Norfolk County Mosquito Control District

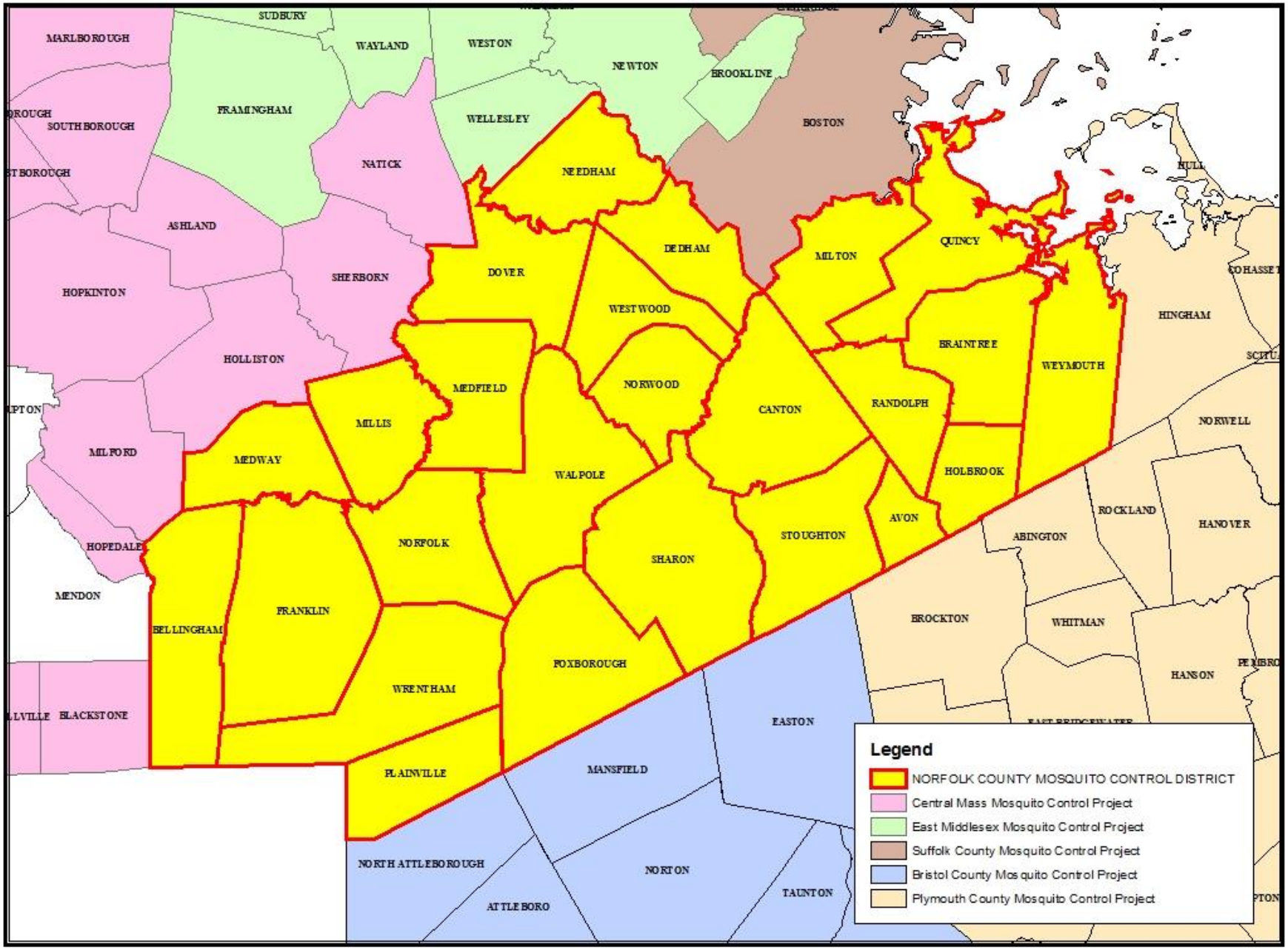
Overview of Operations

What to do about mosquitoes?

- Nothing?
- Individual approach?
- Town approach?
- Regional approach? "…best applied at a regional level."

Small enough to mold to town needs, and to the unique local geographic and watershed characteristics.
Large enough to avoid spillover from one town to another.

Norfolk County Mosquito Control District and Surrounding Mosquito Control Projects



We are not a County agency.

- We are a Commonwealth of Massachusetts Department that has a unique funding mechanism.

- The 25 towns that are *voluntarily* a part of the District, fund the District from local aid distributions through the town Cherry Sheet.

Department of Revenue
Cherry Sheet Assessment

Based on a formula established by legislation

1) The formula takes into account both a municipality's equalized valuation (EQV) and land area (square miles) to produce percentages for each municipality.

2) Once the State Reclamation & Mosquito Control Board "certifies" the Districts budget, the Department of Revenue then applies these percentages to establish the cherry sheet assessment for each community.

C.S. 1-ER

Commonwealth of Massachusetts Department of Revenue
NOTICE TO ASSESSORS OF ESTIMATED CHARGES
General Laws, Chapter 59, Section 21

FY2016

WALPOLE

A. County Assessments:

1. County Tax: *Ch. 35, ss. 30, 31*	193,385
2. Suffolk County Retirement *Ch. 61, Acts of 2009, s. 10*	0
Sub-Total, County Assessments	**193,385**

B. STATE ASSESSMENTS AND CHARGES:

1. Retired Employees Health Insurance *Ch. 32A, s. 10B*	0
2. Retired Teachers Health Insurance *Ch. 32A, s. 12*	0
3. Mosquito Control Projects *Ch. 252, s. 5A*	93,757
4. Air Pollution Districts *Ch. 111, ss. 142B,142C*	8,235
5. Metropolitan Area Planning Council *Ch. 40B, ss. 26, 29*	11,869
6. Old Colony Planning Council *1967, Ch. 332*	0
7. RMV Non-Renewal Surcharge *Ch. 90; Ch. 60A*	20,140
Sub-Total, State Assessments	**134,001**

Click on the Quick link on the home page of our website to view cherry sheet assessments – www.norfolkcounty mosquito.org

Department of Agricultural Resources (DAR)
Commissioner Delegate (Chair)

Department of Environmental Protection (DEP)
Commissioner Delegate

Department of Conservation and Recreation (DCR)
Commissioner Delegate

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State Reclamation and Mosquito Control Board (SRMCB)

