# NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report for 7 July to 13 July 2013, CDC Week 28

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Center for Vector Biology

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funding from the NJ State Mosquito Control Commission and with the participation of the 21 county mosquito control agencies of New Jersey.

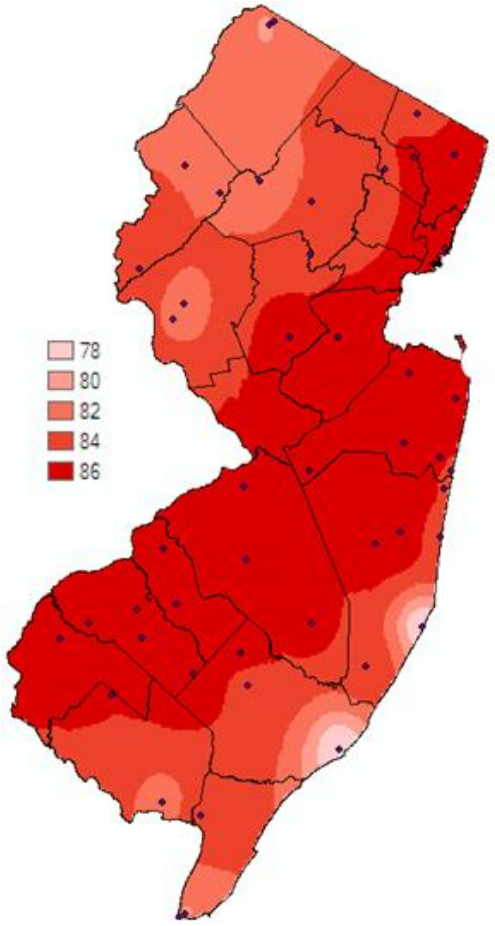
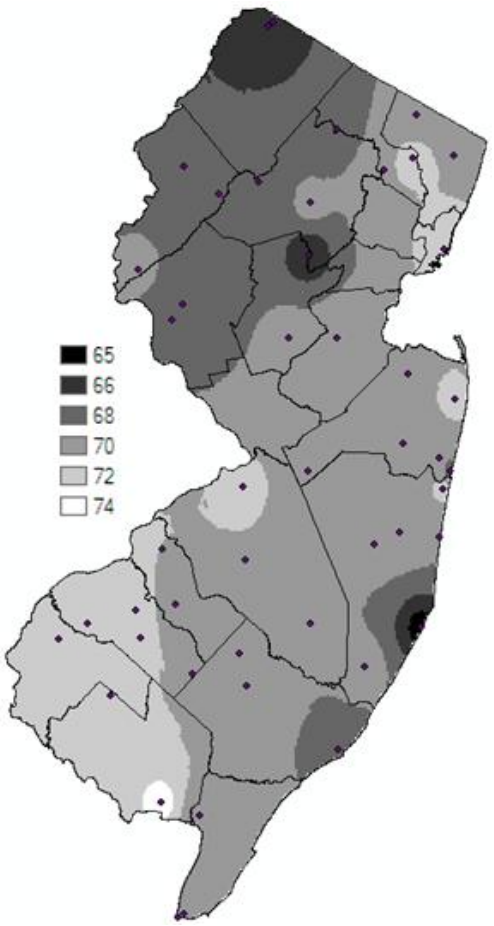
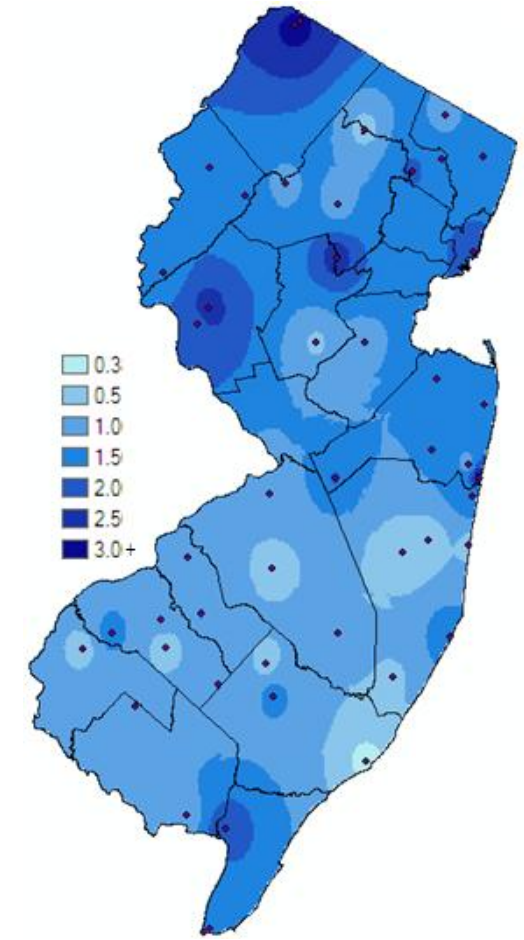
## *Summary Table – Week 28*

| | ***Aedes vexans*** | | | ***Culex* Mix** | | | ***Coquillettidia perturbans*** | | | ***Aedes sollicitans*** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Region** | This Week | Average* | Increase | This Week | Average* | Increase | This Week | Average* | Increase | This Week | Average* | Increase |
| Agricultural | **2.05** | **1.14** | **2** | **0.76** | **1.92** | **0** | **0.10** | **0.42** | **0** | **0.00** | **0.02** | **0** |
| Coastal | **0.93** | **3.51** | **0** | **2.04** | **5.85** | **0** | **0.00** | **0.52** | **0** | **0.00** | **10.65** | **0** |
| Delaware Bayshore | **nd** | **1.62** | **0** | **nd** | **16.39** | **0** | **nd** | **1.62** | **0** | **nd** | **6.90** | **0** |
| Delaware River Basin | **nd** | **6.60** | **0** | **nd** | **2.01** | **0** | **nd** | **0.16** | **0** | **nd** | **0.09** | **0** |
| New York Metro | **4.63** | **5.30** | **0** | **2.14** | **11.40** | **0** | **0.01** | **0.24** | **0** | **1.76** | **0.29** | **4** |
| North Central Rural | **0.55** | **0.34** | **2** | **0.73** | **0.80** | **0** | **0.02** | **0.03** | **0** | **0.00** | **0.00** | **0** |
| Northwest Rural | **31.86** | **14.82** | **3** | **0.71** | **6.39** | **0** | **0.00** | **1.64** | **0** | **0.00** | **0.00** | **0** |
| Philadelphia Metro | **nd** | **5.10** | **0** | **nd** | **6.20** | **0** | **nd** | **0.38** | **0** | **nd** | **0.00** | **0** |
| Pinelands | **0.12** | **1.44** | **0** | **0.09** | **3.26** | **0** | **0.18** | **0.75** | **0** | **0.00** | **0.08** | **0** |
| Suburban Corridor | **3.35** | **6.11** | **0** | **0.68** | **2.97** | **0** | **0.03** | **0.70** | **0** | **0.00** | **<0.01** | **0** |

*Averages represent data from, at most, the previous 5 years. Increase is a scale of current values from historical values where no difference or a decrease is represented by 0 (blue), up to 50% greater difference by 1 (green), up to 100% greater difference by 2 (yellow), up to 150% greater difference by 3 (orange) and greater than 150% increase by 4 (red). White cells in the increase column denote increases from an historic zero and thus no value can be appropriately given. nd=no data reported.

State Summary: June's rainfall continues to play a role in the emergence of local floodwater populations. *Aedes vexans* numbers are higher in the Agricultural, North Central Rural and Northwest Rural than historical values while *Ae. sollicitans* in the New York Metropolitan region is significantly elevated. Both *Culex* and *Coquillettidia* populations appear to be suppressed in many regions, although this pattern is not absolute, with higher numbers appearing in previous weeks.

# *Climate Factors*

| Average High Temperature | Average Low Temperature | Total Precipitation |
|---|---|---|
|  |  |  |



