NEW JERSEY ADULT MOSQUITO SURVEILLANCE Report

May 30 to June 5, CDC Week 22

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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.

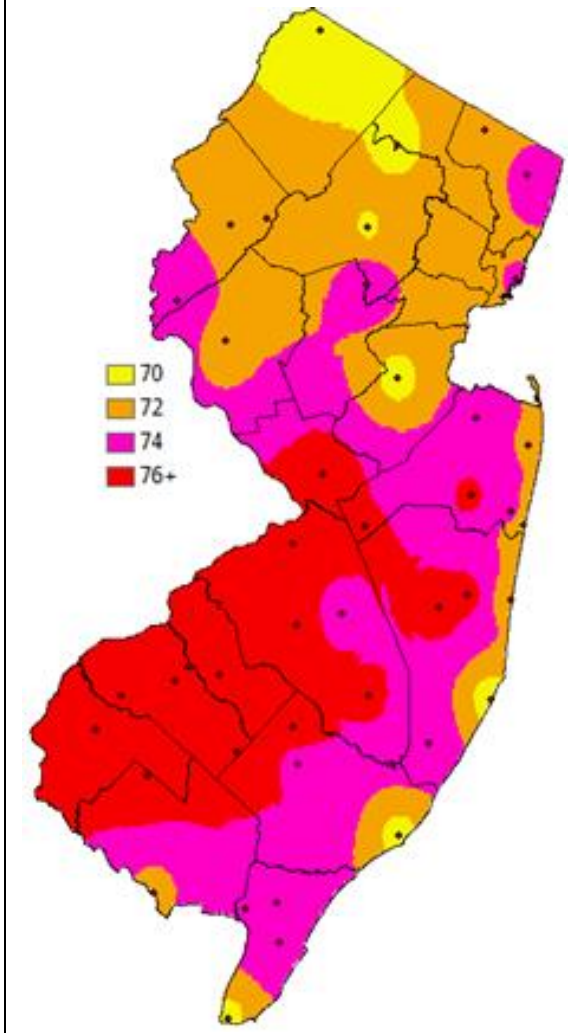
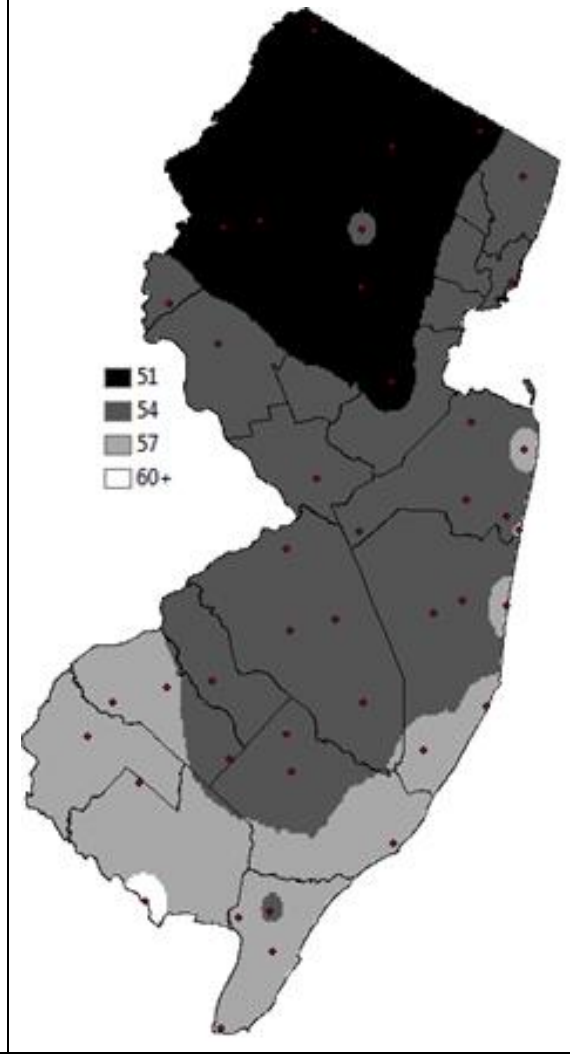
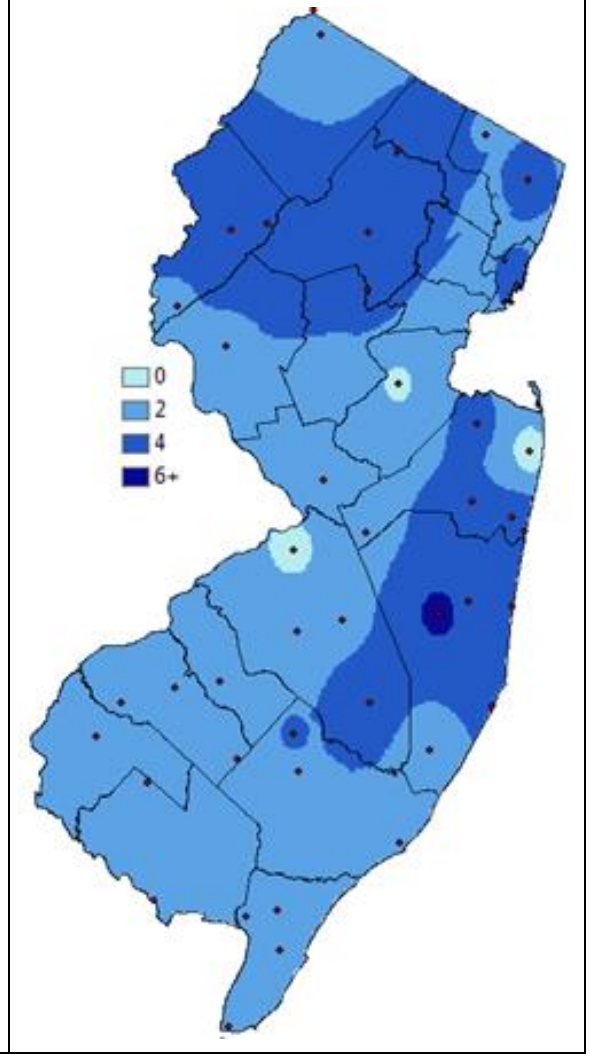
Summary Table – Week 22

	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	**0.00**	**22.37**	**0**	**0.88**	**11.14**	**0**	**0.00**	**0.12**	**0**	**0.00**	**0.03**	**0**
Coastal	**0.00**	**2.86**	**0**	**0.21**	**5.17**	**0**	**0.00**	**0.10**	**0**	**0.00**	**0.96**	**0**
Delaware Bayshore	**0.00**	**1.46**	**0**	**0.00**	**6.09**	**0**	**0.00**	**0.88**	**0**	**0.00**	**0.49**	**0**
Delaware River Basin	**0.07**	**23.21**	**0**	**2.79**	**21.89**	**0**	**0.14**	**0.13**	**1**	**0.00**	**0.03**	**0**
New York Metro	**0.00**	**0.84**	**0**	**0.30**	**3.17**	**0**	**0.00**	**0.10**	**0**	**0.00**	**0.09**	**0**
North Central Rural	**0.02**	**0.30**	**0**	**0.16**	**0.42**	**0**	**0.00**	**0.02**	**0**	**0.00**	**0.00**	**0**
Northwest Rural	**0.00**	**5.09**	**0**	**0.00**	**3.05**	**0**	**0.00**	**0.01**	**0**	**0.00**	**0.00**	**0**
Philadelphia Metro	**0.29**	**8.49**	**0**	**1.32**	**3.45**	**0**	**0.43**	**0.08**	**4**	**0.00**	**0.00**	**0**
Pinelands	**0.00**	**2.10**	**0**	**0.26**	**1.57**	**0**	**0.01**	**0.14**	**0**	**0.00**	**0.09**	**0**
Suburban Corridor	**0.04**	**0.99**	**0**	**0.28**	**1.17**	**0**	**0.00**	**0.01**	**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: Currently, only early populations of *Coquillettidia perturbans* have emerged in significant numbers in the Delaware River Basin and the Philadelphia Metropolitan regions. See also *Culiseta melanura* numbers on page 6.

