# NEW JERSEY ADULT MOSQUITO SURVEILLANCE Report

September 26 to October 2, CDC Week 39

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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.

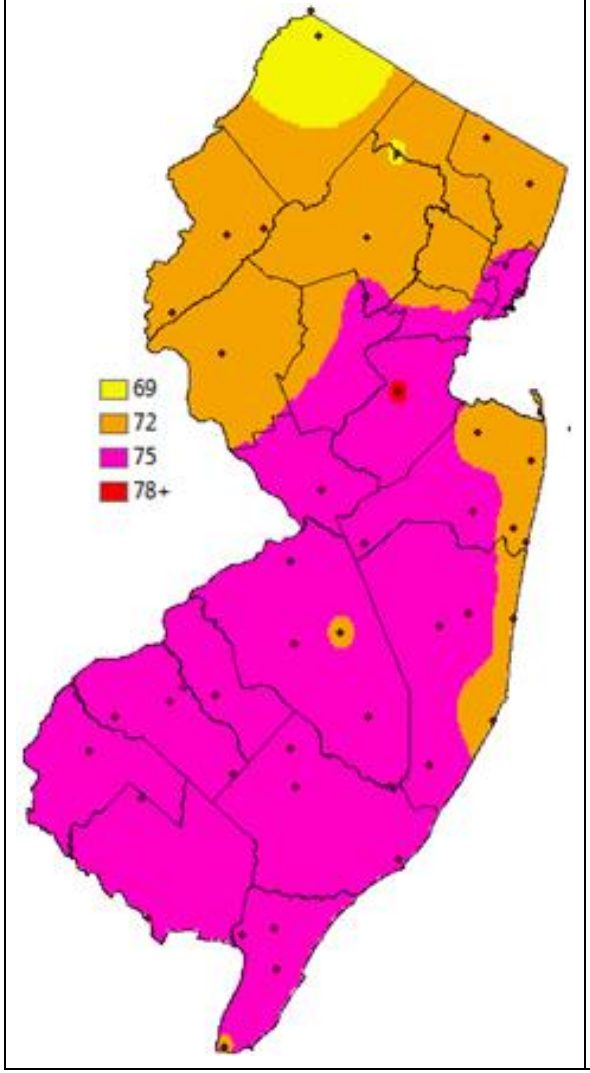
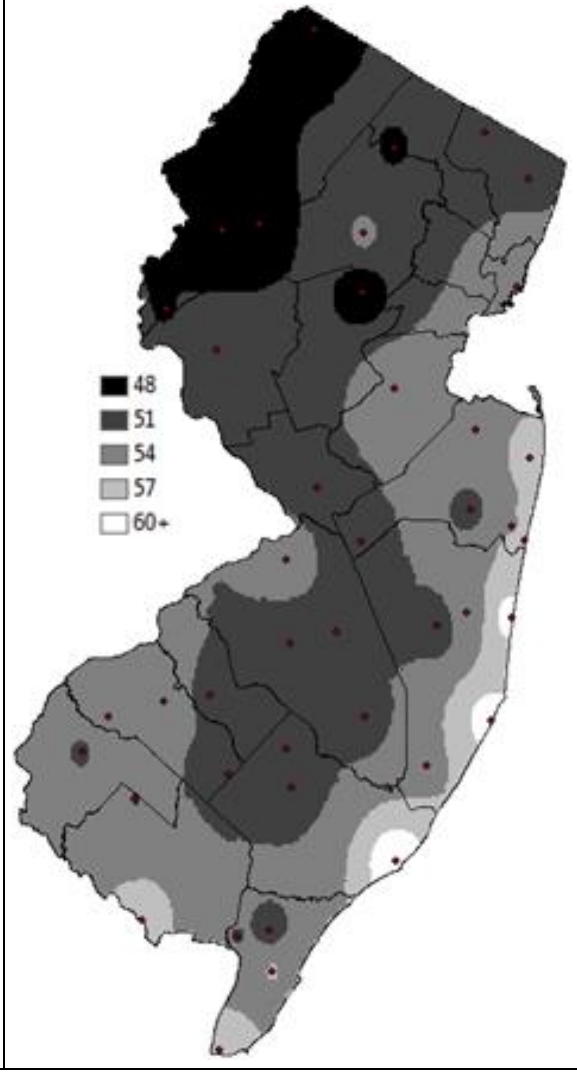
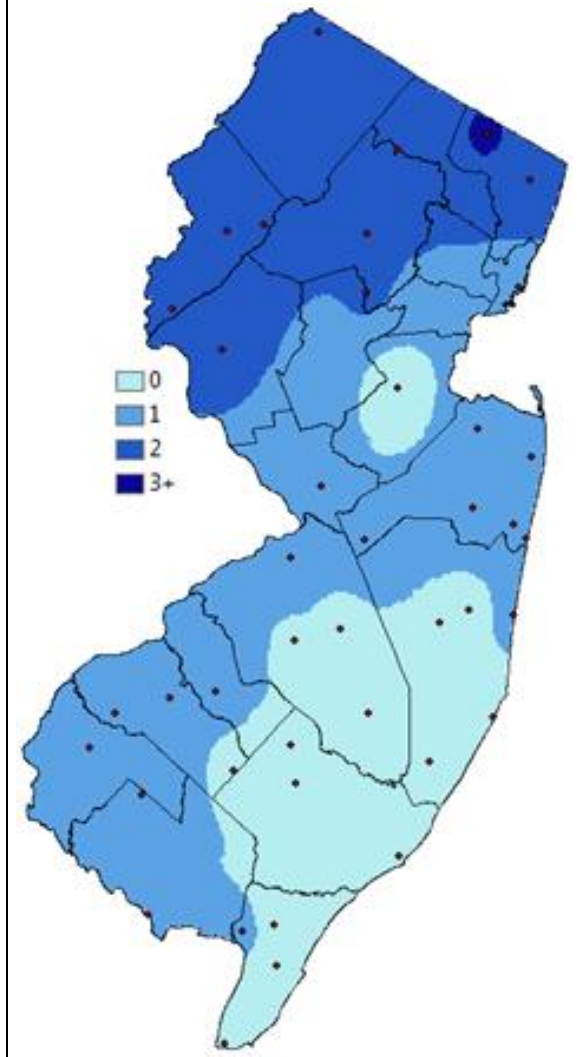
## *Summary Table – Week 39*

| Region | *Aedes vexans* | | | *Culex* Mix | | | *Coquillettidia perturbans* | | | *Aedes sollicitans* | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | This Week | Average* | Increase | This Week | Average* | Increase | This Week | Average* | Increase | This Week | Average* | Increase |
| Agricultural | 2.43 | 1.55 | 2 | 13.93 | 6.65 | 3 | 0.00 | 0.01 | 0 | 0.02 | 0.09 | 0 |
| Coastal | 1.83 | 2.53 | 0 | 4.46 | 5.05 | 0 | 0.00 | 0.00 | 0 | 0.51 | 0.62 | 0 |
| Delaware Bayshore | 3.83 | 1.03 | 4 | 7.60 | 4.67 | 2 | 0.00 | 0.06 | 0 | 1.03 | 0.67 | 2 |
| Delaware River Basin | 1.43 | 2.99 | 0 | 3.93 | 2.63 | 1 | 0.00 | 0.01 | 0 | 0.00 | 0.11 | 0 |
| New York Metro | 0.43 | 0.48 | 0 | 1.97 | 4.60 | 0 | 0.06 | 0.01 | 4 | 0.00 | 0.15 | 0 |
| North Central Rural | 0.04 | 0.03 | 1 | 0.07 | 0.30 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 |
| Northwest Rural | 8.14 | 1.06 | 4 | 2.29 | 2.93 | 0 | 0.00 | 0.01 | 0 | 0.00 | 0.00 | 0 |
| Philadelphia Metro | 3.14 | 2.22 | 1 | 1.71 | 1.28 | 1 | 0.00 | 0.05 | 0 | 0.00 | 0.00 | 0 |
| Pinelands | 0.47 | 0.77 | 0 | 0.79 | 1.26 | 0 | 0.00 | 0.02 | 0 | 0.00 | 0.91 | 0 |
| Suburban Corridor | 0.50 | 0.21 | 3 | 0.98 | 0.77 | 1 | 0.00 | 0.01 | 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: As the season begins to change into fall, stability in population numbers degrade, and more fluctuation is seen. For *Aedes vexans,* significantly elevated populations were seen in the Delaware Bayshore, the Northwest Rural, and the Suburban Corridor regions. Minor elevations were also observed in the Agricultural, North Central Rural and the Philadelphia Metropolitan regions. *Culex* Mix populations showed a significant increase in numbers in the Agricultural region, with minor elevations observed for the Delaware Bayshore, the Delaware River Basin, the Philadelphia Metropolitan, and the Suburban Corridor. *Aedes sollicitans* showed a moderate increase in the Delaware Bayshore while the waning populations of *Coquillettidia perturbans* were significantly elevated in the New York Metropolitan region, albeit with low overall numbers.

