# NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report for 4 June to 10 June 2017, CDC Week 23

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Center for Vector Biology

This New Jersey Agricultural Experiment Station report is supported by Rutgers University, Hatch funds,
funding from the NJ State Mosquito Control Commission and with the participation of the 21 county mosquito control agencies of New Jersey.

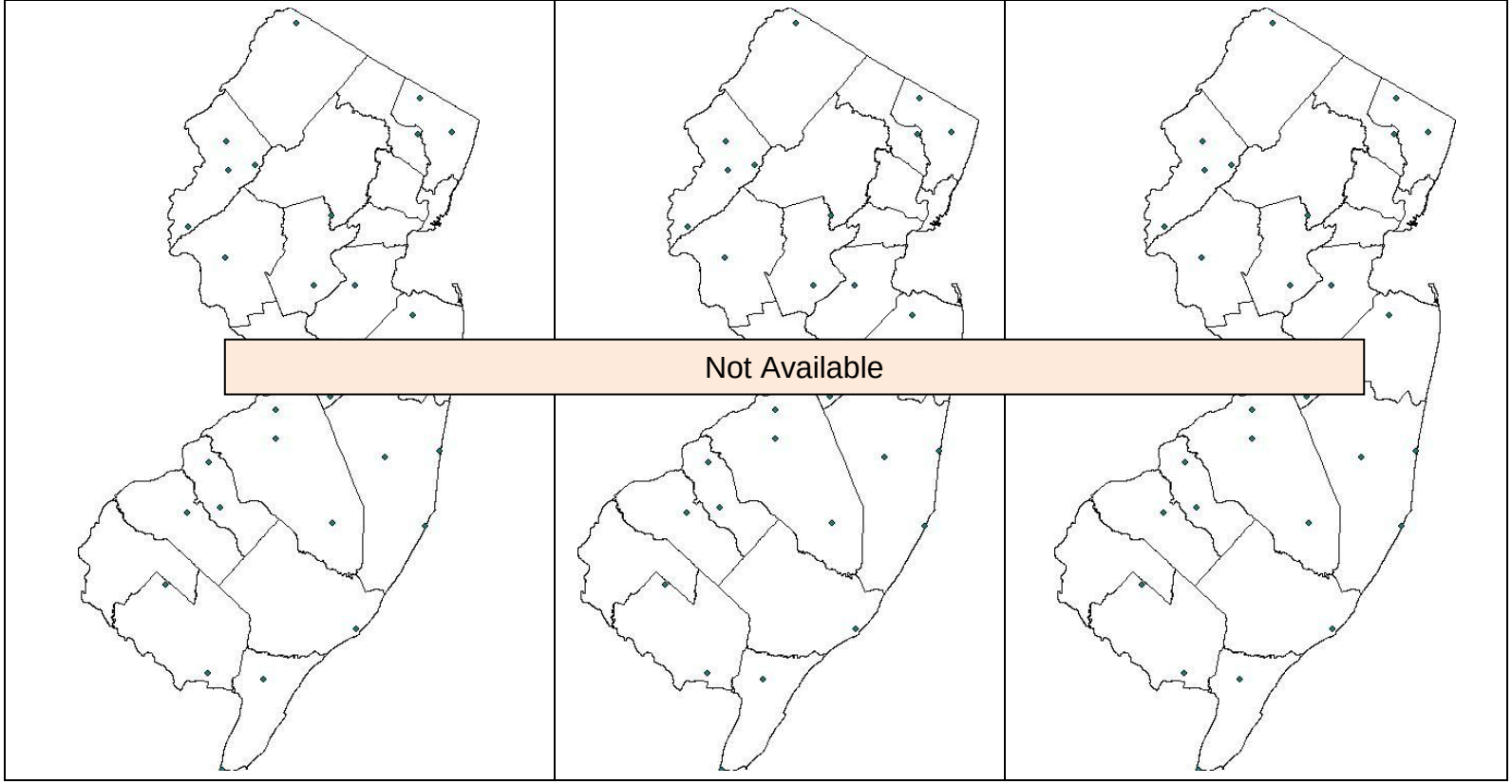
## *Summary Table – Week 23*

| | *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 | **0.05** | **1.28** | **0** | **0.31** | **0.94** | **0** | **0.00** | **0.08** | **0** | **0.00** | **0.01** | **0** |
| Coastal | **0.08** | **1.10** | **0** | **0.81** | **2.13** | **0** | **0.00** | **0.07** | **0** | **0.05** | **0.62** | **0** |
| Delaware Bayshore | **nd** | **1.79** | **0** | **nd** | **7.37** | **0** | **nd** | **1.37** | **0** | **nd** | **0.17** | **0** |
| Delaware River Basin | **nd** | **1.39** | **0** | **nd** | **0.80** | **0** | **nd** | **0.07** | **0** | **nd** | **0.00** | **0** |
| New York Metro | **0.29** | **2.43** | **0** | **2.26** | **2.73** | **0** | **0.00** | **0.02** | **0** | **0.00** | **0.23** | **0** |
| North Central Rural | **0** | **1.39** | **0** | **0.32** | **0.48** | **0** | **0.00** | **0.02** | **0** | **0.00** | **0.00** | **0** |
| Northwest Rural | **nd** | **3.11** | **0** | **nd** | **1.70** | **0** | **nd** | **0.03** | **0** | **nd** | **0.00** | **0** |
| Philadelphia Metro | **nd** | **2.02** | **0** | **nd** | **2.35** | **0** | **nd** | **0.03** | **0** | **nd** | **0.00** | **0** |
| Pinelands | **nd** | **0.49** | **0** | **nd** | **0.85** | **0** | **nd** | **0.04** | **0** | **nd** | **0.00** | **0** |
| Suburban Corridor | **0.03** | **3.75** | **0** | **0.10** | **1.09** | **0** | **0.00** | **0.21** | **0** | **0.00** | **0.00** | **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: The season begins with no pestiferous species reported above historical values. Counties are still coming online with data and the previous week (CDC Week 22) is most likely a better estimate of current activity.

# *Climate Factors*

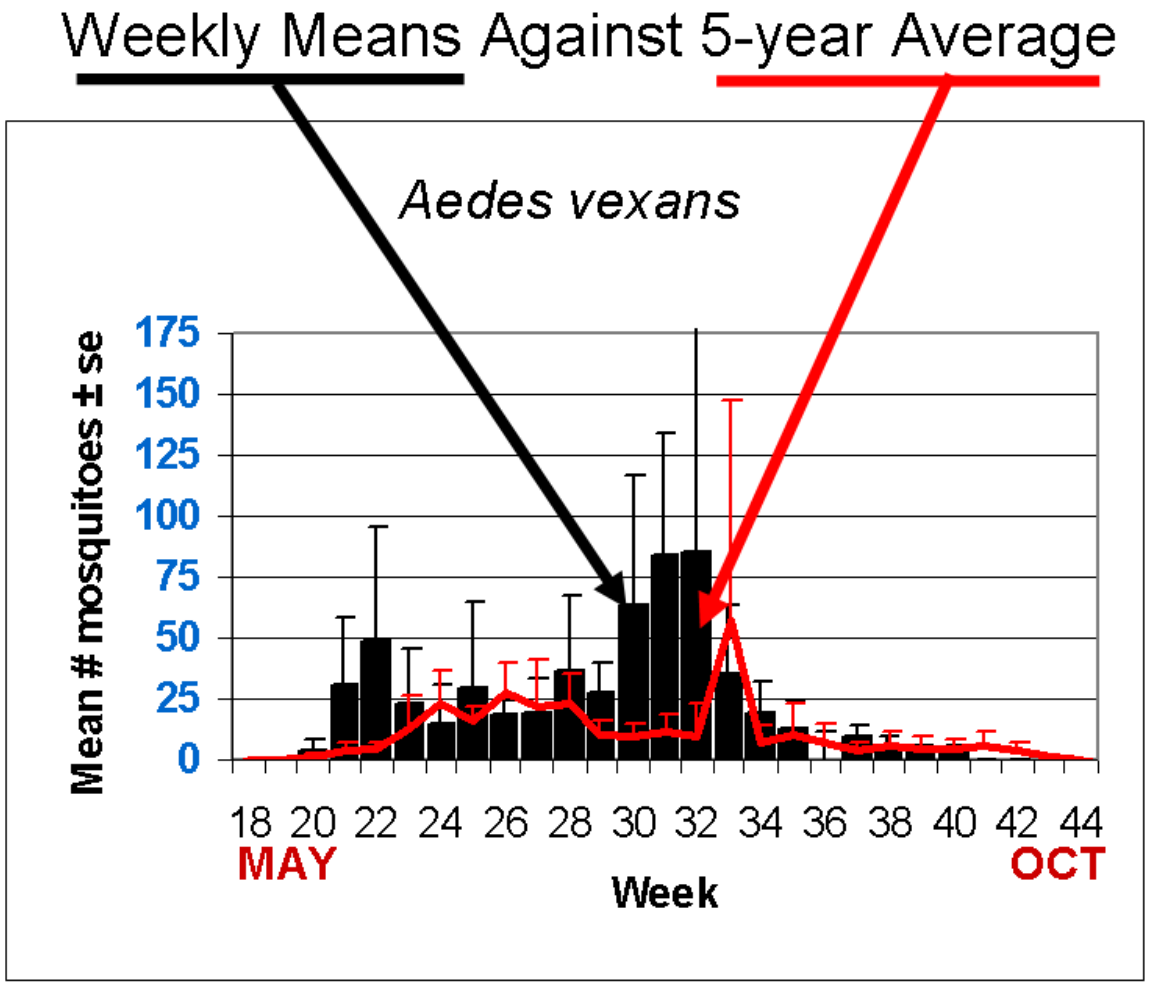
| Average High Temperature | Average Low Temperature | Total Precipitation |
|---|---|---|
|  | | |



The three figures show the interpolation of average maximum (°F) and minimum temperature (°F) and total precipitation (inches) for 30 days prior to 9 June 2017 in New Jersey. Data points are from about 56 weather stations maintained through the New Jersey Weather & Climate Network and the State Climatologist. Interpolation between points was performed using ArcMap 10.1.