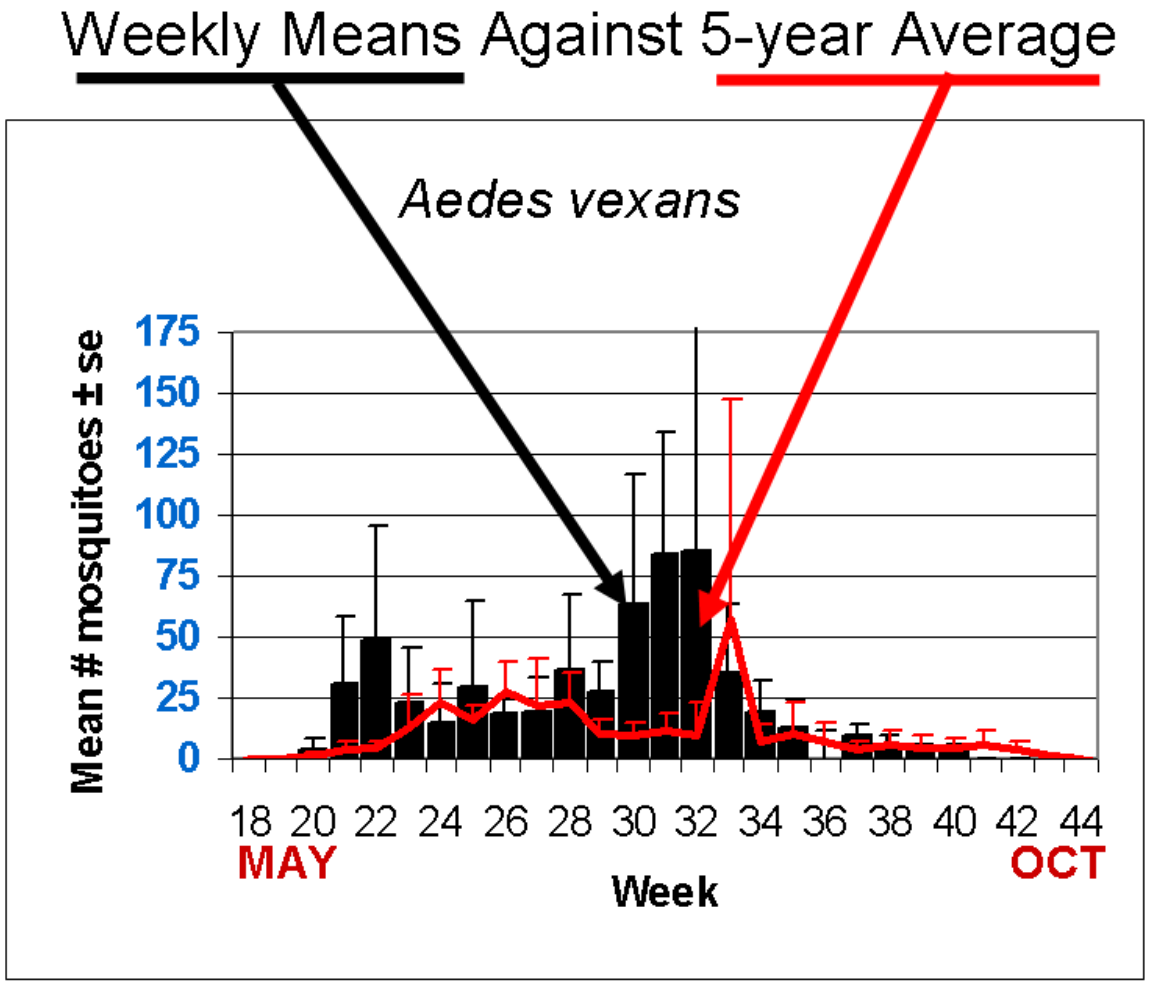




The three figures show the interpolation of average maximum (°F) and minimum temperature (°F) and total precipitation (inches) from 1 July to 12 July, 2013 in New Jersey. Data points are from about 47 weather stations maintained through the New Jersey Weather & Climate Network and the State Climatologist. Interpolation between points was performed using ArcMap 10.1.

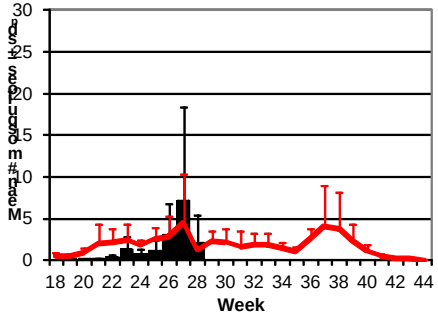
NJ Weather & Climate NETWORK ONJSC at Rutgers University

**The Species Graphs**: The species graph pages include a graph with two plots for each of the ten regions defined on the first page (Agricultural, Coastal, Delaware Bayshore, Delaware River, New York Metro, North-Central, Northwestern, Philadelphia Metro, Pinelands, and Suburban Corridor). Below is an example of one graph from one species within one region. The bar plot show the average number of mosquitoes per trap within the region (weekly means) and line plots show the historical trend as the average number of mosquitoes from the previous 5 years (5-year average). In general, historical data are running means from the previous 5 years, but on occasion, will include data from fewer years. Adjustments are made to account for year discrepancies. Data for this week are from Essex, Hudson, Monmouth, Morris, Ocean, Union and Warren counties. Data for the previous week(s) are from Atlantic, Bergen, Essex, Hudson, Hunterdon, Mercer, Monmouth, Morris, Ocean, Union and Warren counties.

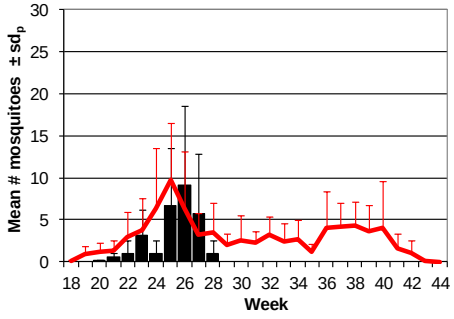


# *Aedes vexans* - Fresh Floodwater Species
# Multivoltine Aedine (*Ae. vexans* Type)

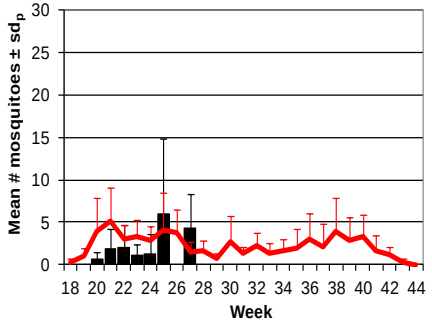
## Agricultural



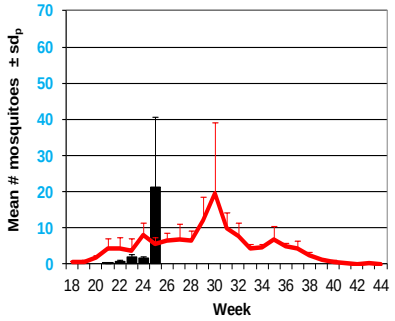

## Coastal



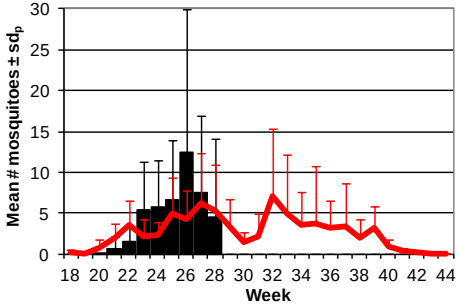

## Delaware Bayshore



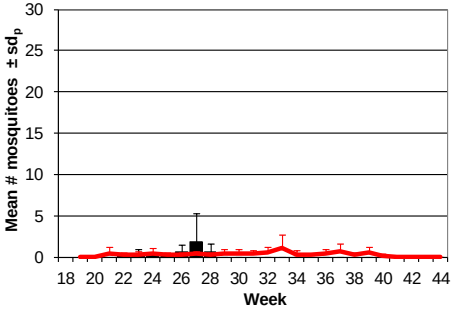

## Delaware River Basin



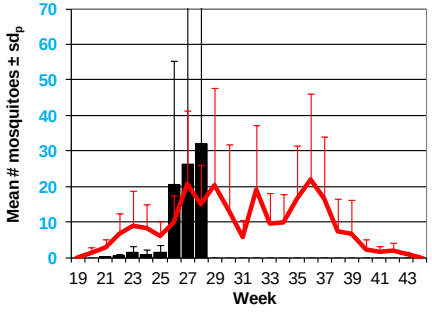

## New York Metro



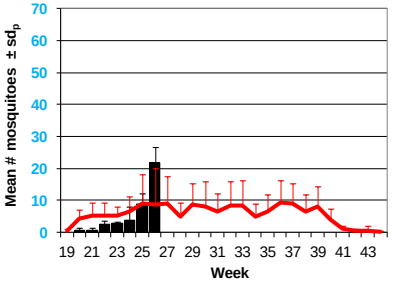

## North Central Rural



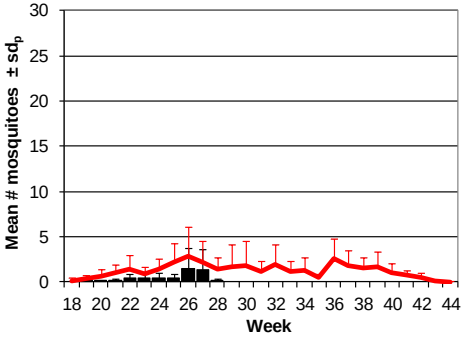

## Northwestern Rural



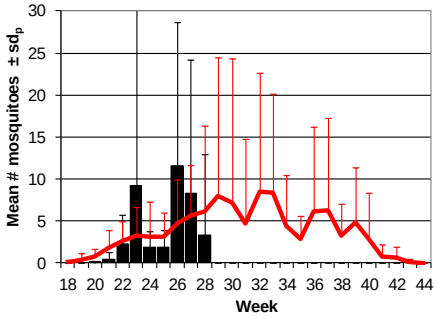

## Philadelphia Metro




## Pinelands




## Suburban Corridor

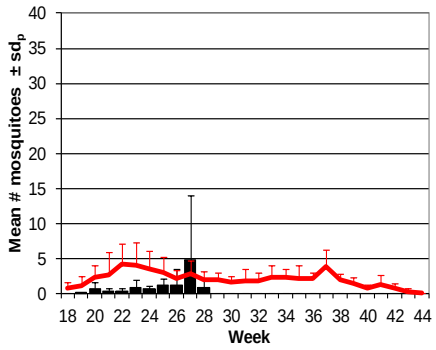



## Comments

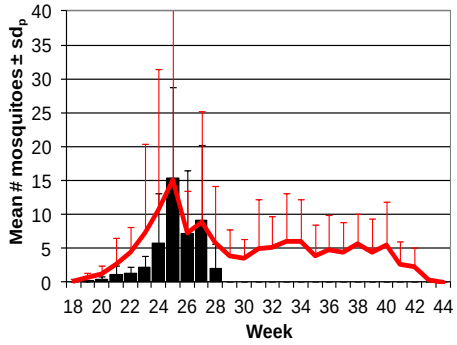
*Aedes vexans* continues to respond to the significant rainfall experienced previously with populations above historical values in the Agricultural, North Central Rural and Northwestern Rural regions. As data accumulates, other regions may show similar trends. Numbers in the Northwestern Rural region were high enough to make *Ae. vexans* the most light-trapped species in this program's traps for that region, well ahead of the rest (see Top Ten graphs).

