NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report for 12 June to 18 June 2016, beginning to CDC Week 24

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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 24

	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**	**1.60**	**0**	**0.31**	**1.89**	**0**	**0.00**	**0.23**	**0**	**0.00**	**0.03**	**0**
Coastal	**0.08**	**1.01**	**0**	**1.16**	**5.54**	**0**	**0.00**	**0.68**	**0**	**0.02**	**1.32**	**0**
Delaware Bayshore	**0.00**	**1.12**	**0**	**0.00**	**23.39**	**0**	**0.00**	**3.58**	**0**	**0.00**	**1.46**	**0**
Delaware River Basin	**0.00**	**1.81**	**0**	**0.00**	**1.34**	**0**	**0.00**	**0.13**	**0**	**0.00**	**0.00**	**0**
New York Metro	**0.87**	**3.11**	**0**	**8.61**	**6.14**	**1**	**0.44**	**0.13**	**4**	**0.11**	**0.09**	**1**
North Central Rural	**0.02**	**0.32**	**0**	**0.69**	**0.61**	**1**	**0.20**	**0.01**	**4**	**0.00**	**0.00**	**0**
Northwest Rural	**0.26**	**4.20**	**0**	**0.54**	**1.94**	**0**	**0.00**	**0.09**	**0**	**0.00**	**0.00**	**0**
Philadelphia Metro	**0.00**	**2.34**	**0**	**0.00**	**3.69**	**0**	**0.00**	**0.16**	**0**	**0.00**	**0.00**	**0**
Pinelands	**0.00**	**0.43**	**0**	**0.00**	**1.39**	**0**	**0.00**	**0.35**	**0**	**0.00**	**0.02**	**0**
Suburban Corridor	**0.13**	**2.46**	**0**	**1.22**	**2.20**	**0**	**0.18**	**0.39**	**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: With the current dataset, the New York Metropolitan and North Central Rural regions were showing mildly elevated *Culex* Mix populations and significantly elevated *Coquillettidia perturbans* populations. The New York Metro region also had mildly elevated *Aedes sollicitans* numbers.

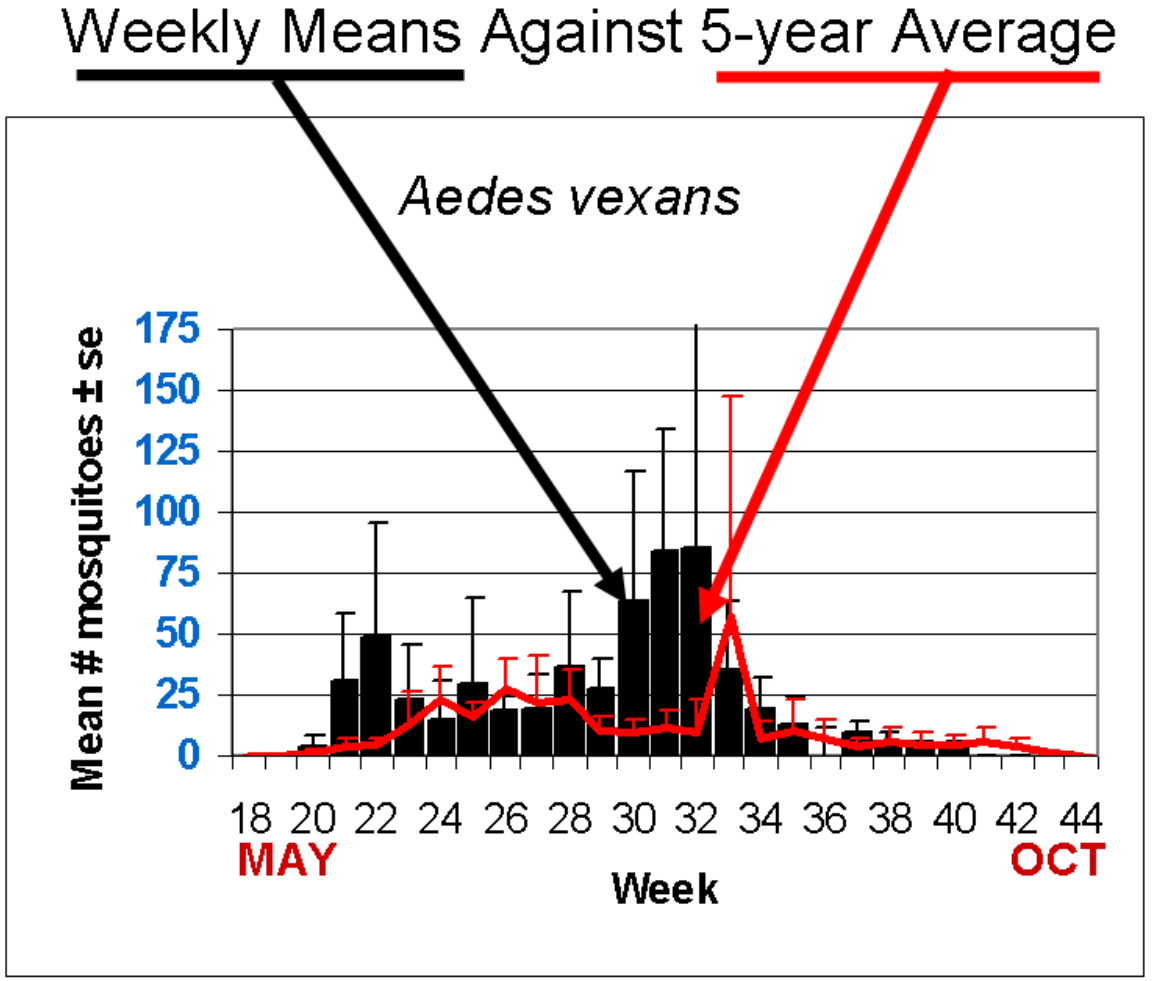
Climate Factors

Average High Temperature	Average Low Temperature	Total Precipitation
		

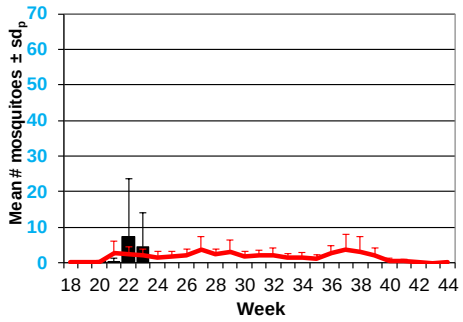
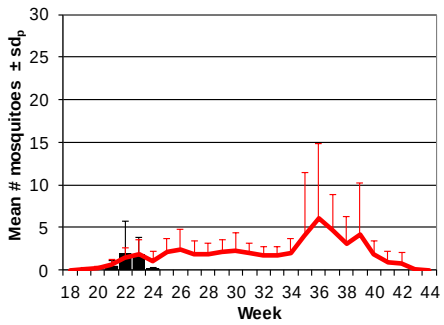
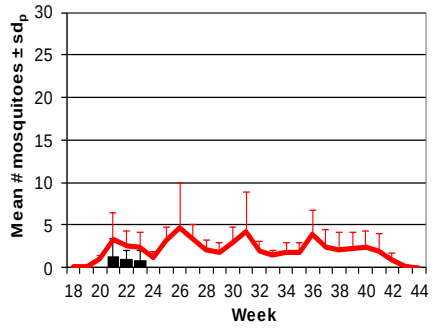
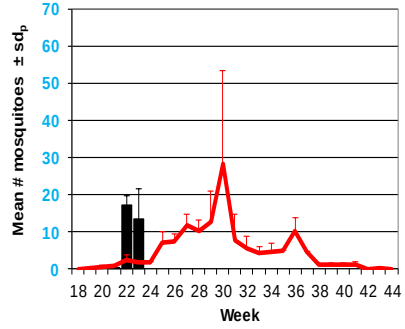
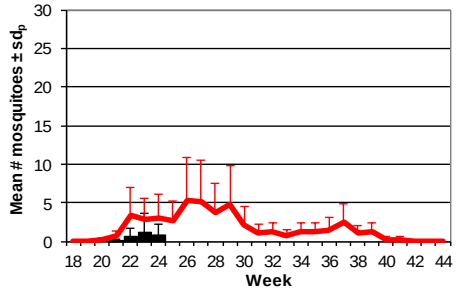
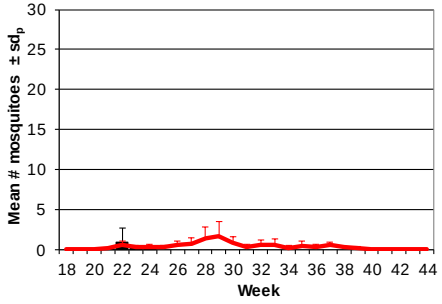
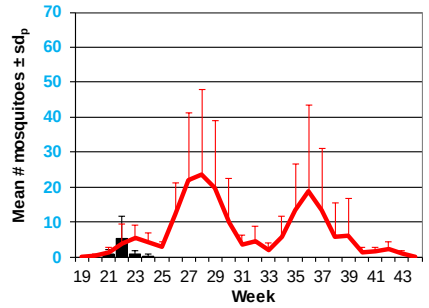
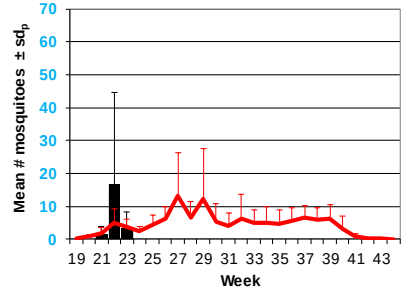
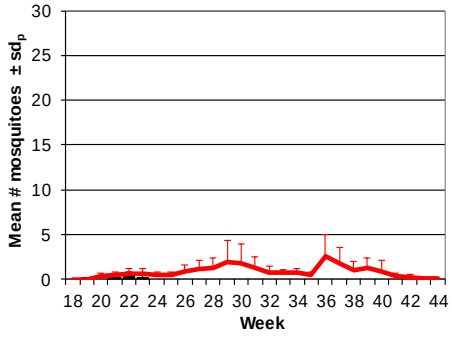
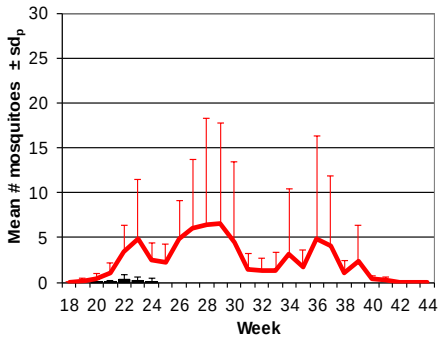
NOTE: Due to technical issues, weather maps were unavailable.
The three figures show the interpolation of average maximum (°F) and minimum temperature (°F) and total precipitation (inches) for 30 days prior to 17 June 2016 in New Jersey. Data points are from about 58 weather stations maintained through the New Jersey Weather & Climate Network and the State Climatologist. Interpolation between points was performed using ArcMap 10.1.

