NEW JERSEY ADULT MOSQUITO SURVEILLANCE Report

August 15 to August 21, CDC Week 33

Prepared by Lisa M. Reed and Dina Fonseca
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 33

	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	**0.67**	**13.22**	**0**	**6.19**	**23.42**	**0**	**0.19**	**0.37**	**0**	**0.07**	**2.76**	**0**
Coastal	**0.48**	**4.88**	**0**	**0.54**	**9.46**	**0**	**0.16**	**0.08**	**3**	**0.38**	**2.55**	**0**
Delaware Bayshore	**0.07**	**1.99**	**0**	**5.94**	**16.64**	**0**	**0.00**	**0.50**	**0**	**1.00**	**3.27**	**0**
Delaware River Basin	**36.93**	**73.29**	**0**	**14.64**	**13.63**	**1**	**1.36**	**1.06**	**1**	**0.00**	**0.19**	**0**
New York Metro	**0.07**	**3.01**	**0**	**1.16**	**8.66**	**0**	**0.27**	**0.33**	**0**	**0.04**	**0.43**	**0**
North Central Rural	**0.59**	**0.66**	**0**	**0.57**	**0.72**	**0**	**0.41**	**0.09**	**4**	**0.00**	**0.00**	**0**
Northwest Rural	**5.20**	**11.52**	**0**	**3.31**	**5.50**	**0**	**0.52**	**0.36**	**1**	**0.00**	**0.00**	**0**
Philadelphia Metro	**0.00**	**12.94**	**0**	**0.00**	**3.81**	**0**	**0.00**	**0.42**	**0**	**0.00**	**0.00**	**0**
Pinelands	**0.64**	**2.91**	**0**	**0.61**	**3.59**	**0**	**0.18**	**1.26**	**0**	**0.00**	**0.41**	**0**
Suburban Corridor	**0.44**	**1.96**	**0**	**0.68**	**1.89**	**0**	**0.01**	**0.07**	**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 Most appropriately given. nd=no data reported.

State Summary: Most mosquito populations remained at or below the 5-year running mean. The exception was primarily *Coquillettidia perturbans*, where declining numbers of this mid-season species were significantly above average (in the North Central Rural or Coastal regions), or mildly elevated (Delaware River Basin or Northwestern Rural regions).

Climate Factors

Average High Temperature	Average Low Temperature	Total Precipitation
NA	NA	NA

**note* Climate maps unavailable until mid-September*. The three figures show the interpolation of average maximum (°F) and minimum temperature (°F) and total precipitation (inches) for 14 days prior to 15 August 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.
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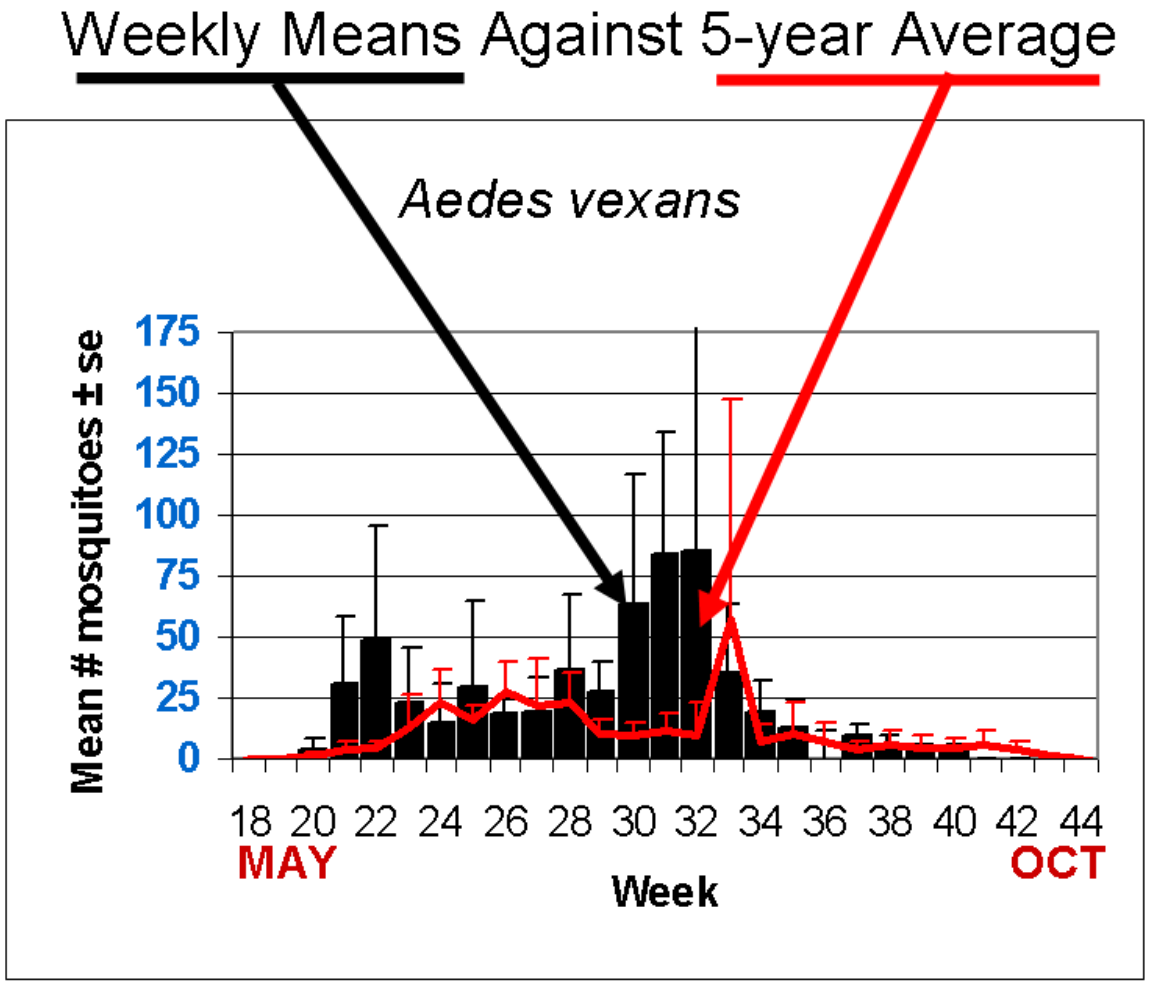
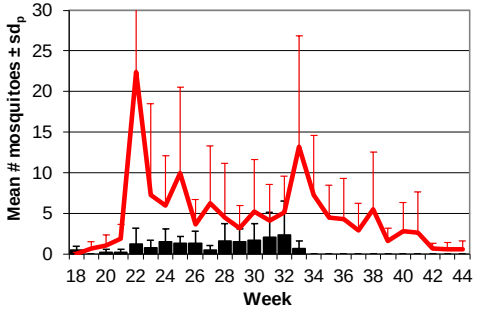
The Species Graphs: The species graph pages include a graph with two plots for each of the ten regions defined on the first page (Agricultural, Coastal, Delaware Bayshore, Delaware River, New York Metro, North-Central, Northwestern, Philadelphia Metro, Pinelands, and Suburban Corridor). Below is an example 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, Cumberland, Hudson, Mercer, Middlesex, Morris, Passaic, Salem, Somerset, Sussex, and Union counties. Data for the previous week are from Atlantic, Burlington, Cape May, Cumberland, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Salem, Somerset, Sussex, Union, and Warren counties.

