Commonwealth of Massachusetts

STATE RECLAMATION AND MOSQUITO CONTROL BOARD

NORTHEAST MASSACHUSETTS MOSQUITO CONTROL AND WETLANDS MANAGEMENT DISTRICT

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Operations

Barry Noone: *District Director*
Kimberly A. Foss.: *Entomologist*
Robyn A. Januszewski: GIS/*Biologist*
Steven Przyjemski: *Wetlands Project Coordinator*

Commissioners

John W. Morris, CHO: *Chair*
Vincent J. Russo, MD, MPH: *Vice Chair*
Paul Sevigny, RS, CHO
Joseph T. Giarrusso, Conservation Officer
Rosemary Decie, RS

2023 Best Management Practice Plan
Winthrop

FY24 Percentage of assessment allocated to specific measures as prescribed by individual municipalities Best Management Practice (BMP) in the Town of Winthrop

NEMMC is requesting a 3% increase above the FY2023 certified assessment for a FY2024 operational budget. During FY2023 the District reorganized allowing more technicians in the field and the district is anticipated to be at full staff this year. FY2023 allowed the opportunity to replace one of our frontline heavy equipment pieces. Due to ongoing supply shortages, the district was unable to make intended vehicle replacement purchases. Our FY2024 budget addresses funding for an increase of approximately $84,000 for regional aerial larviciding treatments. This also includes the increased costs of materials, energy, fuel, pesticides, full staffing and two vehicle replacements. The State mandated EV First Initiative comes with a substantial cost increase when replacing vehicles. Regional environmental changes remain challenging to plan for a “normal” year of mosquito control. Often dictated by the weather, mosquito populations, additional treatment for viruses and requests from member municipalities, NEMMC will work diligently to deal with exceptional mosquito nuisance and health issues.

Assessment: As estimated by the Massachusetts Department of Revenue, Division of Local Services, in accordance with Chapter 516 of the General Laws of the Commonwealth. The assessment formula is based on a regional concept, which considers square miles and evaluation. The district offers this breakdown as a general guide to how funds are allocated specific to your community.

FY24 Estimated District Budget for the Town of Winthrop	$ 17,774.00
FY24 State Reclamation and Mosquito Control Board	$ 757.00
FY24 Total Estimated Assessment for the Town of Winthrop	$ 18,531.00

District Control Measures specific to Winthrop

General Operational Cost Share

Regional Adult Mosquito Surveillance Program

Regional Vector / Virus Intervention

Surveillance

Ground Larviciding

Catch Basin Treatments

Manual Ditch Maintenance

Adulticiding **(Resident and/or Board of Health requests)**

Barrier Treatment **(By Board of Health and School Department request only)**

Ditch Maintenance / Wetlands Management

Tire Recycling Program

Property Inspections

Mosquito Habitat Mitigation

Research and Development

Education and Outreach

Social Media

NOTE: Any adulticiding, larviciding or treatment of catch basins for mosquito control on public school property requires a current IPM (Integrated Pest Management) Plan. We are often asked by local Boards of Health and/or athletic directors to treat ball fields and/or parks that may be owned/used by the school departments, and without an IPM plan that includes our materials we may not be able to assist.

Board of Health Checklist for 2022

☐ **Schedule an annual Board of Health meeting/ presentation with NEMMC**

Note: meetings will only be scheduled between the dates of October 1st - June 1st

☐ **Review login information for Municipal Toolbox on NEMMC website**

Our Liaison will e-mail you the password and login (see contact below)

☐ **Update School IPMs to have all current and recently added NEMMC pesticide products**

Recently added pesticide products include Metalarv XRP and Merus 3.0

☐ **Schedule Barrier Treatment for schools, parks, and/or public areas for peak mosquito season**

Note: scheduled barrier treatments are recommended between July 15th – August 25th

☐ **Check with Department of Public Works for field access for barrier treatments once scheduled**

☐ **Notify NEMMC with Board of Health contact changes**

Work phone, cell phone, and email are required of primary and secondary contacts.

☐ **Review District Phased Response to WNV/EEE Virus Isolations in Integrated Pest and Vector Management Plan (IPVMP)**

For any questions on where to find this information, scheduling, and/or how to complete these tasks, please reach out to our Board of Health Liaison:

Barry Noone, Director/Board of Health Liaison
Cell: (978) 609-1859
Office: (978) 352- 2800 Email: barry.noone@mass.gov

Updated 2022 NEMMC Protocols for District Arboviral Events

Climate change is expected to affect the geographic and seasonal patterns of mosquito-borne diseases in the United States. The northeast is experiencing an increase in precipitation and unusually hot temperatures. Since EEE is more prevalent in wetter years and WNV in hotter years the likeness of the district experiencing EEE and/or WNV events in any given year is possible, in some years both viruses can present substantial risk. The district feels that it is beneficial to our subscribing municipalities to set prevention and response criteria preparing for both mosquito-borne viruses.

