RUTGERS
New Jersey Agricultural Experiment Station

NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report for 5 October to 11 October 2008, CDC Week 41

Prepared by Lisa M. Reed, Scott Crans, Dina Fonseca and Marc Slaff
Center for Vector Biology

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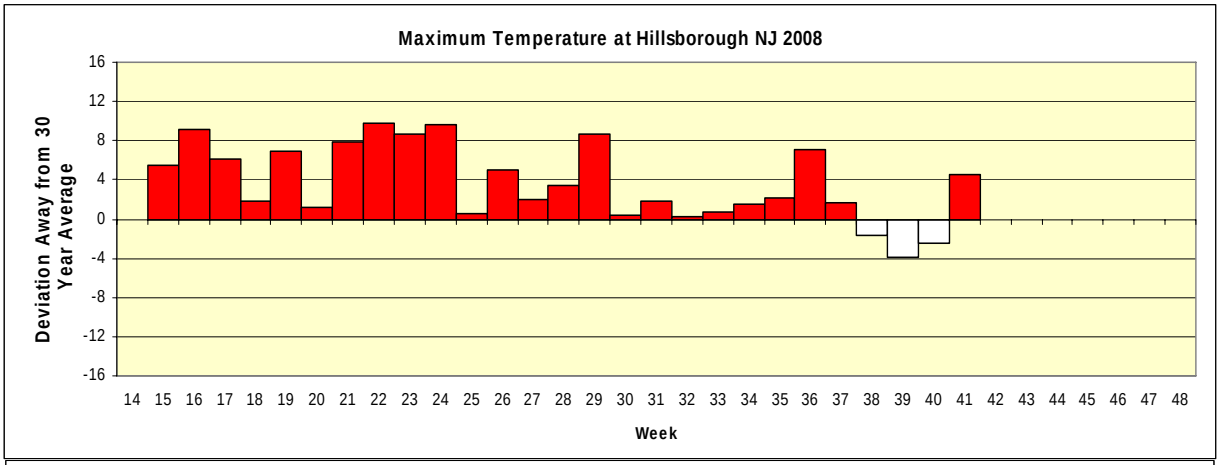
Summary table – Week 41

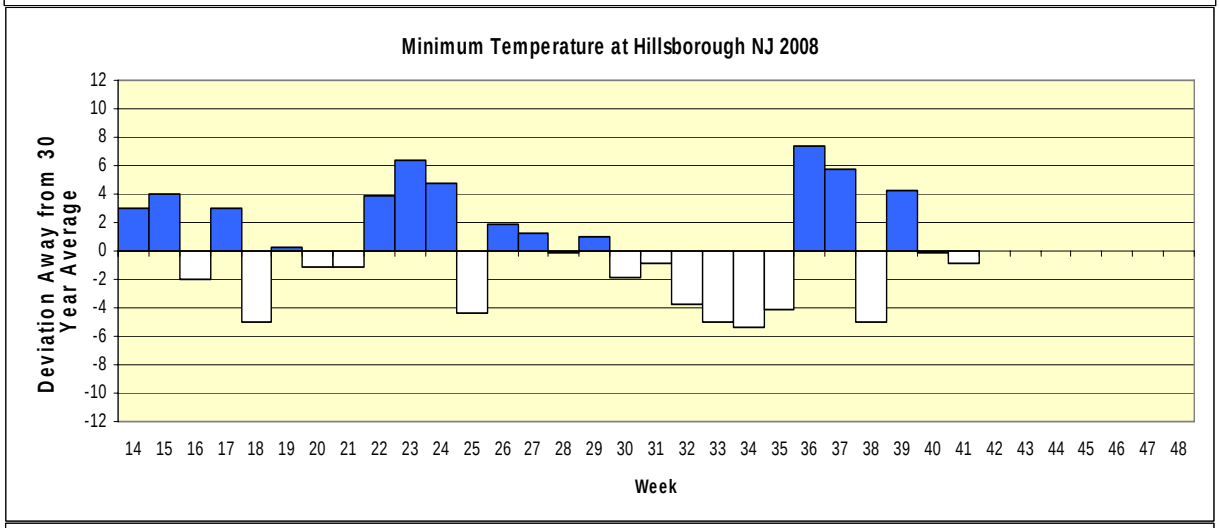
	Aedes vexans			*Culex* Mix			*Coquillettidia perturbans*			*Aedes sollicitans*		
Region	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase
Agricultural	**0.07**	**1.02**	**0**	**0.02**	**1.63**	**0**	**0.00**	**0.00**	**0**	**0.00**	**0.06**	**0**
Coastal	**1.35**	**1.05**	**1**	**2.17**	**1.12**	**2**	**0.00**	**0.00**	**0**	**0.51**	**0.66**	**0**
Delaware Bayshore	**0.00**	**0.36**	**0**	**0.00**	**3.22**	**0**	**0.00**	**0.00**	**0**	**0.00**	**2.51**	**0**
Delaware River Basin	**0.00**	**1.11**	**0**	**0.00**	**0.89**	**0**	**0.00**	**0.03**	**0**	**0.00**	**0.00**	**0**
New York Metro	**0.13**	**0.35**	**0**	**0.14**	**1.67**	**0**	**0.00**	**0.00**	**0**	**0.01**	**0.05**	**0**
North Central Rural	**0.00**	**0.07**	**0**	**0.02**	**0.04**	**0**	**0.00**	**0.00**	**0**	**0.00**	**0.00**	**0**
Northwest Rural	**0.06**	**0.42**	**0**	**0.20**	**0.45**	**0**	**0.00**	**0.00**	**0**	**0.00**	**0.00**	**0**
Philadelphia Metro	**0.93**	**3.12**	**0**	**0.31**	**1.29**	**0**	**0.00**	**0.00**	**0**	**0.00**	**0.00**	**0**
Pinelands	**0.61**	**0.78**	**0**	**0.16**	**0.90**	**0**	**0.00**	**0.00**	**0**	**0.00**	**0.00**	**0**
Suburban Corridor	**0.52**	**0.52**	**0**	**0.14**	**0.60**	**0**	**0.00**	**0.00**	**0**	**0.00**	**0.00**	**0**

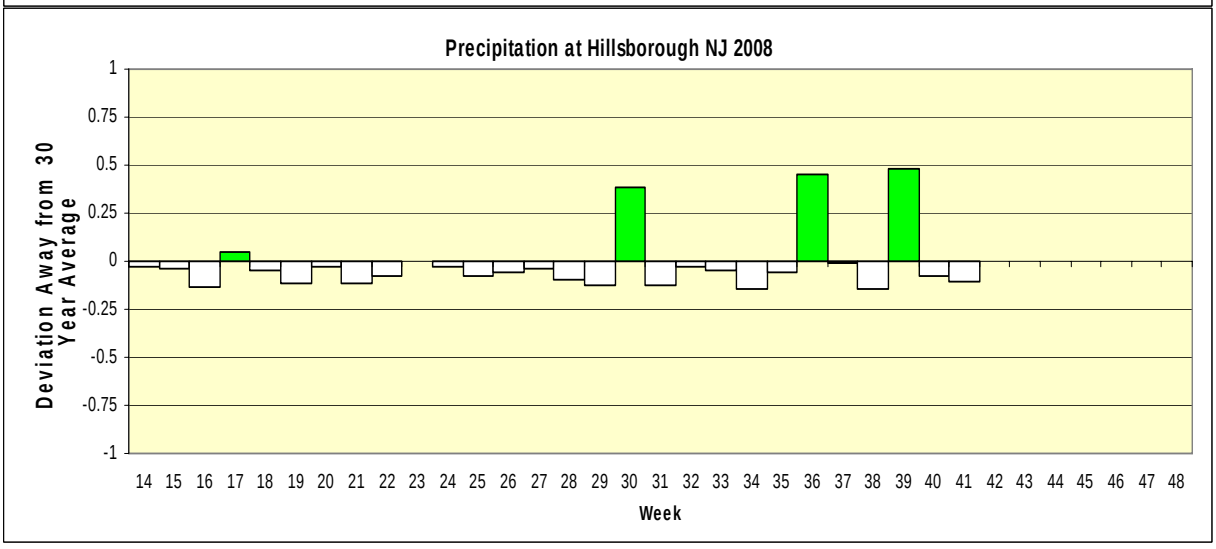
*Averages represent data from, at most, the previous 5 years. Increase is a scale of current values from historical values where no difference or a decrease is represented by 0 (blue), up to 50% greater difference by 1 (green), up to 100% greater difference by 2 (yellow), up to 150% greater difference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

State Summary: Most populations of on-the-wing pestiferous or public health mosquitoes have dropped down considerably. *Culex* Mixed populations in the Coastal region remains above historical levels as do *Ae. vexans* in the same region while *Coquillettidia perturbans* has declined statewide to zero.