NJ Weather & Climate NETWORK ONJSC at Rutgers University

The Species Graphs: The species graph pages include a graph with two plots for each of the ten regions defined on the first page (Agricultural, Coastal, Delaware Bayshore, Delaware River, New York Metro, North-Central, Northwestern, Philadelphia Metro, Pinelands, and Suburban Corridor). Below is an example of one graph from one species within one region. The bar plot show the average number of mosquitoes per trap within the region (weekly means) and line plots show the historical trend as the average number of mosquitoes from the previous 5 years (5-year average). In general, historical data are running means from the previous 5 years, but on occasion, will include data from fewer years. Adjustments are made to account for year discrepancies. Data for this week are from Middlesex, Monmouth, Morris, Union and Warren counties. Data for the previous week are from Atlantic, Bergen, Burlington, Cape May, Hudson, Mercer, Middlesex, Monmouth, Morris, Ocean, Salem, Union and Warren counties.

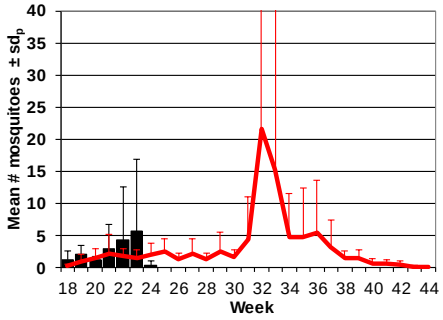


Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

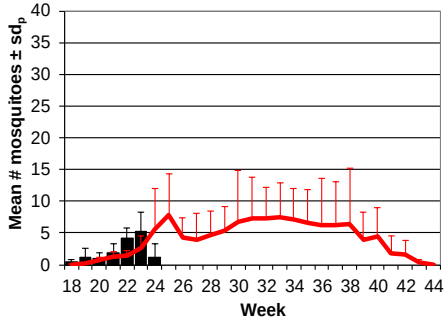
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		This fresh floodwater species is showing some significant emergences in regions where precipitation had previously occurred, such as the Delaware River Basin and some southern Agricultural areas. Other more northerly areas are showing smaller populations, likely due to the lack significant rainfall. Northern portions of New Jersey have been elevated from abnormally dry to moderate drought . which includes the condition where “streams, reservoirs, or wells low, some water shortages developing or imminent.” http://droughtmonitor.unl.edu/Home/RegionalDroughtMonitor.aspx?northeast	

