NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report for 29 May to 4 June 2016, beginning to 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.

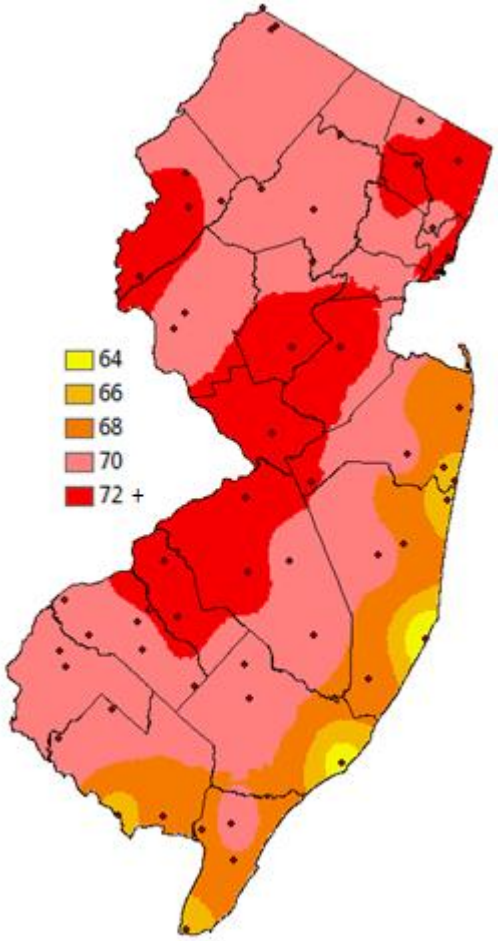
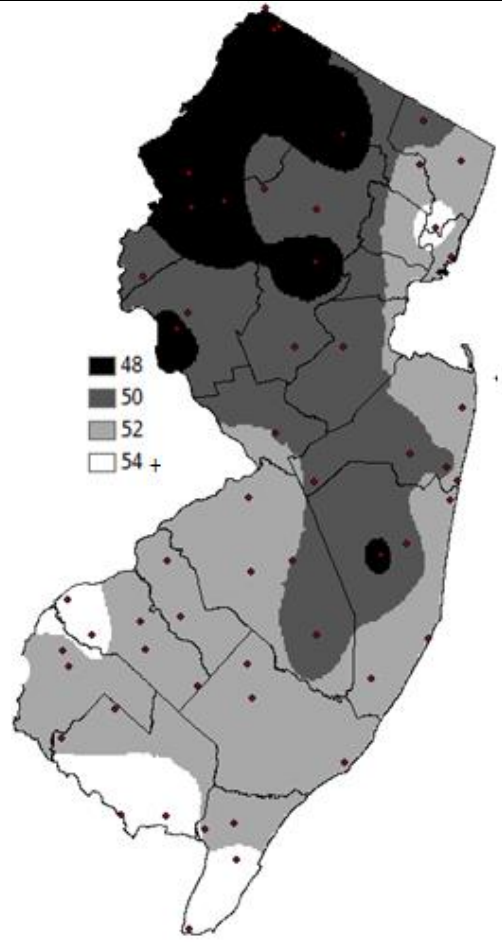
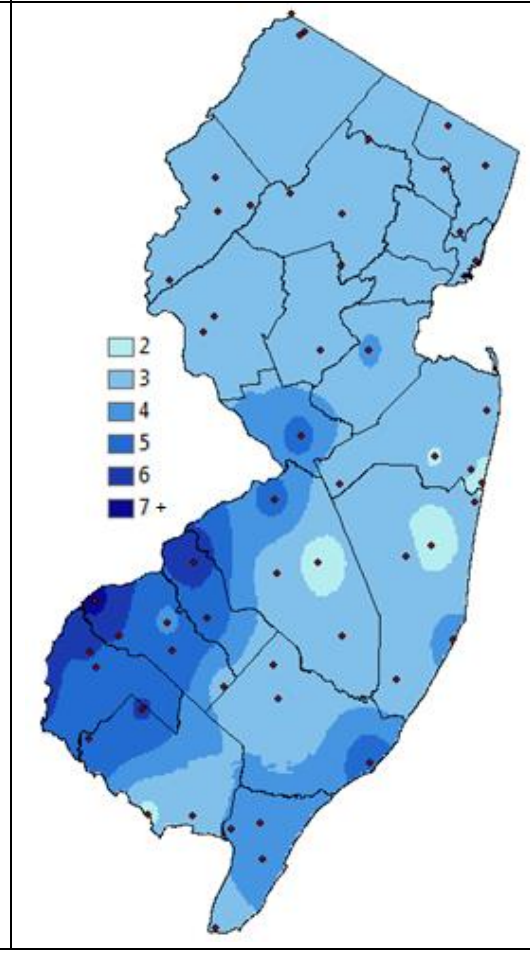
Summary Table – Week 22

	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**	**2.50**	**0**	**0.14**	**2.04**	**0**	**0.00**	**0.37**	**0**	**0.00**	**0.11**	**0**
Coastal	**0.14**	**1.79**	**0**	**0.87**	**2.03**	**0**	**0.00**	**0.25**	**0**	**0.71**	**3.17**	**0**
Delaware Bayshore	**nd**	**3.13**	**0**	**nd**	**8.04**	**0**	**nd**	**2.65**	**0**	**nd**	**2.22**	**0**
Delaware River Basin	**nd**	**2.60**	**0**	**nd**	**0.57**	**0**	**nd**	**0.10**	**0**	**nd**	**0.03**	**0**
New York Metro	**0.26**	**3.71**	**0**	**1.70**	**4.00**	**0**	**0.00**	**0.10**	**0**	**0.10**	**0.42**	**0**
North Central Rural	**0.88**	**0.52**	**2**	**0.35**	**0.71**	**0**	**0.00**	**0.01**	**0**	**0.00**	**0.00**	**0**
Northwest Rural	**0.63**	**4.05**	**0**	**0.37**	**1.05**	**0**	**0.00**	**0.02**	**0**	**0.00**	**0.00**	**0**
Philadelphia Metro	**nd**	**5.22**	**0**	**nd**	**3.43**	**0**	**nd**	**0.81**	**0**	**nd**	**0.00**	**0**
Pinelands	**0.00**	**0.82**	**0**	**0.06**	**1.37**	**0**	**0.00**	**0.35**	**0**	**0.04**	**0.12**	**0**
Suburban Corridor	**0.06**	**3.72**	**0**	**0.12**	**1.97**	**0**	**0.00**	**0.37**	**0**	**0.00**	**0.00**	**0**

*Averages represent data from, at most, the previous 5 years. Increase is a scale of current values from historical values where no difference or a decrease is represented by 0 (blue), up to 50% greater difference by 1 (green), up to 100% greater difference by 2 (yellow), up to 150% greater difference by 3 (orange) and greater than 150% increase by 4 (red). White cells in the increase column denote increases from an historic zero and thus no value can be appropriately given. nd=no data reported.

State Summary: With the current dataset, *Aedes vexans* is the only pestiferous species to show elevated population levels, occurring in the North Central region, albeit at very low numbers.