District Prevention for WNV and EEE

- Adult mosquito surveillance and DPH virus testing
- Larviciding areas that can promote mosquito breeding including municipal catch basins
- Public notification to use personal protective measures from spring to first hard frost
- Wetlands management and stormwater maintenance
- Property inspections to larvicide standing water and remove containers holding water
- Early barrier treatments for public parks, recreation areas and schools
- Tire disposal program

District Response for WNV and EEE

If *risk level increases* for municipality but no virus in municipality:

- Public notification to use personal protective measures
- Additional larviciding of freshwater wetlands and flooded areas
- Recommendation for municipality to complete barrier treatments

If *bird biting mosquitoes* in municipality test positive for virus:

- Public notification to use personal protective measures
- Supplemental adult mosquito trapping and additional DPH virus testing in risk areas
- Additional larviciding of freshwater wetlands and flooded areas
- Retreatment of catch basins (if WNV) in focal area
- Retreatment of hummock swamps (if EEE) in focal area

If *human biting mosquitoes* in municipality test positive for virus:

- Public notification to use personal protective measures
- Supplemental adult mosquito trapping and additional DPH virus testing in risk areas
- Additional larviciding of freshwater wetlands and flooded areas
- Recommendation for municipality to complete a block adulticide of focal area
- Recommendation for municipality to complete barrier treatments

If *mammal or human case* of WNV or EEE in municipality:

- Public notification to use personal protective measures
- Supplemental adult mosquito trapping and additional DPH virus testing in risk areas
- Additional larviciding of freshwater wetlands and flooded areas
- Recommendation for municipality to complete a block adulticide of focal area
- Recommendation for municipality to complete barrier treatments

Summary of NEMMC District Operations Completed in Winthrop during 2022

Date	Activity Completed
3/3/2022	2022 Draft Best Management Plans (BMP) e-mailed to BOH for review
3/8/2022	2022 Integrated Pest and Vector Management Plan published to NEMMC website
3/31/2022	District-wide Zoom NEMMC BOH/DPW Mosquito Control Overview Presentation & Spring Welcome
4/12/2022	Winthrop BOH/NEMMC hybrid meeting- presentation and BMP review (added residential adulticide requests)
4/13/2022	Larviciding- Corinha Beach Road (1.75 lbs. VectoBac-G)
4/13/2022	Habitat Site Inspections (3)
4/15/2022	Larviciding- Corinha Beach Road (2.05 lbs. VectoBac-G)
4/15/2022	Habitat Site Inspections (1)
4/20/2022	Larviciding- Bayou Street, Belle Isle marsh section (5.53 lbs. VectoBac-G)
4/20/2022	Larviciding- Bayou Street, Belle Isle marsh sections (6.65 lbs. VectoMax-FG)
4/20/2022	Habitat Site Inspections (2)
5/2/2022	Larviciding- Nahant Street (3.37 lbs. Fourstar Bti-CRG)
5/13/2022	Resident Request Site Inspection- Lincoln Street
6/7/2022	Catch basin larviciding (659 Metalarv XRP) + Gorman, Cummings Schools (18 Metalarv XRP)
6/8/2022	Catch basin larviciding (746 Metalarv XRP) + Winthrop Middle/High School (4 Metalarv XRP)
6/9/2022	Larviciding- Kennedy Road, Governors Drive (3.94 lbs. Fourstar CRG)
6/9/2022	Catch basin larviciding (12 Metalarv XRP)
6/9/2022	Catch Basins Winthrop Completed = 1,439 (1,417 + 22 Schools)
6/9/2022	Residential Adulticiding Requests (1)
6/14/2022	Pools Submitted to DPH for WNV/EEE Testing- 1 NEGATIVE
6/28/2022	Barrier Adulticide Treatment- Ingleside Park, Coughlin Park, ATC Elementary, WPG Elementary (8.5 oz Suspend SC)
6/28/2022	Pools Submitted to DPH for WNV/EEE Testing- 1
7/7/2022	Residential Adulticiding Requests (1)
7/13/2022	Pools Submitted to DPH for WNV/EEE Testing- 1 NEGATIVE
7/14/2022	Residential Adulticiding Requests (1)
7/19/2022	Pools Submitted to DPH for WNV/EEE Testing- 1 NEGATIVE
7/25/2022	Pools Submitted to DPH for WNV/EEE Testing- 1 NEGATIVE
7/28/2022	Residential Adulticiding Requests (1)
8/2/2022	Pools Submitted to DPH for WNV/EEE Testing- 1 NEGATIVE
8/4/2022	Resident Request Site Inspection- Seaview Avenue
8/8/2022	Pools Submitted to DPH for WNV/EEE Testing- 1 NEGATIVE
8/11/2022	Residential Adulticiding Requests (1)
8/16/2022	Pools Submitted to DPH for WNV/EEE Testing- 1 NEGATIVE
8/25/2022	Residential Adulticiding Requests (1)
8/31/2022	Pools Submitted to DPH for WNV/EEE Testing- 1 NEGATIVE