# *Culex* Mix – Permanent Water Species
# Multivoltine *Culex/Anopheles* (*Cx. pipiens* Type)

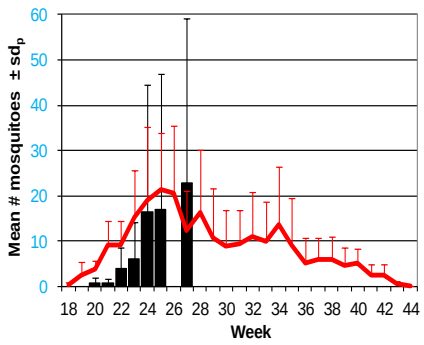
## Agricultural



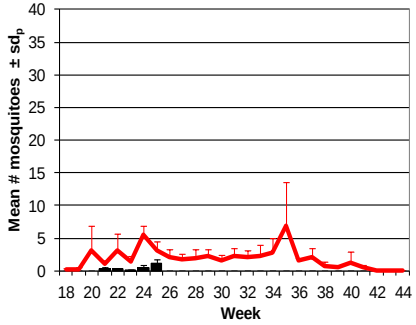

## Coastal



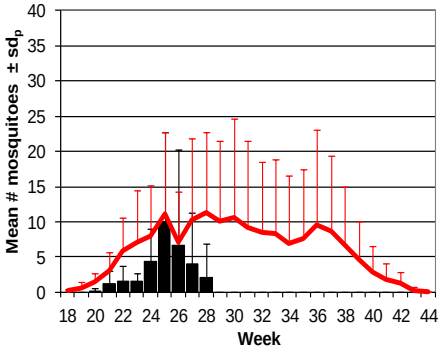

## Delaware Bayshore



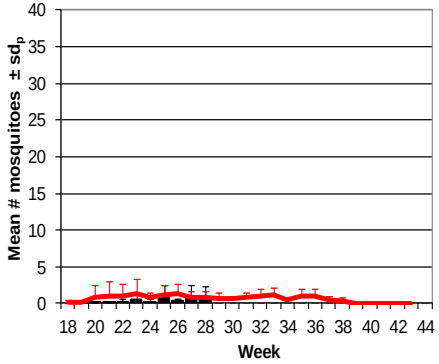

## Delaware River Basin



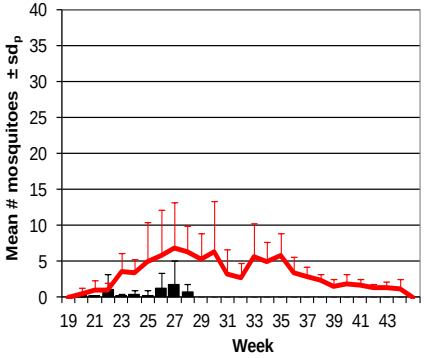

## New York Metro



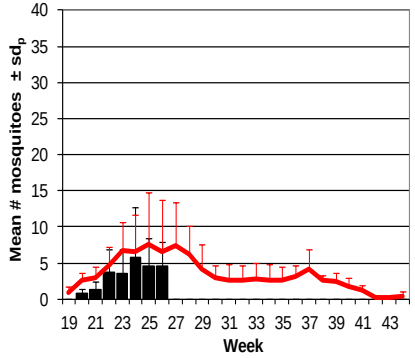

## North Central Rural



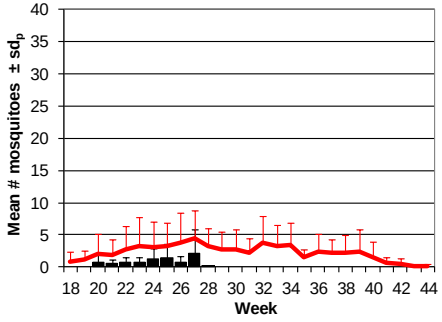

## Northwestern Rural



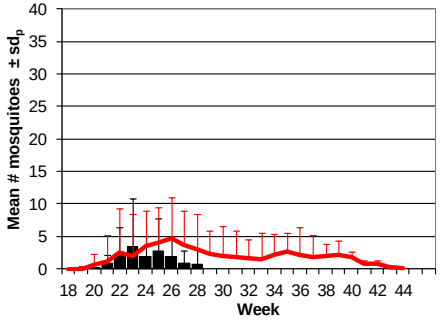

## Philadelphia Metro




## Pinelands




## Suburban Corridor

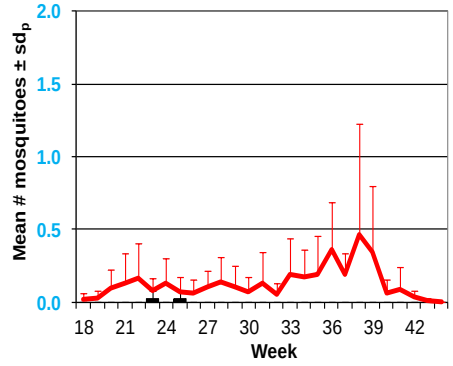
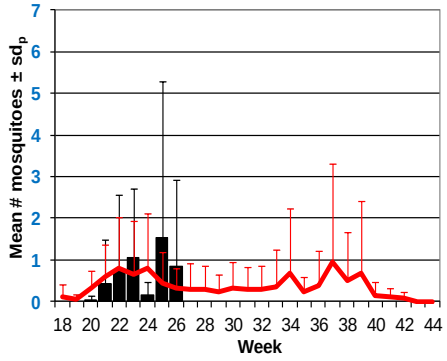
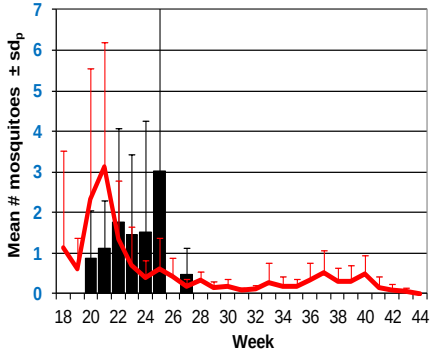
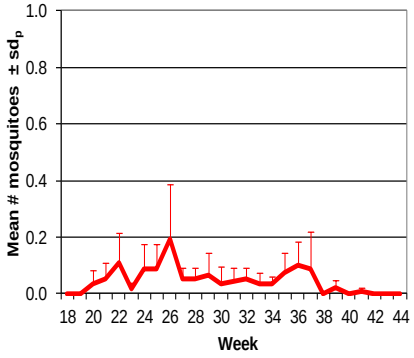
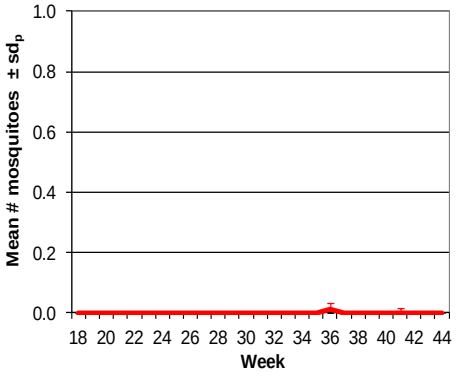
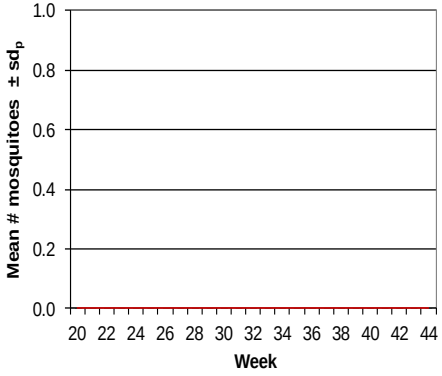
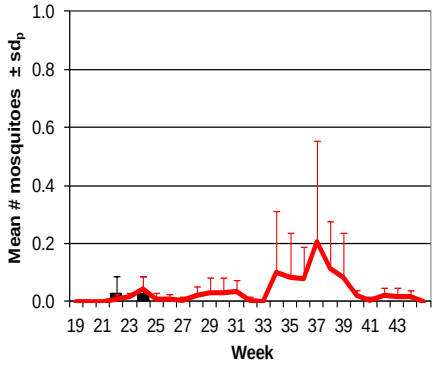
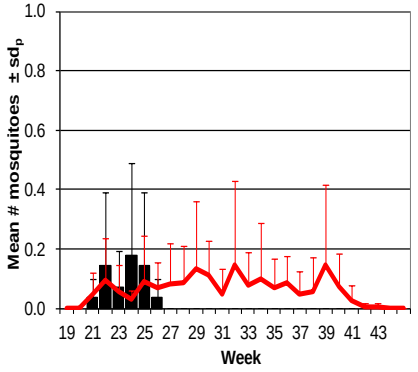
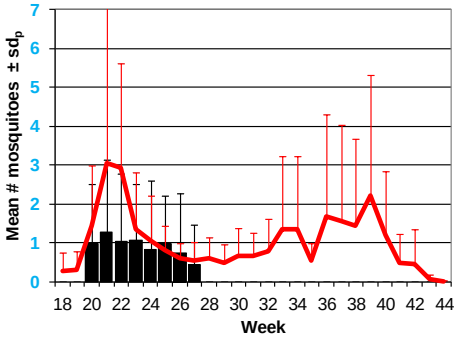
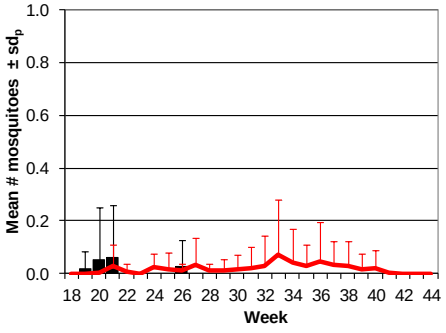