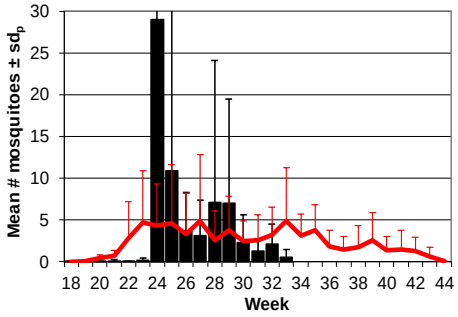


Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

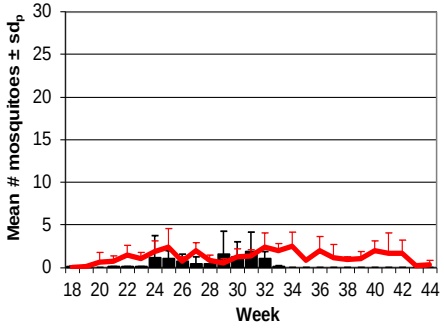
Agricultural



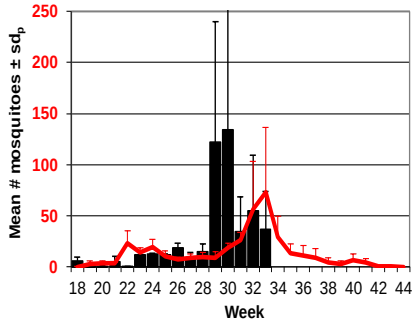
Coastal



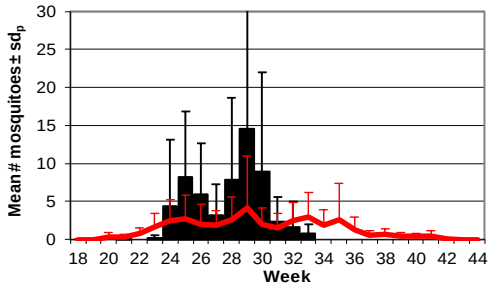
Delaware Bayshore



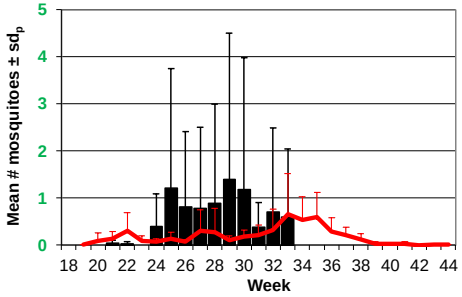
Delaware River Basin



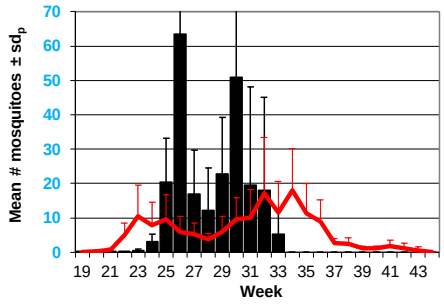
New York Metro



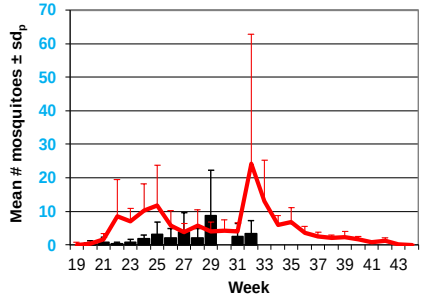
North Central Rural



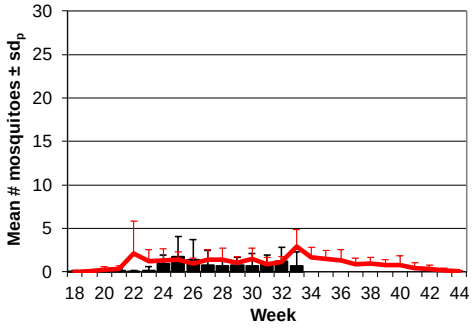
Northwestern Rural



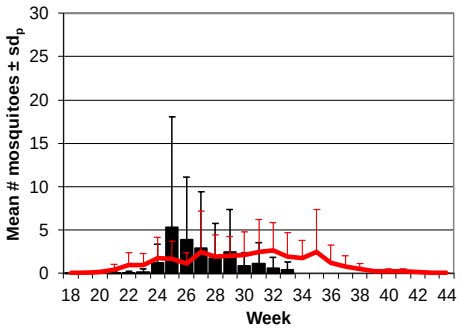
Philadelphia Metro



Pinelands



Suburban Corridor



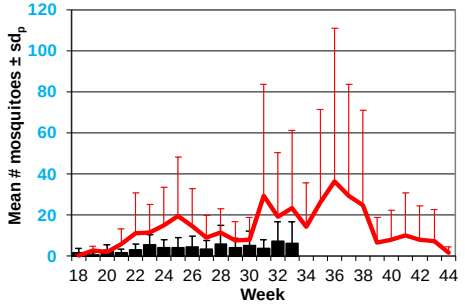
Comments

Aedes vexans is the model for fresh floodwater species. With abundant precipitation, this species can emerge in very significant numbers. *Aedes vexans* populations were either at or below historical values throughout the state.

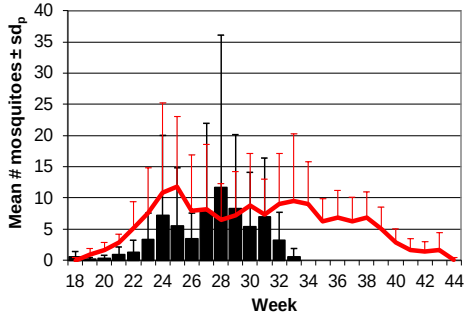
https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?NJ

