MASSACHUSETTS MOSQUITO CONTROL

ANNUAL OPERATIONS REPORT

Year Report Covers: 2018 Date of Report: 1/4/2019

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

Address: 144 Production Road, Suite C

City/Town: Walpole, MA Zip: 02771

Phone: 781 762-3681 Fax: 781 769-6436

E-mail: dave.lawson@norfolkcountymosquito.org

Report prepared by: ***David Lawson***

NPDES permit no. **MAG87B255**

If you have a mission statement, please include it here: "The Norfolk County Mosquito Control District Commission represents the interests of the member communities and their residents by providing oversight of District activities. The Commissioners each live or work within a community serviced by the District, were nominated by municipal authorities, and were evaluated and appointed to their posts by the State Reclamation and Mosquito Control Board. The Commission strives to ensure that the member communities receive services consistent with applicable laws and justified by tenets of public health, vector control, environmental safety and fiscal responsibility. The Commission invites input and questions from community officials and residents. The District's website announces the Commission's monthly meetings and planned agendas, and hosts minutes from past meetings."

ORGANIZATION SETUP:

Commissioner names:

Robin L. Chapell
Maureen P. MacEachern
Linda R. Shea
Norman P. Jacques
Richard J. Pollack, PhD

Superintendent/Director name: David Lawson
Superintendent/Director contact phone number: (781) 762-3681
Asst. Superintendent/Director name: Caroline Haviland - Field Operations Manager

District/Project website: http://www.norfolkcountymosquito.org
Twitter handle: @
Facebook page: http://www.facebook.com/Norfolk-County-Mosquito-Control-District-152138671525303/?fref=ts

Staffing levels for the year of this report:
Full time: 12
Part time: 0
Seasonal: 1
Other: (please describe)

Of the above, how many are:
(Please check off all that apply, and list employee name(s) next to each category)

☒ Administrative Liz Donnell, David Lawson, Caroline Haviland
☒ Biologist Kaitlyn O'Donnell, Caroline Haviland
☒ Educator Kaitlyn O'Donnell, David Lawson
☒ Entomologist Kaitlyn O'Donnell
☒ Facilities David Lawson, Caroline Haviland
☒ Information technology Nate Boonisar
☒ Laboratory Kaitlyn O'Donnell
☒ Operations Caroline Haviland, David Lawson, Brian Moore, William Haviland, Robert O'Halloran, John Tuana, Anthony Caso, Eric Tarala, Greg Gangitano
☒ Public relations Kaitlyn O'Donnell, Caroline Haviland, David Lawson, Nate Boonisar
☒ Wetland scientist Caroline Haviland
☒ Other (please describe) GIS - Nate Boonisar

For the year of this report, the following were maintained (enter number in the column to the left):

4 Modified wetland equipment (list type) Linkbelt 1600 quantum series excavator; modified (extended tracks) Kobelco SK60 excavator; non wetland - John deere 880 bulldozer; Bombadier Muskeg
2 Larval control equipment (list type) Mid-Atlantic Equipment high pressure larvicide unit; A-1 Mist sprayer
8 ULV sprayers (list type) 7 Clarke Dura Promists, 1 Cougar
19 Vehicles
Other (please be specific):

Comments: _____

How many cities and towns are in your service area?* 25
Alphabetical list: Avon, Bellingham, Braintree, Canton, Dedham, Dover, Foxborough, Franklin, Holbrook, Medfield, Medway, Millis, Milton, Needham, Norfolk, Norwood, Plainville, Quincy, Randolph, Sharon, Stoughton, Walpole, Westwood, Weymouth, Wrentham

Map of Service area www.norfolkcountymosquito.org/service-request/

Were there any changes to your service area this year? No
Cities/towns added:
Cities/towns removed:

***Please attach a map of your service area (or a website link to that map).**

INTEGRATED PEST MANAGEMENT (IPM):

Check off all services that your district/project currently provides to member cities and towns as part of an IPM program (details will be provided in the sections below):

☒ **Adult mosquito control**
☒ **Adult mosquito surveillance**
☒ **Ditch maintenance**
☒ **Education, Outreach & Public education**
☒ **Larval mosquito control**
☒ **Larval mosquito surveillance**
☐ **Open Marsh Water Management**
☒ **Research**
☒ **Source reduction (tire removals)**
☐ **Other (please list):**

Comments: _____

LARVAL MOSQUITO CONTROL:

If you have a larval mosquito control program, please fill out the section below, else skip ahead to the next section.

