NEW JERSEY ADULT MOSQUITO SURVEILLANCE Report

23 June to 29 June 2019, CDC Week 26

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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.

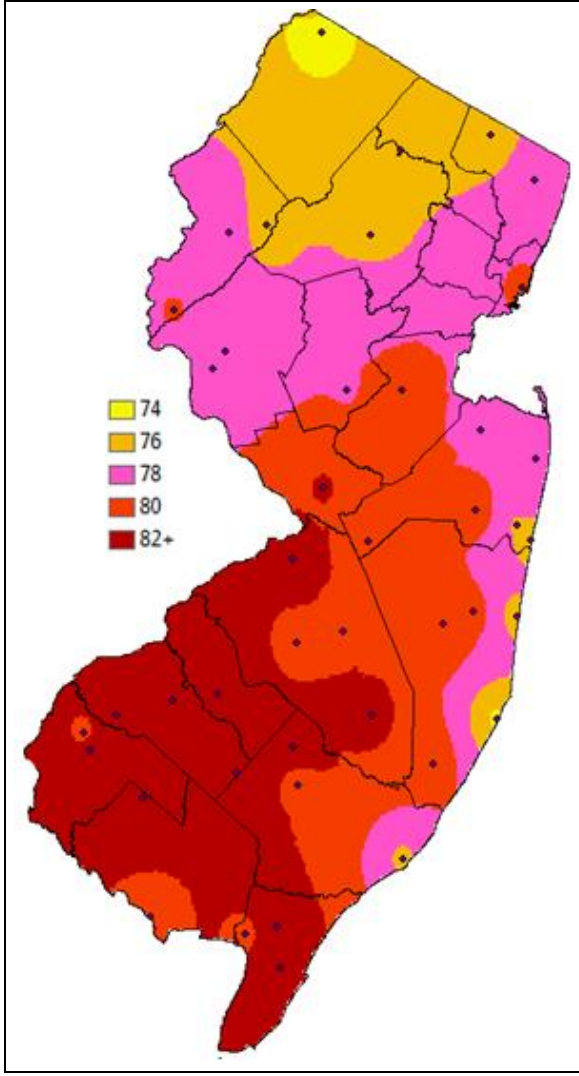
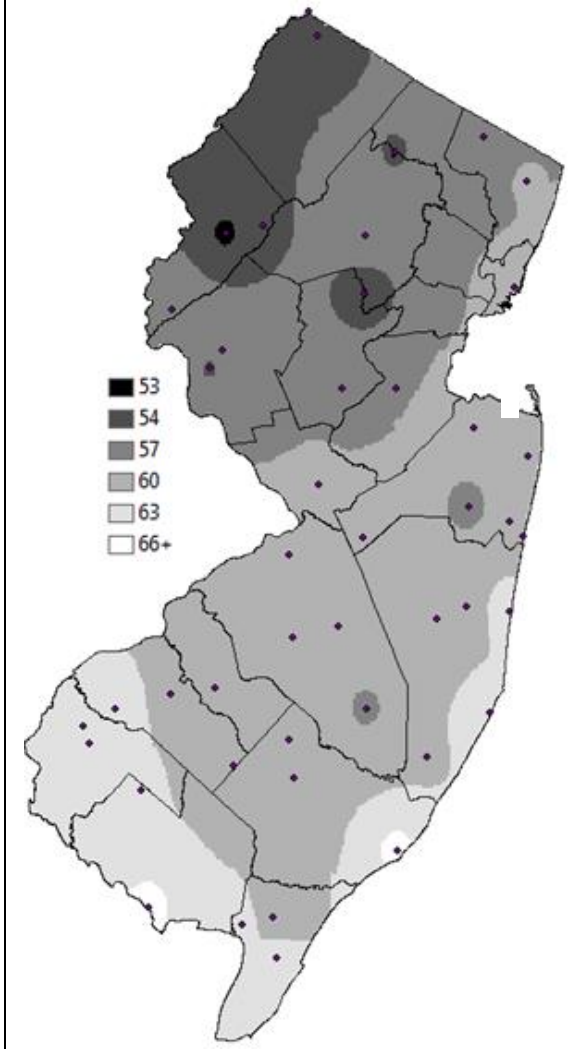
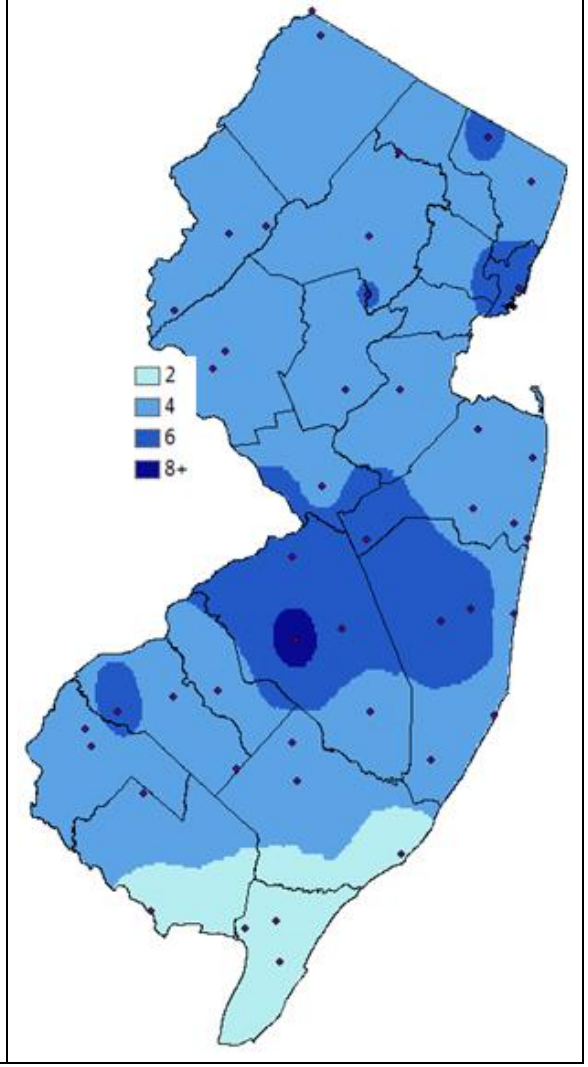
Summary Table –begin to Week 26

	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	**0.80**	**8.17**	**0**	**3.54**	**14.51**	**0**	**0.20**	**0.93**	**0**	**0.00**	**0.31**	**0**
Coastal	**0.33**	**2.50**	**0**	**1.46**	**6.98**	**0**	**0.35**	**1.06**	**0**	**0.51**	**3.37**	**0**
Delaware Bayshore	**0.00**	**2.41**	**0**	**0.00**	**26.27**	**0**	**0.00**	**8.65**	**0**	**0.00**	**2.17**	**0**
Delaware River Basin	**2.29**	**8.53**	**0**	**25.64**	**7.79**	**4**	**3.57**	**1.77**	**3**	**0.00**	**0.03**	**0**
New York Metro	**1.20**	**4.31**	**0**	**3.89**	**8.42**	**0**	**0.10**	**0.37**	**0**	**0.07**	**0.31**	**0**
North Central Rural	**0.00**	**0.24**	**0**	**0.29**	**0.40**	**0**	**0.32**	**0.14**	**3**	**0.00**	**0.00**	**0**
Northwest Rural	**0.29**	**7.69**	**0**	**0.11**	**3.85**	**0**	**0.10**	**1.03**	**0**	**0.00**	**0.00**	**0**
Philadelphia Metro	**0.00**	**6.51**	**0**	**0.00**	**4.86**	**0**	**0.00**	**0.30**	**0**	**0.00**	**0.00**	**0**
Pinelands	**0.43**	**1.06**	**0**	**1.38**	**2.36**	**0**	**0.68**	**2.02**	**0**	**0.00**	**0.09**	**0**
Suburban Corridor	**0.54**	**1.74**	**0**	**1.37**	**1.80**	**0**	**0.05**	**0.51**	**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: Populations of pestiferous species were down across the state. The Delaware River Basin showed significant populations of *Culex* Mix and *Coquillettidia perturbans*. The latter species was also higher in the North Central region.

