RUTGERS
New Jersey Agricultural Experiment Station

NEW JERSEY ADULT MOSQUITO SURVEILLANCE
Report for 24 August to 30 August 2008, CDC Week 35

Prepared by Lisa M. Reed, Scott Crans, Dina Fonseca and Marc Slaff
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.

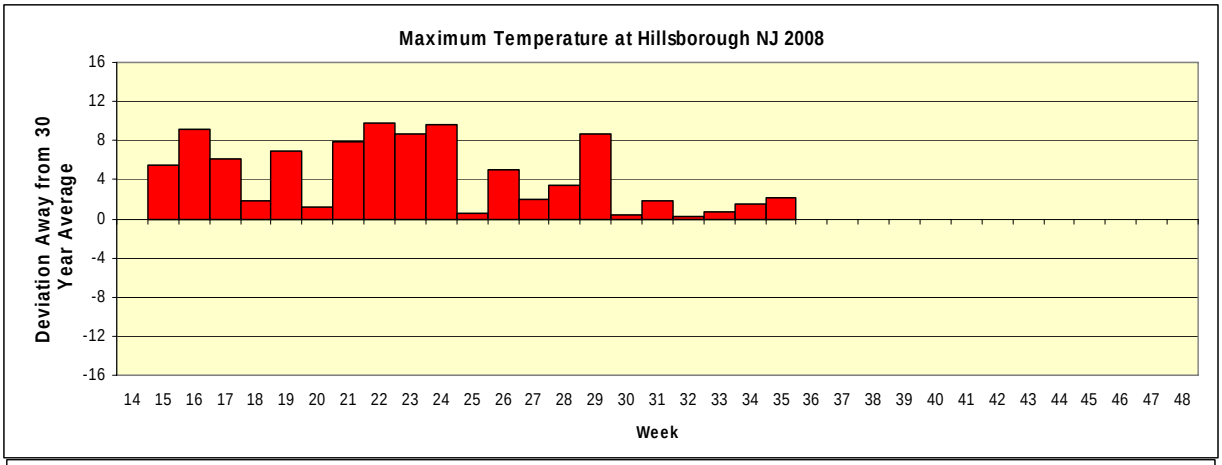
Summary table – Week 35

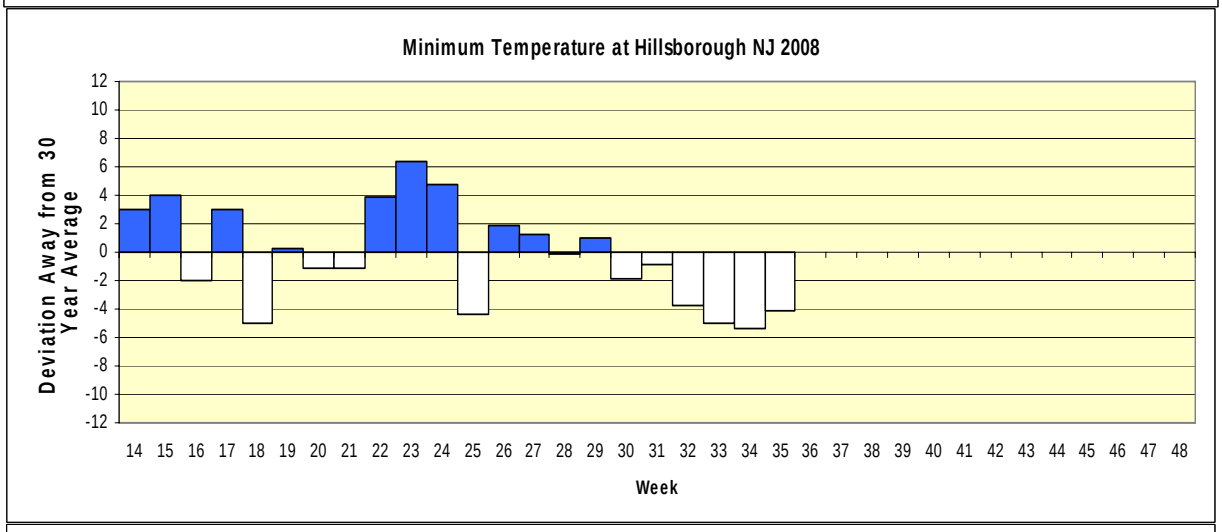
	Aedes vexans			*Culex* Mix			*Coquillettidia perturbans*			*Aedes sollicitans*		
Region	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase
Agricultural	**0.10**	**3.54**	**0**	**0.05**	**8.99**	**0**	**0.00**	**0.11**	**0**	**0.00**	**0.83**	**0**
Coastal	**0.29**	**5.46**	**0**	**0.60**	**4.58**	**0**	**0.00**	**1.03**	**0**	**2.22**	**10.81**	**0**
Delaware Bayshore	**0.00**	**1.28**	**0**	**0.00**	**25.13**	**0**	**0.00**	**0.96**	**0**	**0.00**	**12.27**	**0**
Delaware River Basin	**0.00**	**13.58**	**0**	**0.00**	**15.47**	**0**	**0.00**	**0.28**	**0**	**0.00**	**0.12**	**0**
New York Metro	**0.71**	**4.86**	**0**	**7.19**	**6.04**	**1**	**0.21**	**0.20**	**1**	**0.10**	**0.55**	**0**
North Central Rural	**0.00**	**0.58**	**0**	**0.14**	**0.69**	**0**	**0.00**	**0.01**	**0**	**0.00**	**0.00**	**0**
Northwest Rural	**0.06**	**23.00**	**0**	**0.11**	**4.63**	**0**	**0.00**	**0.09**	**0**	**0.00**	**0.00**	**0**
Philadelphia Metro	**0.62**	**15.00**	**0**	**1.45**	**3.15**	**0**	**0.00**	**0.22**	**0**	**0.00**	**0.00**	**0**
Pinelands	**0.30**	**1.91**	**0**	**0.26**	**2.48**	**0**	**0.06**	**0.25**	**0**	**0.00**	**0.11**	**0**
Suburban Corridor	**1.00**	**7.83**	**0**	**2.36**	**1.57**	**2**	**0.06**	**0.51**	**0**	**0.03**	**0.01**	**4**

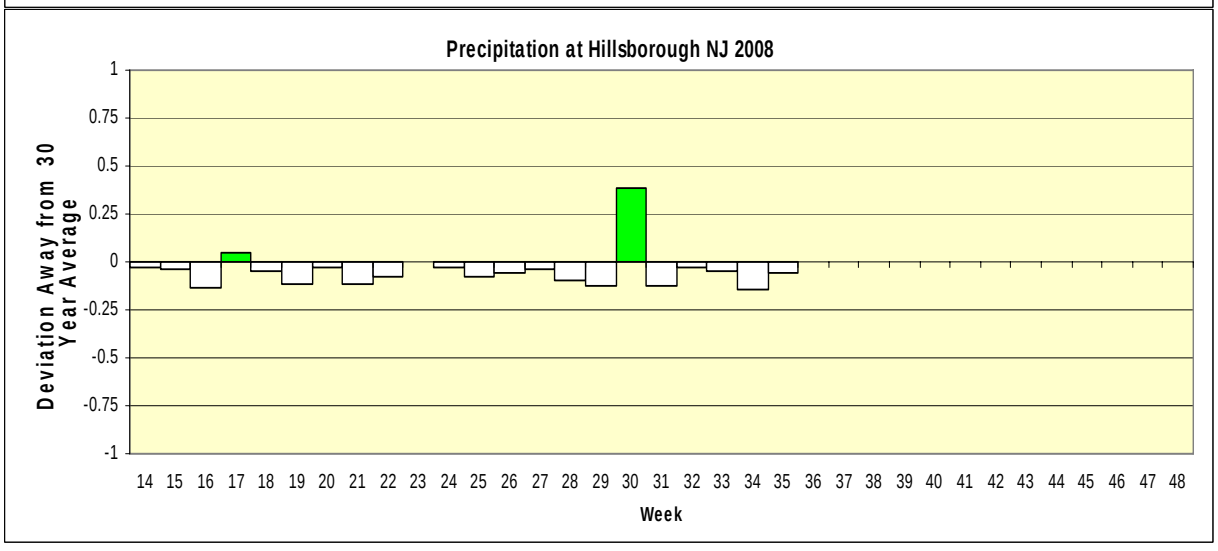
*Averages represent data from, at most, the previous 5 years. Increase is a scale of current values from historical values where no difference or a decrease is represented by 0 (blue), up to 50% greater difference by 1 (green), up to 100% greater difference by 2 (yellow), up to 150% greater difference 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.