Climate Deviations

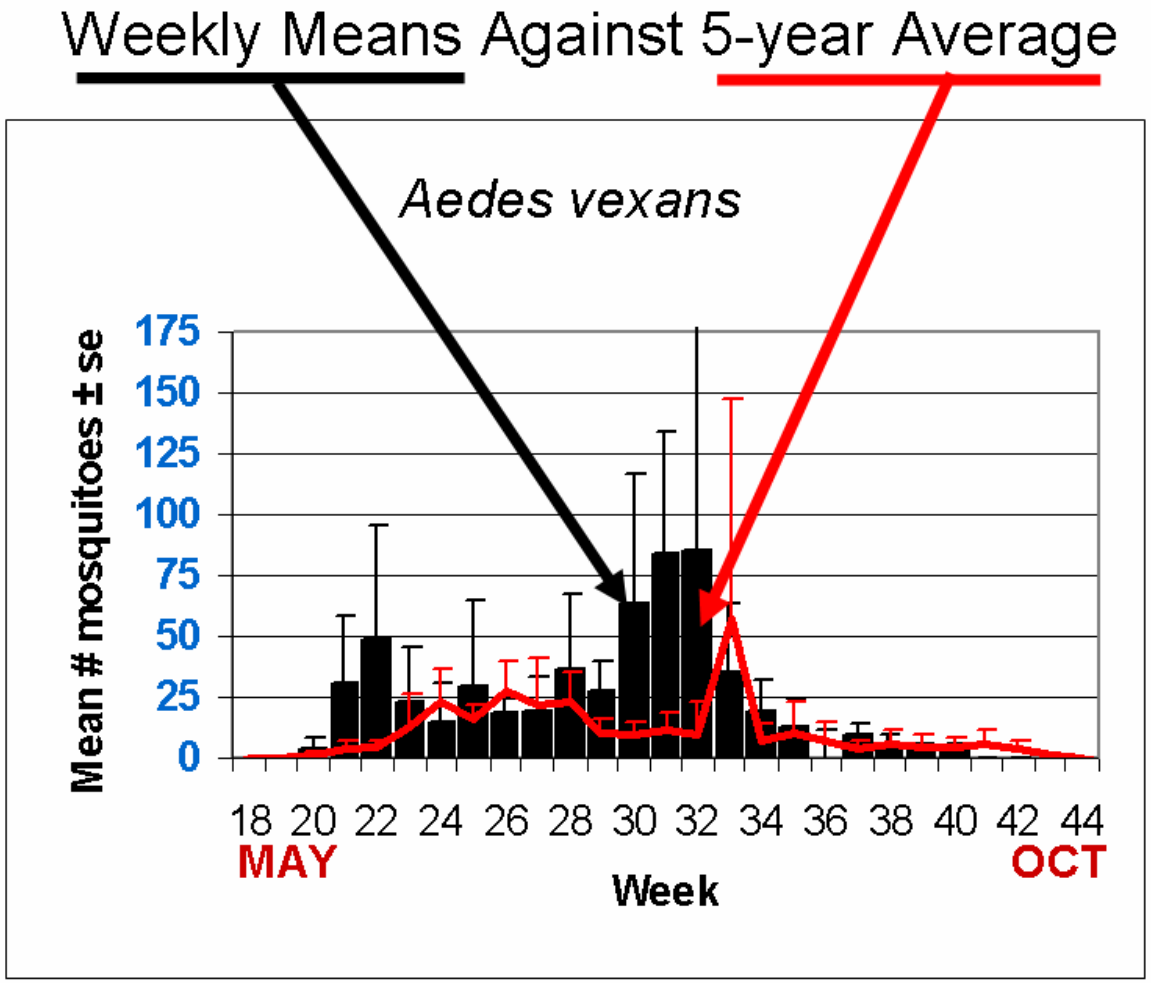






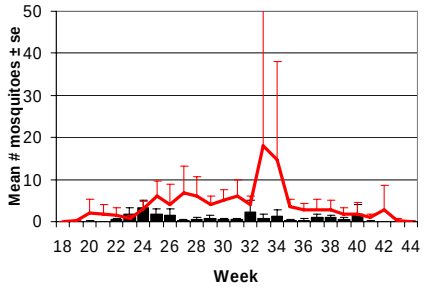
The figures show the average maximum temperature, minimum temperature and precipitation deviations from 30 year averages. Current data are from the Hillsborough NJ weather station (a station close to central NJ which recorded all three parameters and was available online at the NJ state climatologist) 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, Burlington, Camden, Morris, Somerset, Sussex and Warren counties. Note: County data is sent in at a variety of times during the week, and some counties suspend light trap operation in October.