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5 Commissioners of the Norfolk County Mosquito Control District (NCMCD)

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Director of NCMCD

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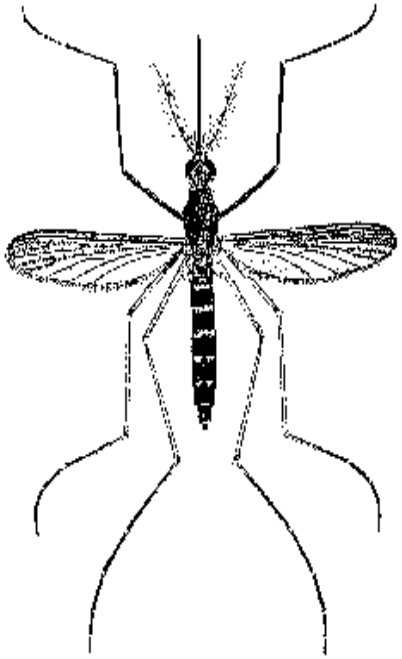
Day to day operations of NCMCD

Field Operations at Norfolk County Mosquito Control

Effective mosquito control requires



- ✓ **Interdisciplinary efforts**
- ✓ **Utilizing the best available science.**
- ✓ **Integrated pest management (IPM)**

Society of Wetland Scientists, 2009. Current practices in wetland management for mosquito control.

Integrated Pest Management

A strategy that is recognized world wide.

IPM is applied in all kinds of pest control environments – Agricultural, structural, public health, etc

IPM (Integrated Pest Management)

Selection of biological, cultural, physical & chemical methods to provide:

The greatest benefit in reducing burden from a pest (damage, disease, nuisance)

with

The least risk to public & environmental health, at lowest effective cost

IPM at Norfolk County Mosquito Control

- **Surveillance**
  - We need to understand the mosquito to provide the most effective control. Where? Why?
- **Source reduction –**
  - All mosquitoes need standing water to complete their life cycle. We want to remove standing water where we can.
  - This provides long term control vs. short term control from more frequent applications
- **Larvicide**
  - It is more effective to control mosquitoes as larvae in water than after they become flying adults. We have an array of very environmentally sensitive products available to us.
- **Adulticide**
  - When other efforts don't achieve target control levels. To provide control in disease outbreaks.

Surveillance

- Important part of IPM
- Monitor adult and larval mosquito populations
- Virus testing at MDPH