9/13/2022	Pools Submitted to DPH for WNV/EEE Testing- 1 NEGATIVE
10/1/2022	Adult mosquito surveillance and DPH testing concluded for the season

- **6 Residential requests for adulticiding (added option for 2022)**
- **4 Board of Health adulticide service requests (down from 39 in 2021)**
- **2 residential property inspection service requests (up from 1 in 2021)**

Informing residents that they can contact the district to inspect for standing water and help identify new breeding areas can help reduce mosquito populations.

- **6 mosquito habitat site inspections**
- **Catch basin larviciding was completed on 6/09/2022: 1,439 total basins were treated (1,417 municipal + 22 school)**
- **0 Residential pesticide exclusions were filed with the district this year from Winthrop**

2022 Winthrop Mosquito & Arbovirus Surveillance Summary

There were no WNV/EEE mosquito isolations or human and animal WNV/EEE cases in Winthrop for 2022. At the end of 2022, the arboviral risk level for Winthrop remained at REMOTE for EEE and LOW for WNV. Risk Categories are described on pages 13, 22, 25 of the 2022 Massachusetts State Arbovirus Surveillance and Response Plan.

Massachusetts DPH assesses arboviral risk levels based on many factors including but not limited to mosquito isolations, locations of acquired veterinary and human infections, virus history locally and in bordering states, weather conditions present and predictions, and current mosquito populations and future trends.

State arbovirus risk updates: https://www.mass.gov/info-details/massachusetts-arbovirus-update#risk-maps-

- 10 mosquito pools/batches were sent from Winthrop to the MDPH lab for testing in 2022, all batches tested negative for EEE/WNV.

Mosquito virus isolation history (WNV/EEE) in Winthrop:

Collection Date	Species	Test Type	Result
7/17/2017	*Culex pipiens/restuans* complex	WNV	Positive
8/8/2016	*Culex pipiens*	WNV	Positive
8/15/2016	*Culex salinarius*	WNV	Positive
8/24/2016	*Culex pipiens*	WNV	Positive
8/24/2016	*Culex pipiens*	WNV	Positive
7/27/2015	*Culex pipiens*	WNV	Positive
8/24/2015	*Culex pipiens*	WNV	Positive
8/31/2015	*Culex salinarius*	WNV	Positive
8/31/2015	*Culex salinarius*	WNV	Positive
8/31/2015	*Culex pipiens/restuans* complex	WNV	Positive
8/31/2015	*Culex pipiens/restuans* complex	WNV	Positive

8/31/2013	*Culex pipiens/restuans* complex	WNV	Positive
9/3/2013	*Culex pipiens/restuans* complex	WNV	Positive
9/10/2013	*Culex pipiens/restuans* complex	WNV	Positive
7/25/2012	*Culex pipiens/restuans* complex	WNV	Positive
7/30/2012	*Culex pipiens/restuans* complex	WNV	Positive
8/22/2012	*Culex pipiens/restuans* complex	WNV	Positive
8/29/2012	*Culex pipiens/restuans* complex	WNV	Positive
7/21/2010	*Culex pipiens/restuans* complex	WNV	Positive
8/11/2010	*Culex pipiens/restuans* complex	WNV	Positive
8/18/2010	*Culex pipiens/restuans* complex	WNV	Positive
9/1/2010	*Culex pipiens/restuans* complex	WNV	Positive
9/3/2008	*Culex pipiens/restuans* complex	WNV	Positive
8/23/2006	*Culex pipiens/restuans* complex	WNV	Positive
9/7/2005	*Culex pipiens*	WNV	Positive
8/17/2005	*Culex pipiens/restuans* complex	WNV	Positive
8/24/2005	*Culex pipiens/restuans* complex	WNV	Positive
9/8/2004	*Culex pipiens/restuans* complex	WNV	Positive
9/8/2004	*Culex pipiens/restuans* complex	WNV	Positive