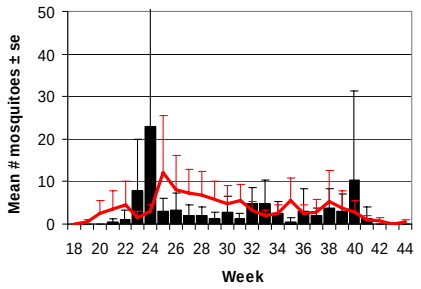


Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

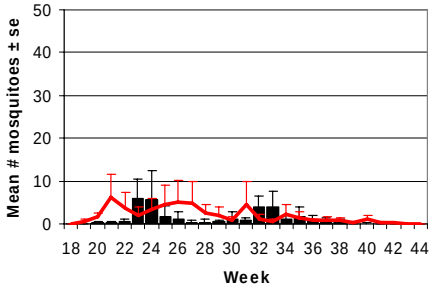
Agricultural



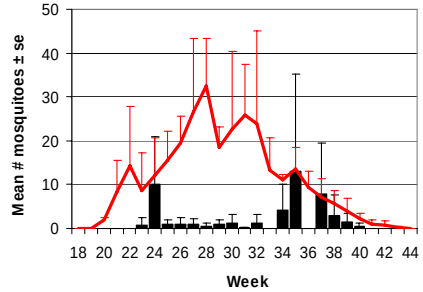
Coastal



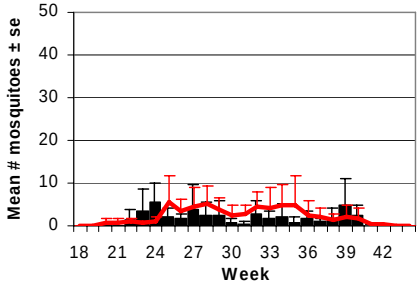
Delaware Bayshore



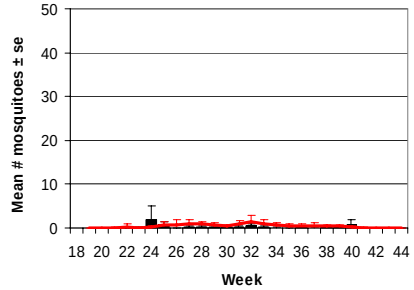
Delaware River Basin



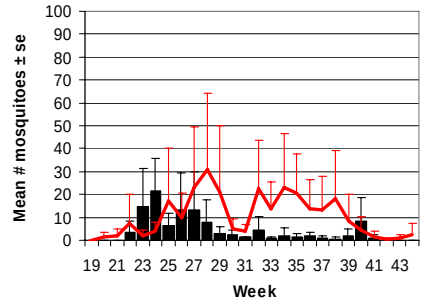
New York Metro



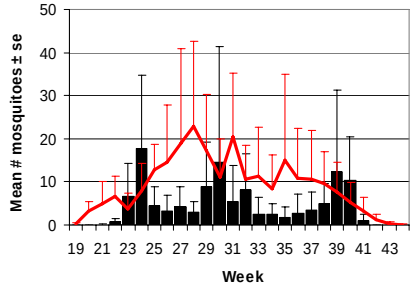
North Central Rural



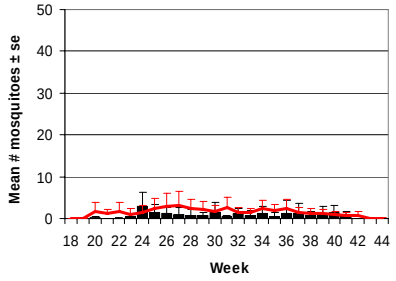
Northwestern Rural



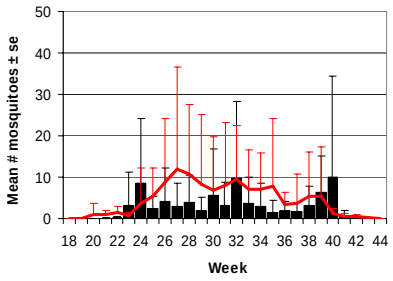
Philadelphia Metro



Pinelands



Suburban Corridor

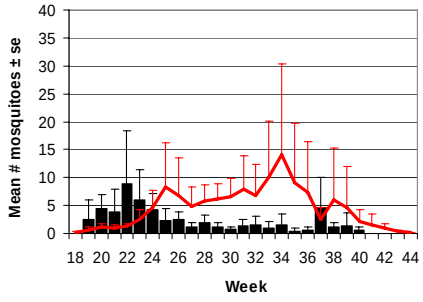


Comments

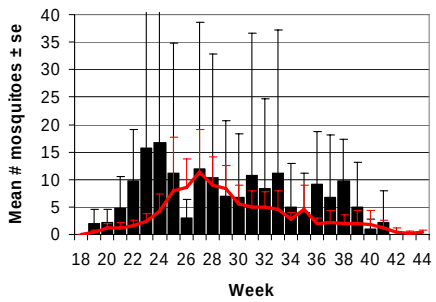
Aedes vexans populations continue to be higher than historical trends in the Coastal area, but have decreased considerably from the previous week's high average of 10 per trap. Rainfall has decreased over the past week, but daytime temperatures have increased. However, *Ae. vexans* populations that are on the wing in northern regions of New Jersey can be significantly decreased should night time temperatures reach the expected 40°C.

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

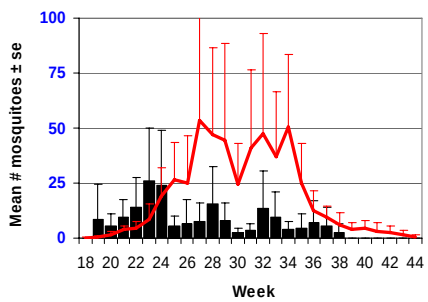
Agricultural



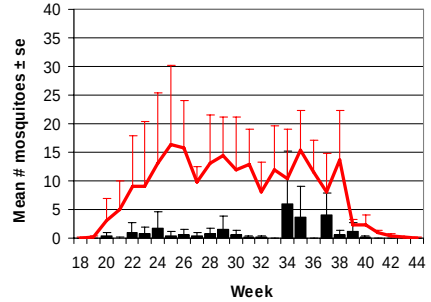
Coastal



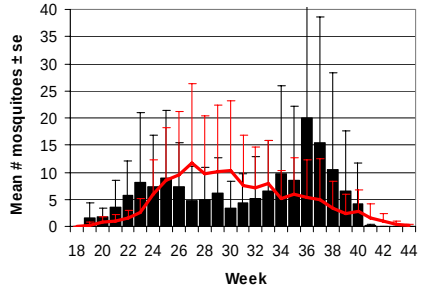
Delaware Bayshore



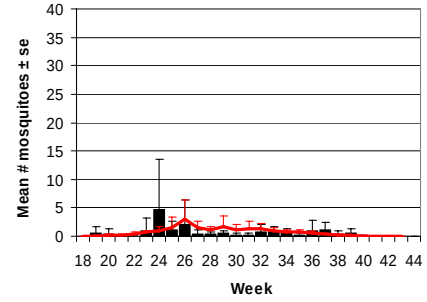
Delaware River Basin



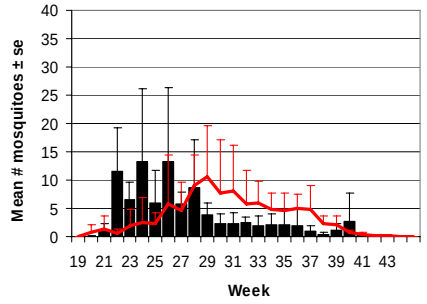
New York Metro



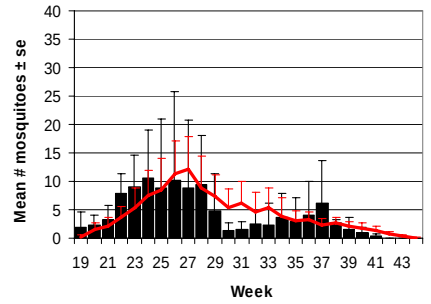
North Central Rural



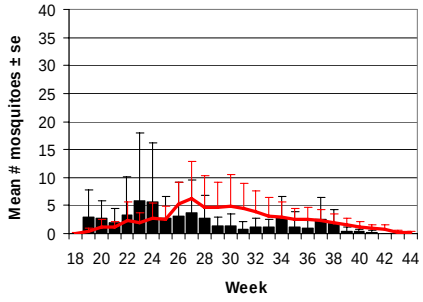
Northwestern Rural



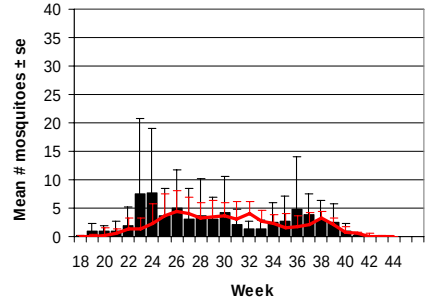
Philadelphia Metro



Pinelands



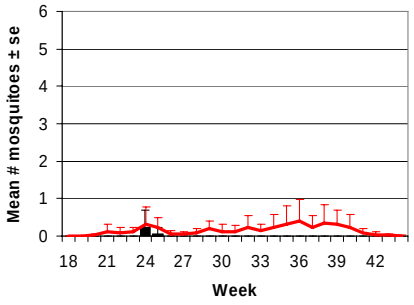
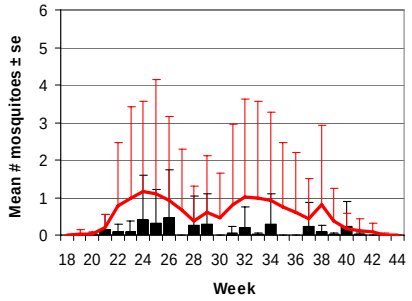
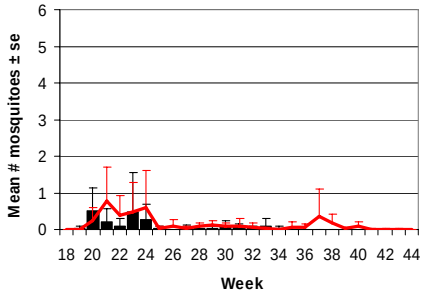
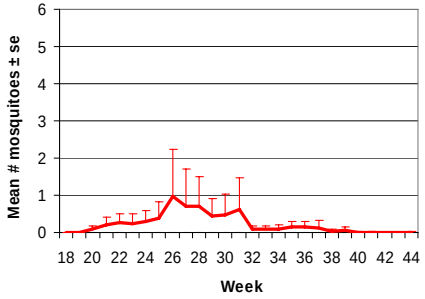
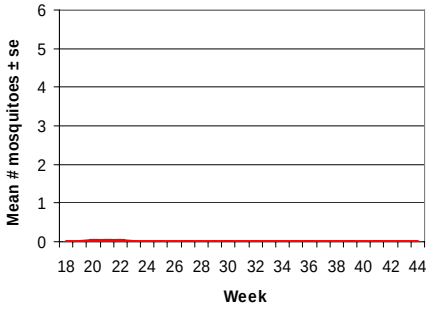
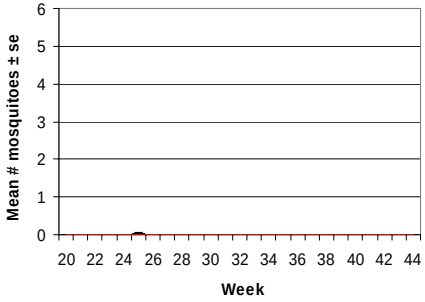
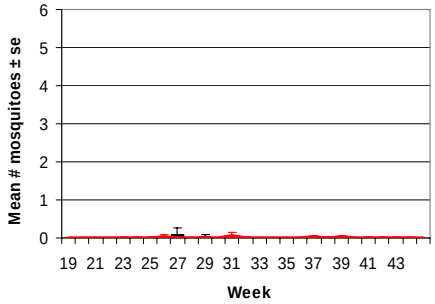
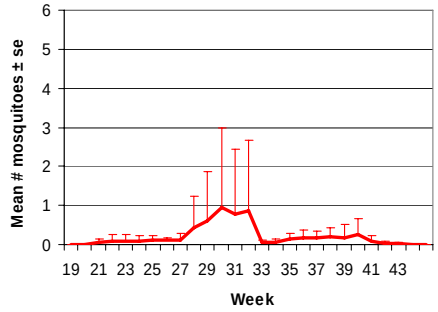
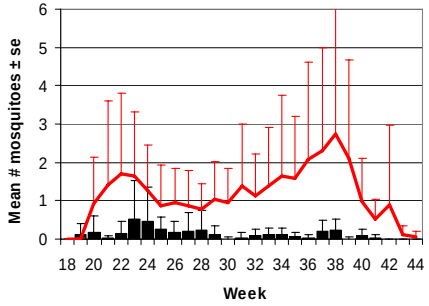
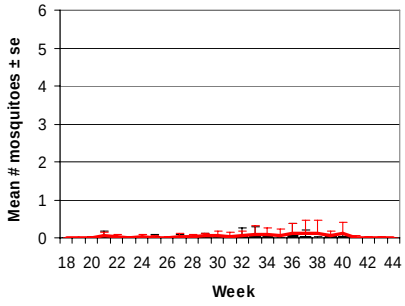
Suburban Corridor