# Climate Factors

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



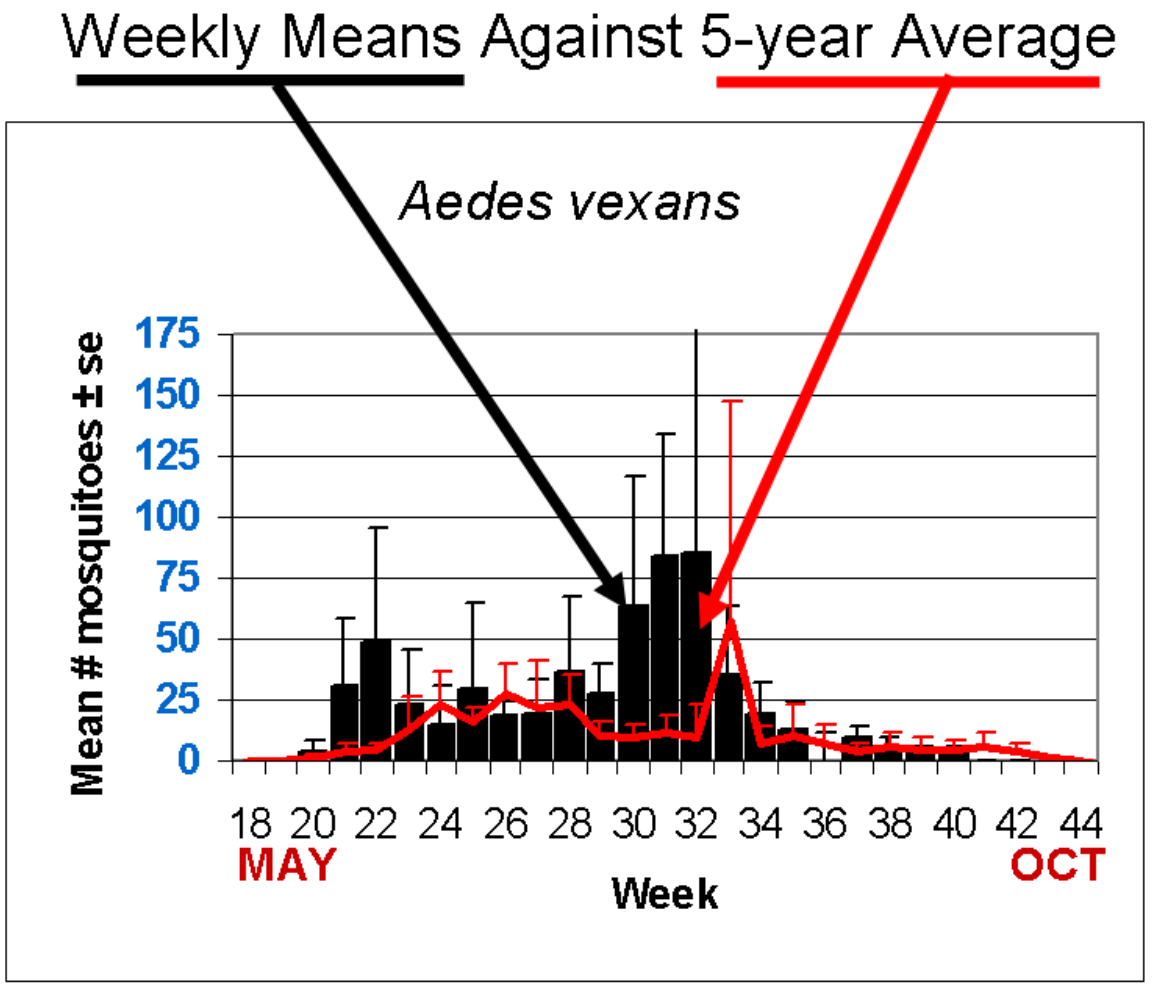




The three figures show the interpolation of average maximum (°F) and minimum temperature (°F) and total precipitation (inches) for 14 days prior to 3 October 2021 in New Jersey. Data points are from about 45 weather stations maintained through the New Jersey Weather & Climate Network and the State Climatologist. Interpolation between points was performed using ArcMap 10.1.

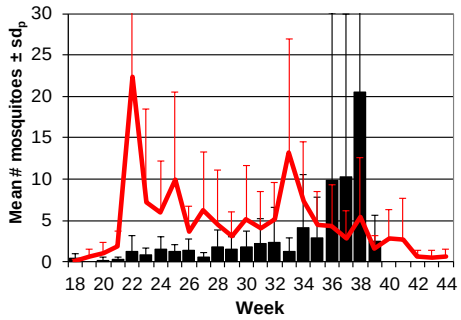
ONJSC at Rutgers University NJ Weather & Climate NETWORK

**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 Atlantic, Burlington, Cumberland Hudson, Mercer, Middlesex, Salem, Somerset, Sussex, and Union counties. Data for the previous week are from Atlantic, Burlington, Cape May, Cumberland, Hudson, Middlesex, Morris, Ocean, Passaic, Salem, Somerset, Sussex, and Union counties.

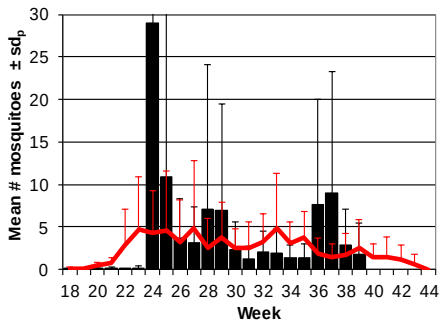


# *Aedes vexans* - Fresh Floodwater Species
# Multivoltine Aedine (*Ae. vexans* Type)

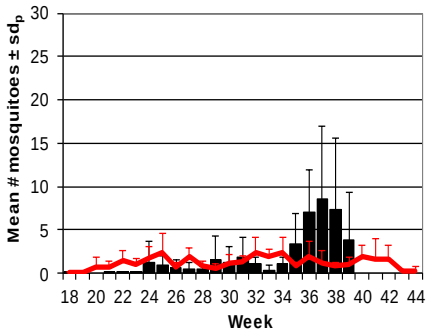
## Agricultural



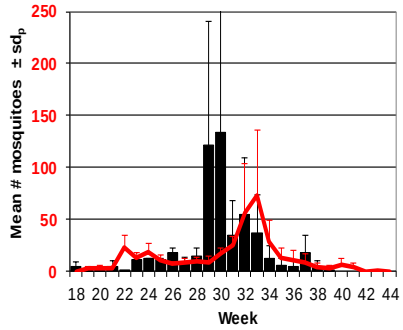

## Coastal



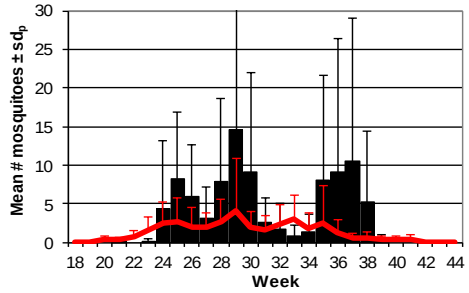

## Delaware Bayshore



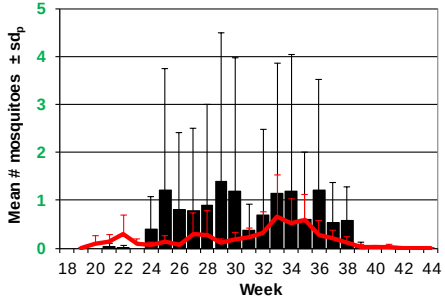

## Delaware River Basin



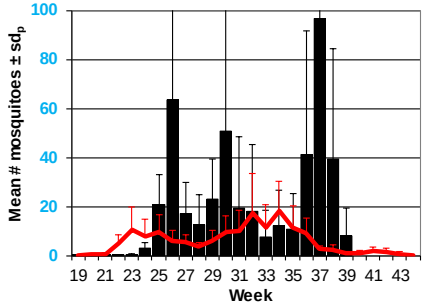

## New York Metro



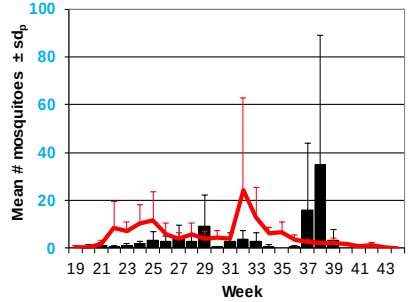

## North Central Rural



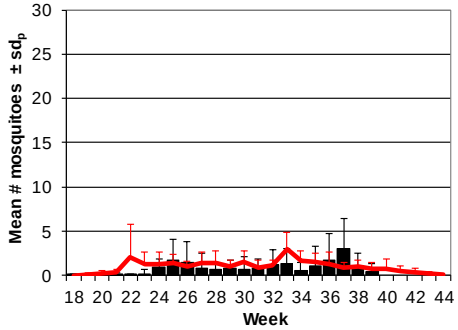

## Northwestern Rural



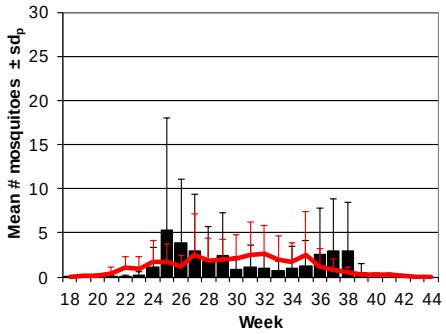

## Philadelphia Metro




## Pinelands




## Suburban Corridor



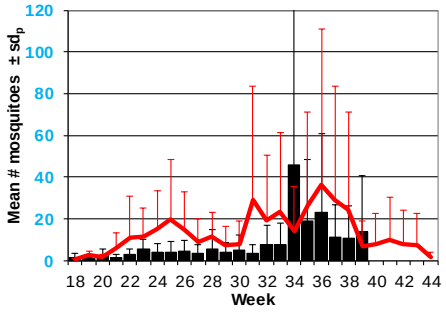

## Comments

*Aedes vexans* is the model for fresh floodwater species. With abundant precipitation, this species can emerge in very significant numbers. Effects of flooding continue. *Aedes vexans* had significantly elevated populations seen in the Delaware Bayshore, the Northwest Rural, and the Suburban Corridor regions. Minor population increases were also observed in the Agricultural, North Central Rural and the Philadelphia Metropolitan regions.