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

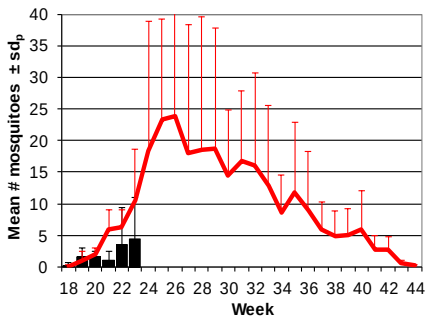
Agricultural



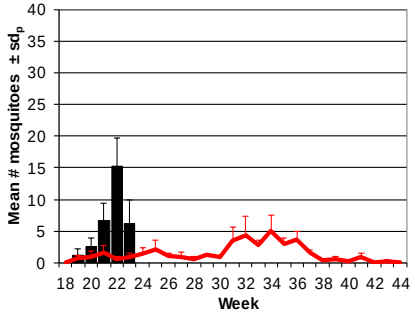
Coastal



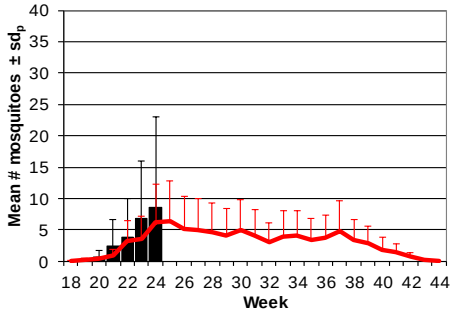
Delaware Bayshore



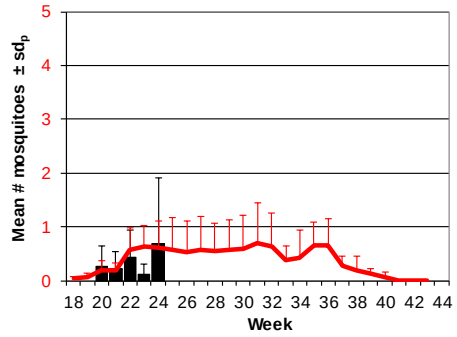
Delaware River Basin



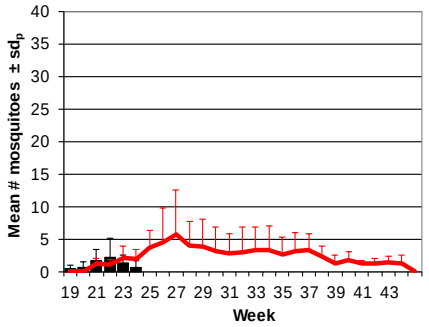
New York Metro



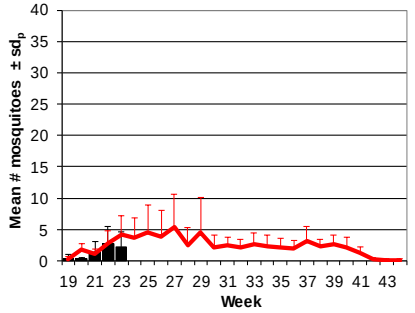
North Central Rural



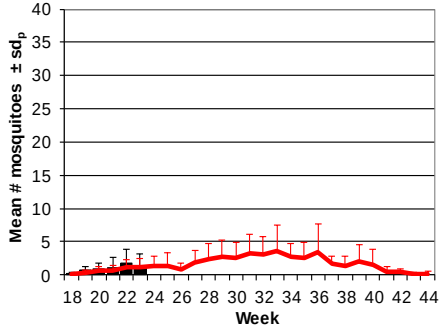
Northwestern Rural



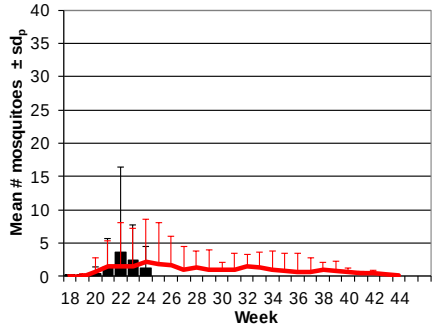
Philadelphia Metro



Pinelands



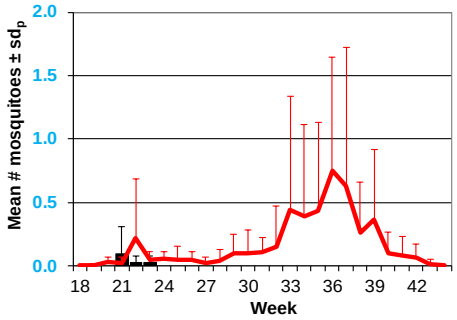
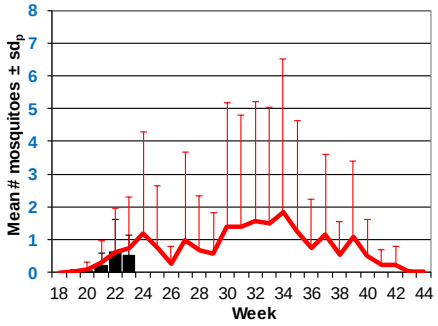
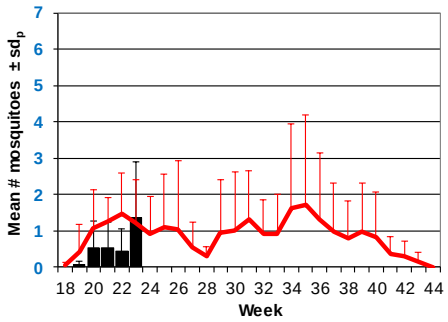
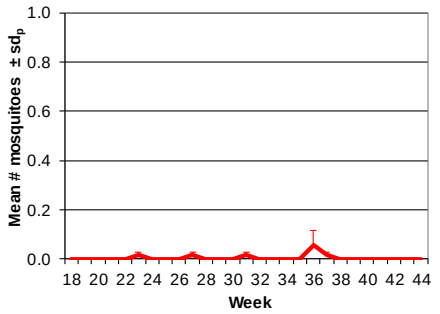
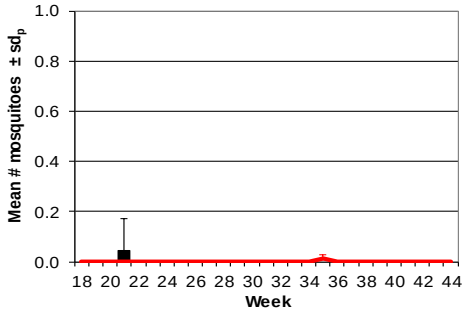
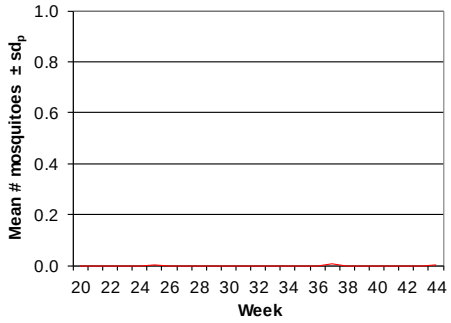
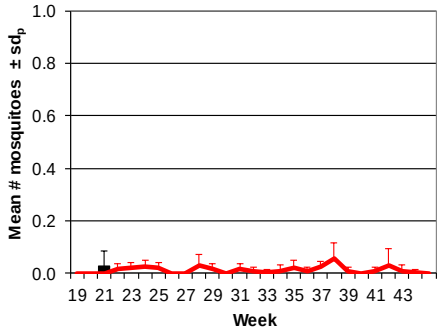
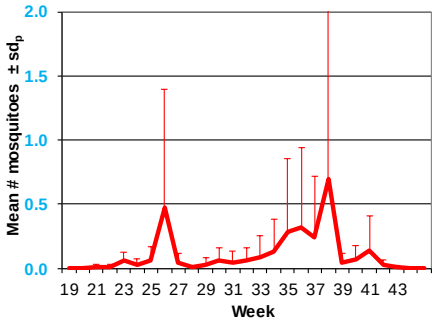
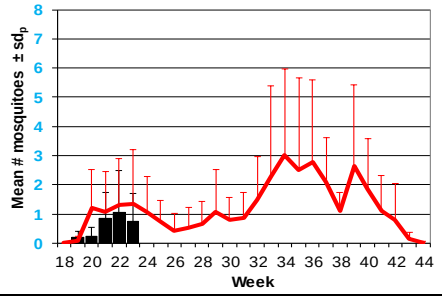
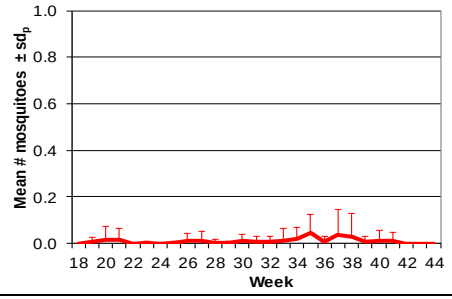
Suburban Corridor



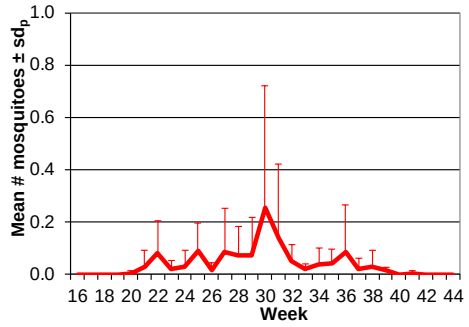
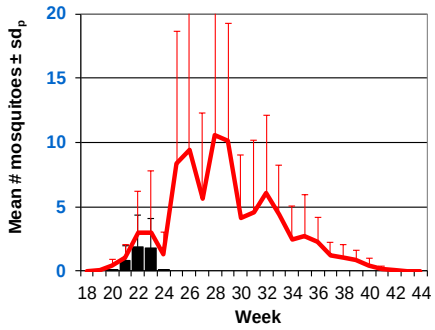
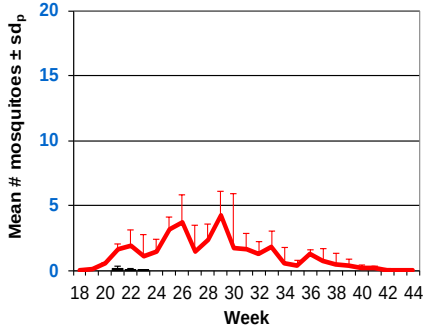
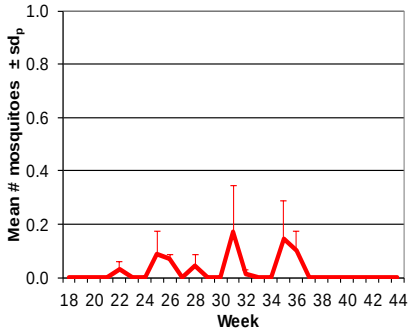
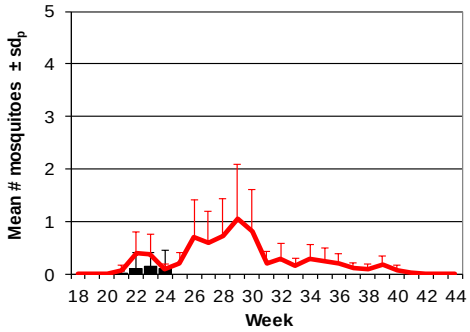
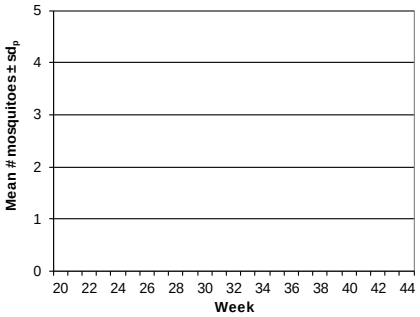
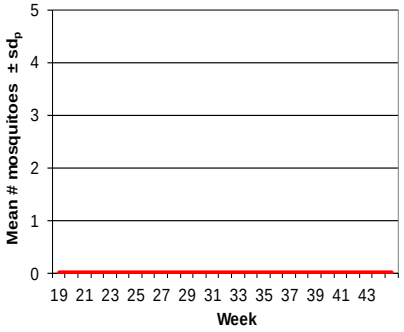
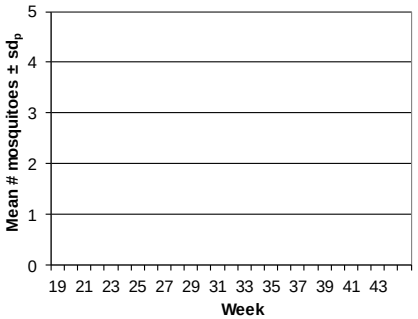
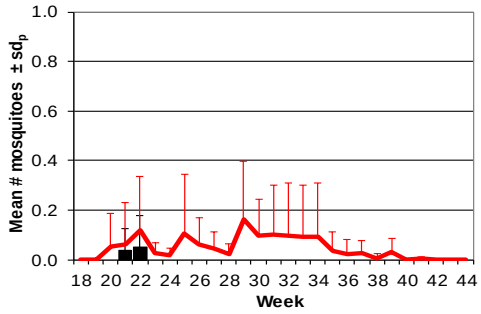
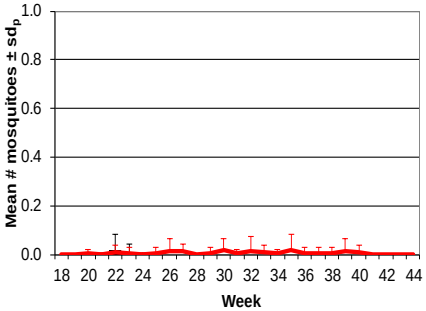
Comments

Culex Mix is composed of *Culex pipiens, Cx. restuans* and *Cx. salinarius*. These three species (especially *pipiens* and *restuans*) are often difficult to tell apart after encountering the damaging blades of the New Jersey light trap. For the current dataset, *Culex* populations in the New York Metropolitan and North Central Rural regions are mildly higher than the historical averages. Recent population numbers in the Delaware River Basin and possibly the Agricultural regions also suggest that this weeks' numbers will too be higher than historical trends.