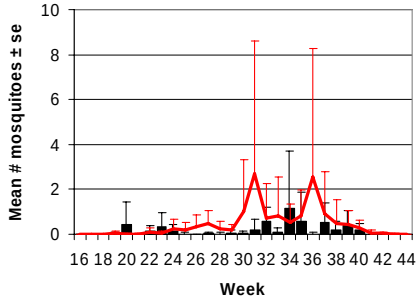
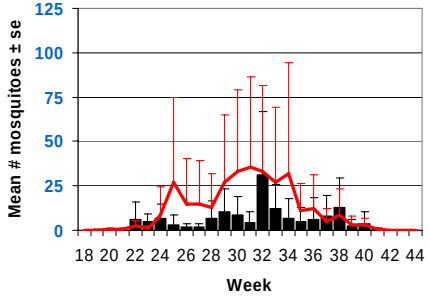
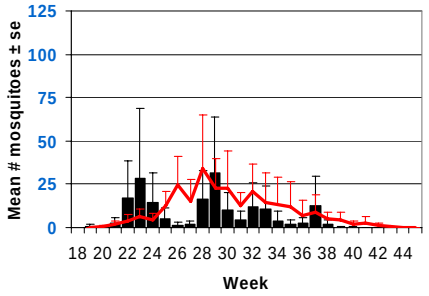
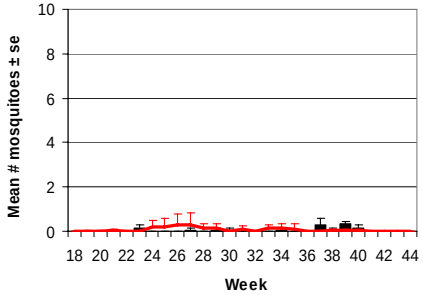
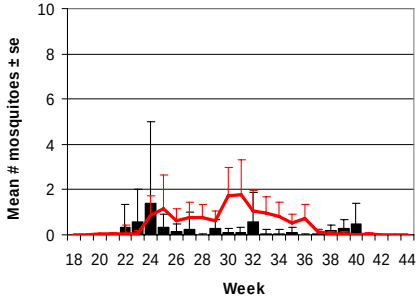
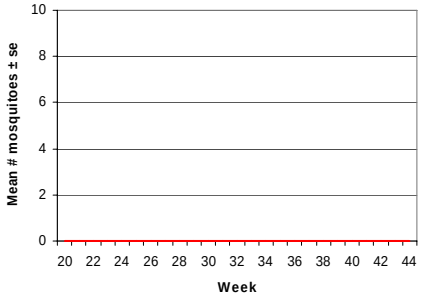
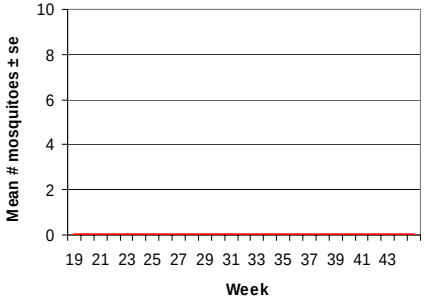
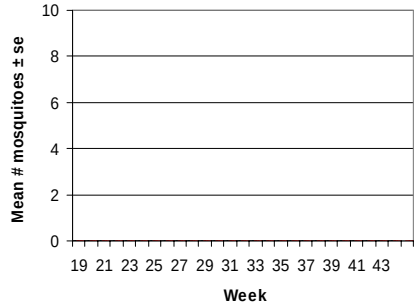
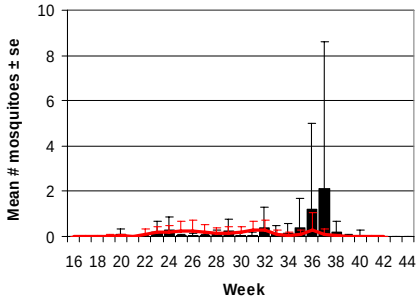
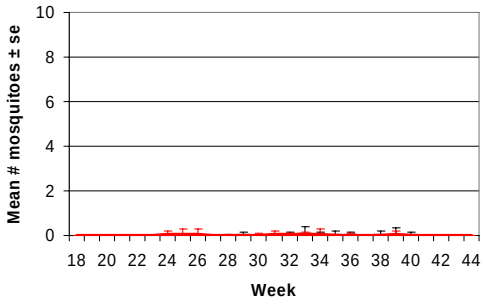
Comments

Culex populations are generally decreasing as inseminated females find their way into hibernaculae. But *Cx. salinarius* appears to be increasing along coastal areas as they comprise increasing proportions of the Mixed *Culex* populations, particularly in the Coastal, New York Metro and Delaware River Basin regions. This apparent increase is due to the ability of *Cx. salinarius* to extend activity well into the fall as it does not fall into torpor like *Culex pipiens*.

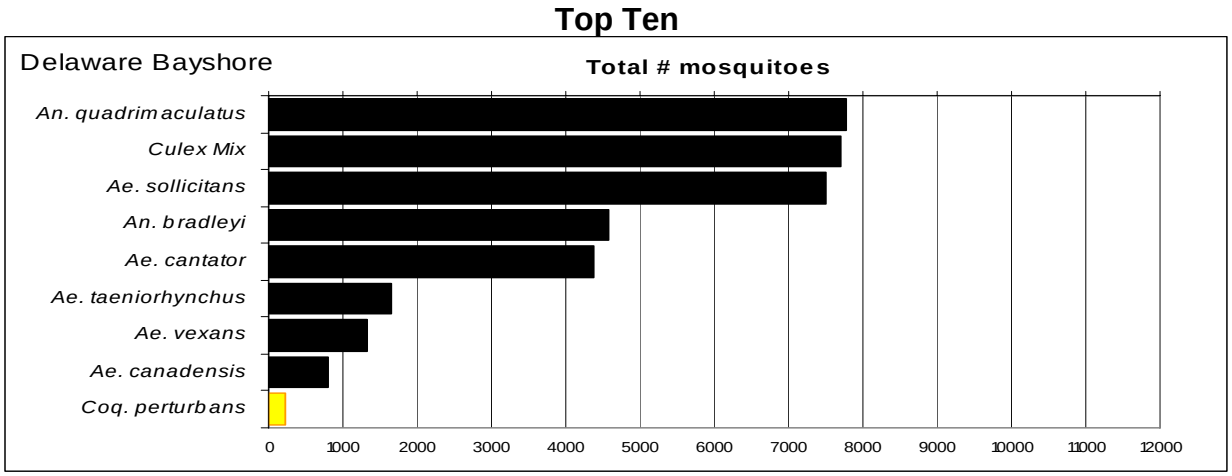
Culiseta melanura – Miscellaneous Group Unique (*Cs. melanura* Type)