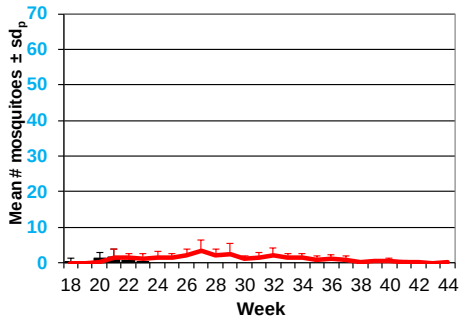
NJ Weather & Climate NETWORK ONJSC at Rutgers University

**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 Mercer, Monmouth, and Morris counties. Data for the previous week are from Atlantic, Bergen, Cape May, Cumberland, Hudson, Hunterdon, Mercer, Monmouth, Ocean, Passaic, Sussex, and Union counties.

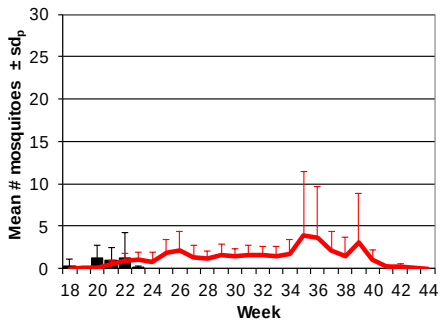


# *Aedes vexans* - Fresh Floodwater Species
# Multivoltine Aedine (*Ae. vexans* Type)

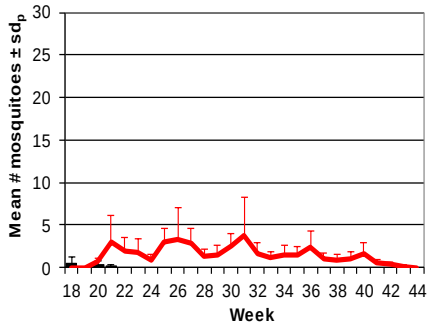
## Agricultural



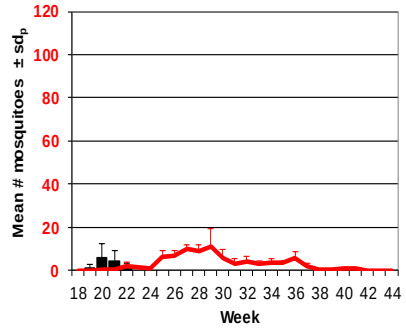

## Coastal



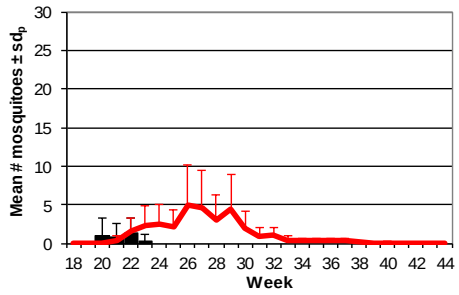

## Delaware Bayshore



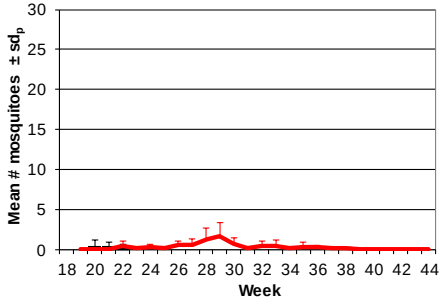

## Delaware River Basin



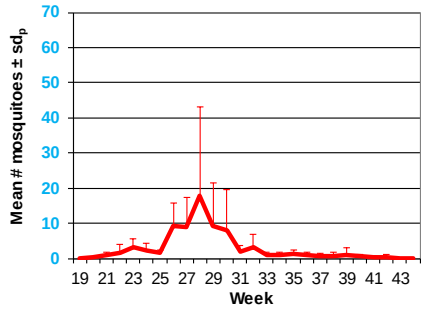

## New York Metro



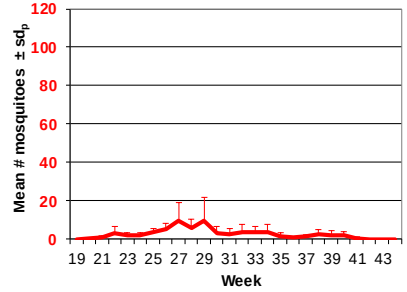

## North Central Rural



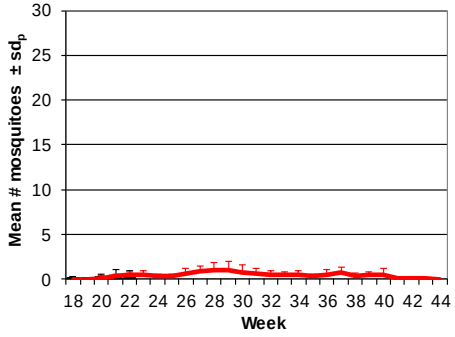

## Northwestern Rural



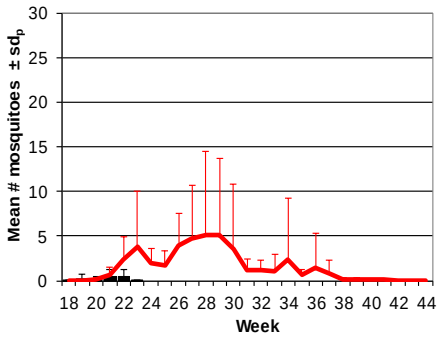

## Philadelphia Metro




## Pinelands

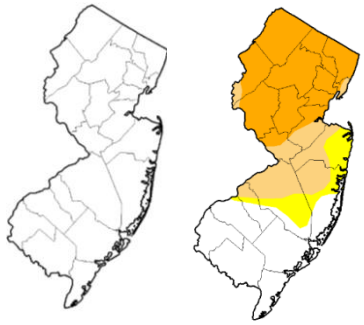



## Suburban Corridor




## Comments

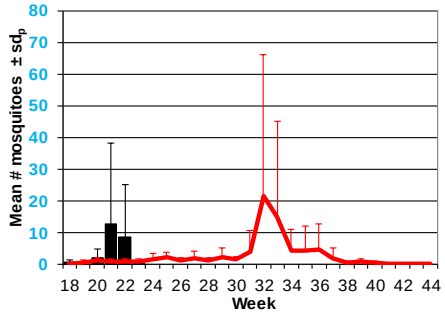
New Jersey is now out of the drought conditions (left map) that the state was in during 2016 (on the right).Being a floodwater species, *Ae. vexans* populations should respond favorably to wetter conditions, and several regions show early population activity.



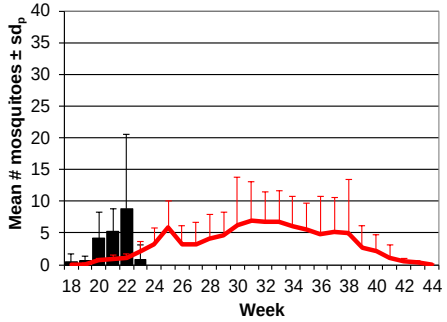
http://droughtmonitor.unl.edu/Home/RegionalDroughtMonitor.aspx?northeast