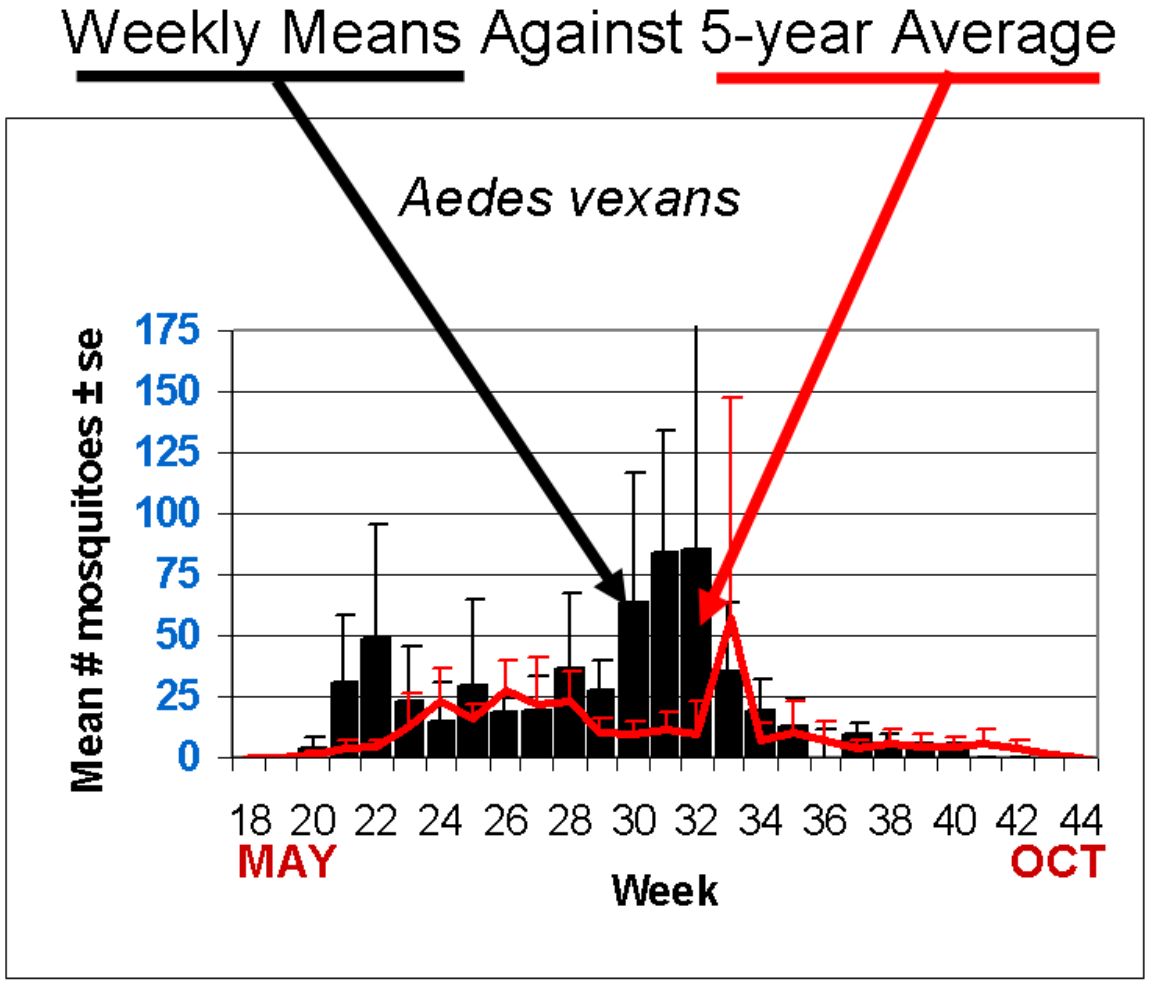
Climate Factors

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 30 June 2019 in New Jersey. Data points are from about 50 weather stations maintained through the New Jersey Weather & Climate Network and the State Climatologist. Interpolation between points was performed using ArcMap 10.1.

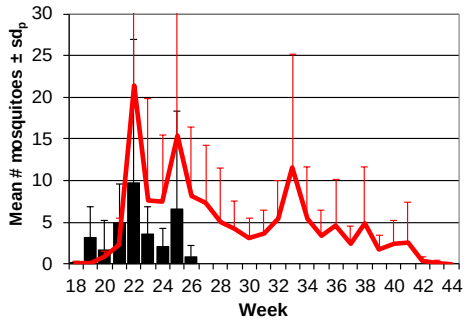
ONJSC at Rutgers University NJ Weather & Climate NETWORK

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

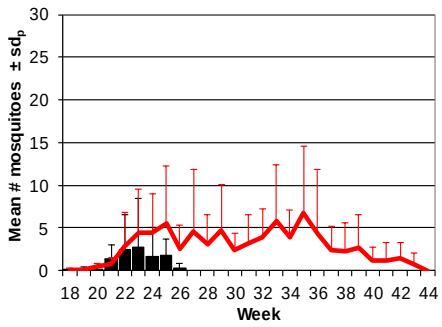


Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

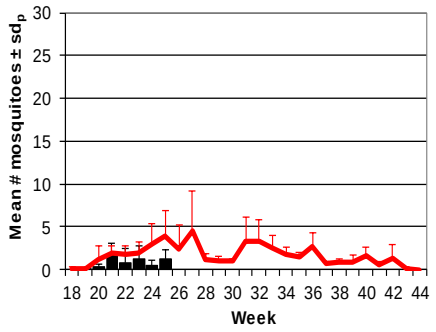
Agricultural



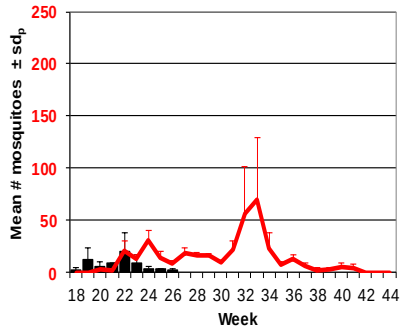
Coastal



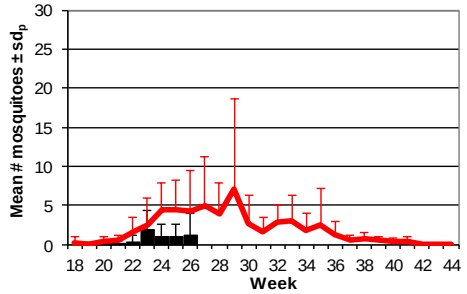
Delaware Bayshore



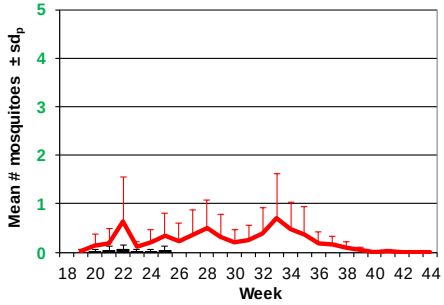
Delaware River Basin



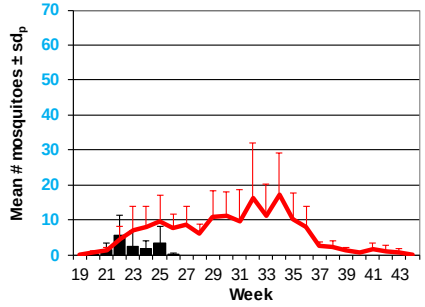
New York Metro



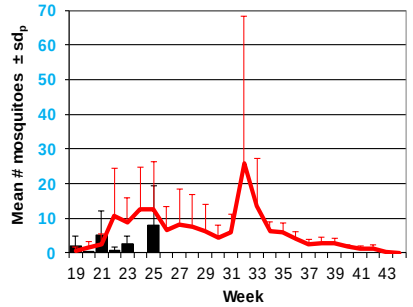
North Central Rural



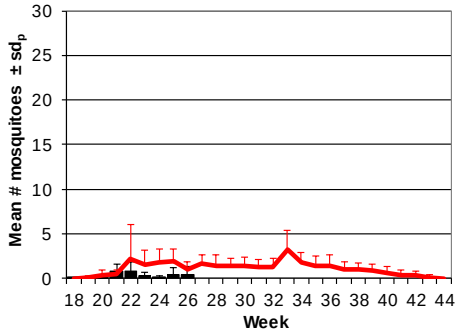
Northwestern Rural



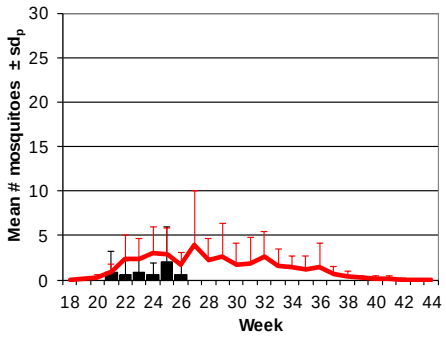
Philadelphia Metro



Pinelands



Suburban Corridor

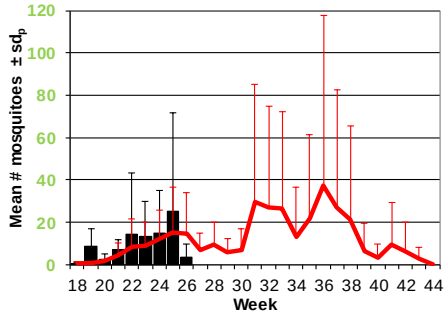


Comments

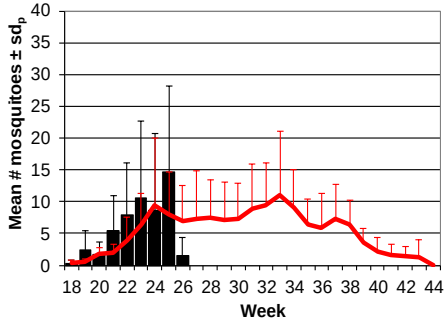
Aedes vexans is the model for fresh floodwater species. With abundant precipitation, this species can emerge in very significant numbers. For the past few weeks, *Aedes* abundances have been near or below the 5-year historical running means in all regions. Although precipitation occurred last week, in some places with significant amounts, no region reported higher than average amounts of this fresh floodwater species.