State Summary: Daytime temperatures have recently been increasing after a cool period. This warming period has not been enough to increase *Ae. vexans* populations. On the other hand, *Culex* populations, most notably in the New York Metro and Suburban Corridor regions, have rebounded past historical levels. This is occurring at the same time that WNV activity in these regions has increased. The Suburban Corridor *Ae. sollicitans* population increase is from a very low number, but these populations are typically low in this region and so should not be disregarded.

Climate Deviations

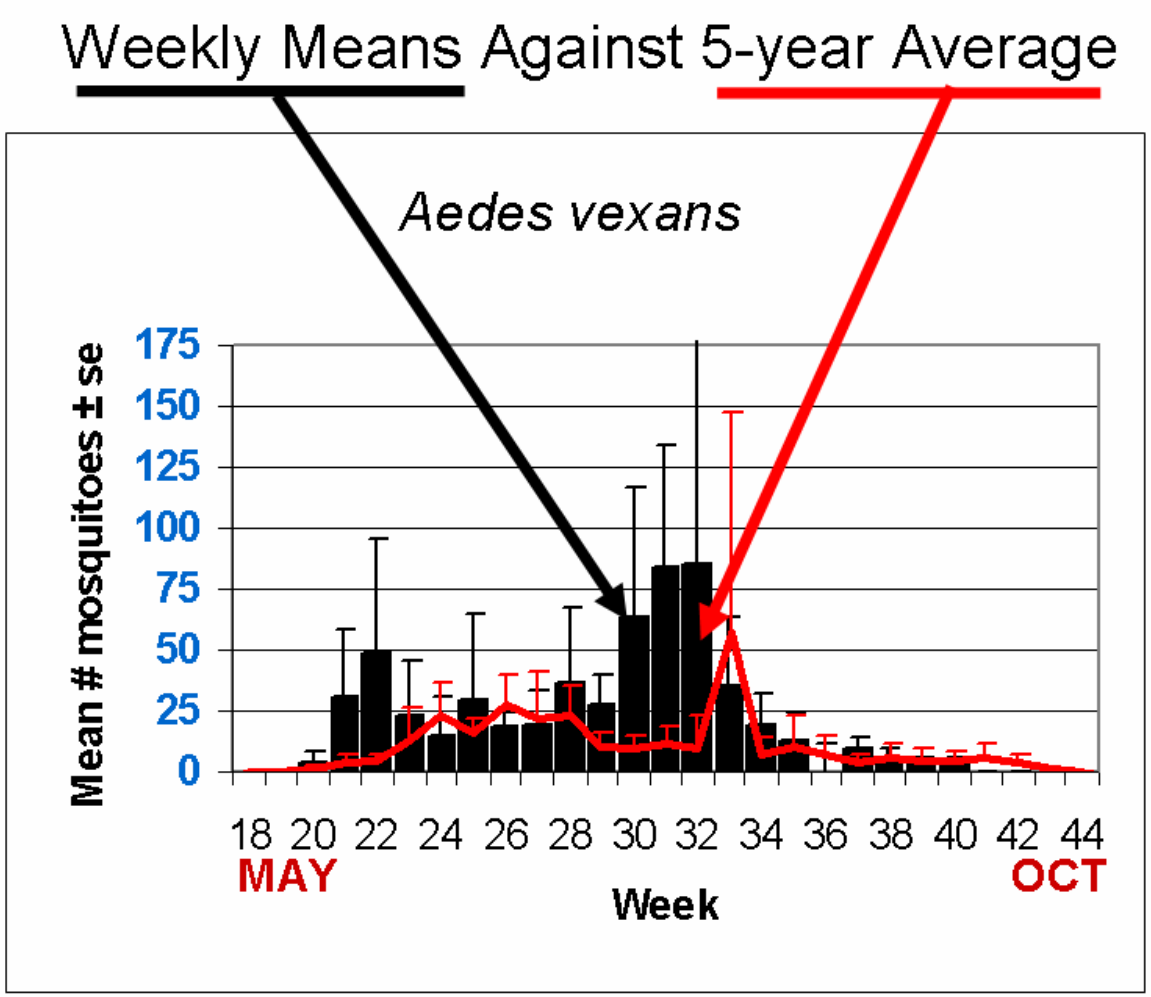






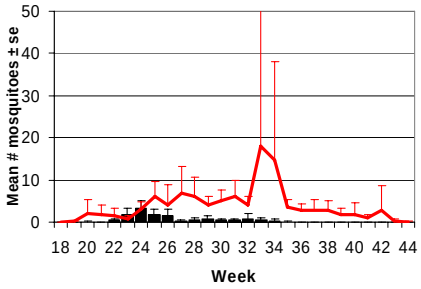
The figures show the average maximum temperature, minimum temperature and precipitation deviations from 30 year averages. Current data are from the Hillsborough NJ weather station (a station close to central NJ which recorded all three parameters and was available online at the NJ state climatologist) while historical data was from the New Brunswick weather station. Color bars above the zero line indicate warmer maximum or minimum temperatures and wetter conditions while white bars indicate cooler temperatures and dryer conditions.

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, Bergen, Camden, Essex, Hudson, Mercer, Middlesex, Ocean, Somerset, Union and Warren counties. Note: County data is sent in at a variety of times during the week.