Describe the purpose of this program: Targeted preemptive control measures are the most cost effective, efficient and environmentally friendly way to reduce mosquito populations. NCMCD applies biorational insecticides to shallow water to control mosquitoes in their most vulnerable aquatic stages in an attempt to prevent the emergence of adult mosquitoes. A GIS database of mosquito larval development sites are checked and treated as necessary by means of hand and/or aerial application. Spring and summer flooding following snow melt and/or heavy rainfall creates a potential each year for significant mosquito larval development in various wetlands across the NCMCD. The predominate species which develop in the spring are Ochlerotatus abserratus, Ochlerotatus excrucians and Ochlerotatus canadensis. In the summer the predominate species following river flooding are Ochlerotatus trivittatus, Aedes cinereus, Aedes vexans, Psorophora ferox and Ochlerotatus canadensis. All of these mosquito species are strong human biters and can create significant nuisance level populations during the late spring and summer months. During certain years, some of the summer mosquito species, such as Aedes vexans, may be involved in the transmission of Eastern Equine Encephalitis (EEE) from birds to humans. In an effort to proactively control these aggressive human biting species, and in an environmentally responsible manner, the Norfolk County Mosquito Control District conducts aerial larval control operations using products with the active ingredient Bacillus thuringiensis israelensis (Bti). In small wetlands and in larval development sites proximate to homes, where aircraft applications are not suitable, hand applications using the same products at the same rates are utlilized.

NCMCD makes applications of an insecticide to catch basins, storm water structures, etc. to control primarily Culex mosquitoes in their aquatic stages. Culex species have been identified as likely vectors of WNv.

NCMCD began research and surveillance in consideration of conducting fall aerial applications to control Coquilletidia perturbans in the unique wetland habitats that they overwinter in. In September of 2018, the District treated 124 acres of habitat in Westwood and Franklin with VectoLex FG (Bacillus sphaericus). During the summer season 2019, the District will conduct follow-up surviellance to see how effective these applications were.

What months is this program active? April - September

Describe the types of areas where you use this program: Ground larvicide treatments are typically made to smaller natural and manmade wetlands and depressions. The typical wetlands treated during the spring aerial larvicide are described as large (greater than five acres) Wooded Swamp Deciduous/Coniferous/Mixed, Shrub Swamp, Shallow Marsh/Meadow/Fen wetlands. Summer aerial applications applications are more typically conducted on river floodplain areas especially within wetlands adjacent to the Neponset and Charles Rivers. Maps of aerially targeted wetlands are available on the District's website. The new focus on Cq. perturbans is treating deep marsh habibat with specific vegetation utilized by this mosquito larvae.
Rain basin treatments typically occur in high density population areas around centers of towns and heavy residential/commercial areas.

Do you use:
☒ **Ground application (hand, portable and/or backpack, etc.)**
☒ **Aerial applications**
☐ **Other (please list):**
Comments: _____

List all products that you use for larval mosquito control in the table below (leave blank if not applicable)**:**