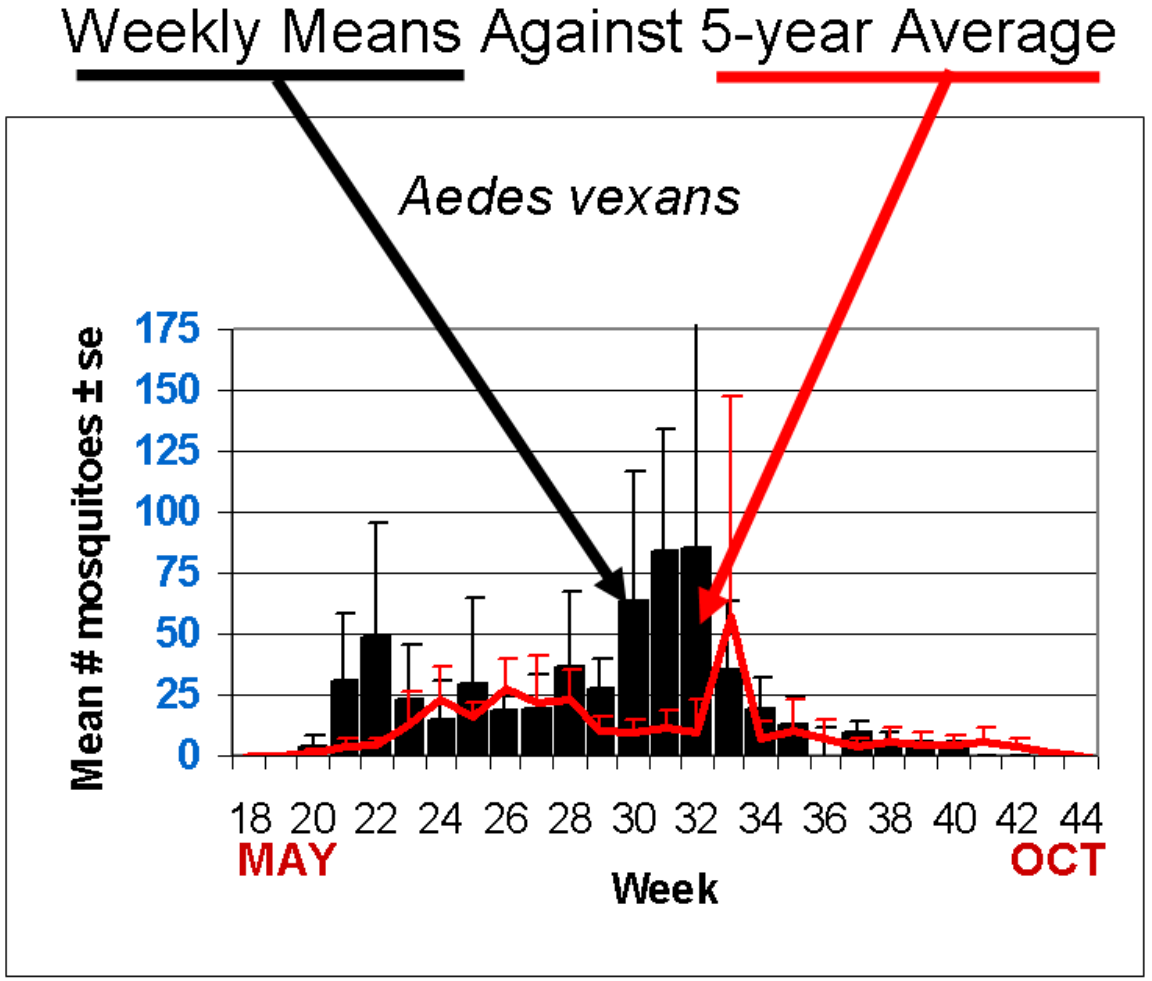
Climate Factors

Average High Temperature	Average Low Temperature	Total Precipitation
		

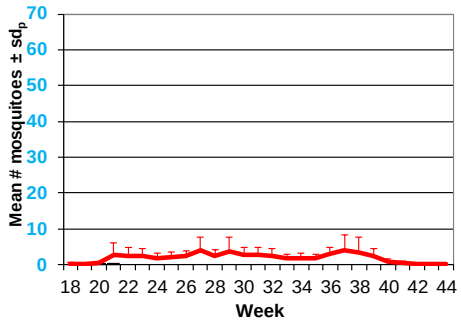
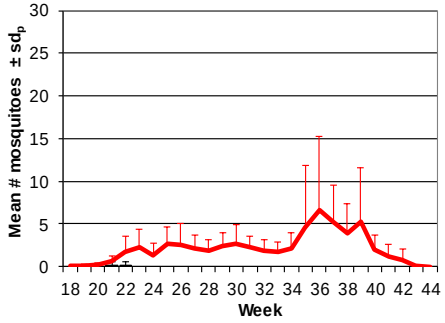
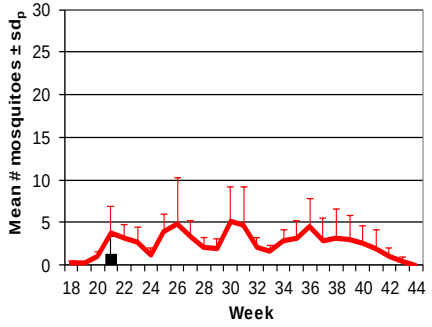
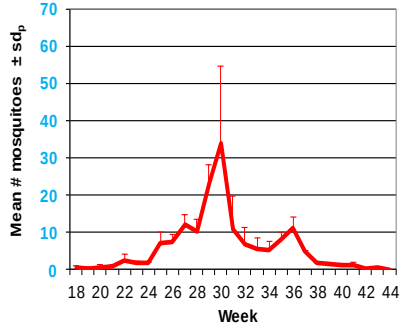
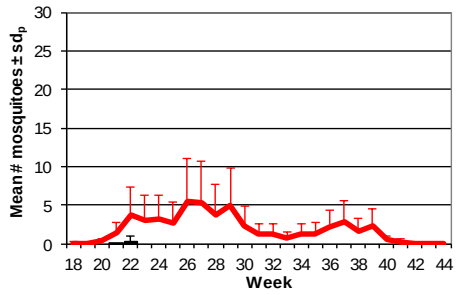
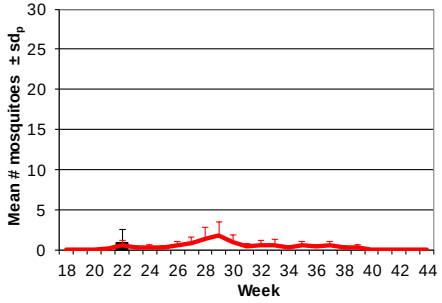
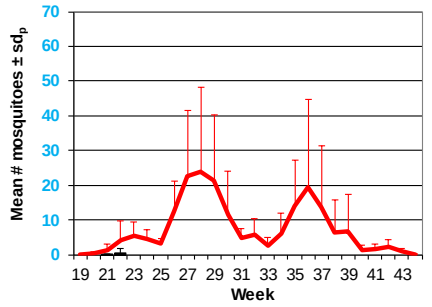
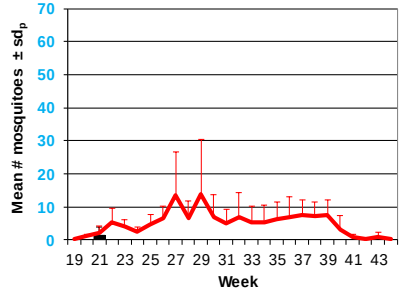
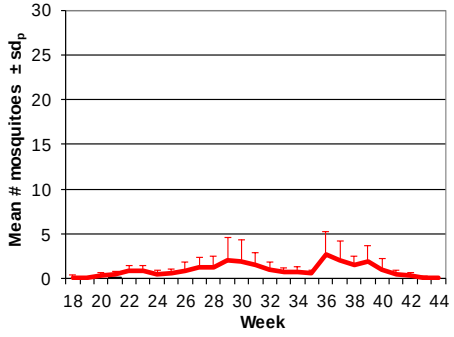
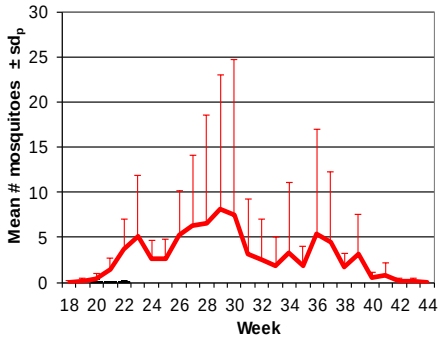
The three figures show the interpolation of average maximum (°F) and minimum temperature (°F) and total precipitation (inches) for 30 days prior to 3 June 2016 in New Jersey. Data points are from about 58 weather stations maintained through the New Jersey Weather & Climate Network and the State Climatologist. 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 Bergen, Monmouth, Morris, Ocean and Warren counties. Data for the previous week are from (Atlantic early season), Bergen, Burlington, Cape May, Cumberland (early), Mercer (early), Monmouth, Morris, Ocean, Salem (early) and Warren counties.