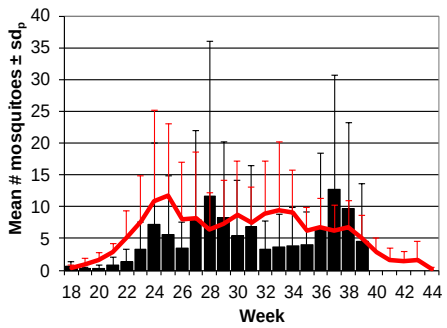
https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?NJ

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

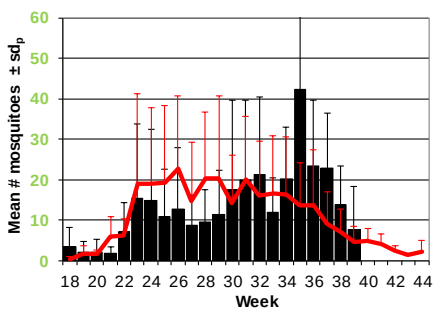
## Agricultural



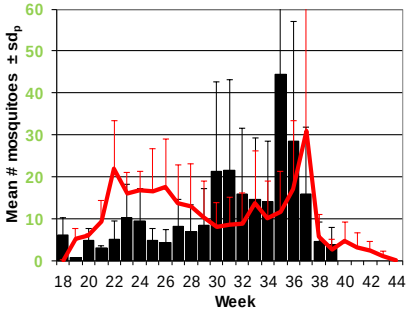

## Coastal



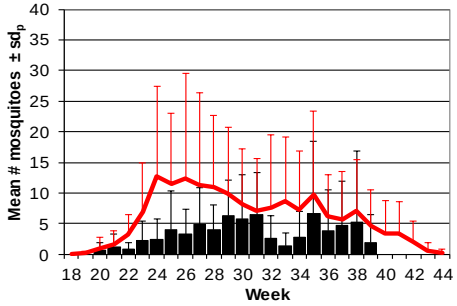

## Delaware Bayshore



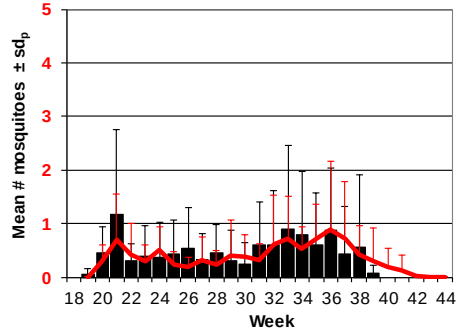

## Delaware River Basin



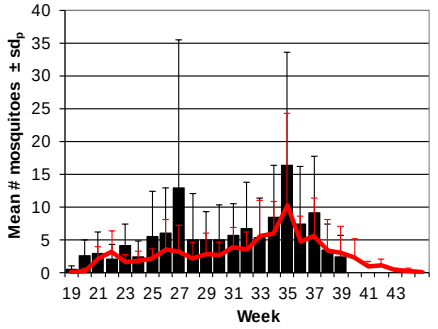

## New York Metro



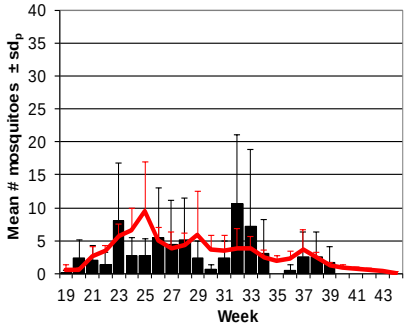

## North Central Rural



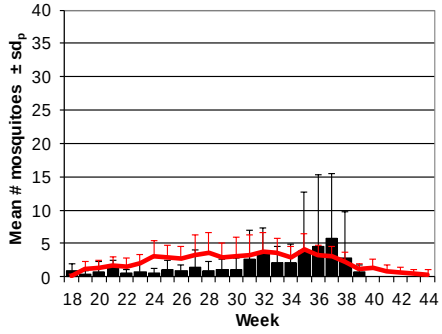

## Northwestern Rural



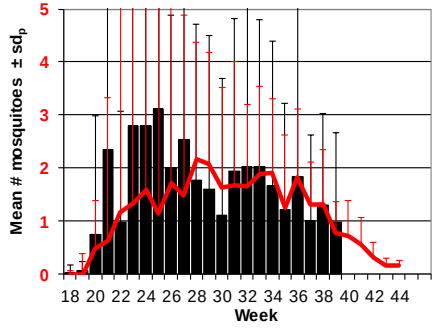

## Philadelphia Metro




## Pinelands




## Suburban Corridor



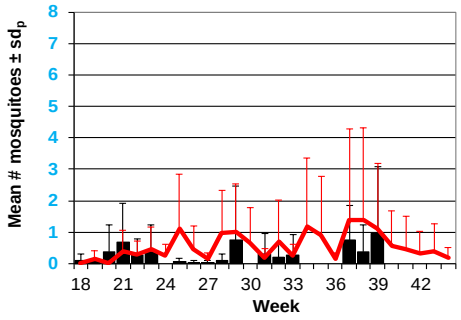

## Comments

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* Mix populations showed a significant increase in numbers in the Agricultural region, with minor elevations observed for the Delaware Bayshore, the Delaware River Basin, the Philadelphia Metropolitan, and the Suburban Corridor.

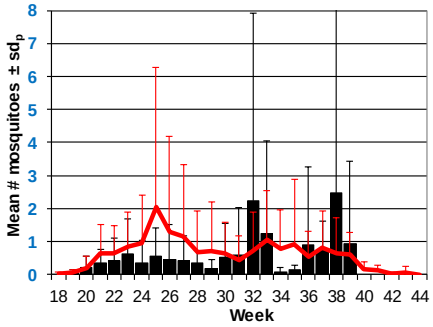
West Nile activity continues to be seen throughout most of the state.