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

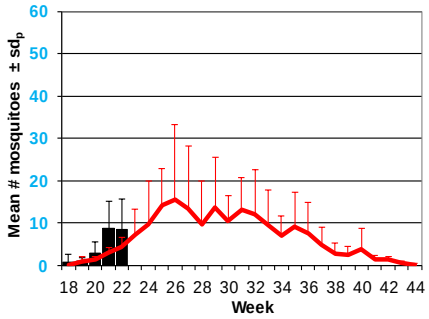
## Agricultural



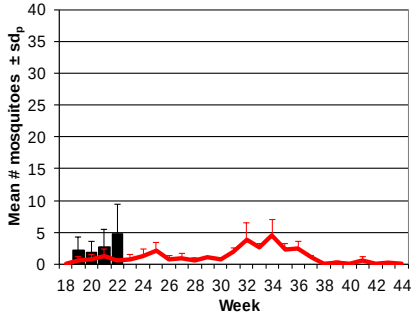

## Coastal



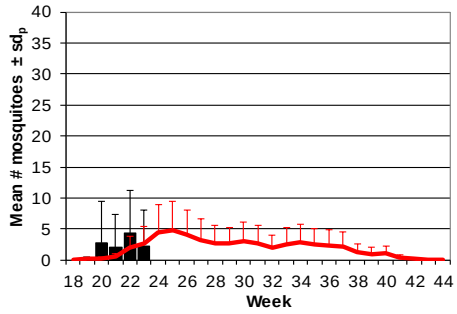

## Delaware Bayshore



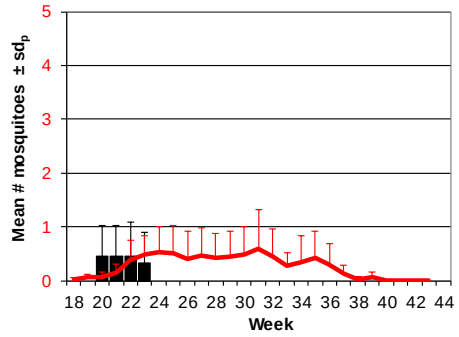

## Delaware River Basin



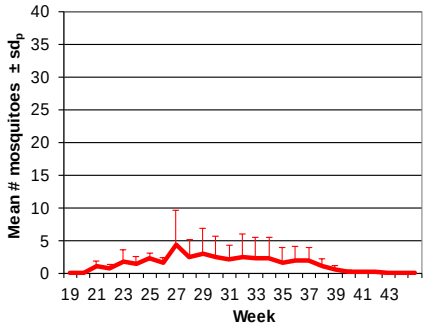

## New York Metro



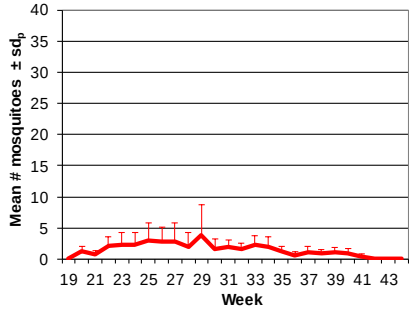

## North Central Rural



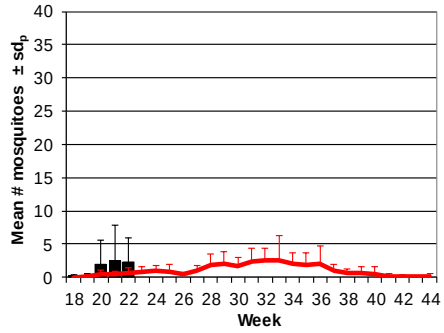

## Northwestern Rural



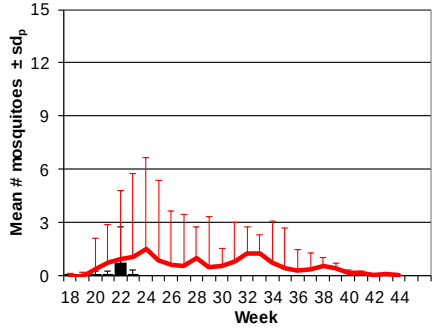

## Philadelphia Metro




## Pinelands




## Suburban Corridor

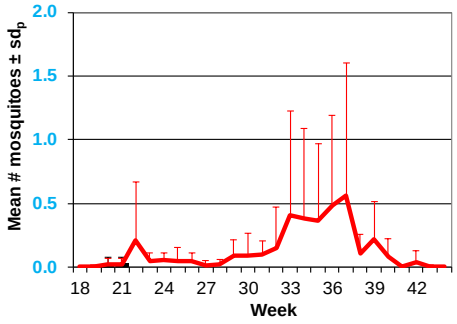



## Comments

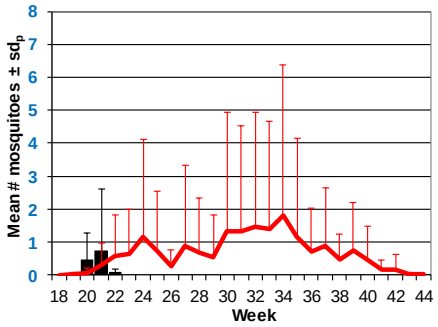
*Culex* Mix is composed of *Culex pipiens, Cx. restuans* and *Cx. salinarius*. These three species (especially *pipiens* and *restuans*) are often difficult to tell apart after encountering the damaging blades of the New Jersey light trap. Early populations of *Culex* appear to be substantial in the Agricultural and Coastal regions and for other regions reporting at this time, populations are around historical levels.

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

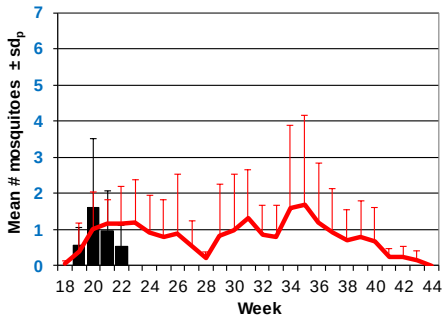
## Agricultural



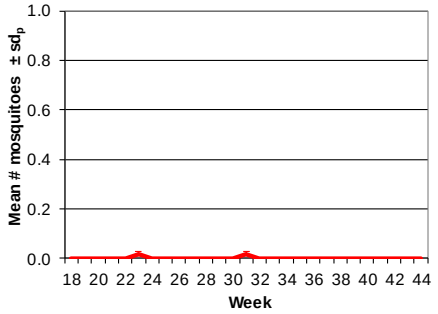

## Coastal



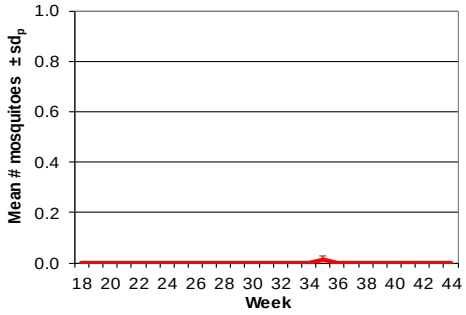

## Delaware Bayshore



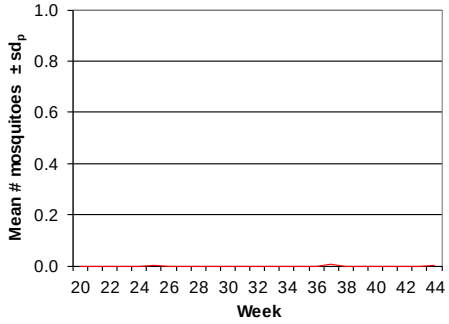

## Delaware River Basin



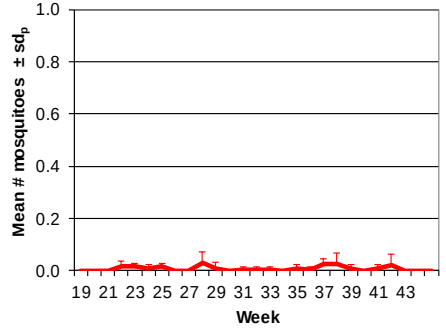

## New York Metro



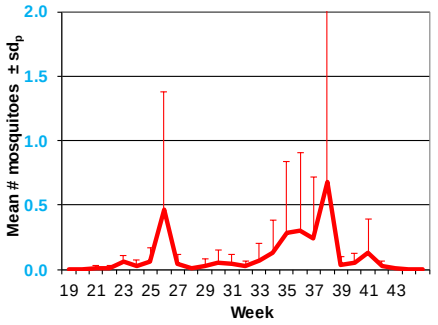

## North Central Rural



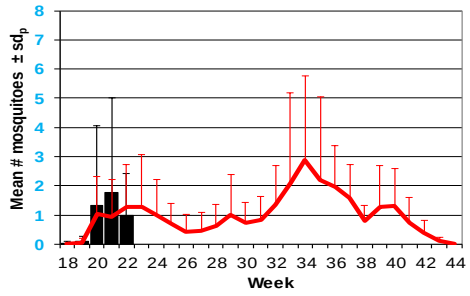

## Northwestern Rural



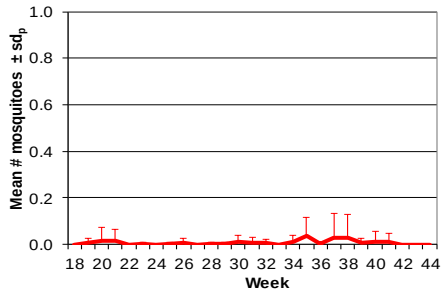

## Philadelphia Metro




## Pinelands




## Suburban Corridor



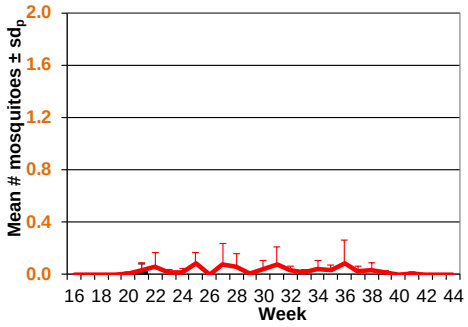

## Comments

*Culiseta melanura* is the enzootic ornithophilic vector of eastern equine encephalitis. Last year, EEE activity was recorded not only in southern NJ where it is typically found, but also in the northern half of the state. One human case occurred in the latter area. These counties are gearing up for increased *Cs. melanura* surveillance. Currently, populations appear to be trending within historical averages.