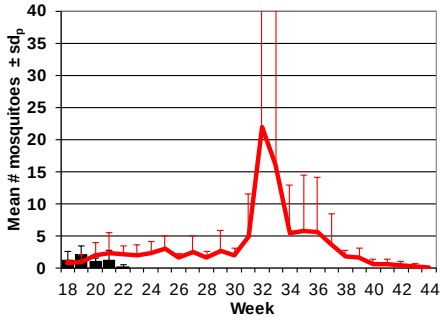


Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

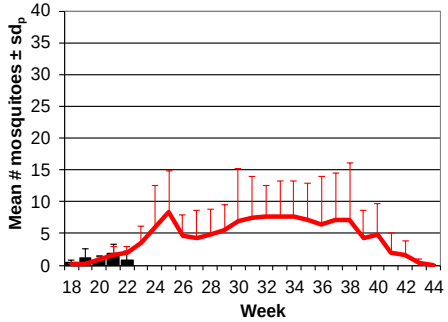
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		Northern portions of New Jersey continue to have abnormally dry conditions according to the US Drought Monitor website, and the precipitation map continues to show more activity in the south than in the northern half of the state. But counties are reporting *vexans* on the wing, even in the dry northern half. The North Central Rural region even reports higher than average population levels (even though this number is quite low compared to areas of high production). http://droughtmonitor.unl.edu/Home/RegionalDroughtMonitor.aspx?northeast	

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

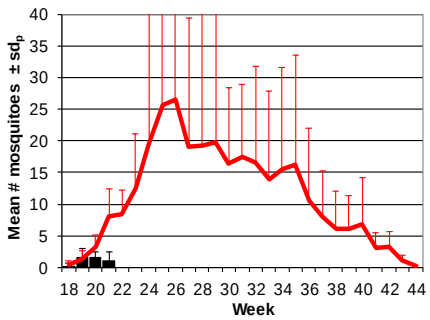
Agricultural



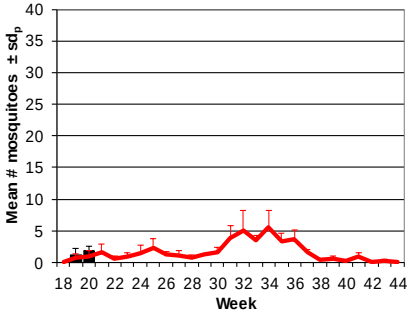
Coastal



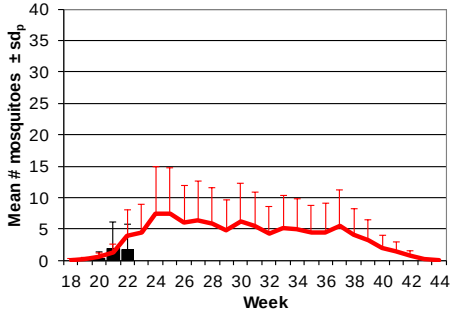
Delaware Bayshore



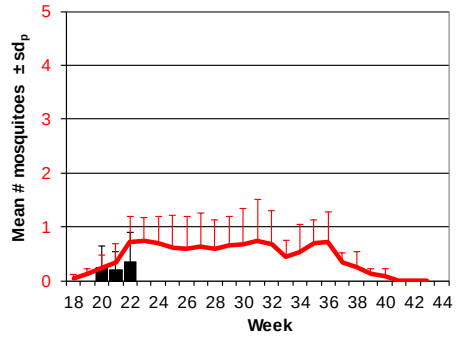
Delaware River Basin



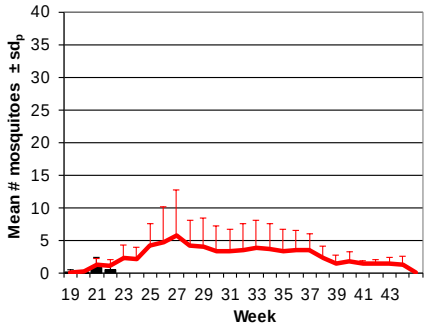
New York Metro



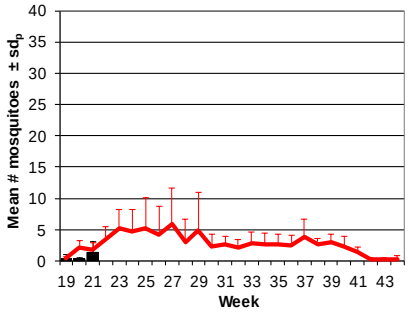
North Central Rural



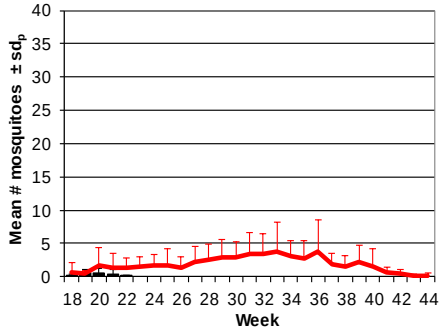
Northwestern Rural



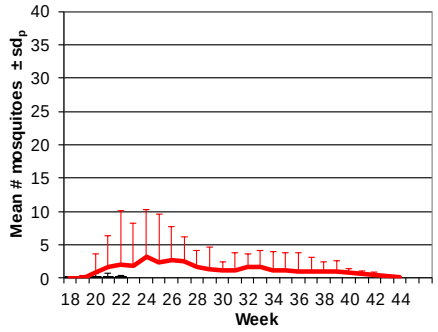
Philadelphia Metro



Pinelands



Suburban Corridor

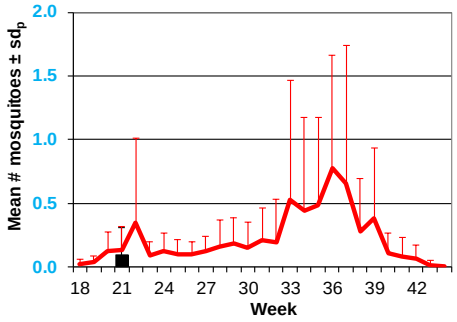


Comments

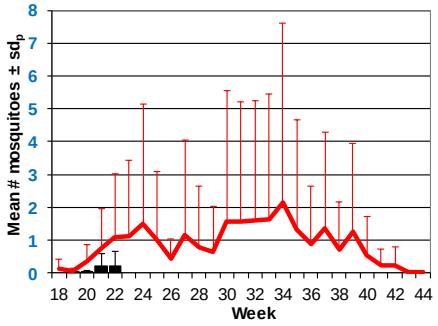
Culex Mix is composed of *Culex pipiens, Cx. restuans* and *Cx. salinarius*. These three species (especially *pipiens* and *restuans*) are often difficult to tell apart after encountering the damaging blades of the New Jersey light trap. For the current dataset, *Culex* populations appear close to historical averages. These values are expected to increase as all counties send in their data. In the northeastern US, *Culex* species play a role in the enzootic and very likely the epizootic transmission cycle of West Nile and Saint Louis encephalitis virus.

