

**MASSACHUSETTS MOSQUITO CONTROL
ANNUAL OPERATIONS REPORT**



2012 Year of Report

Date of Report: 10/25/12

Project/District Name: **Please select**

Address: 39 Industrial Drive

City/Town: Hyde Park

Zip: 02136

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Report prepared by: Bruce A. Landers

NPDES permit no. *****

If you have a mission statement, please include it here: Provide a scientifically based, cost effective program to control mosquitoes and the diseases they transmit.

ORGANIZATION SETUP:

Please list your Commissioner's names:

Christopher Busch
Dr. Jennifer Evans,DVM

Anna Todesca
Kaitlyn Hennigan

Please list the Supt./Director's name: Bruce A. Landers

Please list the Supt./Director's contact phone number: 617-361-4954

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

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: 2

Part time:

Seasonal: 2

Other: (please describe)

Please break these down into the following areas:

Administrative staff: 1.5

Field staff: 2.5

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

- Public relations Bruce A. Landers
- Information technology
- Entomologist same
- Wetland Scientist
- Biologist same
- Education same
- Laboratory same
- Operations same
- Facilities same
- Other (please list)

For the year of this report, we maintained:

2 vehicles

modified wetland equipment (list type)

ULV sprayers (list type) Cougar truck mounted; Leco handheld

Larval control equipment (list type) Backpack sprayers

Other (please be specific): 1 motorized backback mistblower

Comments: _____

How many cities & towns in your service area? 2

Please list: Boston & Chelsea

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

<http://goo.gl/maps/E2Mk8>

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: To keep the mosquito population as low as possible. The lower the population the less adulticiding is needed.

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

Describe the areas that this program is used: Freshwater wetlands, salt marshes, and various manmade structures.

Do you use:

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

Comments: _____

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

Wetlands: Teknar HPD #73049-404; Vectolex WSP #73049-20; Altosid Pellets WSP #2724-448

Catch basins: Vectolex WSP #73049-20; Altosid Pellets WSP #2724-448; FourStar Briquets #83362-3; Spheratax WSP #84268-2; Altosid XR Briquets #2724-421

Containers: Tekknar HPD #73049-404; Vectolex WSP #73049-404; Altosid Pellets WSP #2724-448; Spheratax WSP #84268-2

Other (please list):

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

Wetlands: 1 pint Teknar HPD/2.5+ gals.water/acre; 1 Vectolex WSP/50 square feet; 1 Altosid WSP/135 square feet

Catch basins: 1 Vectolex WSP/basin; 1 Altosid WSP/basin; 1 FourStar Briquet/basin; 1 Altosid XR Briquet/basin; 1 Spheratax WSP/basin

Containers: squirt of TeknarHPD 1pt./2.5gals.water/container; 1 Altosid WSP or 1 Vectolex WSP or 1 Spheratax WSP/container

Other:

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

- Larval dip counts – please list trigger for application: Minimum of 1/dip. Usually there is either less than 1/dip or 4-40/dip. In practice it is usually black and white, not many greys.
- Historical records
- Best professional judgment

Comments: Spring hatch starts in April. Daily rainfall and monthly high tides are listed right in the weather section of the newspaper. Natural sites get larval sampling dip counts following water events. Catchbasins are sampled and when 6/10 are positive for larvae, treatment with bacterial products begins. Altosid treatments particularly 120 day control products can start earlier. Once the larvae to basin rate gets to 6/10, it goes to near 99% of wet basins in about a week or possibly two.

***Please attach a link to maps of treatment areas if possible.**
<http://goo.gl/maps/z8ZSI>

ADULT MOSQUITO CONTROL:

Do you have an adult mosquito suppression program? Yes

If yes, please describe the purpose of this program: To control mosquitoes at a level where residents can utilize their outdoor environment and to control disease vectors to protect public health.

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

Describe the areas that this program is used: Parks, cemeteries, and residential areas.

Do you use:

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

Comments: _____

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

- 1). Anvil 10+10 #1021-1688-8329
- 2). SuspendSC #432-763
- 3).

- 4).
- 5).
- 6).