## Comments

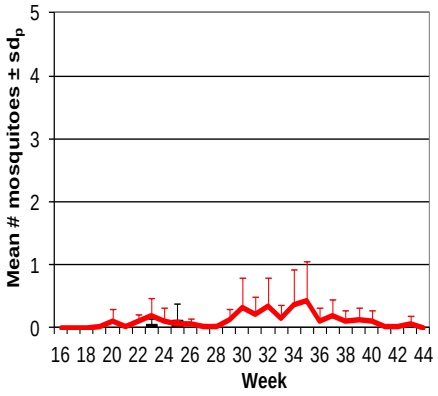
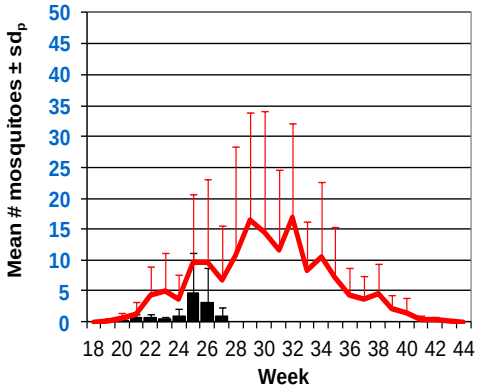
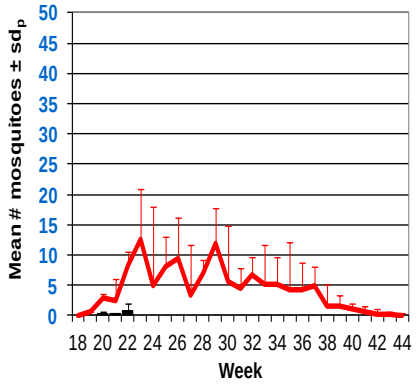
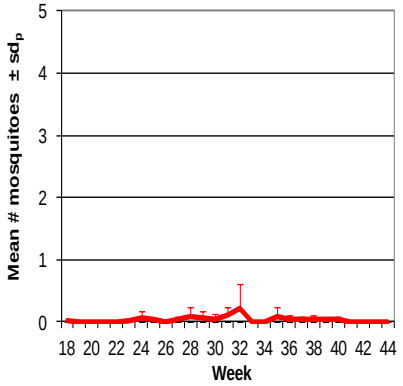
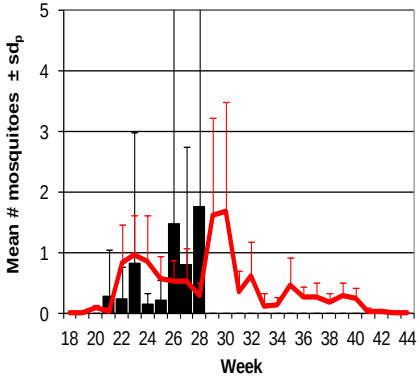
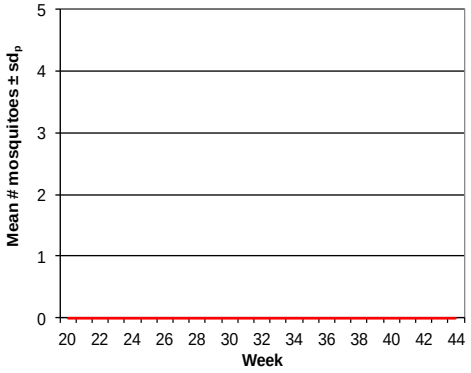
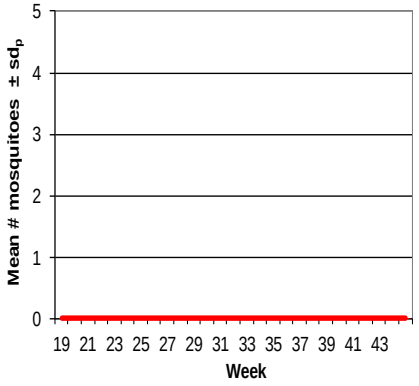
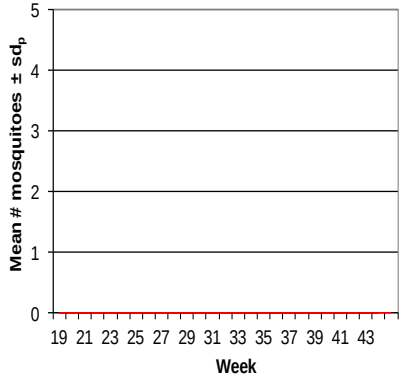
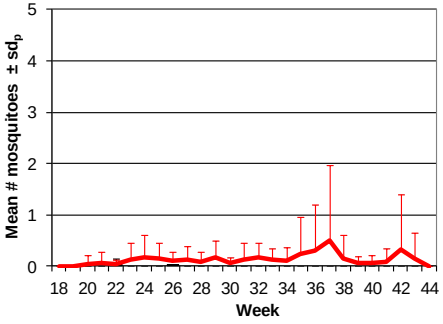
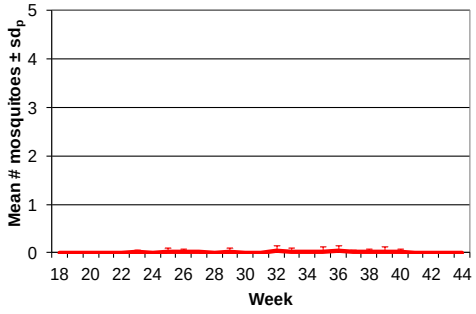
*Culex* Mix is composed of *Culex pipiens, Cx. restuans* and *Cx. salinarius*. These three species (especially *pipiens* and *restuans*) are often difficult to tell apart after encountering the damaging blades of the New Jersey light trap. *Culex* populations have recently been higher than historical values in a few local populations, but this week's numbers are below those values for all reporting regions. Lower numbers may be a running trend for regions such as the Delaware River Basin, New York Metropolitan, Northwestern Rural, Pinelands and Suburban Corridor.

WNV has now been detected in pools originating from the central and northern portions of New Jersey.

# *Culiseta melanura* – Miscellaneous Group Unique (*Cs. melanura* Type)

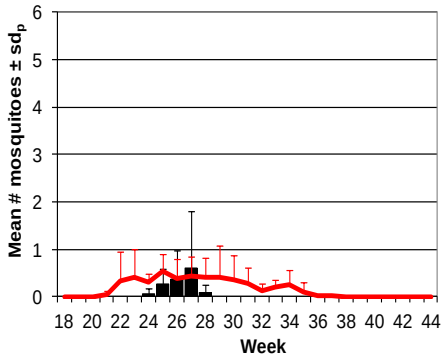
| Agricultural | Coastal | Delaware Bayshore | Delaware River Basin |
|---|---|---|---|
|  |  |  |  |
| **New York Metro** | **North Central Rural** | **Northwestern Rural** | **Philadelphia Metro** |
|  |  |  |  |
| **Pinelands** | **Suburban Corridor** | **Comments** | |
|  |  | *Culiseta melanura* is the enzootic ornithophilic vector of eastern equine encephalitis. Numbers for this species appear to have dropped off in the Coastal region and possibly the Delaware Bayshore. Currently no detection of EEE in New Jersey has occurred. | |

# *Aedes sollicitans* - Salt Floodwater Species
## Multivoltine Aedine (*Ae. sollicitans* Type)

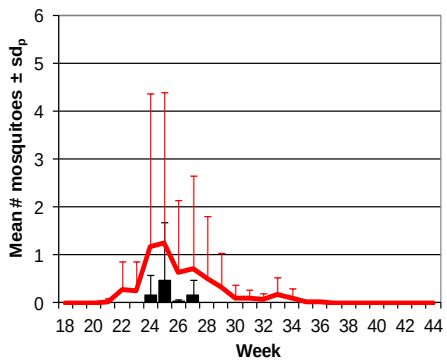
| Agricultural | Coastal | Delaware Bayshore | Delaware River Basin |
|---|---|---|---|
|  |  |  |  |
| **New York Metro** | **North Central Rural** | **Northwestern Rural** | **Philadelphia Metro** |
|  |  |  |  |
| **Pinelands** | **Suburban Corridor** | **Comments** | |
|  |  | *Aedes sollicitans* is a salt floodwater species and responds to both lunar tidal patterns as well as rainfall. While numbers in the traditional areas of significance (Coastal and Delaware Bayshore) are well below historical values, the New York Metropolitan region continued to experience higher than average abundance.<br><br>Next lunar full moon is July 22nd. | |