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

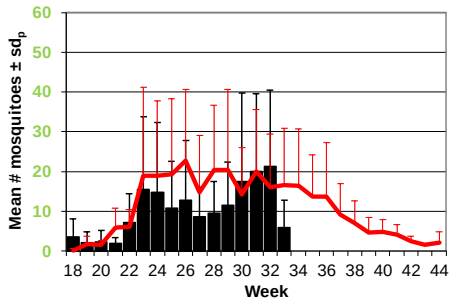
Agricultural



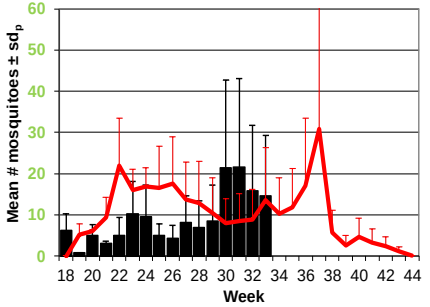
Coastal



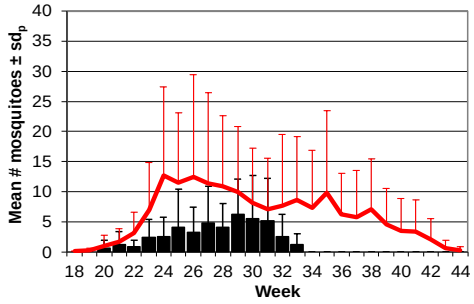
Delaware Bayshore



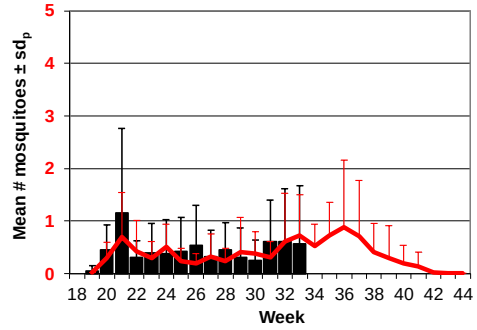
Delaware River Basin



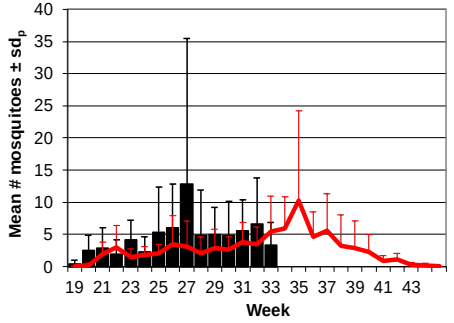
New York Metro



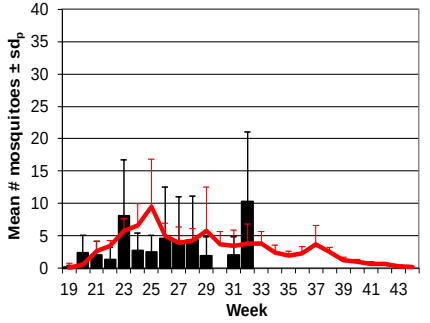
North Central Rural



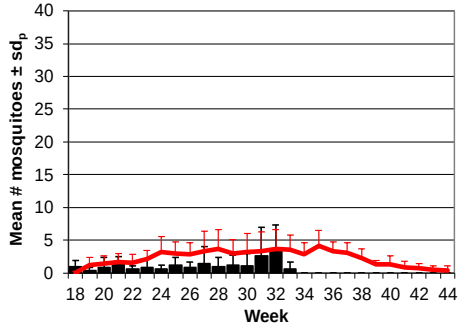
Northwestern Rural



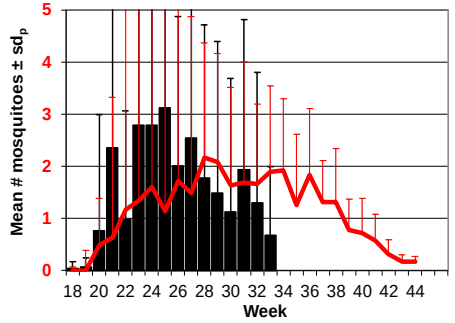
Philadelphia Metro



Pinelands



Suburban Corridor



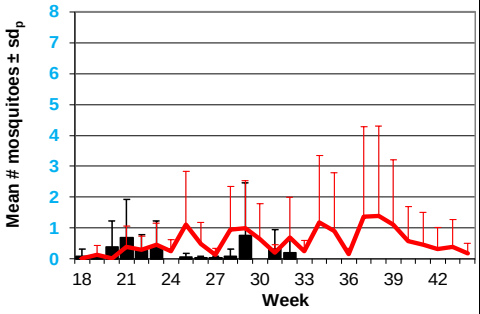
Comments

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 in the Delaware River Basin population were mildly above average with all other populations close to the average or well below.

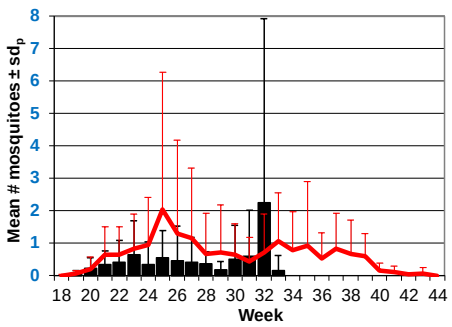
WNV activity has been active throughout the state, with most positive pools in *Culex* species.

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

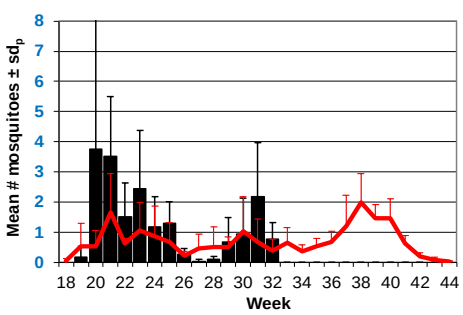
Agricultural



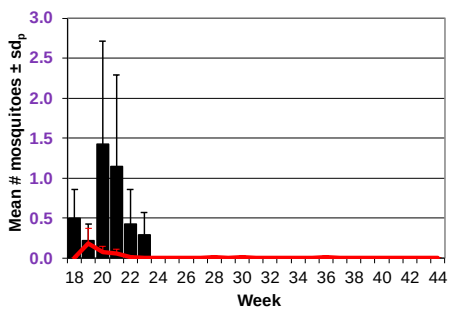
Coastal



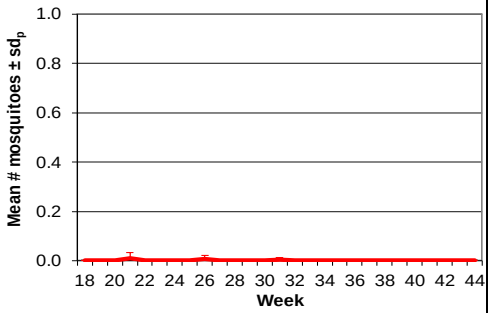
Delaware Bayshore



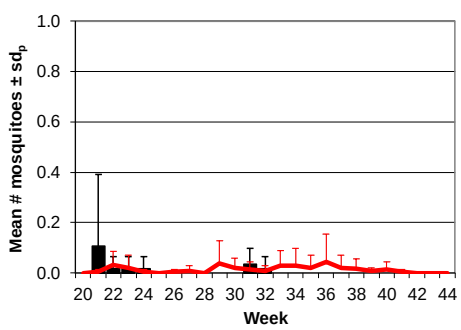
Delaware River Basin



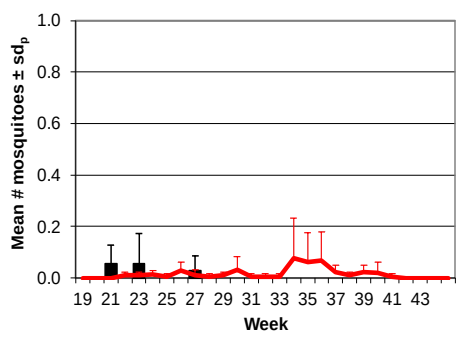
New York Metro



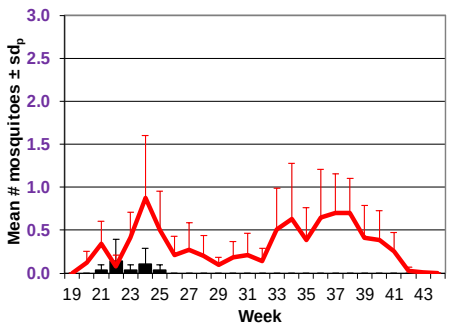
North Central Rural



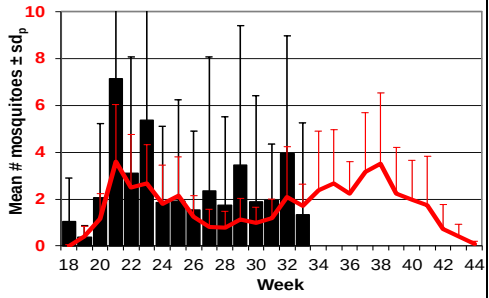
Northwestern Rural



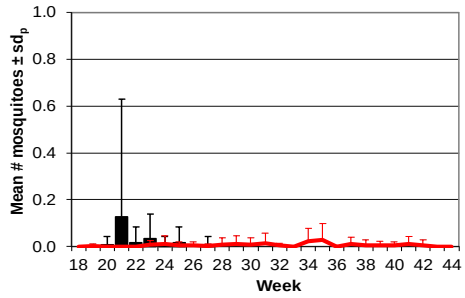
Philadelphia Metro



Pinelands



Suburban Corridor



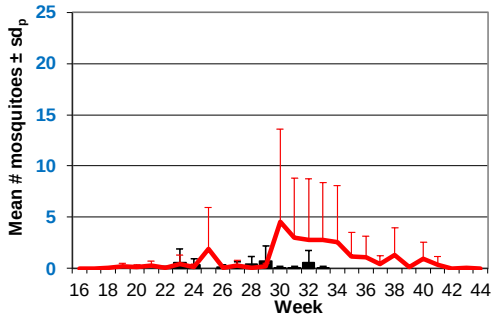
Comments

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. Populations remain close to historic averages. EEE activity continues to be detected and as such, due diligence in monitoring this species as well as *Coquillettidia perturbans* is needed.

