RUTGERS
New Jersey Agricultural Experiment Station

NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report for 07 September to 13 September 2008, CDC Week 37

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

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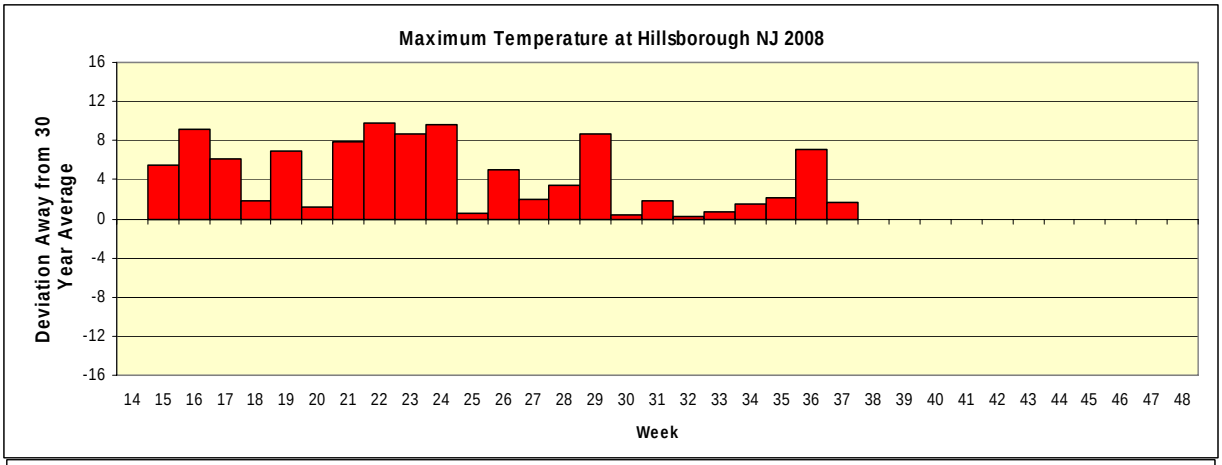
Summary table – Week 37

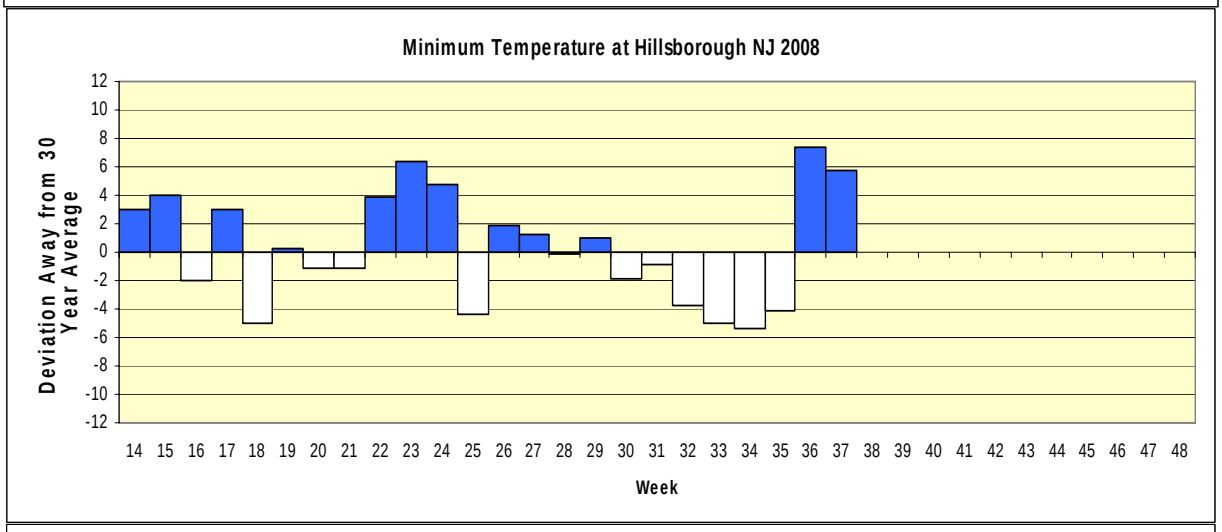
	Aedes vexans			*Culex* Mix			*Coquillettidia perturbans*			*Aedes sollicitans*		
Region	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase
Agricultural	**0.00**	**2.80**	**0**	**0.05**	**2.43**	**0**	**0.00**	**0.01**	**0**	**0.00**	**2.57**	**0**
Coastal	**0.40**	**2.81**	**0**	**0.59**	**2.22**	**0**	**0.00**	**0.15**	**0**	**1.54**	**12.29**	**0**
Delaware Bayshore	**0.00**	**0.89**	**0**	**0.00**	**9.51**	**0**	**0.00**	**0.17**	**0**	**0.24**	**7.16**	**0**
Delaware River Basin	**0.00**	**7.16**	**0**	**0.00**	**8.15**	**0**	**0.00**	**0.20**	**0**	**0.00**	**0.00**	**0**
New York Metro	**0.33**	**2.03**	**0**	**10.53**	**5.02**	**3**	**0.07**	**0.03**	**3**	**0.00**	**0.73**	**0**
North Central Rural	**0.10**	**0.60**	**0**	**0.88**	**0.41**	**3**	**0.00**	**0.00**	**0**	**0.00**	**0.00**	**0**
Northwest Rural	**1.00**	**13.09**	**0**	**0.94**	**4.88**	**0**	**0.00**	**0.05**	**0**	**0.00**	**0.00**	**0**
Philadelphia Metro	**1.26**	**10.68**	**0**	**2.86**	**2.37**	**1**	**0.00**	**0.10**	**0**	**0.00**	**0.00**	**0**
Pinelands	**0.58**	**1.41**	**0**	**0.52**	**2.28**	**0**	**0.04**	**0.08**	**0**	**0.08**	**0.29**	**0**
Suburban Corridor	**0.85**	**3.77**	**0**	**1.80**	**2.03**	**0**	**0.02**	**0.23**	**0**	**0.03**	**0.02**	**2**