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

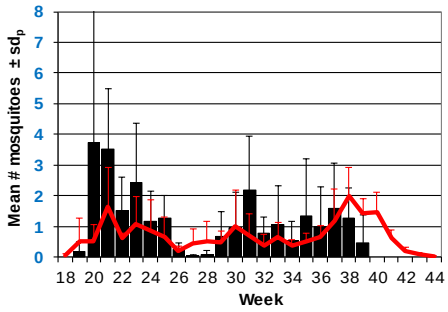
## Agricultural



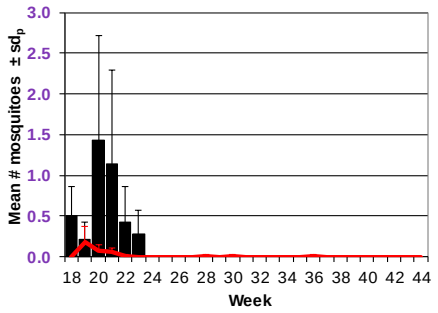

## Coastal



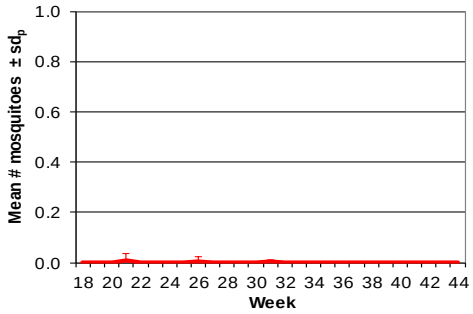

## Delaware Bayshore



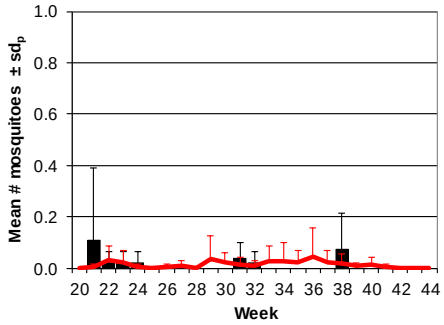

## Delaware River Basin



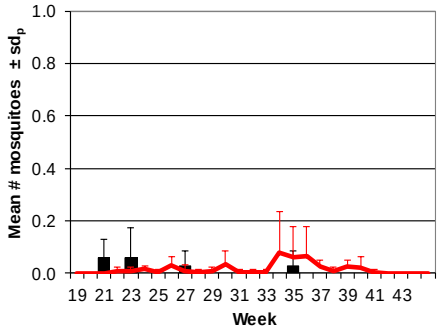

## New York Metro



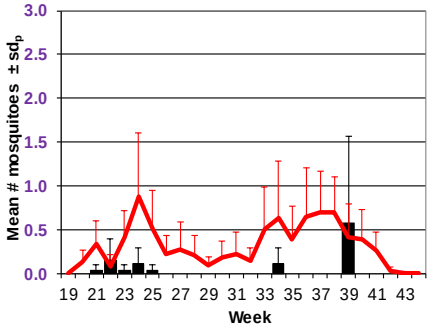

## North Central Rural



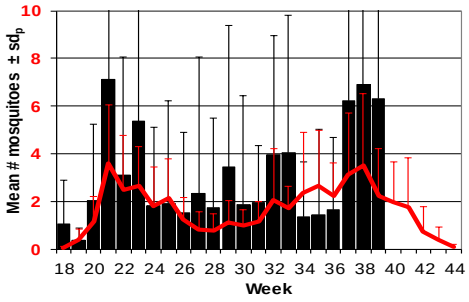

## Northwestern Rural



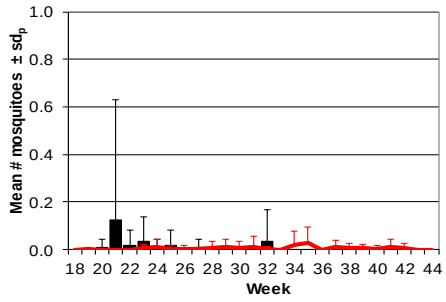

## Philadelphia Metro




## Pinelands




## Suburban Corridor

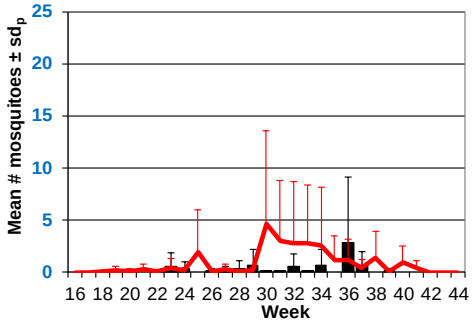
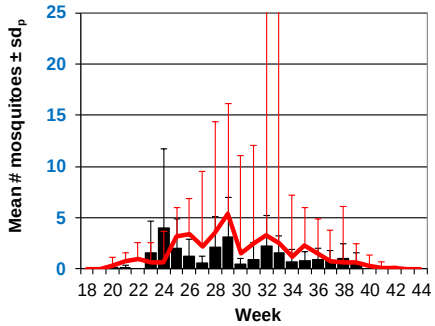
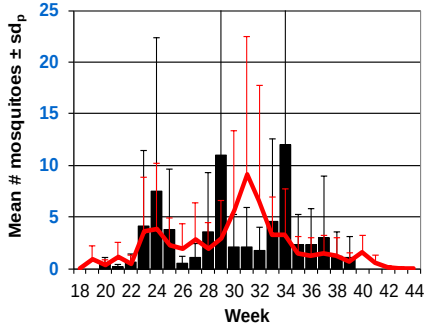
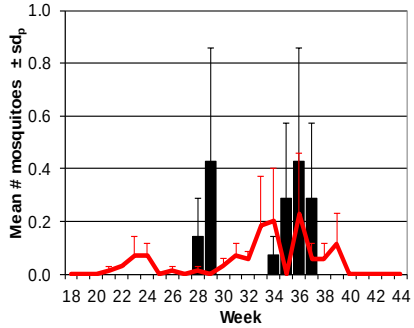
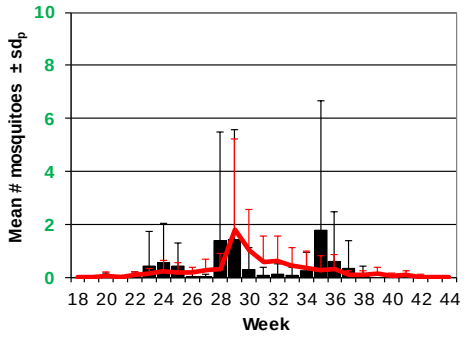
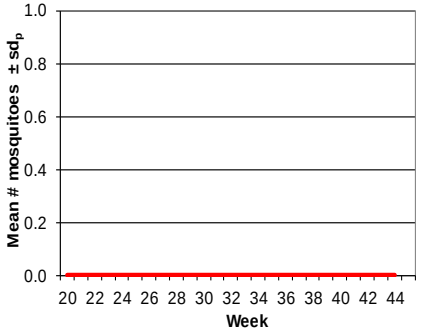
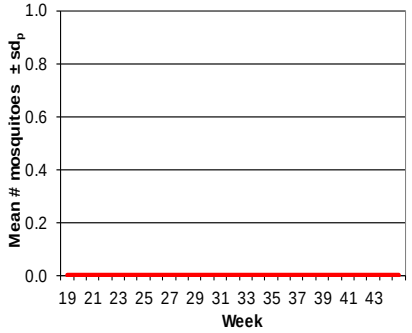
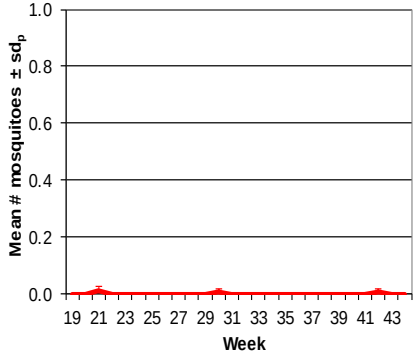
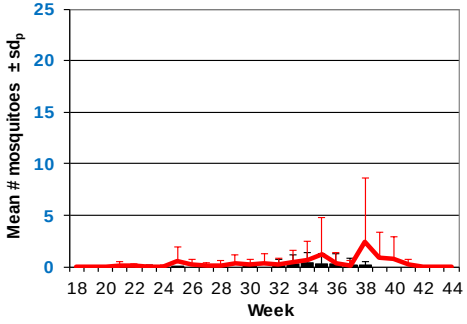
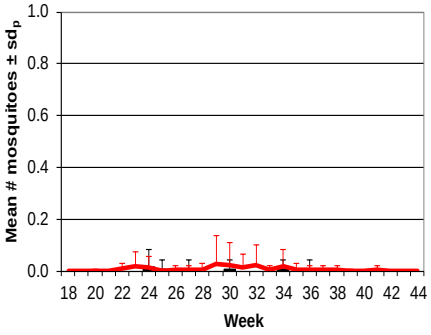