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

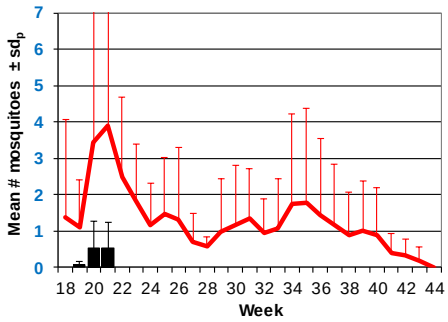
Agricultural



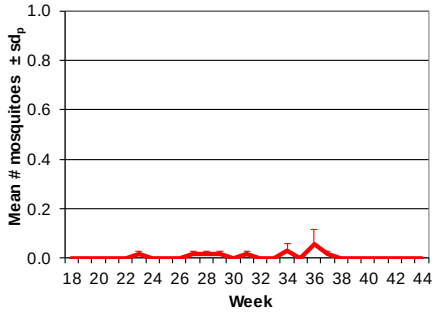
Coastal



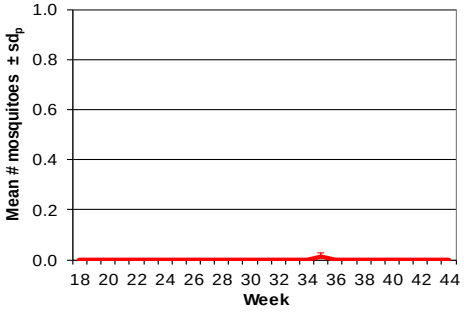
Delaware Bayshore



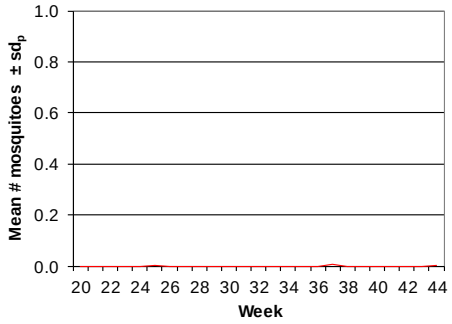
Delaware River Basin



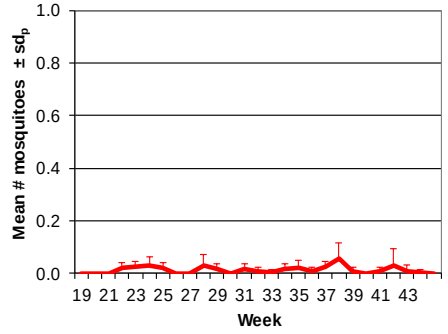
New York Metro



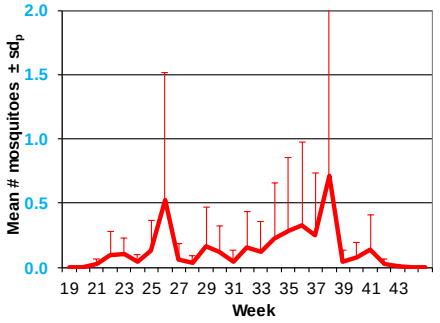
North Central Rural



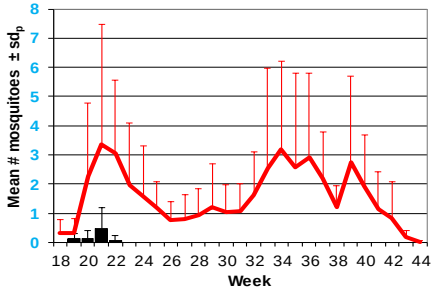
Northwestern Rural



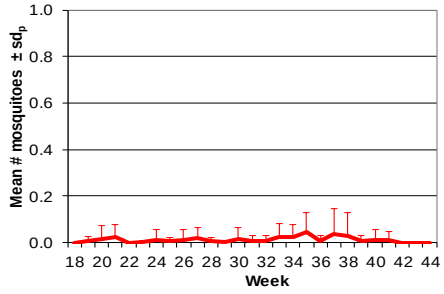
Philadelphia Metro



Pinelands



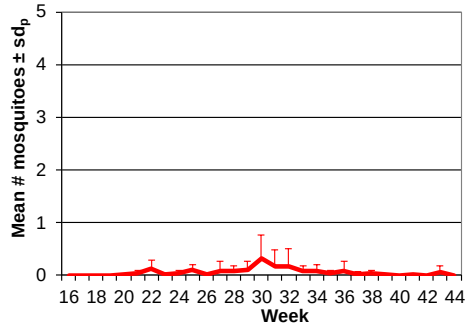
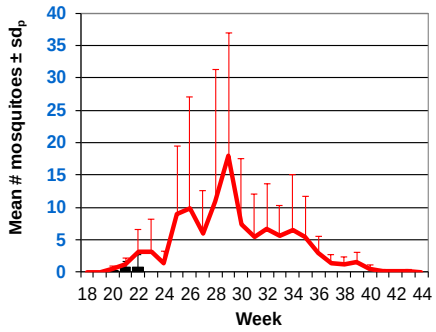
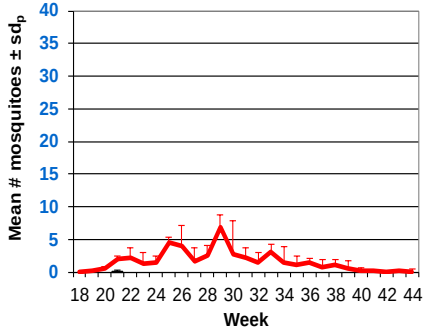
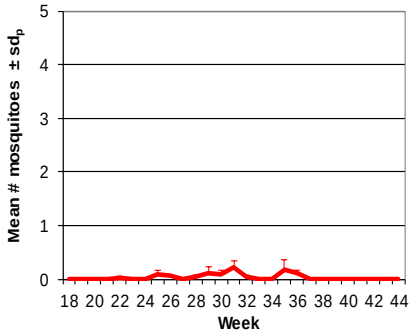
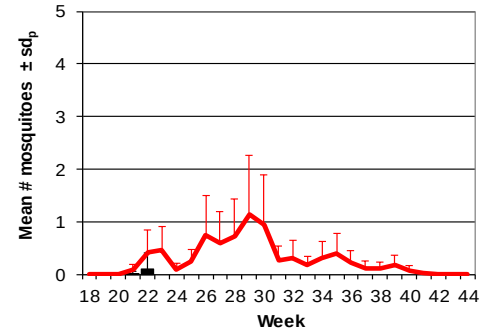
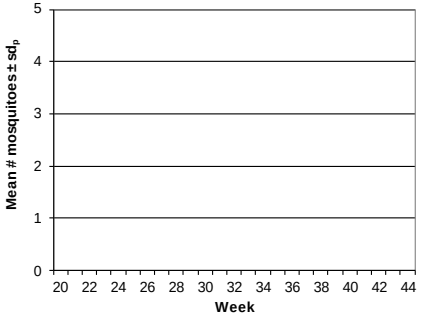
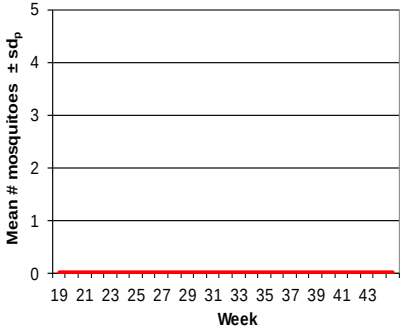
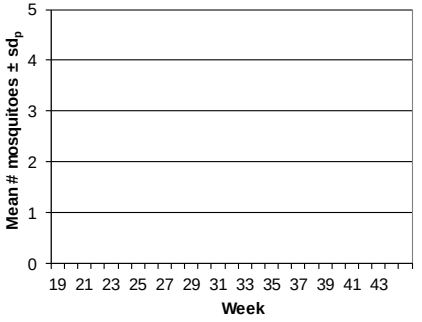
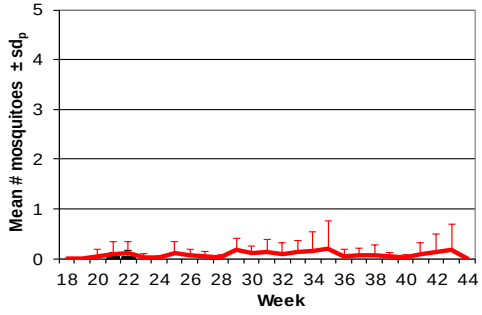
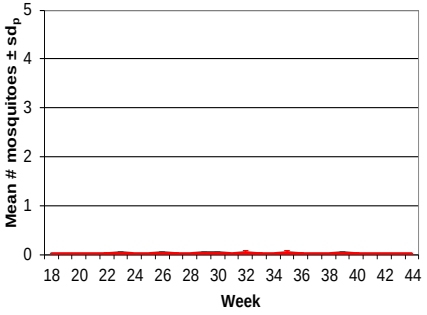
Suburban Corridor



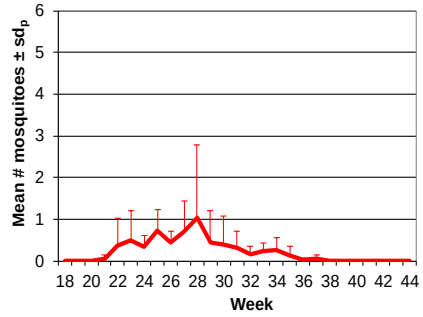
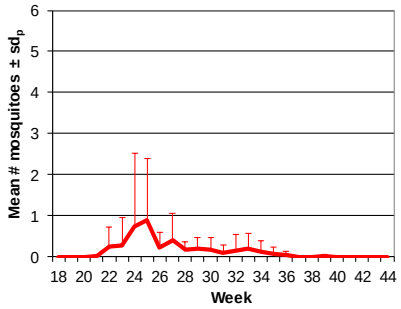
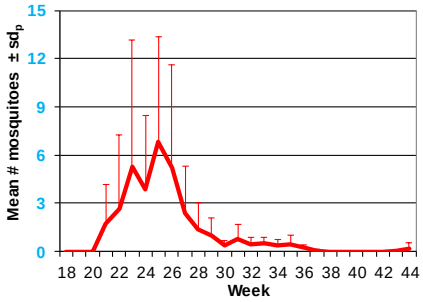
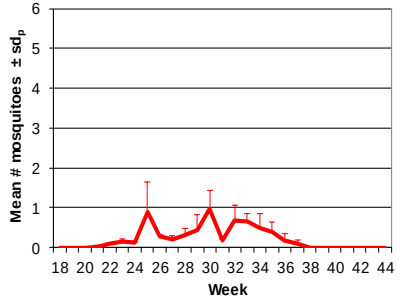
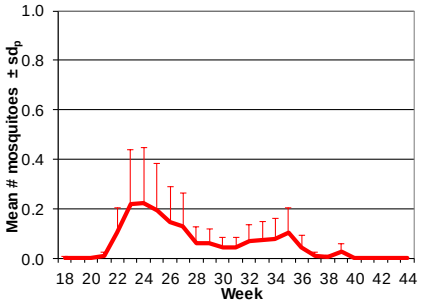
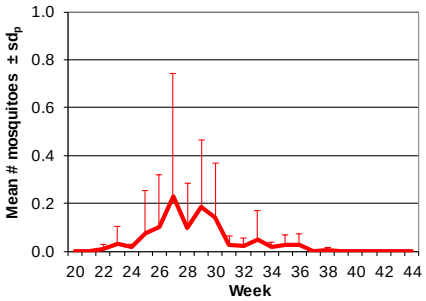
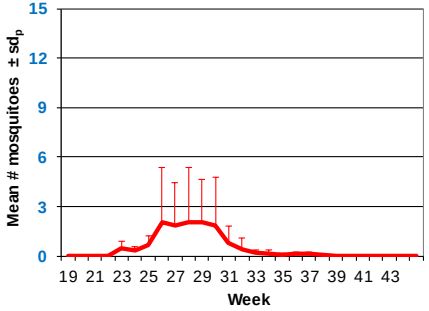
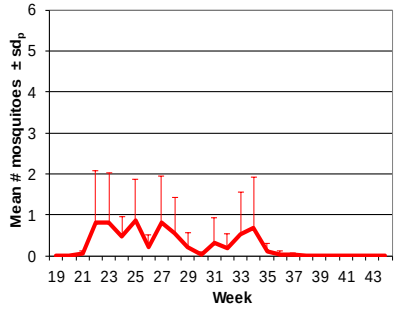
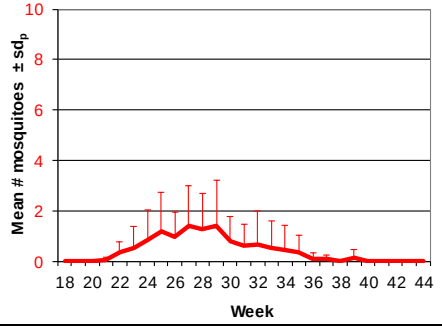
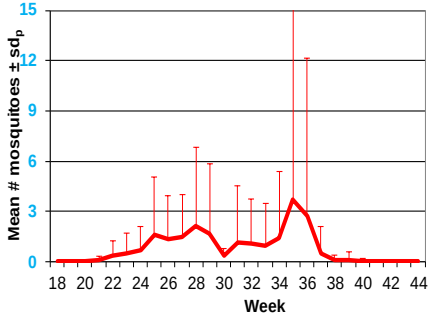
Comments