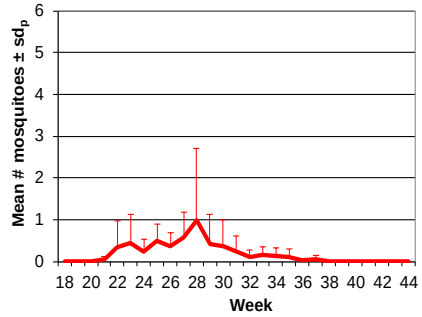
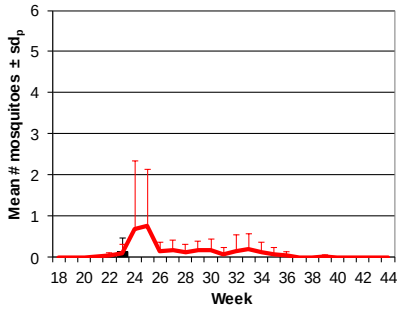
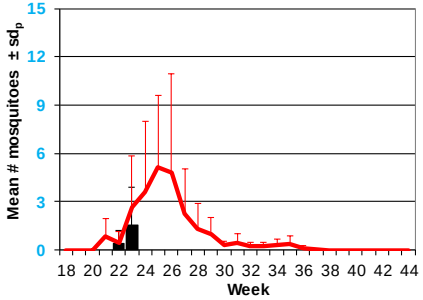
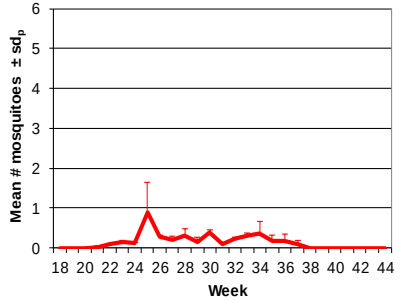
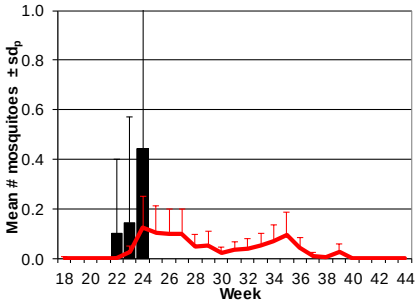
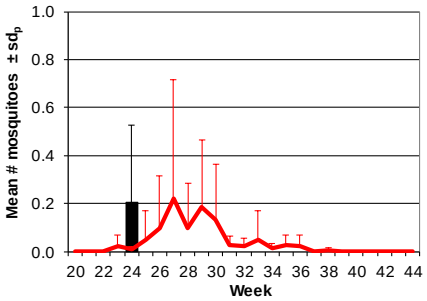
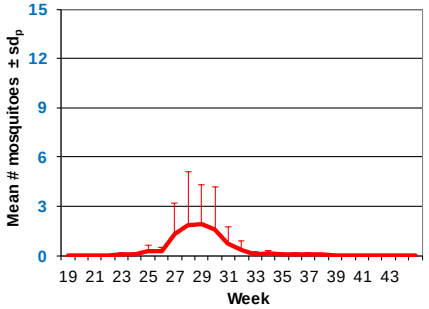
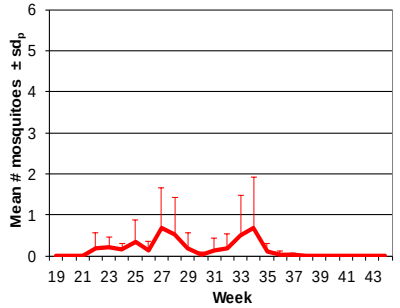
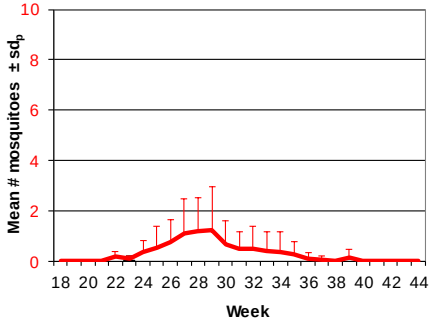
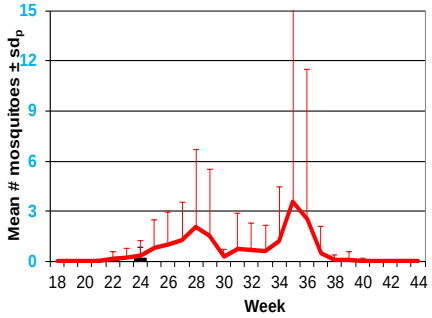
Culiseta melanura – Miscellaneous Group Unique (*Cs. melanura* Type)

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. Current numbers in the regions of higher abundance (Coastal, Delaware Bayshore and Pinelands) continue to show populations that area tracking historical averages.	

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

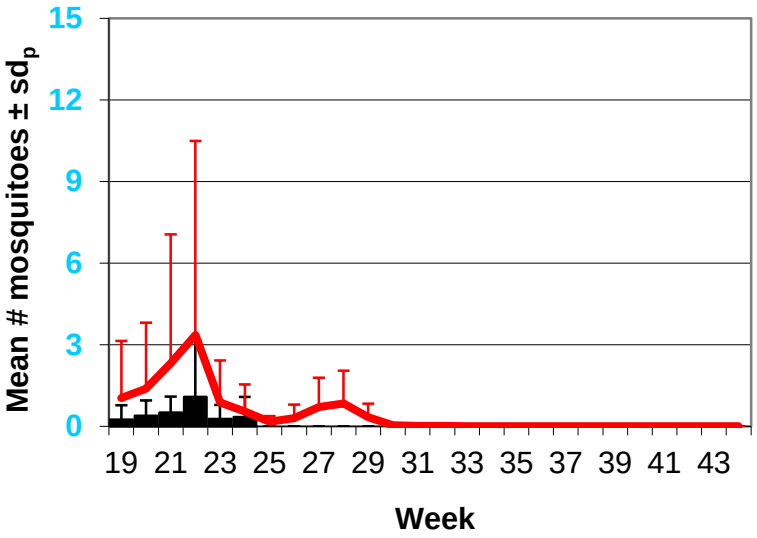
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes sollicitans* is a salt floodwater species and responds to both lunar tidal patterns as well as rainfall. This species has recently shown lower than expected numbers for a few years, but may be on the rebound. Populations currently are on par with recent historical data. The New York Metro region has mildly elevated numbers, but is low in comparison to traditional habitat areas of the Coast and Delaware Bayshore. The next full moon is 20 June.	

Coquillettidia perturbans
Monotypic (*Coquillettidia perturbans* Type)

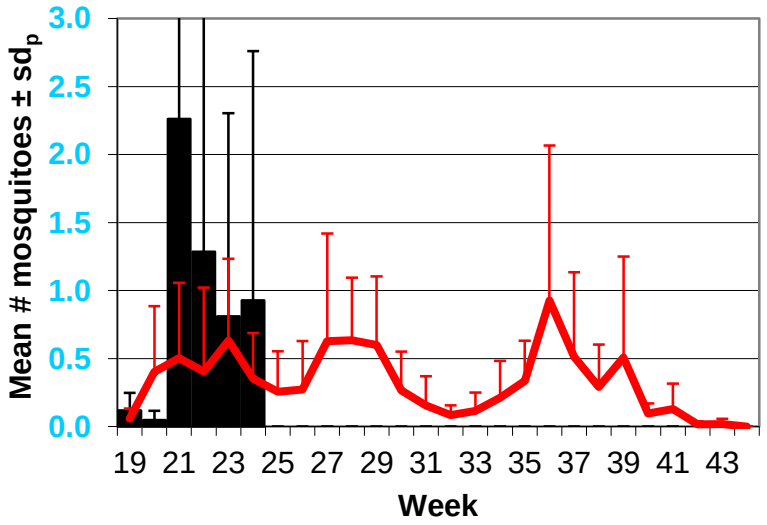
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Coquillettidia perturbans* populations are located in cattail swamps and other wetlands with emergent vegetation, often making control of their numbers dependent on controlling water depth. The New York Metropolitan and North Central Rural regions are both showing significant numbers of *Coq. perturbans*. In other regions, the population levels are on track with historical levels. This species is suspected to be the inland vector of EEE.	

Early season species: Some species, such as *Aedes stimulans* and *Aedes cinereus* do not get much attention in these reports, primarily because they appear in the early season. Both populations below are from the Northwestern Rural region. As can be seen from the historical data, *Ae. cinereus* can re-appear later in the season.