## Comments

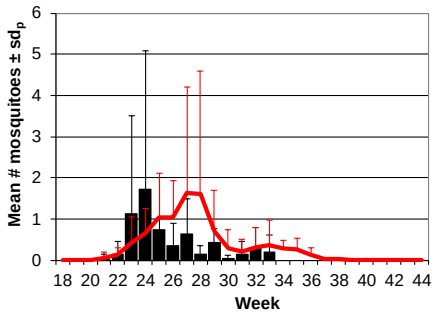
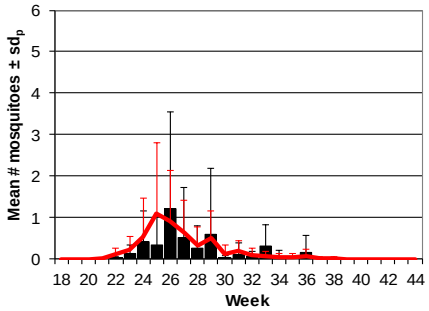
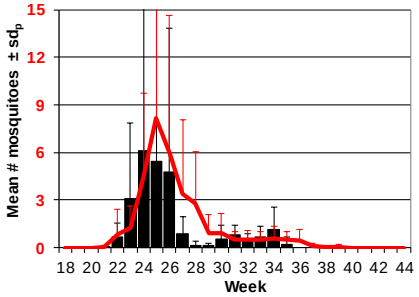
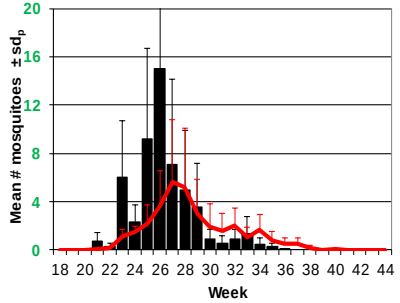
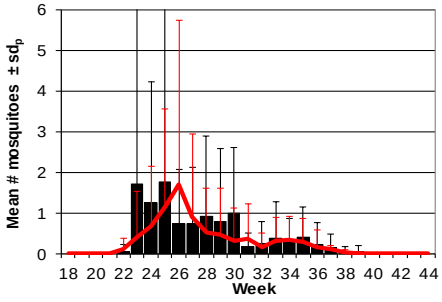
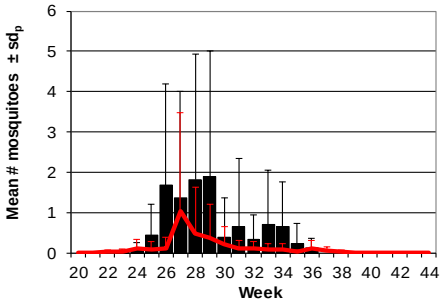
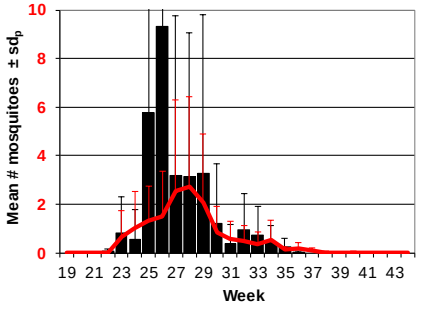
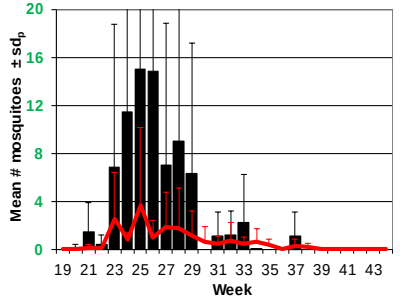
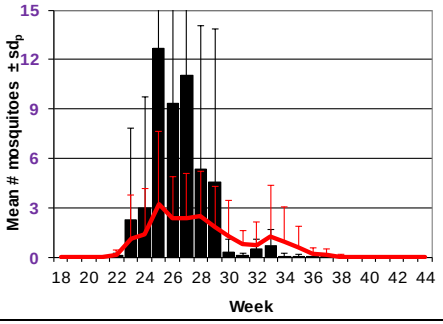
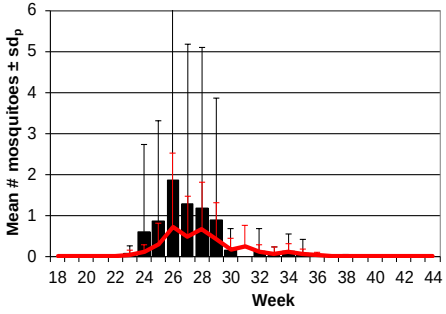
*Culiseta melanura* is the enzootic ornithophilic vector of eastern equine encephalitis. This cold-hearty species can emerge early in the season as well as staying active late into fall. Elevated numbers continue to be observed in the Pinelands as well as the Coastal and Philadelphia Metropolitan regions and with continued EEE activity, due diligence is essential.

All horse owners should make sure their horses are up to date on their EEE/WNV 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. *Aedes sollicitans* showed a moderate increase in the Delaware Bayshore, but this species is rapidly coming to the end of activity as the season draws toward cooler weather.<br><br>Next full moon on 20 October.<br>Salt line on the Delaware River is within expected values along the Basin region:<br>https://www.nj.gov/drbc/programs/flow/salt-front.html | |

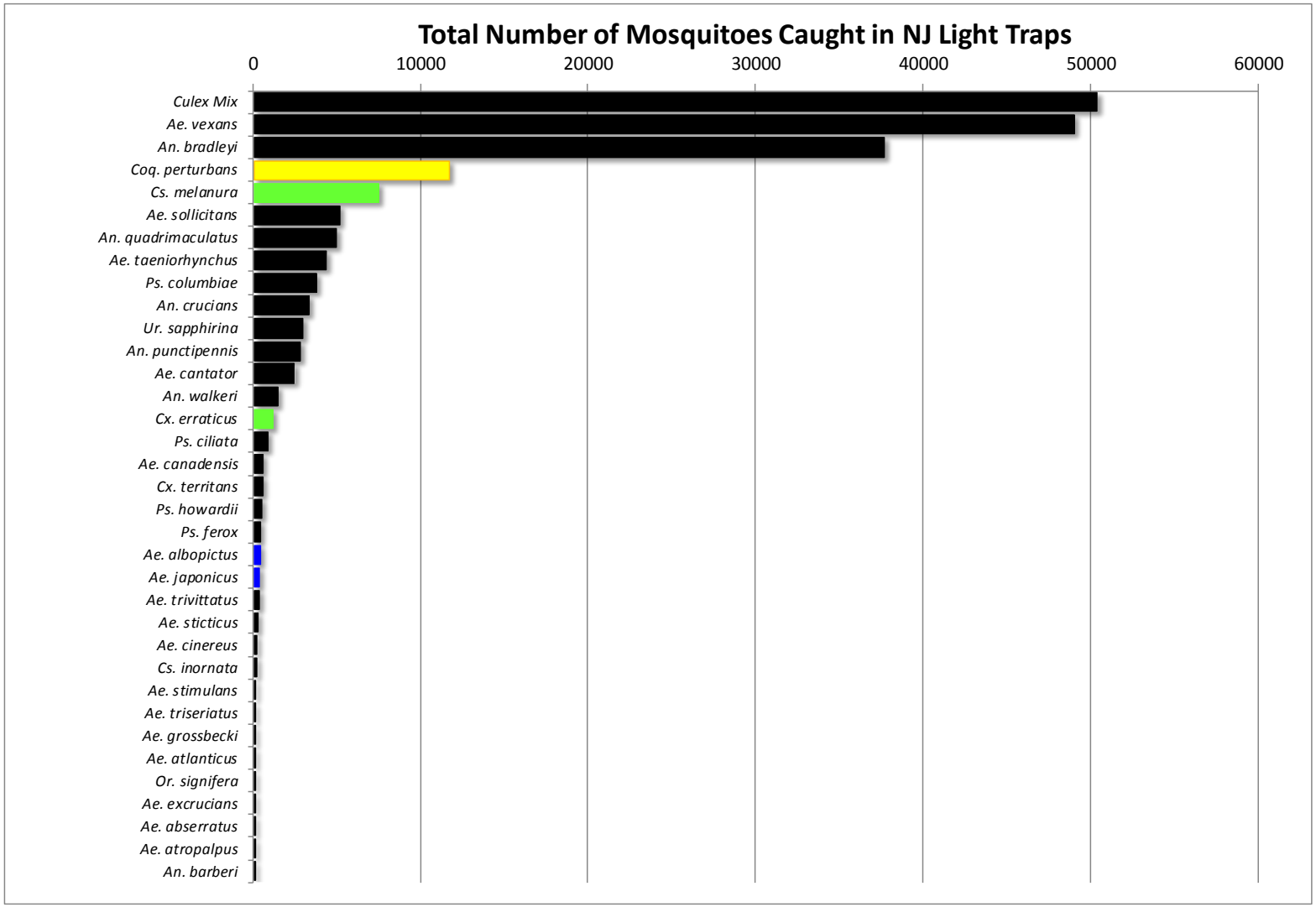
# *Coquillettidia perturbans*
# Monotypic (*Coquillettidia perturbans* Type)

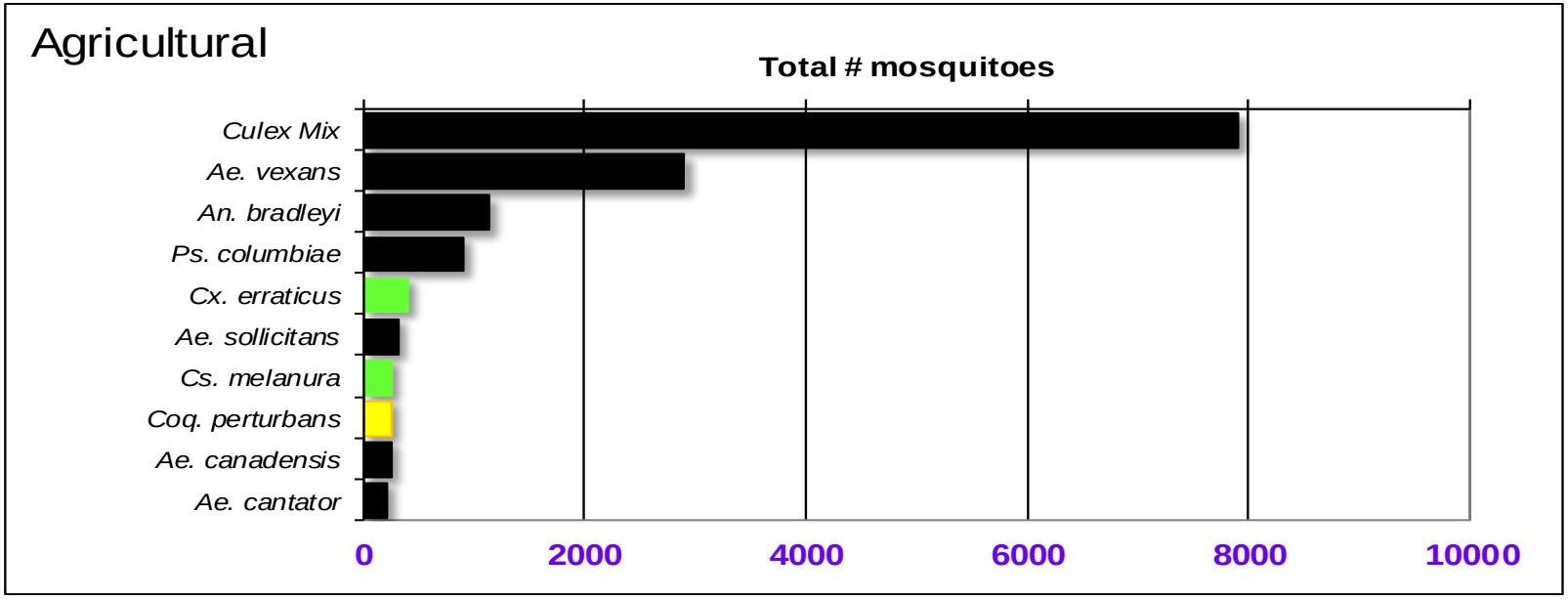
| Agricultural | Coastal | Delaware Bayshore | Delaware River Basin |
|---|---|---|---|
|  |  |  |  |
| **New York Metro** | **North Central Rural** | **Northwestern Rural** | **Philadelphia Metro** |
|  |  |  |  |
| **Pinelands** | **Suburban Corridor** | **Comments** | |
|  |  | *Coquillettidia perturbans* populations are located in cattail swamps and other wetlands with emergent vegetation, often making control of their numbers dependent on controlling water depth. *Coquillettidia perturbans* were significantly elevated in the New York Metropolitan region, albeit with low overall numbers.<br><br>EEE has been detected in the state and as such, due diligence should be taken with the monitoring of the endemic vector (*Cs. melanura*) and this bridge vector (*Coq. perturbans*). | |