Culiseta melanura is the enzootic ornithophilic vector of eastern equine encephalitis. Current numbers in the regions of higher abundance (Coastal, Delaware Bayshore and Pinelands) show populations that appear under the recent historical trends. Last year, EEE activity was modestly active.

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. While numbers are below historical values, the difference may not be significant (overlapping error bars) and this species is showing up in several regions. The next full moon is 20 June.	

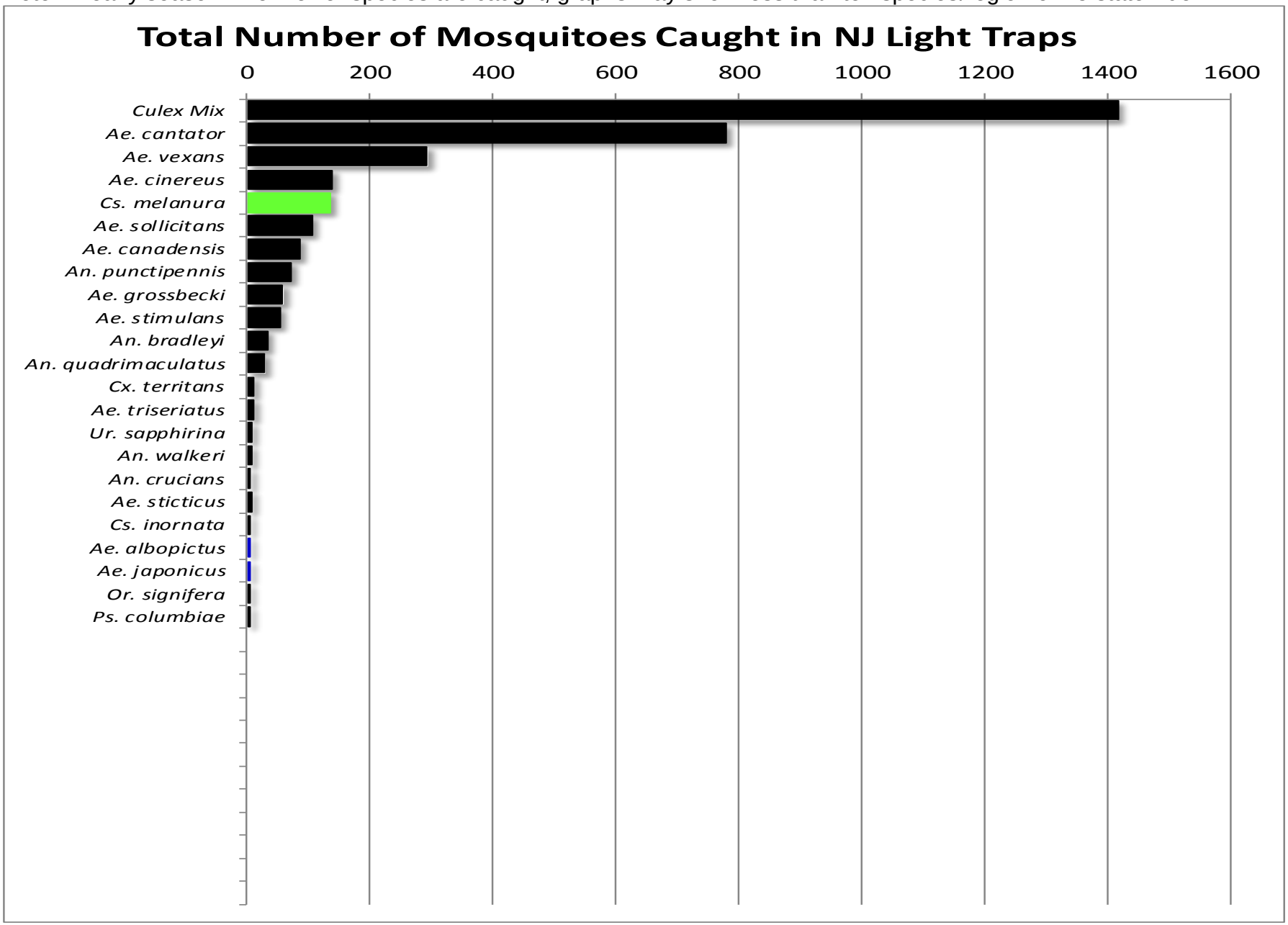
Coquillettidia perturbans
Monotypic (*Coquillettidia perturbans* Type)

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. Currently no *Coq. perturbans* have been reported in the dataset.	