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

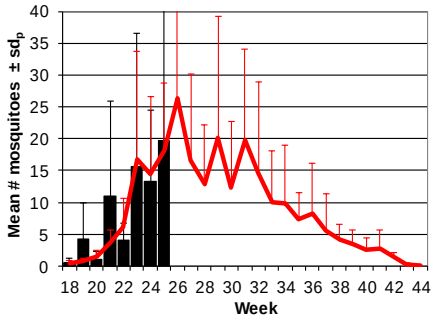
Agricultural



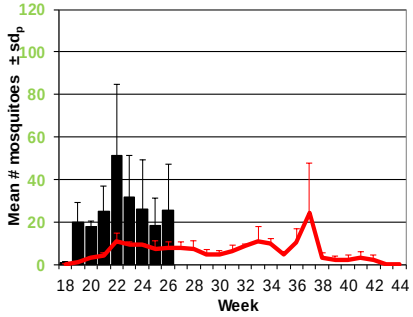
Coastal



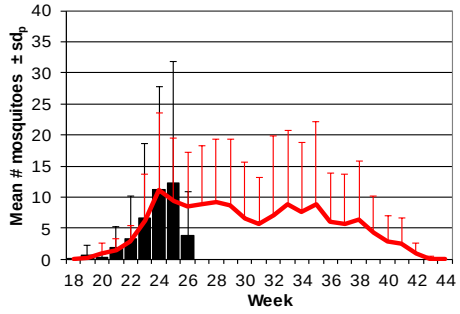
Delaware Bayshore



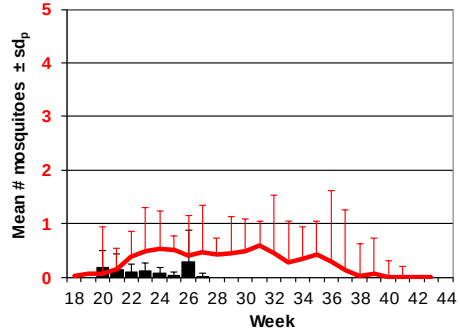
Delaware River Basin



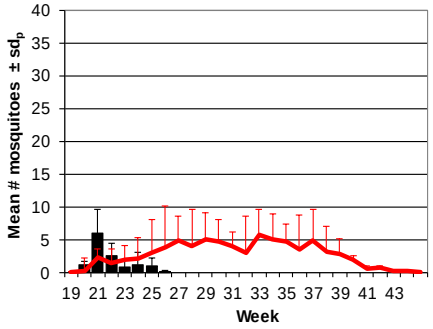
New York Metro



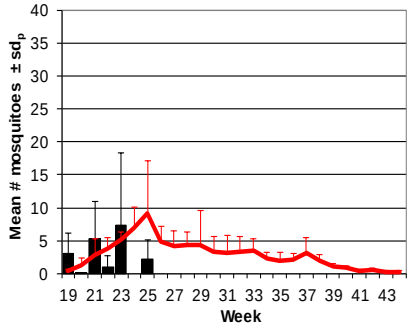
North Central Rural



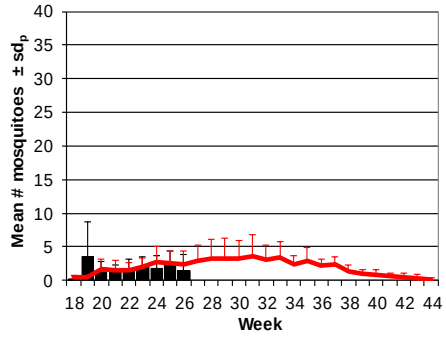
Northwestern Rural



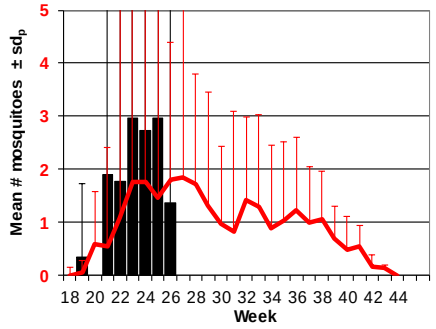
Philadelphia Metro



Pinelands



Suburban Corridor

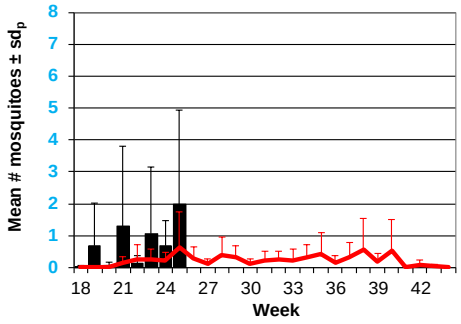


Comments

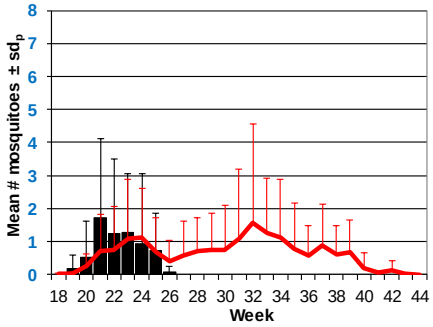
Culex Mix is composed of *Culex pipiens, Cx. restuans* and *Cx. salinarius*. These three species (especially *pipiens* and *restuans*) are often difficult to tell apart after encountering the damaging blades of the New Jersey light trap. Populations of *Culex* Mix continued to show significant activity in the Delaware River Basin. Other regions appear to be trending around historical averages for this enzootic vector of West Nile virus or even above average when all data is reported.