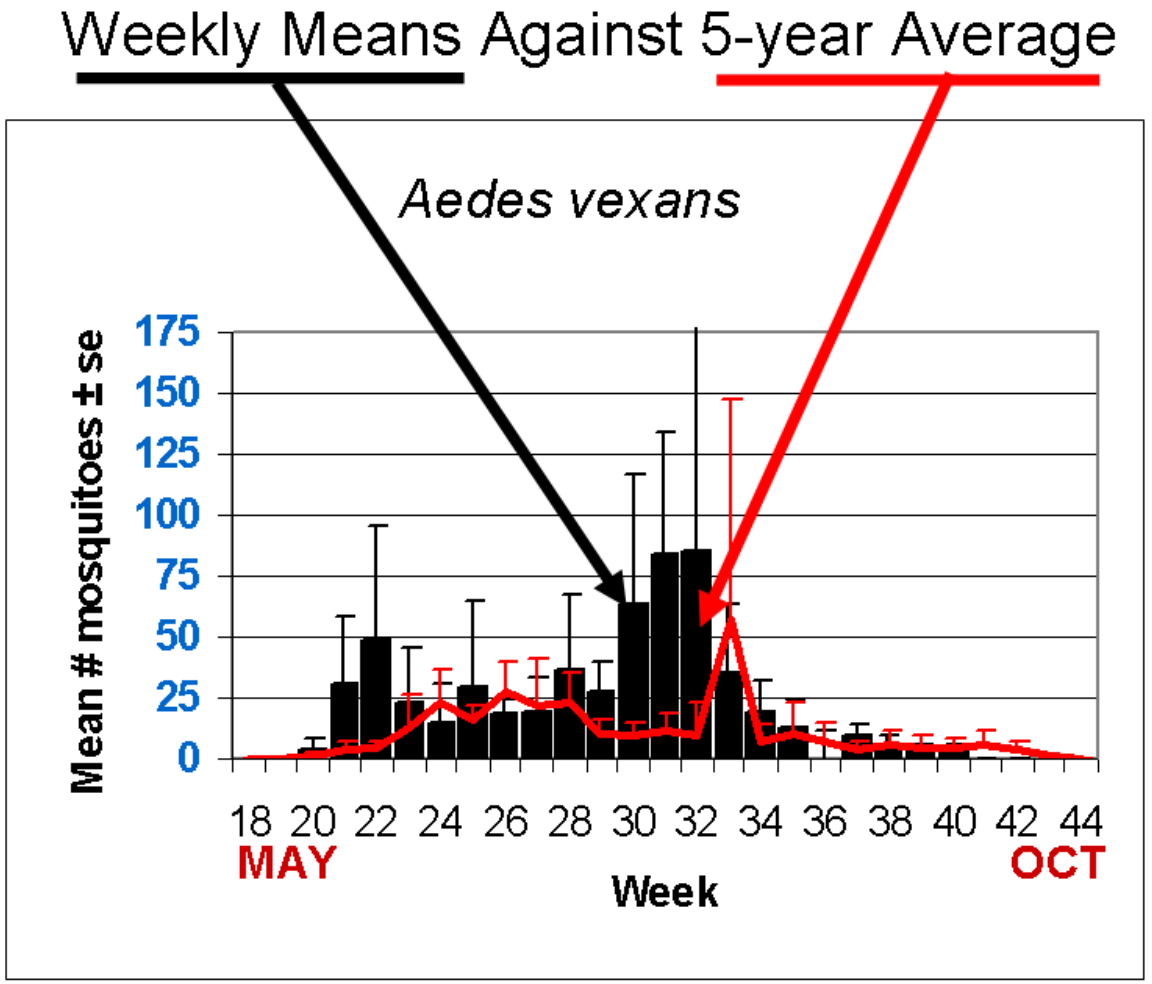
Climate Factors

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 7 June 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.

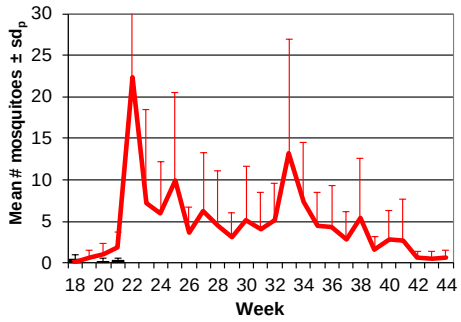
ONJSC at Rutgers University NJ Weather & Climate NETWORK

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, Hudson, Mercer, Morris, and Salem counties. Data for the previous week are from Atlantic, Bergen, Burlington, Cape May, Hudson, Hunterdon, Mercer, Middlesex, Morris, Ocean, Salem, Sussex, and Warren counties.

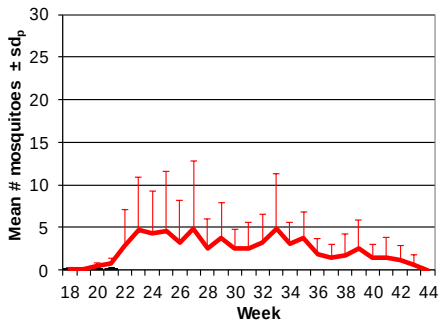


Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

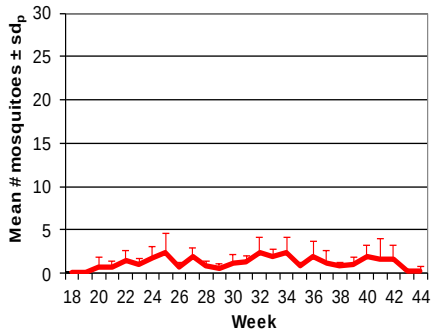
Agricultural



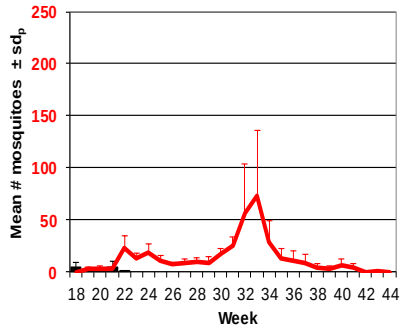
Coastal



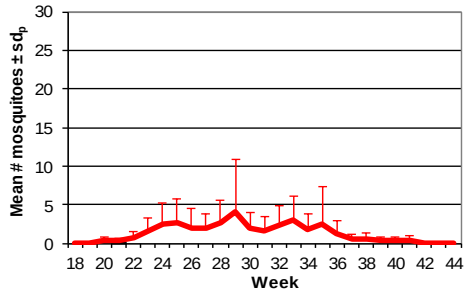
Delaware Bayshore



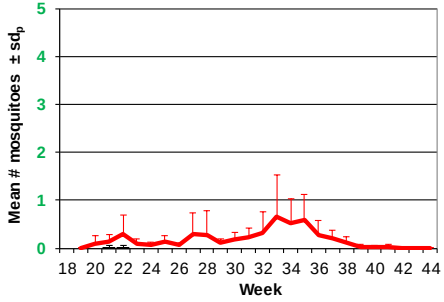
Delaware River Basin



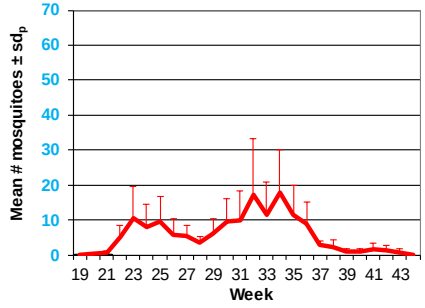
New York Metro



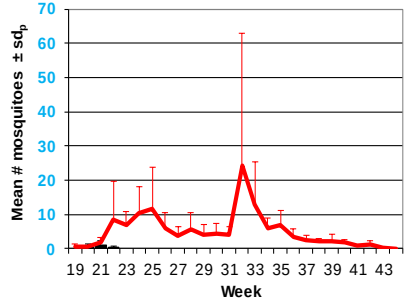
North Central Rural



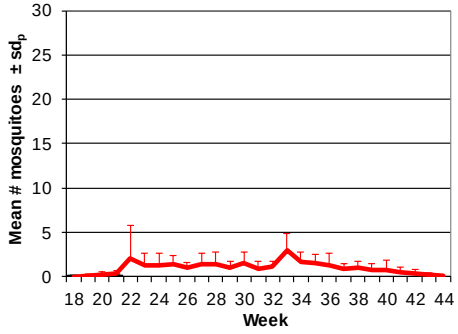
Northwestern Rural



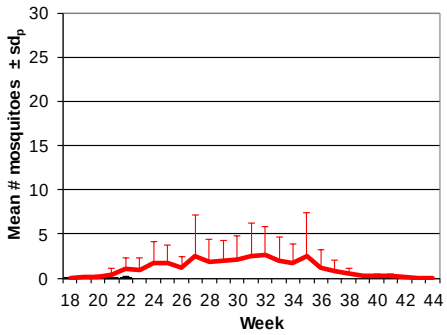
Philadelphia Metro



Pinelands



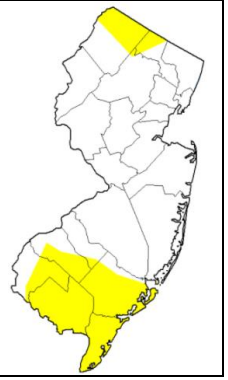
Suburban Corridor



Comments

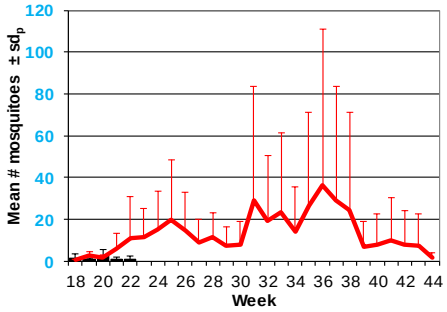
Aedes vexans is the model for fresh floodwater species. With abundant precipitation, this species can emerge in very significant numbers. No populations were reported above historical averages. Rainfall for the Memorial holiday and the following week has brought most of New Jersey out of the abnormally dry condition. Floodwater species such as *Ae. vexans* and *Ae. sollicitans* should show up in number in the coming week.