# *Coquillettidia perturbans*
# Monotypic (*Coquillettidia perturbans* Type)

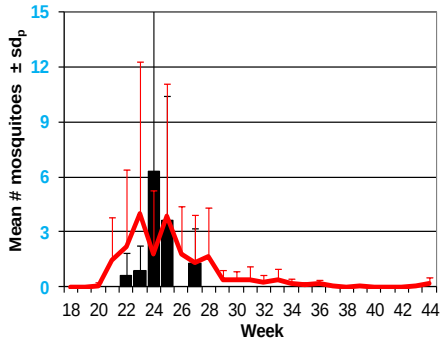
## Agricultural



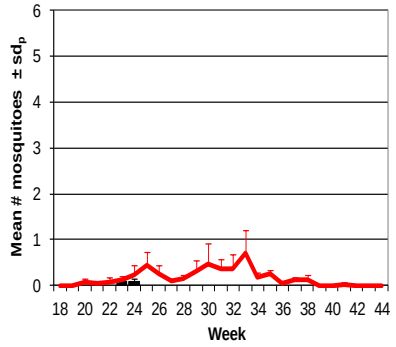

## Coastal



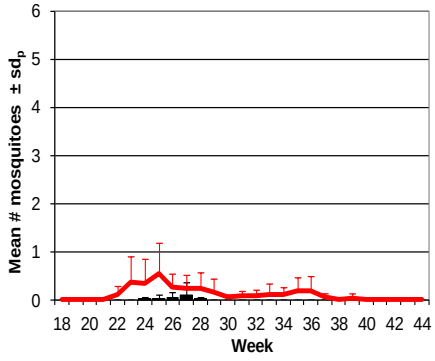

## Delaware Bayshore



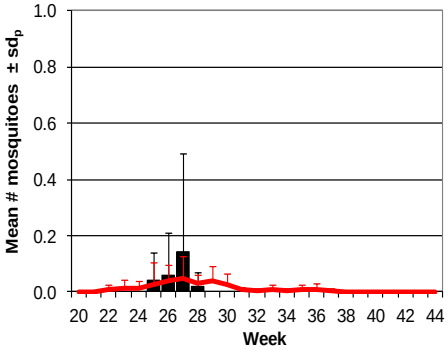

## Delaware River Basin



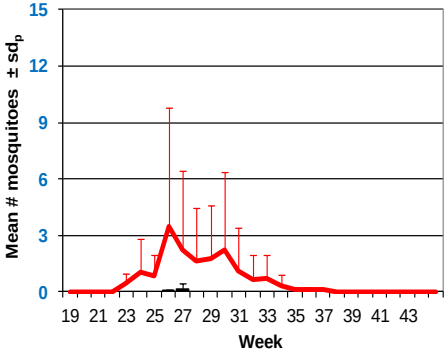

## New York Metro



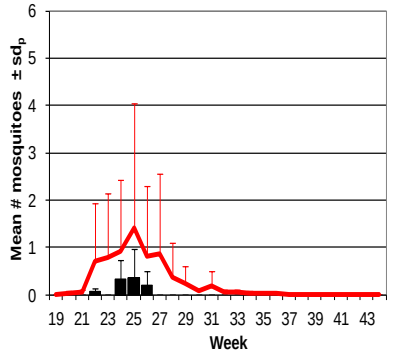

## North Central Rural



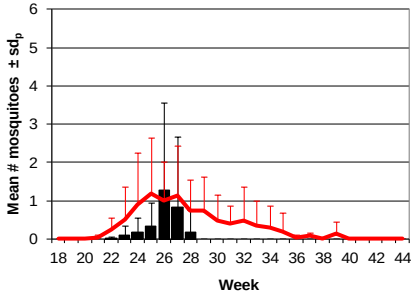

## Northwestern Rural



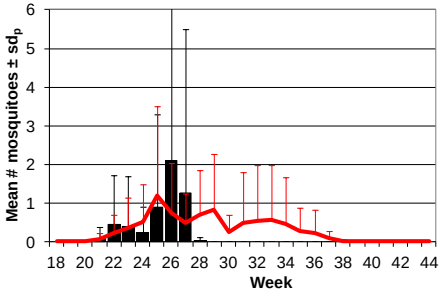

## Philadelphia Metro




## Pinelands



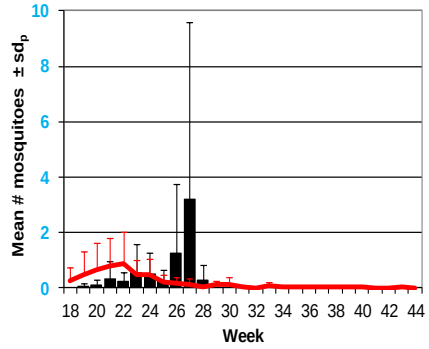
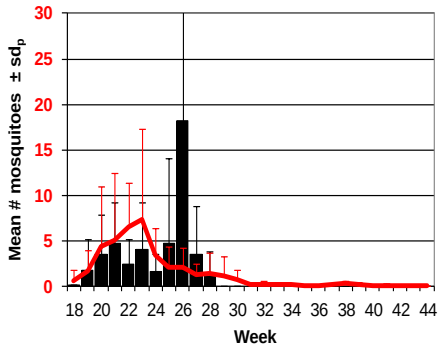
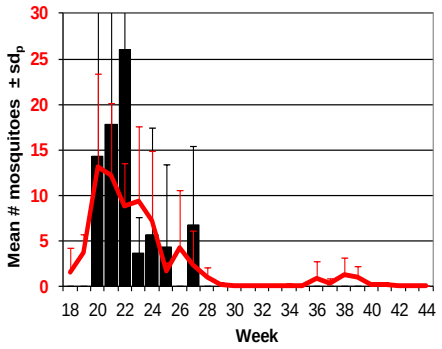
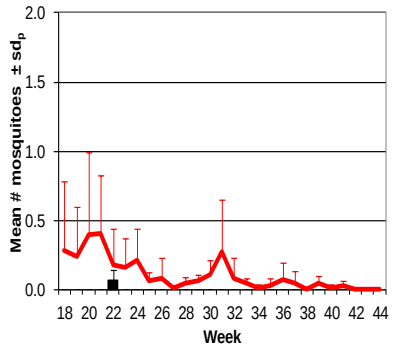
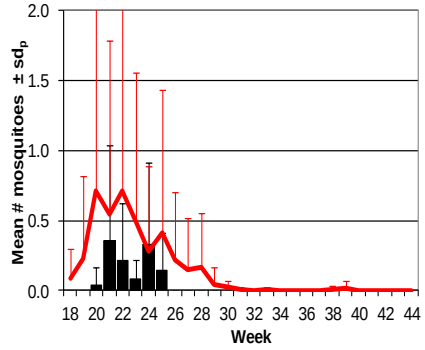
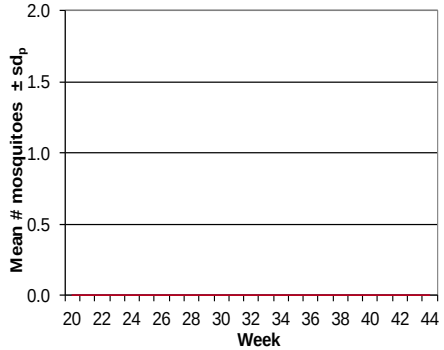
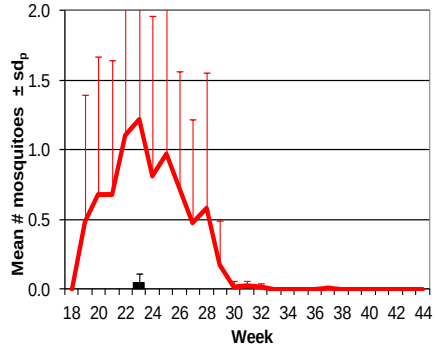
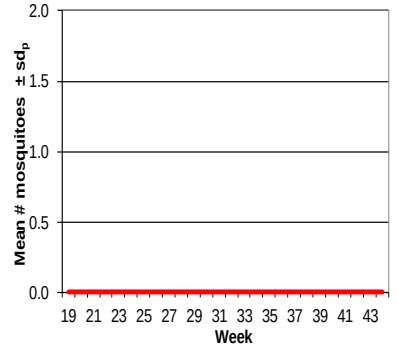
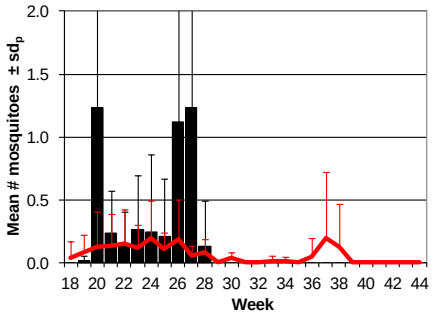
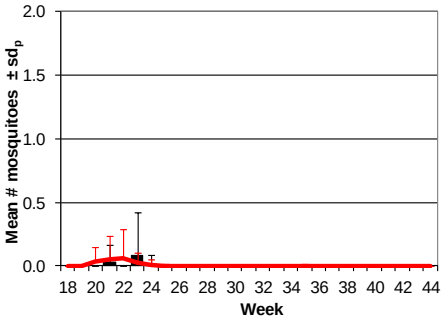

## Suburban Corridor




## Comments

*Coquillettidia perturbans* populations are located in cattail swamps and other wetlands with emergent vegetation. This week, there are no populations that are reported above historical values, although that may change as data continues to come in.