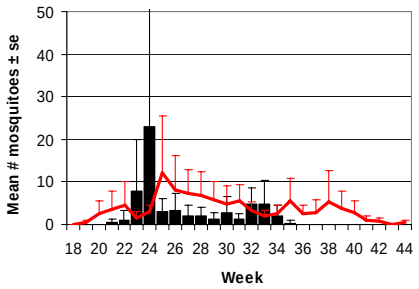


Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

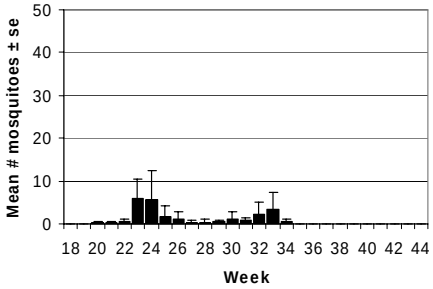
Agricultural



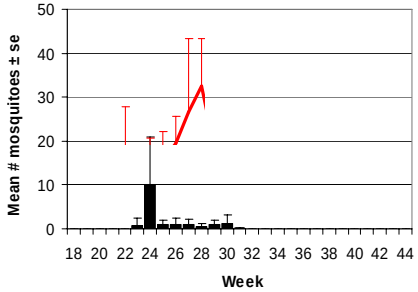
Coastal



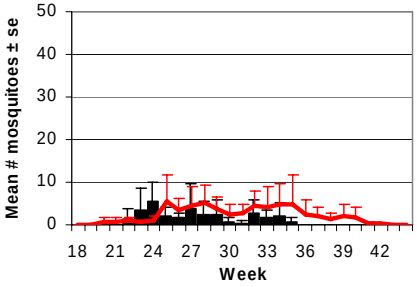
Delaware Bayshore



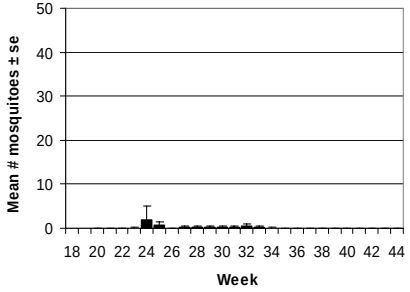
Delaware River Basin



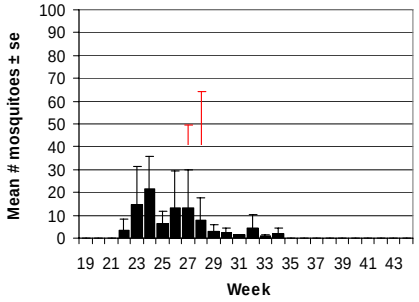
New York Metro



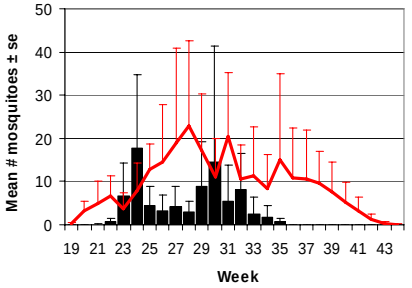
North Central Rural



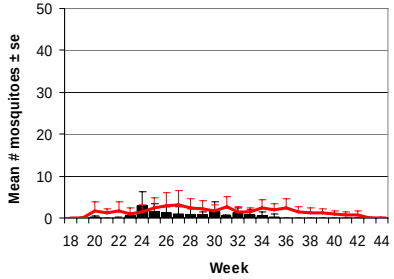
Northwestern Rural



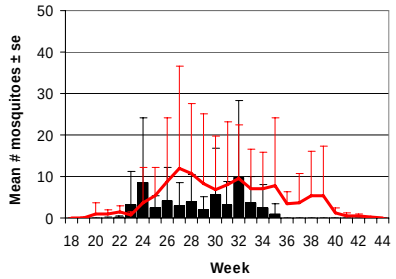
Philadelphia Metro



Pinelands



Suburban Corridor

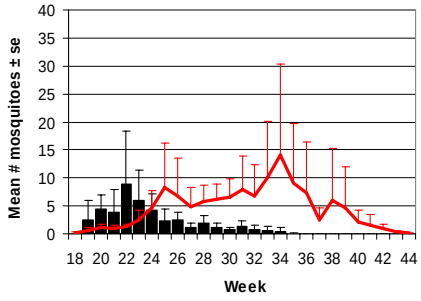


Comments

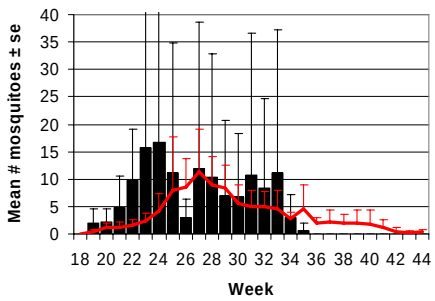
Aedes vexans populations throughout most regions are less than historical means. Occasionally, a local population will respond to rainfall or flooding events, although conditions have been drier than usual as well as cooler than usual. Recently, daytime temperatures have increased. With the advent of Tropical Storm Hanna, estimated to make New Jersey landfall on Saturday, conditions should improve for *Aedes vexans* and other floodwater populations to increase their abundance.