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

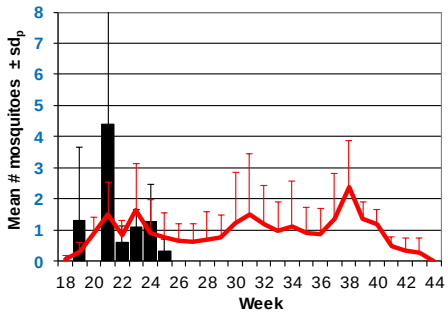
Agricultural



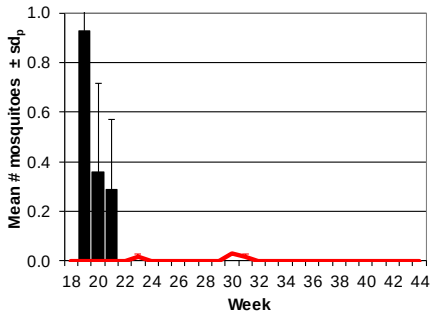
Coastal



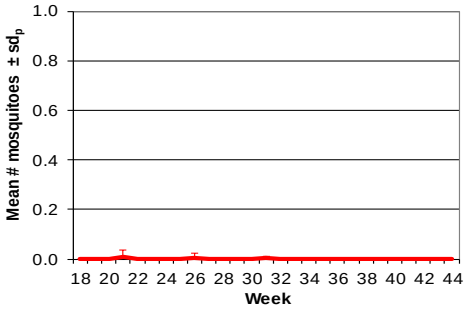
Delaware Bayshore



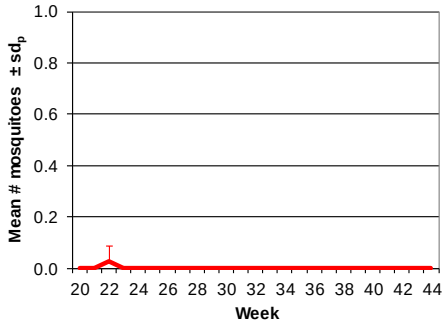
Delaware River Basin



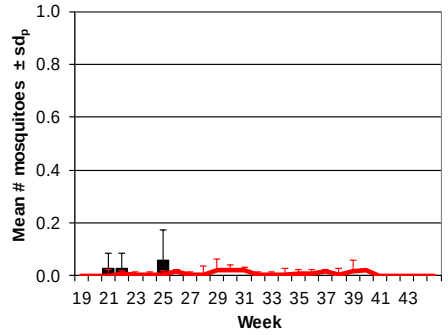
New York Metro



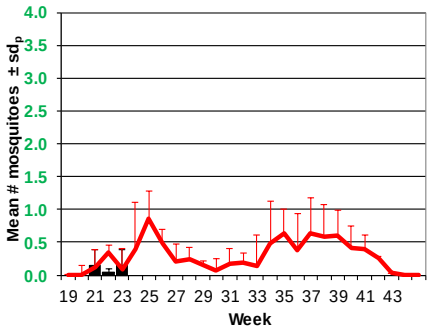
North Central Rural



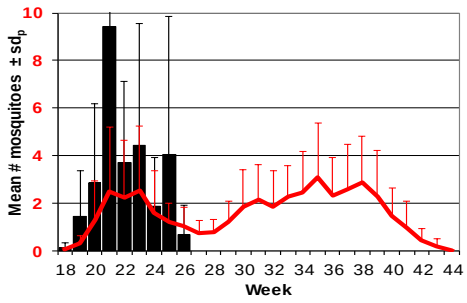
Northwestern Rural



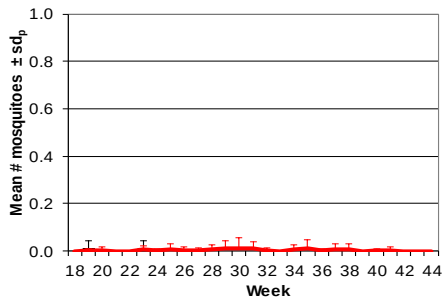
Philadelphia Metro



Pinelands



Suburban Corridor

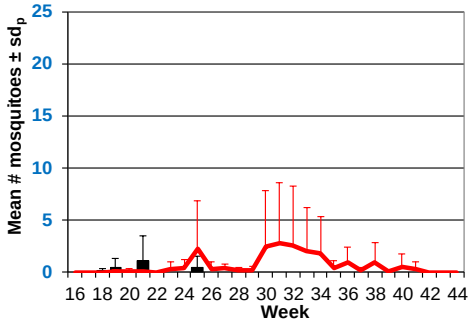
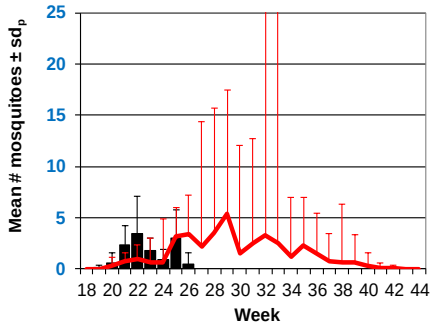
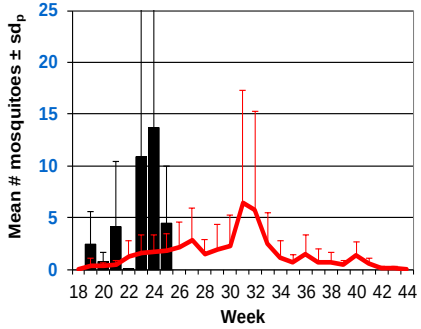
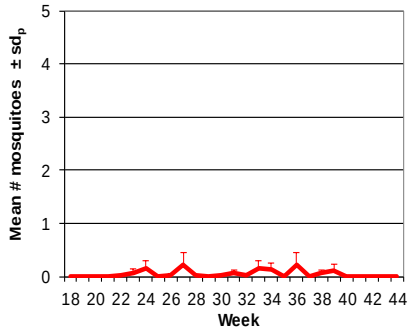
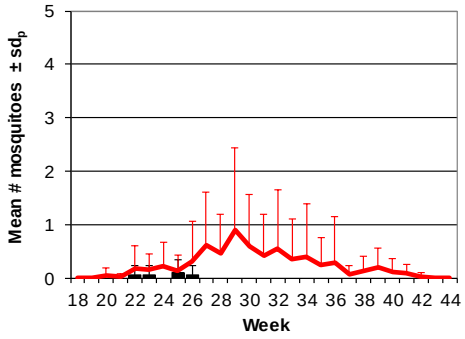
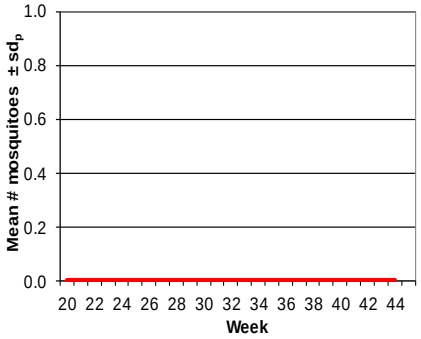
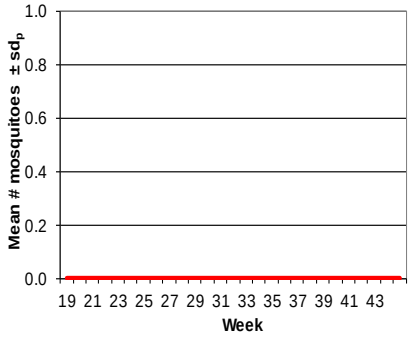
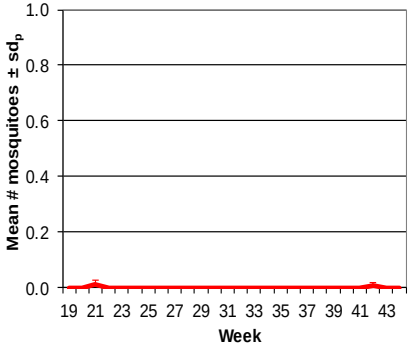
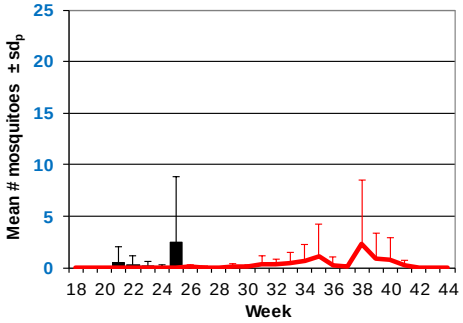
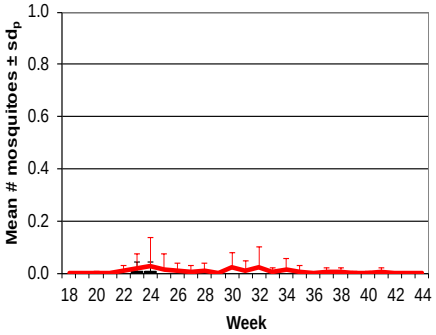


Comments

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. The state as a whole appears to be at or below the historical running averages for this species. At this point in time, there has been no detection of EEE in this endemic vector.

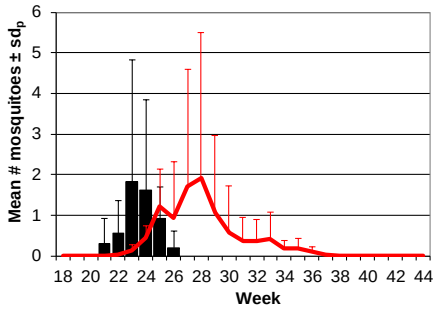
All horse owners should make sure their horses are up to date on the vaccination schedules: http://www.aaep.org/custdocs/adultvaccinationchart.pdf

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

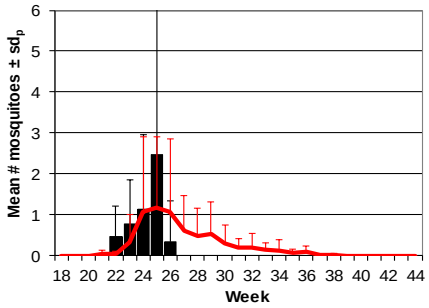
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes sollicitans* is a salt floodwater species and responds to both lunar tidal patterns as well as rainfall. Currently, it appears that the second emergence of this salt floodwater species is ending and all regions are reporting fewer than average numbers of populations. Next full moon on 16 July.	

Coquillettidia perturbans
Monotypic (*Coquillettidia perturbans* Type)