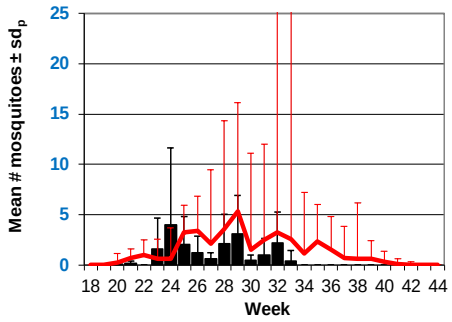
All horse owners should make sure their horses are up to date on their EEE/WNV vaccination schedules:
http://www.aaep.org/custdocs/adultvaccinationchart.pdf

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

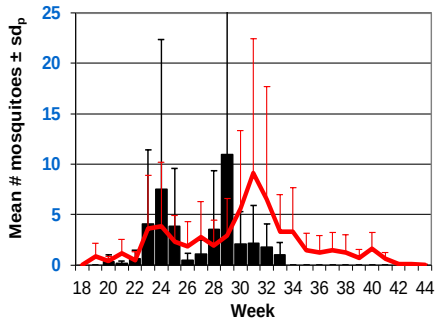
Agricultural



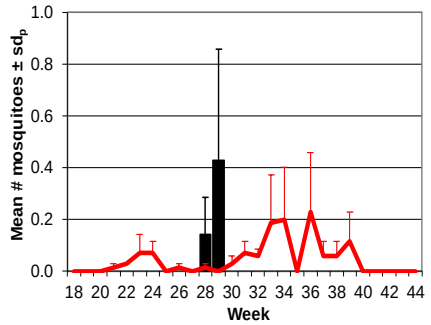
Coastal



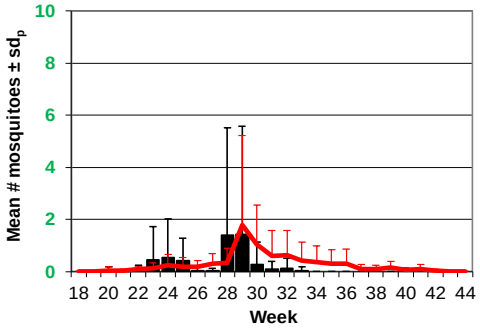
Delaware Bayshore



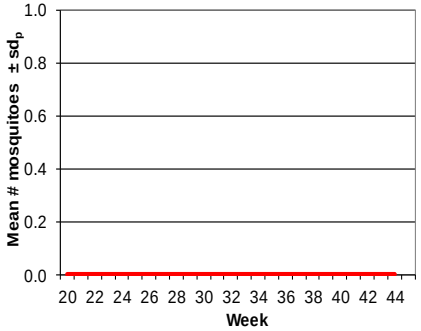
Delaware River Basin



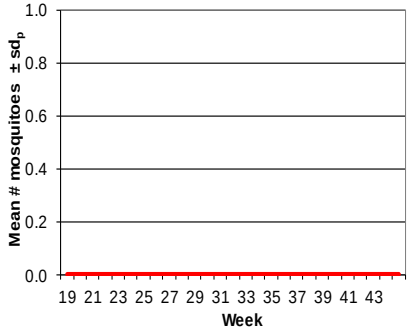
New York Metro



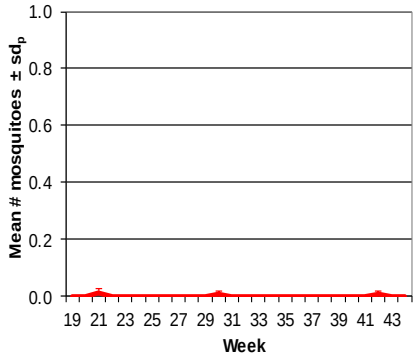
North Central Rural



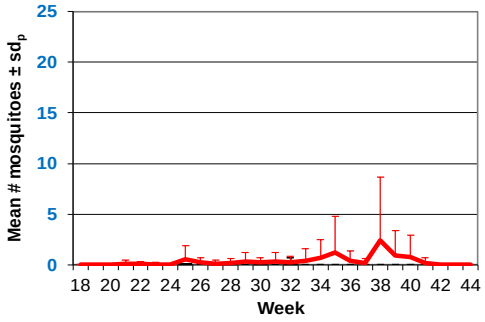
Northwestern Rural



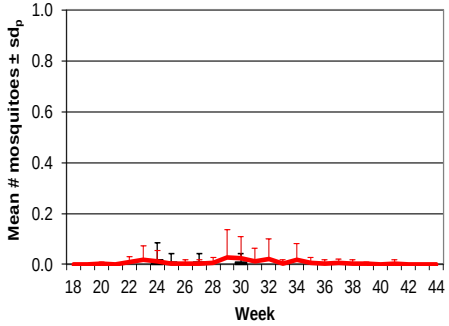
Philadelphia Metro



Pinelands



Suburban Corridor



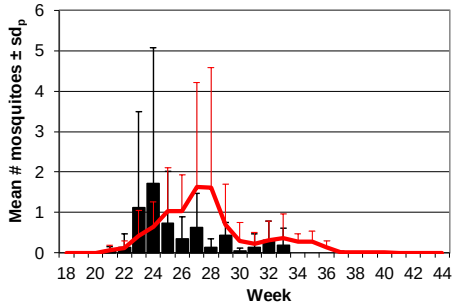
Comments

Aedes sollicitans is a salt floodwater species and responds to both lunar tidal patterns as well as rainfall. As with the previous two weeks, no populations were above historical values.

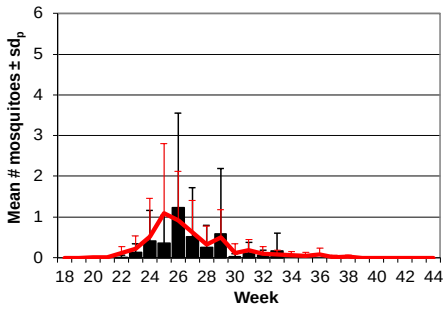
Next full moon on 21 September.
Salt line on the Delaware River is within expected values along the Basin region:
https://www.nj.gov/drbc/programs/flow/salt-front.html

Coquillettidia perturbans
Monotypic (*Coquillettidia perturbans* Type)