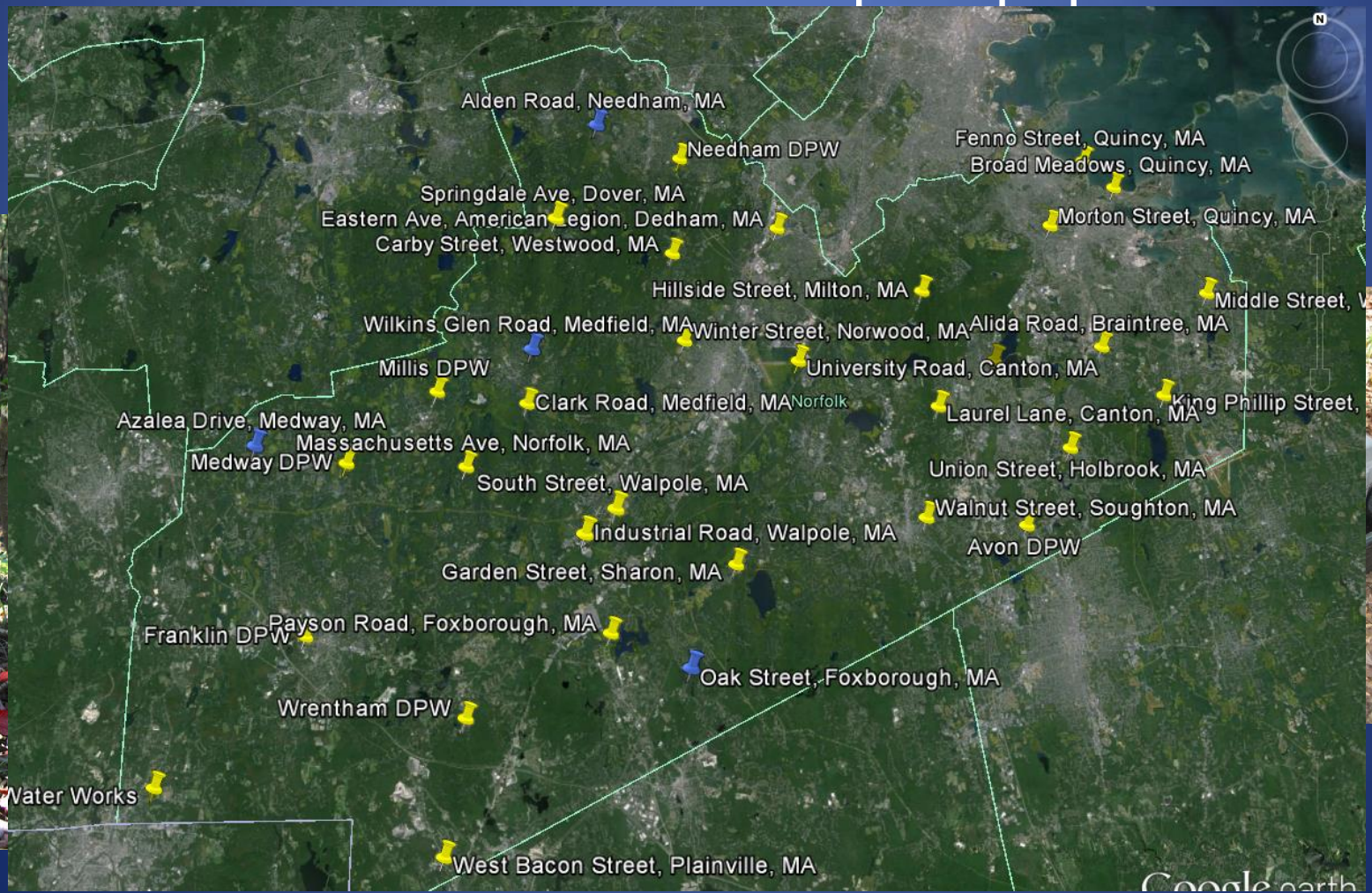
Resting box

CDC light trap

Gravid trap

Surveillance

- Important part of IPM
- Monitor adult and larval mosquito populations