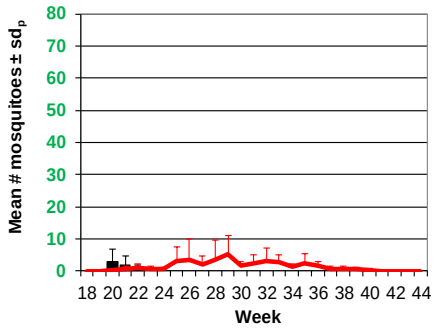
All horse owners should make sure their horses are up to date on the vaccination schedules: http://www.aaep.org/custdocs/adultvaccinationchart.pdf

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

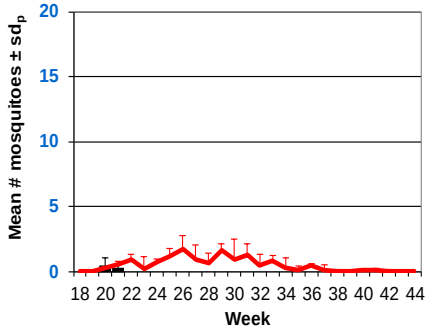
## Agricultural



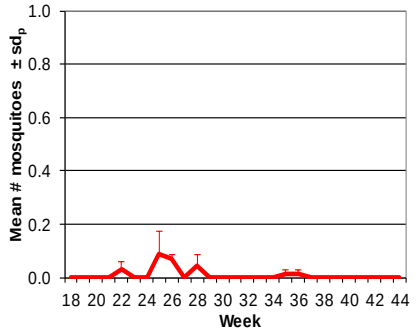

## Coastal



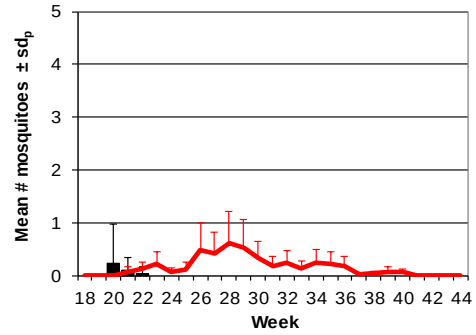

## Delaware Bayshore



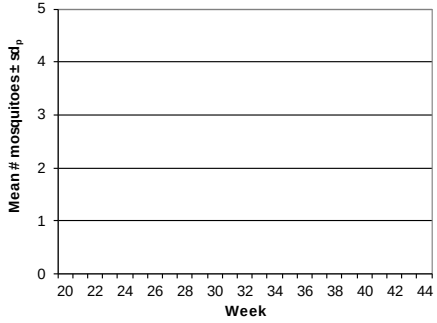

## Delaware River Basin



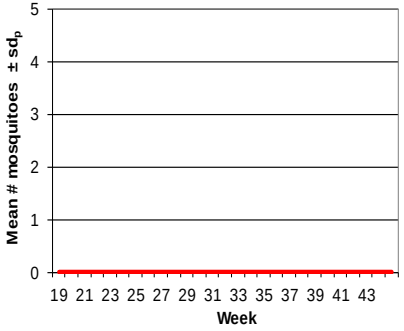

## New York Metro



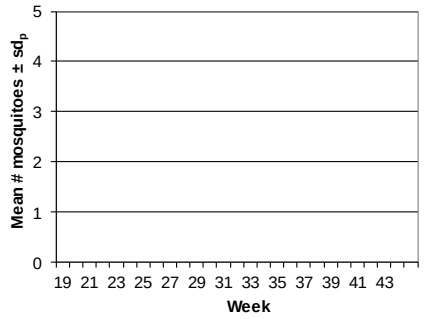

## North Central Rural



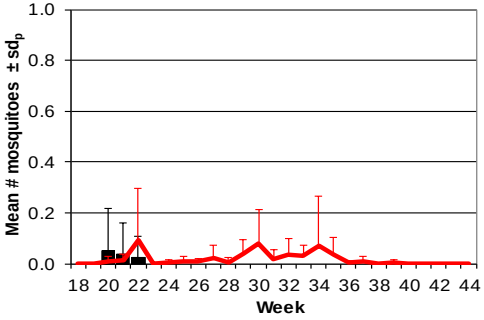

## Northwestern Rural



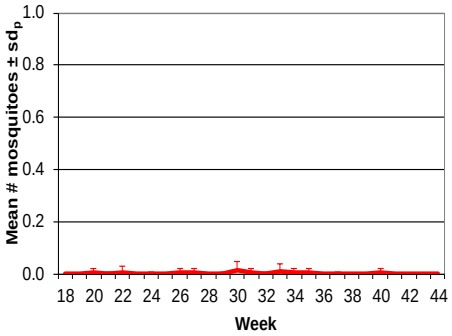

## Philadelphia Metro




## Pinelands



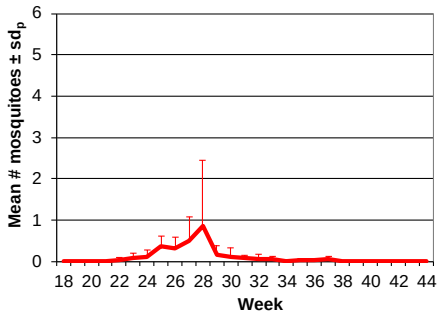
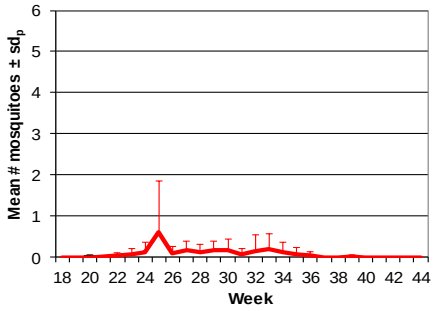
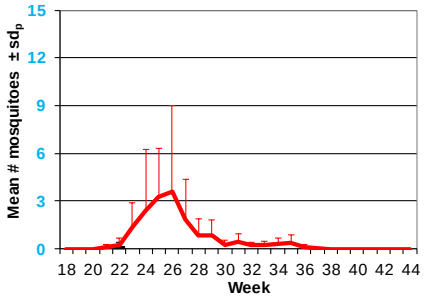
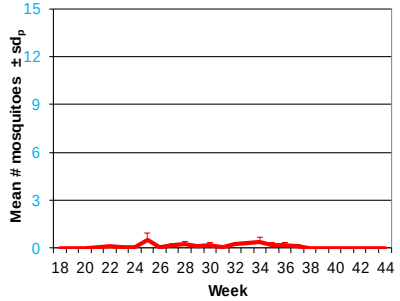
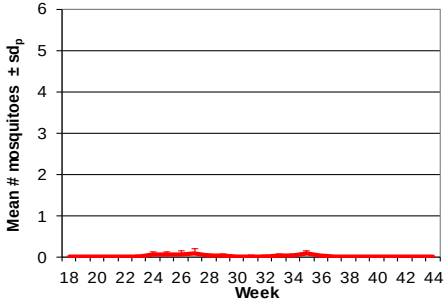
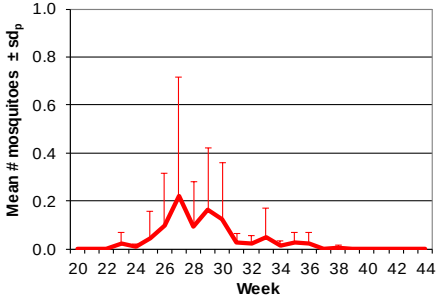
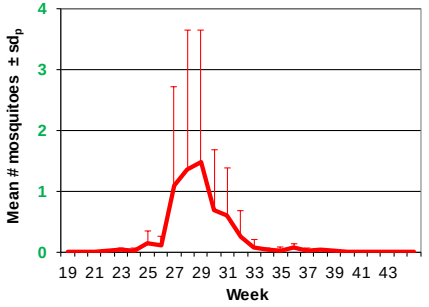
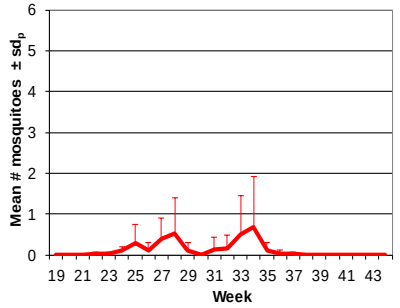
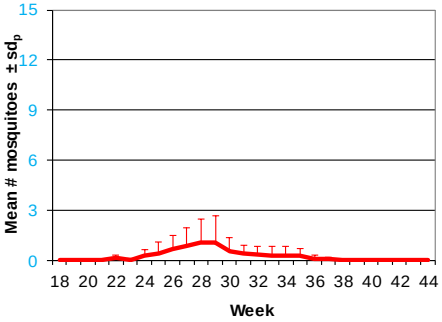
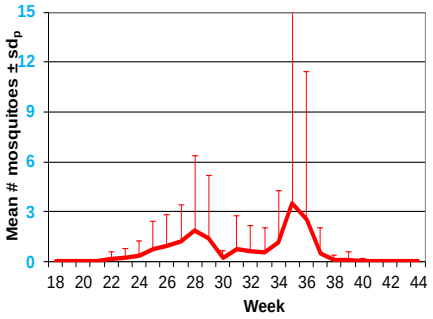