Total Mosquitoes Collected in Winthrop	**2021**	**2022**	**% Change**
CDC CO2/Light Traps (1) - Mammal feeders/bridge vectors	484	66	-86%
Gravid Traps (1)- WNV primary vectors	112	95	-15%
Totals	**596**	**161**	**-73%**

Mosquito Species- pest/disease list- Winthrop	**2021**	**2022**	**% Change**	**WNV/EEE +**	**District Total % Change 2021 to 2022**
Culiseta melanura (red maple swamp/acid bog)	0	0	-	NO	-30%
Culex pipiens (container/catch basins/heavy organics)	84	83	-1%	NO	14%
Culex restuans (container/catch basins)	14	7	-50%	NO	-68%
Culex salinarius (brackish water/phragmites/roadside ditches)	210	28	-87%	NO	-99%
Coquillitidia perturbans (cattail)	0	2	-	NO	41%
Aedes vexans (rainwater/fresh floodwater)	166	0	-100%	NO	-98%
Aedes japonicus (tree hole/container breeder)	0	0	-	NO	-19%
Aedes sollicitans (salt marsh)	19	1	-95%	NO	-68%
Aedes cantator (salt marsh)	99	40	-60%	NO	-35%
Aedes canadensis (snowmelt/woodland pool)	0	0	-	NO	-38%

WNV/EEE bridge vectors/human biters

- Due to the prolonged drought event during 2022, there was a decrease in the fresh floodwater species *Ae. vexans* of 100% in Winthrop. *Cx. salinarius*, a brackish water mosquito which also relies on seasonal precipitation, decreased by 87%. Populations of *Ae. canadensis* and the cattail species *Cq. perturbans* are not predominant in Winthrop and collections are infrequent. Only 1 batch of *Cq. perturbans* tested positive in Rowley for WNV in 2022. There were no EEE isolates in these species during 2022. Informing residents that they can contact the district to inspect for standing water and help identify new breeding areas can also reduce these populations.

WNV primary vectors/bird biters (*Cx. pipiens/restuans*)

- There was an 8% decrease in collections of WNV primary vectors from 2021 to 2022 in Winthrop. There is typically an increase in these vector species during hot dry years and timely catch basin cleaning and treatments helped keep *Culex* mosquito populations in check. Only 2 batches of *Cx. pipiens* tested positive in Lynnfield and Haverhill for WNV in 2022. There were no EEE isolates in these species during 2022. Informing residents that they can contact the district to inspect for standing water and help identify new breeding areas can also reduce these populations.

EEE primary vectors/bird biters (*Cs. melanura*)

- While 2019 was an unprecedented year for EEE statewide, due to early and sustained drought conditions and anticipatory targeted larviciding activities in the Northeast from 2020 through 2022. In 2022, the district saw a 30% decrease in *Cs. melanura* populations from 2021. It will take several years for *Cs. melanura* populations to recover from the droughts. There were no EEE isolates in these species during 2022.

Pest Status salt marsh mosquitoes (*Ae. sollicitans*)

- *Ae. sollicitans,* a summer-fall salt marsh species, also suffered from drought conditions. With less precipitation falling on the marshes the hatches were restricted to the usual tidal flow triggers. Although total salt marsh mosquito populations in the district decreased by 49% from 2021, there was a 65% decrease in collection of these species in Winthrop in 2022 and populations remain below the annual average.

Winthrop has a largely urban setting that favors the development of the WNV vectors. Due to extensive WNV history in Winthrop and surrounding communities, from July to the first full hard frost, residents should take necessary precautions to reduce the risk of infection from WNV and other mosquito borne viruses, regardless of low mosquito populations and/or aggressiveness of control.

A hard, or killing frost, is defined meteorologically as two consecutive hours of temperatures below 28 degrees Fahrenheit or three hours below 32 degrees. This will occur at different times for different communities, and there may even be variation within communities based on local geography. Although mosquitoes are not killed until a hard frost occurs, they are extremely unlikely to be active when temperatures fall below 50 degrees in the evening (Page 15 of the 2022 MA Arbovirus Plan listed below).

Refer to the 2022 Massachusetts State Arbovirus Surveillance and Response Plan viewed online at:
https://www.mass.gov/lists/arbovirus-surveillance-plan-and-historical-data