

**MASSACHUSETTS MOSQUITO CONTROL  
ANNUAL OPERATIONS REPORT**



2009 Year of Report

Date of Report: 1-14-2010

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

Address: Box 72 142 R Pembroke Street

City/Town: Kingston

Zip: 02364

Phone: 781-585-5450

Fax: 781-582-1276

E-mail: atexeira@plymouthmosquito.com

**Report prepared by: Anthony Texeira**

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

**ORGANIZATION SETUP:**

Please list your Commissioner's names:

Carolyn Brennan - Chairman

Leighton F. Peck, Jr.

Kimberly King

John Kenny

Michael Valenti

Please list the Supt./Director's name: Anthony Texeira

Please list the Supt./Director's contact phone number: 781-585-5459

Please list your Asst. Supt./Asst. Director's name:

Do you have a website? Yes

If yes, please list the web address here: <http://www.plymouthmosquito.com>

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

Full time: 11

Part time: 1

Seasonal: 8

Other: (please describe)

Please break these down into the following areas:

Administrative staff: 2

Field staff: 9

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

- Public relations Dan Daly
- Information technology
- Entomologist Ellen Bidlack
- Wetland Scientist
- Biologist
- Education Dan Daly, Ellen Bidlack
- Laboratory
- Operations Jo Ann Fawcett, Steve Gillett
- Facilities Anthony Texeira, Steve Gillett
- Other (please list) Pilot & Excavator operator - Greg Goodband, Excavator operator - Brian Callahan, Area Foreman - Edward Medeiros, Ronald DeMoura, Richard Goodwin, Christopher Hanna and George Rego

For the year of this report, we maintained:

18 vehicles

1 modified wetland equipment (list type) Link-Belt

9 ULV sprayers (list type) Becomist

14 Larval control equipment (list type) 2 Hydraulic units, 2 backpack sprayers, 10 pump cans

Other (please be specific):

**Comments:** \_\_\_\_\_

How many cities & towns in your service area? 28

Please list: Abington, Bridgewater, Brockton, Carver, Cohasset, Duxbury, East Bridgewater, Halifax, Hanover, Hanson, Hingham, Hull, Kingston, Lakeville, Marion, Marshfield, Mattapoisett, Middleboro, Norwell, Pembroke, Plymouth, Plympton, Rochester, Rockland, Scituate, Wareham, West Bridgewater, Whitman

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

[www.plymouthmosquito.com/map.htm](http://www.plymouthmosquito.com/map.htm)

### **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):

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

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

Describe the areas that this program is used: We target a variety of fresh water wetlands and salt marshes

Do you use:

- Ground applied (includes hand, portable and/or backpack)
- Helicopter applications
- Other (please list): Airplane

Comments: \_\_\_\_\_

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

**Wetlands:** Vectobac 12AS 73049-38, Vectolex CG 73049-20, BTI Briquets 6218-47, Altosid XR 2724-421

**Catch basins:** Altosid pellets wsp 2724-448, Altosid Pellets

**Containers:**

**Other (please list):**

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

**Wetlands:** Vectobac 12AS 1 pint per acre by plane, 1 1/2 pint per acre helicopter

**Catch basins:** Altosid Pellets 7 gramms per basin

**Containers:**

**Other:**

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

- Larval dip counts – please list trigger for application:
- Historical records
- Best professional judgment

**Comments:** \_\_\_\_\_

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

### **ADULT MOSQUITO CONTROL:**

Do you have an adult mosquito suppression program? Yes

If yes, please describe the purpose of this program: The goal of our program is to reduce the number of biting mosquitoes to protect human health and improve the quality of life of our residents

Please give the time frame for this program: May - October (end date depends on virus activity and weather conditions)

Describe the areas that this program is used: Project wide PCMCMP accepts requests for adult mosquito control from residents, businesses and town officials

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 1020 - 1688-888329
- 2). Duet 1021 -1795 -8329
- 3). Flit 10 EC - 8329-67
- 4).
- 5).
- 6).

Please list your application rates for each product:

- 1). Anvil - 0.62 Fl. oz/acre
- 2). Duet - 0.62 Fl. oz/acre
- 3). Flit 7 oz. per gal. water
- 4).
- 5).
- 6).

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

Each resident has a maximum of 10 treatments per season

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
- Complaint calls - please list trigger for application
- Arbovirus data
- Best professional judgment

**Comments:** \_\_\_\_\_

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

### **SOURCE REDUCTION**

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

If yes, please describe your program: Our source reduction program is comprised of our ditch maintenance program, OMWM and education. We often inspect properties and offer advice to landowners regarding actions they can take to reduce the amount of mosquito production on their property.