## Suburban Corridor



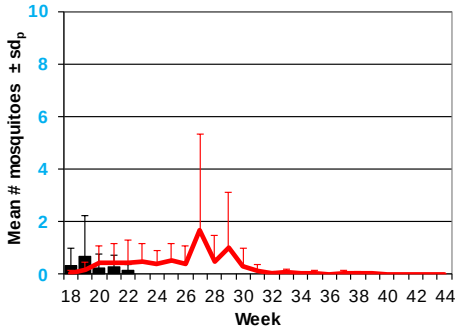
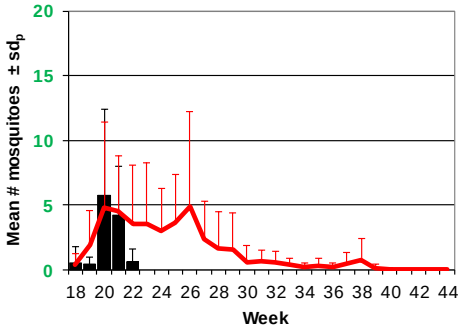
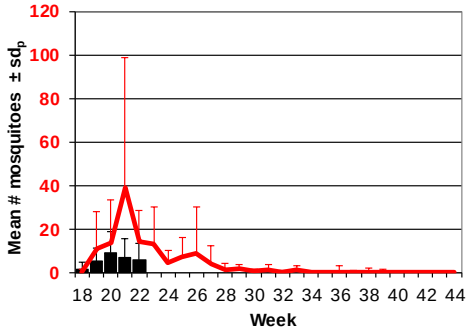
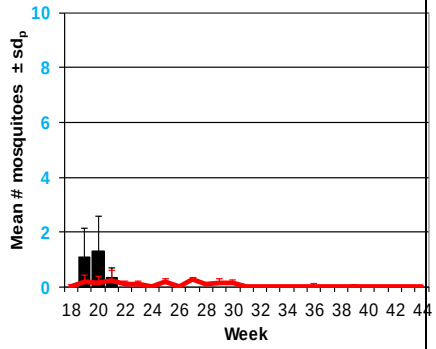
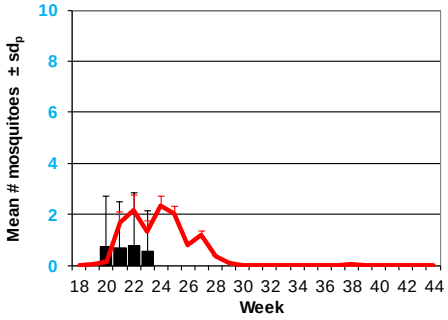
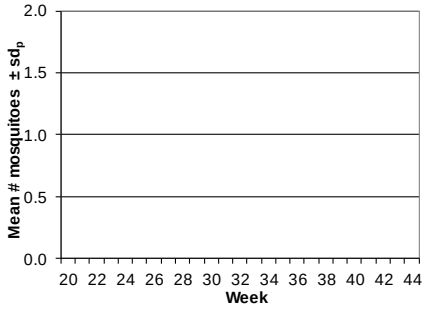
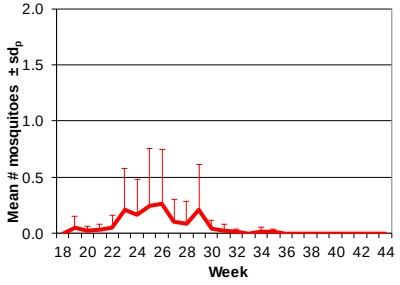
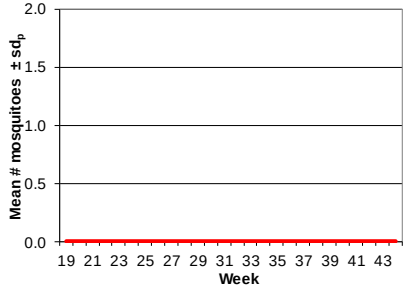
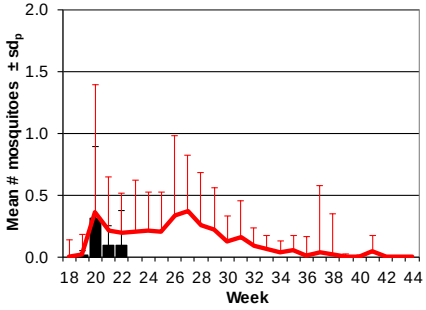
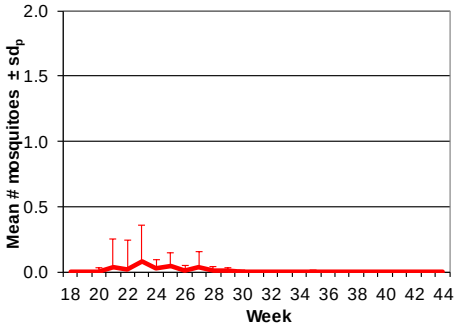

## Comments

*Aedes sollicitans* is a salt floodwater species and responds to both lunar tidal patterns as well as rainfall. For the last several years, populations have been on the decline. Last year, however, numbers starting to increase. If numbers approach typical values, we may still see “higher” population levels compared with the historical 5-year running mean as these values will need to “catch up.” But if trends continue to decrease, then the lower historical values would appear to be more typical. What contributes toward changing population levels? Factors could include rising sea levels, changes in salt marsh heights, changes in pesticide/resistance sensitivities.

# *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, often making control of their numbers dependent on controlling water depth. This mid-season species is a potential inland vector of EEE and should be monitored closely when the arbovirus is present. Small numbers have been reported in southern regions. | |

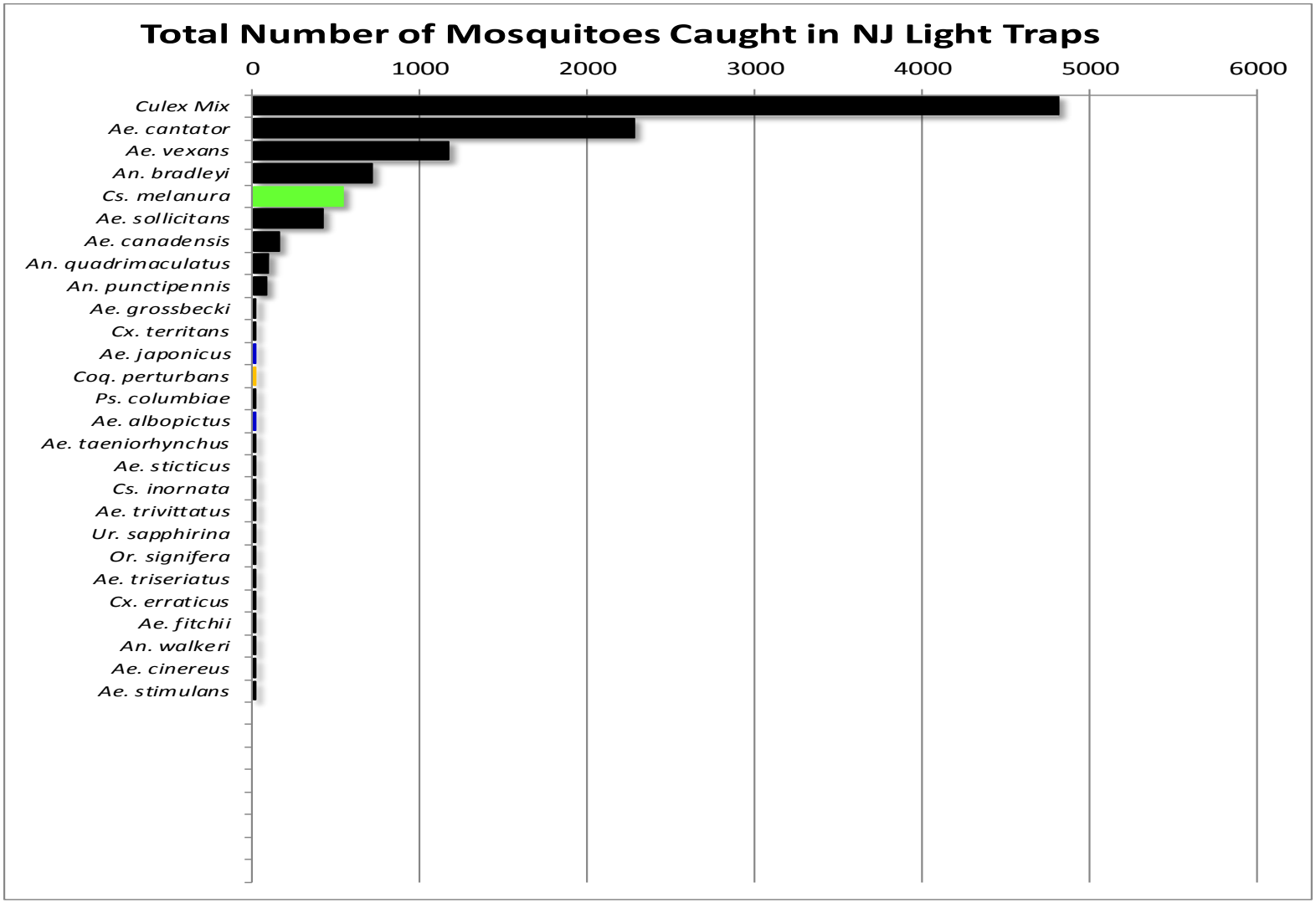
# *Aedes cantator*
## Monotypic (*Coquillettidia perturbans* Type)