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

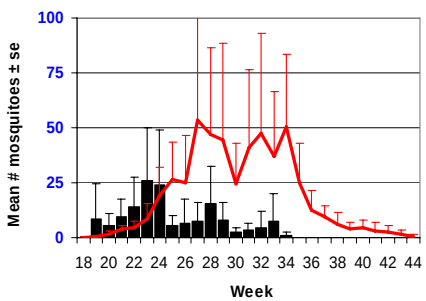
Agricultural



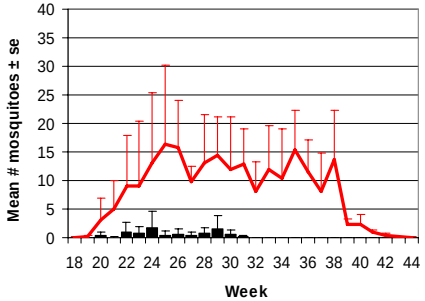
Coastal



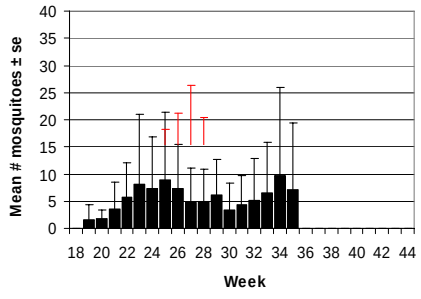
Delaware Bayshore



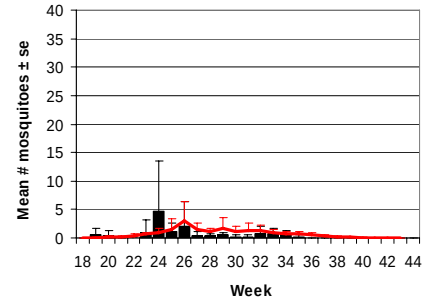
Delaware River Basin



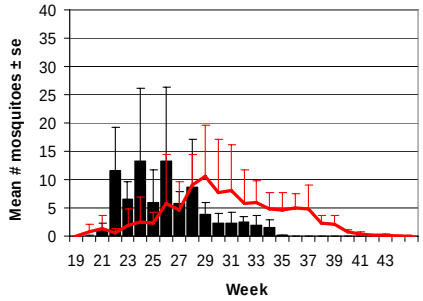
New York Metro



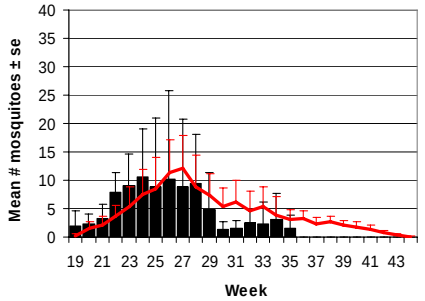
North Central Rural



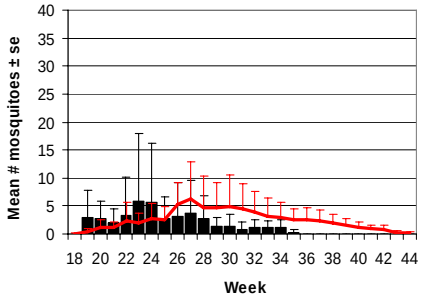
Northwestern Rural



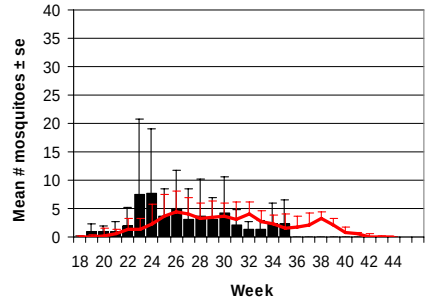
Philadelphia Metro



Pinelands



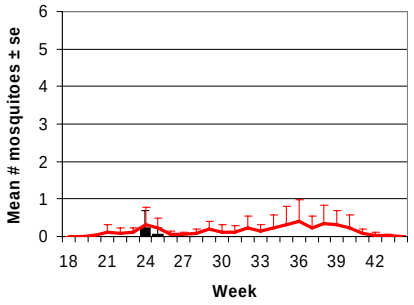
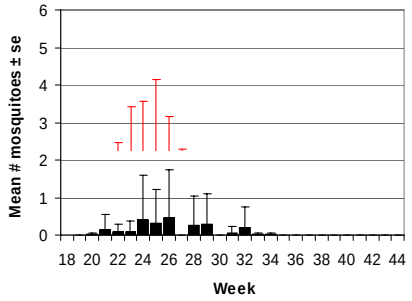
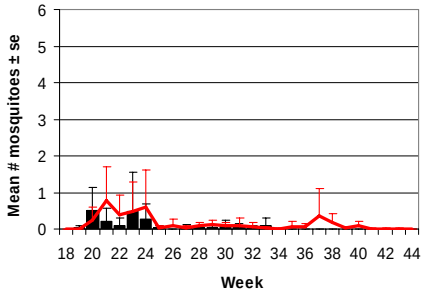
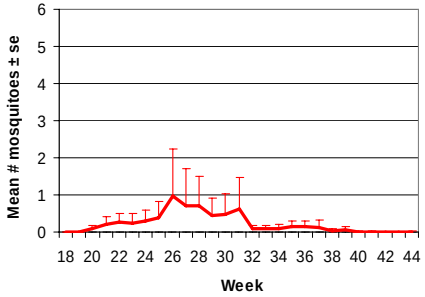
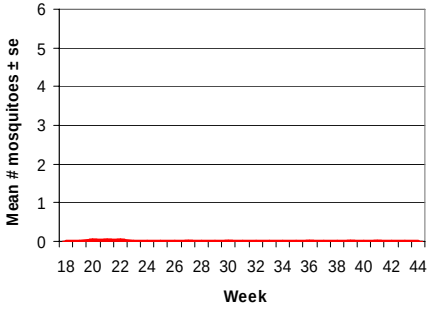
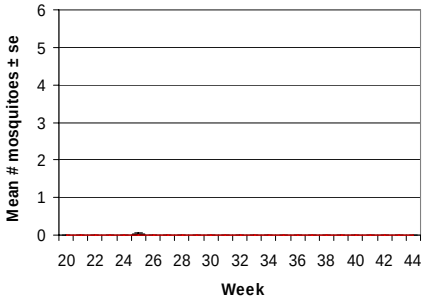
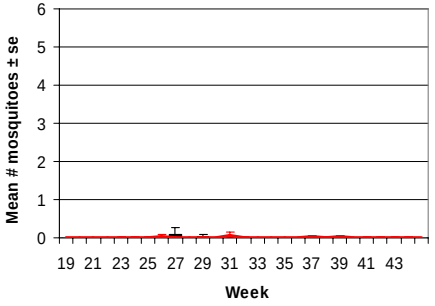
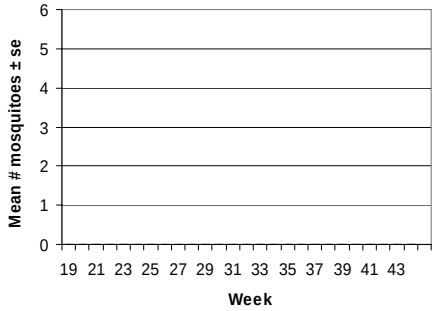
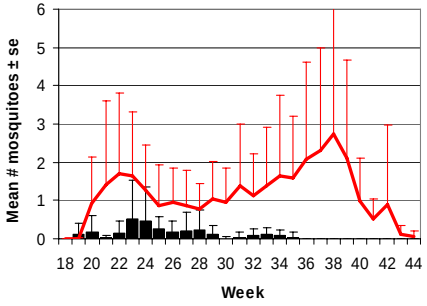
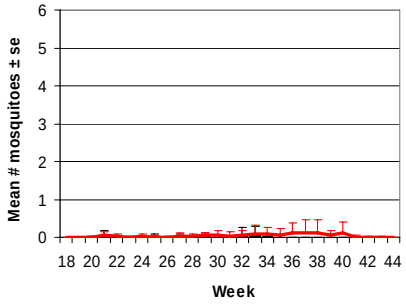
Suburban Corridor



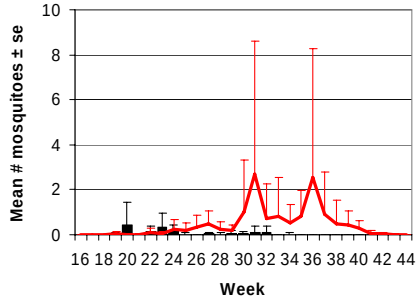
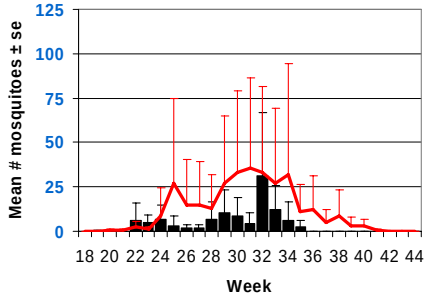
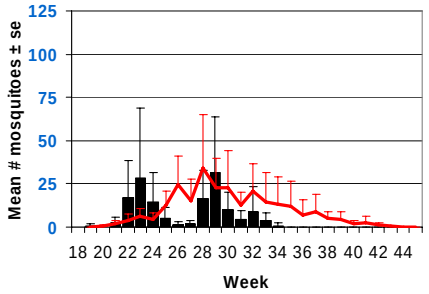
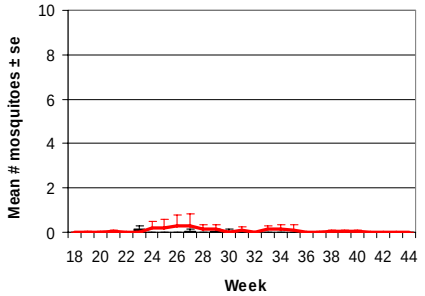
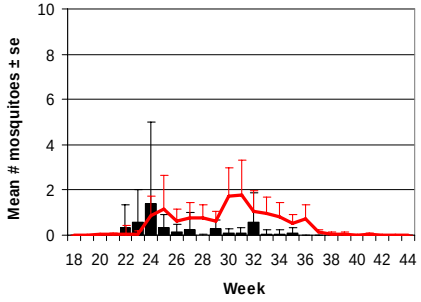
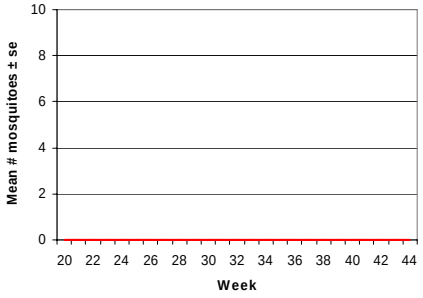
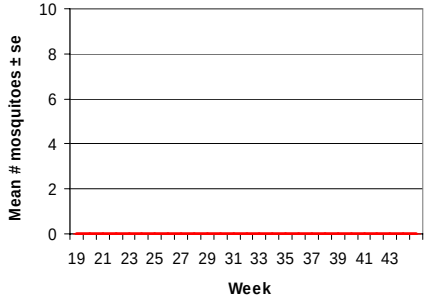
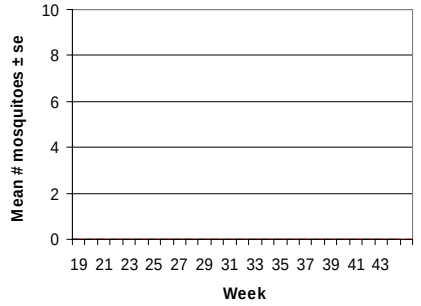
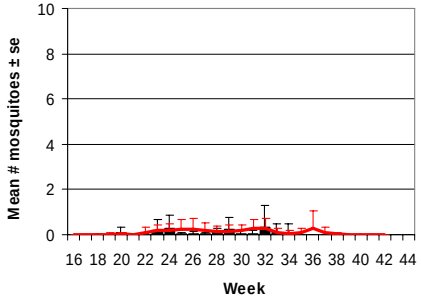
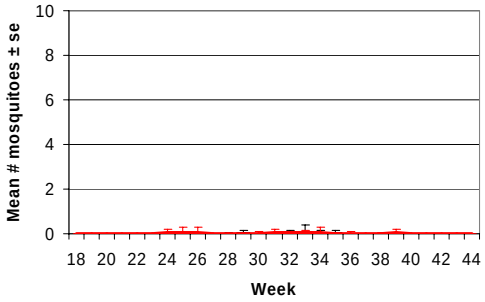
Comments

Culex populations (*Cx. pipiens, Cx. restuans* and *Cx. salinarius*) in several regions (Coastal, the two metropolitan regions, Suburban Corridor, for example) appear to be tracking historical trends after an early emergence. In some areas, *Cx salinarius* is emerging in comparison to *Cx restuans*' earlier emergence. The latter, an ornithophilic mosquito that occasionally is found positive for EEE, may be making up the bulk of the Agricultural regions' populations and thus not show a rebound as easily as other regions with a greater *Cx salinarius* population. Yet, while the Delaware River Basin's lack of *Culex* species likely is due to the lack of habitat in dredges under maintenance, it is more difficult to understand why the Delaware Bayshore region should be showing far fewer than historically seen at this point in time.