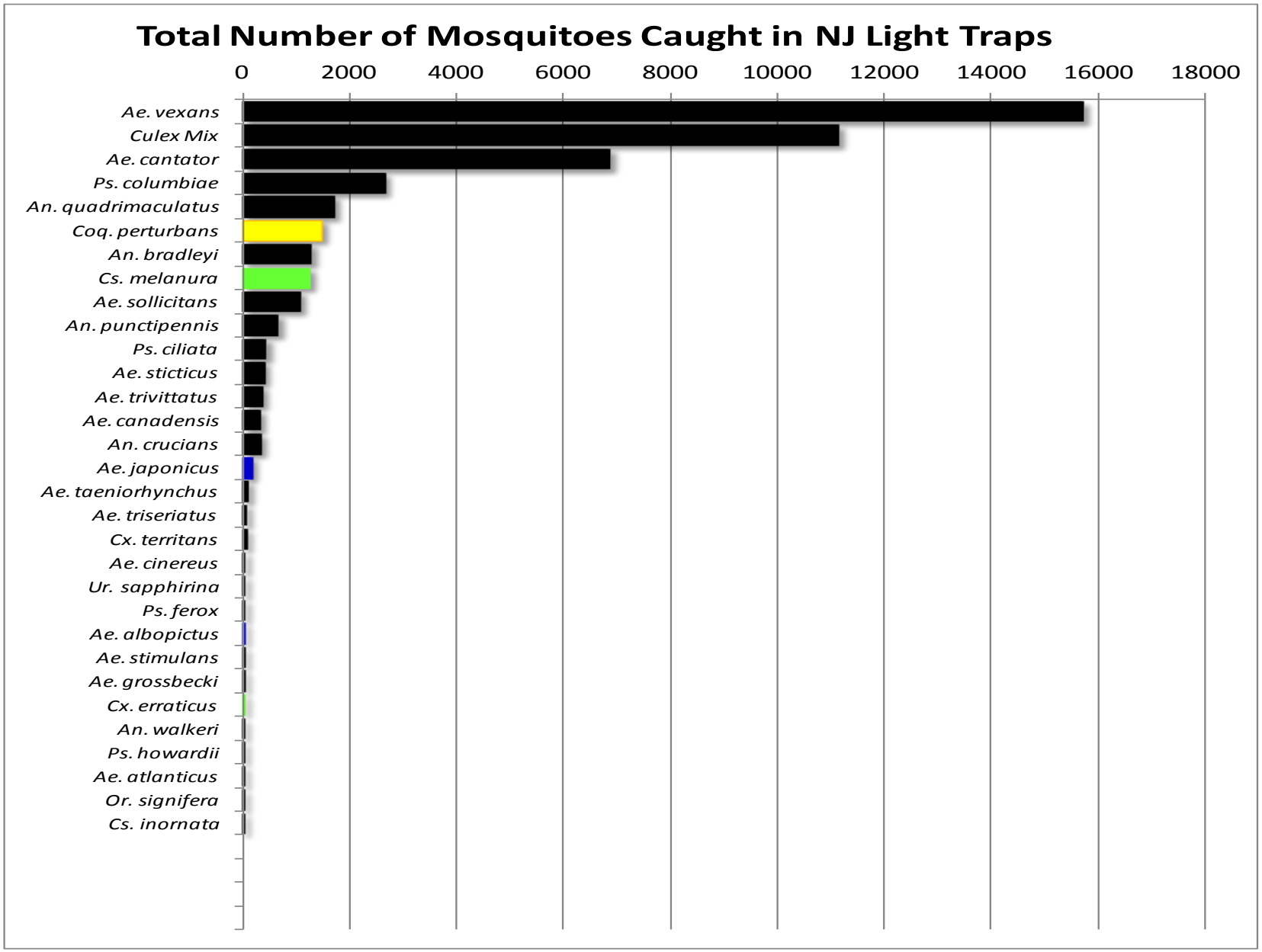
# *Aedes cantator*
## Multivoltine Aedine (*Ae. sollicitans* Type)

| Agricultural | Coastal | Delaware Bayshore | Delaware River Basin |
|---|---|---|---|
|  |  |  |  |
| **New York Metro** | **North Central Rural** | **Northwestern Rural** | **Philadelphia Metro** |
|  |  |  |  |
| **Pinelands** | **Suburban Corridor** | **Comments** | |
|  |  | *Aedes cantator* is a salt floodwater species. Occupying similar habitat, *Ae. cantator* finds its niche by emerging earlier than *Ae. sollicitans.* As with other floodwater species, *Ae, cantator* has responded to increased precipitation and warming weather. Numbers for this species has been variable, and recently some counties have noted higher than expected numbers late in the season. Is this a response to competitive pressures decreased with the noted reduction of *Aedes sollicitans*? Note the reduced population of *Ae. cantator* in the New York Metropolitan region, the only region where *Ae. sollicitans* are higher than expected. | |

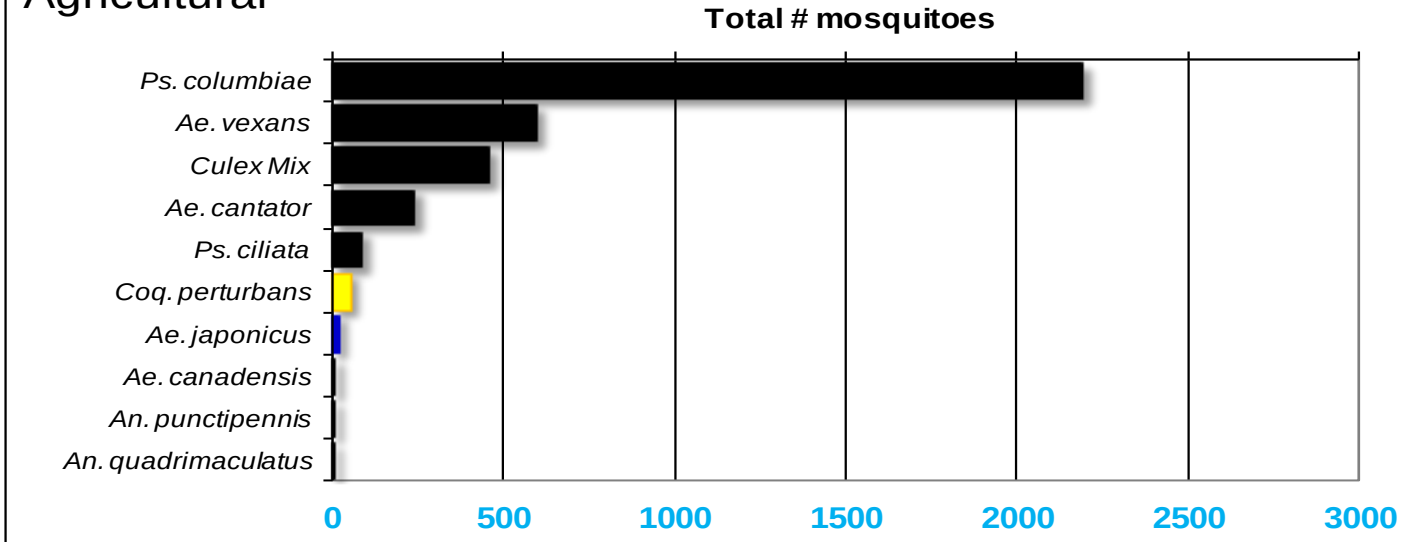
*WNV* *EEE*

***Top Ten Mosquito Species/Region -*** *Ae. albopictus,* *Ae. japonicus (invasives);* *Cs. melanura or Cx. erraticus* *Coq. perturbans*

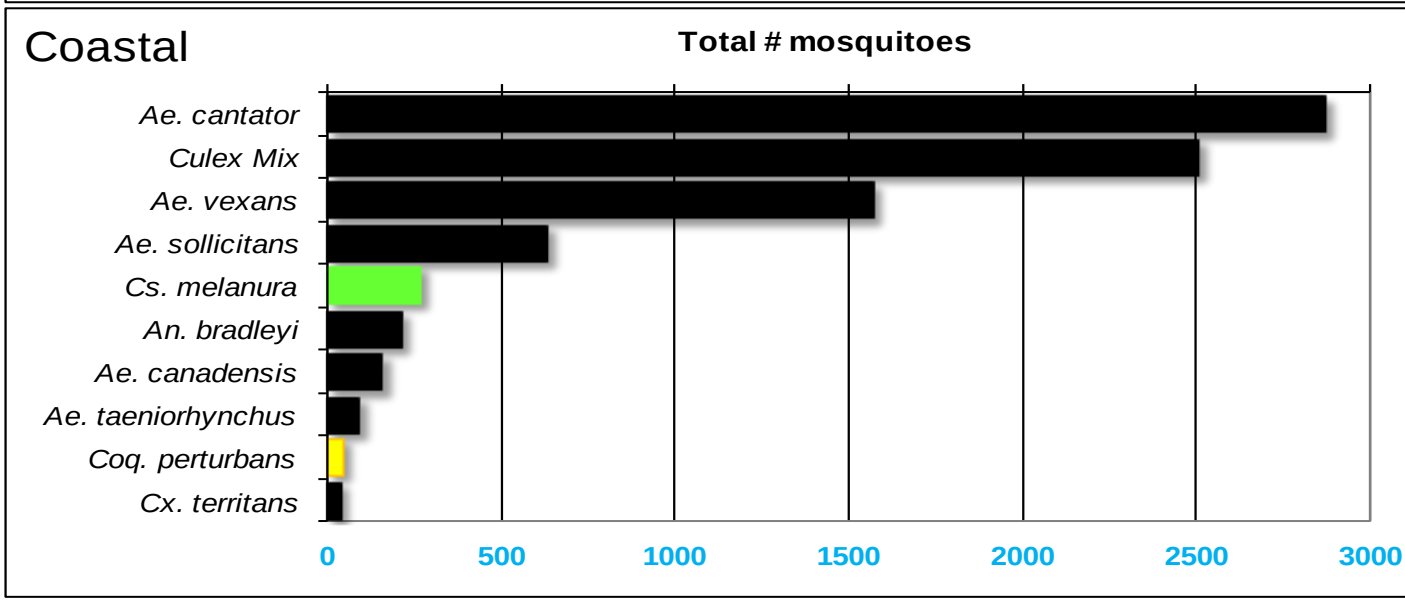
Note: In early season when fewer species are caught, graphs may show less than ten species/region or 25 statewide.