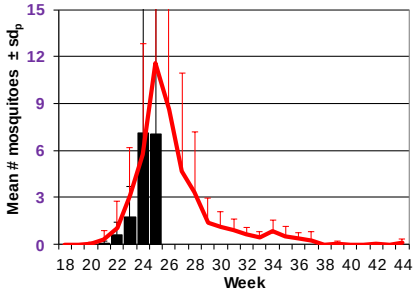
Agricultural



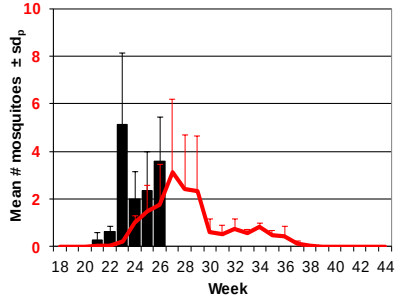
Coastal



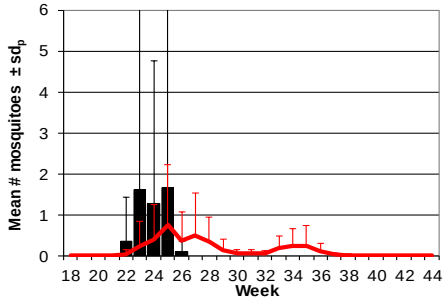
Delaware Bayshore



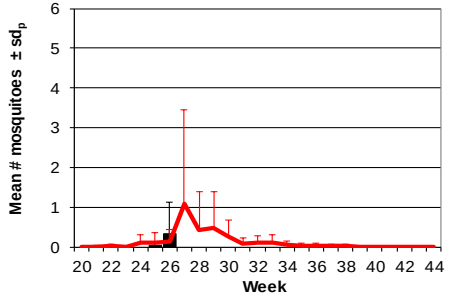
Delaware River Basin



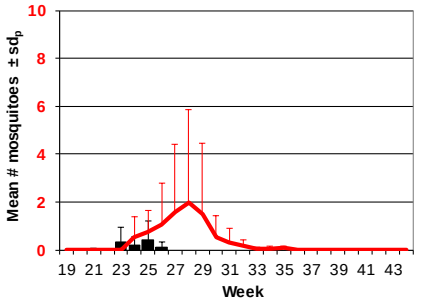
New York Metro



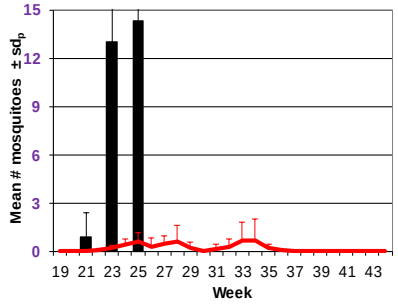
North Central Rural



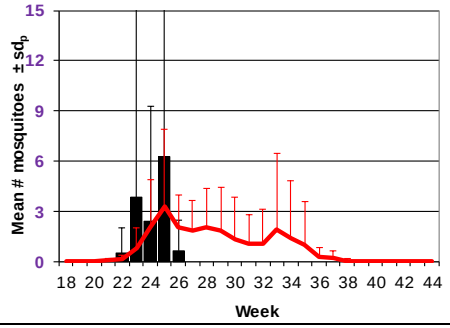
Northwestern Rural



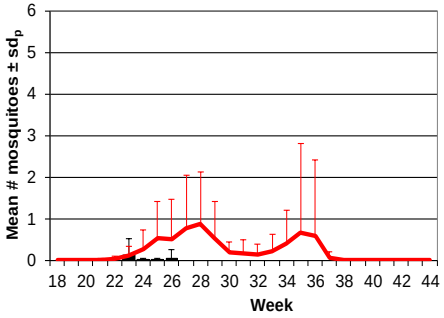
Philadelphia Metro



Pinelands



Suburban Corridor



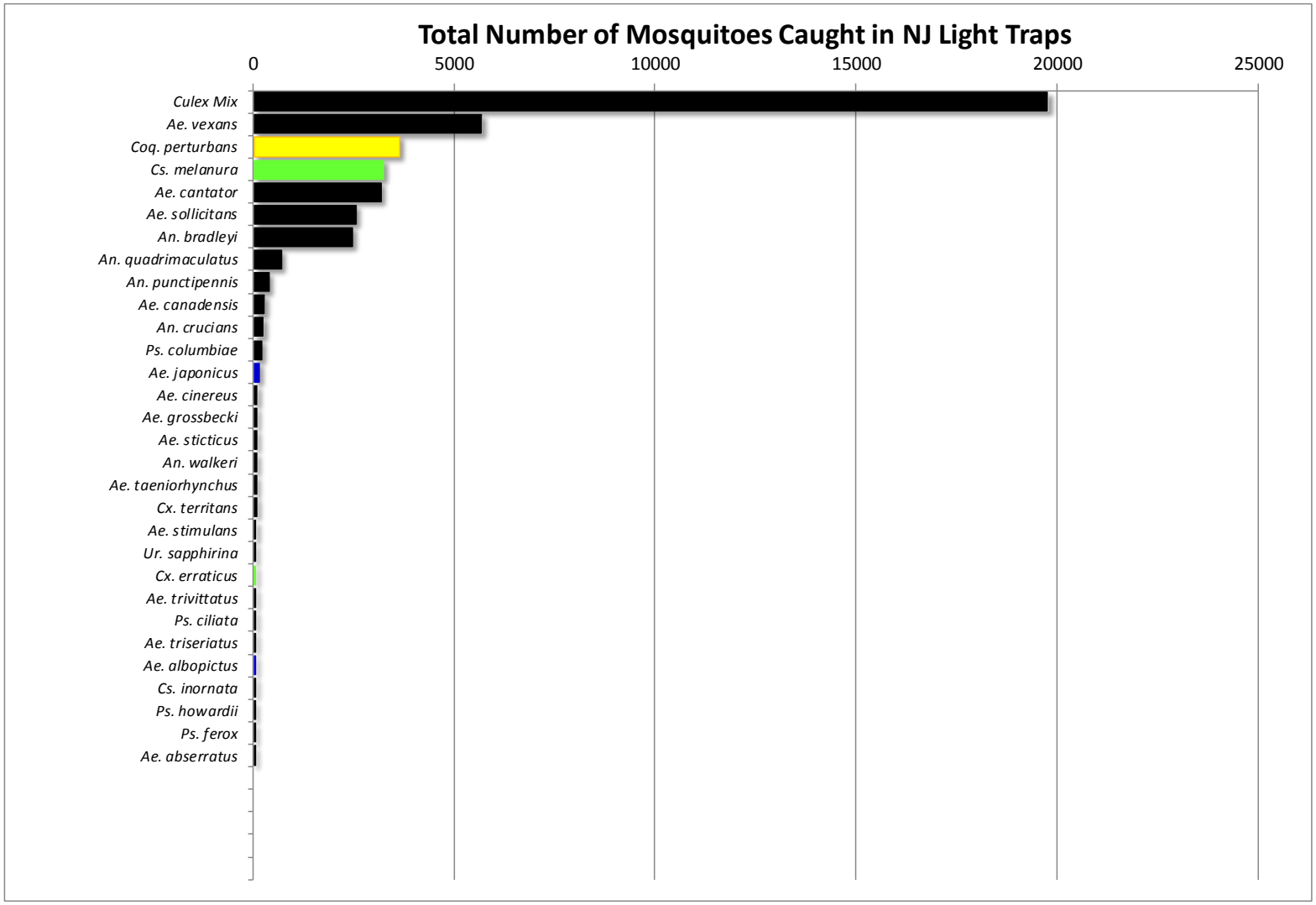
Comments

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. Abundances of this species were higher than historical averages in the Delaware River Basin and the North Central Rural regions while all other regions reported less than average numbers.