What time frame during the year is this method employed? Throughout the year

**Comments:** \_\_\_\_\_

### **DITCH MAINTENANCE**

Do you have a ditch maintenance program? Yes

Please check all that apply:

- Inland/freshwater
- Saltmarsh

If yes, please describe: Hand and Mechanized equipment

Please check off all that apply INLAND DITCH MAINTENANCE:

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

Comments: \_\_\_\_\_

Please check off all that apply SALTMARSH DITCH MAINTENANCE:

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

Comments: \_\_\_\_\_

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

**Hand cleaning 35,165**  
**Mechanized cleaning 5,060**  
**Other (please list): 3,140**

Comments: Other is Brushing

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

**Hand cleaning**  
**Mechanized cleaning 5,975**  
**Other (please list):**

What time frame during the year is this method employed?

Comments: \_\_\_\_\_

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

### **MONITORING (Measures of Efficacy)**

Please describe monitoring efforts for each of the following:

<b>Aerial Larvicide – wetlands:</b>	<b>Pre and Post application</b>
<b>Larvicide – catch basins:</b>	
<b>Larvicide-hand/small area</b>	<b>Prior to treatment</b>

**Ground ULV Adulicide:** Periodic landing rate checks and trapping data  
**Source Reduction:** Per established Mass. Best Management Practice Standards  
**Open Marsh Water Management:** Per established Mass. Best Management Practice Standards  
**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):

**OPEN MARSH WATER MANAGEMENT**

Do you have an OMWM program? Yes

If yes, please describe: We have had OMWM permits since approxemely 2000 and our permits are current until 2016.

Please give an estimate of total square feet or acreage: 0

What time frame during the year is this method employed? The research for each project occurs between June and September. The excavator work occurs in the winter typically between Novemeber and March.

**Comments:** We did no new OMWM projects in 2009. However, we are planning a project that will occur in early 2010 in Scituate.

**\*Please attach a link to maps of OMWM areas if possible.**

**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: 5

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

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

Other (please describe):

Please describe the purpose of this program: The purpose of this program is three fold to monitor the mosquitoes for diseases, to determine general population levels and to decide where we can better focus our larvaciding efforts.

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

If yes, please describe how you chose these long-term sites. We maintain a system of NJ traps that have been at the same locations for numerous years. We use these traps to compare mosquito numbers between years. In cooperation with DPH we have in recent years begun to maintain our own sites for disease surveillance.

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 checked="" type="checkbox"/> <i>Ae. cinereus</i>        | <input checked="" type="checkbox"/> <i>Oc. excrucians</i>     |
| <input checked="" type="checkbox"/> <i>Ae. vexans</i>          | <input checked="" type="checkbox"/> <i>Oc. fitchii</i>        |
| <input checked="" type="checkbox"/> <i>An. punctipennis</i>    | <input checked="" type="checkbox"/> <i>Oc. j. japonicus</i>   |
| <input checked="" type="checkbox"/> <i>An. quadrimaculatus</i> | <input checked="" 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 checked="" 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 checked="" type="checkbox"/> <i>Oc. trivittatus</i>    |
| <input checked="" type="checkbox"/> <i>Cs. morsitans</i>       | <input checked="" type="checkbox"/> <i>Ps. ferox</i>          |
| <input checked="" 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? 24.8

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

- West Nile Virus  
 Eastern Equine Encephalitis  
 Other Please list:

Did the above listed diseases cause human or horse illnesses? No

Please explain:

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

**WNV: low**  
**EEE: low**

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

**WNV: low**  
**EEE: low, moderate and high**

What time frame during the year is this method employed? June 15 to October 16, 2009

**Comments:** We attempted to scale our surveillance program back this year due to changes at DPH. In previous years DPH did not charge us a fee for any samples we submitted. In 2009 DPH began to charge \$25 for every mosquito sample submitted. As a result of these changes PCMCP decided to focus on WNV surveillance and limited the amount of EEEV surveillance we conducted. PCMCP choose this strategy because DPH was still conducting their EEEV surveillance program and did not plan to conduct WNV gravid trap surveillance in the district. We felt our strategy complimented DPH's efforts and made efficient use of the pools allotted to us.

However, toward the end of the season EEEV activity was increasing. We choose to shift our focus to EEEV surveillance due to the large mosquito population that existed. This helped to replace some of the supplemental EEEV surveillance that DPH would normally conduct..