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

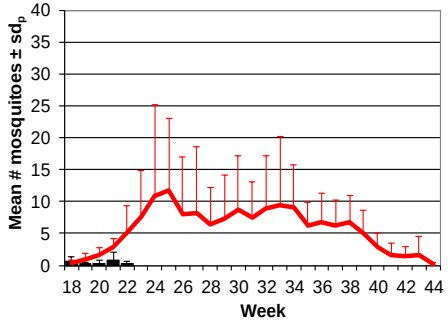


Culex Mix – Permanent Water Species
Multivoltine *Culex/Anopheles* (*Cx. pipiens* Type)

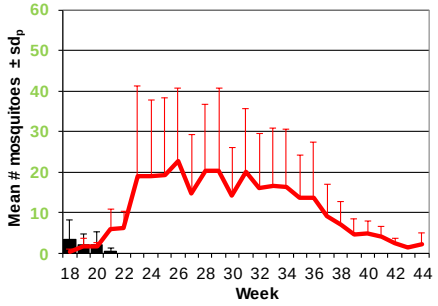
Agricultural



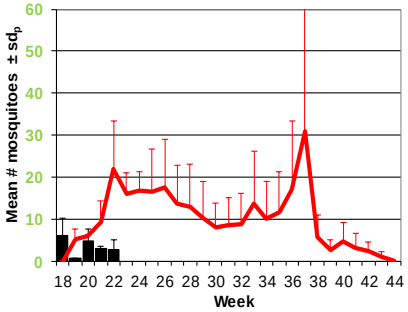
Coastal



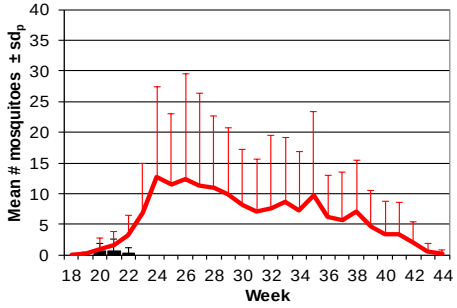
Delaware Bayshore



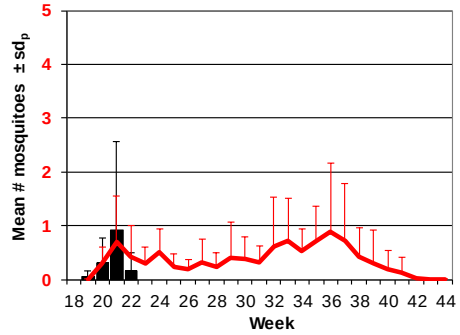
Delaware River Basin



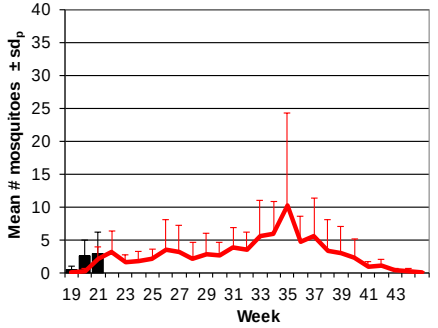
New York Metro



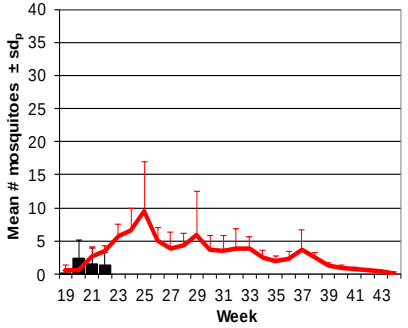
North Central Rural



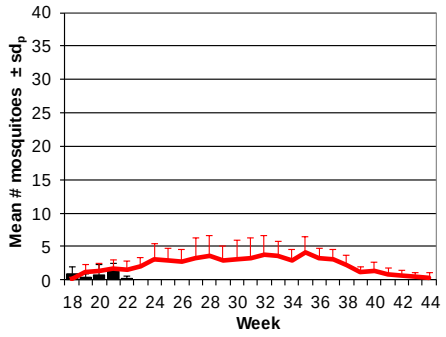
Northwestern Rural



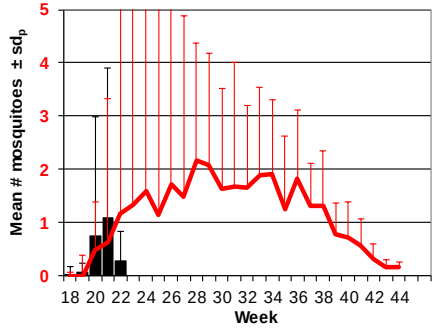
Philadelphia Metro



Pinelands



Suburban Corridor

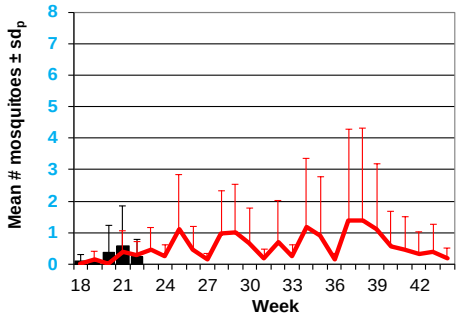


Comments

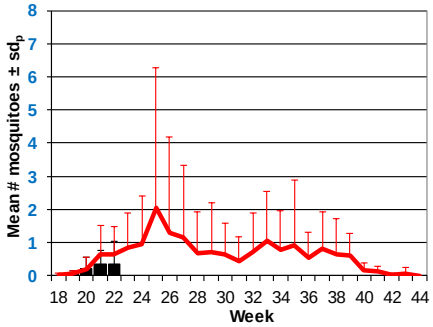
Culex Mix is composed of *Culex pipiens, Cx. restuans* and *Cx. salinarius*. These three species (especially *pipiens* and *restuans*) are often difficult to tell apart after encountering the damaging blades of the New Jersey light trap. *Culex* Mix populations *Culex* Mix populations were under or near historical values throughout most of the state. Some data is expected to come into the system, which should increase population values in underreported areas.