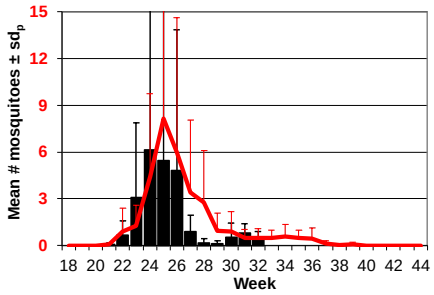
Agricultural



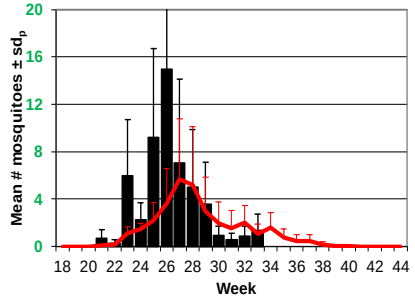
Coastal



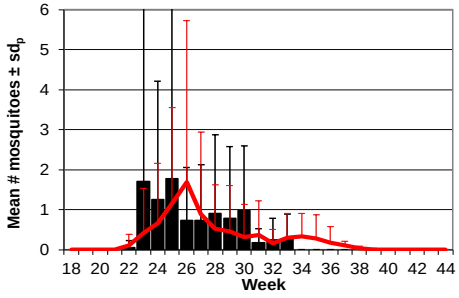
Delaware Bayshore



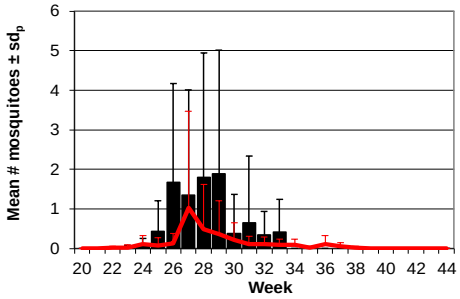
Delaware River Basin



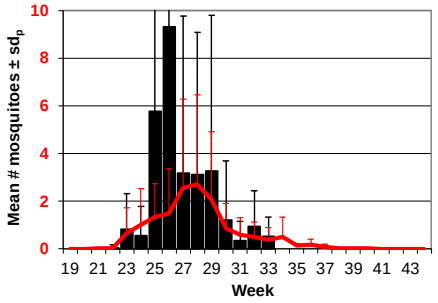
New York Metro



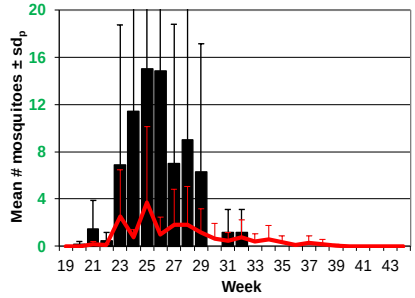
North Central Rural



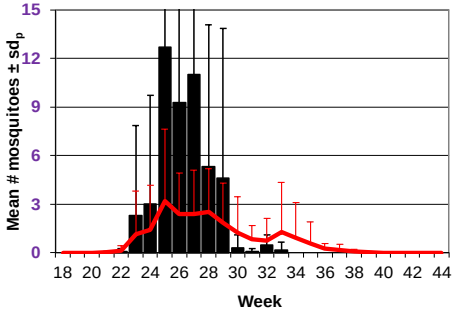
Northwestern Rural



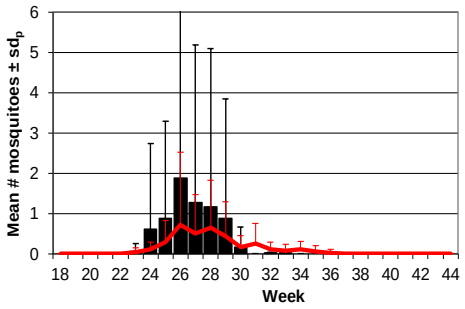
Philadelphia Metro



Pinelands



Suburban Corridor



Comments

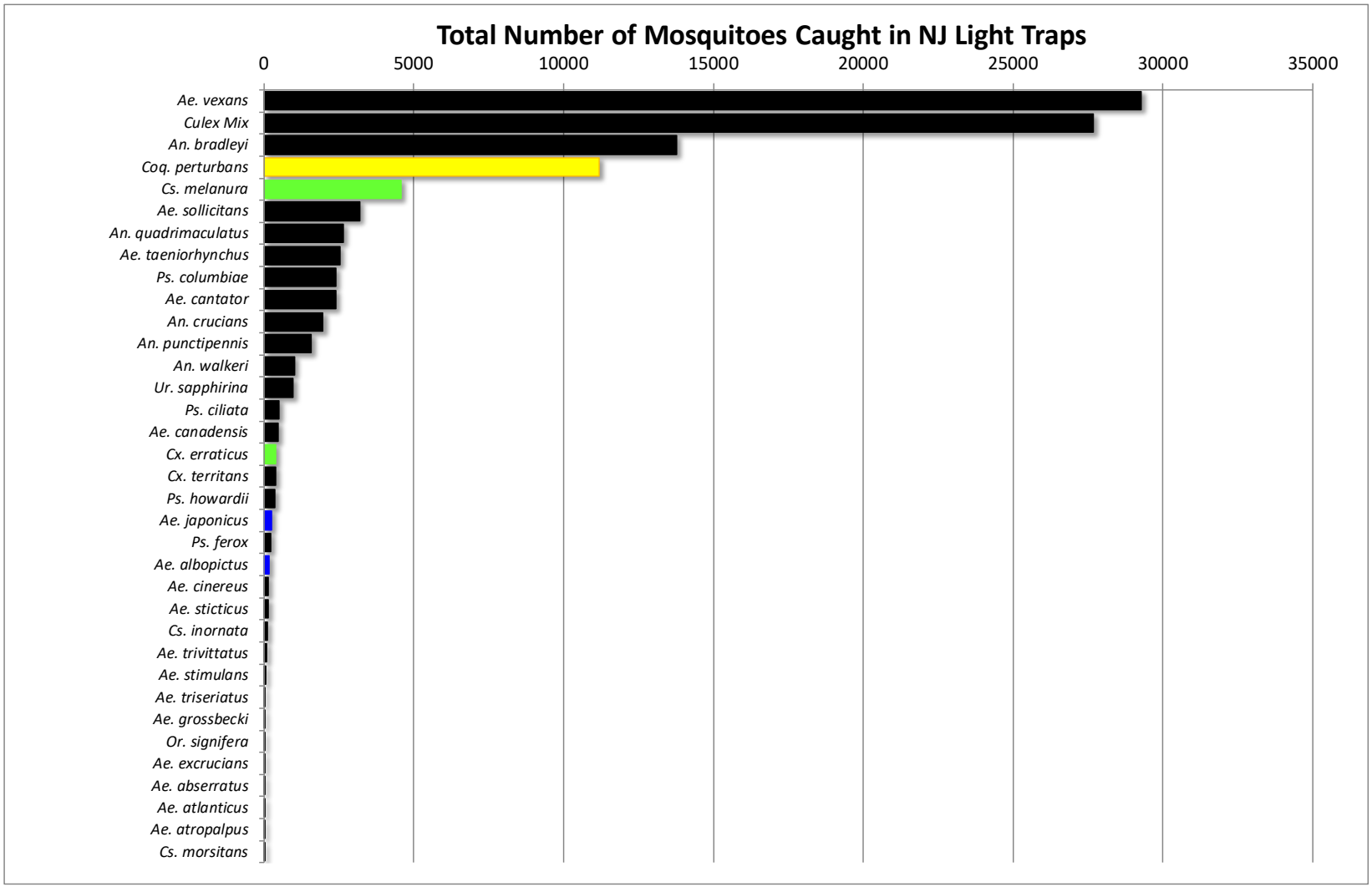
Coquillettidia perturbans populations are located in cattail swamps and other wetlands with emergent vegetation, often making control of their numbers dependent on controlling water depth. Populations of *Coquillettidia perturbans* are showing declining numbers, but were significantly above average (in the North Central Rural or Coastal regions), or mildly elevated (Delaware River Basin or Northwestern Rural regions)..

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*).