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

## **EDUCATION, OUTREACH & PUBLIC RELATIONS**

Do you have an education/public outreach program? Yes

If yes, please describe: The Program includes issuing press releases, education using the Project's website, identifying connections between mosquito education and the Massachusetts Curriculum Frameworks, making public presentations to various adult and youth audiences, and keeping local boards of health etc updated on mosquito related issues.

Please check off all that apply:

- School based program
- Website
- PR brochures/handouts
- Community events
- Science fairs

- Meeting presentations
- Other (please describe): Meeting with school personell regarding the Children's Protection Act

Please give an estimate of attendance/participants in this program: varied usually small groups.

Please list some events you participated in for the year of this report: Council on Aging presentations, girl scouts, meeting with school administrators

What time frame during the year is this method employed? Throughout the year, but especially during the spring and the summer months.

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

If yes, please elaborate on your research projects:

Are you involved in any collaboration with academia, industry, environmental groups, etc.? Not at this time

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

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: NMCA Annual Meeting, Clarke field training, Field safety and Power tools NMCA field day

Please list the certifications and degrees held by your staff: Excavator operator ,Pilot - Greg Goodband, U.S. Commercial Airline Certificate, Commercial Certification 34 + 47 CDL, Hoisting License- Excavator operator - Brian Callahan Commercial Certification 47 CDL, Hoisting License, - Area Foreman - Edward Medeiros B.S., Applicators license CDL, Hoisting License, - Ronald DeMoura Commercial Certification 47 - Richard Goodwin Commercial Certification 47, Hoisting License - Christopher Hanna Commercial Certification 47, Hoisting License - George Rego Applicators license, CDL, Hoisting License - Ellen Bidlack B.S., M.A., Commercial applicators Certificate 47 - Anthony Texeira B.S., M.A.T. Commercial Certificate 47 - General Foreman Steve Gillett Commercial Certification 47, CDL, Hoisting License .

**Comments:** \_\_\_\_\_

## BIOLOGICAL CONTROL EFFORTS

Do you have a biological control program? No

If yes, please describe:

Is this program the introduction of mosquito predators or the 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?

Comments: \_\_\_\_\_

## INFORMATION TECHNOLOGY

Does your program use (check all that applies):

- Computers
- GIS mapping
- GPS equipment
- Computer databases
- Aerial Photography
- Other (please describe): Our sprayers are equipped with a GPS unit that monitors the location of the sprayer, speed, and application rate.

Please describe your capabilities in these areas: Our goal is to use computers and GIS technology to improve record keeping, efficiency and communication. As a result these tools have been used in a variety of ways to meet these goals. Almost 10 years our service requests have been put directly into a database. We are using this Service Request system in 2009. The system decreases data entry errors and speeds handling of the requests. We have geocoded two years of service requests to help us identify areas where we can improve our larviciding. Other ways we have been using this technology includes installing PDAs and GPS units in all our trucks with ULV sprayers. This system tracks when and where the sprayer was used as well as other information. PCMC's helicopter contractor uses similar technology as well. We also use GIS technology to map our trap sites and help determine trap placement breeding sites and sensitive habitats. We are developing a system using GIS and computer databases to improve tracking of our hand larviciding sites and ditch maintainance.

Please describe your current GIS abilities: Intermediate

Give details if possible on your GIS abilities: We currently have: ArcGIS 9.1 installed on one computer, 3 hand held GPS units including 1 Trimble GeoXT. We have GPS units installed in 11 of our trucks .We make use of MassGIS' data for our aerial photography, wetland maps and other data.

Please describe any changes/enhancements in this area from the previous year: We have been working on improving our hand larvicide program through the creation of a data base cataloging the site descriptions and by collecting the GPS locations of the sites. Geo coding breeding sites and placing symbols on Area Foreman's town maps along with vernal pools and sensitive habitats as determined by Mass. Nartural Heritage program. We have completed mapping in 16 towns. This project will improve our record keeping and ability to identify which sites where Massachusetts Natural Heritage Program has restricted our use of pesticides.