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

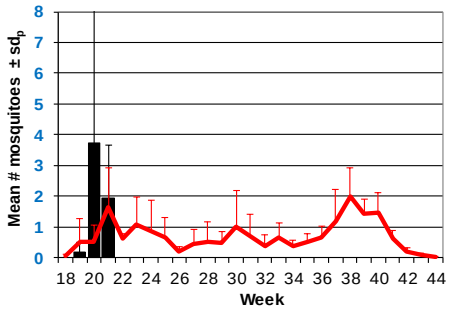
Agricultural



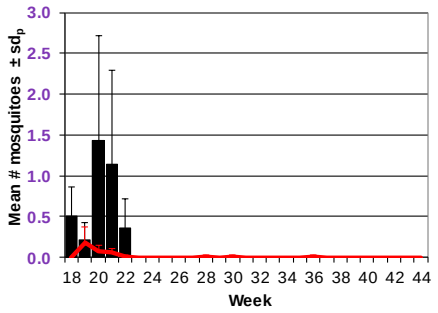
Coastal



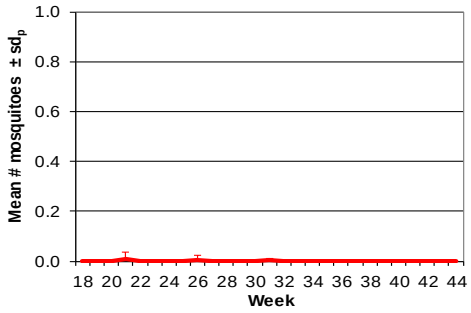
Delaware Bayshore



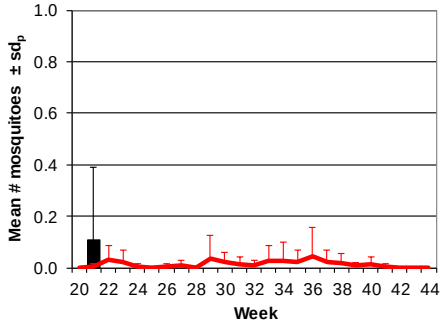
Delaware River Basin



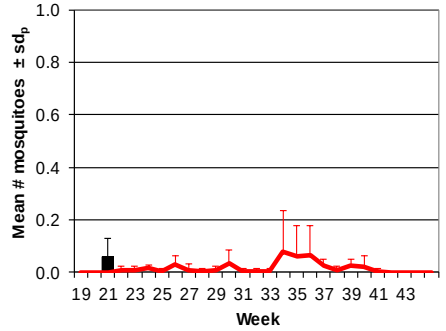
New York Metro



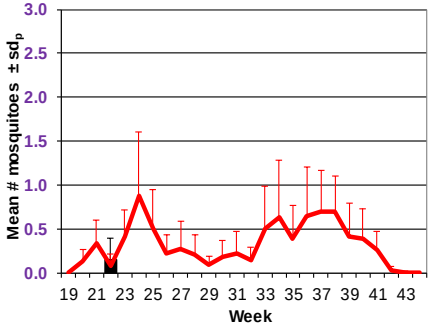
North Central Rural



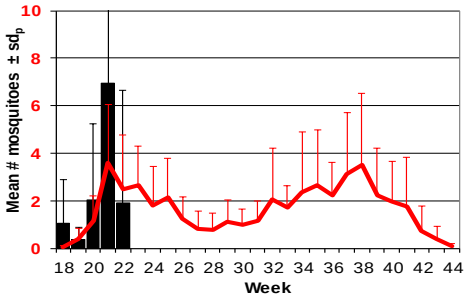
Northwestern Rural



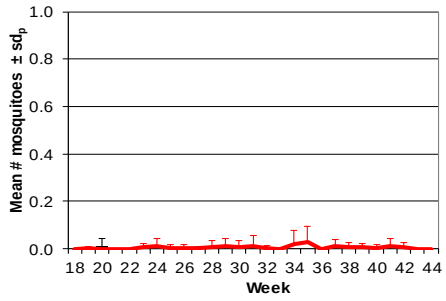
Philadelphia Metro



Pinelands



Suburban Corridor



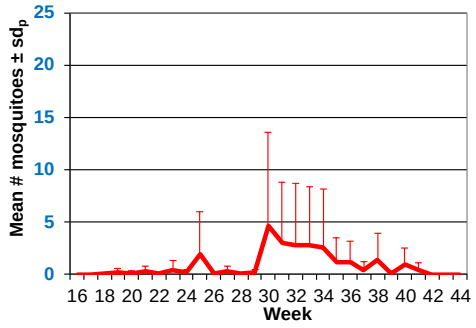
Comments

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 later. Noteworthy numbers continue to be seen in the Delaware River Basin. Pinelands populations also appear robust, suggesting that monitoring this species is encouraged. EEE has not yet been reported in New Jersey.

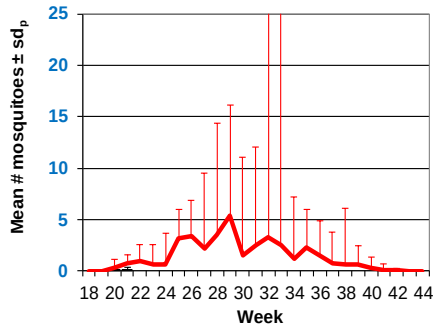
EEE activity has been significant in Florida. All horse owners should make sure their horses are up to date on their EEE/WNV vaccination schedules: **http://www.aaep.org/custdocs/adultvaccinationchart.pdf**

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

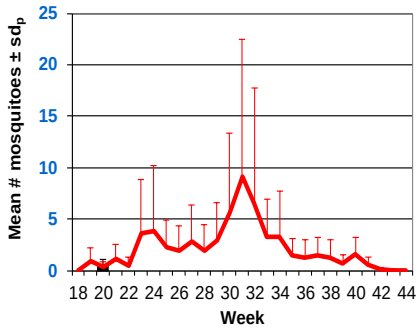
Agricultural



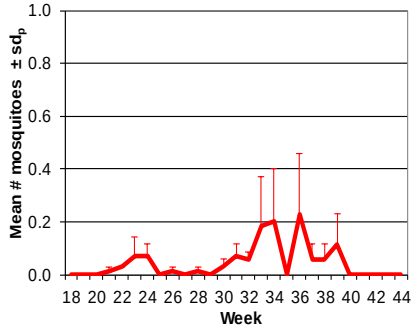
Coastal



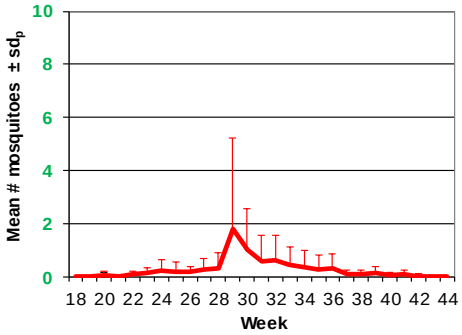
Delaware Bayshore



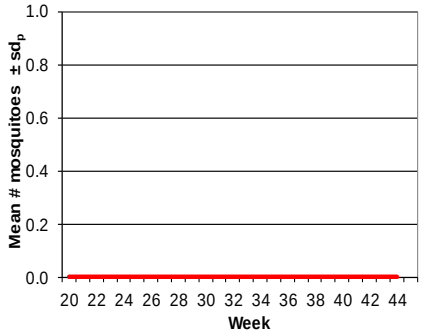
Delaware River Basin



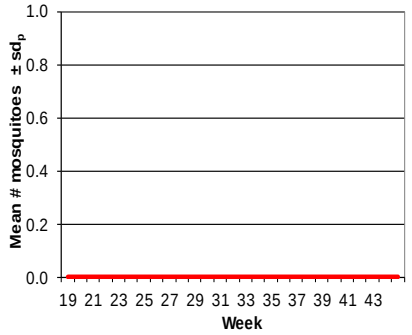
New York Metro



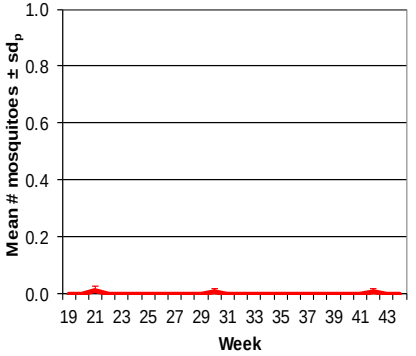
North Central Rural



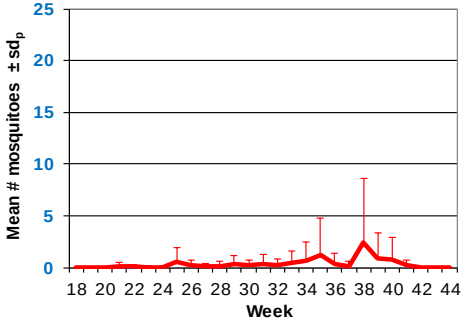
Northwestern Rural



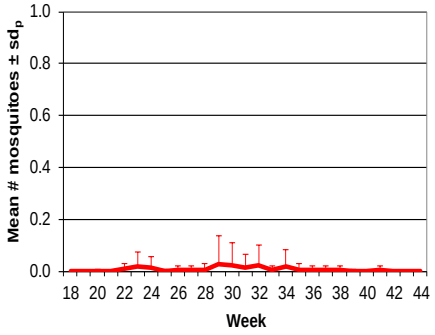
Philadelphia Metro



Pinelands



Suburban Corridor



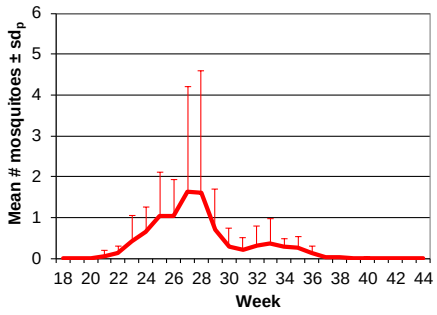
Comments

Aedes sollicitans is a salt floodwater species and responds to both lunar tidal patterns as well as rainfall. Despite low numbers seen thus far for this species, recent rainfall, along with a recent full moon suggests that the next emergence could be significant. Some delays in reporting data may also be contributing to the apparent lack of population numbers.

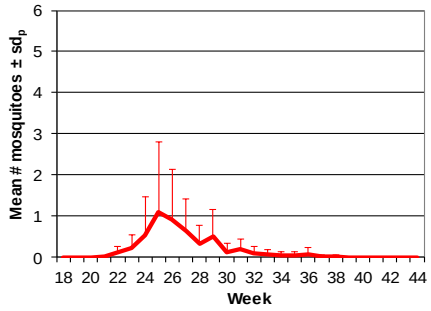
Next full moon on 24 June.