Product Name	**EPA #**	**Application Rate(s)**	**Application Method**	**Targeted life stage**	**Habitat Type**	**Total finished product applied**
VectoBac GR	73049-486	2.5-10 lbs/acre	aerial	Larvae	☐ Catch basins ☐ Containers ☒ Wetland ☐ Other (please list):	24,800 lbs
VectoBac G	73049-10	2.5-10 lbs/acre	hand/back pack blower	Larvae	☐ Catch basins ☒ Containers ☒ Wetland ☐ Other (please list):	1906.61 lbs
VectoBac 12AS	73049-38	.25-2 pints/acre	Pressure sprayer	Larvae	☐ Catch basins ☐ Containers ☒ Wetland ☐ Other (please list):	211.5 pints
VectoLex FG	73049-20	5-20 lbs/acre	aerial	Larvae	☐ Catch basins ☐ Containers ☒ Wetland ☐ Other (please list):	1,840 lbs
VectoLex WSP	73049-20	1 pouch/50 sq. ft.	hand	Larvae	☒ Catch basins ☒ Containers ☐ Wetland ☐ Other (please list):	6358 pouches
Fourstar Briquet	83362-3	1 Briquet/100 sq. ft.	hand	Larvae	☒ Catch basins ☒ Containers ☐ Wetland ☒ Other (please list): 3 pools	5976 briquets
Fourstar 45 day briquet	83362-3	1 briquet / 100 sq. ft.	hand	Larvae	☒ Catch basins ☒ Containers ☐ Wetland ☐ Other (please list):	4024 briquets

List all products that you use for larval mosquito control in the table below (leave blank if not applicable)**:**

Product Name	**EPA #**	**Application Rate(s)**	**Application Method**	**Targeted life stage**	**Habitat Type**	**Total finished product applied**
Altosid XR	2724-421	1 briquet/100 sq. ft.	hand	Larvae	☒ Catch basins ☒ Containers ☐ Wetland ☐ Other (please list):	18 briquets
Altosid 30 day briquet	2724-375	1 briquet/100 sq. ft.	hand	Larvae	☒ Catch basins ☒ Containers ☐ Wetland ☒ Other (please list): pools, construction site	2026 briquets
Altosid WSP	2724-448	1 pouch / 135 sq. ft.	hand	Larvae	☒ Catch basins ☒ Containers ☐ Wetland ☒ Other (please list): storage pod container	15,353 pouches
CocoBear Oil	8329-93	10oz/1000sq.ft.	hand	Larvae/pupae	☐ Catch basins ☒ Containers ☒ Wetland ☐ Other (please list):	22 oz.
Altosid Pro-G	2724-451	1 tsp / 50 sq feet.	hand	Larvae	☒ Catch basins ☐ Containers ☐ Wetland ☐ Other (please list):	2.5 lbs.
				Choose one	☐ Catch basins ☐ Containers ☐ Wetland ☐ Other (please list):	
				Choose one	☐ Catch basins ☐ Containers ☐ Wetland ☐ Other (please list):	

What is your trigger for larviciding operations? (check all that apply)
☐ Best professional judgment
☒ Historical records
☒ Larval dip counts – please list trigger for application: any larvae found
☐ Other (please describe):
Comments: _____

Please attach a map of your service area (or a website link to that map).
www.norfolkcountymosquito.org/service-request/

ADULT MOSQUITO CONTROL:

If you have a larval mosquito control program, please fill out the section below, else skip ahead to the next section.

Describe the purpose of this program: When larviciding is not a viable option (example: Coquillettidia perturbans) and/or when adult mosquito populations reach levels which are either bothersome to residents and/or a public health concern is realized, targeted adulticiding applications are used. NCMCD makes decisions to use adulticides based on evaluations of the risks of EEE or WNv transmission to humans in collaboration with MDPH or based on evaluations of the nuisance level that residents report to NCMCD. NCMCD also bases decisions to adulticide on mosquito surveillance (trap counts), field crew observations and after careful analysis of predicted local weather conditions.

What is the time frame for this program? May through October

Describe the types of areas where you use this program: ULV applications can be conducted anywhere the trucks can access, though mostly on paved streets in residential neighborhoods. Barrier applications are conducted on municipal properties that the public utilizes and where the public may be at risk, such as schools, public parks, and athletic fields.