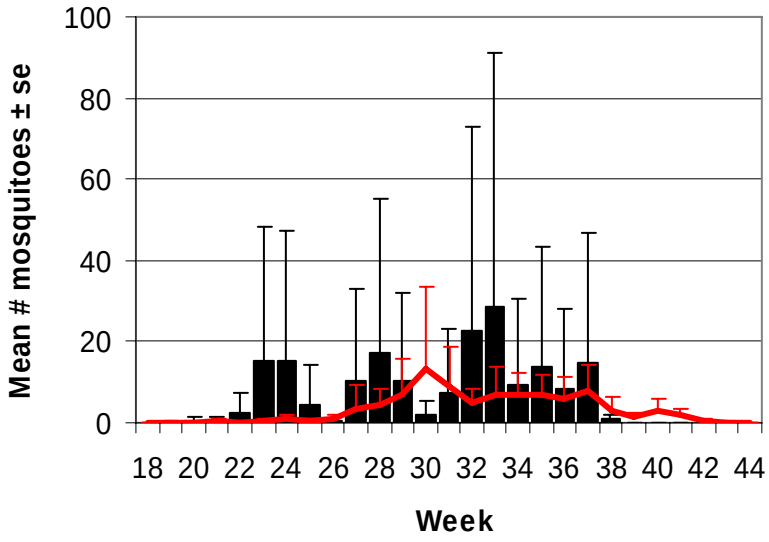
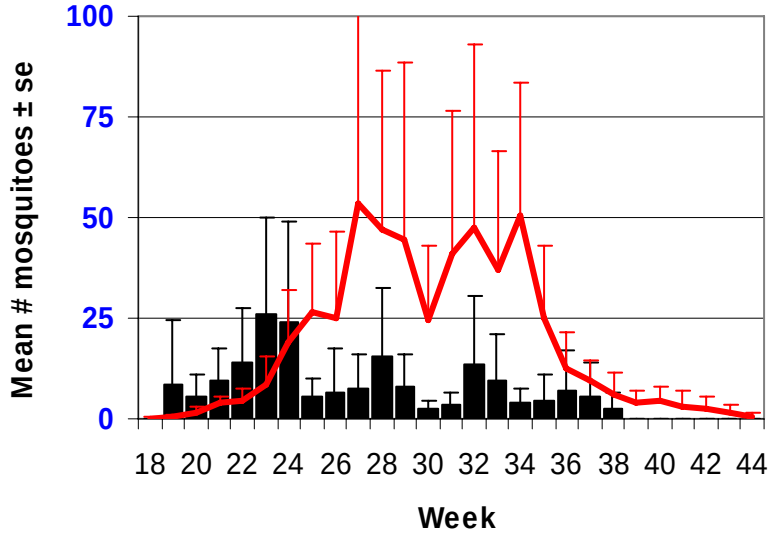
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Culiseta melanura* populations continue to be low in comparison to historical trends.	

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* populations have declined toward zero in most regions. The floodwater eggs of this species have gone into diapause to overwinter until late spring tides, rainfall and temperatures have achieved the right combination for emergence next year.	

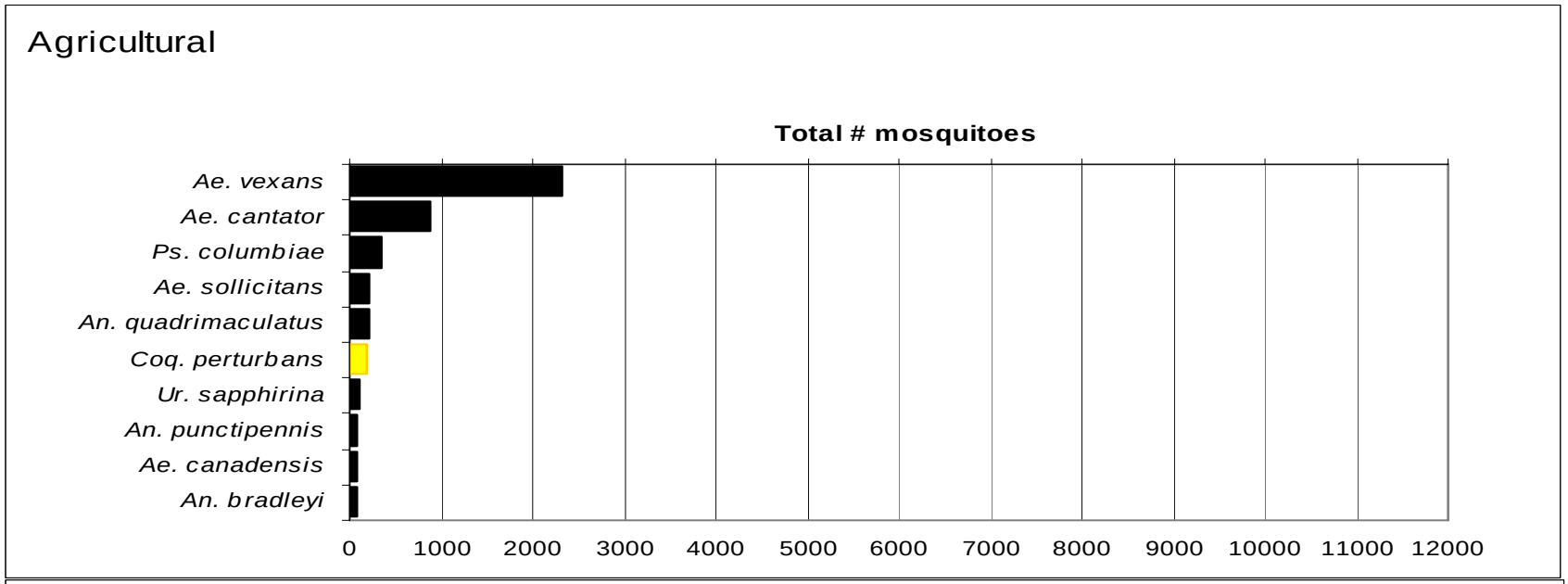
Why *Anopheles quadrimaculatus* is number 1 of the Top Ten for the Delaware Bayshore region: Their numbers have been higher than historical levels and comparable to *Culex* Mixed, whose numbers have been lower than their respective historical levels.