-



Surveillance

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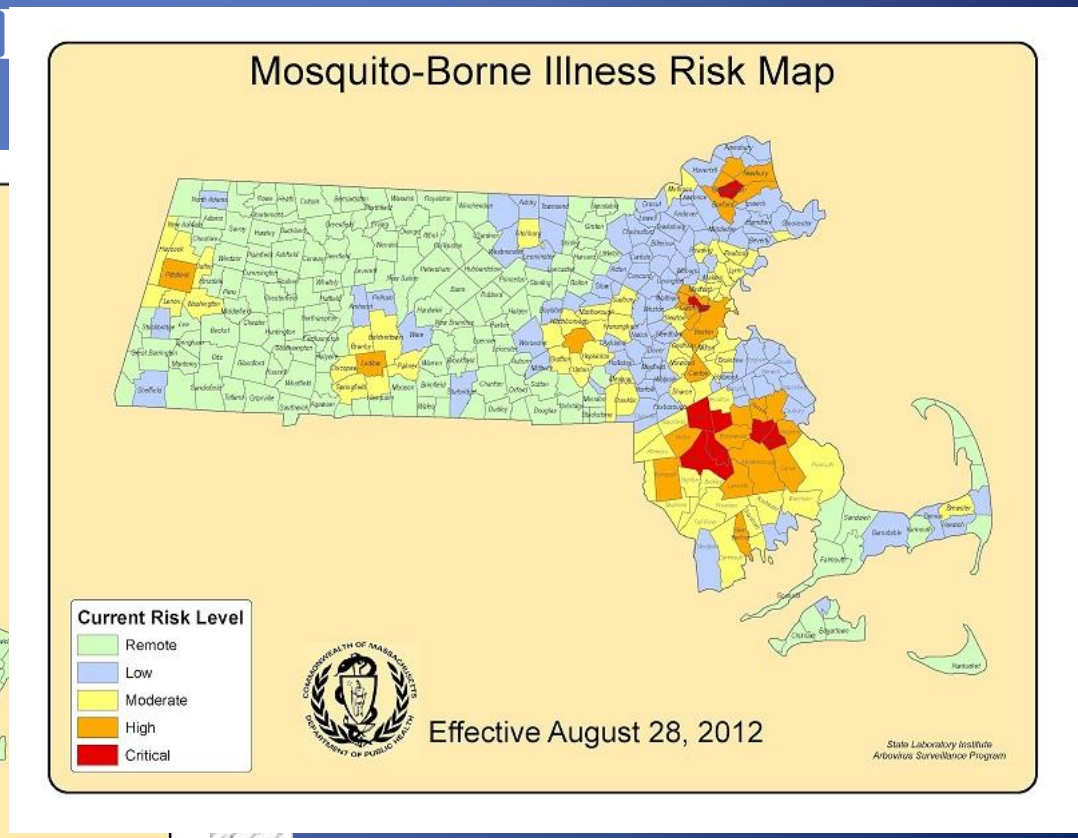