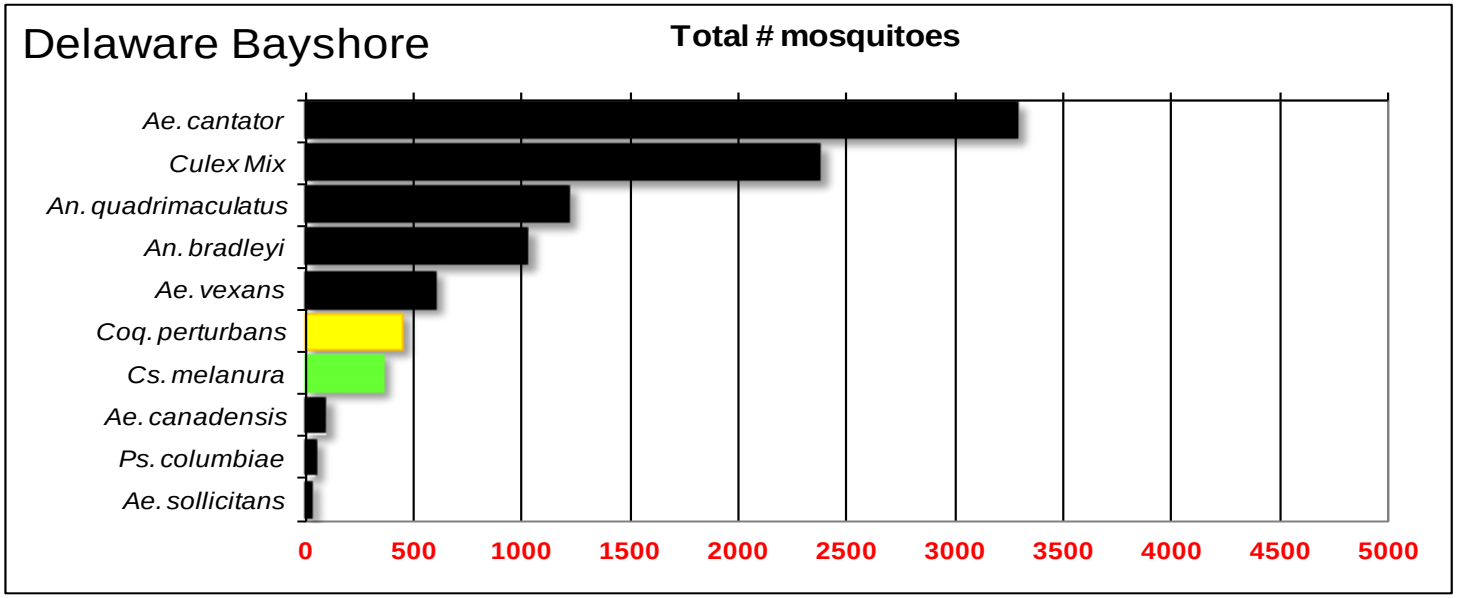


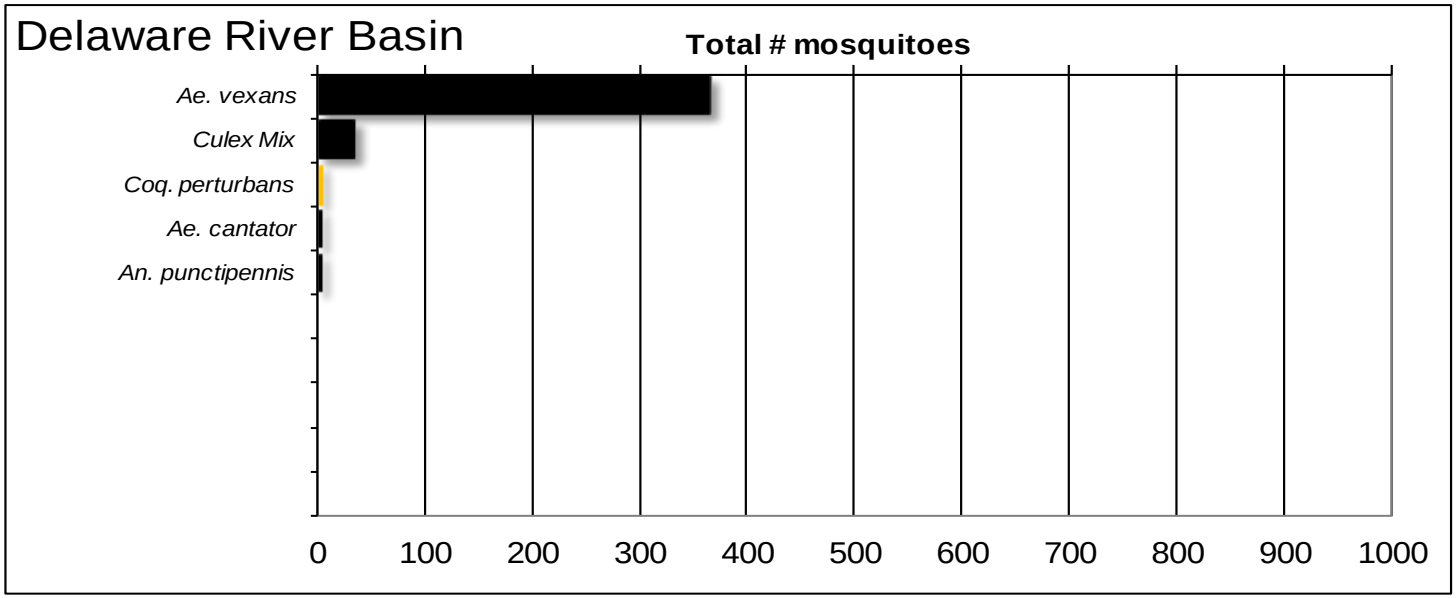
## Agricultural

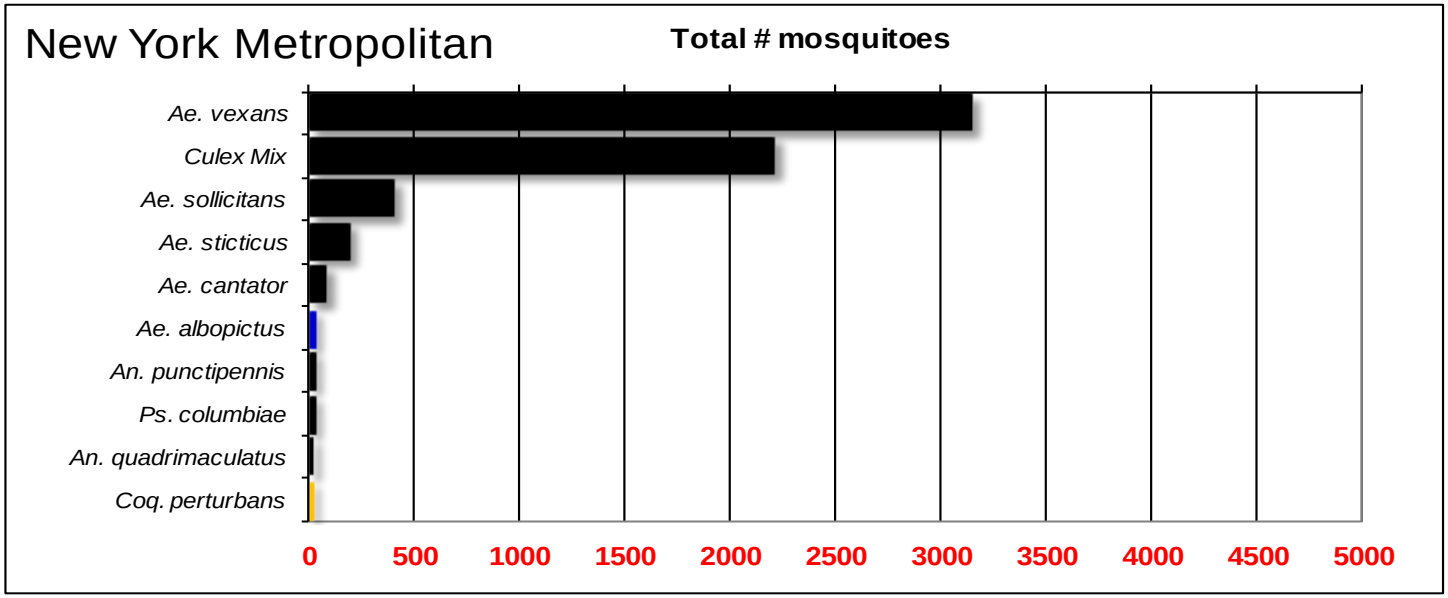


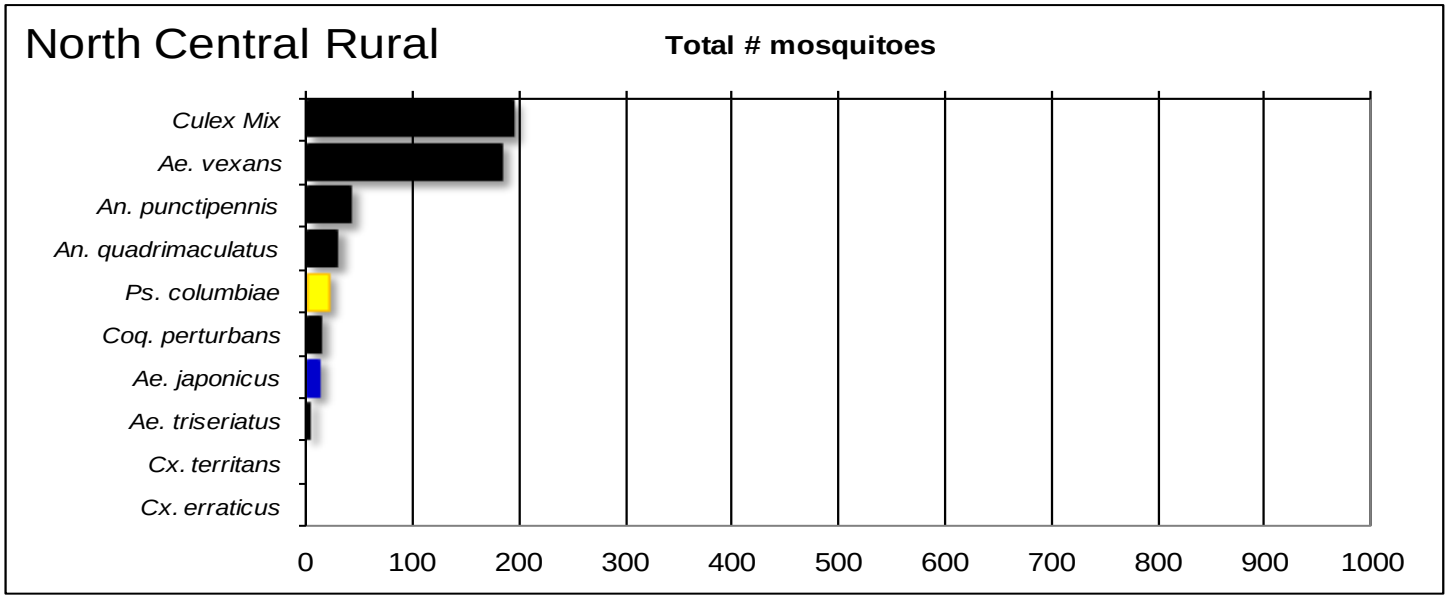

## Coastal



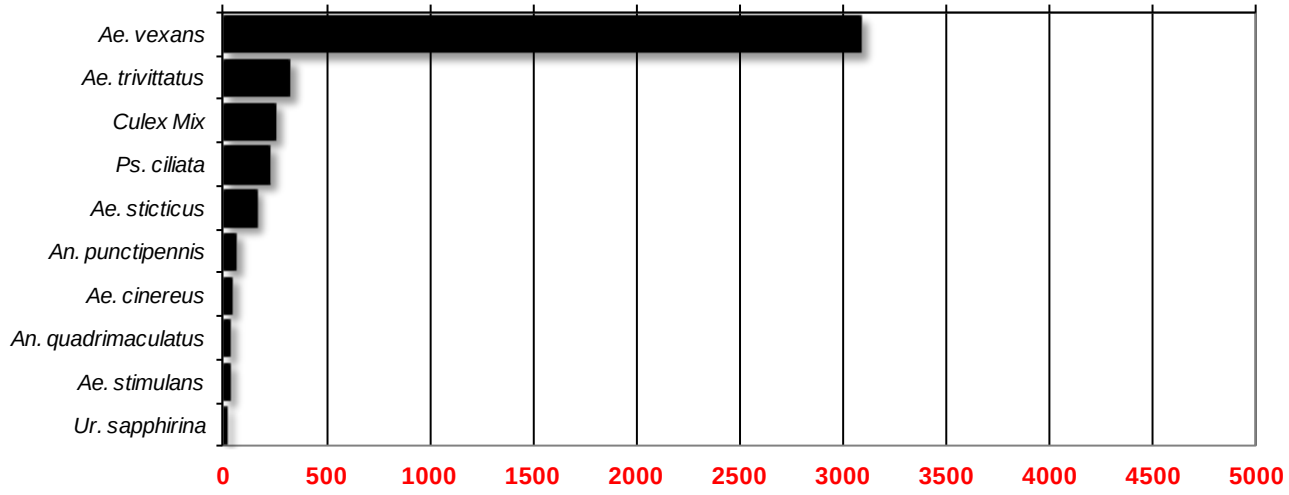

Delaware Bayshore
Total # mosquitoes
Ae. cantator
Culex Mix
An. quadrimaculatus
An. bradleyi
Ae. vexans
Coq. perturbans
Cs. melanura
Ae. canadensis
Ps. columbiae
Ae. sollicitans
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000


Delaware River Basin
Total # mosquitoes
Ae. vexans
Culex Mix
Coq. perturbans
Ae. cantator
An. punctipennis
0
100
200
300
400
500
600
700
800
900
1000