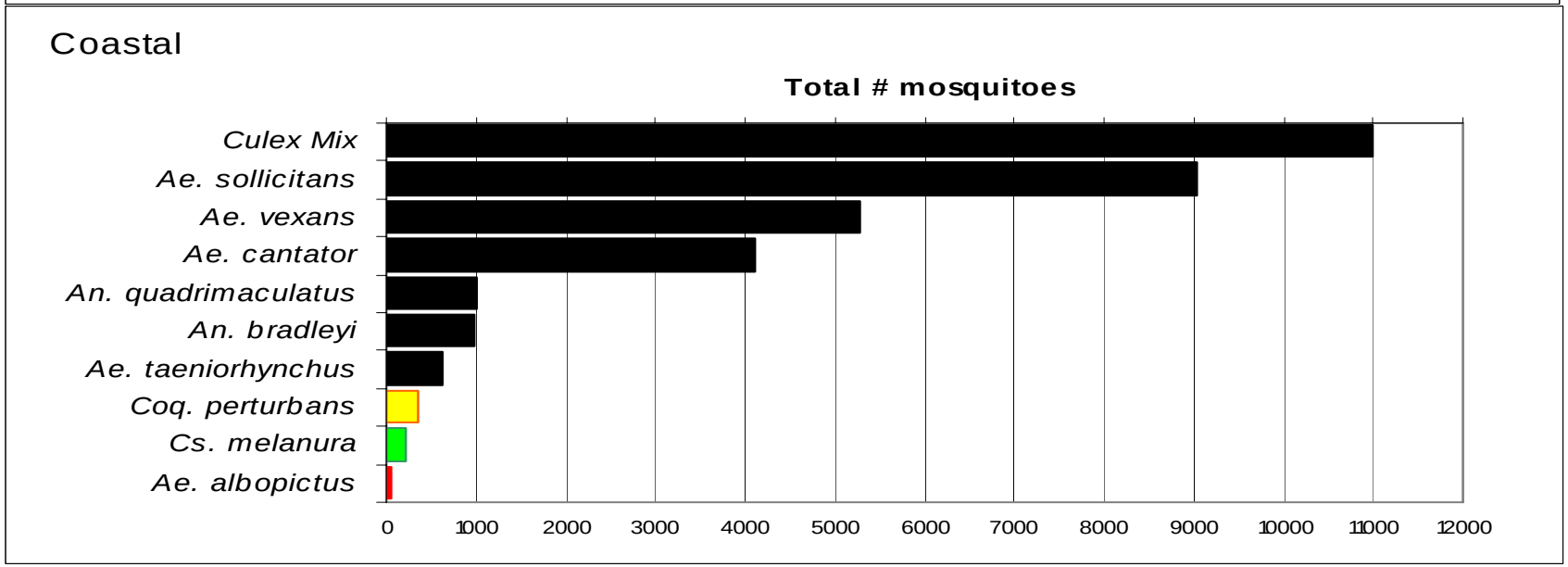


Anopheles quadrimaculatus	*Culex* Mixed
	

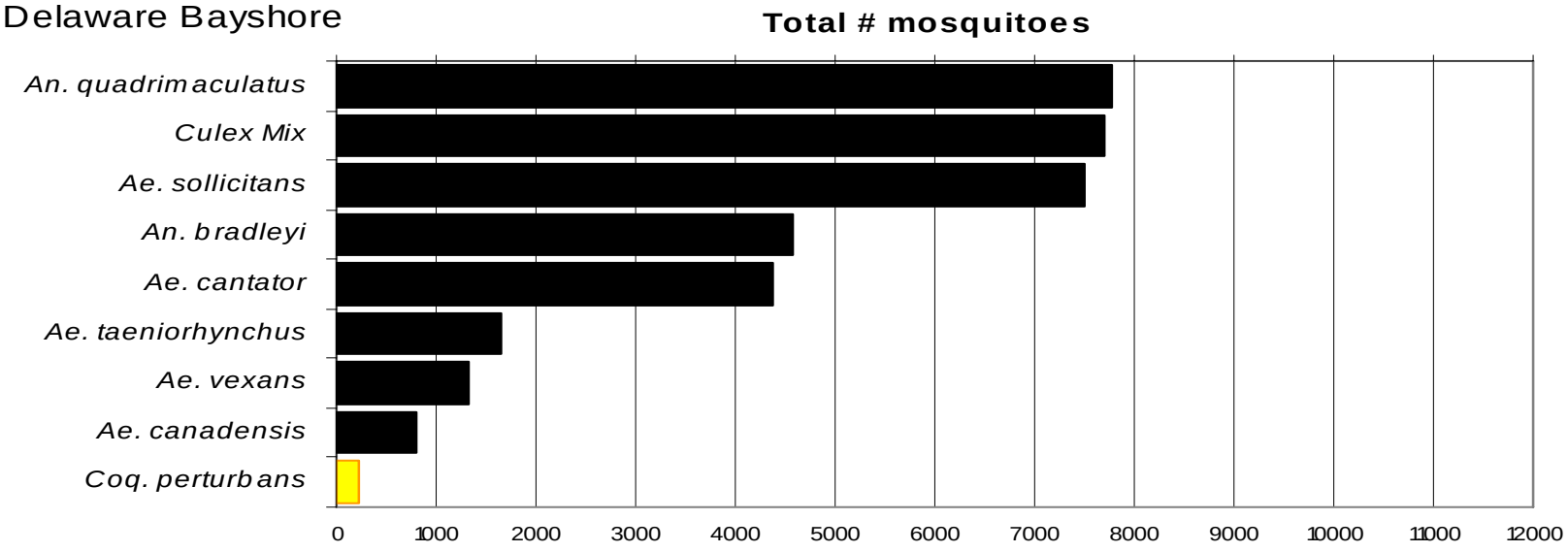
WNV **EEE**

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

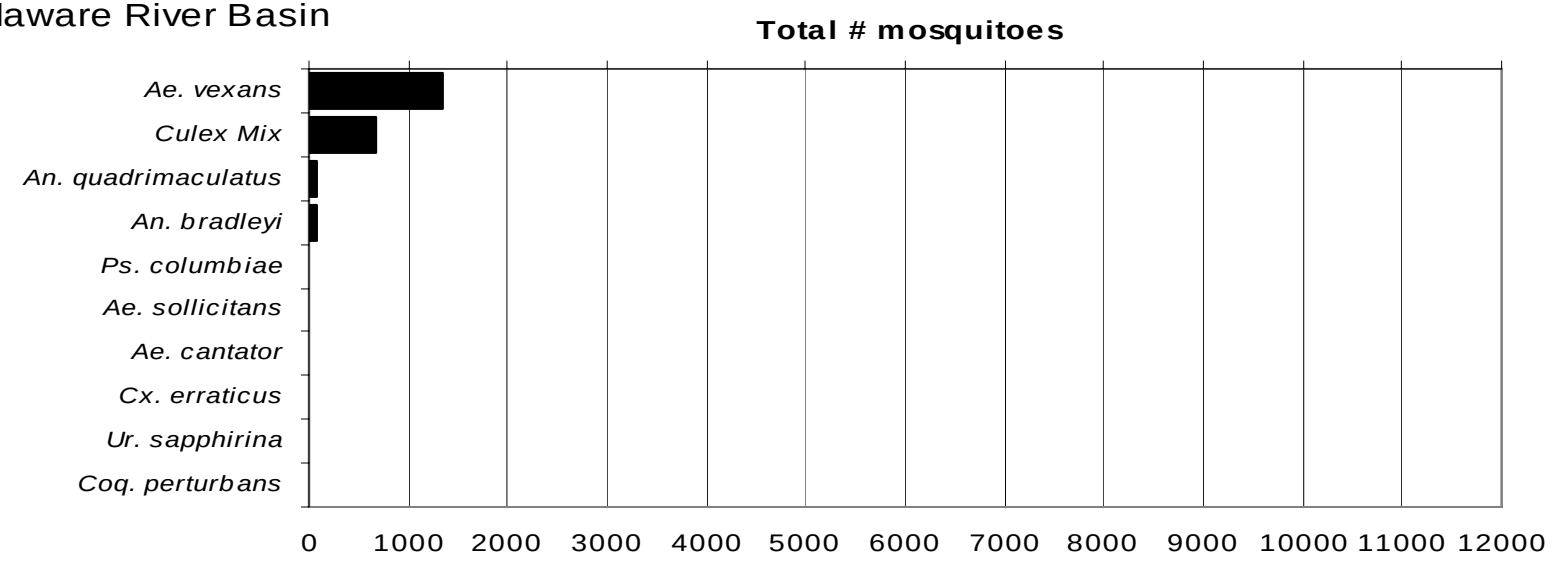


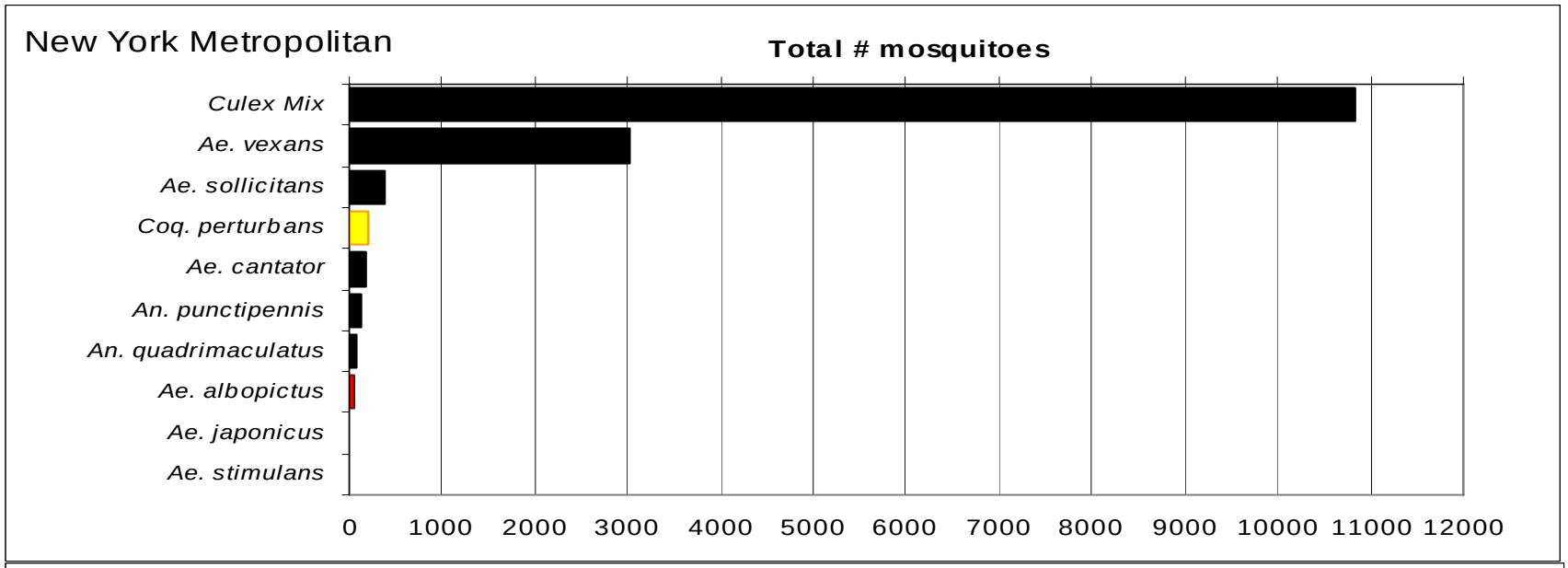


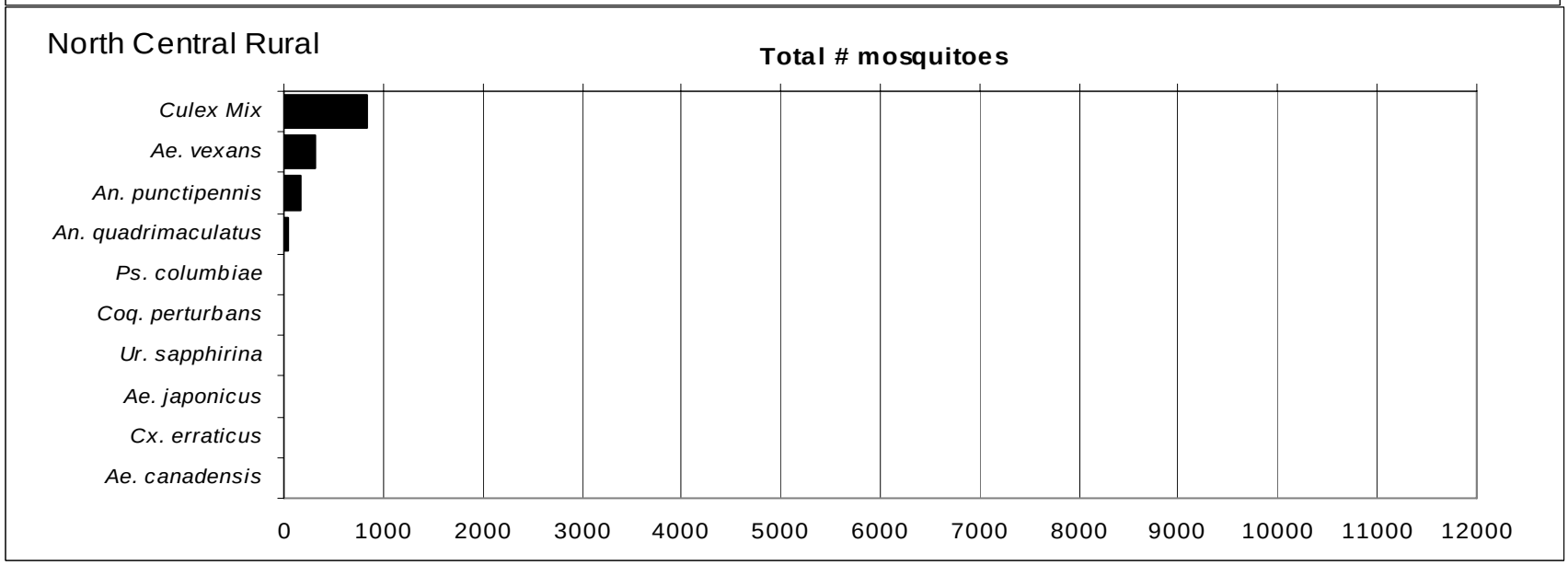
Delaware Bayshore



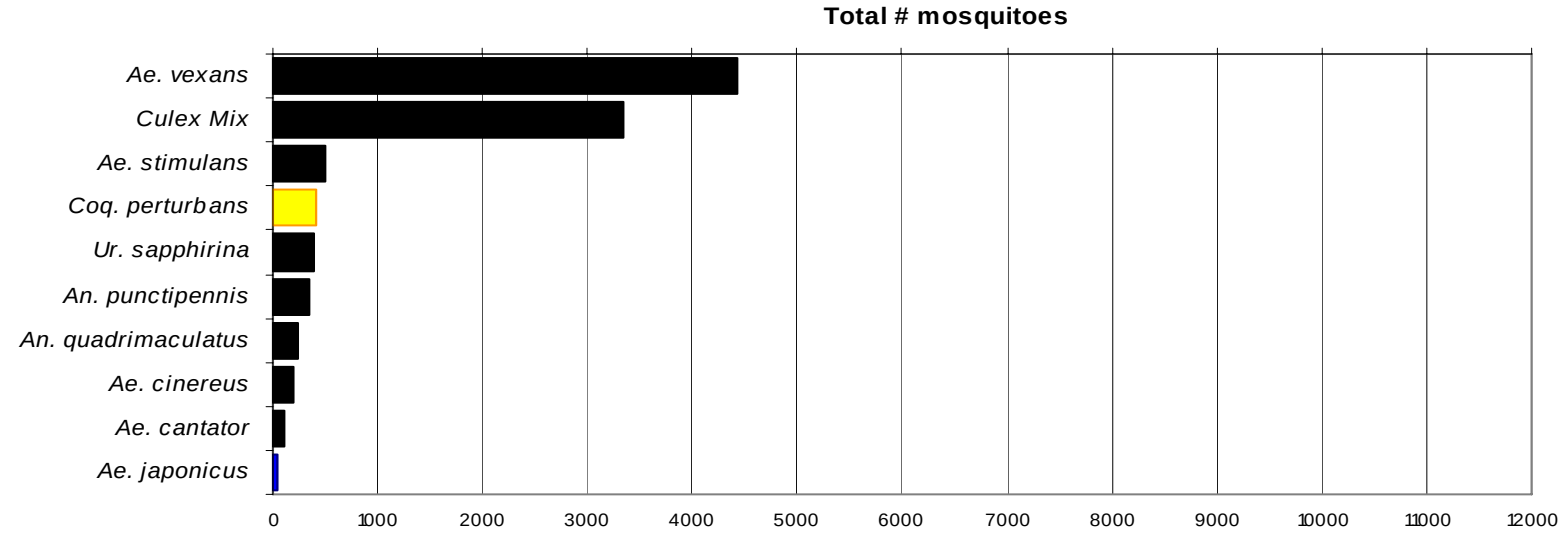
Delaware River Basin



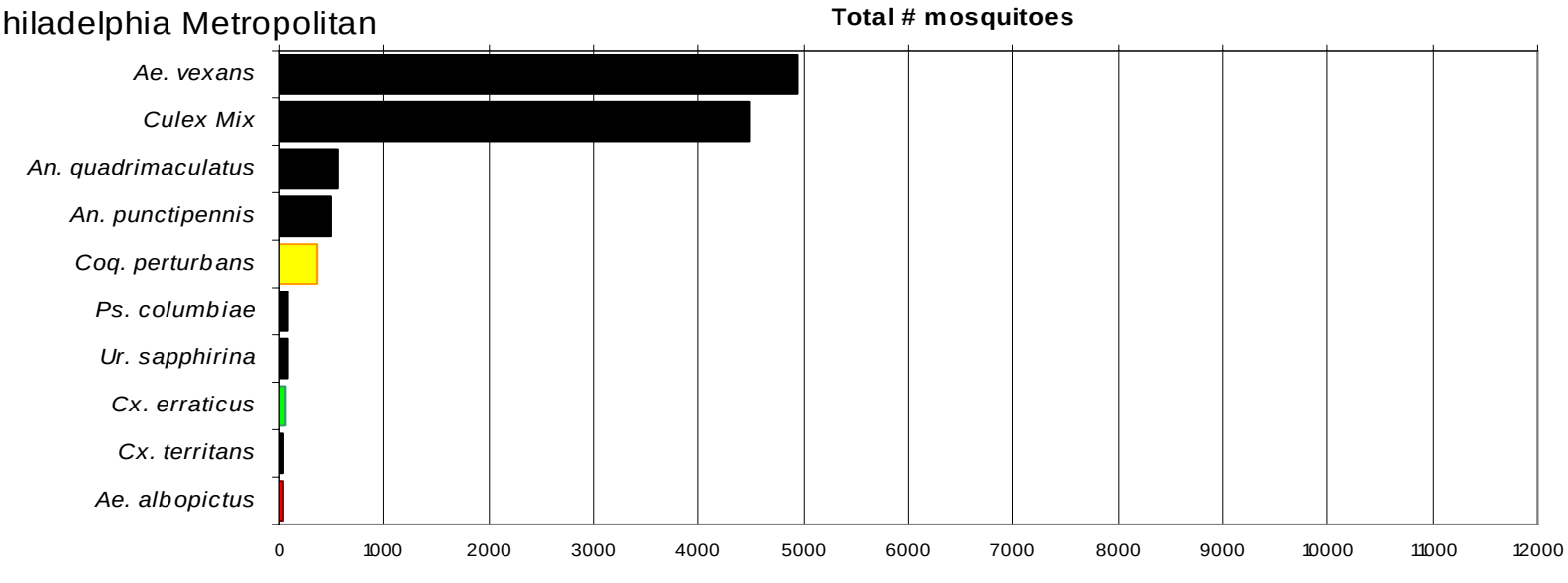

New York Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. sollicitans
