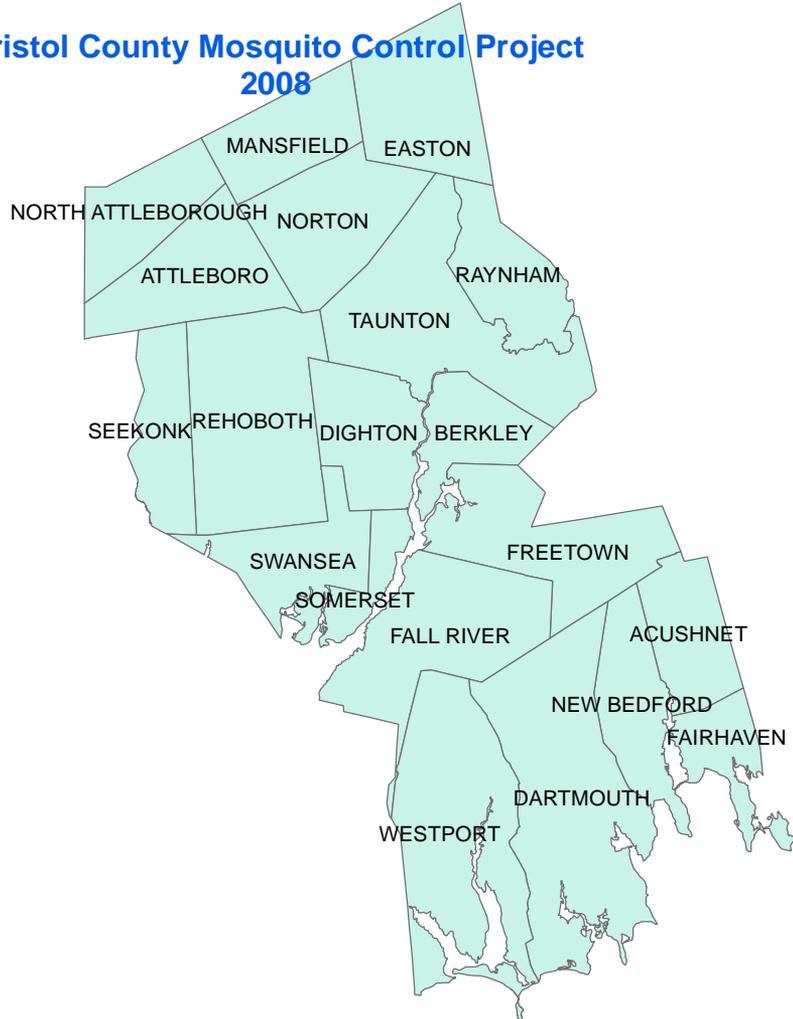
If you had difficulties with implementation of your program due to this law, please elaborate here: Avoiding this many locations at night makes adulticiding applications very difficult.

Comments: Map included at end of document with schools and no-sprays.