Do you use:
☐ **Aerial applications**
☐ **Portable applications**
☒ **Truck applications**
☐ **Other (please list):**
Comments: _____

For each product used, please list the name, EPA #, and application rate(s):

Product Name	**EPA #**	**Application Rate(s)**	**Application Method**	**Total finished product applied**
Zenivex E4	2724-807	1.0 oz/acre	Truck mounted ULV	1083.27 gallons
Mavrik Perimeter	2724-478	0.1oz/gal/1000 sq. ft.	Truck mounted sprayer	134 gallons

Please describe the maximum amounts or frequency used in a particular time frame such as season and areas
ULV is potentially conducted in each town once per week. Possibly more if a disease threat warrants further applications. Barrier applications are conducted based on requests from municipal officials and our own assessments and surveillance. Barrier applications are effective for a couple weeks, and so not repeated for at least 2 weeks.

What is your trigger for adulticiding operations? (check all that apply)
☒ Arbovirus data
☒ Best professional judgment
☒ Complaint calls (Describe trigger for application: GEIR - more than one call per square mile)
☒ Landing rates (Describe trigger for application GEIR - more than one bite per minute)
☒ Light trap data (Describe trigger for application GEIR - more than 5 human biting mosquitoes per trap per night)
Comments: _____

Please attach a map of your service area (or a website link to that map).
www.norfolkcountymosquito.org/service-request/

SOURCE REDUCTION (Tire Removals)

If you practice source reduction methods, such as tire removal, please fill out the section below, else skip ahead to the next section.

Please describe your program:

NCMCD advises residents/Boards of Health in person or via phone or internet to empty any containers that may hold water on their property. When performing site visits, personnel will overturn containers that hold water with mosquito larvae present. In 2012 NCMCD initiated a tire removal program which continued into 2018. The District picks up tires from residents who request this service. Tires must be off the rim and the District takes no more than 10 tires per resident per year. The District also removes dumped tires from the enviroment. Locations are reported as employees find tires during routine field work. 1,182 tires were removed and recylced in 2018.

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

Comments: _____

WATER MANAGEMENT/DITCH MAINTENANCE

If you have a water management or ditch maintenance program, please fill out the section below, else skip ahead to the next section.

Please check all that apply:
☒ Inland/freshwater
☒ Saltmarsh

Please describe your program: The NCMCD reduces the potential for larval mosquito develop through a variety of methods under this category. Our Freshwater Water Management Program includes Ditch & Pond Maintenance, as well as Culvert Area Clearing conducted to improve water quality and increase water flow.
Our Open Marsh Water Management (OMWM) Program employs methods that improve saltmarsh habitat along with mosquito habitat reduction.
Tire casing collection is a growing service in which we remove and recycle off rim tires in order to eliminate this source of larval mosquito development.

For **inland/freshwater water management**, check off all that apply.

Maintenance Type	**Estimate of cumulative length of culverts, ditches, swales, etc. maintained (ft)**
☒ Culvert cleaning	471
☒ Hand cleaning	82,170
☒ Mechanized cleaning	1,010
☐ Stream flow improvement	
☒ Other (please list): brushing	530

Comments: _____

For **saltmarsh ditch maintenance**, check off all that apply:

Maintenance Type	**Estimate of cumulative length of ditches maintained (ft)**
☐ Hand cleaning	950
☐ Mechanized cleaning	890
☐ Other (please list):	

Comments: _____

What time frame during the year is this method employed? All year, but primarily fall-winter.

Comments: _____

Please attach a map of ditch maintenance areas (or a website link to that map).

OPEN MARSH WATER MANAGEMENT

If you have an Open Marsh Water Management program, please fill out the section below, else skip ahead to the next section.

Describe the purpose of this program: New OMWM projects are currently not active at NCMCD

What months is this program active?

Please give an estimate of total square feet or acreage:

Comments: The NCMCD has conducted OMWM in the past, but has stopped performing OMWM due to regulatory requirements that make it overly burdensome to the District. The

Districts OMWM permit from the ACOE expired in January 2016, and was not renewed. Maintenance on past projects is required by the ACOE permit and the District will maintain all past completed OMWM projects.

Please attach a map of OMWM areas (or a website link to that map).