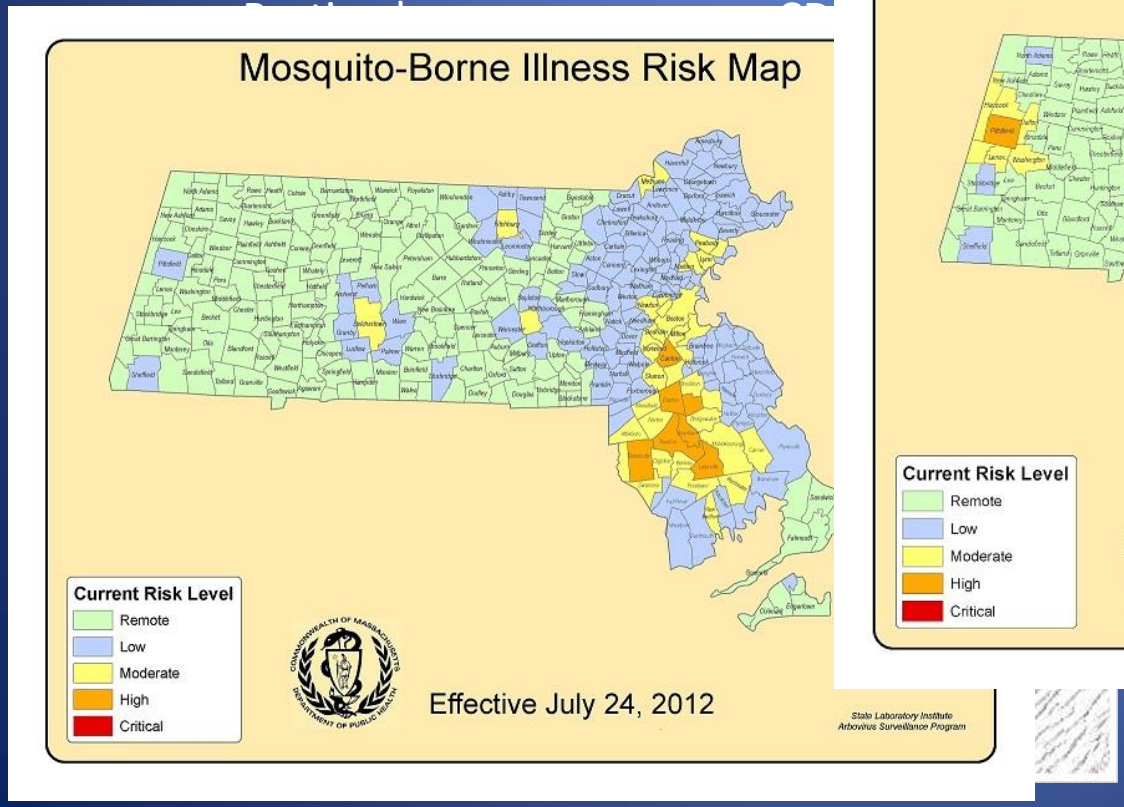
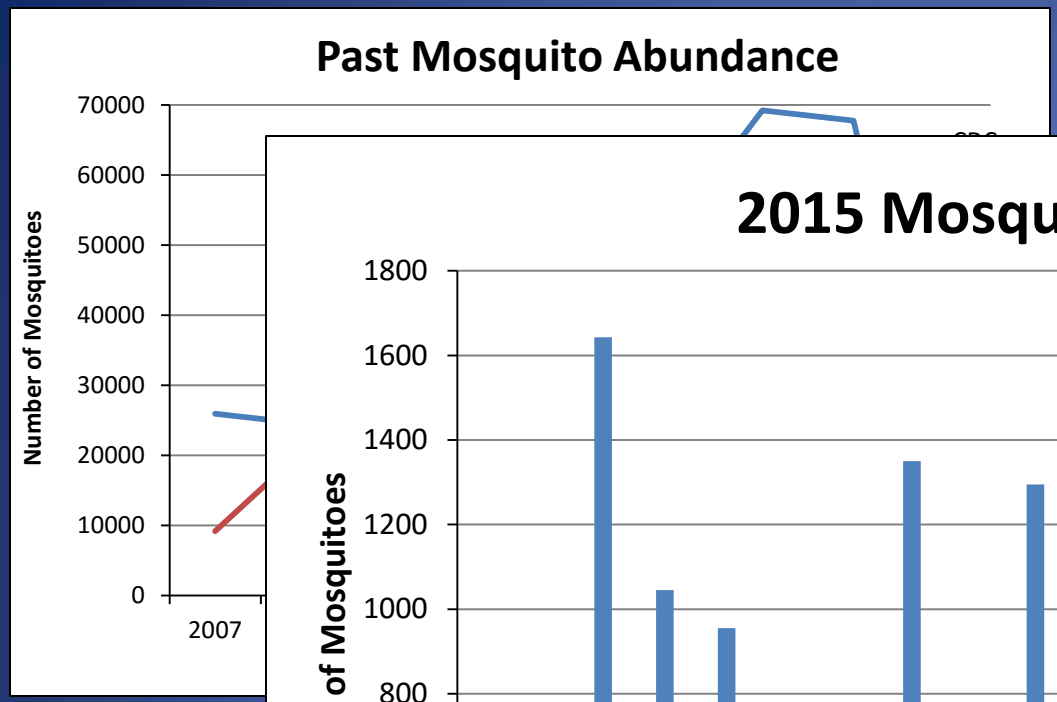
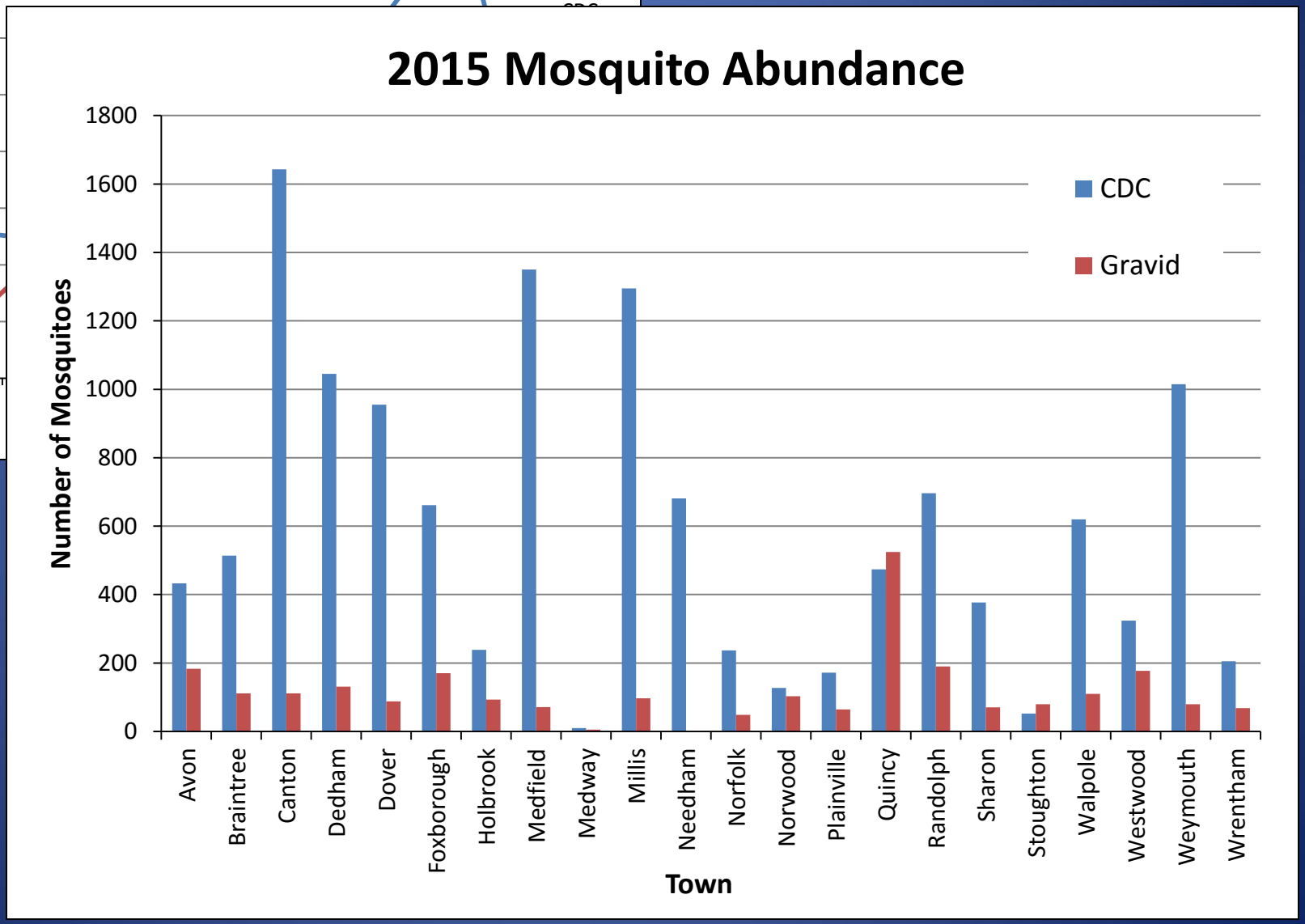
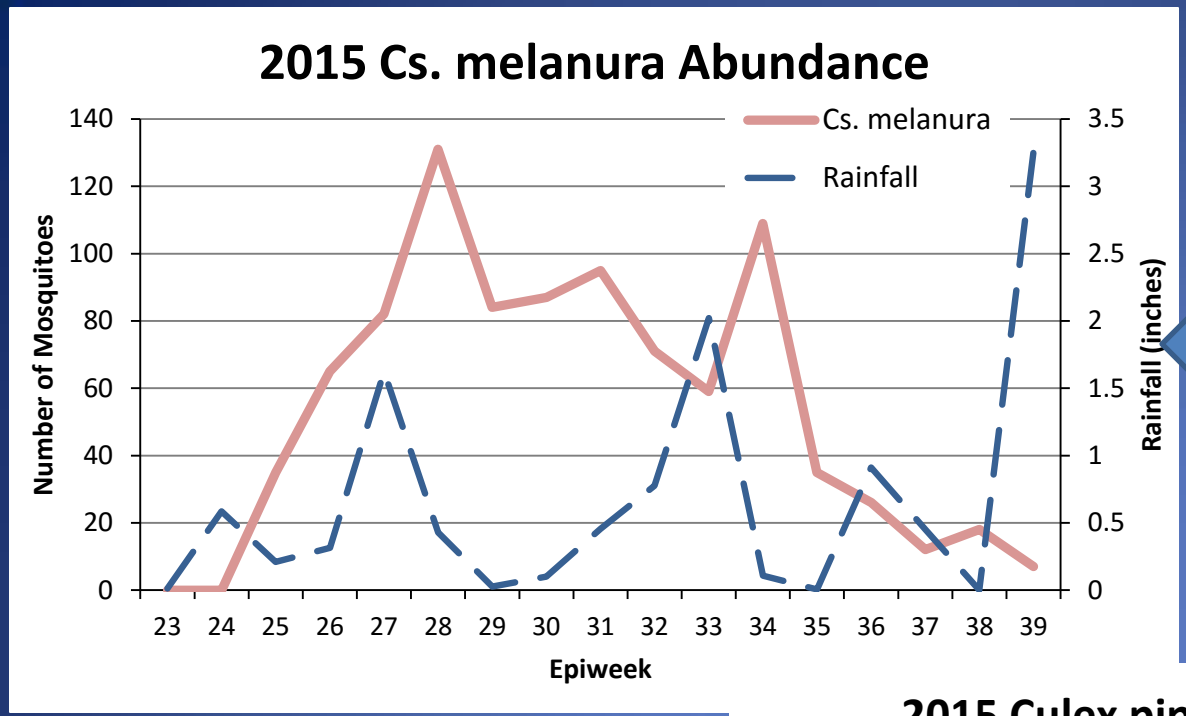