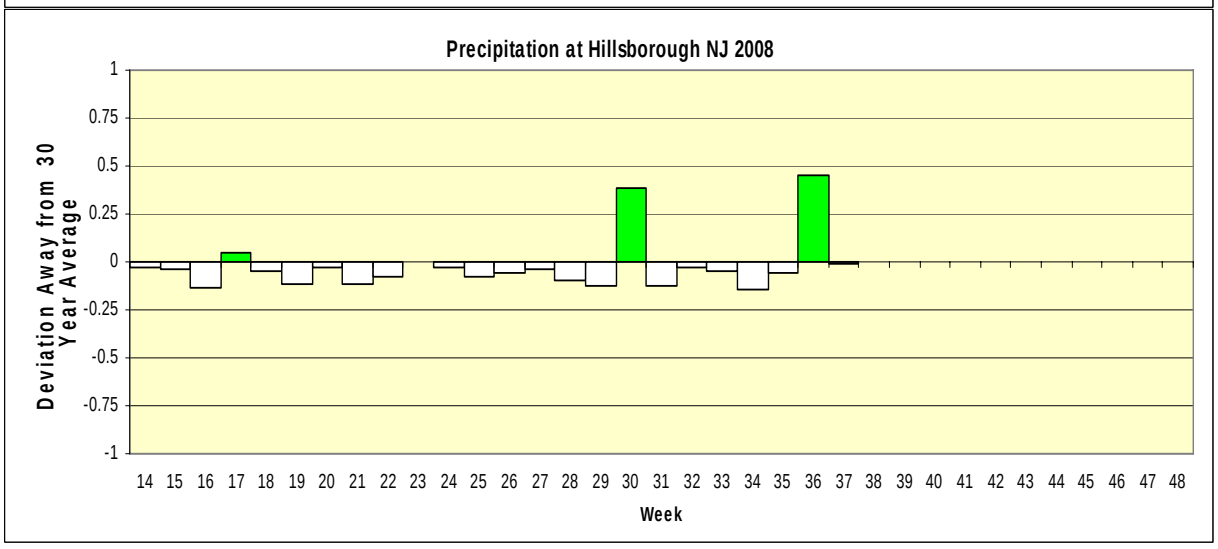
*Averages represent data from, at most, the previous 5 years. Increase is a scale of current values from historical values where no difference or a decrease is represented by 0 (blue), up to 50% greater difference by 1 (green), up to 100% greater difference by 2 (yellow), up to 150% greater difference 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: *Culex* heightened activity continues into the late season in the North Central and both metro regions. This comes at a time when West Nile MFIR for mixed *Culex* samples in counties from these regions is above 7. As female *Culex* begin the seeking overwintering sites, their hostseeking of non-avian sources increases. *Coquillettidia perturbans* and *Aedes sollicitans* increased activity in the New York Metro region and the Suburban Corridor, respectively.