MONITORING (Measures of Efficacy)

Describe monitoring efforts for each of the following:

Aerial Larvicide – wetlands: In the weeks prior to a spring aerial application, wetlands are dipped in all aerial regions and this data is compiled in the GIS map data. Post application dipping is conducted. During the aerial application in 2018, aerial Bti application efficacy was compared in treated and untreated experimental wetlands before and after application.

Ground ULV Adulticide: NCMCD did not monitor ULV efficacy in 2018

Larvicide – catch basins: Some efficacy work was conducted on products used in catch basins in 2018.

Larvicide-hand/small area The Director randomly inspects ground larvicide sites in the spring for employee reporting follow up and concurrently inspects sites for efficacy.

Open Marsh Water Management:

Source Reduction: The Field Operations Manager conducts follow-up site visits to water management project sites to make sure the work is fucntioning as designed.

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):
No resistance testing was performed in 2018.

Check the boxes below, indicating if your program has performed any of the following:

Research Project	Details
Bottle assays	
Efficacy testing	
Other:	
Other:	

ADULT MOSQUITO SURVEILLANCE

If you have an adult mosquito surveillance program, please fill out the section below, else skip ahead to the next section.

Describe the purpose of this program: CDC Light Traps: CDC light traps with CO2 are used to determine the presence of adult mosquitoes and their density. CDC light traps with CO2 are also used to monitor for EEE and West Nile virus. Samples of mosquitoes are submited weekly

to the Massachusetts Arbovirus Surveillance Laboratory (MDPH) and tested for the presence of West Nile Virus and EEE in local mosquito populations.
Gravid Traps: These traps are used by NCMCD to collect primarily Culex pipiens and restuans mosquitoes for submission to the Massachusetts Arbovirus Surveillance Laboratory (MDPH) for West Nile Virus analysis. The gravid mosquitoes attracted to these traps are important for virus surveillance because they have previously fed on a host. Bird biting mosquito species are usually the first to pick up West Nile and Eastern Equine Encephalitis viruses each season. Resting boxes are used to supplement the capture of C. melanura for the detection of EEE.

What months is this program active? June - October

Check off all trap types used this past season by your program:

Trap Type	**Canopy?** (check box for yes)	**Number of traps** (leave blank if zero)
☐ ABC light trap	☐	
☐ ABC light trap w/CO_2	☐	
☐ CDC light trap	☐	
☒ CDC light trap w/CO_2	☐	35
☒ Gravid trap		34
☐ Landing rate test		
☐ NJ light trap	☐	
☐ NJ light trap w/CO_2	☐	
☒ Ovitrap		28
☐ Resting box		
☐ Other (please describe):		
☐ Other (please describe):		
☐ Other (please describe):		

Do you maintain long-term trap sites in any of your areas? Yes
If yes, how many:
37

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

☐ *Ae. albopictus*
☒ *Ae. cinereus*
☒ *Ae. vexans*
☒ *An. punctipennis*
☒ *An. quadrimaculatus*
☒ *Cq. perturbans*
☒ *Cx. pipiens*
☒ *Cx. restuans*
☒ *Cx. salinarius*
☒ *Cs. melanura*
☒ *Cs. morsitans*
☐ Others (please list):

☒ *Oc. abserratus*
☒ *Oc. canadensis*
☒ *Oc. cantator*
☒ *Oc. j. japonicus*
☒ *Oc. sollicitans*
☐ *Oc. taeniorhynchus*
☒ *Oc. triseriatus*
☒ *Oc. trivittatus*
☒ *Ps. ferox*
☐ *Ur. sapphirina*

Number of adult mosquitoes collected this season (whether submitted to DPH or not): 80,767
Number of adult mosquito pools collected this season (submitted and unsubmitted): 233
Number of ovitrap collections this season, if any: 62
Any other trap collections of note (please describe): A few Emergence traps in support of Cq. perturbans aerial surveillance.