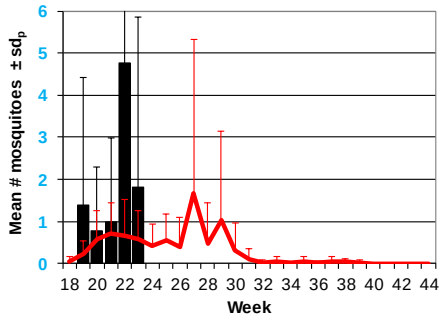
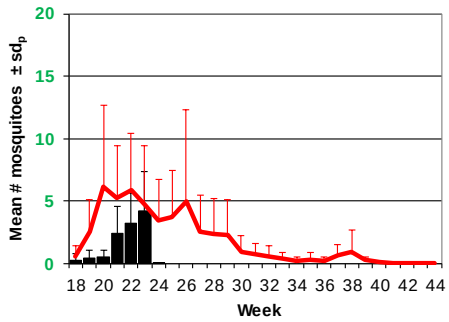
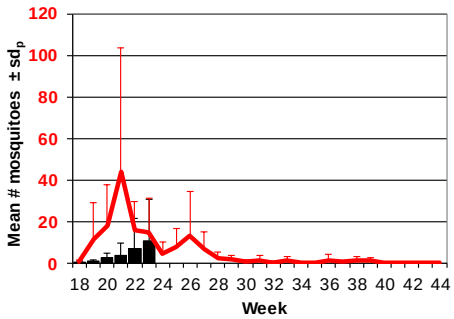
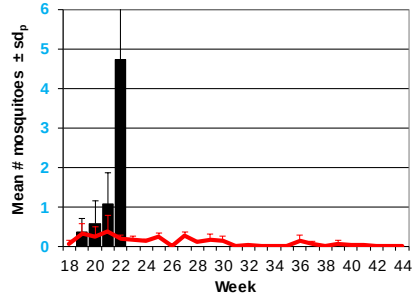
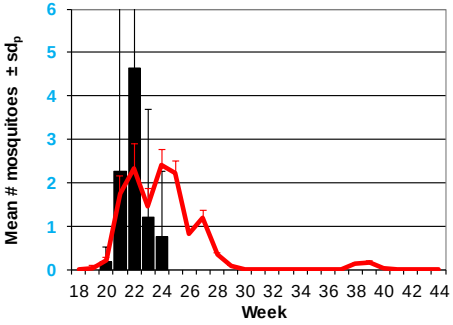
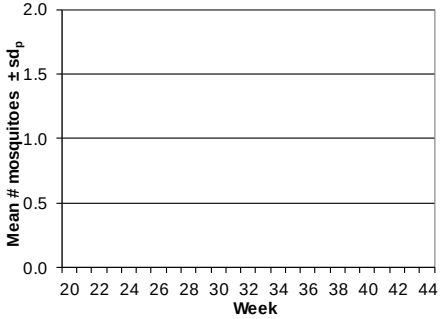
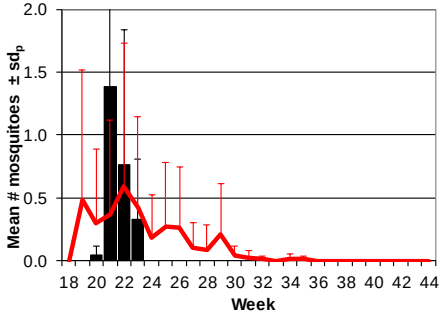
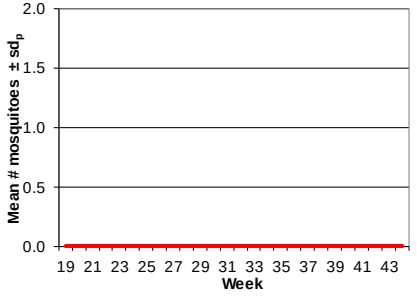
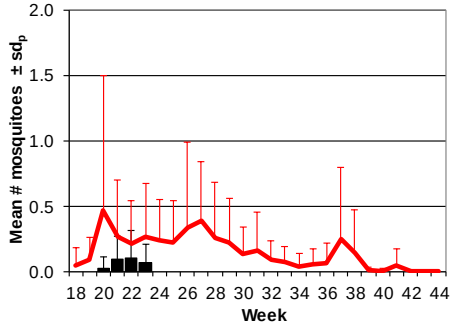
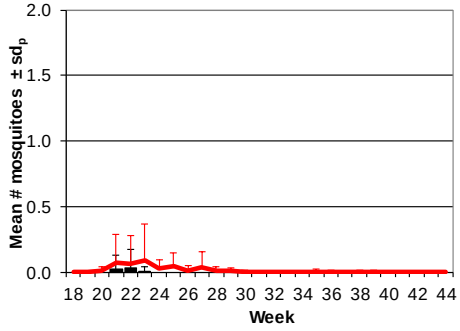
Aedes stimulans



Aedes cinereus



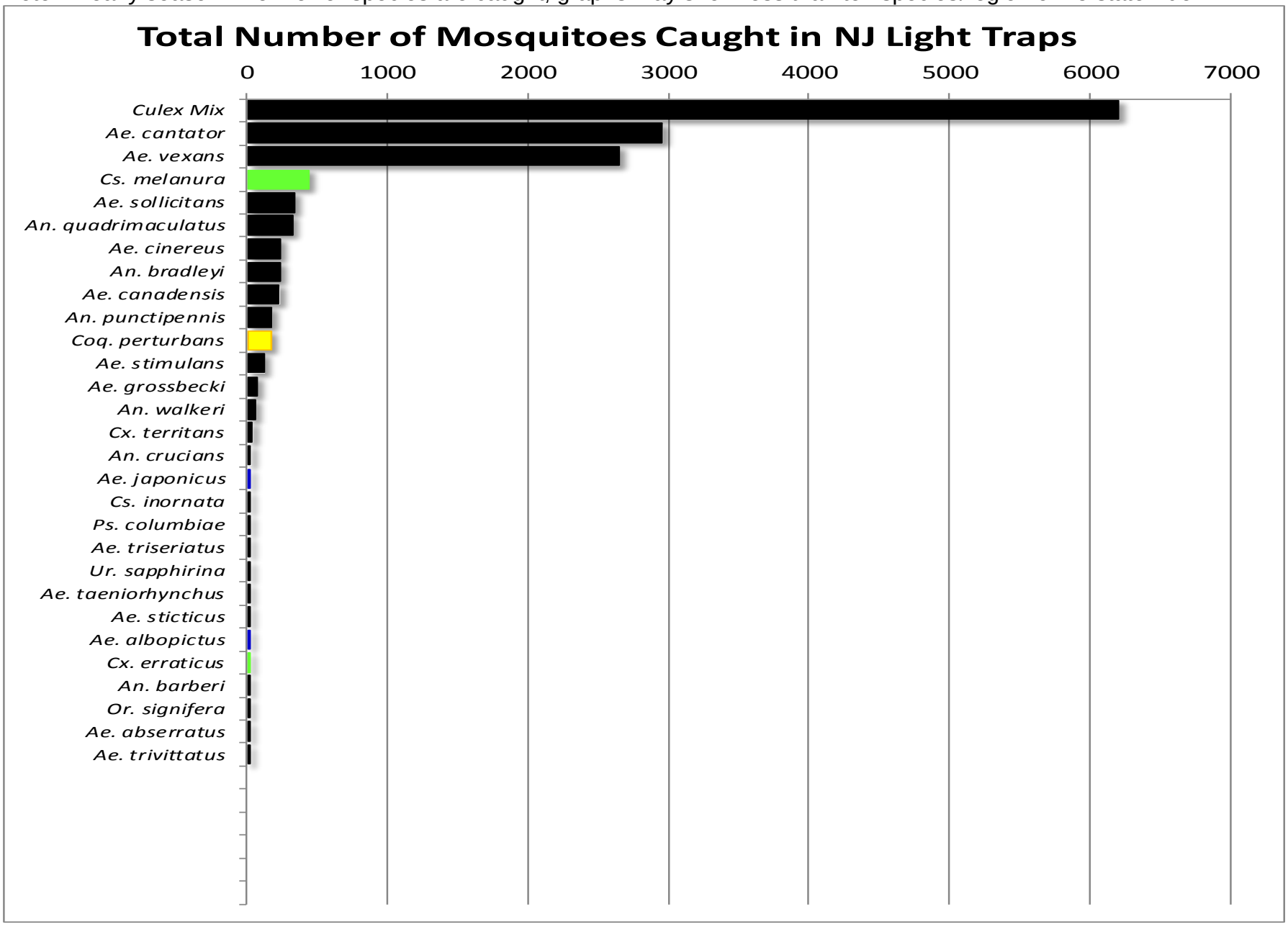
Aedes cantator
Monotypic (*Coquillettidia perturbans* Type)

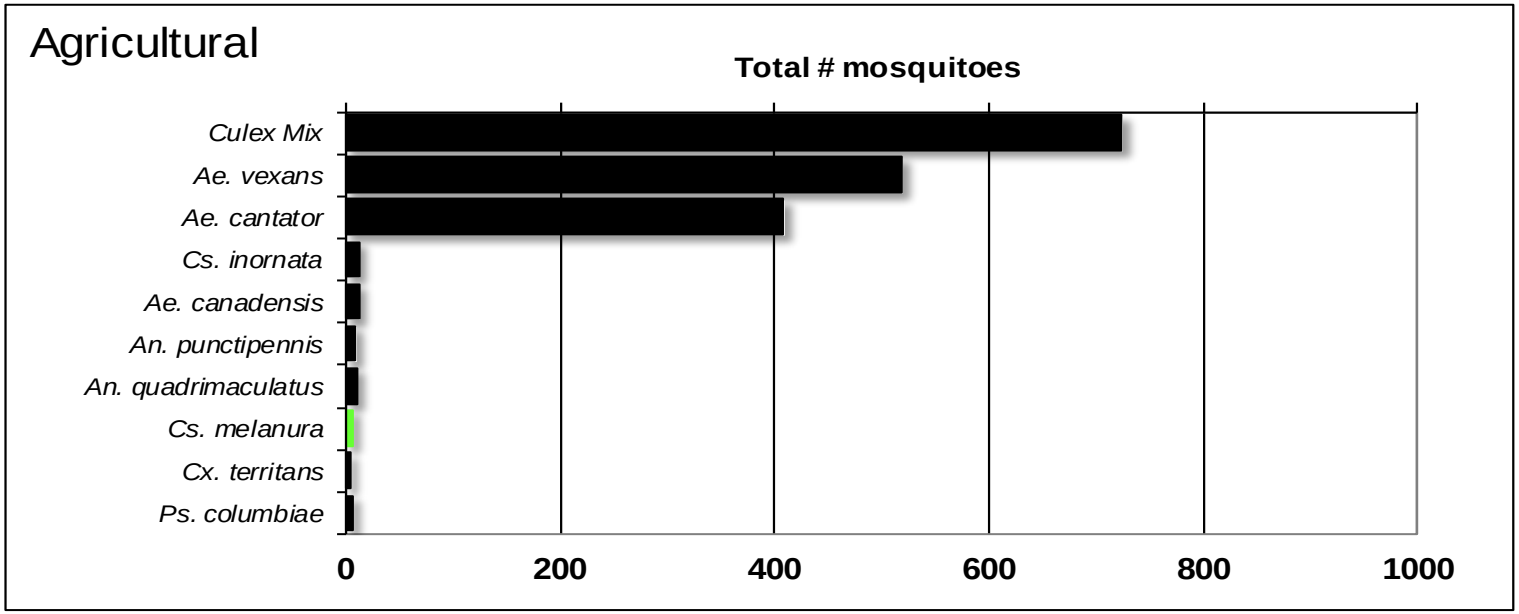
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes cantator* is a salt-tolerant species with a wide range of habitats, but their typical ecology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