Please list your application rates for each product:

- 1). 1 gal. Anvil 10+10 plus 2 gals. soybean oil in Cougar ULV sprayer. Setting #1 for 150ft. swath is 0.31 fluid ounces/acre, actual 0.11fl.oz./acre. Setting#2 for 300ft. swath is 0.62 fluid ounces/acre,actual 0.21 fl.oz./acre
- 2). 1 gal. Anvil 10+10 plus 2gals. soybean oil applied by handheld Leco ULV
- 3). Suspend SC .8fl.ounces/gal. water applied to foliage by Backpack Solo mistblower.
- 4).
- 5).
- 6).

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

*** This season had less rain events the most seasons. A rain event can take place over a number of days but the amount of inches that fall and the height of the water table at that time determines its significance. Saltwater marshes experienced their monthly high tides but they were in the 11ft. range not the 12ft. range they are some years. Adulticiding by hand reduced the area that needed to be sprayed by truck. Many of our worst areas cannot be treated by truck unless we get a favorable wind from the right direction. This year and last we either put down a barrier or were able to get the right wind direction by entering the area on foot carrying a handheld ULV sprayer. Our objective is to restrict as much as possible the exposure of residents to mosquito adulticides. This is best accomplished by larviciding breeding areas and adulticiding before the adults move throughout the adjacent neighborhood. ***

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

- Landing rates - please list trigger for application 10 mosquitoes/10min.
- Light trap data - please list trigger for application 100/trap night minimum. These traps can capture up to 2,000/trap in our Project.
- Complaint calls - please list trigger for application There is a followup inspection before treatment unless the cause is known to Project Staff from having visited the site to larvicide,place traps,etc.
- Arbovirus data
- Best professional judgment

Comments: _____

***Please attach a link to maps of treatment areas if possible.**
<http://goo.gl/maps/yDOfU>

SOURCE REDUCTION

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

If yes, please describe your program: No tires were removed this year, but they were during prior years. Containers emptied and placed upside down..

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

Comments: _____

DITCH MAINTENANCE

Do you have a ditch maintenance program? Yes

Please check all that apply:

- Inland/freshwater
- Saltmarsh

If yes, please describe:

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 *****50ft. in 2012*****

Mechanized cleaning

Other (please list):

Comments: _____

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

Hand cleaning ***none*******

Mechanized cleaning

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:

Aerial Larvicide – wetlands:

Larvicide – catch basins: Sampling device used to check treated basins over the summer to see if still below 6/10 positive basins.

Larvicide-hand/small area Recheck a percentage of areas post treatment. Usually check and retreat areas where breeding is heavy. Most retreats that have larvae on followup are of a pattern showing missed spots not partial kills.

Ground ULV Adulticide: When applied by handheld, the number of mosquitoes attacking you drops right off when the job is completed. The ULV chases the mosquitoes up into the air above the vegetation. You can see the air is no longer full of mosquitoes. Adult populations are monitored weekly with CDC light traps and dry ice.

Source Reduction: Remove fallen tree limbs from ditch, water drops in swamp. Turn over breeding containers, larvae die.

Open Marsh Water Management:

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): **Check new employees' work the day following application. Have a different employee check another's work. Check the effectiveness of larvicide that comes from any container opened last season.**

OPEN MARSH WATER MANAGEMENT

Do you have an OMWM program? No

If yes, please describe:

Please give an estimate of total square feet or acreage:

What time frame during the year is this method employed?

Comments: _____

***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:

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 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 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):

Please describe the purpose of this program: The CDC traps are near freshwater marshes and are used to determine both the number and species distribution of human nuisance mosquitoes. Gravid traps are to provide the MDPH with mosquitoes that can be tested for disease and if positive, notify SCMCP's member cities.

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

If yes, please describe how you chose these long-term sites. The CDC traps are near freshwater swamps and floodplains and have been surveying since 1974. The gravids run north to south along the Project's border with Brookline, Newton, and Dedham. This is where WNV usually shows up first. The other traps run along the southern border and up the eastern side of Boston.

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

- | | |
|---|---|
| <input type="checkbox"/> <i>Ae. albopictus</i> | <input checked="" type="checkbox"/> <i>Oc. cantator</i> |
| <input type="checkbox"/> <i>Ae. cinereus</i> | <input checked="" 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 type="checkbox"/> <i>Cx. restuans</i> | <input type="checkbox"/> <i>Oc. taeniorhynchus</i> |
| <input type="checkbox"/> <i>Cx. salinarius</i> | <input type="checkbox"/> <i>Oc. triseriatus</i> |
| <input type="checkbox"/> <i>Cs. melanura</i> | <input type="checkbox"/> <i>Oc. trivittatus</i> |
| <input 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? 163 pools were submitted this summer. Normal level would be 200.