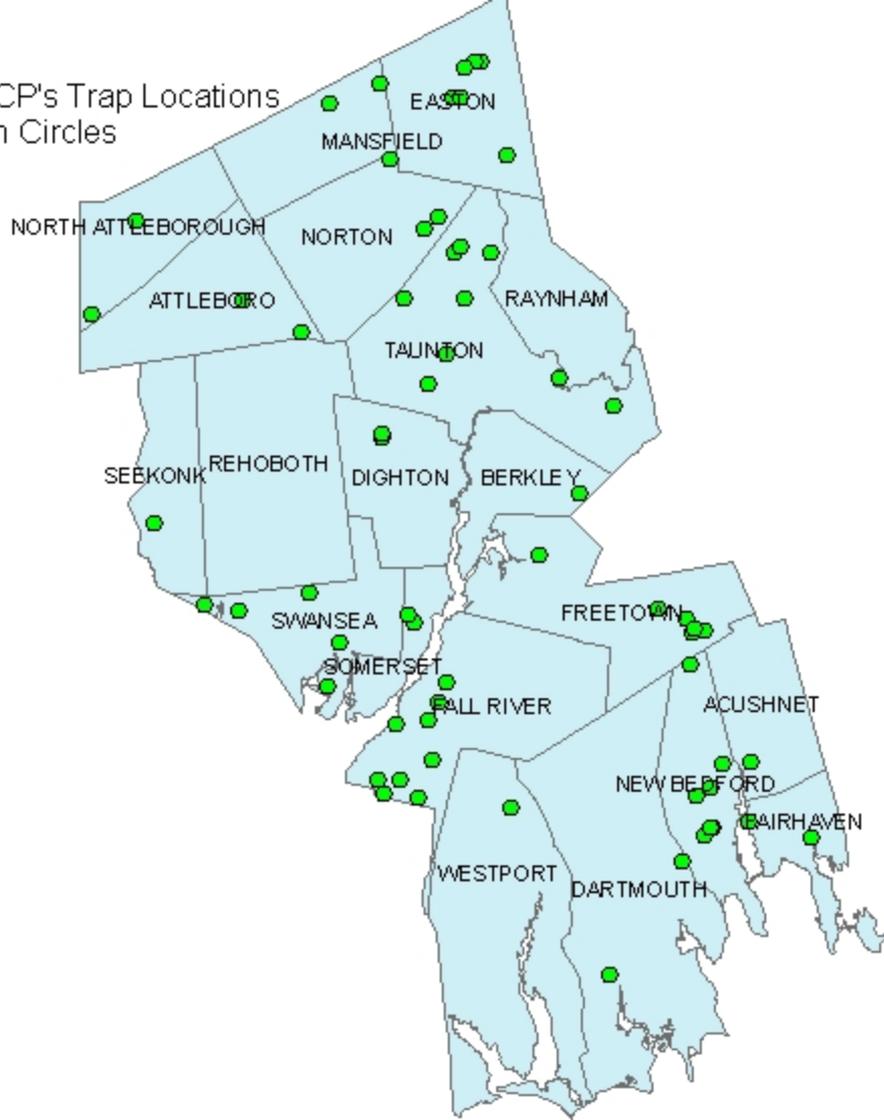
GENERAL COMMENTS

Please list any comments not covered in this report: Bristol County has 691 sq miles. It has 556 sq miles of land and 135 sq miles of water. It also has 74,000 acres of DEP wetlands plus an additional 25,000 acres of re-flood that supports Aedes vexans.

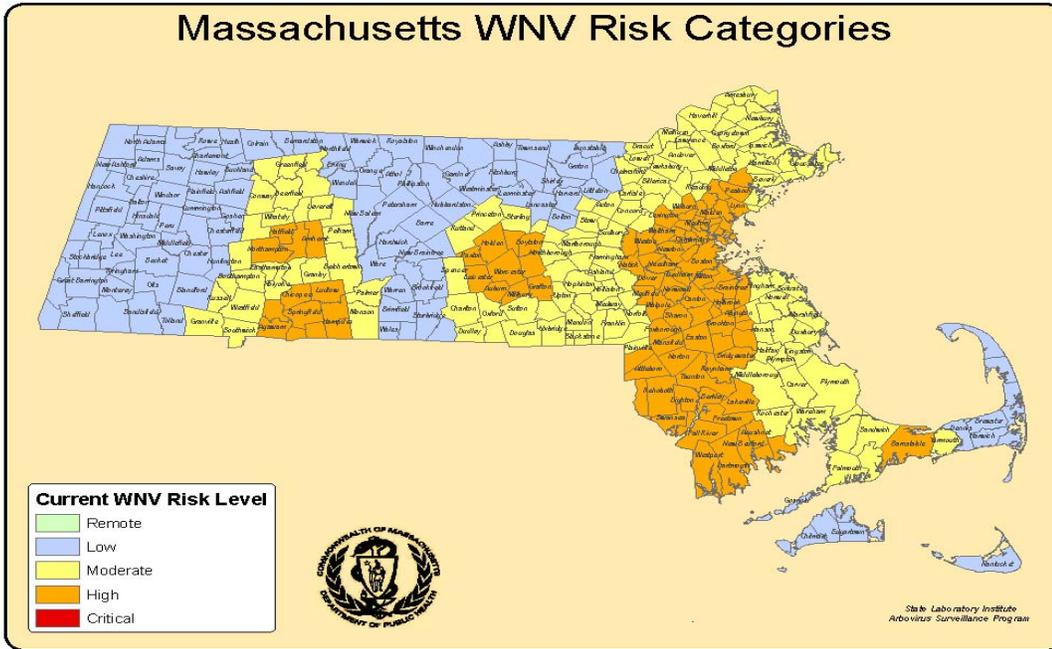
Bristol County Mosquito Control Project 2008