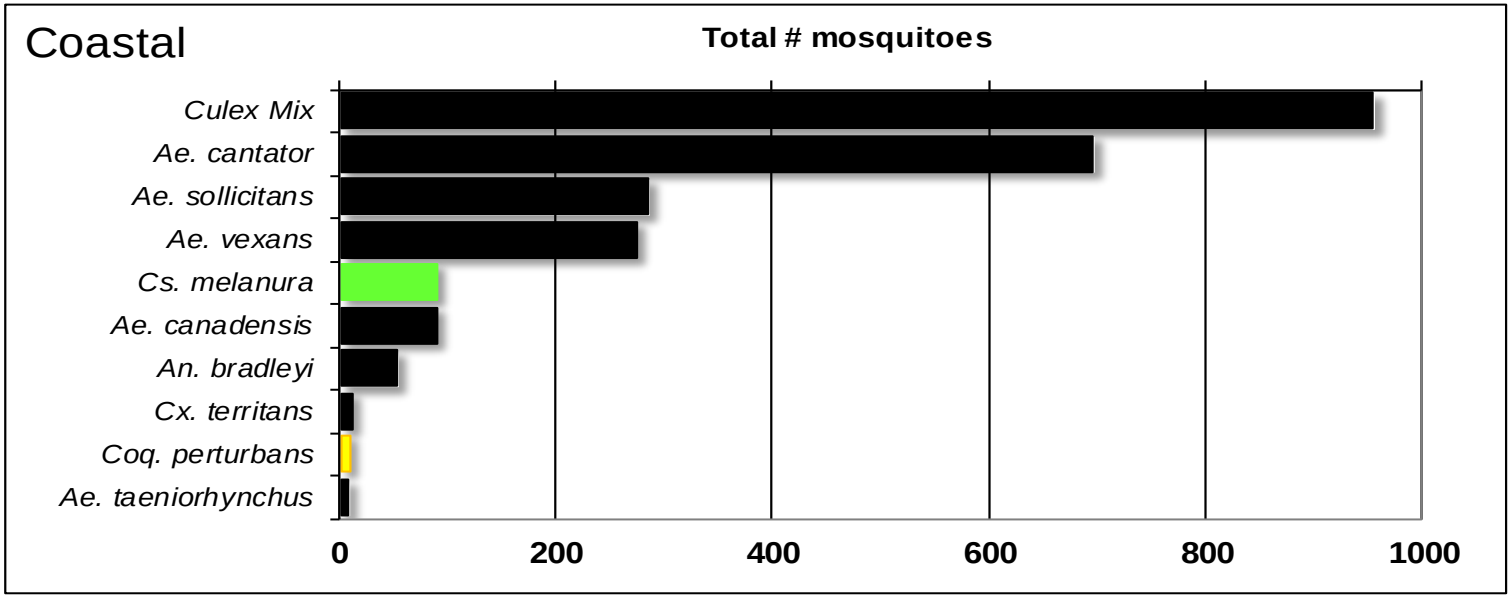
WNV *EEE*

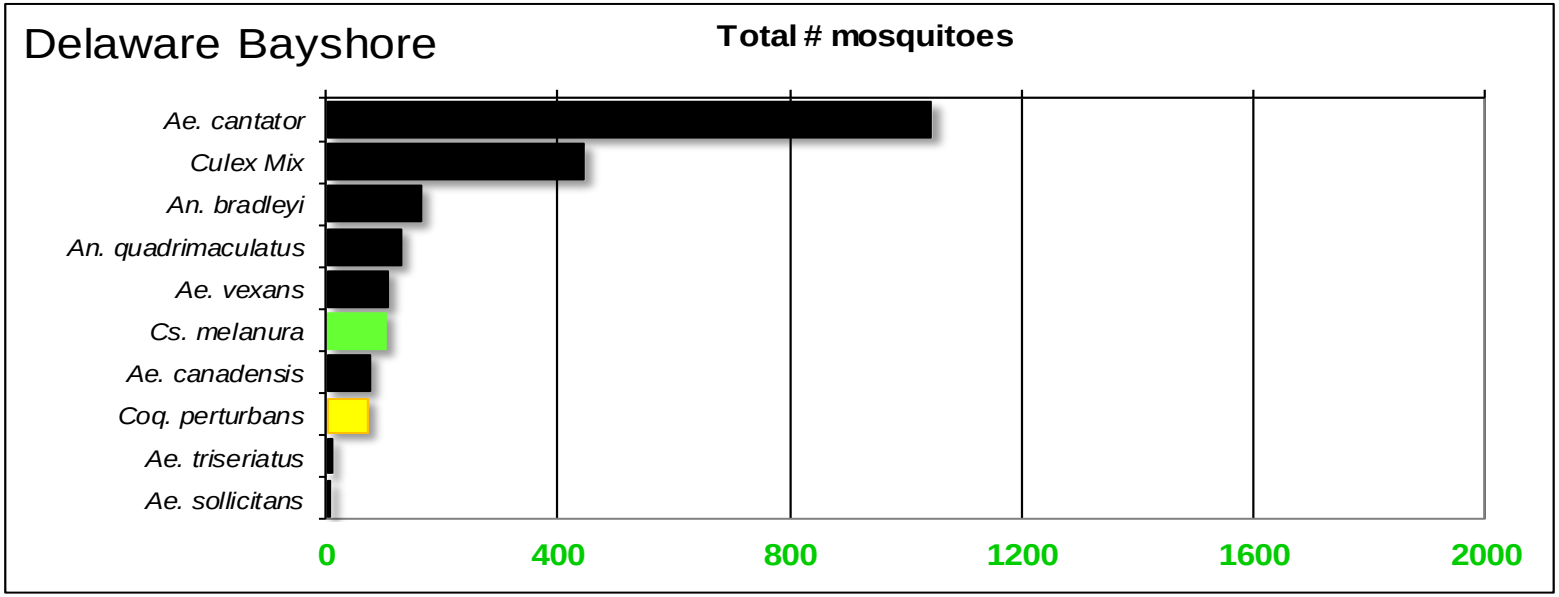
Top Ten Mosquito Species/Region - *Ae. albopictus,* *Ae. japonicus (invasives);* *Cs. melanura or Cx. erraticus* *Coq. perturbans*

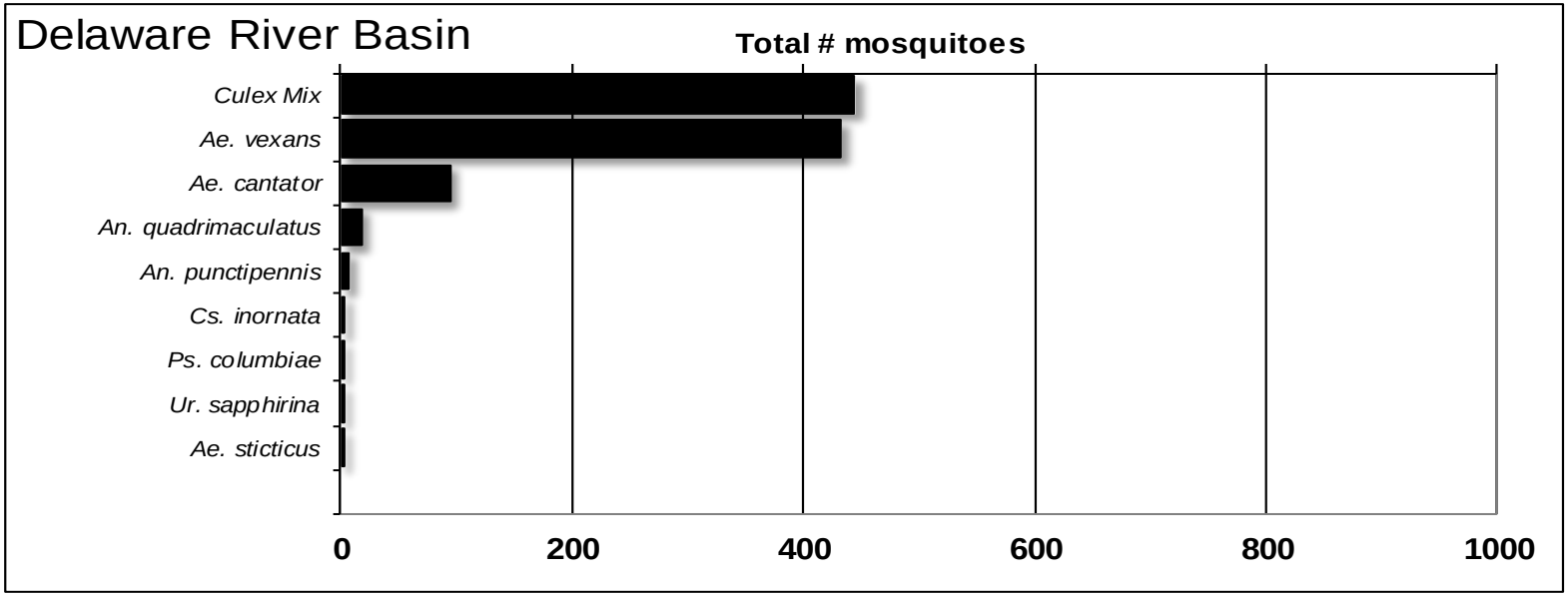
Note: In early season when fewer species are caught, graphs may show less than ten species/region or 25 statewide.