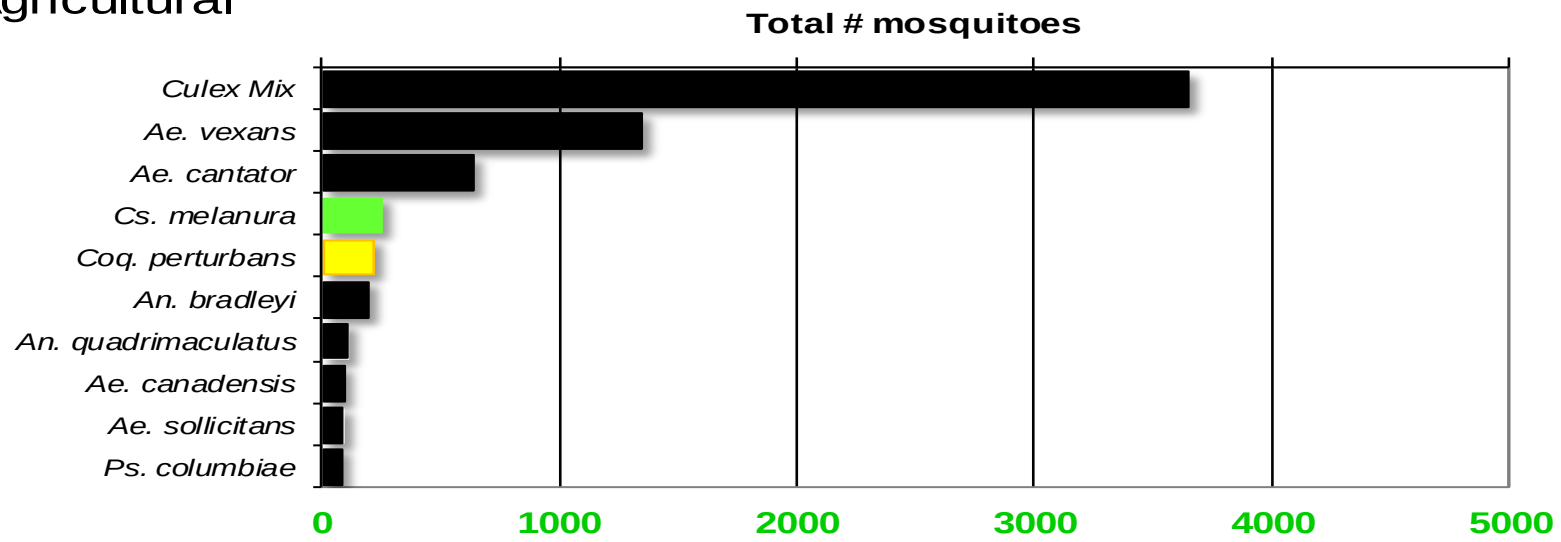
WNV *EEE*

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

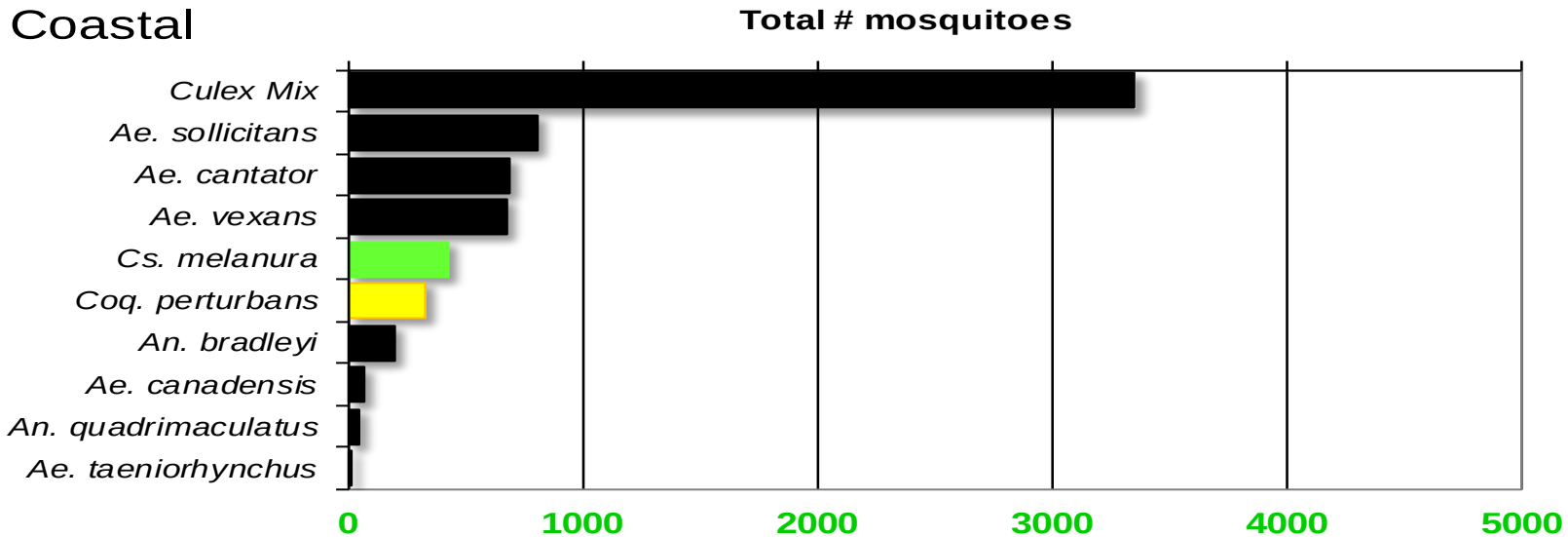
Note: In early season when fewer species are caught, graphs may show less than ten species/region or 25 statewide.