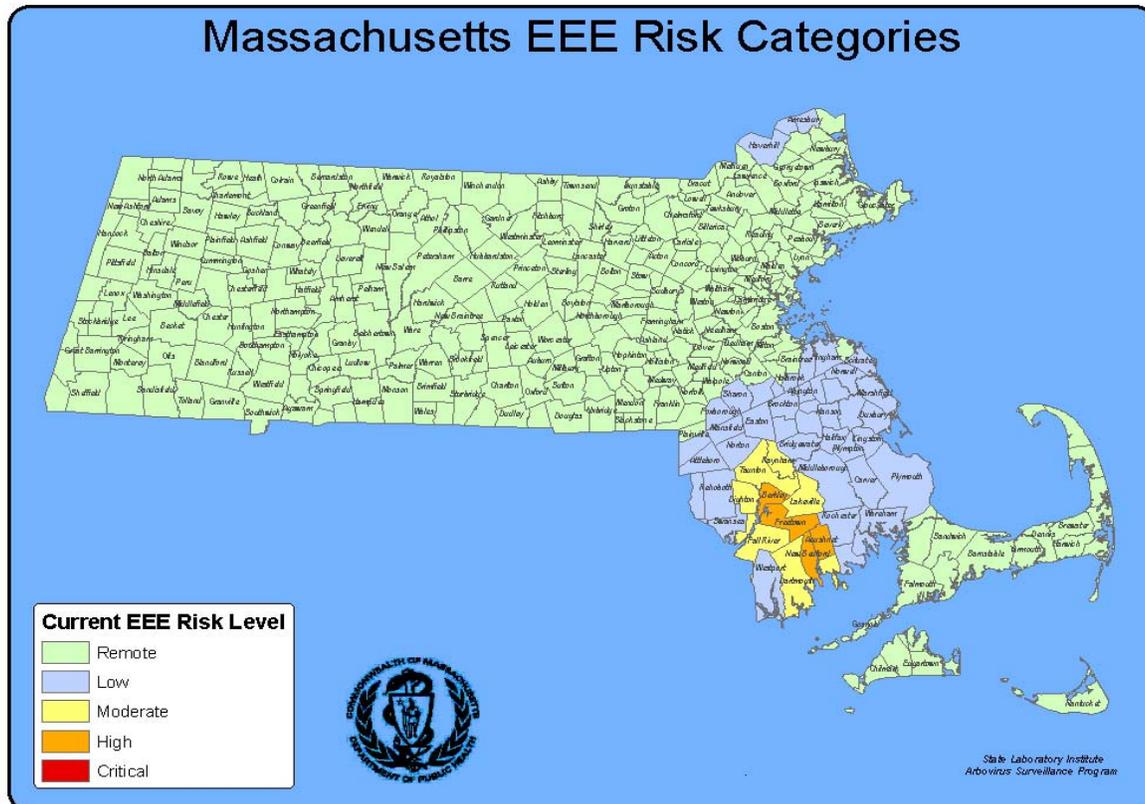
BCMCP's Trap Locations
Green Circles



Current WNV Risk Categories as described in Table 1 of the 2008 MDPH Surveillance and Response Plan
END OF SEASON 2008