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? Yes

Please explain: There were 6 positive WNV cases in Suffolk County in 2012

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

WNV: ***Moderate*******

EEE:

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

WNV: ***High*******

EEE:

What time frame during the year is this method employed?

Comments: _____

***Please attach a link to maps of surveillance areas if possible.
<http://goo.gl/maps/2XSvc>**

EDUCATION, OUTREACH & PUBLIC RELATIONS

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

If yes, please describe: Meet with BPHC prior to and during the season to impliment their catchbasin treatment program. This is a program carried out as a cooperative effort by the Boston ISD, Boston Housing Authority, and SCMCP.

Please check off all that apply:

- School based program
- Website
- PR brochures/handouts
- Community events
- Science fairs
- Meeting presentations
- Other (please describe): We have received requests in previous years, but not in the 2012 season.

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

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

What time frame during the year is this method employed? When requested

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

If yes, please elaborate on your research projects: *****Checked catchbasins over the summer to see if they recovered to pretreatment levels. They did not.*****

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: *****Two attended a Pesticide License educational session and one attended the NMCA Annual Meeting. *****

Please list the certifications and degrees held by your staff: Superintendent has Master's in Entomology; Secretary a Bachelor's. Seasonals: two with Bachelor's.

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):

Please describe your capabilities in these areas: Moderate

Please describe your current GIS abilities: Beginner

Give details if possible on your GIS abilities:

Please describe any changes/enhancements in this area from the previous year:

Comments: _____

REVENUES & EXPENDITURES

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

Revenue: *****\$230,283 Expended: \$230,283*****

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

Comments: **Boston:\$221,566 plus Reclamation Board:\$6,503 Total \$228,069
Chelsea:\$8,717 plus Reclamation Board:\$256 Total:\$8,973*******

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: Teknar HP-D
EPA Reg. #: 73049-404
Application method: Manual Backpack
Targeted life stage: Larvae
Total amount of concentrate applied: 8 gallons
Comments: _____

Product Name: Vectolex WSP
EPA Reg. #: 73049-20
Application method: By hand
Targeted life stage: Larvae
Total amount of concentrate applied: 10,405 by SCMCP, plus 8,599 applied by City of Boston ISD, 160 applied by DCR on Harbor Islands, and 1,230 applied by Boston Housing Authority.
Comments: _____

Product Name: Altosid Pellets WSP
EPA Reg. #: 2724-448
Application method: By hand

Targeted life stage: Larvae
Total amount of concentrate applied: 89 plus ****360 to Franklin Park Zoo
Comments: _____

Product Name: Fourstar Briquets
EPA Reg. #: 83362-3
Application method: By hand
Targeted life stage: Larvae
Total amount of concentrate applied: 466
Comments: _____

Product Name: Altosid XR Briquet
EPA Reg. #: 2724-421
Application method: By hand
Targeted life stage: Larvae
Total amount of concentrate applied: 921
Comments: _____

Product Name: Anvil 10+10
EPA Reg. #: 1021-1688-8329
Application method: ULV
Targeted life stage: Adult
Total amount of concentrate applied: 4.7 gallons
Comments: _____

Product Name: Suspend SC
EPA Reg. #: 432-763
Application method: Motorized backpack mistblower
Targeted life stage: Adult
Total amount of concentrate applied: 28.5 fluid ounces
Comments: _____

Product Name: Spheratax
EPA Reg. #: 84268-2
Application method: By hand
Targeted life stage: Larvae
Total amount of concentrate applied: 153
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 web link if possible. Both habitats are in State parks. Both sites impact W. Roxbury. One site also impacts Roslindale and Hyde Park as well.

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? No

If yes, please elaborate: Not in the 2012 season

Have you worked with these departments on long term solutions? No

If yes, please elaborate:

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: *****City of Boston wants to treat catchbasins at schools but decided would have to wait for next year.*****

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:

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: Low number of rain events. Period between events was long enough that water was absorbed and didn't accumulate. Therefore used less larvicide and adulticides in natural freshwater areas(Less than 2010 or 2011). High tides reached only the low 11ft. tide height not the more problematic 11.5 or 12+ ft. heights of some years. Main issue was WNV transmission by Culex mosquitoes breeding in semi-permanent water in a dry year.