**Comments:** \_\_\_\_\_

### **REVENUES & EXPENDITURES**

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

For FY09, PCMCP had a budget assessment of \$1,321,523 plus a rollover amount from FY08 of \$57,185, a combined total of \$1,378,708. Payroll expenditure was \$718,000. Chargebacks from Group Insurance, Medicare, Work.Comp was in the vicinity of \$120,000. Retirement portion was \$115,275. Insecticides purchased was in the area of \$130,000. Auto, liability, airplane insurance totaled approximately \$62,000, SRB's chargeback was approx. \$32,000. The balance was expended on rent for office, rent for aircraft (also maintenance on aircraft), utilities, office supplies, various shop supplies, repairs and maintenance on state vehicles, fuel for vehicles and airplane, lab equipment, mapping and aerial spray program.

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

**Comments: Municipality**

**ABINGTON - \$27,779**

**BRIDGEWATER - \$51,229**

**BROCKTON - \$90,229**

**CARVER - \$48,680**

**COHASSET - \$29,971**

**DUXBURY - \$56,055**

**HALIFAX - \$24,240**

**HANOVER - \$38,376**

**HANSON - \$26,267**

**EAST BRIDGEWATER - \$32,068**

HINGHAM - \$72,080  
HULL - \$21,324  
KINGSTON - \$35,582  
LAKEVILLE - \$44,233  
MARION - \$29,835  
MARSHFIELD - \$69,830  
MATTAPOISETT - \$30,923  
MIDDLEBOROUGH - \$92,745  
NORWELL - \$42,026  
PEMBROKE - \$43,921  
PLYMOUTH - \$181,539  
PLYMPTON - \$18,747  
ROCHESTER - \$42,054  
ROCKLAND - \$27,445  
SCITUATE - \$53,847  
WAREHAM - \$69,671  
WEST BRIDGEWATER - \$25,548  
WHITMAN - \$20,166

## **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  
EPA Reg. #: 1021-1688-8329  
Application method: ULV  
Targeted life stage: Adult  
Total amount of concentrate applied: 128 Gals  
Comments: \_\_\_\_\_

Product Name: Duet  
EPA Reg. #: 1021-1795-8329  
Application method: ULV  
Targeted life stage: Adult  
Total amount of concentrate applied: 497 Gals  
Comments: \_\_\_\_\_

Product Name: FLIT 10 EC  
EPA Reg. #: 8329-67  
Application method: Hand  
Targeted life stage: Adult  
Total amount of concentrate applied: 30 Gals  
Comments: \_\_\_\_\_

Product Name: Altosid pellets wsp  
EPA Reg. #: 2724-421  
Application method: Hand  
Targeted life stage: Larvae  
Total amount of concentrate applied: 38 lbs  
Comments: \_\_\_\_\_

Product Name: Altosid pellets  
EPA Reg. #: 2724-421  
Application method: Hand  
Targeted life stage: Larvae  
Total amount of concentrate applied: 810lbs  
Comments: \_\_\_\_\_

Product Name: Altosid XR brickets  
EPA Reg. #: 2724-421  
Application method:  
Targeted life stage: Choose one  
Total amount of concentrate applied: 17lbs  
Comments: \_\_\_\_\_

Product Name: Vectobac 12 as  
EPA Reg. #: 73049-38  
Application method: Hydraulic sprayer/ pump-can  
Targeted life stage: Larvae  
Total amount of concentrate applied: 1.5 gal  
Comments: \_\_\_\_\_

Product Name: Summit b.t.i. briquets  
EPA Reg. #: 6218-47  
Application method: hand  
Targeted life stage: Larvae  
Total amount of concentrate applied: 70 lbs  
Comments: \_\_\_\_\_

Product Name: Vectobac 12 as  
EPA Reg. #: 73049-38  
Application method: Aircraft  
Targeted life stage: Larvae  
Total amount of concentrate applied: 1.5 pints per acre helicopter 1 pint per acre by plane  
Comments: 1,839 gals

## **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 web link if possible. Large areas within the projects are designated in the Massachusetts National Heritage Atlas as priority habitats.

## **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: We continue to work with local DPW on water management programs

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

If yes, please elaborate: We have share information and resources in regards to culverts and ditching maintenance.

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

If yes, please elaborate:

Did you or participate on any **State/Regional/National workgroups or panels or attend any meeting pertaining to the above?**

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: The Project found it necessary to educate and/or re-educate many schools/school districts on the requirements of the Act including changes in Standard Written Notification options. Additionally, the Project found as certain school personell changed it was often necessary to review how to access and update IPM Plans.

If you have data on compliance with this Act and your program, please list here:

If you had difficulties with implementation of your program due to this law, please elaborate here:

Comments:

### **GENERAL COMMENTS**

Please list any comments not covered in this report: \_\_\_\_\_