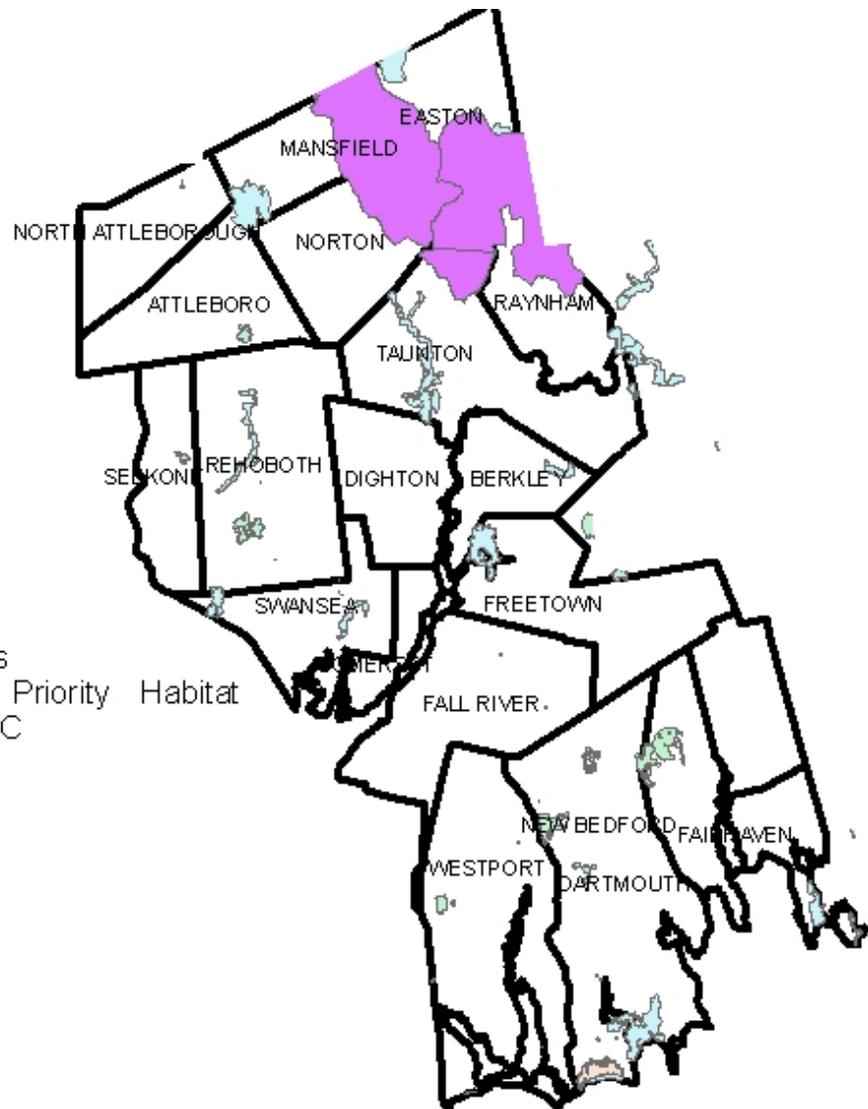


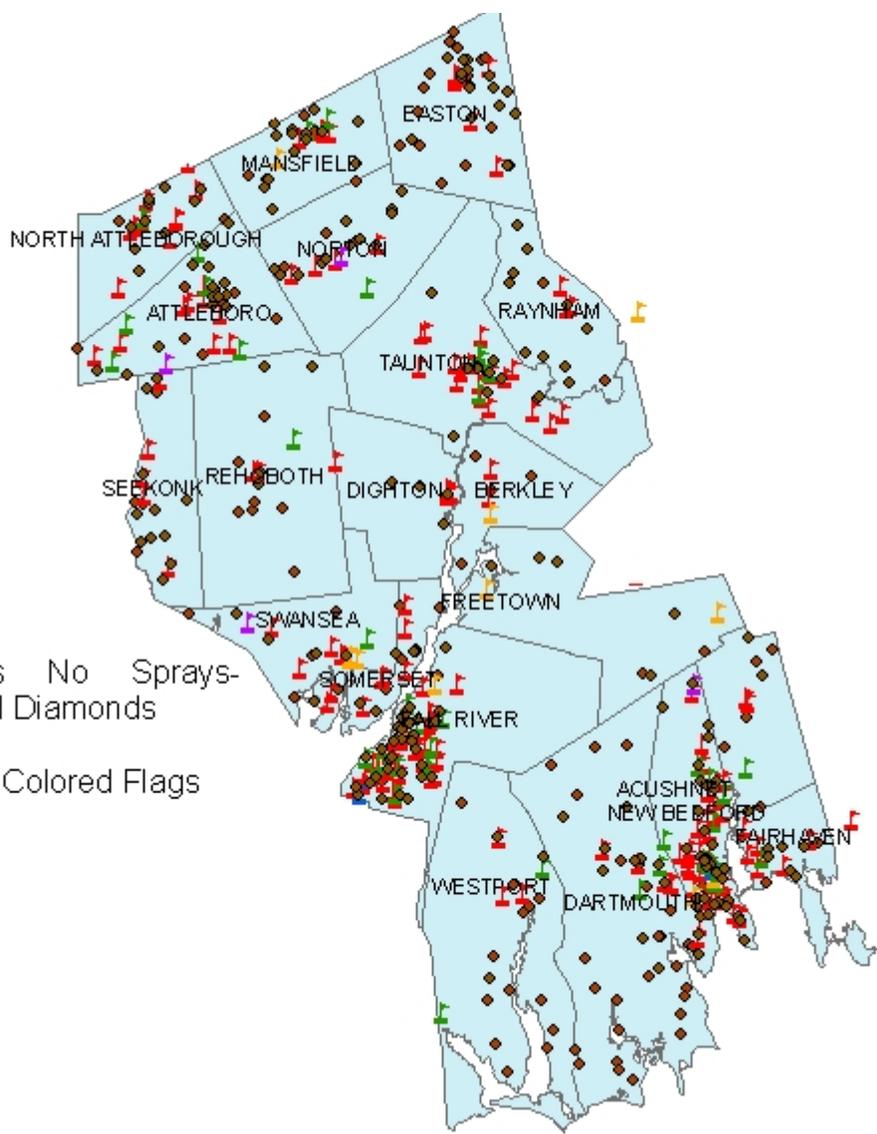
Current EEE Risk Categories as described in Table 2 of the 2008 MDPH Surveillance and Response Plan
END OF SEASON 2008