Coquillettidia perturbans
Monotypic (*Coquillettidia perturbans* Type)

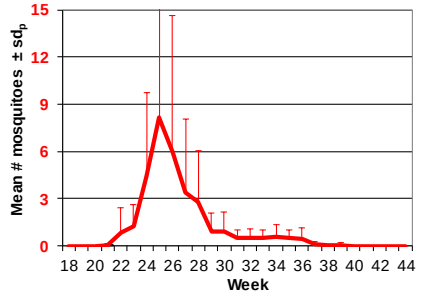
Agricultural



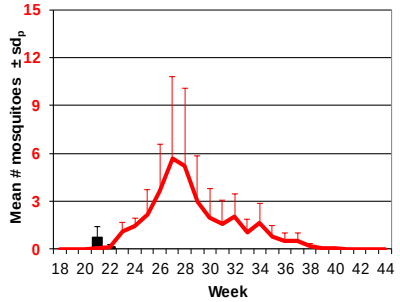
Coastal



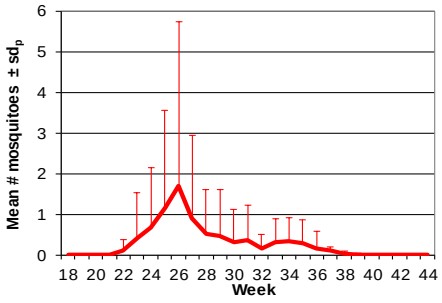
Delaware Bayshore



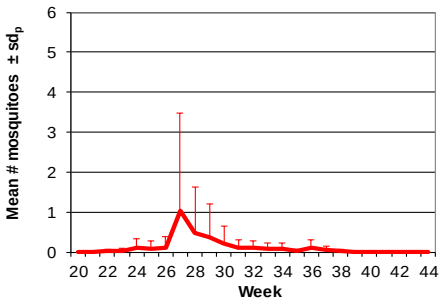
Delaware River Basin



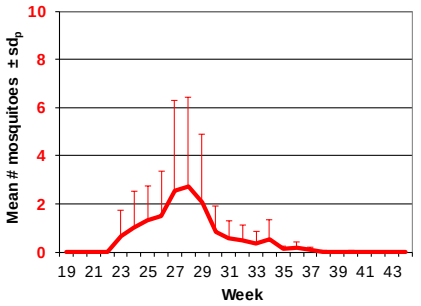
New York Metro



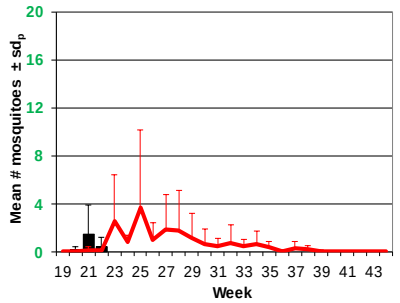
North Central Rural



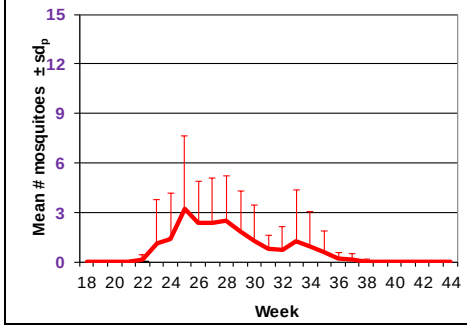
Northwestern Rural



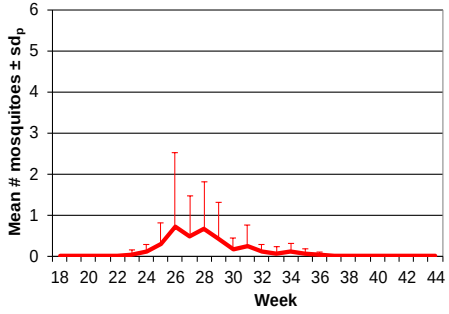
Philadelphia Metro



Pinelands



Suburban Corridor



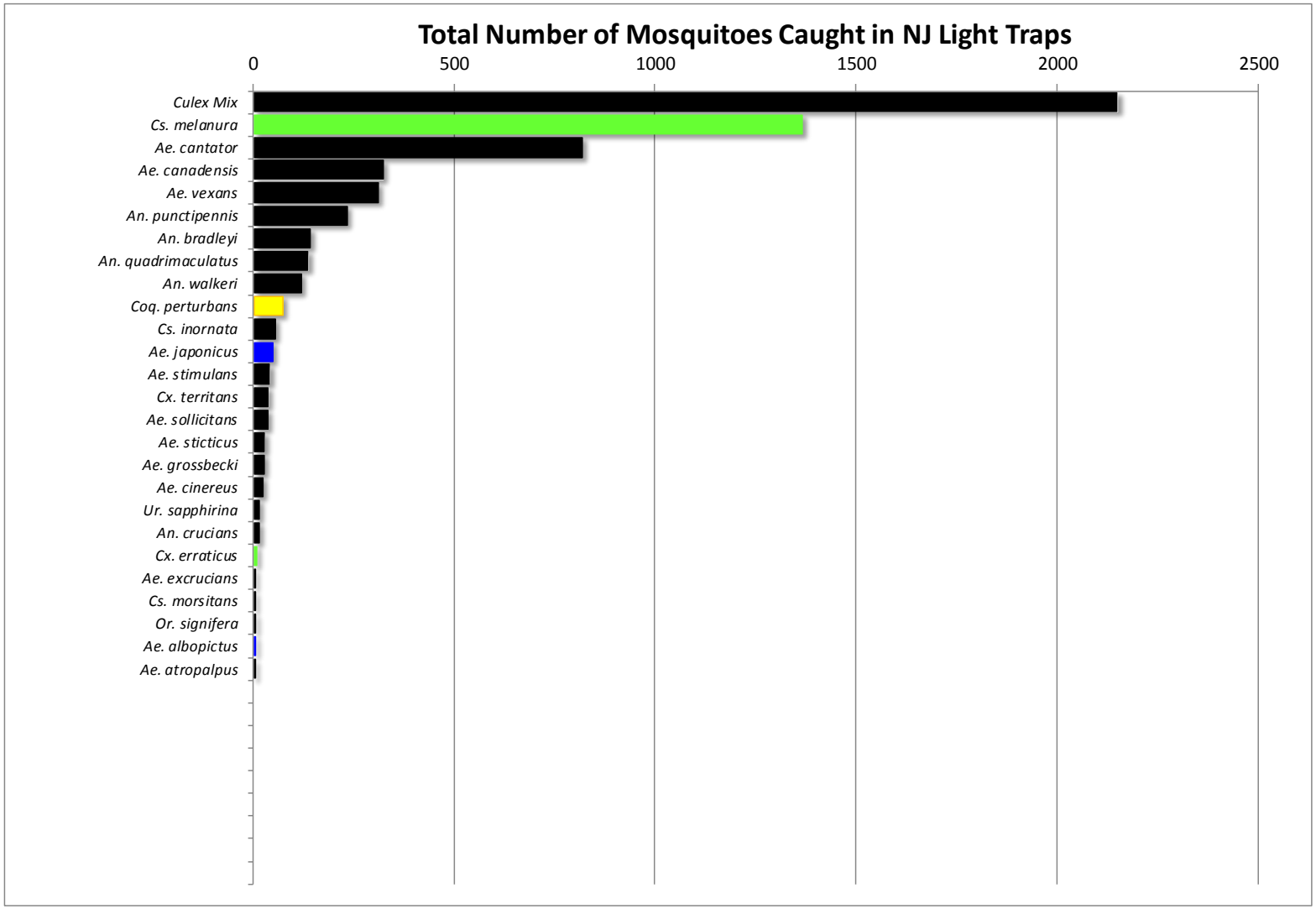
Comments

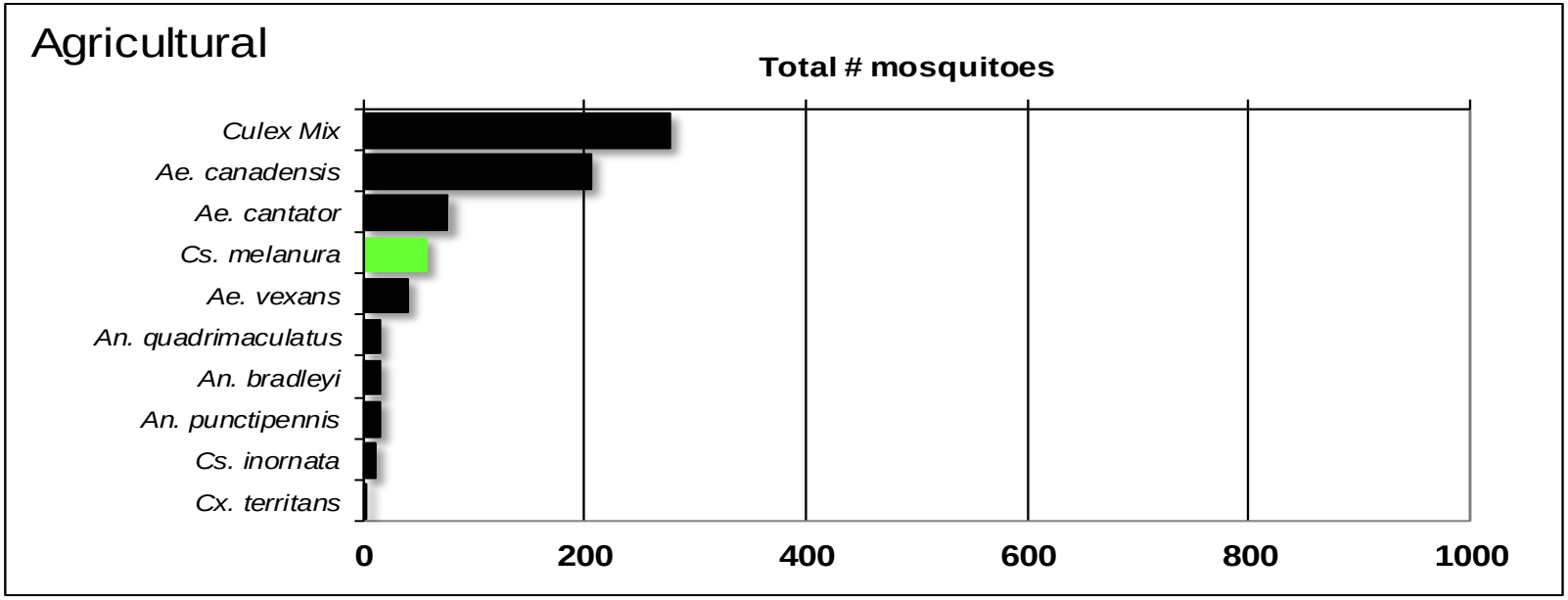
Coquillettidia perturbans populations are located in cattail swamps and other wetlands with emergent vegetation, often making control of their numbers dependent on controlling water depth. This is primarily a mid-season species yet significant numbers have been reported in the Delaware River Basin and the Philadelphia Metropolitan regions. This species is likely an inland vector of EEE, and should always be monitored in areas of potential EEE transmission.