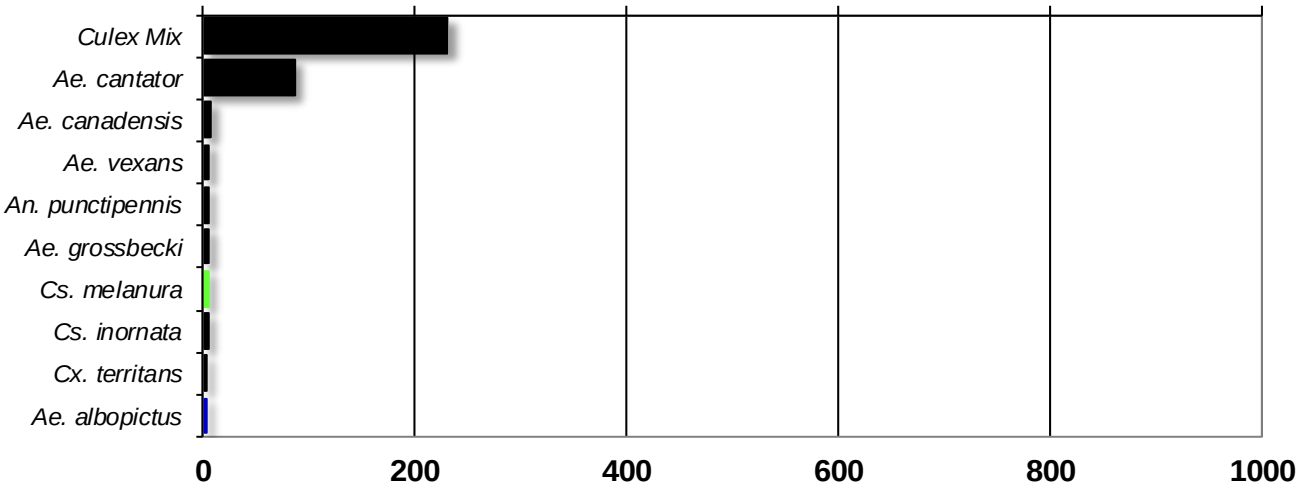
WNV *EEE*

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

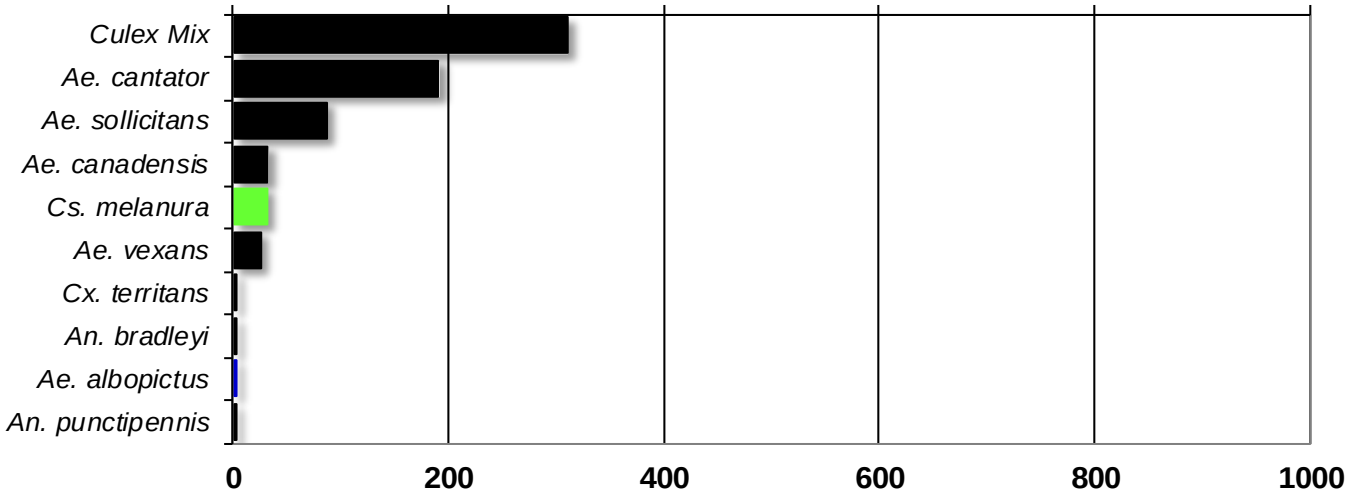
Note: In early season when fewer species are caught, graphs may show less than ten species/region or 25 statewide.