	APPROP.	JULY	AUG	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	YTD TOTAL
SUB AA														
PAYROLL		33,841.97	43,651.01	61,764.73	34,450.76	34,004.66	50,791.32	33,788.99	33,571.98	33,307.88	34,941.20	35,430.25	56,247.26	485,792.01
SUB BB														
EXPENSES, TRAVEL		100.00	198.56	50.50	202.65		2303.36	282.44	1183.92	1223.48	1047.74	306.18	208.61	7,107.44
SUB AMTS														
COMMISSIONERS					1,100.00		700.00			1,200.00			1,200.00	4,200.00
SUB DD														
RET.; INS.; TAXES		103,957.00	6,700.56	8,930.12	9,030.97	12,011.54	7,583.04	28,319.34	10,767.44	10,502.89	10,429.45	16,064.98	27,381.90	251,679.23
SUB EE														
OFFICE EXPENSES		237.14	409.94	1,567.49	1,488.45	20.83	2.49	19,800.83	404.64	479.74	123.43	196.22	207.35	24,938.55
SUB FF														
VEHICLE MAINT-REPAIR		8,591.49	149.79	1,036.94	89.68		405.14	357.77	251.52	318.71	839.24	1,211.11	1,029.55	14,280.94
SUB GG														
RENT; FUEL; UTILITIES		5,403.11	6,122.16	4,865.28	4,463.35	5,600.28	5,074.39	6,885.09	5,974.66	5,572.20	4,577.56	4,783.29	6,191.02	65,512.39
SUB HH														
CONSULTANT SERV.														0.00
SUB JJ														
OPERATIONAL SERV.		180.00	180.00	180.00							144.65	225.00	225.00	1,134.65
SUB KK														
EQUIPMENT												2,652.94		2,652.94
SUB LL														
LEASE-PURCHASE		98.44	995.19	683.7	61.03	153.08	67.97	70.34	66.13	69.78	41.14	2,778.45	1,071.49	6,156.74
SUB NN														
INSECTICIDES														0.00
FACILITY-MAINT & REPAIR			167.30	566.99	928.82	77.05	956.85	637.51	647.52	19,341.15	3,620.61	3,285.25	3,383.50	33,612.55
SUB UU														
INFORMATION TECH		13846.72	12,870.00	10,765.52	11618.12	6796.28	7,187.20	1826.42	95.00	854.00	9261.54	5848.30	2,238.67	83,207.77
		166,255.87	71,444.51	90,411.27	63,433.83	58,663.72	75,071.76	91,968.73	52,962.81	72,869.83	65,026.56	72,781.97	99,384.35	980,275.21

BCMCP's
NHESP Priority Habitat
and ACEC





BCMCP's No Sprays-
Dark Red Diamonds

Schools- Colored Flags