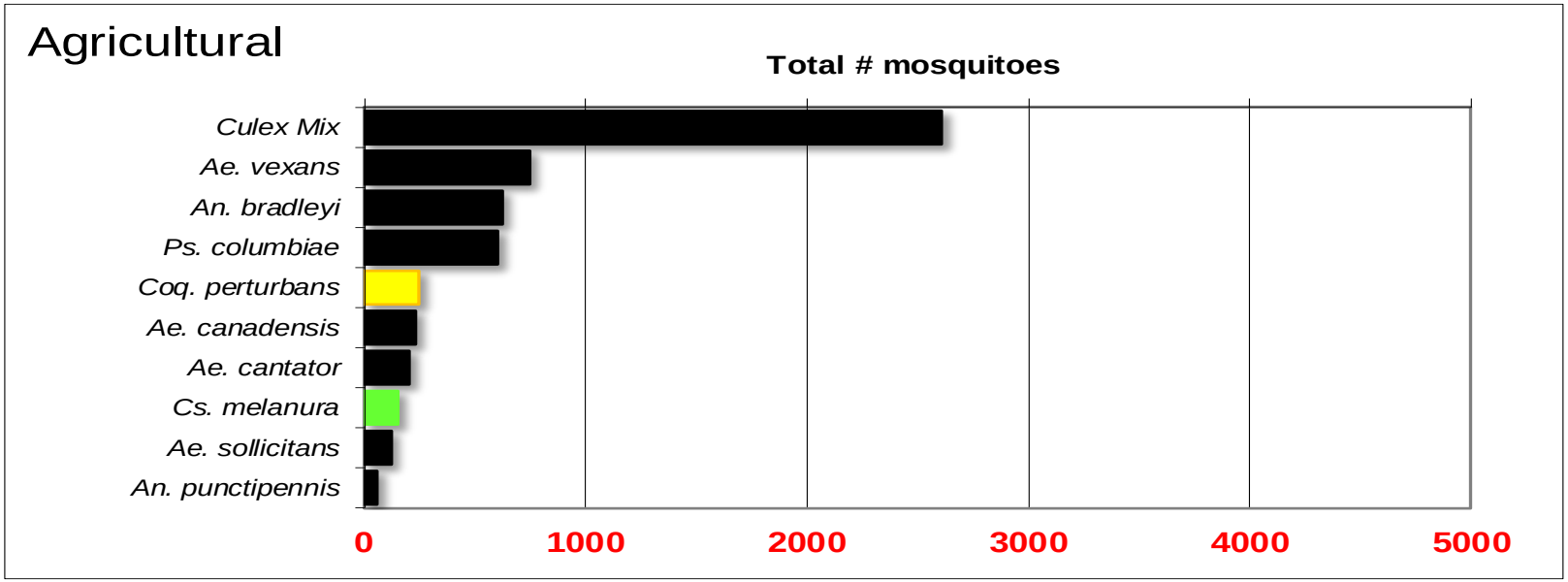
WNV *EEE*

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

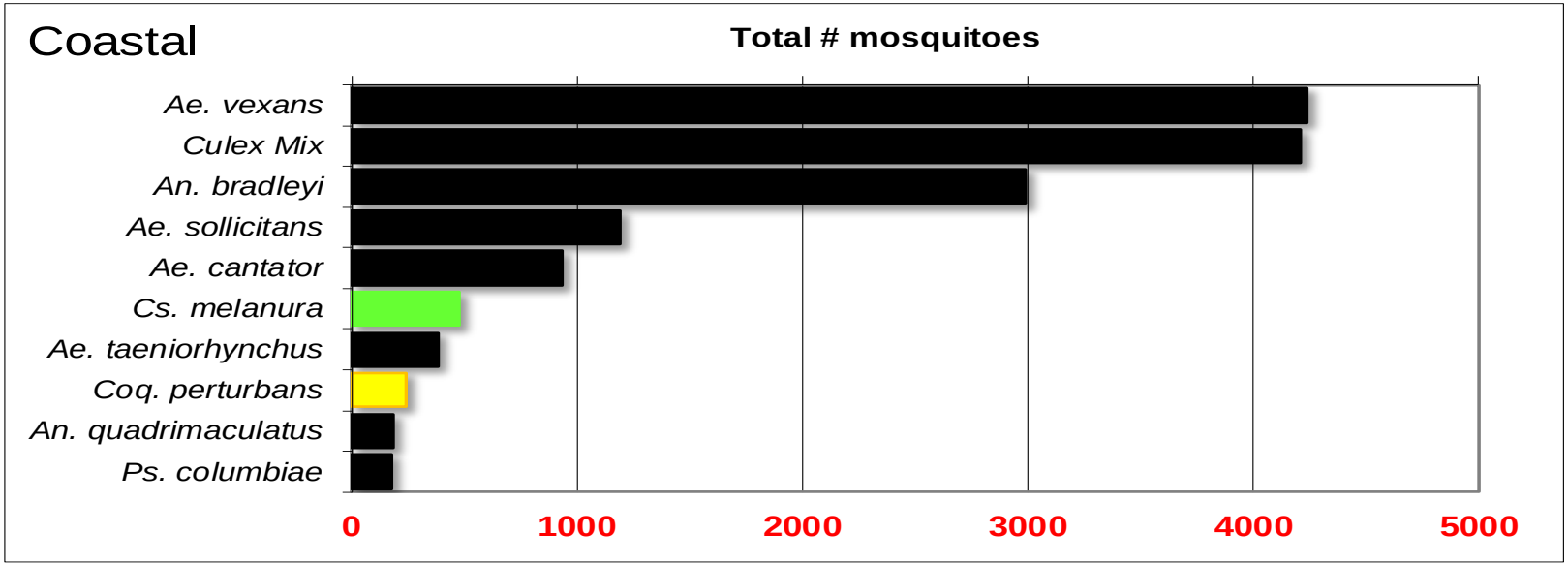
Note: In early season when fewer species are caught, graphs may show less than ten species/region or 25 statewide.