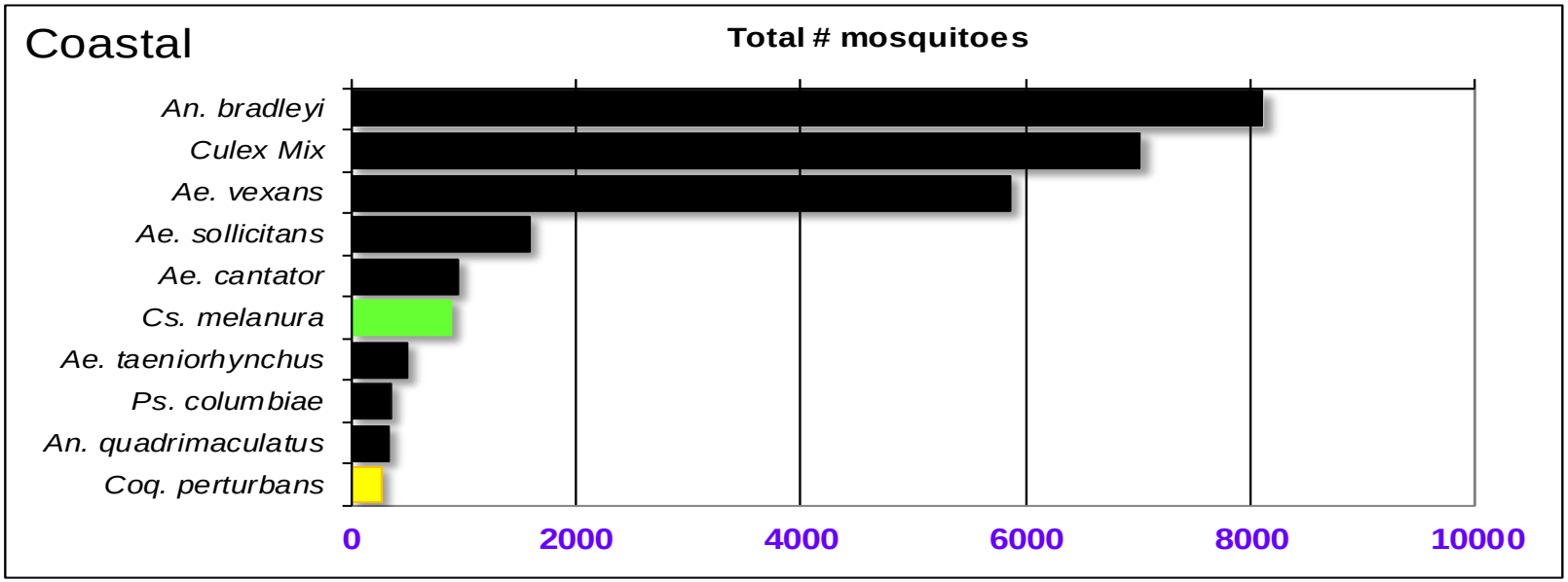
*WNV* *EEE*

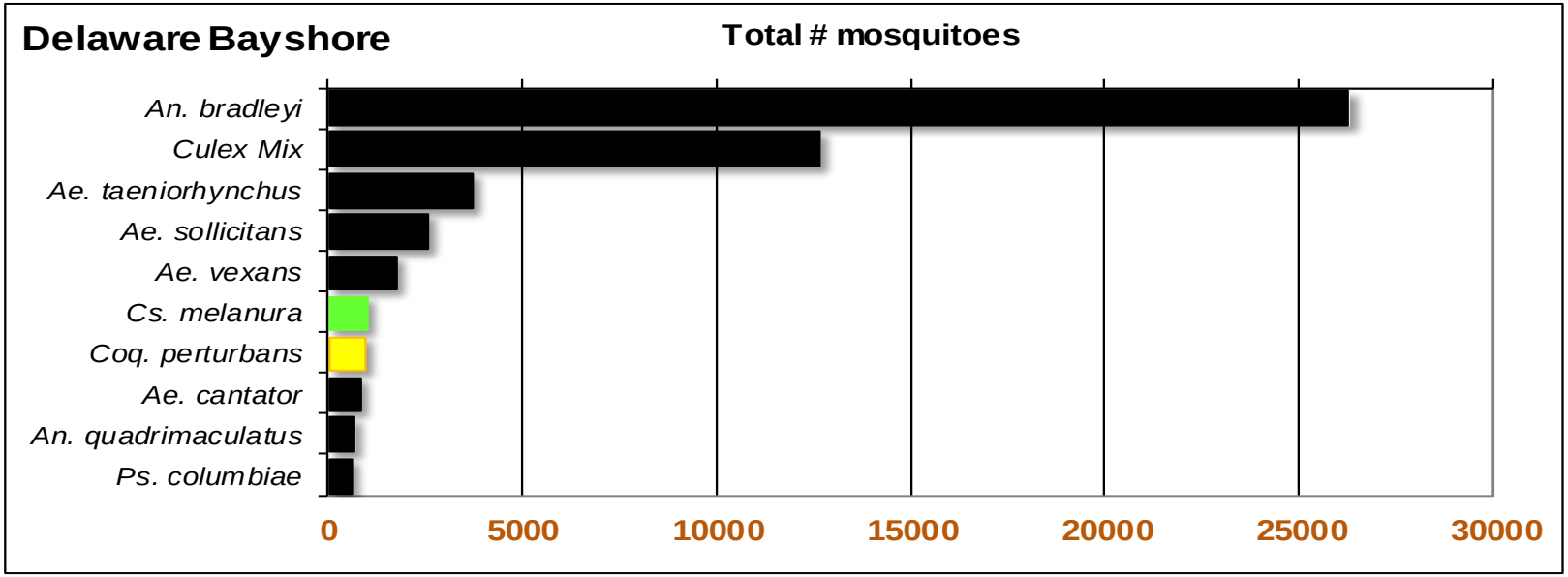
## ***Top Ten Mosquito Species/Region -*** *Ae. albopictus, Ae. japonicus (invasives); Cs. melanura or Cx. erraticus Coq. perturbans*