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

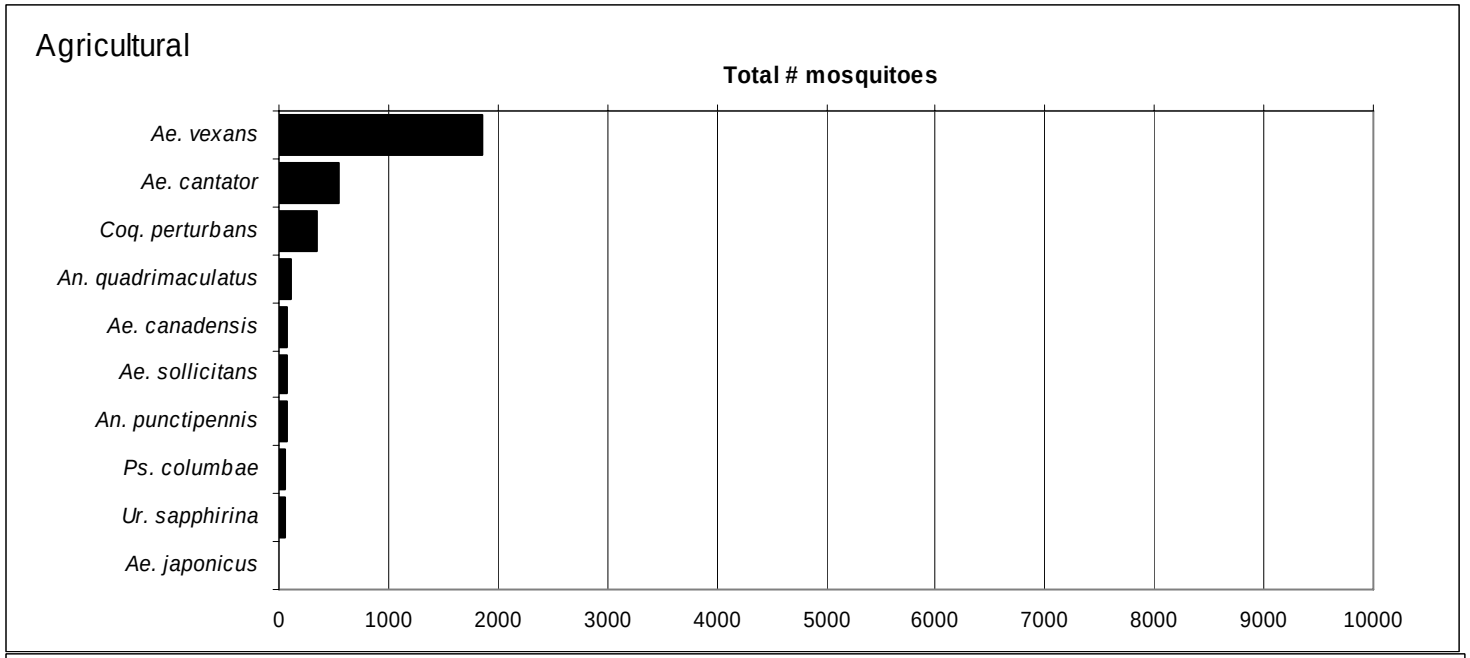
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Culiseta melanura* populations show little movement toward the typical late summer increase by the second generation. This ornithophilic species that is a major enzootic vector for eastern equine encephalitis and is exquisitely built for feeding on birds. The species is cold hardy and larvae that overwinter in roots of white cedar or red maples can emerge early in the season.	

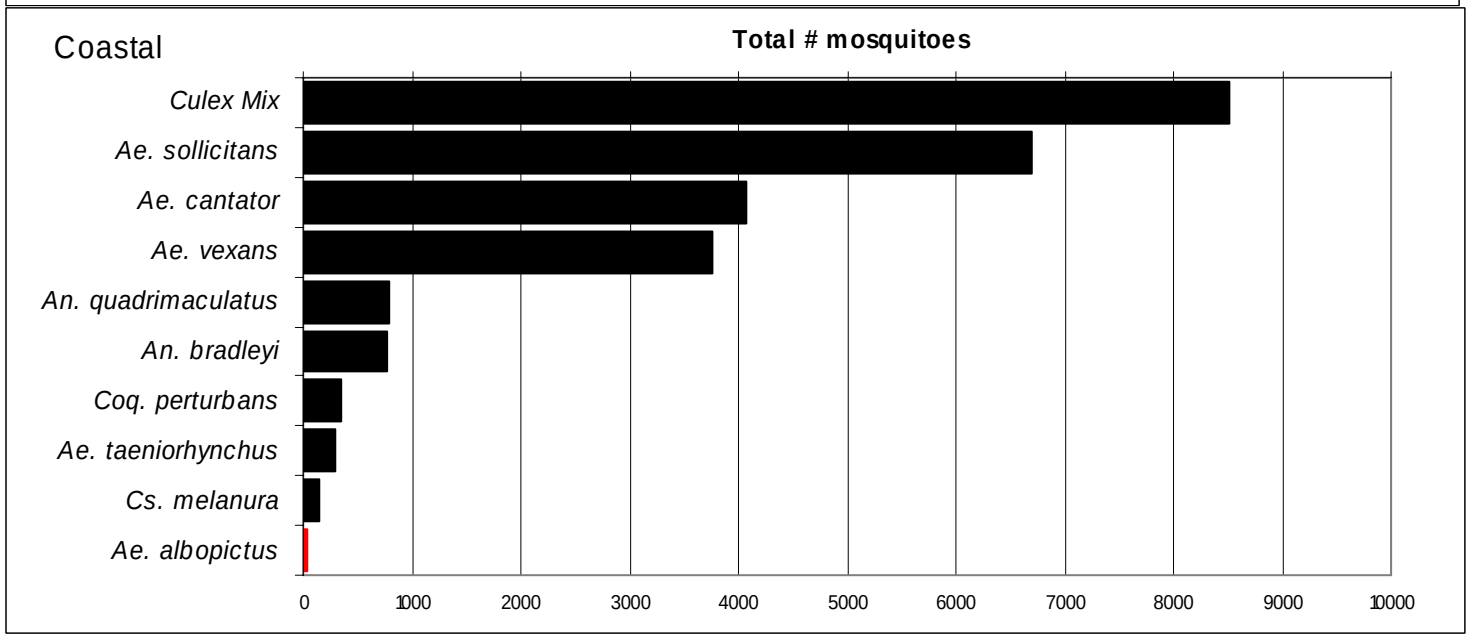
Aedes sollicitans - Salt Floodwater Species
Multivoltine Aedine (*Ae. sollicitans* Type)

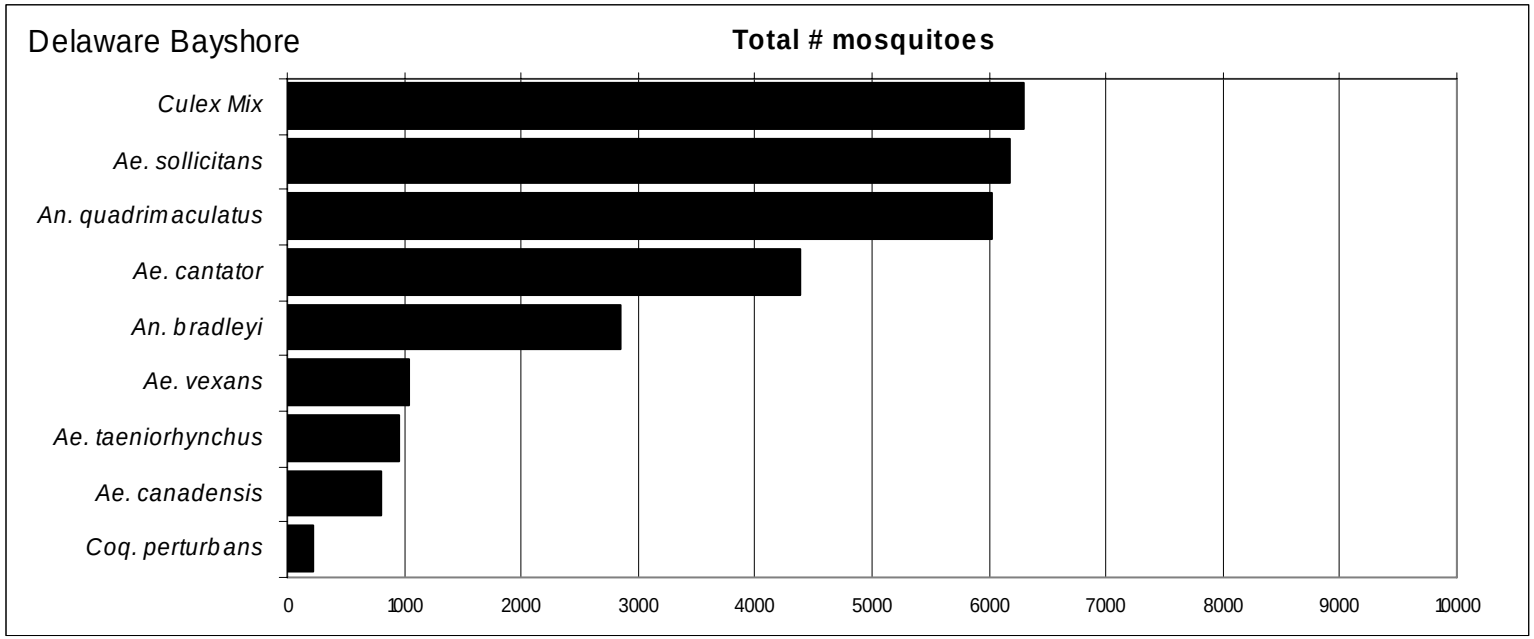
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		Although *Aedes sollicitans* populations have been smaller than in the recent past, they'll likely begin generating complaints as their behavior switches from evening to dusk to daylight host-seeking.	