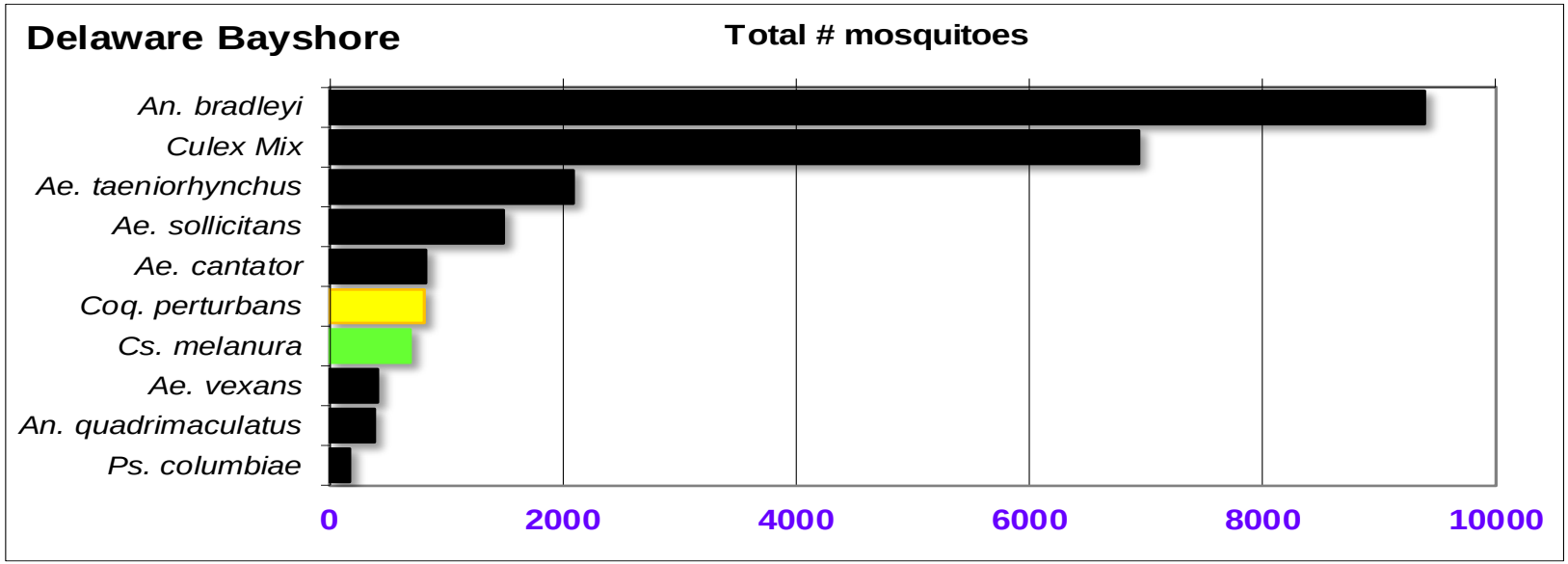


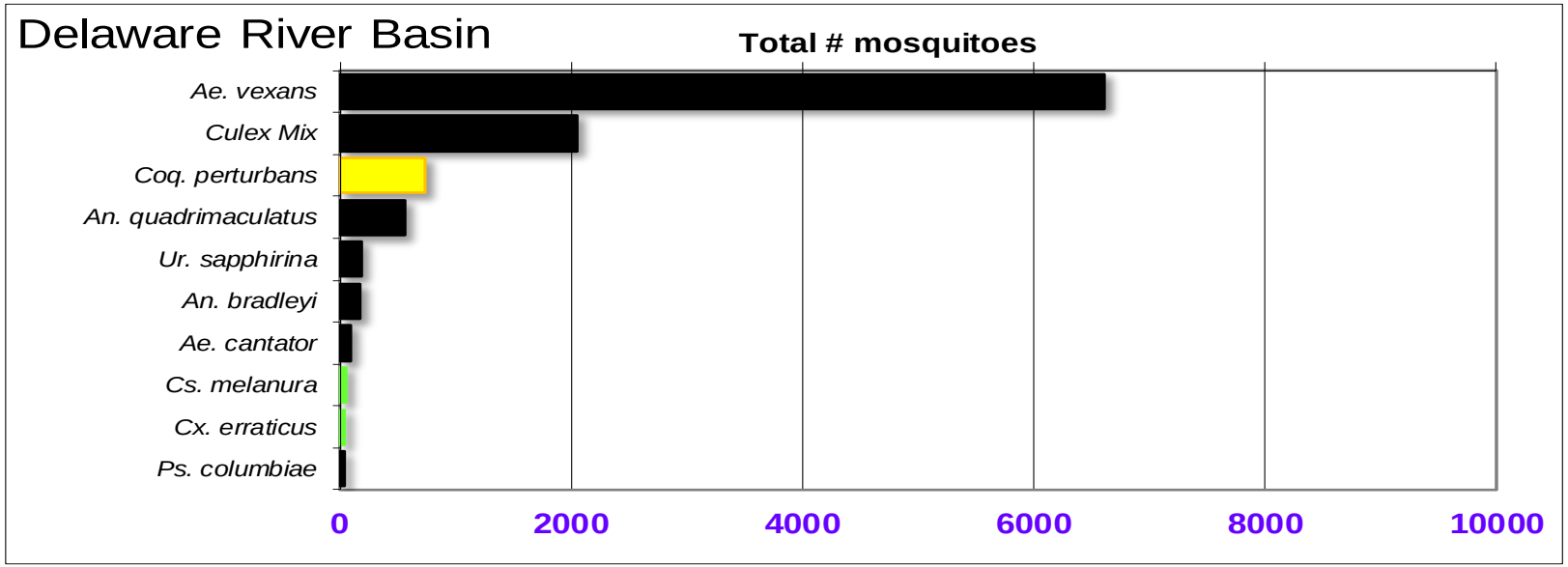
Agricultural

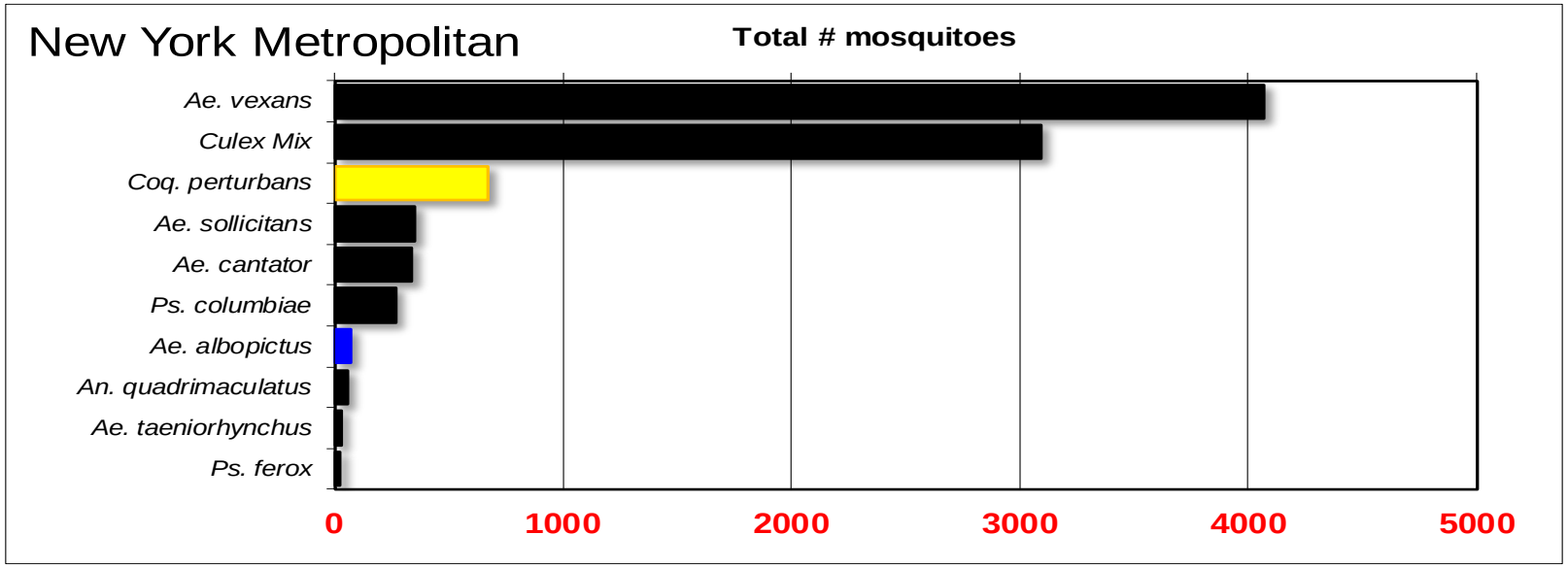


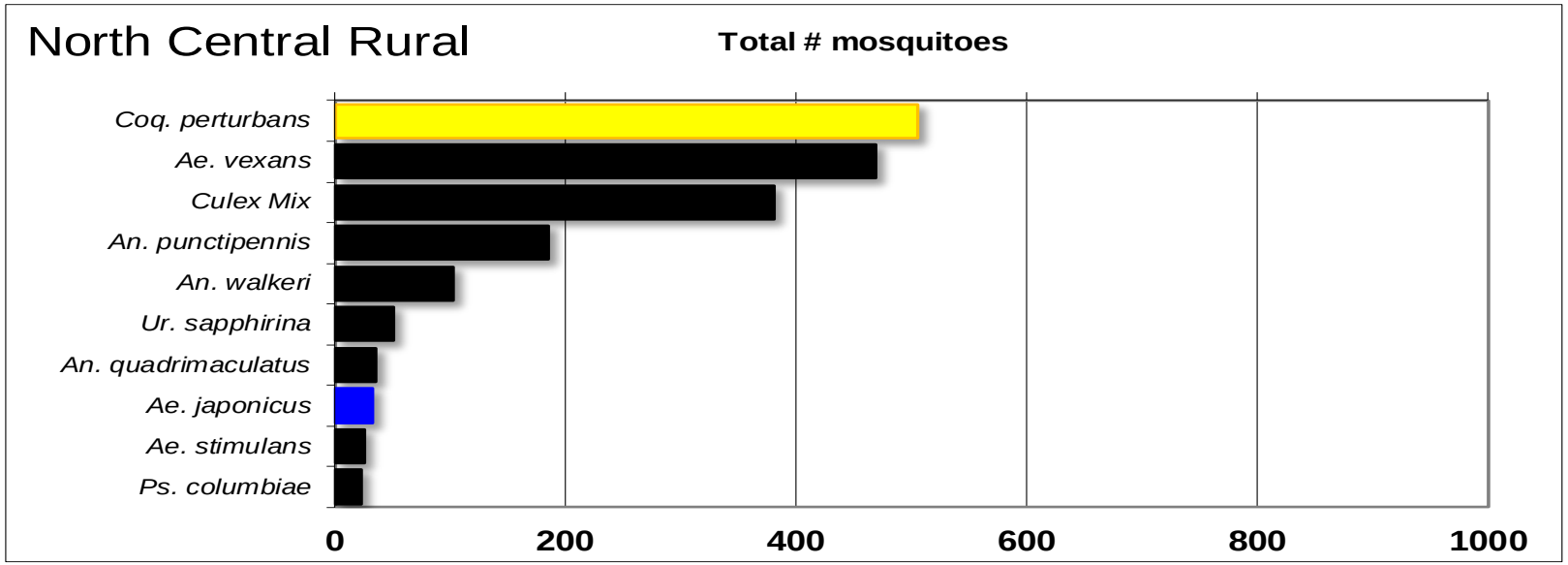
Coastal

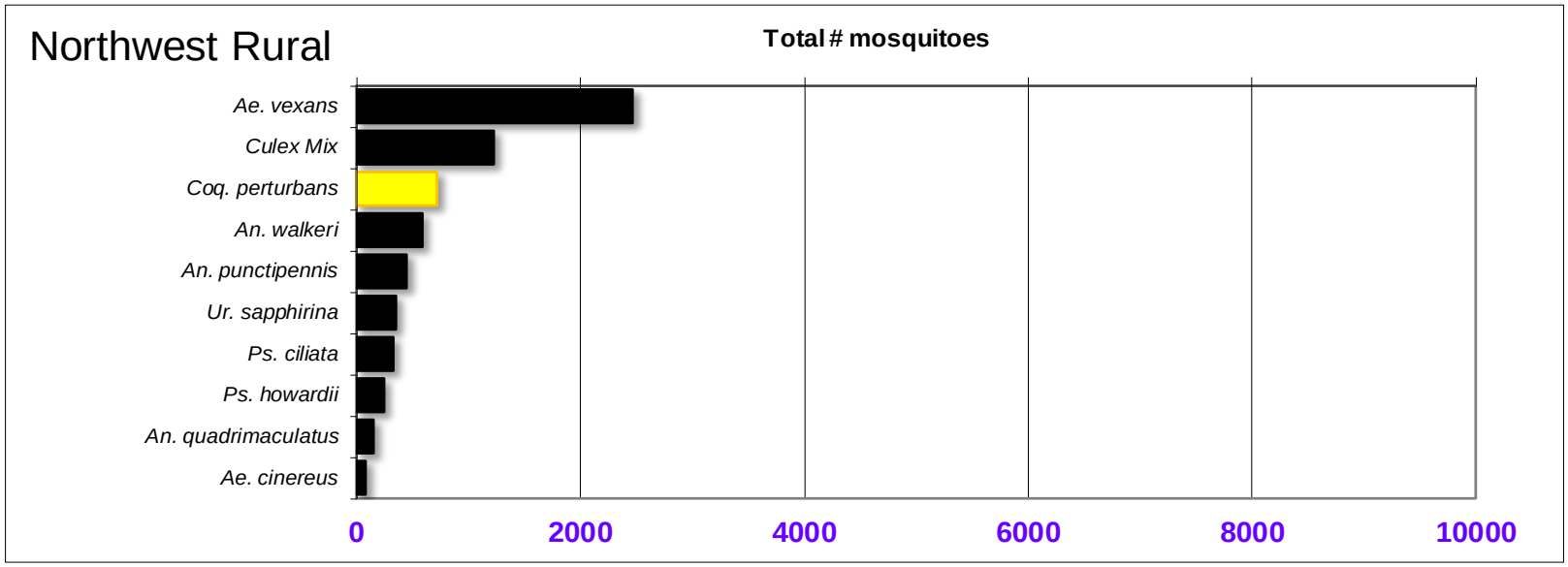


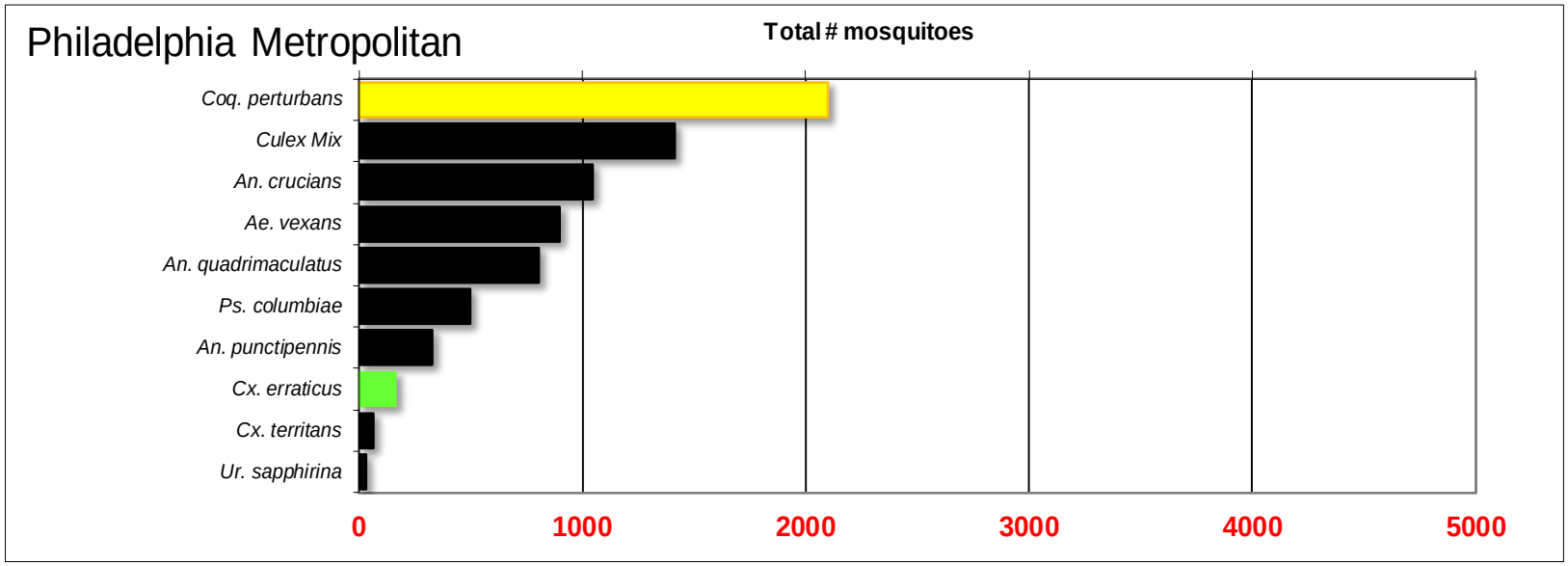

Delaware Bayshore
Total # mosquitoes
An. bradleyi
Culex Mix
Ae. taeniorhynchus
Ae. sollicitans
Ae. cantator
Coq. perturbans
Cs. melanura
Ae. vexans
An. quadrimaculatus
Ps. columbiae
0
2000
4000
6000
8000
10000


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

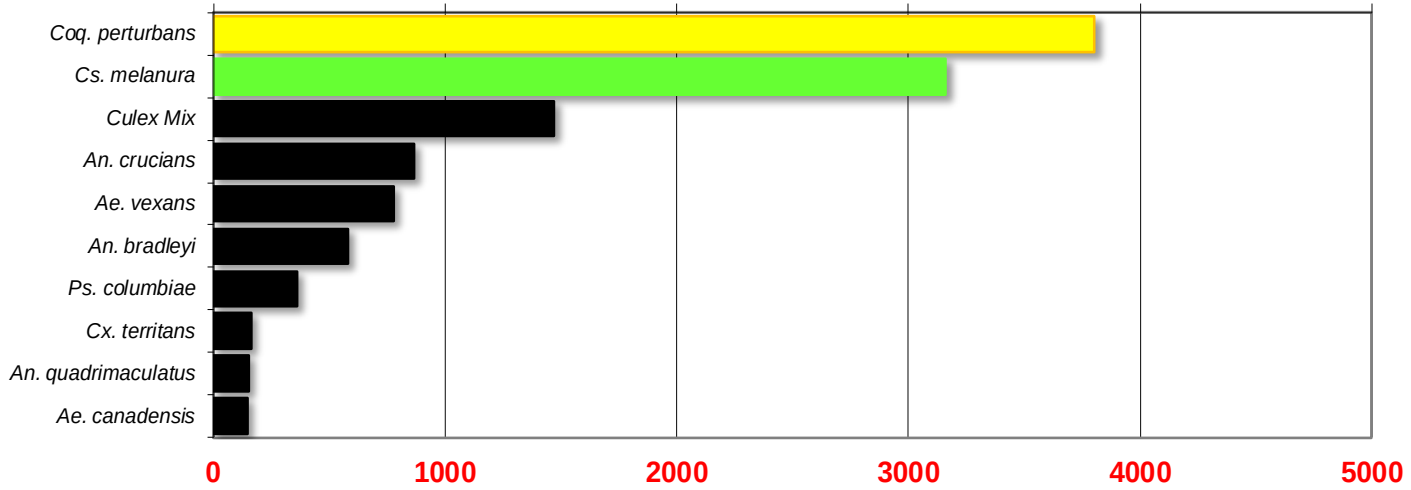

New York Metropolitan
Total # mosquitoes
Ae. vexans
Culex Mix
Coq. perturbans
Ae. sollicitans
Ae. cantator
Ps. columbiae
Ae. albopictus
An. quadrimaculatus
Ae. taeniorhynchus
Ps. ferox
0
1000
2000
3000
4000
5000


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


Northwest Rural
Total # mosquitoes
Ae. vexans
Culex Mix
Coq. perturbans
An. walkeri
An. punctipennis
Ur. sapphirina
Ps. ciliata
Ps. howardii
An. quadrimaculatus
Ae. cinereus
0
2000
4000
6000
8000
10000


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

Pinelands



Suburban Corridor