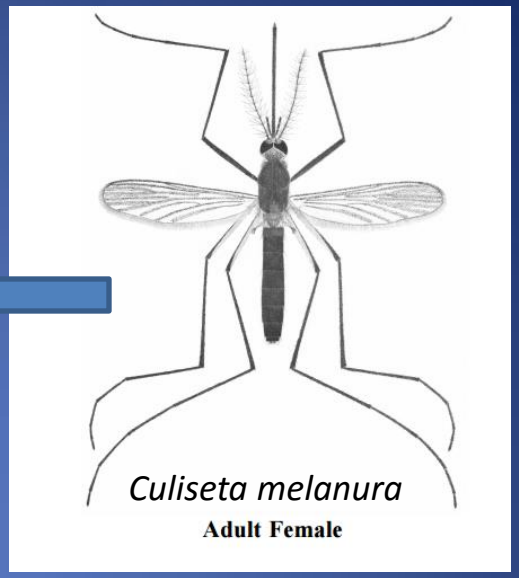


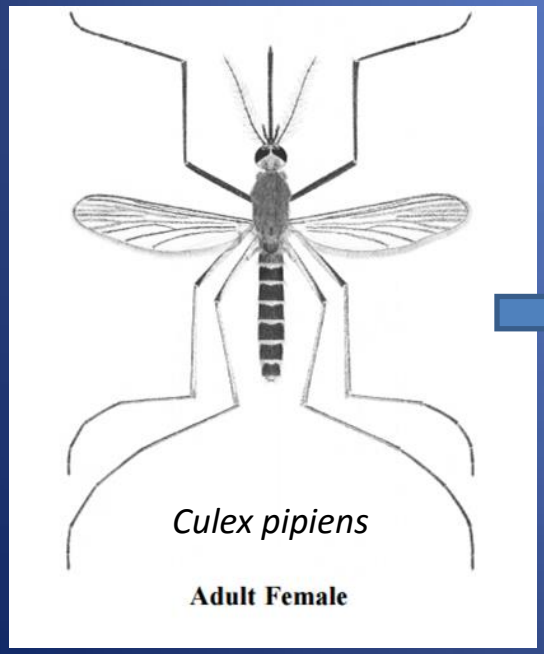
Mosquito Abundance in Norfolk County

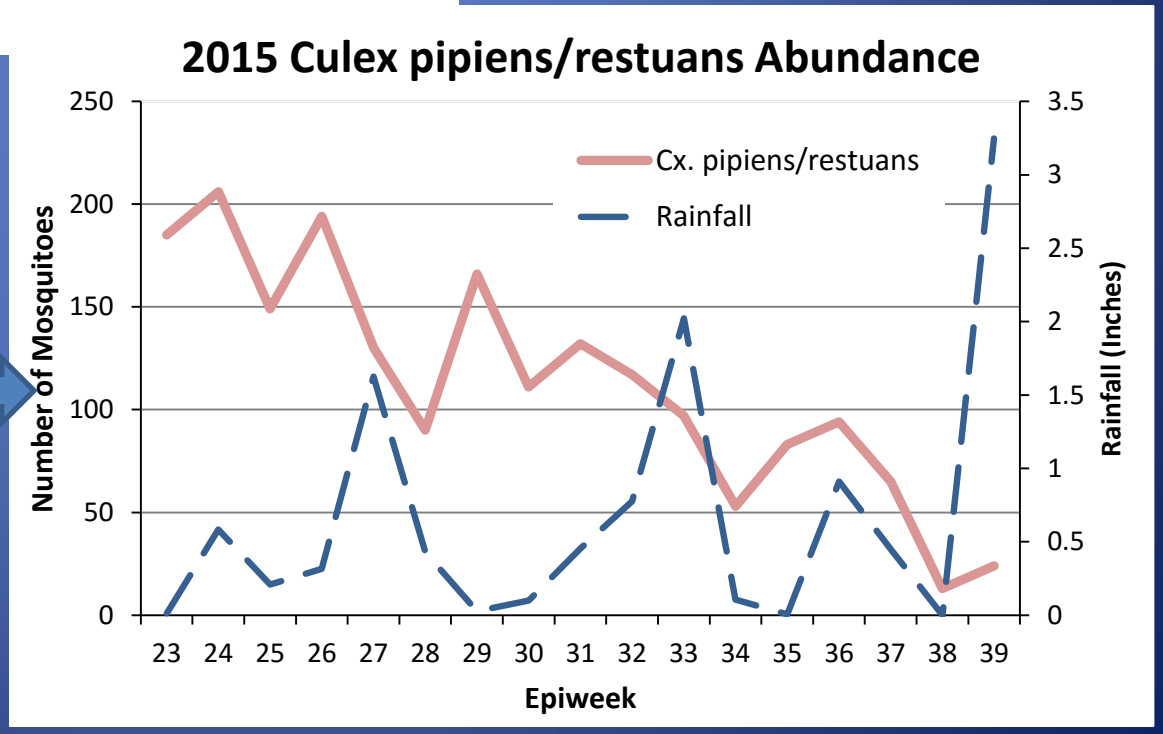





2015 Cs. melanura Abundance
Cs. melanura
Rainfall
Number of Mosquitoes
Rainfall (inches)
Epiweek
0
20
40
60
80
100
120
140
0
0.5
1
1.5
2
2.5
3
3.5
23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39

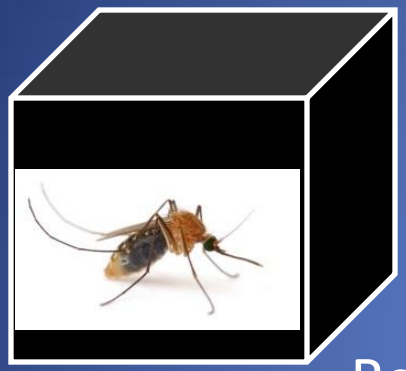

Culiseta melanura
Adult Female


Culex pipiens
Adult Female


2015 Culex pipiens/restuans Abundance
Cx. pipiens/restuans
Rainfall
Number of Mosquitoes
Rainfall (Inches)
Epiweek
0
50
100
150
200
250
0
0.5
1
1.5
2
2.5
3
3.5
23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39

2016 Surveillance Plans

- Additional trapping methods



Resting box

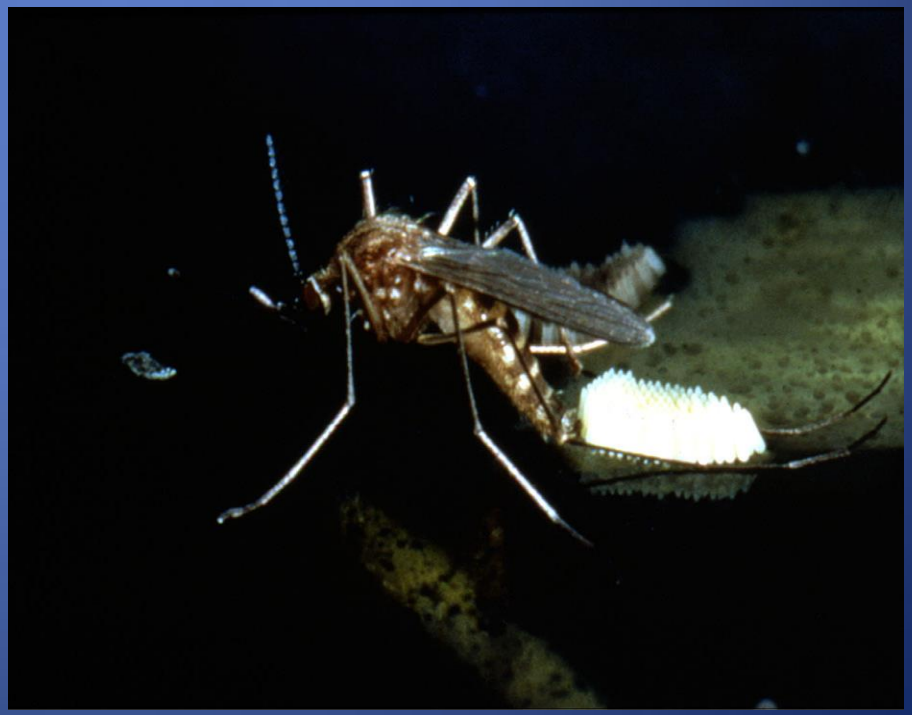
Ovitrap

- Asian Tiger Mosquito surveillance

IPM at Norfolk County Mosquito Control

- **Surveillance**

- **Source reduction**



- **Larvicide**
- **Adulticide**

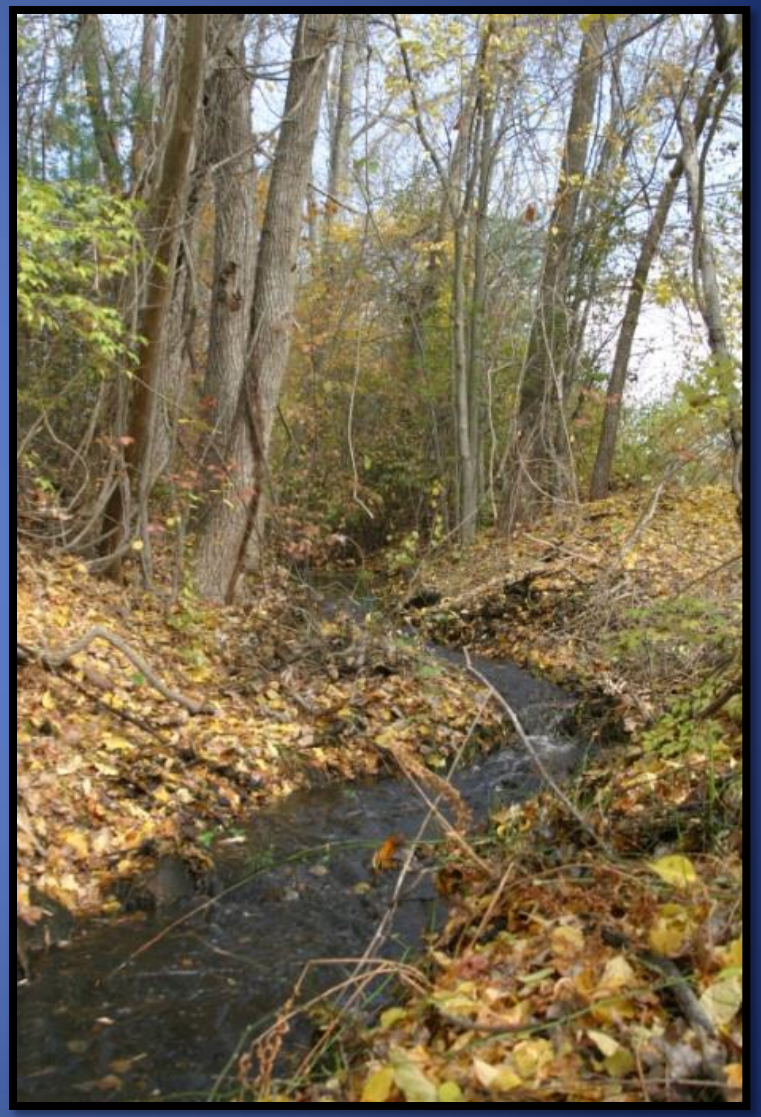
Residential Source Reduction

- Educating the public to recognize sources of mosquito breeding on their properties and take simple measures to prevent mosquito breeding.