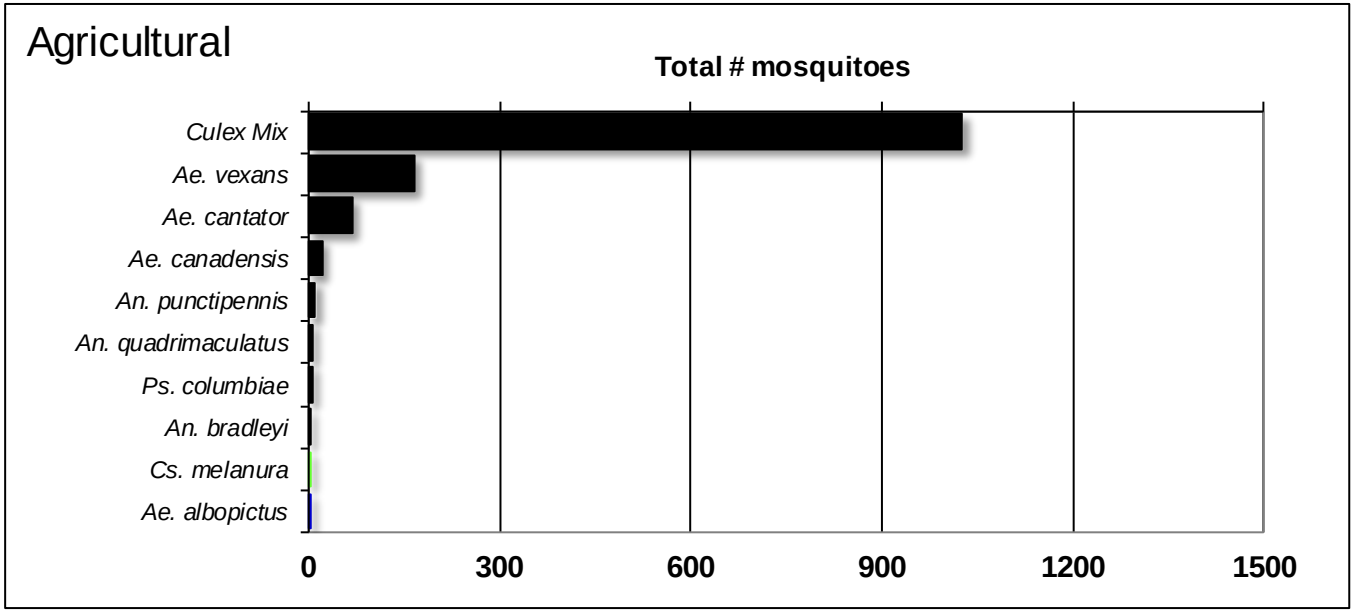
| Agricultural | Coastal | Delaware Bayshore | Delaware River Basin |
|---|---|---|---|
|  |  |  |  |
| **New York Metro** | **North Central Rural** | **Northwestern Rural** | **Philadelphia Metro** |
|  |  |  |  |
| **Pinelands** | **Suburban Corridor** | **Comments** | |
|  |  | *Aedes cantator* is a salt-tolerant species with a wide range of habitats, but their typical ecology includes the upland salt marshes. If manmade sources of salt are available, such as ditches next to well-salted roadways, they can also then be found well inland from coastal habitat. These manmade habitats also include manufacturers' sites such as the textile company in the Northwestern Rural region that uses salts to make dyes hold fast to materials. *Ae. cantator* is seen in abundance along Coastal and the Delaware Bayshore regions, and are especially seen prior to the large emergences of *Ae. sollicitans* where *Ae. cantator* is likely exploiting time to avoid competition from the latter. | |

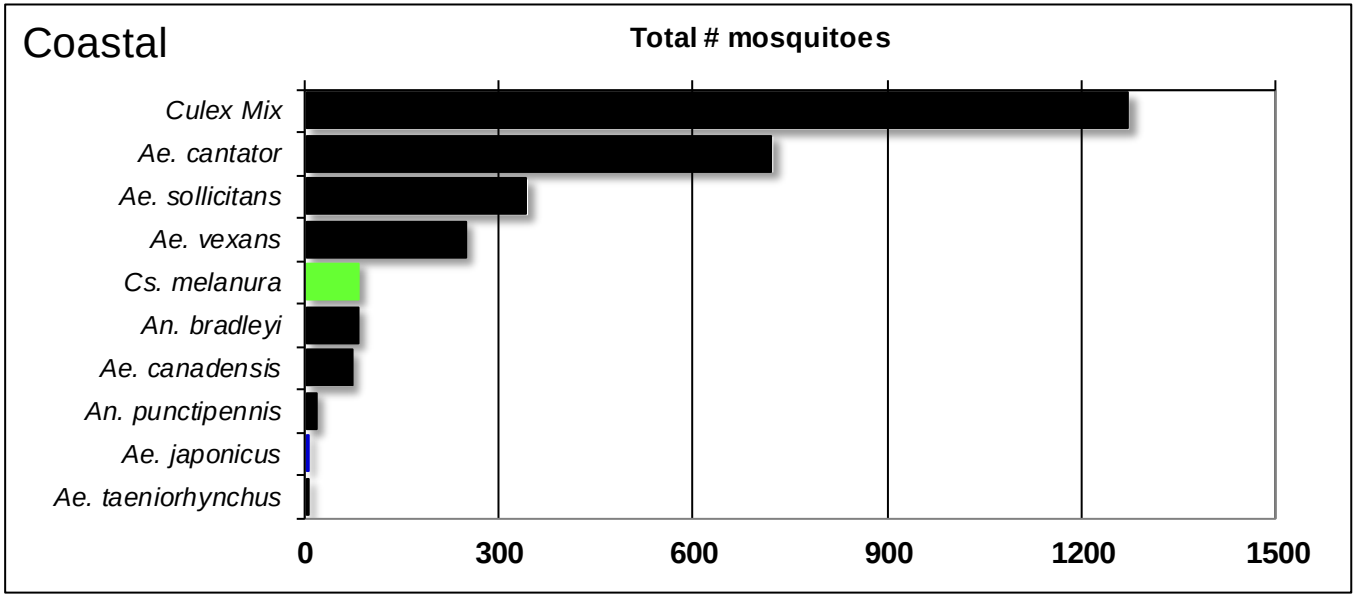
*WNV* *EEE*

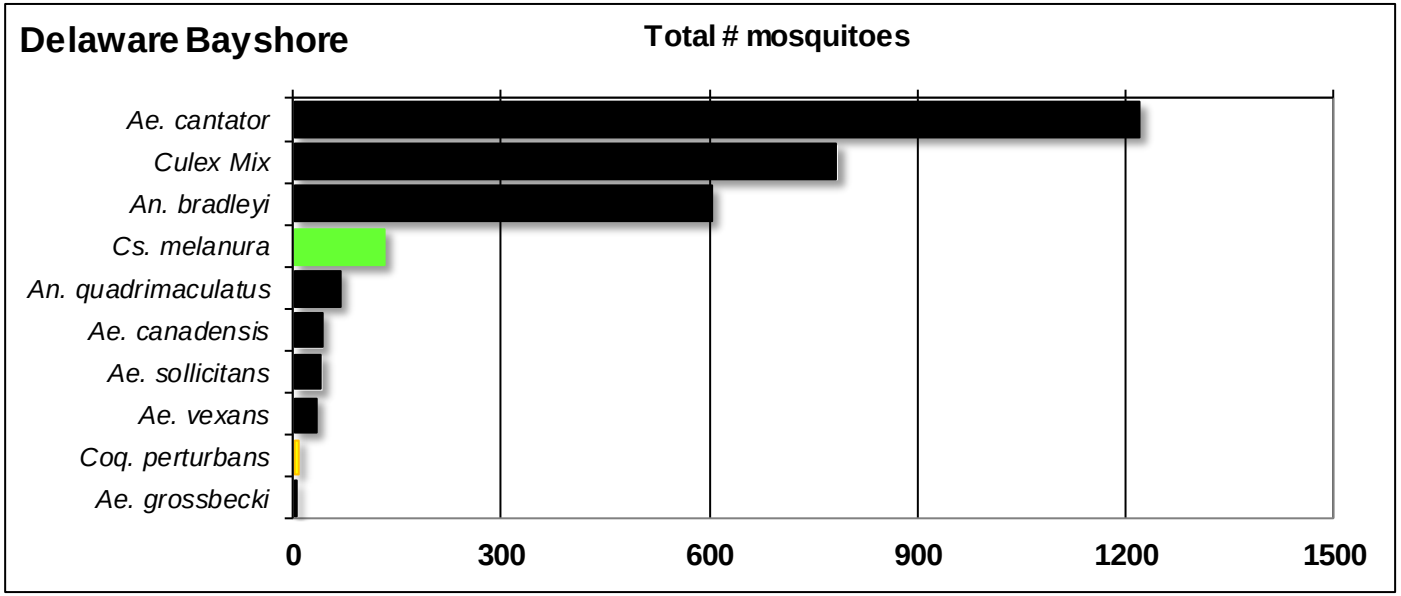
***Top Ten Mosquito Species/Region -*** *Ae. albopictus,* *Ae. japonicus (invasives);* *Cs. melanura or Cx. erraticus* *Coq. perturbans*

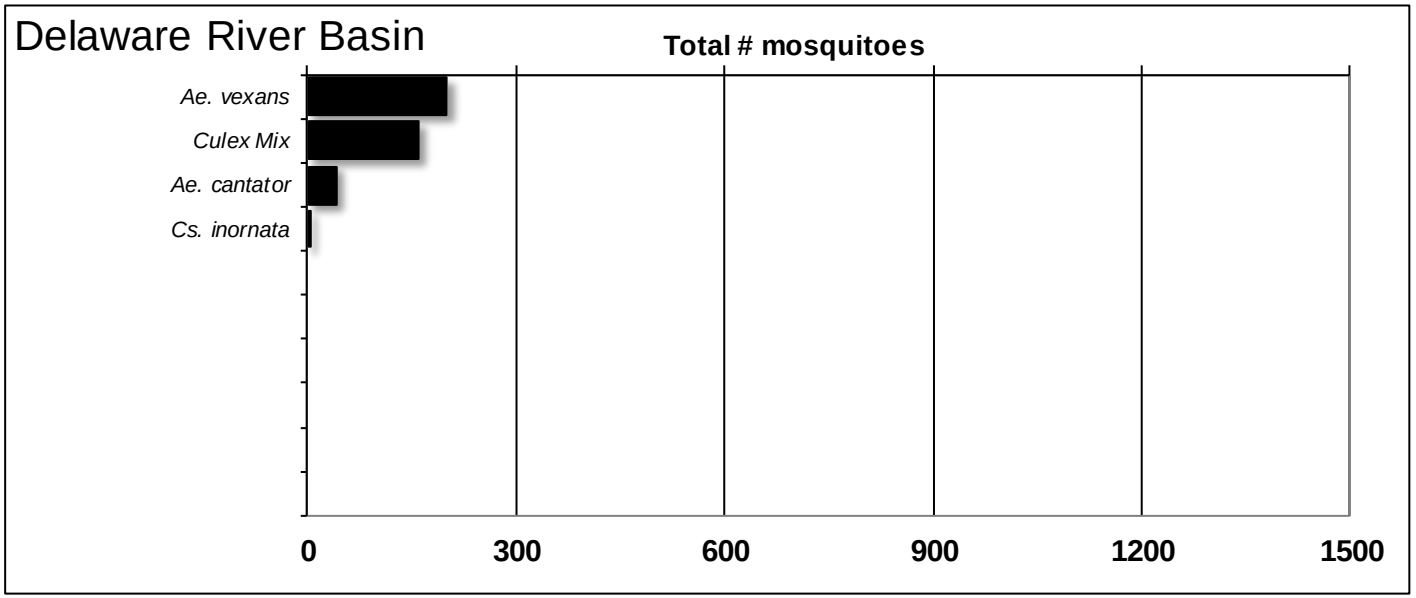
Note: In early season when fewer species are caught, graphs may show less than ten species/region or 25 statewide.