Do you participate in the MDPH Arboviral Surveillance program? Yes
Total number of adult mosquito pools submitted to DPH this past season: 233
How many pools do you submit weekly on average? 13

Number of traps in your service area **placed by MDPH**: 1
Were these long-term trap sites or supplemental trapping sites? long-term

Which arboviruses were found in your area during the previous mosquito season? Enter the number of pools/cases below:

Arbovirus	Positive Mosquito Pools	Equine Cases	Human Cases
☐ Eastern Equine Encephalitis (EEE)			
☒ West Nile Virus (WNV)	22		1
☐ Other (please list):			

Comments: _____

For each arbovirus listed below, please list the risk levels in your project area at both the start and end of the season (if more than one, please list all):

Arbovirus	Start of Season	End of Season
EEE	remote to low	remote to low
WNV	low	moderate

Comments: _____

EDUCATION, OUTREACH & PUBLIC RELATIONS

If you have an education/outreach program, please fill out the section below, else skip ahead to the next section.

Describe the purpose of this program: NCMCD maintains a very informative website which is updated frequently during the season. It contains fact sheets concerning West Nile virus and EEE virus. It also contains notices and news regarding treatment beginning and end dates and ways for residents to protect themselves from mosquito bites around the home. The website also contains links to the Massachusetts Department of Public Health and the Centers for Disease Control and Prevention (CDC) where residents can find up to date information on arbovirus activity in the county, the state as well as country wide. Our Entomologist participates in educational activities such as classroom activites in the schools and field education activities with summer camp programs as appropriate, as well as health fairs and farmers markets. Employees leave door hangers at residents homes after completeing larvicide requests. The hangers highlight actions a resident can do to reduce or eliminate mosquito breeding on their

property. Employees conducting ULV applications, have brochures on the ULV program to hand to residents with questions regarding the program. Employees connect to various outside organizations in an effort to better inform the public about what the District does.

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

Check off all education/outreach methods that were performed by your program this year:
☒ Development/distribution of brochures, handouts, etc.
☒ Door-to-door canvassing (door hangers, speaking to property owners, etc.)
☒ Facebook page, Twitter, or other social media
☒ Mailings (Describe target audience(s): notification of autumn aerial application for adjacent properties.)
☒ Media outreach (interviews for print or online media sources, press releases, etc.)
☒ Presentations at meetings
☒ School-based programs, science fairs, etc.
☒ Tabling at events (local events, annual meetings, etc.)
☒ Website
☐ Other (please describe):

Estimate the audience reached this year using the education/outreach methods above:
Comments: 650

List your program's top 3 education/outreach activities for this year:
1. 4 town health fairs
2. Educational day at the Stonybrook Audobon
3. Canton safety fair

Were you involved in any collaborations with the following partners this year? Provide details below, including a list of technical reports, white/grey papers, journal publications, trade magazine articles, etc:
☐ Academia
☐ Another mosquito control district/project
☐ Another state agency (DCR, DPH, etc.)
☐ Environmental groups
☒ Industry Kaitlyn spoke at conferenes regarding collaborative work with Clarke on some studies using Natular for Cq. perturbans control.

List any training/education your staff received this year: Attendance at Field Day in October. Attendance by all staff except Liz at the NMCA meeting in December - Nashua, NH.

Please list the certifications and degrees held by your staff: Director - Master of Science (Geology), Field Operations Manager - Bachelor of Science (Biology), GIS Coordinator - Master of Science (Geological Oceanography), Entomologist - Master of Science (Entomology)

Comments: _____

INFORMATION TECHNOLOGY (IT)

Does your program use (check all that apply):

☒ Aerial Photography
☒ Databases
☒ Dataloggers (monitoring for temperature, etc.)
☒ GIS mapping (Describe:)
☒ GPS equipment
☒ Smartphones
☐ Tablets/Toughbooks
☐ Other (please describe):

Describe any changes/enhancements in IT from the previous year: The District modernized our service request coding for the service request module of Sentinel Field Seeker software. Completed by Blue Robin.

Describe any difficulties your program had with IT software/equipment this year: We had a short term issue with an IP address issue related to our internal network. It was resolved quickly.