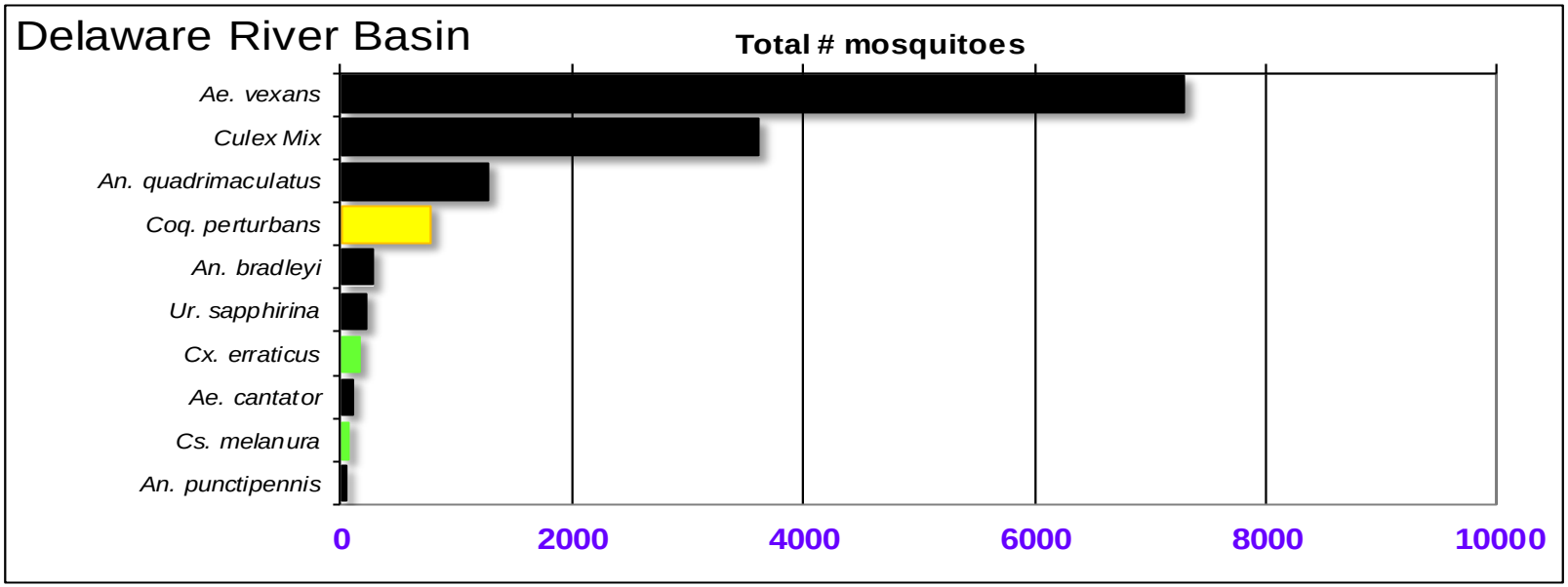
Note: In early season when fewer species are caught, graphs may show less than ten species/region or 25 statewide.

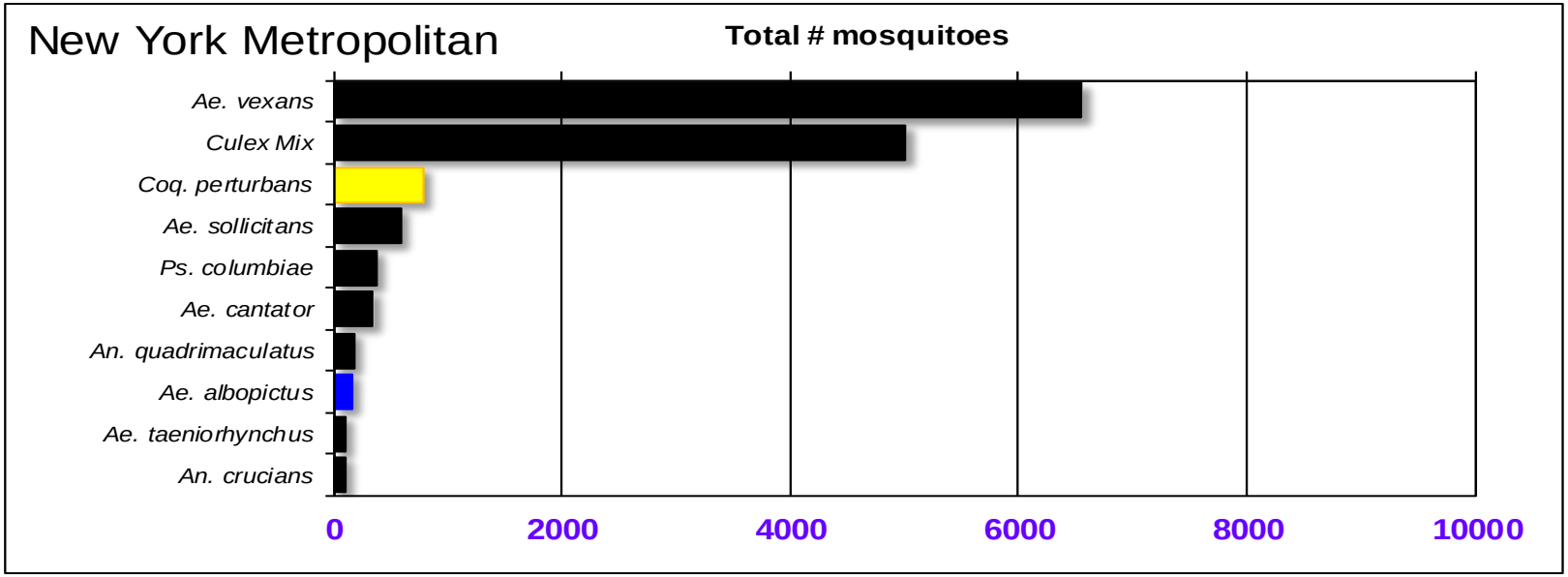


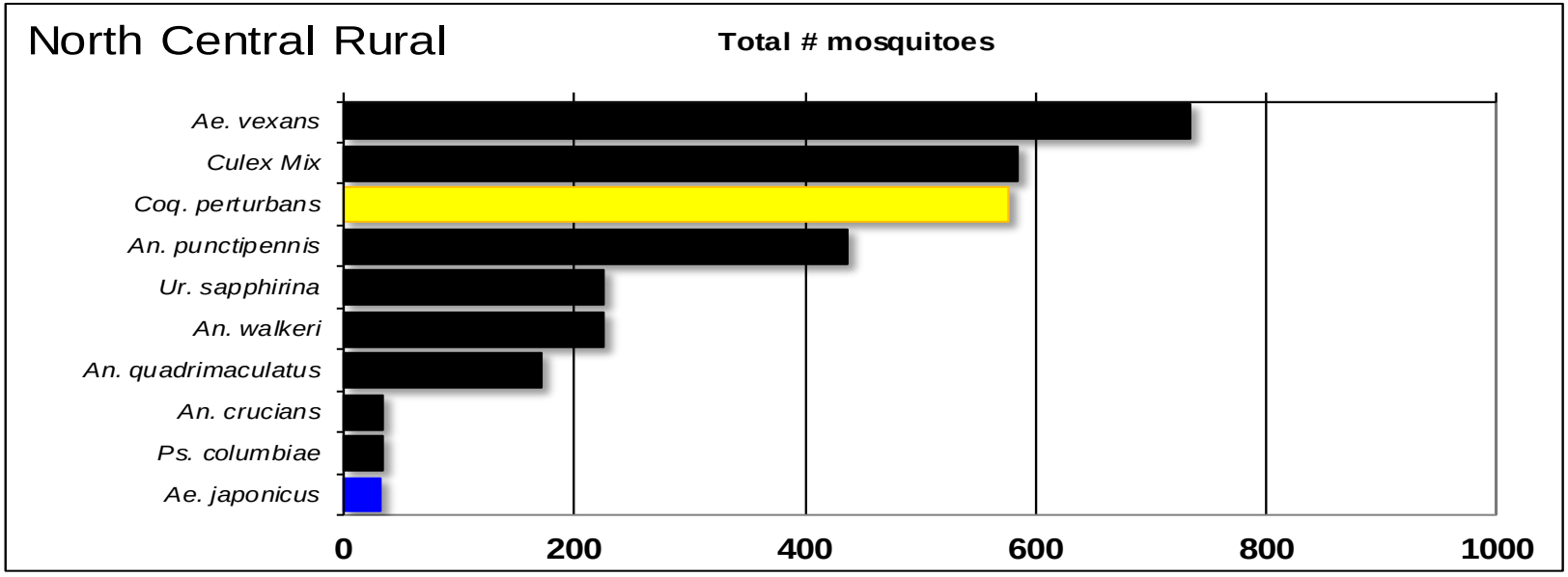

Agricultural
Total # mosquitoes
Culex Mix
Ae. vexans
An. bradleyi
Ps. columbiae
Cx. erraticus
Ae. sollicitans
Cs. melanura
Coq. perturbans
Ae. canadensis
Ae. cantator
0
2000
4000
6000
8000
10000