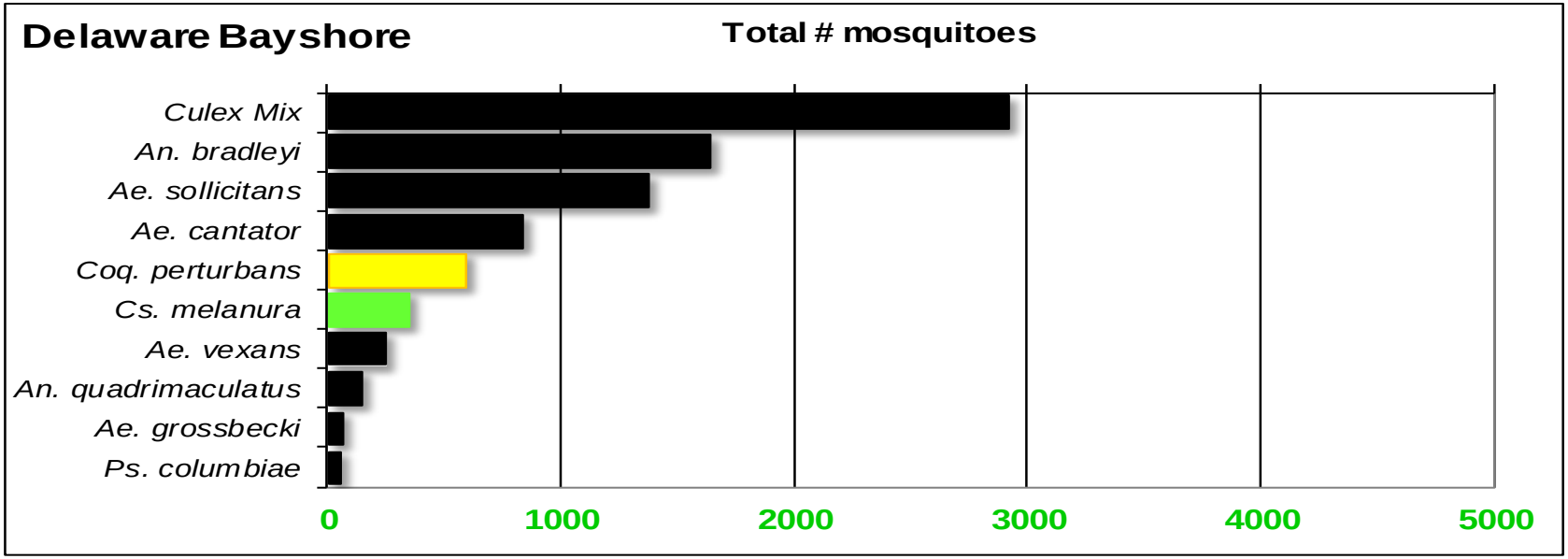


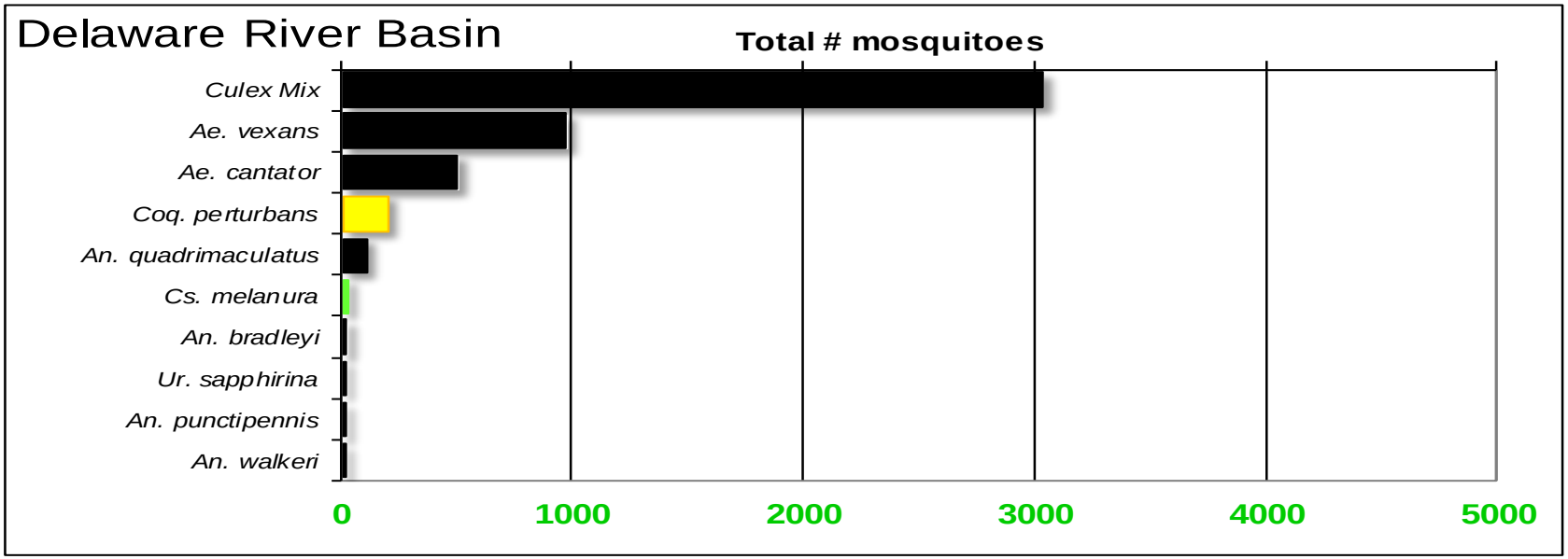
Agricultural

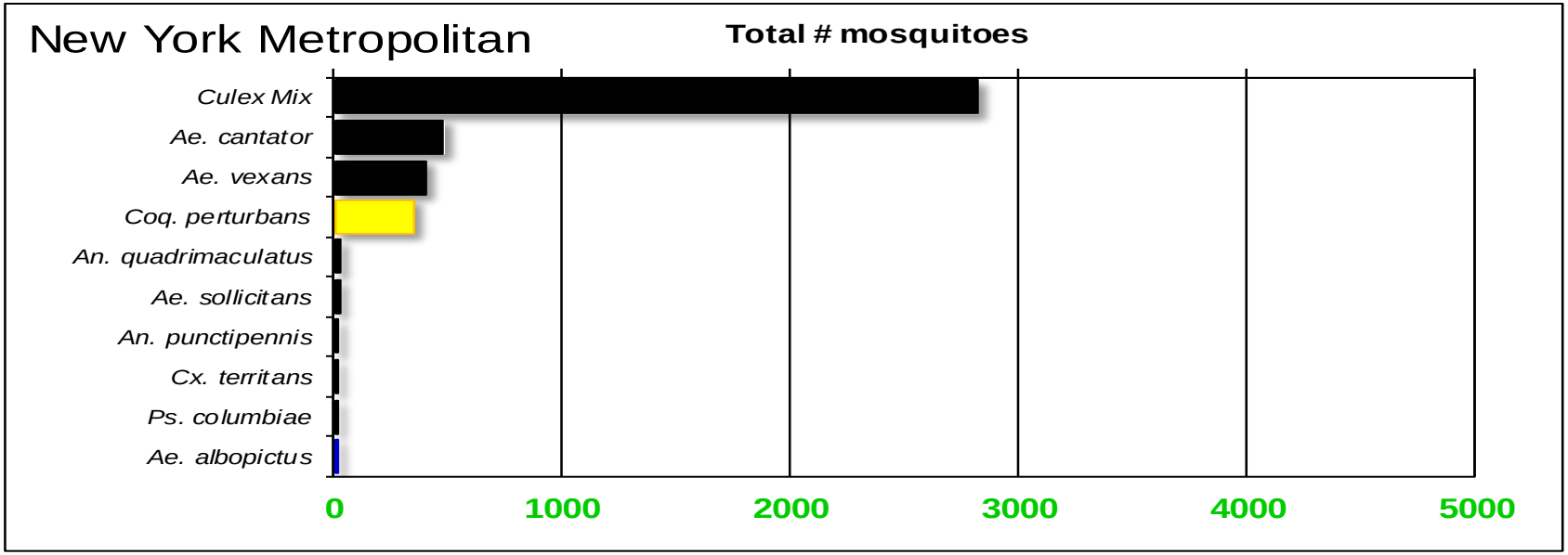


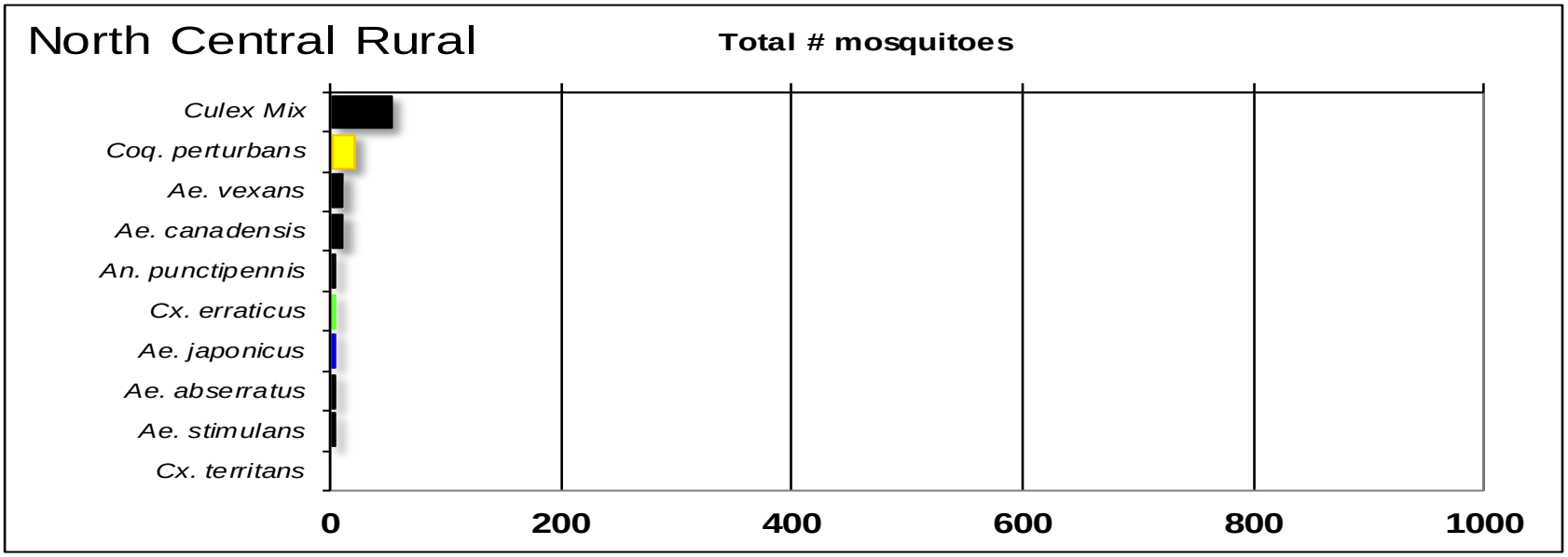
Coastal

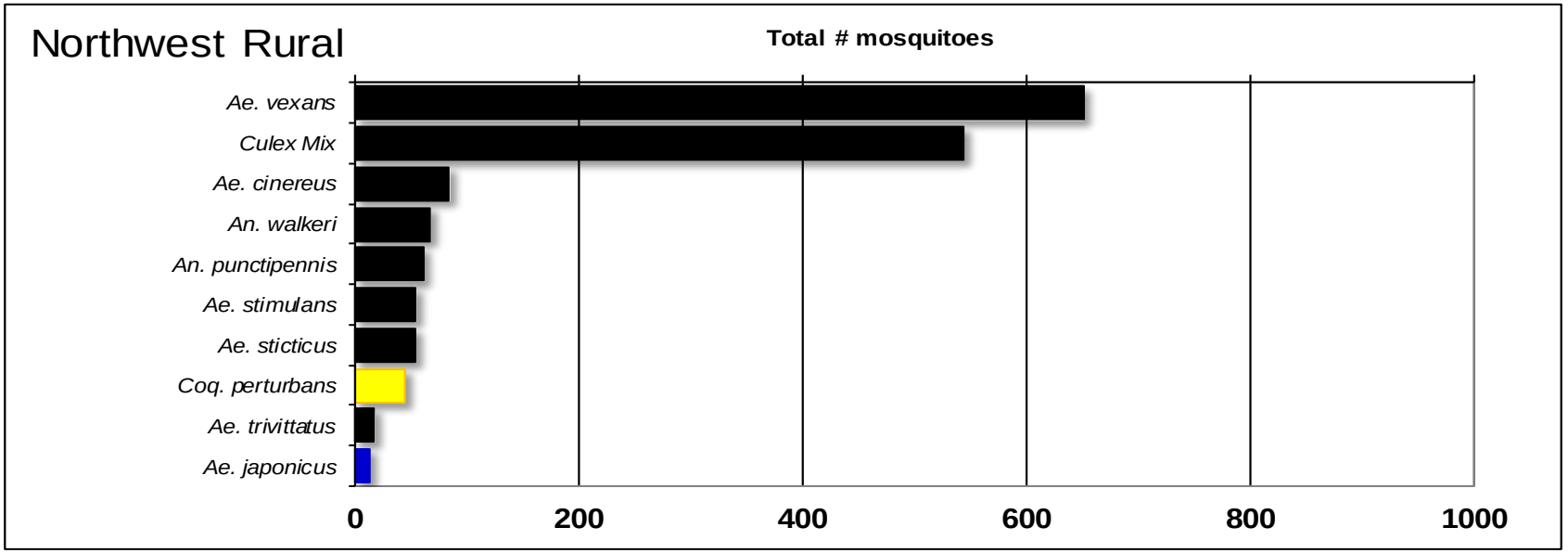


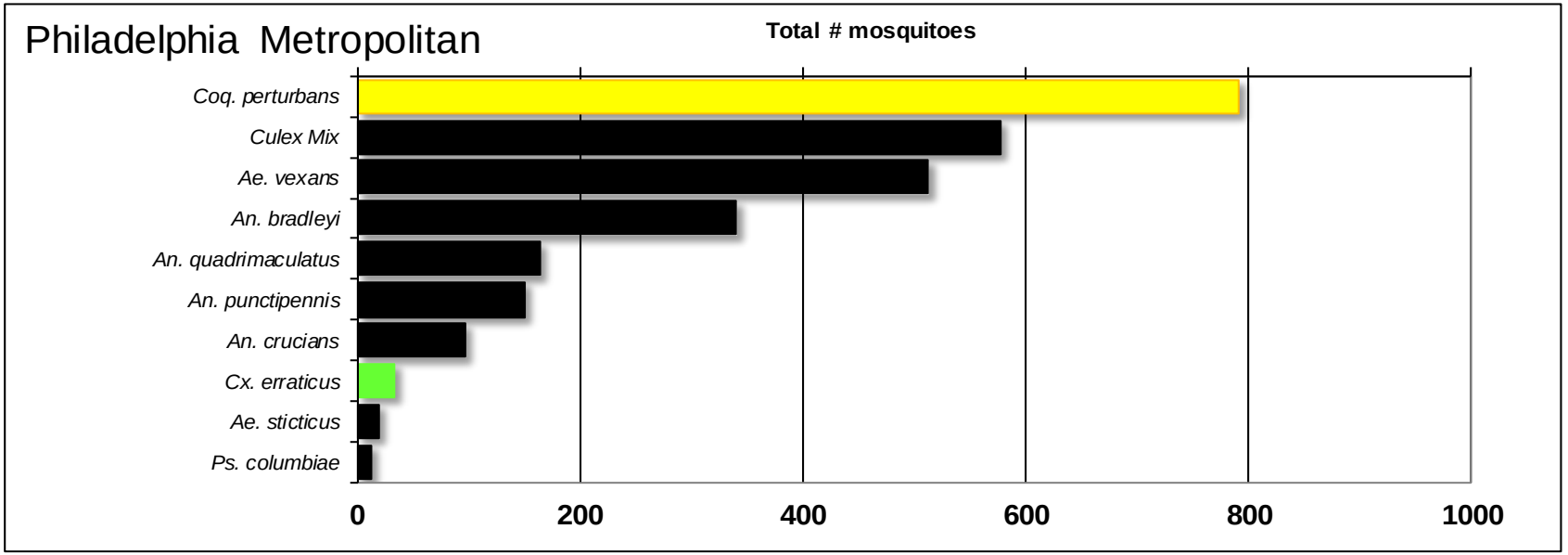

Delaware Bayshore
Total # mosquitoes
Culex Mix
An. bradleyi
Ae. sollicitans
Ae. cantator
Coq. perturbans
Cs. melanura
Ae. vexans
An. quadrimaculatus
Ae. grossbecki
Ps. columbiae
0
1000
2000
3000
4000
5000

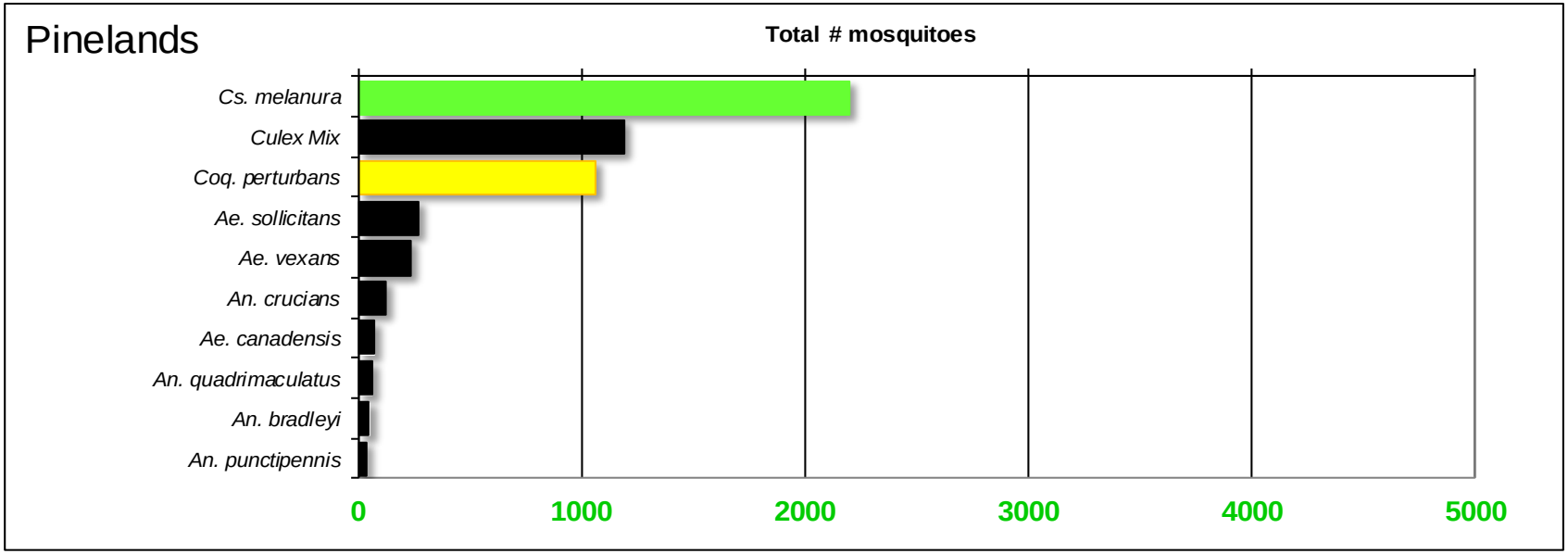

Delaware River Basin
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. cantator
Coq. perturbans
An. quadrimaculatus
Cs. melanura
An. bradleyi
Ur. sapphirina
An. punctipennis
An. walkeri
0
1000
2000
3000
4000
5000

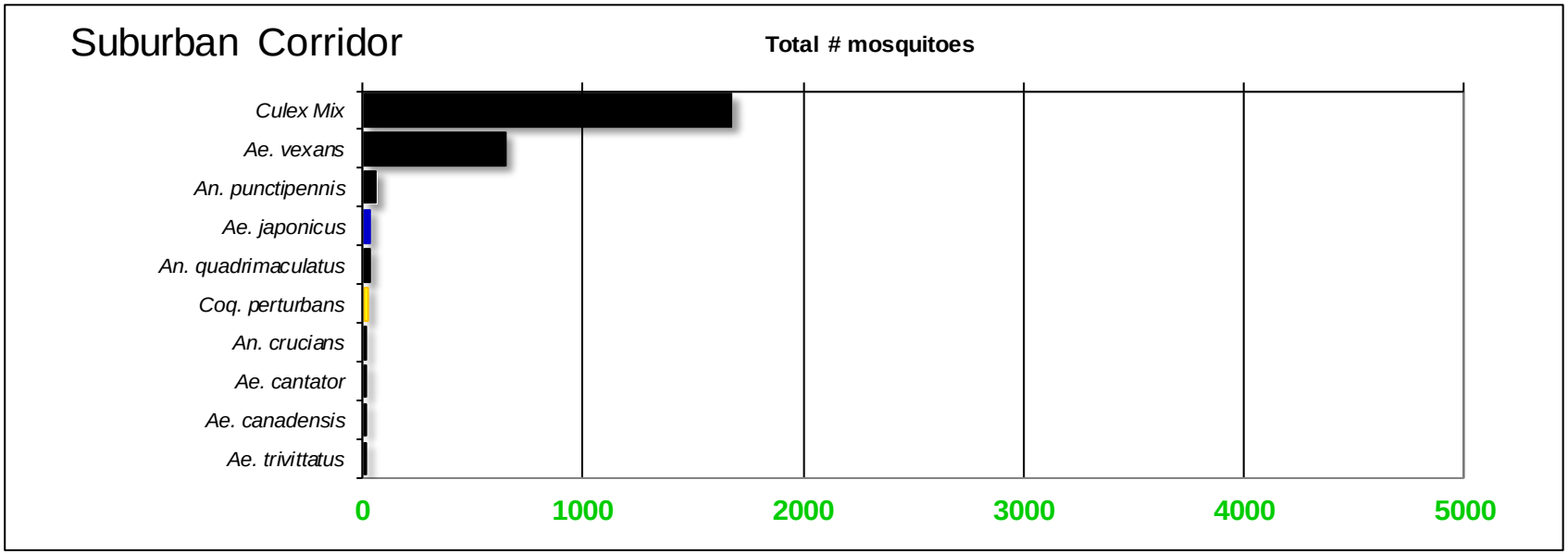

New York Metropolitan
Total # mosquitoes
Culex Mix
Ae. cantator
Ae. vexans
Coq. perturbans
An. quadrimaculatus
Ae. sollicitans
An. punctipennis
Cx. territans
Ps. columbiae
Ae. albopictus
0
1000
2000
3000
4000
5000


North Central Rural