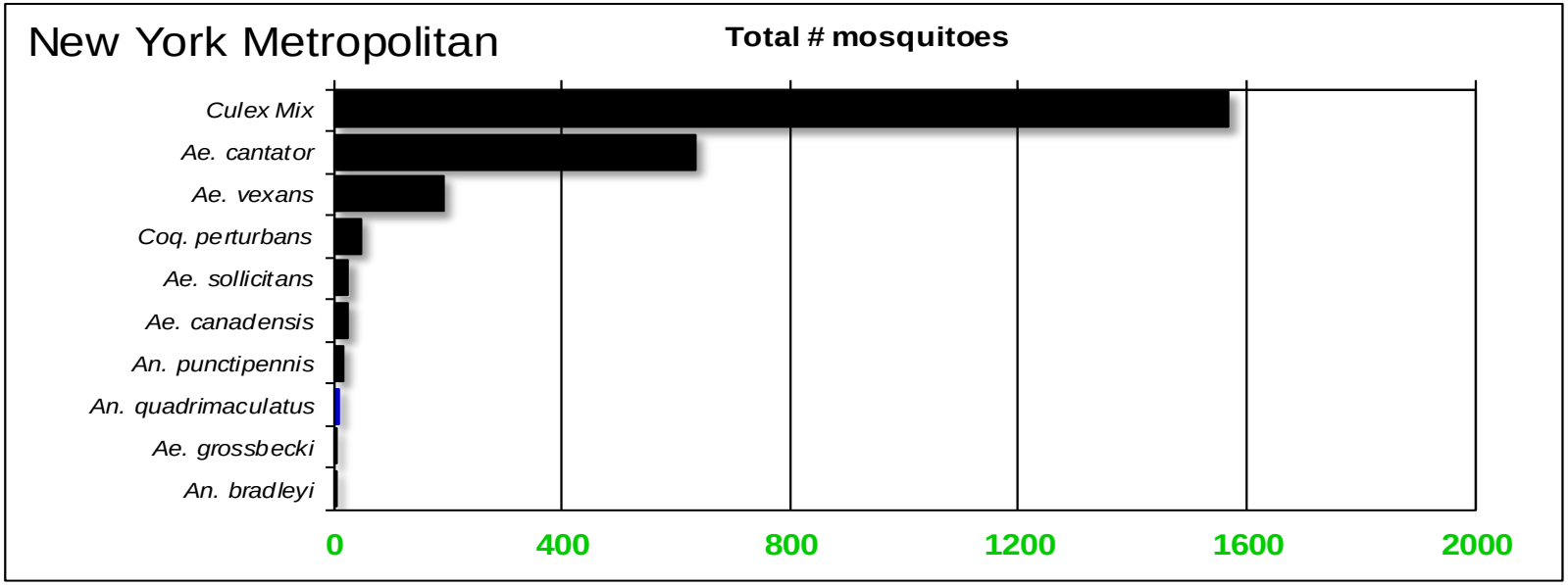


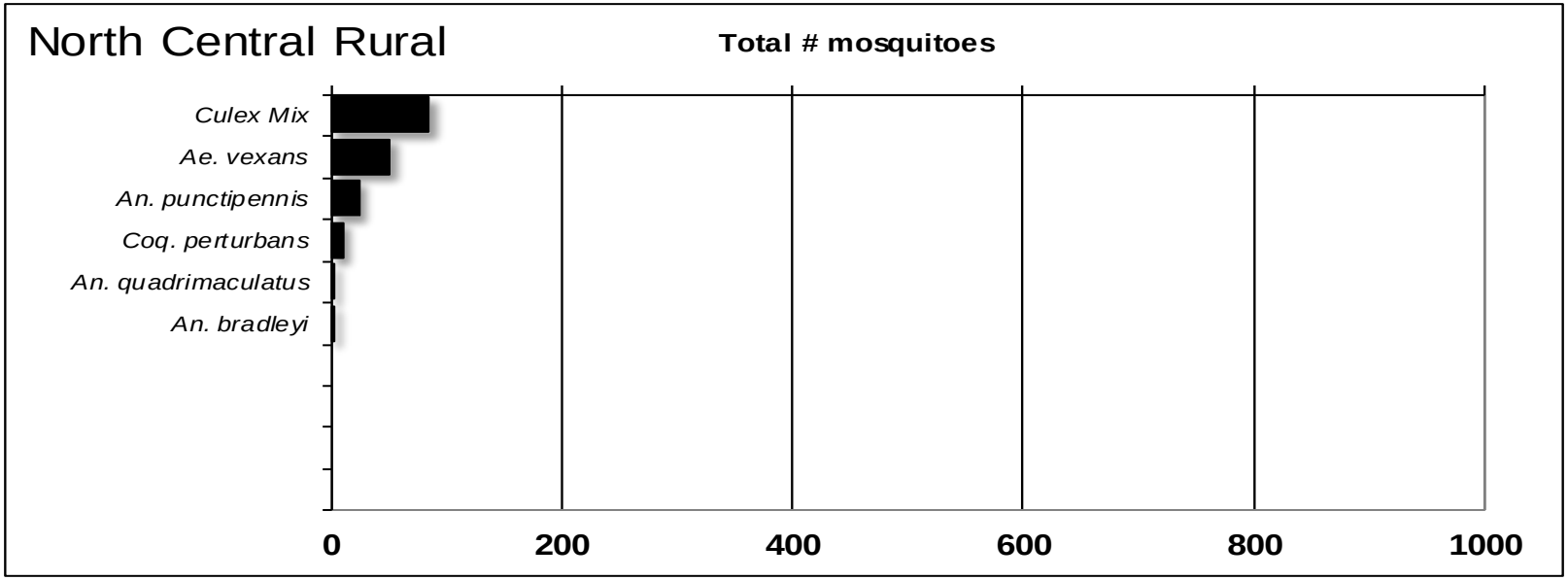

Agricultural
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. cantator
Cs. inornata
Ae. canadensis
An. punctipennis
An. quadrimaculatus
Cs. melanura
Cx. territans
Ps. columbiae
0
200
400
600
800
1000

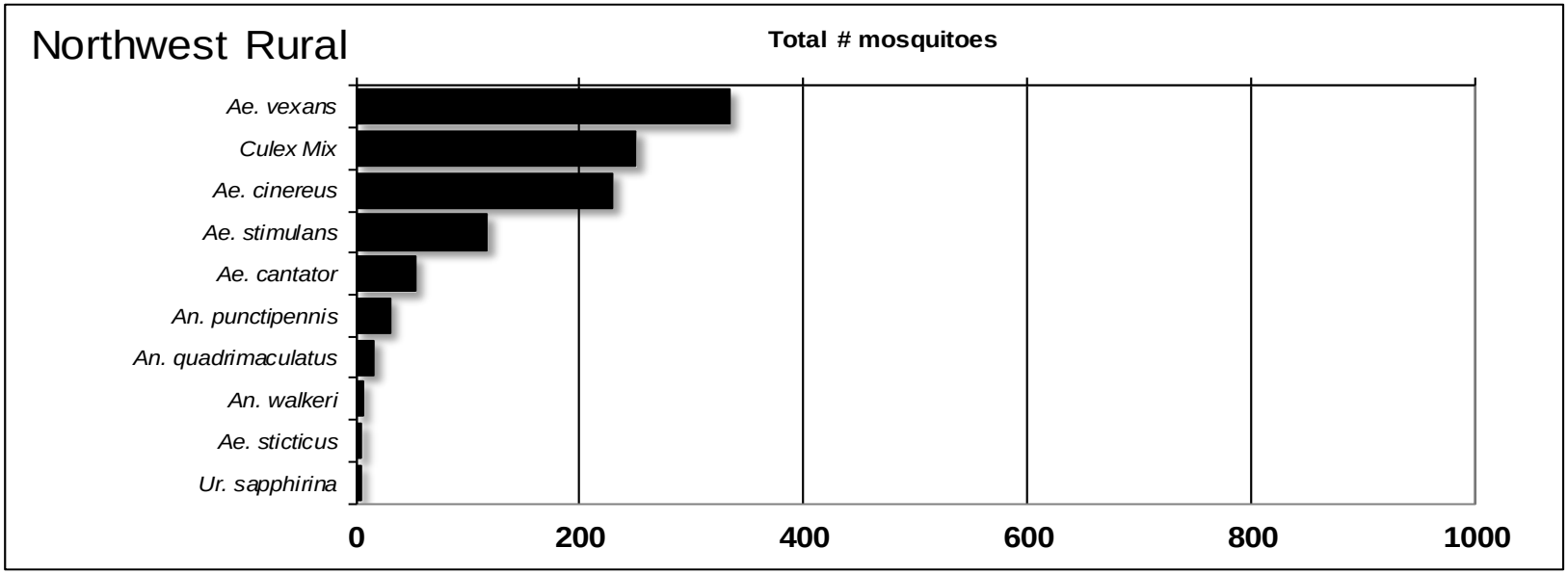

Coastal
Total # mosquitoes
Culex Mix
Ae. cantator
Ae. sollicitans
Ae. vexans
Cs. melanura
Ae. canadensis
An. bradleyi
Cx. territans
Coq. perturbans
Ae. taeniorhynchus
0
200
400
600
800
1000