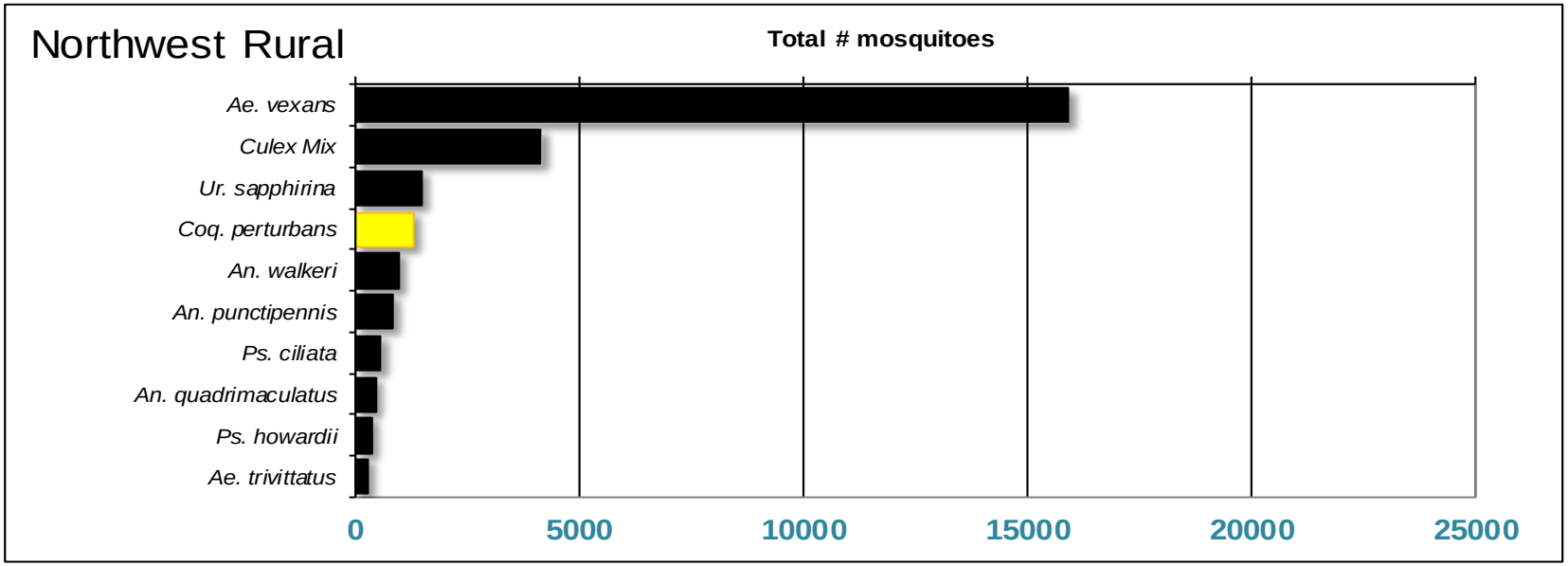

Coastal
Total # mosquitoes
An. bradleyi
Culex Mix
Ae. vexans
Ae. sollicitans
Ae. cantator
Cs. melanura
Ae. taeniorhynchus
Ps. columbiae
An. quadrimaculatus
Coq. perturbans
0
2000
4000
6000
8000
10000

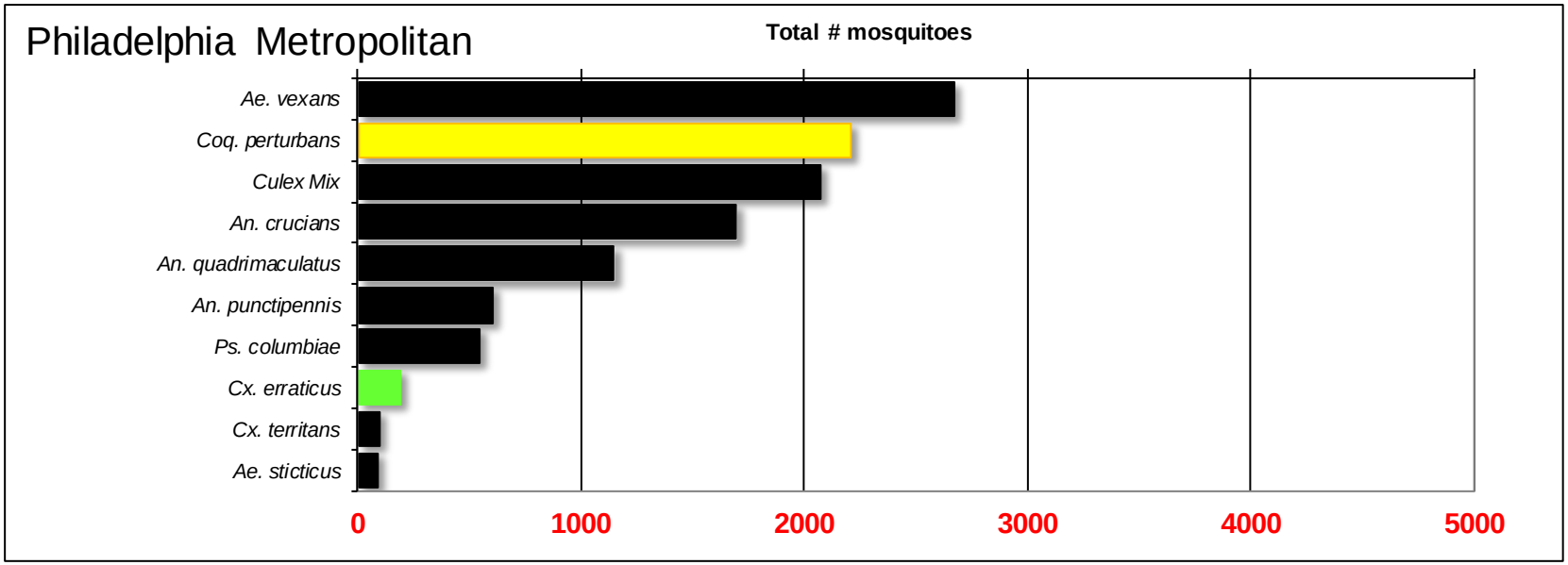

Delaware Bayshore
Total # mosquitoes
An. bradleyi
Culex Mix
Ae. taeniorhynchus
Ae. sollicitans
Ae. vexans
Cs. melanura
Coq. perturbans
Ae. cantator
An. quadrimaculatus
Ps. columbiae
0
5000
10000
15000
20000
25000
30000


Delaware River Basin
Total # mosquitoes
Ae. vexans
Culex Mix
An. quadrimaculatus
Coq. perturbans
An. bradleyi
Ur. sapphirina
Cx. erraticus
Ae. cantator
Cs. melanura
An. punctipennis
0
2000
4000
6000
8000
10000

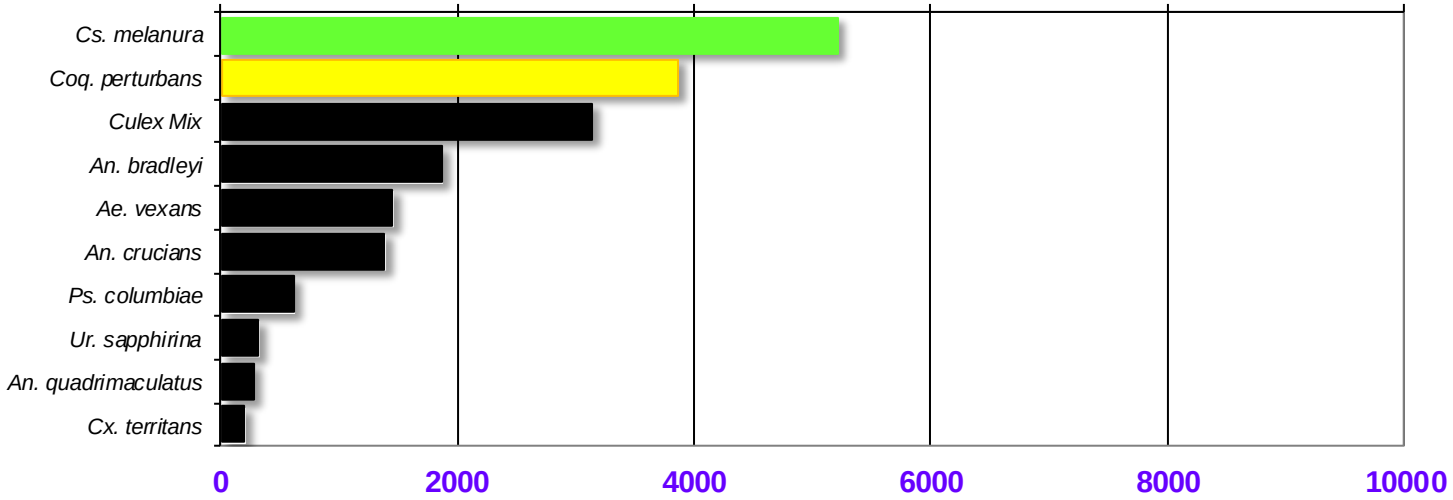

New York Metropolitan
Total # mosquitoes
Ae. vexans
Culex Mix
Coq. perturbans
Ae. sollicitans
Ps. columbiae
Ae. cantator
An. quadrimaculatus
Ae. albopictus
Ae. taeniorhynchus
An. crucians
0
2000
4000
6000
8000
10000


North Central Rural
Total # mosquitoes
Ae. vexans
Culex Mix
Coq. perturbans
An. punctipennis
Ur. sapphirina
An. walkeri
An. quadrimaculatus
An. crucians
Ps. columbiae
Ae. japonicus
0
200
400
600
800
1000


Northwest Rural
Total # mosquitoes
Ae. vexans
Culex Mix
Ur. sapphirina
Coq. perturbans
An. walkeri
An. punctipennis
Ps. ciliata
An. quadrimaculatus
Ps. howardii
Ae. trivittatus
0
5000
10000
15000
20000
25000


Philadelphia Metropolitan
Total # mosquitoes
Ae. vexans
Coq. perturbans
Culex Mix
An. crucians
An. quadrimaculatus
An. punctipennis
Ps. columbiae
Cx. erraticus
Cx. territans
Ae. sticticus
0
1000
2000
3000
4000
5000

## Pinelands




## Suburban Corridor