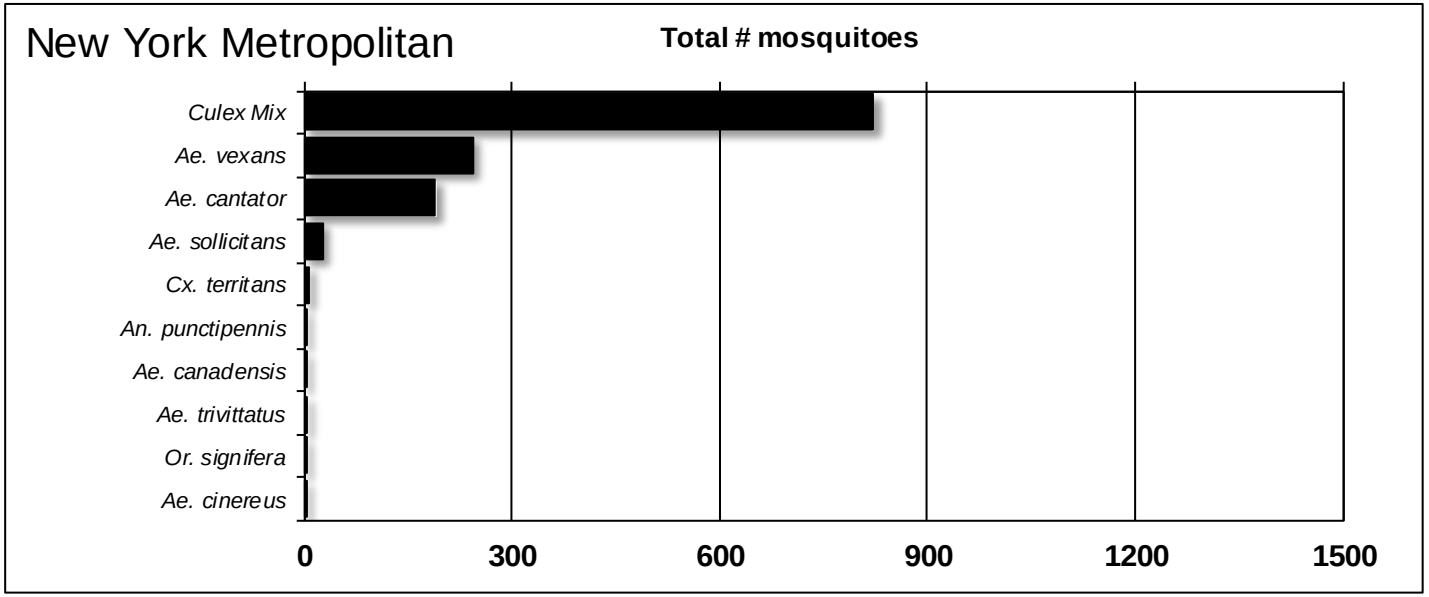


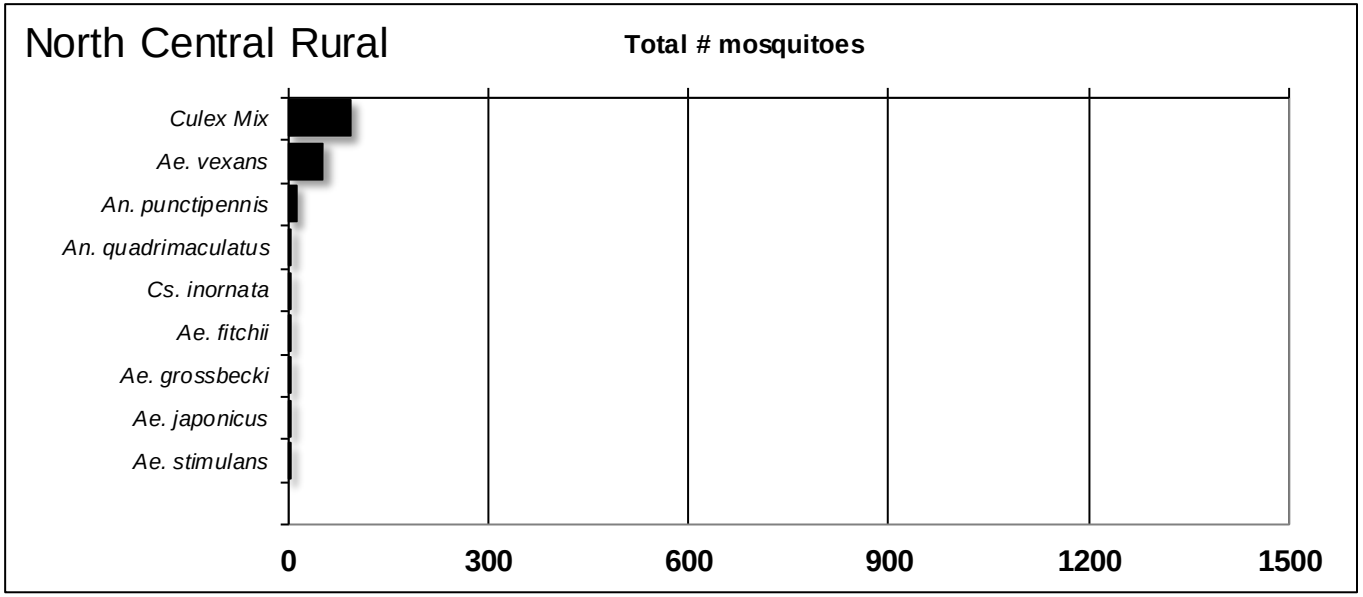

Agricultural
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. cantator
Ae. canadensis
An. punctipennis
An. quadrimaculatus
Ps. columbiae
An. bradleyi
Cs. melanura
Ae. albopictus
0
300
600
900
1200
1500


Coastal
Total # mosquitoes
Culex Mix
Ae. cantator
Ae. sollicitans
Ae. vexans
Cs. melanura
An. bradleyi
Ae. canadensis
An. punctipennis
Ae. japonicus
Ae. taeniorhynchus
0
300
600
900
1200
1500

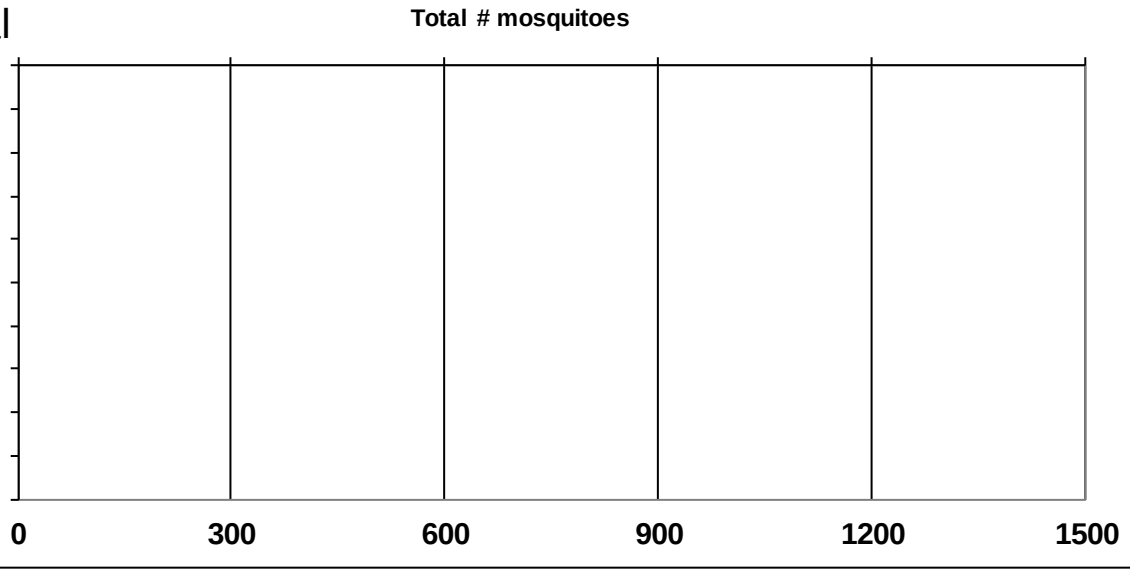

Delaware Bayshore
Total # mosquitoes
Ae. cantator
Culex Mix
An. bradleyi
Cs. melanura
An. quadrimaculatus
Ae. canadensis
Ae. sollicitans
Ae. vexans
Coq. perturbans
Ae. grossbecki
0
300
600
900
1200
1500