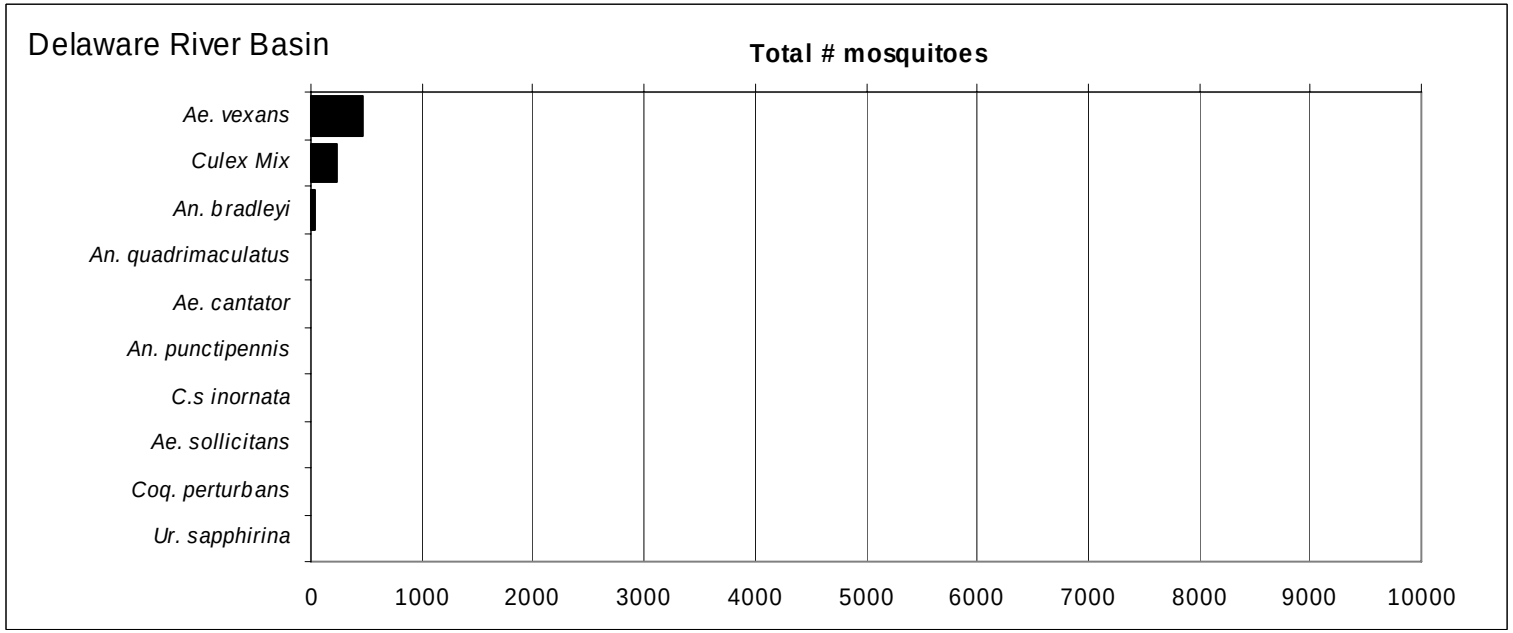
Top Ten Mosquito Species/Region - *Ae. albopictus*, *Ae. japonicus* (both invasive species)