Coq. perturbans
Ae. cantator
An. punctipennis
An. quadrimaculatus
Ae. albopictus
Ae. japonicus
Ae. stimulans
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
11000
12000

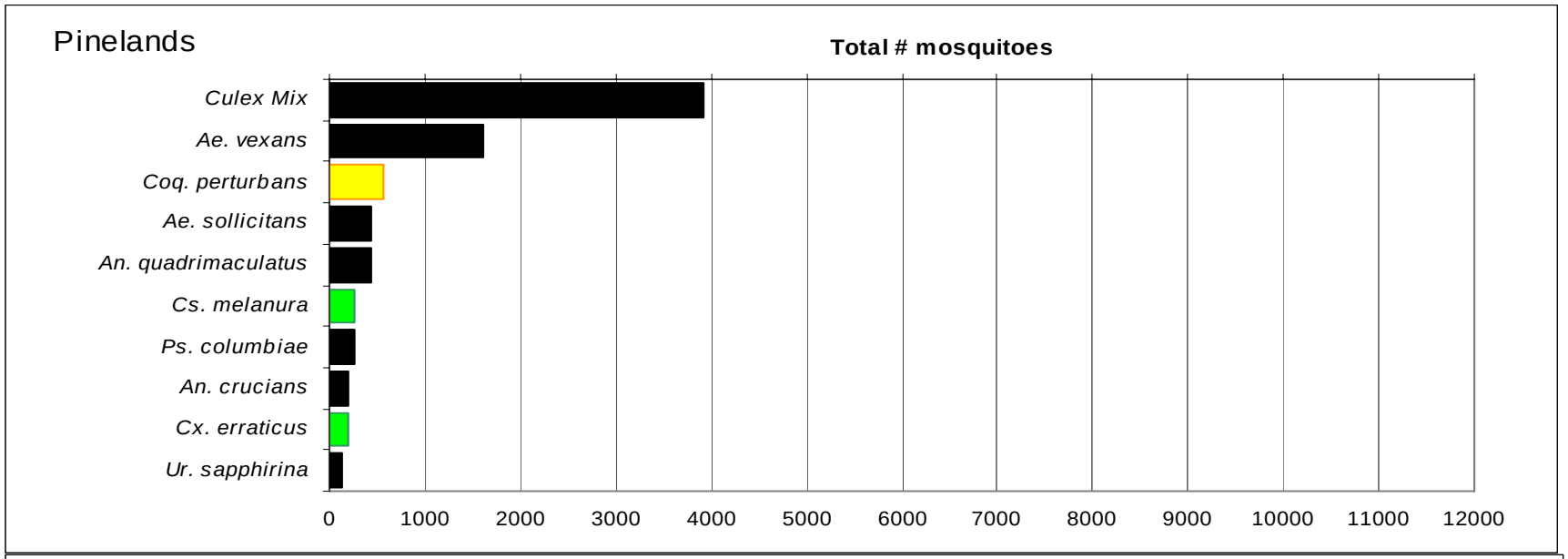

North Central Rural
Total # mosquitoes
Culex Mix
Ae. vexans
An. punctipennis
An. quadrimaculatus
Ps. columbiae
Coq. perturbans
Ur. sapphirina
Ae. japonicus
Cx. erraticus
Ae. canadensis
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
11000
12000

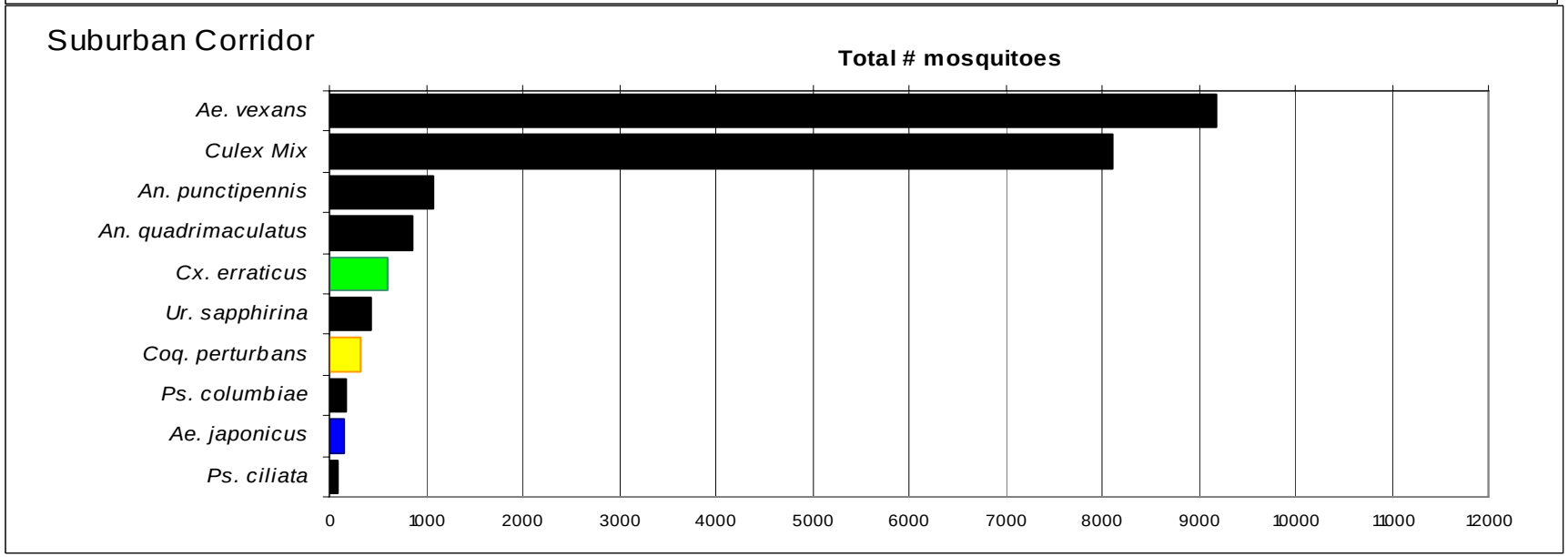
Northwest Rural



Philadelphia Metropolitan




Pinelands
Total # mosquitoes
Culex Mix
Ae. vexans
Coq. perturbans
Ae. sollicitans
An. quadrimaculatus
Cs. melanura
Ps. columbiae
An. crucians
Cx. erraticus
Ur. sapphirina
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
11000
12000


Suburban Corridor
Total # mosquitoes
Ae. vexans
Culex Mix
An. punctipennis
An. quadrimaculatus
Cx. erraticus
Ur. sapphirina
Coq. perturbans
Ps. columbiae
Ae. japonicus
Ps. ciliata
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
11000
12000