Delaware River Basin
Total # mosquitoes
Ae. vexans
Culex Mix
Ae. cantator
Cs. inornata
0
300
600
900
1200
1500

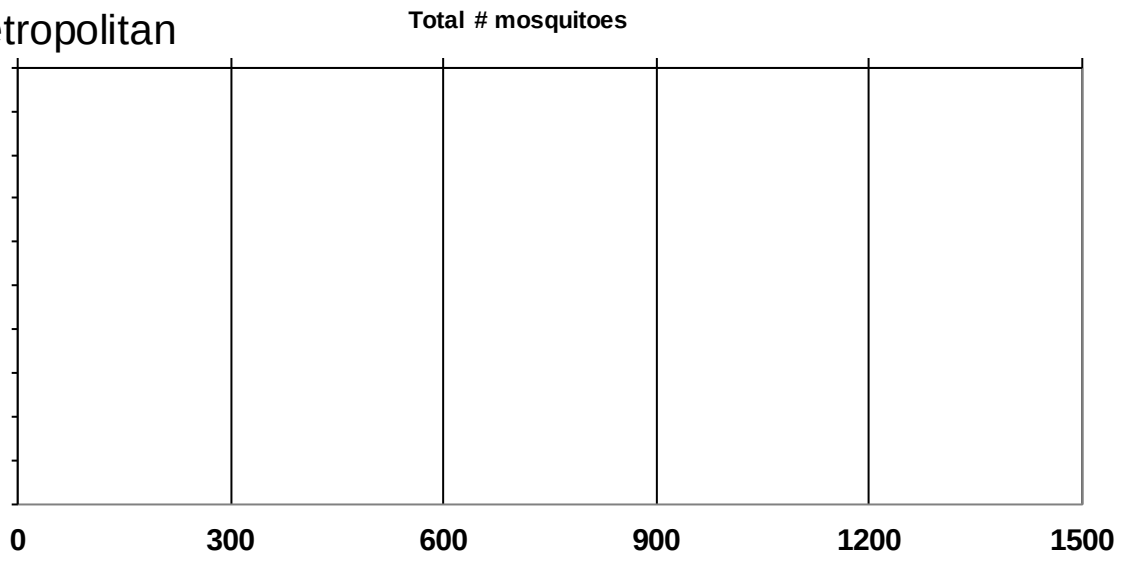

New York Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. cantator
Ae. sollicitans
Cx. territans
An. punctipennis
Ae. canadensis
Ae. trivittatus
Or. signifera
Ae. cinereus
0
300
600
900
1200
1500

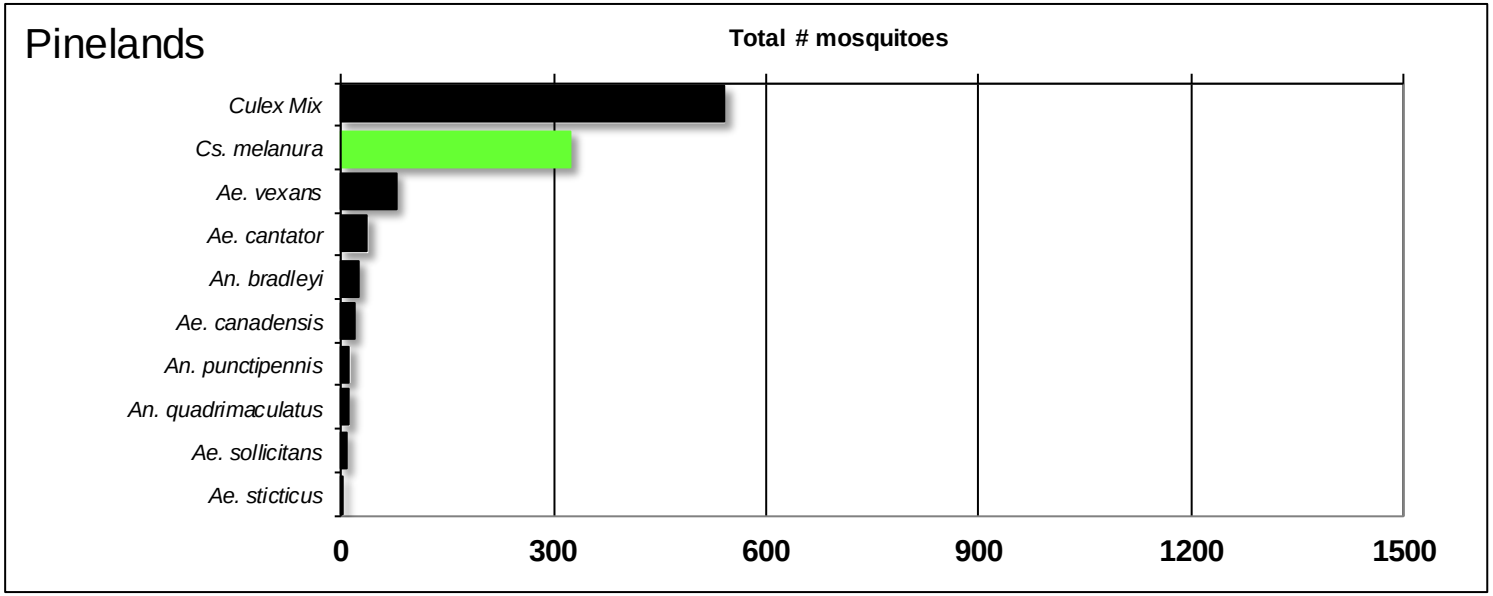

North Central Rural
Total # mosquitoes
Culex Mix
Ae. vexans
An. punctipennis
An. quadrimaculatus
Cs. inornata
Ae. fitchii
Ae. grossbecki
Ae. japonicus
Ae. stimulans
0
300
600
900
1200
1500

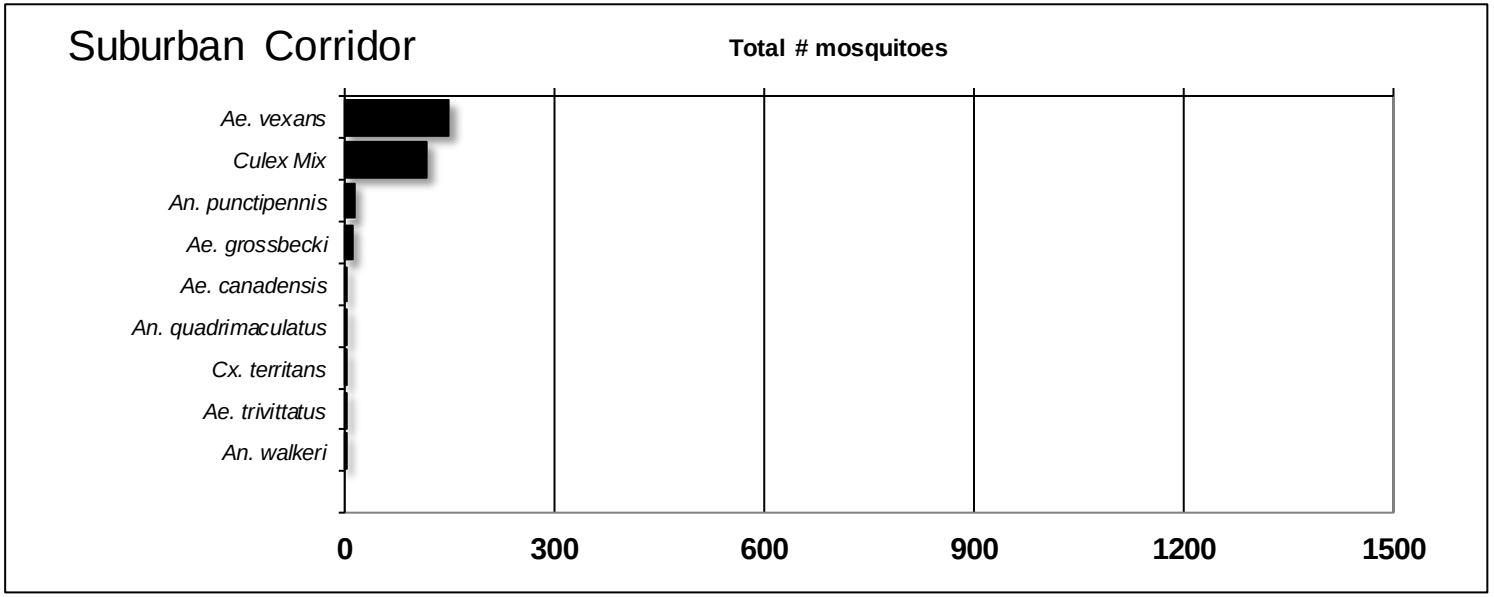
Northwest Rural




Philadelphia Metropolitan




Pinelands
Total # mosquitoes
Culex Mix
Cs. melanura
Ae. vexans
Ae. cantator
An. bradleyi
Ae. canadensis
An. punctipennis
An. quadrimaculatus
Ae. sollicitans
Ae. sticticus
0
300
600
900
1200
1500


Suburban Corridor
Total # mosquitoes
Ae. vexans
Culex Mix
An. punctipennis
Ae. grossbecki
Ae. canadensis
An. quadrimaculatus
Cx. territans
Ae. trivittatus
An. walkeri
0
300
600
900
1200
1500