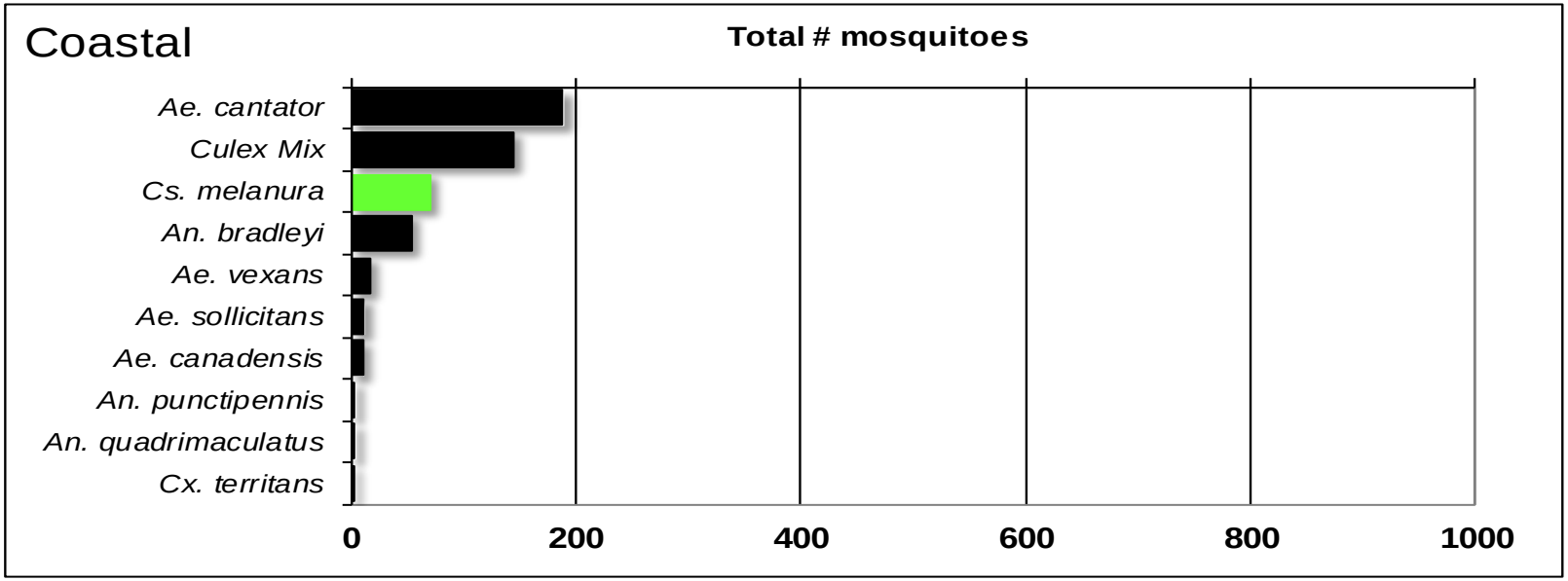
WNV *EEE*

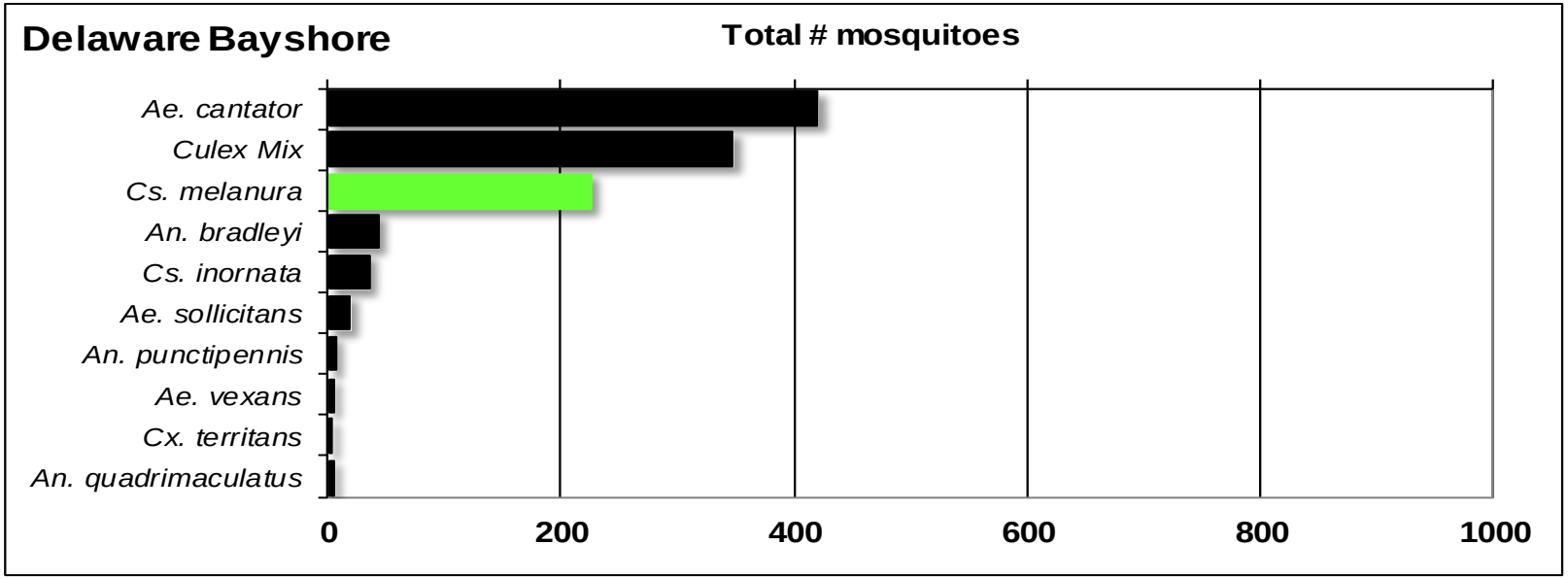
Top Ten Mosquito Species/Region - *Ae. albopictus,* *Ae. japonicus (invasives);* *Cs. melanura or Cx. erraticus* *Coq. perturbans*

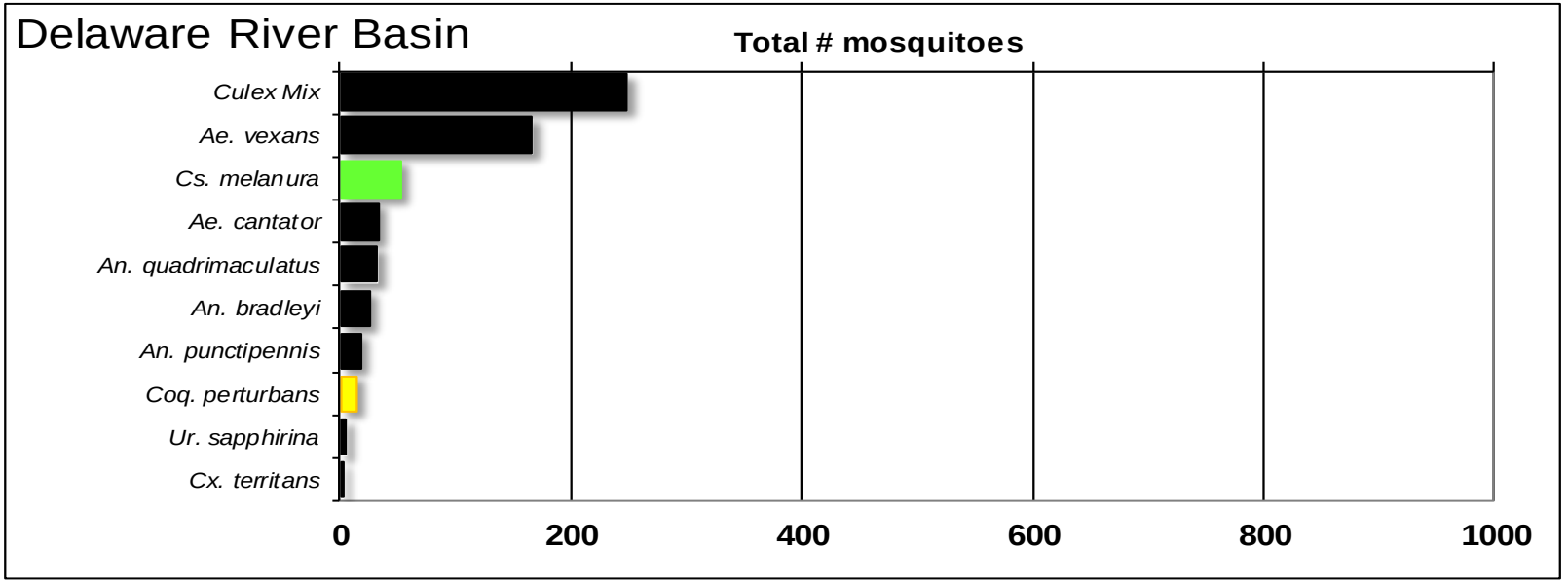
Note: In early season when fewer species are caught, graphs may show less than ten species/region or 25 statewide.