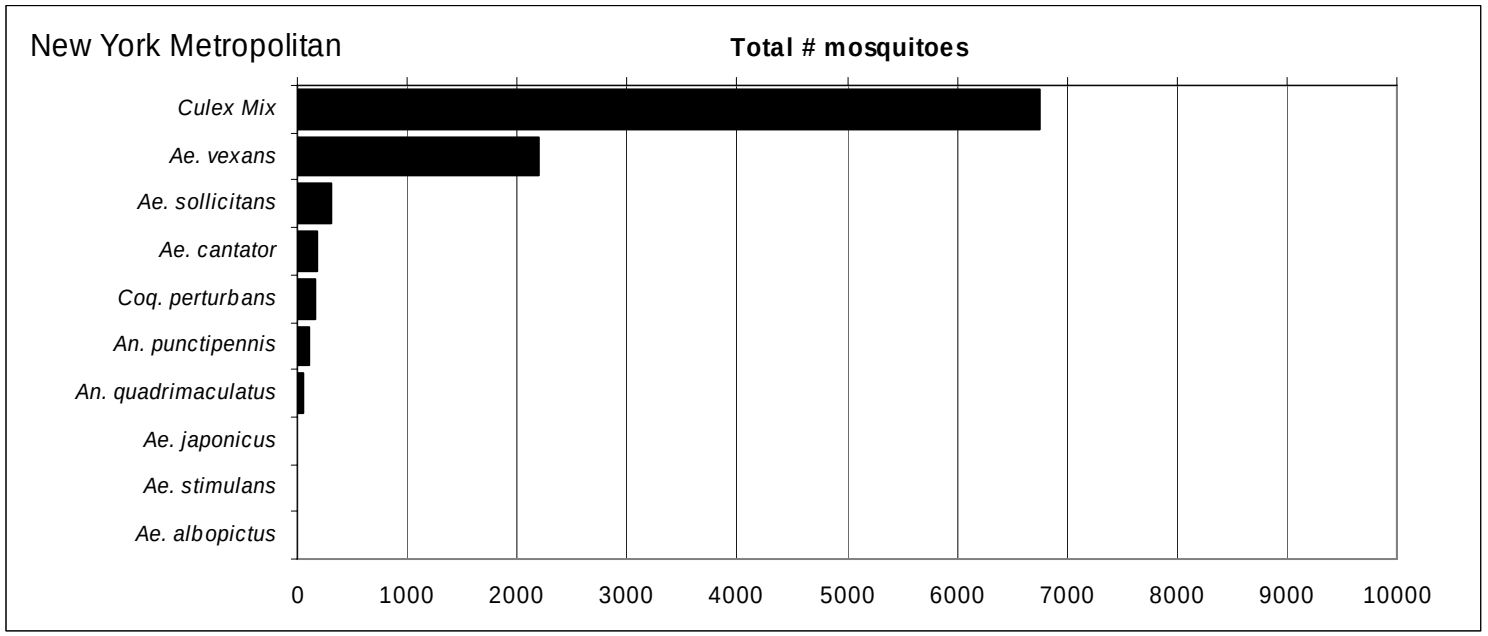
Cs. melanura and Cx. erraticus

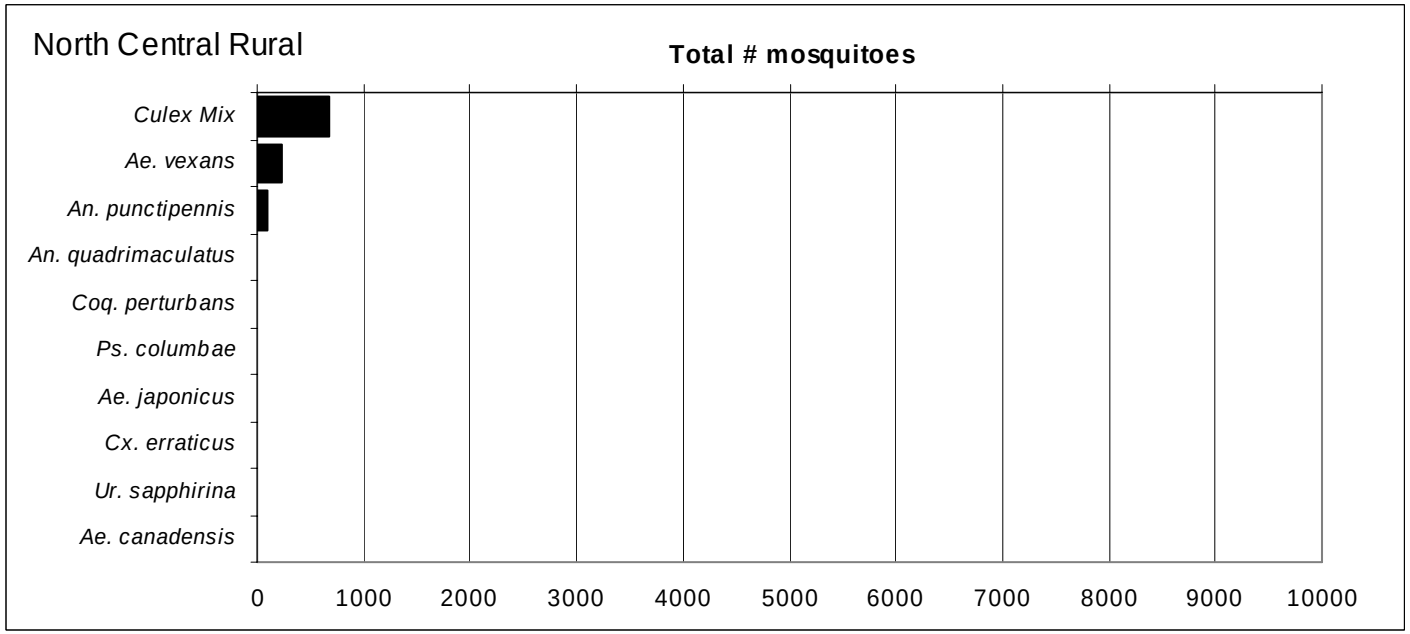


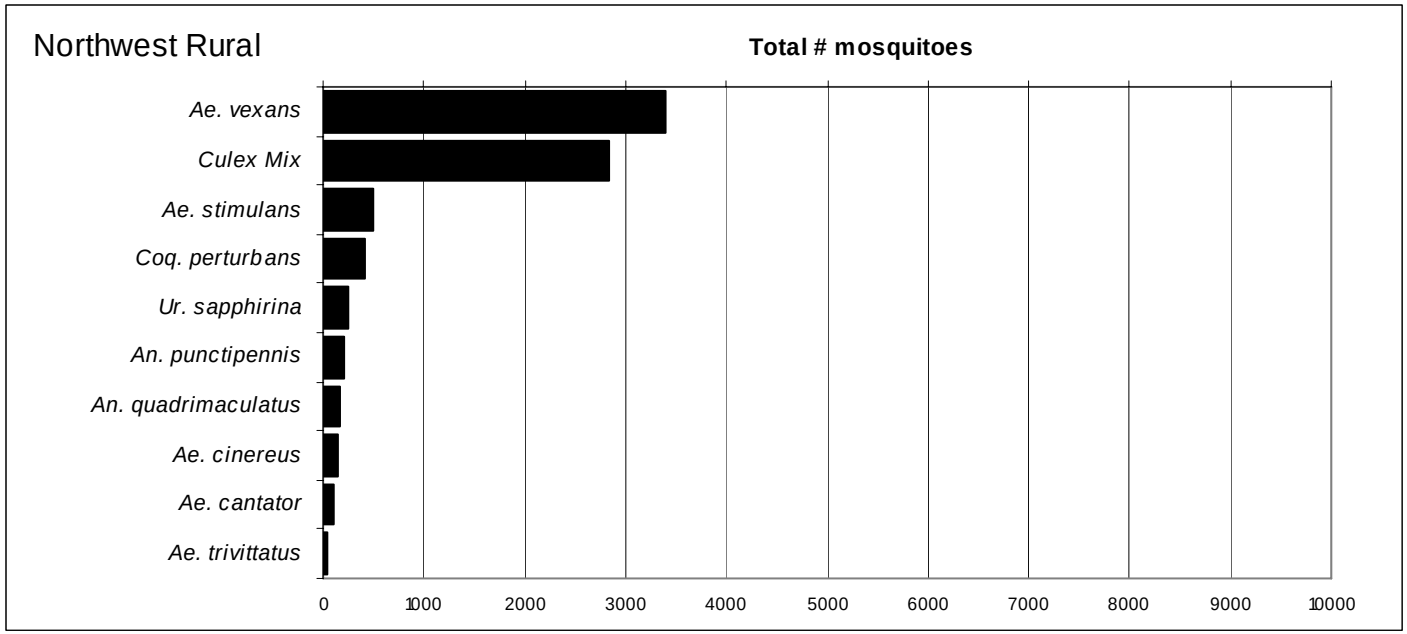


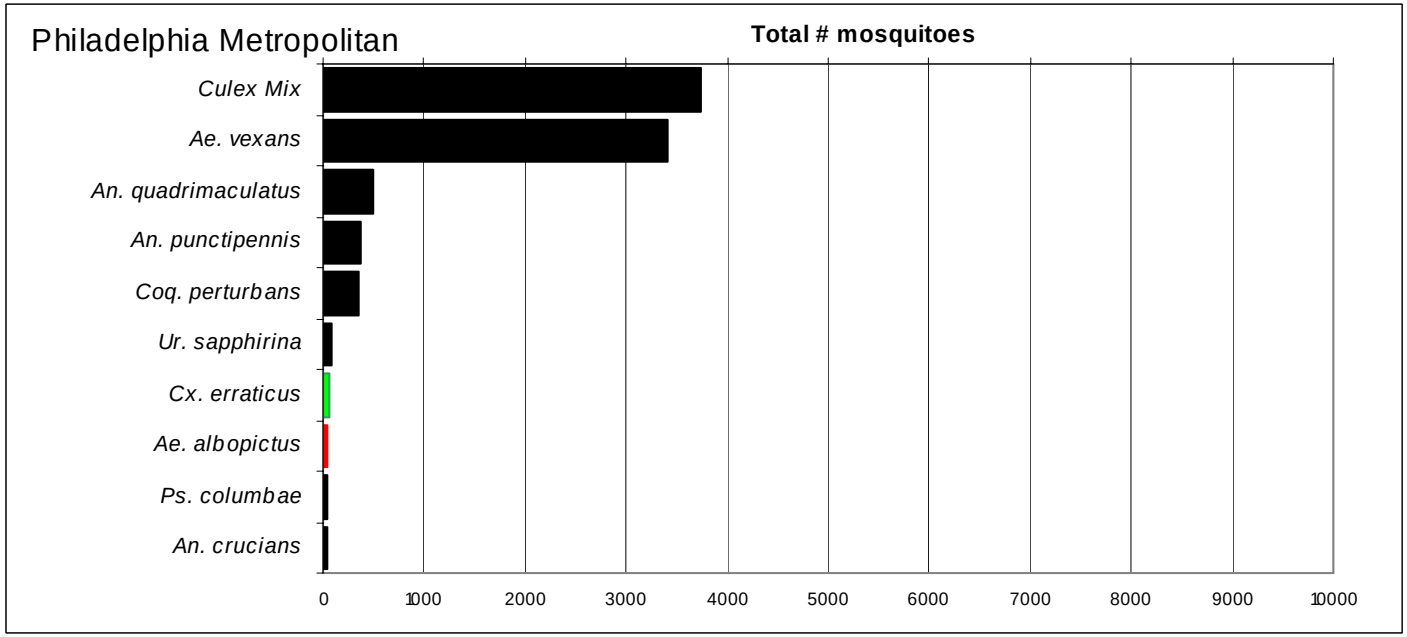

Delaware Bayshore
Total # mosquitoes
Culex Mix
Ae. sollicitans
An. quadrimaculatus
Ae. cantator
An. bradleyi
Ae. vexans
Ae. taeniorhynchus
Ae. canadensis
Coq. perturbans
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