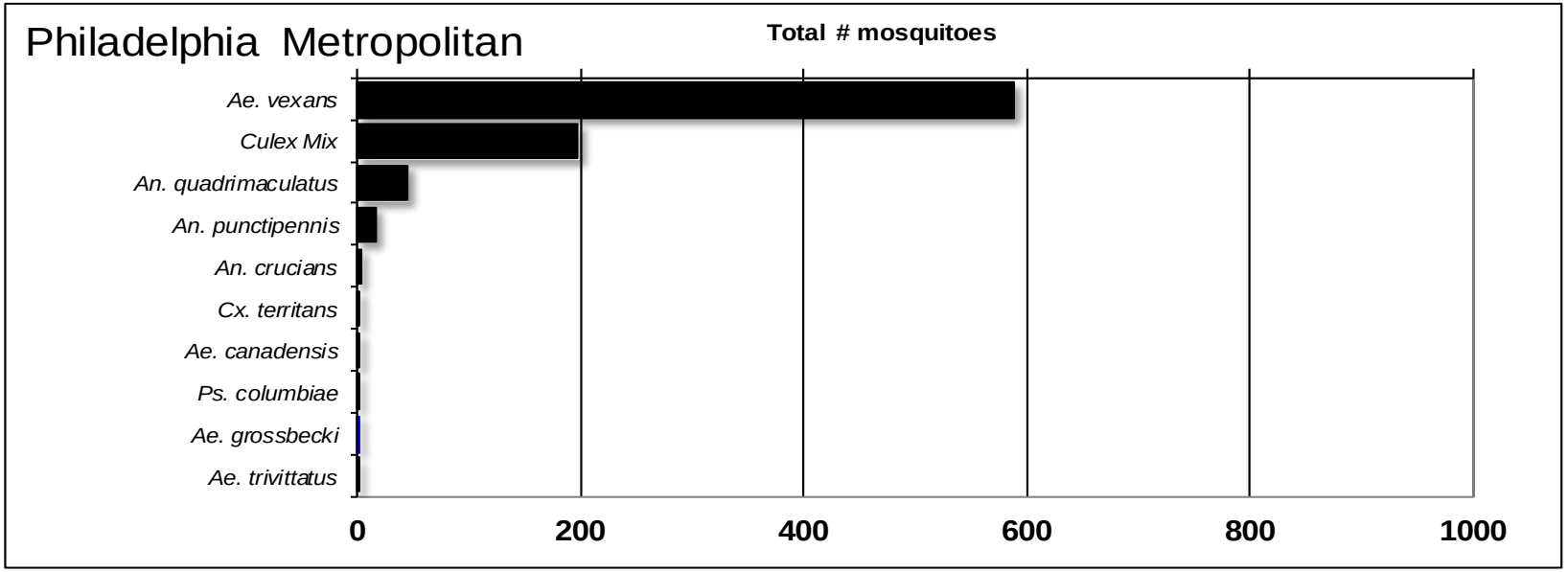

Delaware Bayshore
Total # mosquitoes
Ae. cantator
Culex Mix
An. bradleyi
An. quadrimaculatus
Ae. vexans
Cs. melanura
Ae. canadensis
Coq. perturbans
Ae. triseriatus
Ae. sollicitans
0
400
800
1200
1600
2000

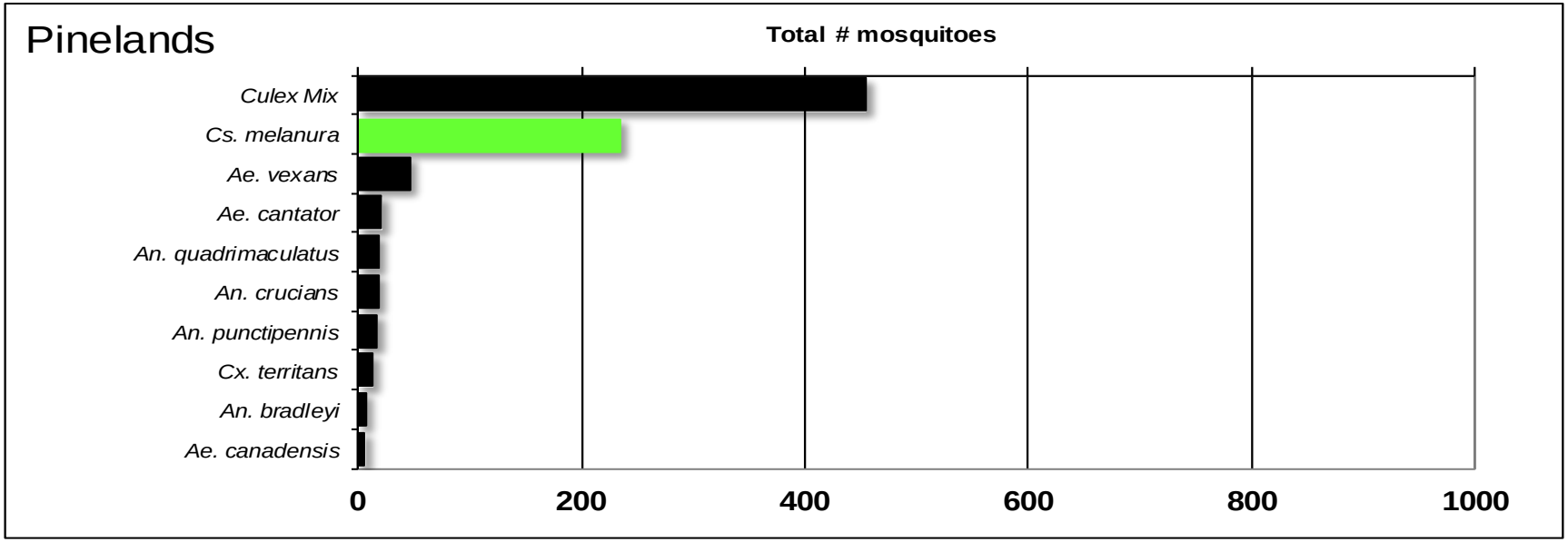

Delaware River Basin
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. cantator
An. quadrimaculatus
An. punctipennis
Cs. inornata
Ps. columbiae
Ur. sapphirina
Ae. sticticus
0
200
400
600
800
1000

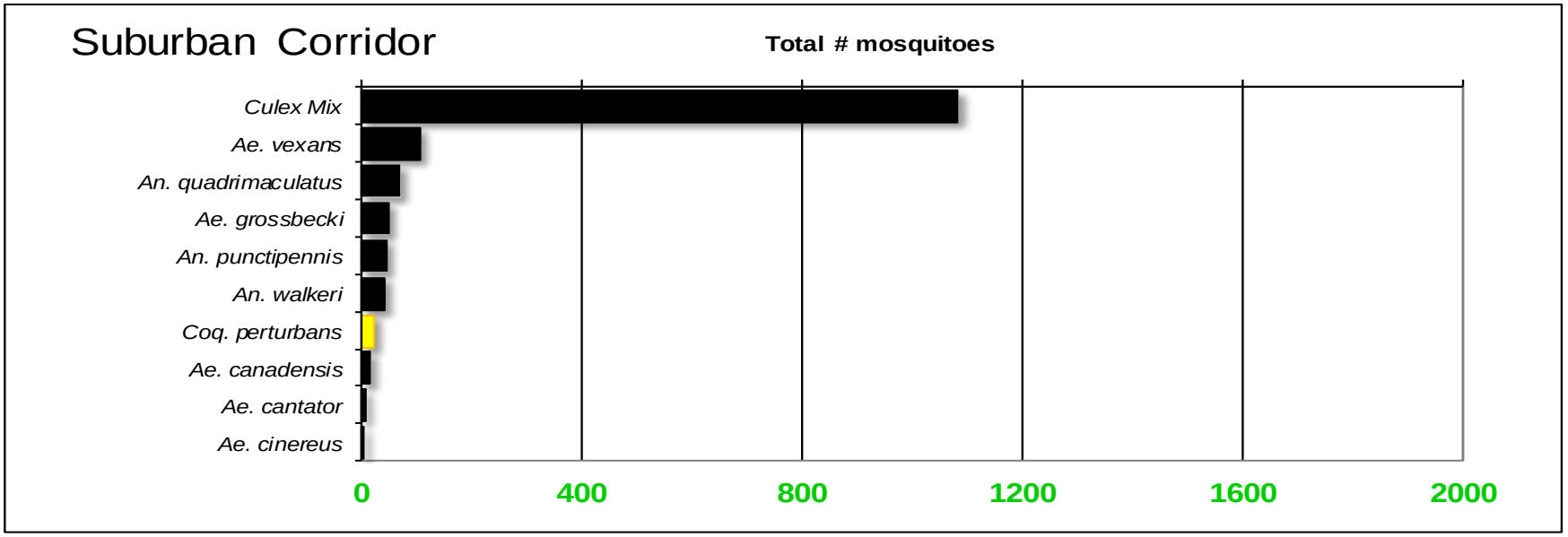

New York Metropolitan
Total # mosquitoes
Culex Mix
Ae. cantator
Ae. vexans
Coq. perturbans
Ae. sollicitans
Ae. canadensis
An. punctipennis
An. quadrimaculatus
Ae. grossbecki
An. bradleyi
0
400
800
1200
1600
2000


North Central Rural
Total # mosquitoes
Culex Mix
Ae. vexans
An. punctipennis
Coq. perturbans
An. quadrimaculatus
An. bradleyi
0
200
400
600
800
1000


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


Philadelphia Metropolitan
Total # mosquitoes
Ae. vexans
Culex Mix
An. quadrimaculatus
An. punctipennis
An. crucians
Cx. territans
Ae. canadensis
Ps. columbiae
Ae. grossbecki
Ae. trivittatus
0
200
400
600
800
1000


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


Suburban Corridor
Total # mosquitoes
Culex Mix
Ae. vexans
An. quadrimaculatus
Ae. grossbecki
An. punctipennis
An. walkeri
Coq. perturbans
Ae. canadensis
Ae. cantator
Ae. cinereus
0
400
800
1200
1600
2000