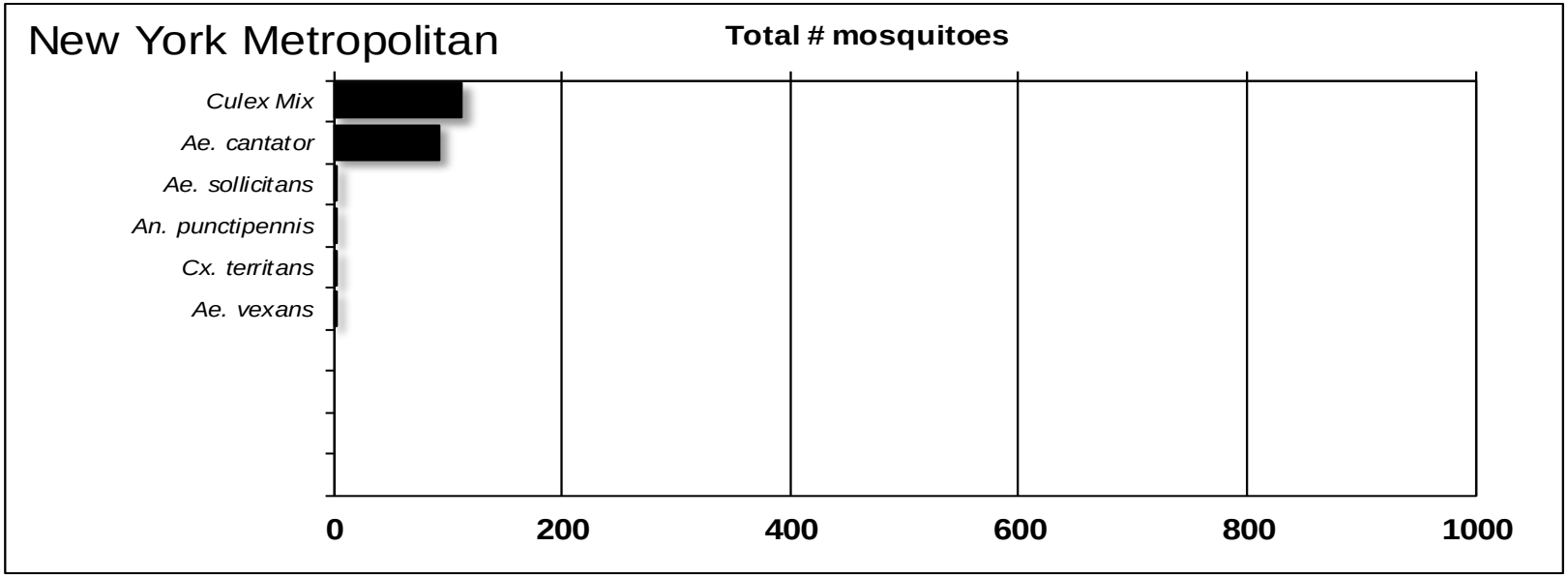


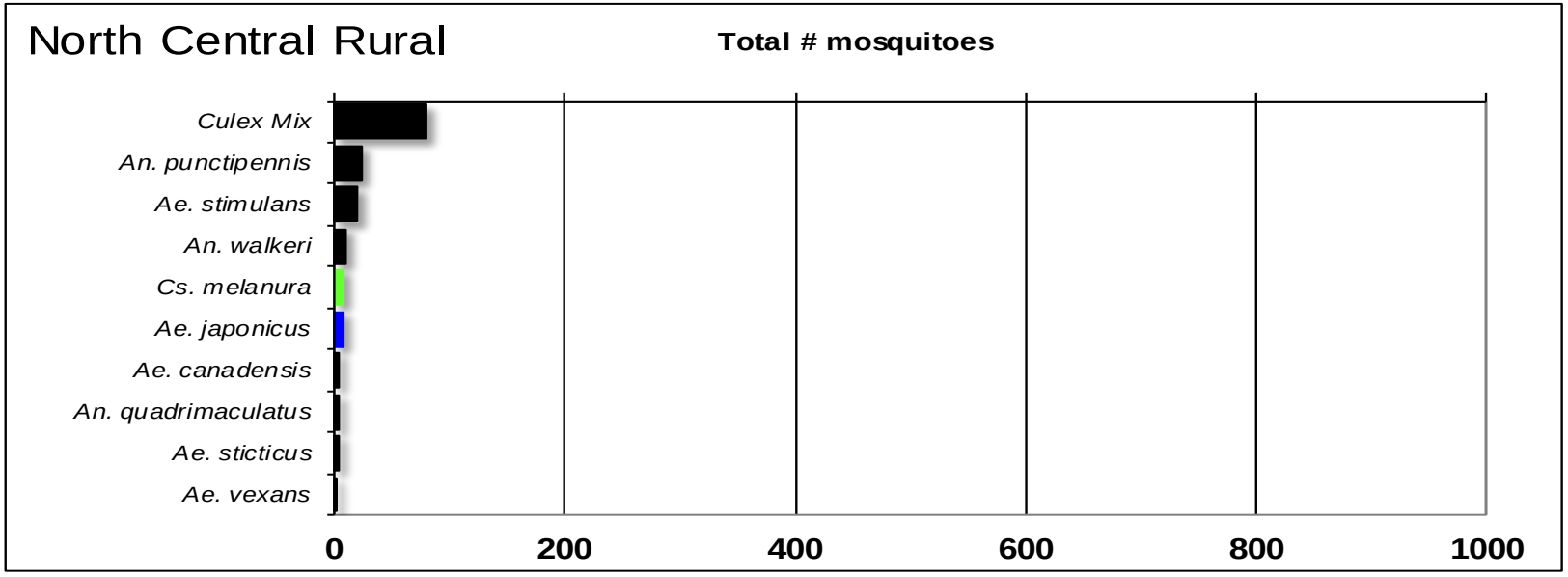

Agricultural
Total # mosquitoes
Culex Mix
Ae. canadensis
Ae. cantator
Cs. melanura
Ae. vexans
An. quadrimaculatus
An. bradleyi
An. punctipennis
Cs. inornata
Cx. territans
0
200
400
600
800
1000