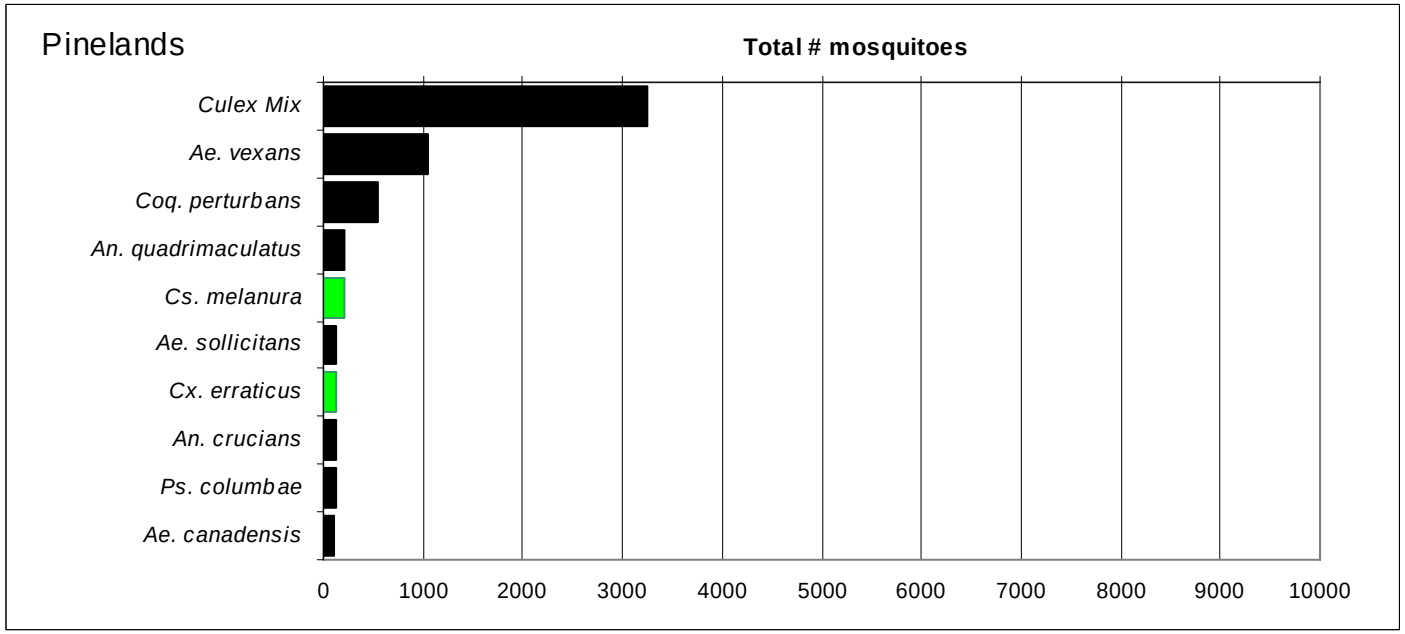

Delaware River Basin
Total # mosquitoes
Ae. vexans
Culex Mix
An. bradleyi
An. quadrimaculatus
Ae. cantator
An. punctipennis
C.s inornata
Ae. sollicitans
Coq. perturbans
Ur. sapphirina
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

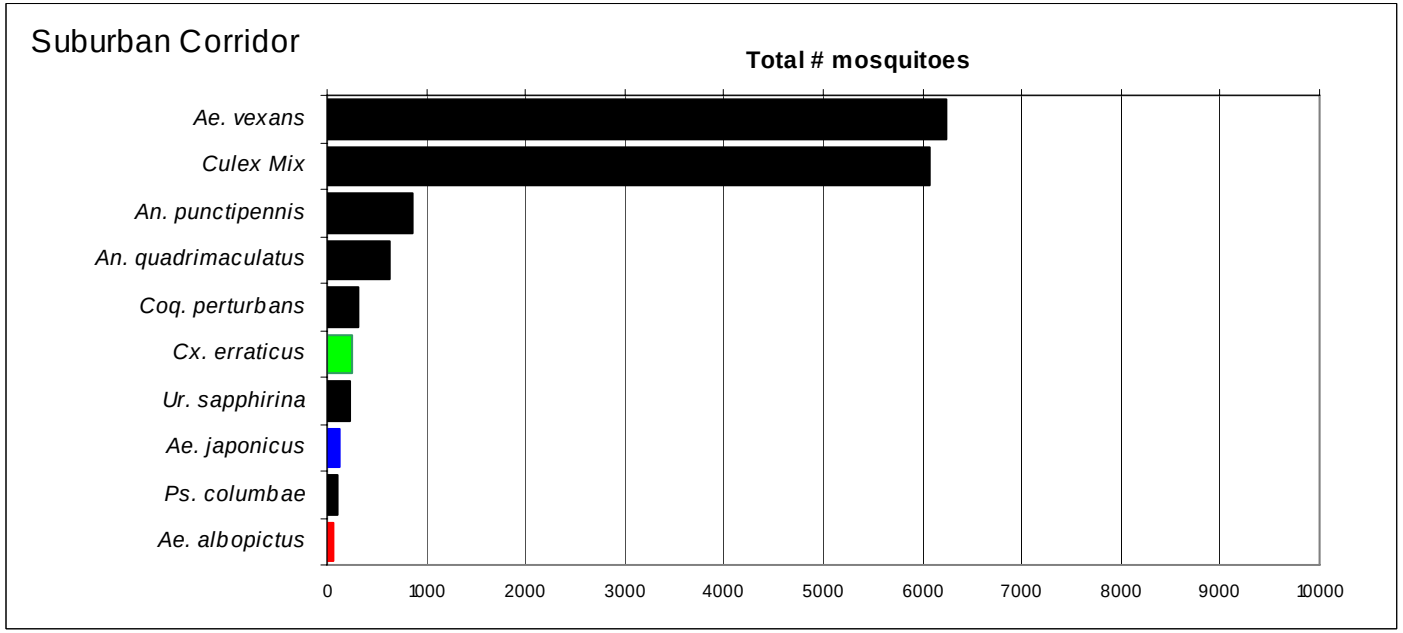

New York Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. sollicitans
Ae. cantator
Coq. perturbans
An. punctipennis
An. quadrimaculatus
Ae. japonicus
Ae. stimulans
Ae. albopictus
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


North Central Rural
Total # mosquitoes
Culex Mix
Ae. vexans
An. punctipennis
An. quadrimaculatus
Coq. perturbans
Ps. columbae
Ae. japonicus
Cx. erraticus
Ur. sapphirina
Ae. canadensis
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


Northwest Rural
Total # mosquitoes
Ae. vexans
Culex Mix
Ae. stimulans
Coq. perturbans
Ur. sapphirina
An. punctipennis
An. quadrimaculatus
Ae. cinereus
Ae. cantator
Ae. trivittatus
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


Philadelphia Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
An. quadrimaculatus
An. punctipennis
Coq. perturbans
Ur. sapphirina
Cx. erraticus
Ae. albopictus
Ps. columbae
An. crucians
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


Pinelands
Total # mosquitoes
Culex Mix
Ae. vexans
Coq. perturbans
An. quadrimaculatus
Cs. melanura
Ae. sollicitans
Cx. erraticus
An. crucians
Ps. columbae
Ae. canadensis
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


Suburban Corridor
Total # mosquitoes
Ae. vexans
Culex Mix
An. punctipennis
An. quadrimaculatus
Coq. perturbans
Cx. erraticus
Ur. sapphirina
Ae. japonicus
Ps. columbae
Ae. albopictus
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000