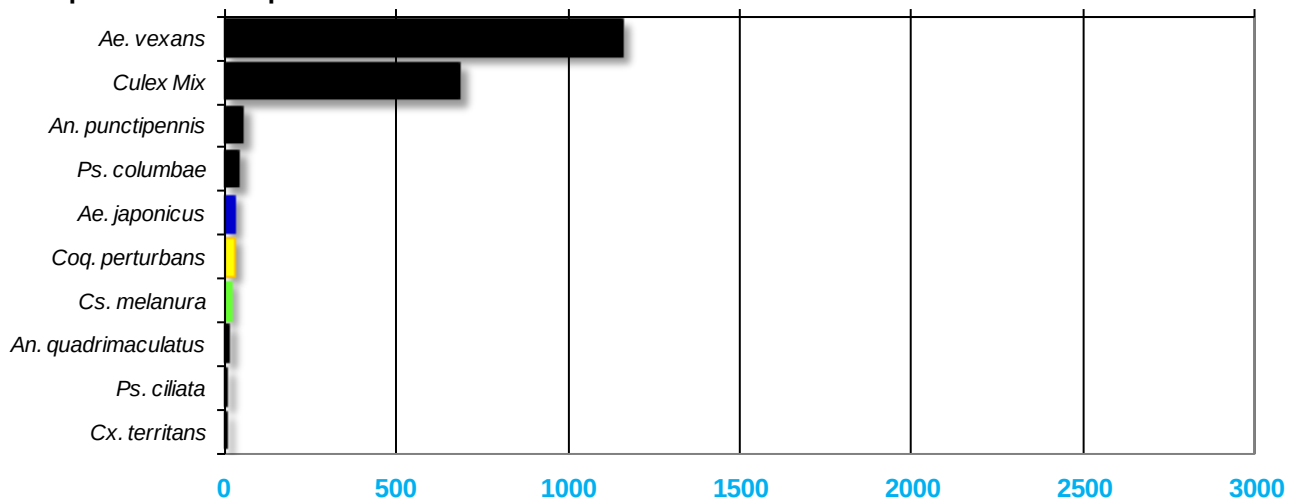

New York Metropolitan
Total # mosquitoes
Ae. vexans
Culex Mix
Ae. sollicitans
Ae. sticticus
Ae. cantator
Ae. albopictus
An. punctipennis
Ps. columbiae
An. quadrimaculatus
Coq. perturbans
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000


North Central Rural
Total # mosquitoes
Culex Mix
Ae. vexans
An. punctipennis
An. quadrimaculatus
Ps. columbiae
Coq. perturbans
Ae. japonicus
Ae. triseriatus
Cx. territans
Cx. erraticus
0
100
200
300
400
500
600
700
800
900
1000

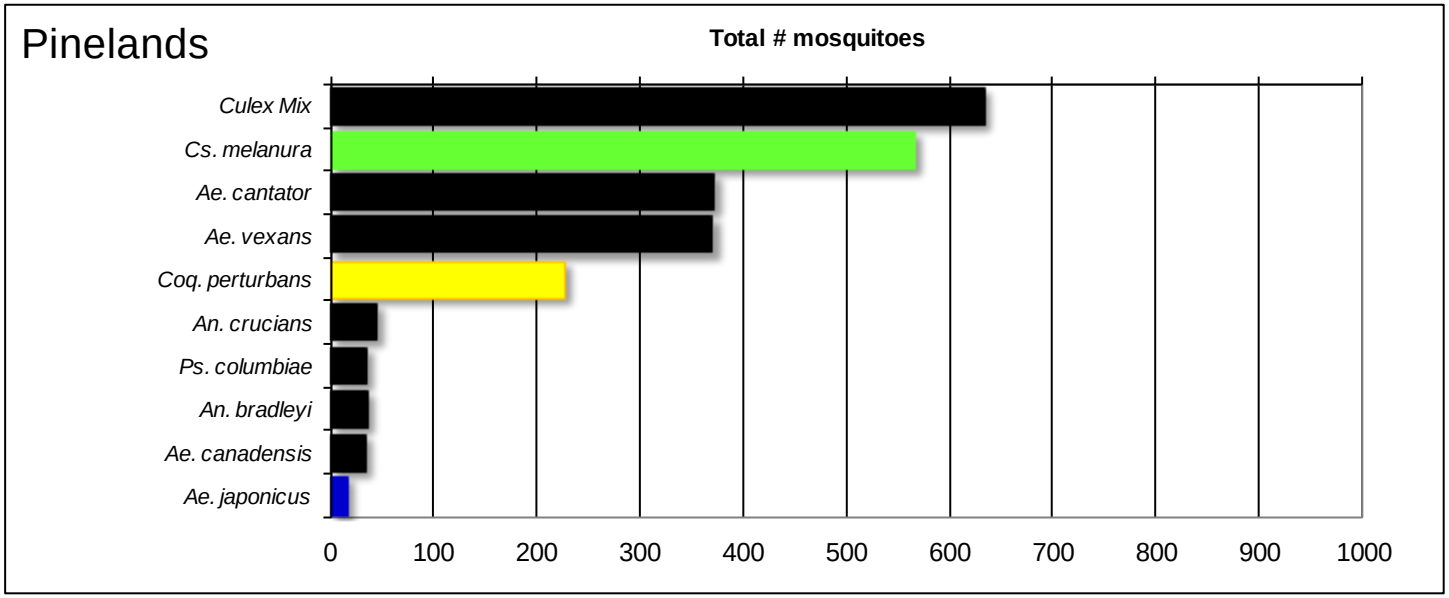
## Northwest Rural




## Philadelphia Metropolitan



## Pinelands




## Suburban Corridor