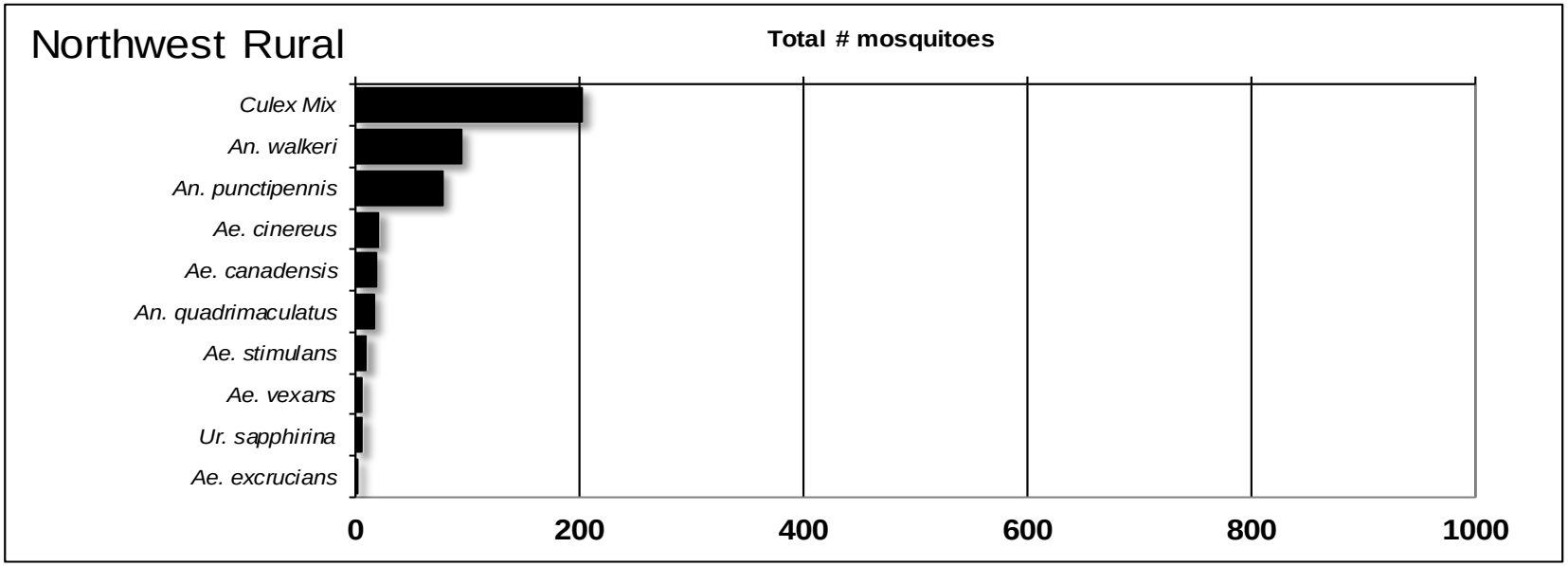

Coastal
Total # mosquitoes
Ae. cantator
Culex Mix
Cs. melanura
An. bradleyi
Ae. vexans
Ae. sollicitans
Ae. canadensis
An. punctipennis
An. quadrimaculatus
Cx. territans
0
200
400
600
800
1000

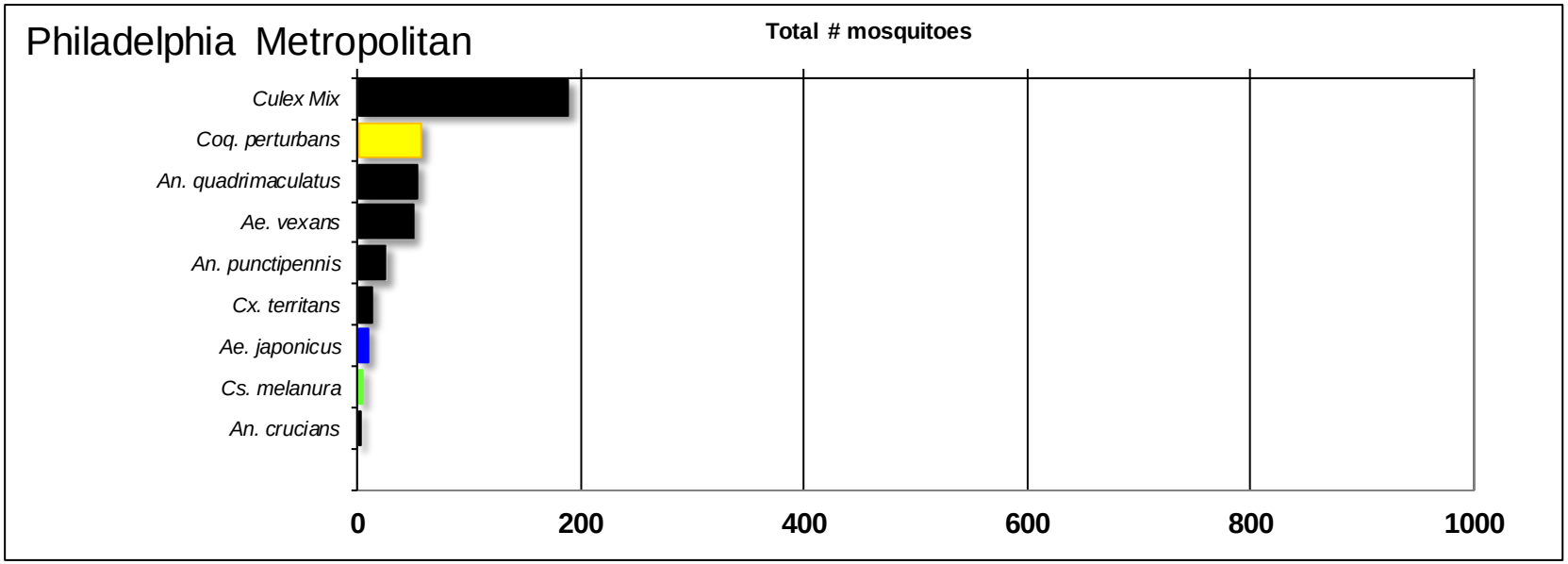

Delaware Bayshore
Total # mosquitoes
Ae. cantator
Culex Mix
Cs. melanura
An. bradleyi
Cs. inornata
Ae. sollicitans
An. punctipennis
Ae. vexans
Cx. territans
An. quadrimaculatus
0
200
400
600
800
1000


Delaware River Basin
Total # mosquitoes
Culex Mix
Ae. vexans
Cs. melanura
Ae. cantator
An. quadrimaculatus
An. bradleyi
An. punctipennis
Coq. perturbans
Ur. sapphirina
Cx. territans
0
200
400
600
800
1000

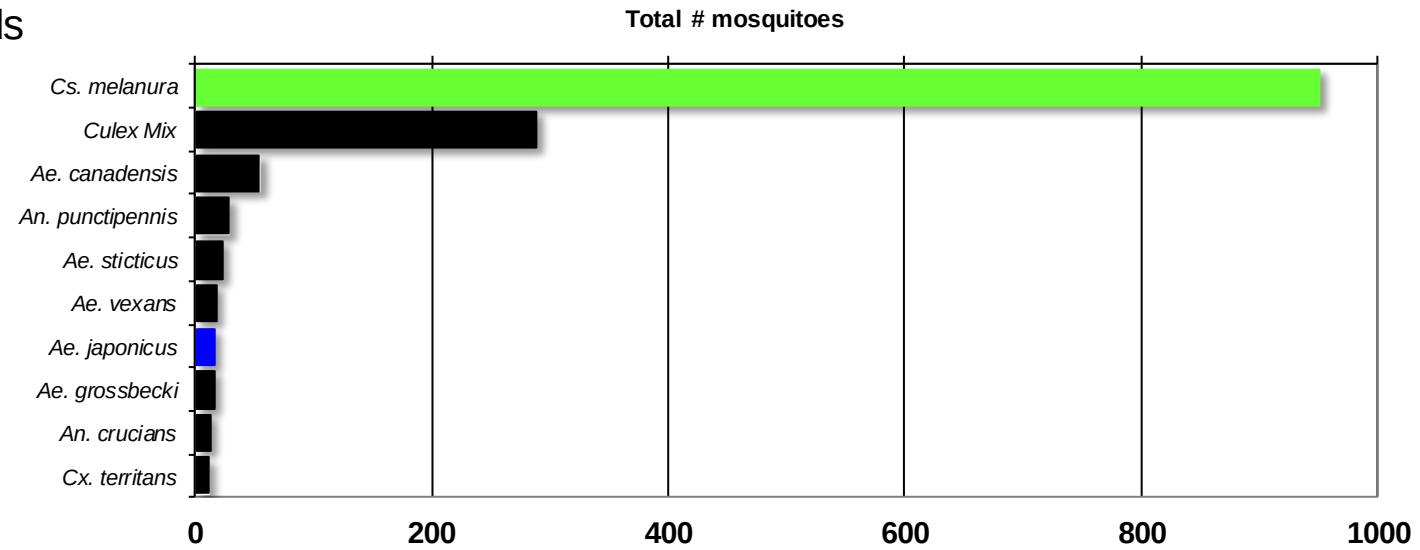

New York Metropolitan
Total # mosquitoes
Culex Mix
Ae. cantator
Ae. sollicitans
An. punctipennis
Cx. territans
Ae. vexans
0
200
400
600
800
1000


North Central Rural
Total # mosquitoes
Culex Mix
An. punctipennis
Ae. stimulans
An. walkeri
Cs. melanura
Ae. japonicus
Ae. canadensis
An. quadrimaculatus
Ae. sticticus
Ae. vexans
0
200
400
600
800
1000


Northwest Rural
Total # mosquitoes
Culex Mix
An. walkeri
An. punctipennis
Ae. cinereus
Ae. canadensis
An. quadrimaculatus
Ae. stimulans
Ae. vexans
Ur. sapphirina
Ae. excrucians
0
200
400
600
800
1000


Philadelphia Metropolitan
Total # mosquitoes
Culex Mix
Coq. perturbans
An. quadrimaculatus
Ae. vexans
An. punctipennis
Cx. territans
Ae. japonicus
Cs. melanura
An. crucians
0
200
400
600
800
1000

Pinelands



Suburban Corridor