Total # mosquitoes
Culex Mix
Coq. perturbans
Ae. vexans
Ae. canadensis
An. punctipennis
Cx. erraticus
Ae. japonicus
Ae. abserratus
Ae. stimulans
Cx. territans
0
200
400
600
800
1000


Northwest Rural
Total # mosquitoes
Ae. vexans
Culex Mix
Ae. cinereus
An. walkeri
An. punctipennis
Ae. stimulans
Ae. sticticus
Coq. perturbans
Ae. trivittatus
Ae. japonicus
0
200
400
600
800
1000


Philadelphia Metropolitan
Total # mosquitoes
Coq. perturbans
Culex Mix
Ae. vexans
An. bradleyi
An. quadrimaculatus
An. punctipennis
An. crucians
Cx. erraticus
Ae. sticticus
Ps. columbiae
0
200
400
600
800
1000


Pinelands
Total # mosquitoes
Cs. melanura
Culex Mix
Coq. perturbans
Ae. sollicitans
Ae. vexans
An. crucians
Ae. canadensis
An. quadrimaculatus
An. bradleyi
An. punctipennis
0
1000
2000
3000
4000
5000


Suburban Corridor
Total # mosquitoes
Culex Mix
Ae. vexans
An. punctipennis
Ae. japonicus
An. quadrimaculatus
Coq. perturbans
An. crucians
Ae. cantator
Ae. canadensis
Ae. trivittatus
0
1000
2000
3000
4000
5000