Water Management

Culvert Clearing

Routine Hand Clearing

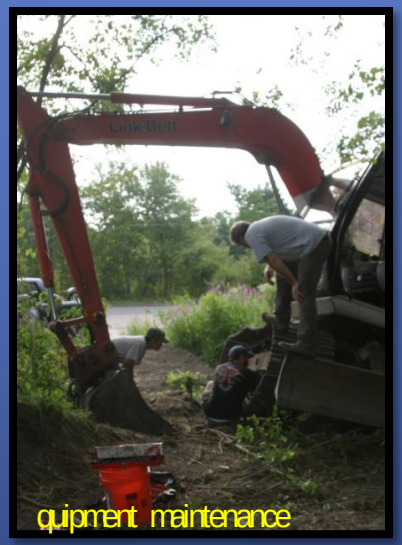


KOBELCO

Link-Belt

Beaver Management

The bulk of Water Management work is conducted in Fall through Winter



IPM at
Norfolk County Mosquito Control

- **Surveillance**
- **Source reduction**
- **Larvicide**
- **Adulticide**

Aerial Larvicide

- 6,000 – 8,000 acres each spring, periodic summer applications.
- Applied by helicopter

Ground Larvicide

- Applied by hand to wetlands, catch basins, and other man-made water sources.

IPM at
Norfolk County Mosquito Control

- **Surveillance**
- **Source reduction**
- **Larvicide**
- **Adulticide**

Adulticide

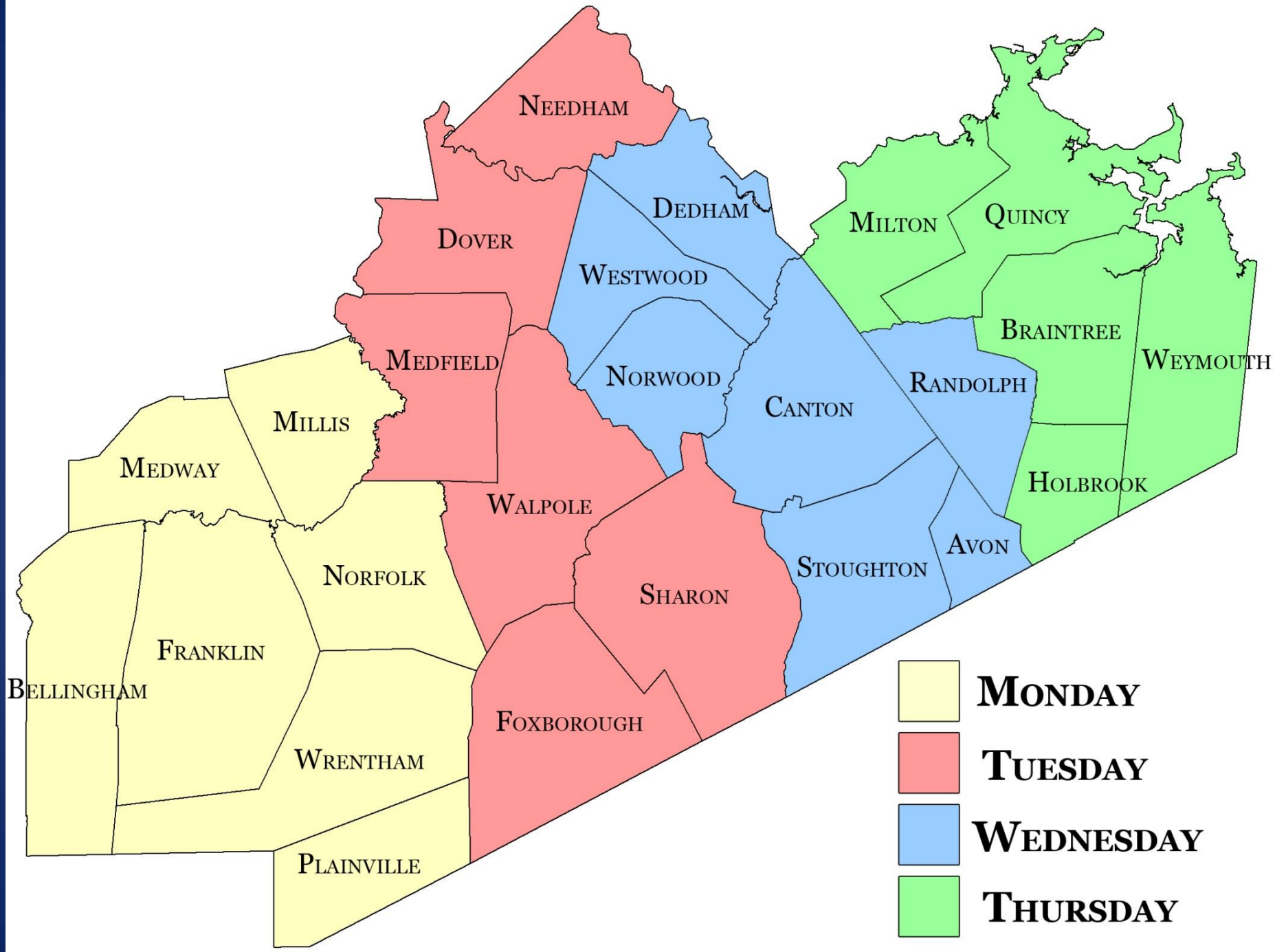
- "Spraying"

- Ultra Low Volume (ULV) aerosol
- Zenivex
- Active ingredient - Etofenprox
- Synthetic pyrethroid – man-made version of natural pyrethrum, found in chrysanthemum.