Comments: _____

REVENUES & EXPENDITURES

Please enter your approved budgets for the current, previous, and future fiscal years.

	Date of Fiscal Year	**Approved Budget**	**Notes**
Previous	FY 2018	$1,762,776	
Current	FY 2019	$1,824,473	
Future	FY 2020	$1,933,941	requested but not certified yet.

List each member municipality, along with the corresponding (cherry sheet) funding assessment dollar amount, for the current fiscal year (or provide a web link to this information):

NCMCD Municipality	FY 2019 Total Town Assessment (District plus SRMCB Assessements)
Avon	$21,204
Bellingham	$69,116
Braintree	$101,945
Canton	$110,014
Dedham	$76,464
Dover	$67,599
Foxborough	$83,033
Franklin	$128,945
Holbrook	$31,144
Medfield	$68,673
Medway	$50,835

Millis	$39,199
Milton	$92,807
Needham	$115,340
Norfolk	$52,783
Norwood	$78,264
Plainville	$41,514
Quincy	$153,803
Randolph	$65,555
Sharon	$94,878
Stoughton	$89,629
Walpole	$108,543
Westwood	$76,674
Weymouth	$120,846
Wrentham	$71,175
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Total -	$2,009,985

Comments: _____

SERVICE REQUESTS

How many service requests did you receive this season? 7,396
How many were for larviciding? 289
How many were for adulticiding? 6,846

Was this an increase or decrease over last season? Increase

Comments: Also an additional 261 requests from residents for tire removals included in number above.

EXCLUSIONS

How many exclusion requests did you receive this season? 210

Was this an increase or decrease over last season? Decrease

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. Audubon Society property in Canton and Sharon.

SPECIAL PROJECTS

Did your program perform any of the following special projects? Check all that apply.

- ☐ Inspectional services (inspections at sewage treatment facilities, review of subdivision plans, etc.)

  Describe:

- ☒ Work with DPW departments or other local or state officials to address stormwater systems, clogged culverts, or other areas identified as man-made mosquito problem areas

  Describe: NCMCD is in direct communication with both state DOT and local DPW departments with regard to clogged culverts, general drainage issues, and stormwater systems. NCMCD coordinates with several local DPWs annually to clean outfall areas and drainage pipes and associated drainage ditches of sand and debris that may eventually discharge into adjacent wetlands. Some town departments have assisted NCMCD by bearing the burden of disposing of sands and sediments NCMCD removes

- ☐ Work with groups as described above on long term solutions?

  Describe:

- ☐ Conduct or participate in any cooperative research or restoration projects?

  Describe:

- ☐ Participate in any state/regional/national workgroups or panels, or attend any meeting pertaining to the above?

  Describe:

- ☐ Work on any biological control projects, such as enhancement of habitat for native predators, release of predatory fish or invertebrates, etc.?

  Describe:

CHILDREN AND FAMILIES PROTECTION ACT (CFPA)

Is your program impacted by the CFPA? Yes

If yes, please explain: Throughout the Districts service area, NCMCD has approximately 225 schools and 250+ day cares that must comply with this law. Each school/day care has been located either through parcel maps, when available, or through geocoding, combined with aerial photography. These properties are excluded from routine applications. The exclusion zones are clearly marked on the ULV route maps that are posted on the districts website in an effort to keep the public informed of the exclusionary status of these areas.

If you have data on compliance rates with the CFPA within your program area, please list here:

Describe any difficulties you have had with the implementation of your program due to the CFPA, please elaborate here:

Comments:

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT PROGRAM

Did your program report any adverse incidents during this reporting period? No

If yes, please list any corrective actions here: _____

GENERAL COMMENTS

Please add any comments here for topics not covered elsewhere in this report: An excessively wet late summer and fall made for one of the latest major outbreaks of mosquitoes off the Neponset River flood plain, which the District did not control with aerial larvicide. 2 late season truck sprays, in Norwood and Dedham, during a period of warm weather in October stand out as very unusal historically. I cannot ever remember ULV applications in October - DL.