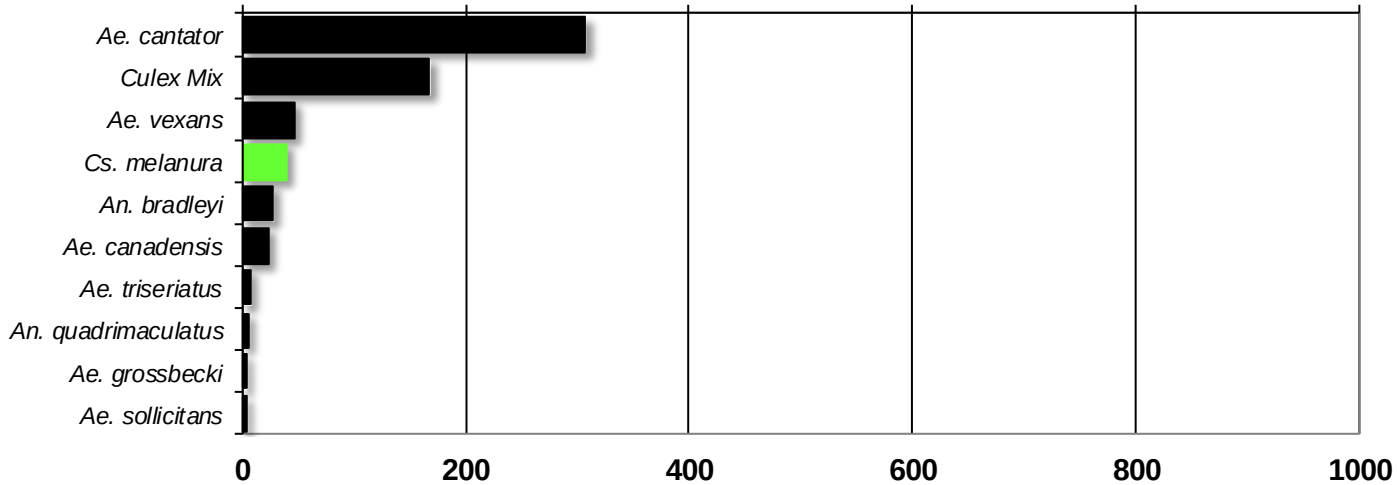
Agricultural



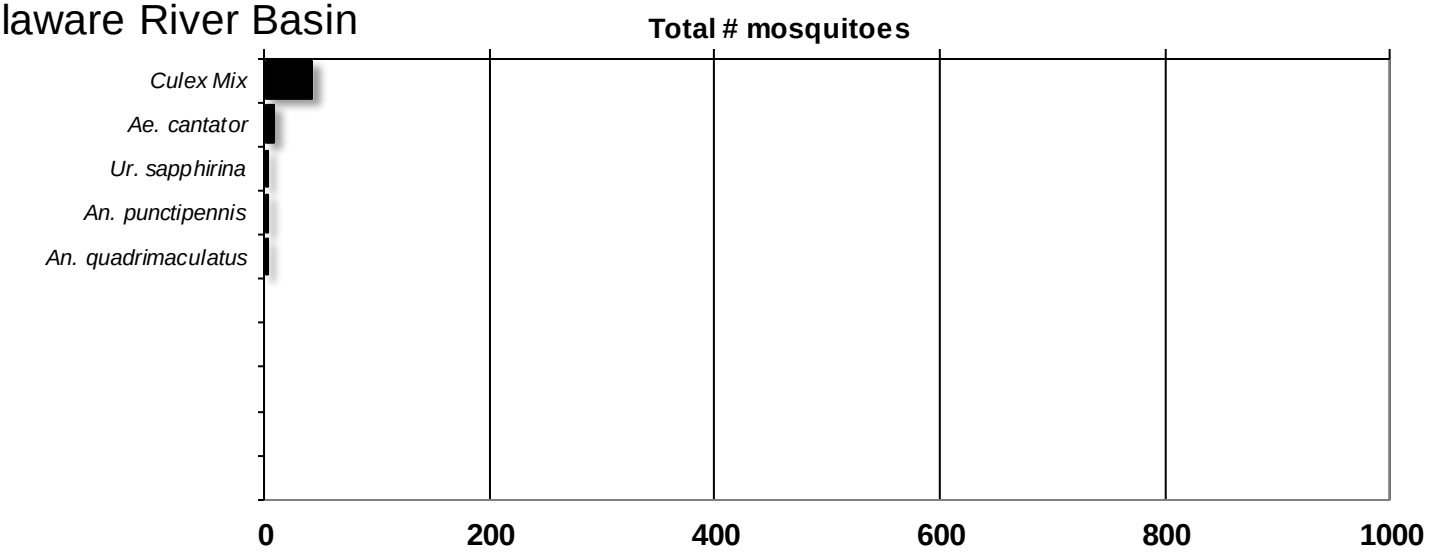
Coastal

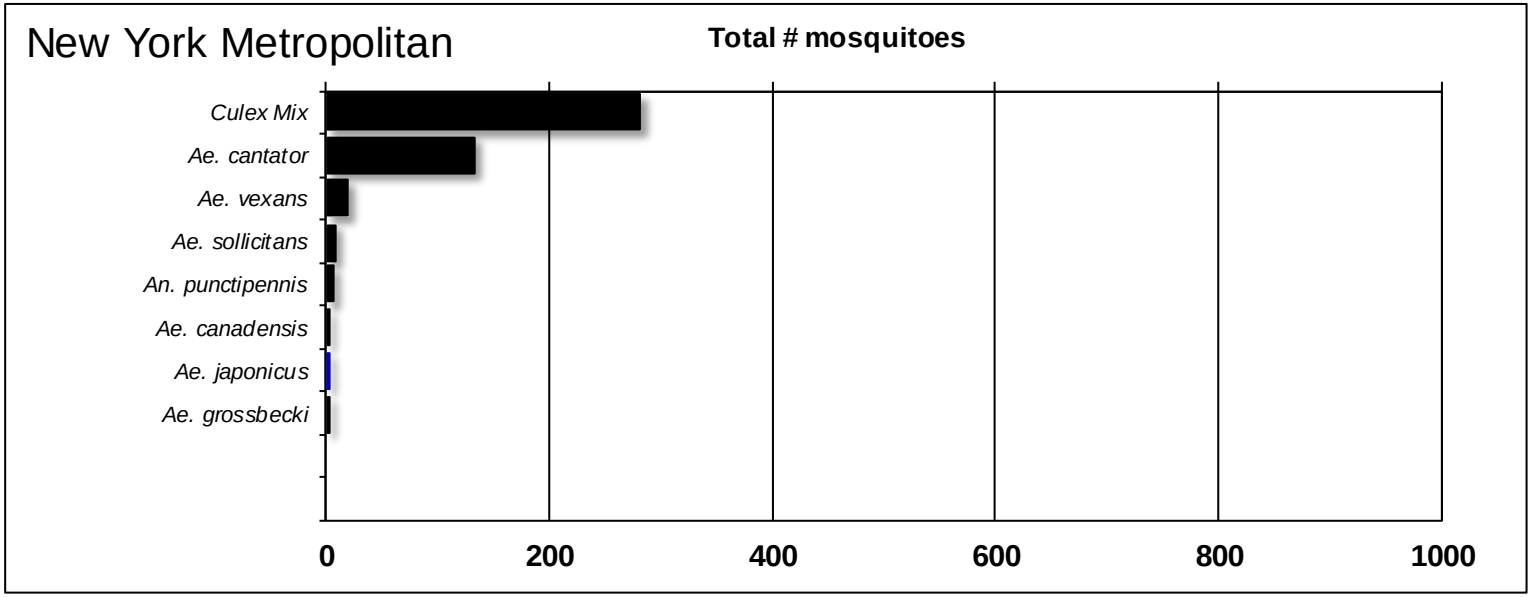


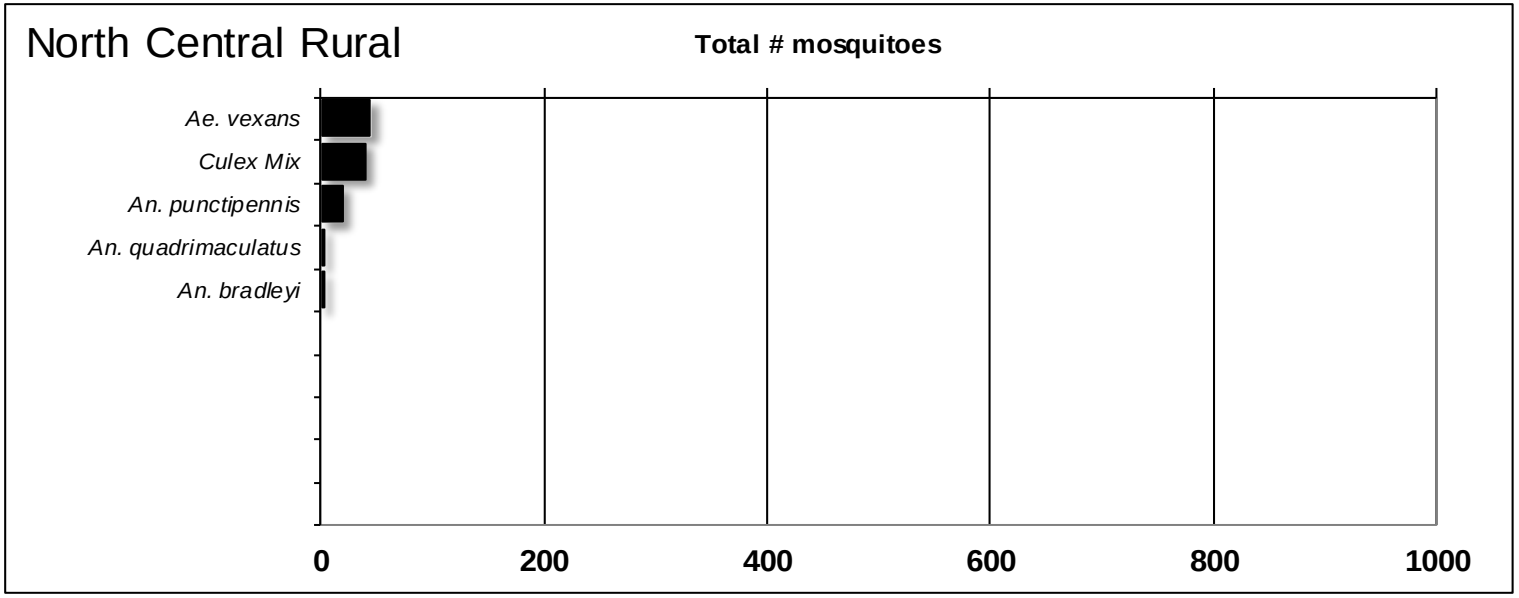
Delaware Bayshore

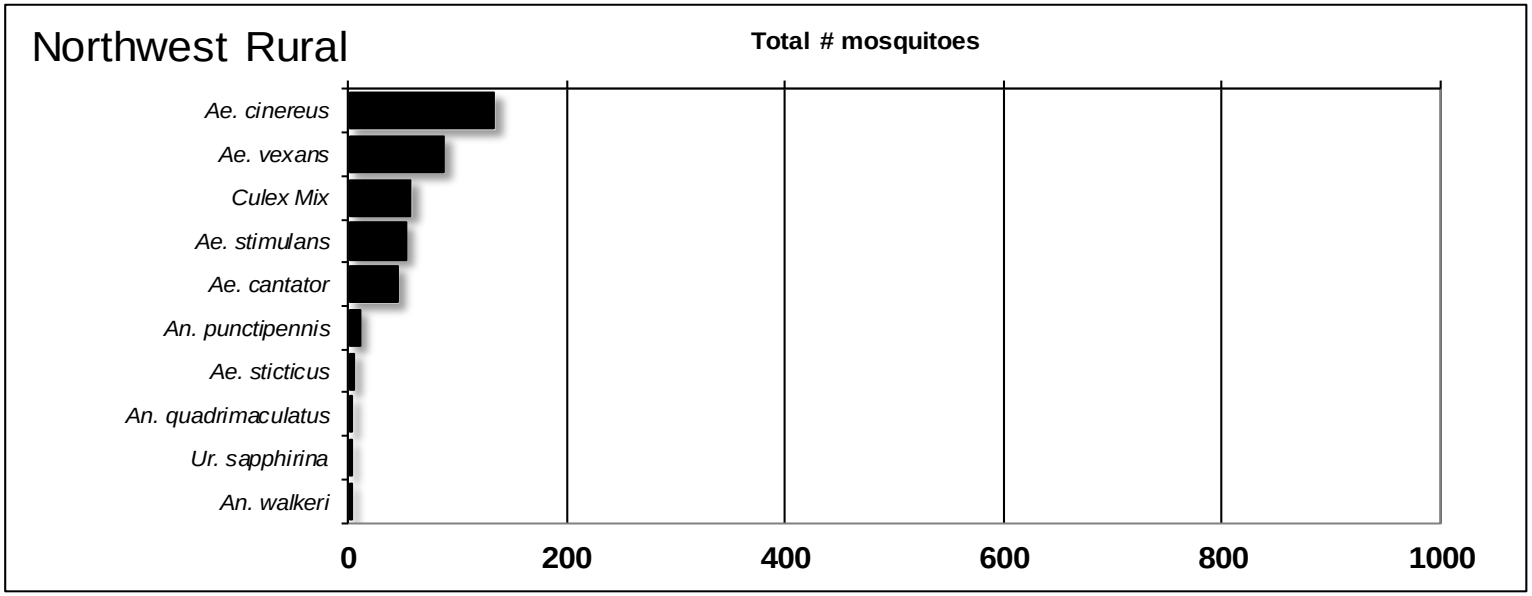


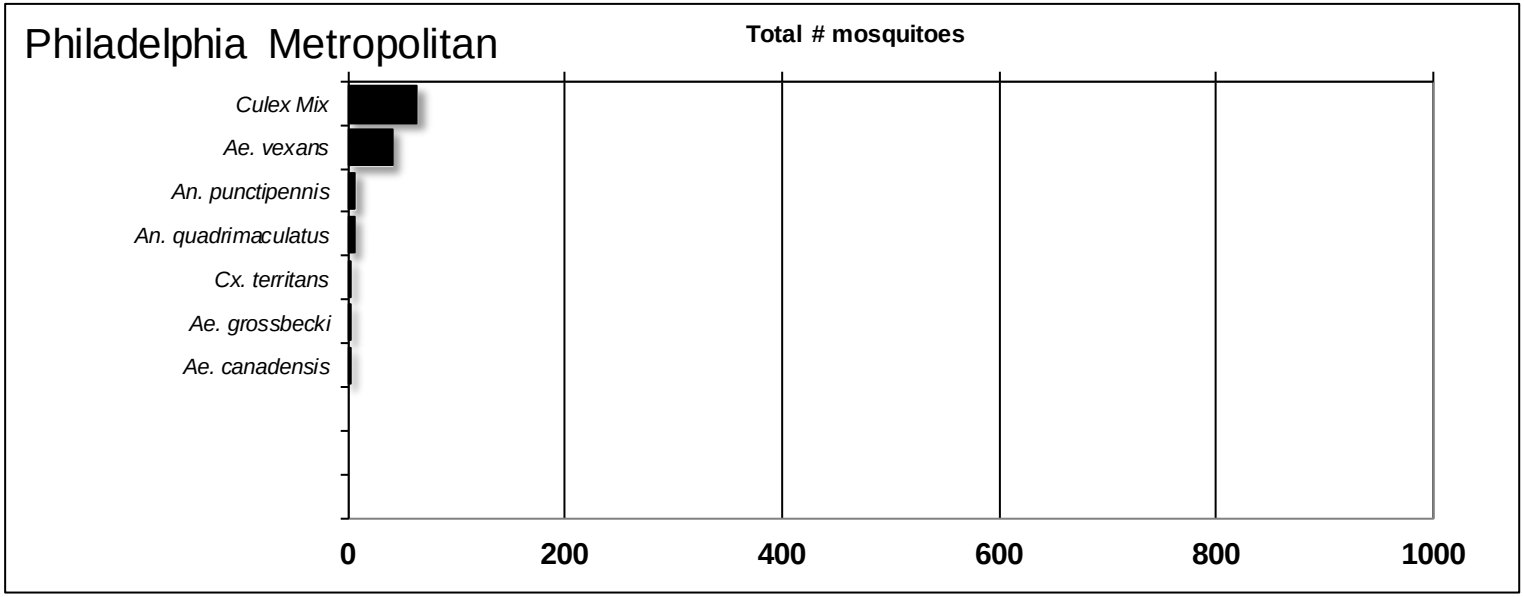
Delaware River Basin

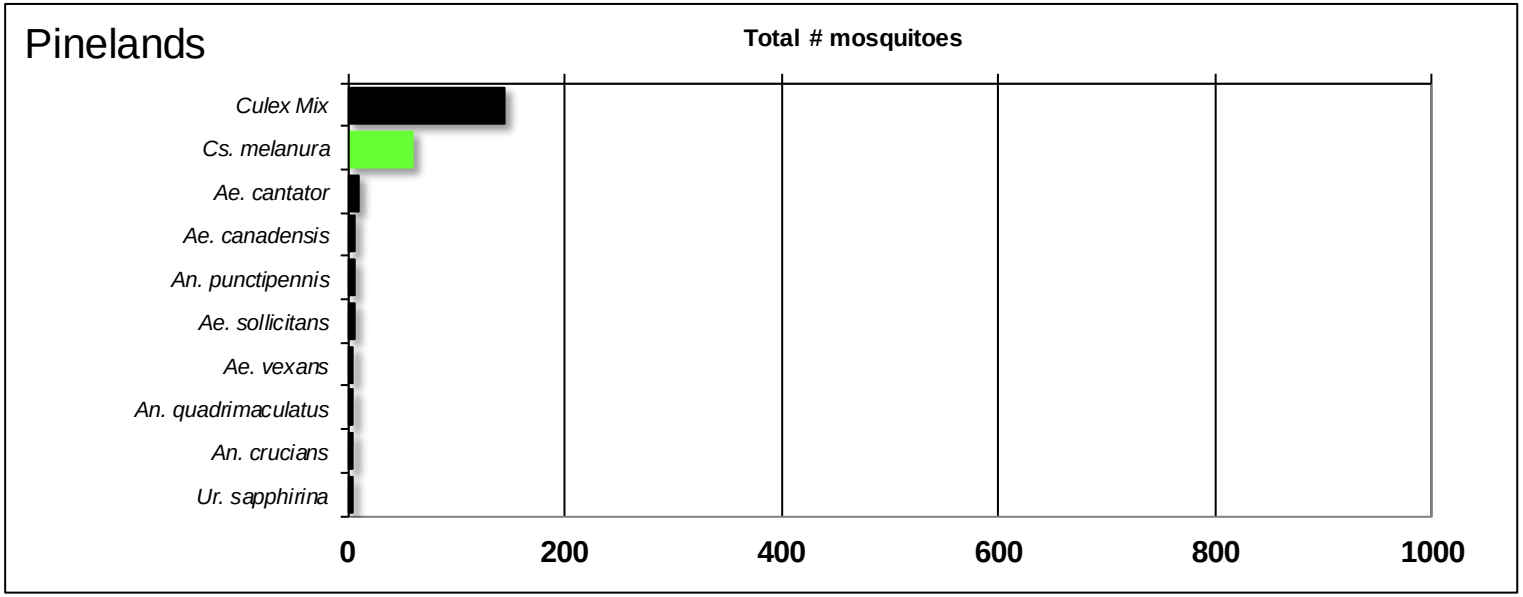


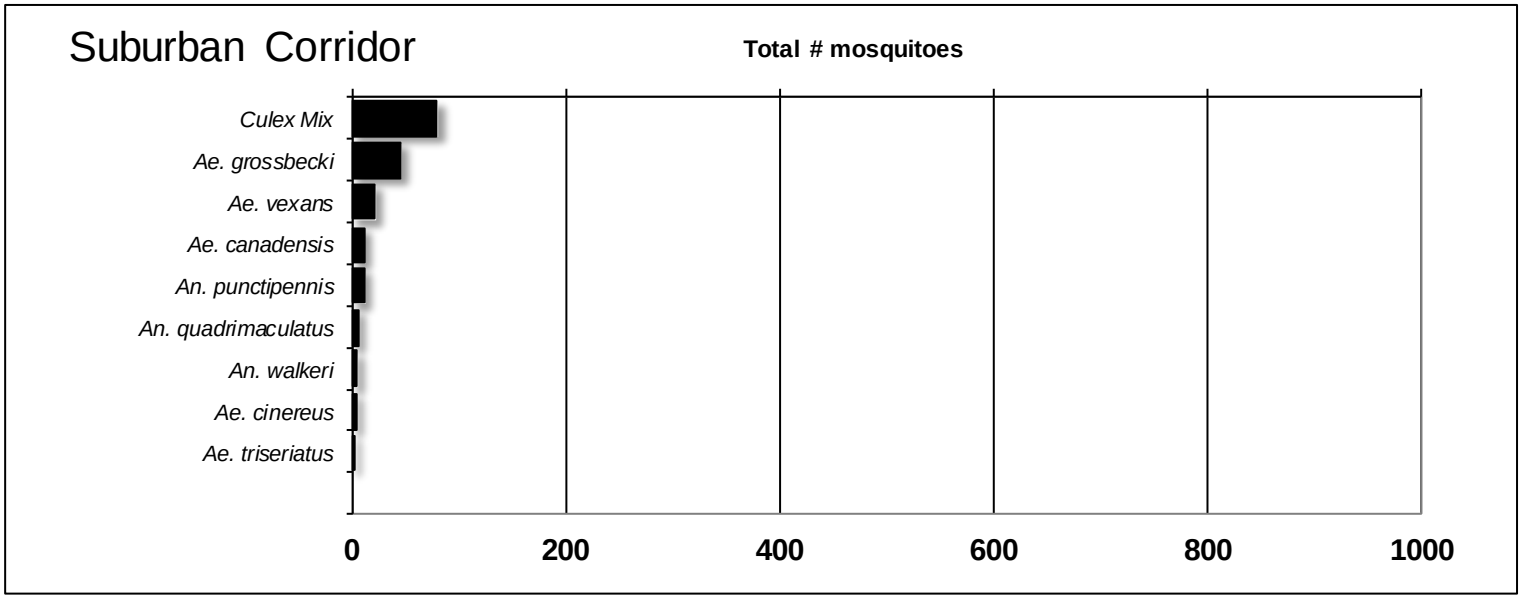

New York Metropolitan
Total # mosquitoes
Culex Mix
Ae. cantator
Ae. vexans
Ae. sollicitans
An. punctipennis
Ae. canadensis
Ae. japonicus
Ae. grossbecki
0
200
400
600
800
1000


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


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


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


Pinelands
Total # mosquitoes
Culex Mix
Cs. melanura
Ae. cantator
Ae. canadensis
An. punctipennis
Ae. sollicitans
Ae. vexans
An. quadrimaculatus
An. crucians
Ur. sapphirina
0
200
400
600
800
1000


Suburban Corridor
Total # mosquitoes
Culex Mix
Ae. grossbecki
Ae. vexans
Ae. canadensis
An. punctipennis
An. quadrimaculatus
An. walkeri
Ae. cinereus
Ae. triseriatus
0
200
400
600
800
1000