- Applied from truck mounted equipment
- Applied from sunset – midnight.
- ½ ounce of product per acre of coverage.
- Product breaks down in sunlight quickly.
- Very low toxicity to people and environment.

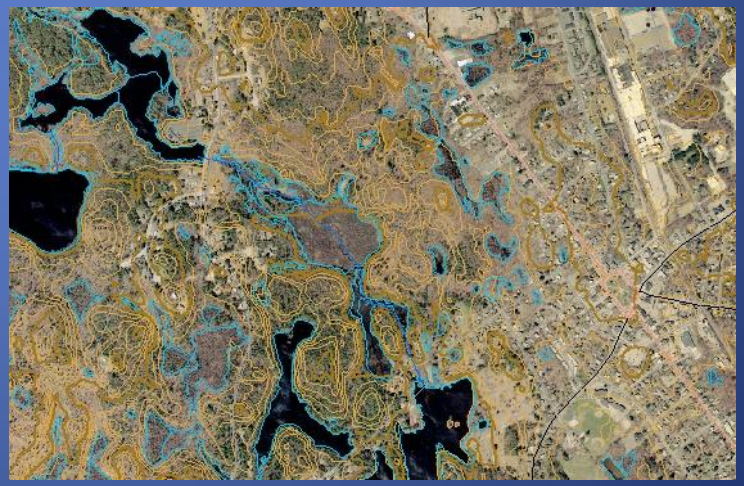
  Classified by EPA as 'reduced risk'.

  It is over 200 times ***less*** acutely toxic than caffeine.
- Response to high nuisance populations and to knock down disease carrying mosquitoes.


Needham
Dedham
Dover
Westwood
Milton
Quincy
Braintree
Weymouth
Medfield
Norwood
Canton
Randolph
Millis
Medway
Walpole
Holbrook
Avon
Stoughton
Sharon
Norfolk
Franklin
Bellingham
Foxborough
Wrentham
Plainville
Monday
Tuesday
Wednesday
Thursday

GIS (Geographic Information Systems)

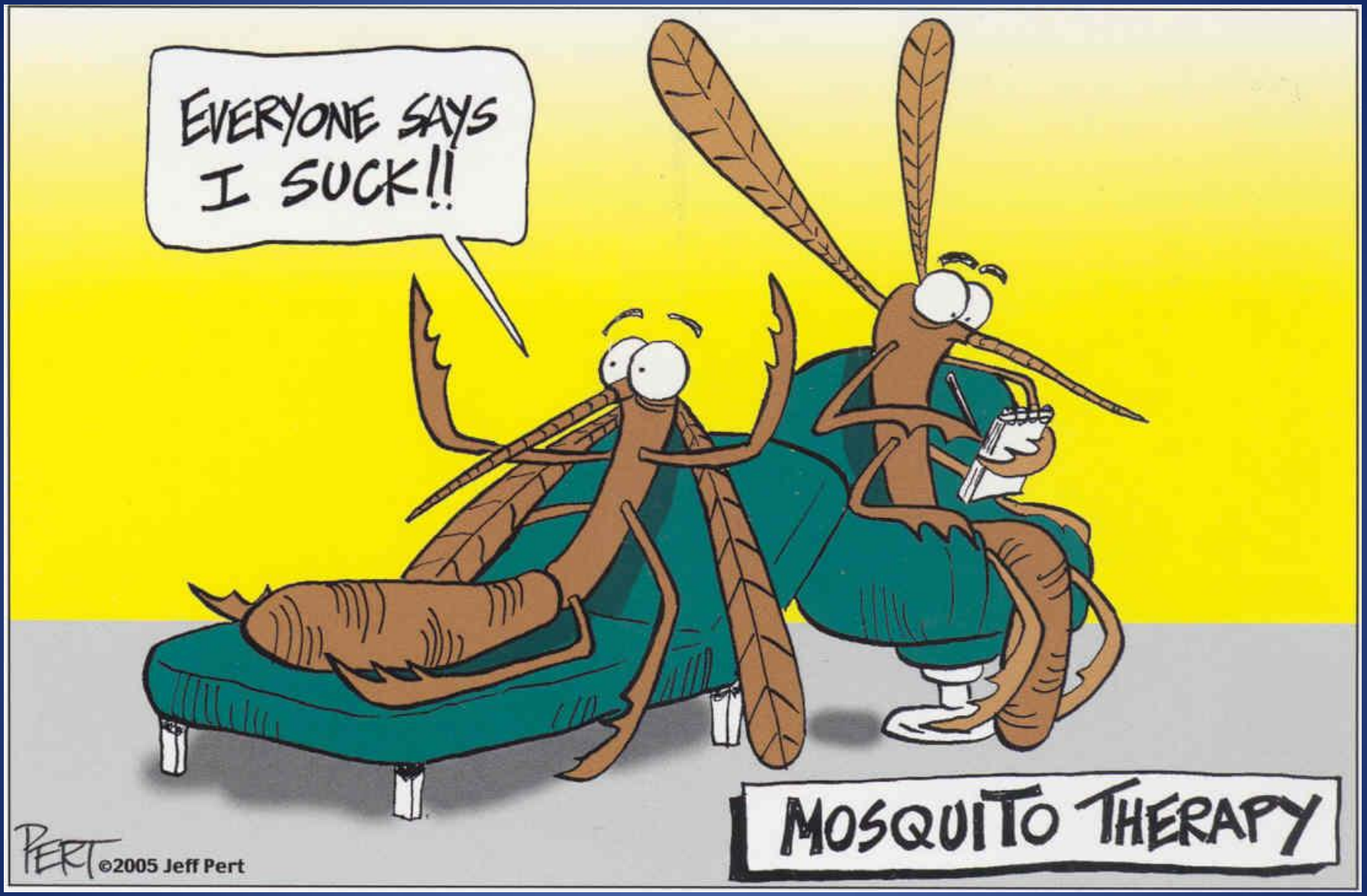
- Used in all aspects of our operations but primarily in conducting aerial larvicide applications, tracking ULV applications, and documenting water management projects.



Cost per resident

- Just over $3.00 per resident.
- Equivalent to a cup of coffee per year.

- **The NCMCD is committed to:**
  - Continuing to implement an effective and responsible IPM program for mosquito control
  - Serving the public to the greatest degree possible with our given resources
  - Being available and transparent to the residents and the government of the towns in the Mosquito Control District


EVERYONE SAYS I SUCK!!
MOSQUITO THERAPY
PERT ©2005 Jeff Pert