Climate Deviations

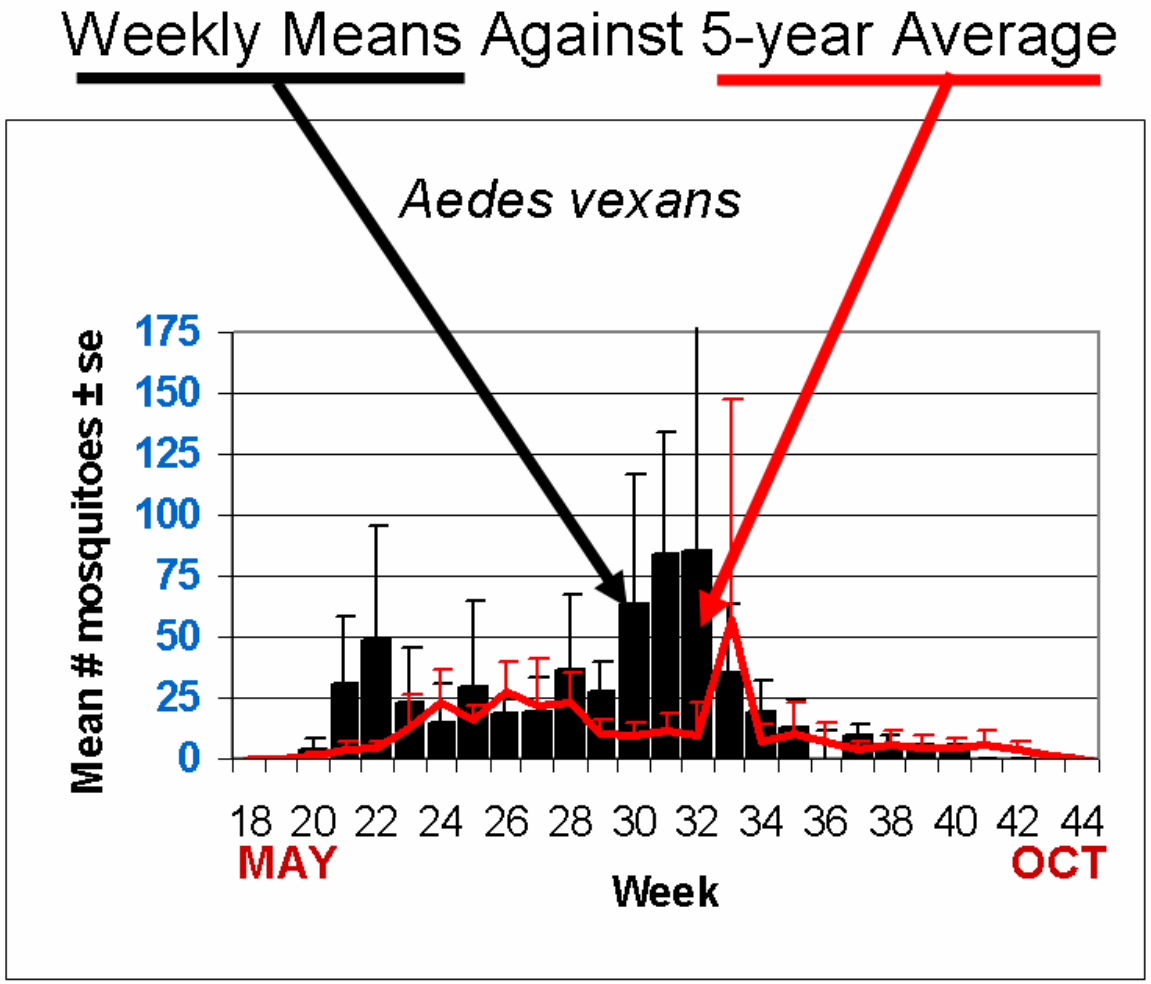




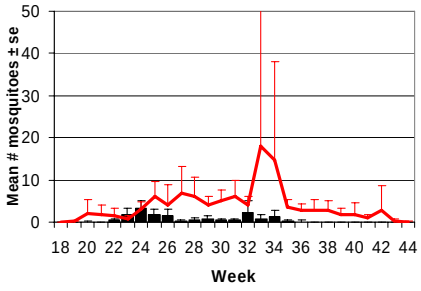
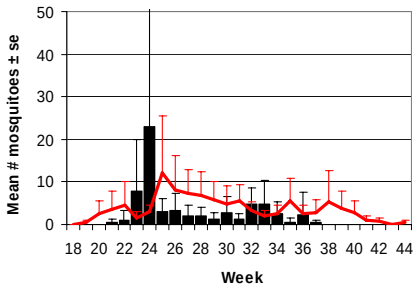
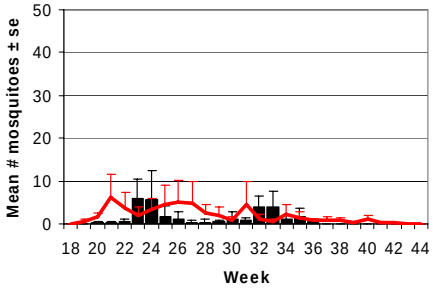
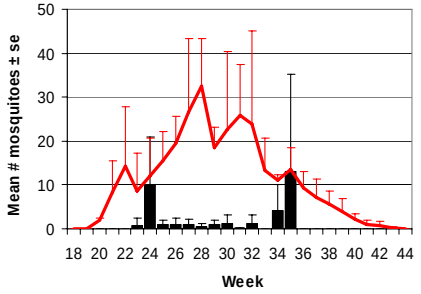
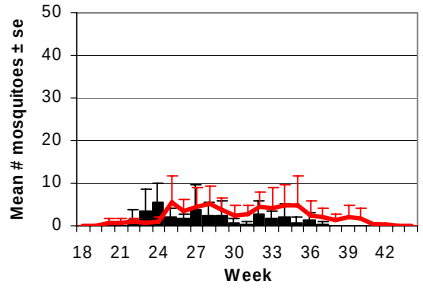
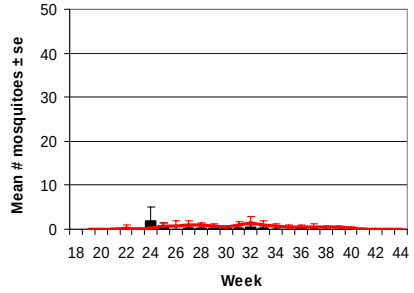
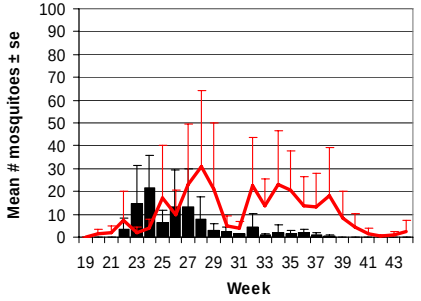
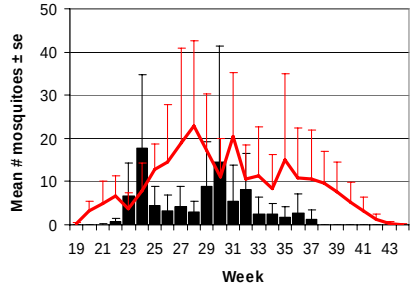
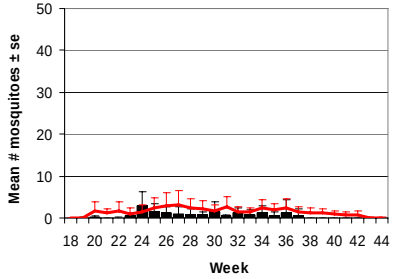
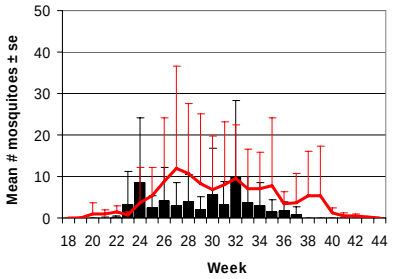


The figures show the average maximum temperature, minimum temperature and precipitation deviations from 30 year averages. Current data are from the Hillsborough NJ weather station (a station close to central NJ which recorded all three parameters and was available online at the NJ state climatologist)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

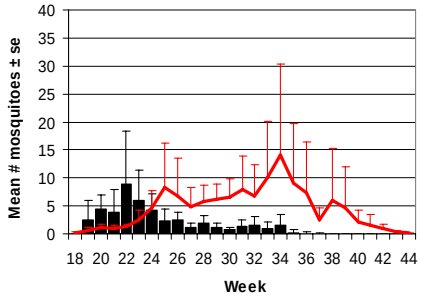


Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

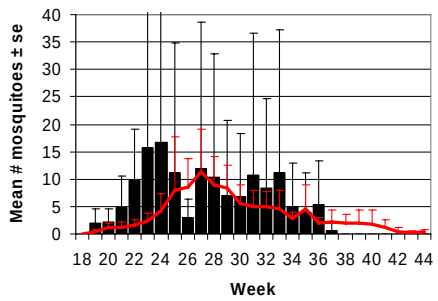
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes vexans* populations responded to local flooding that occurred in the Delaware River Basin after the passing of TS Hanna. Some counties reported an increased abundance of floodwater larvae and responded with control measures (disparate gaps in data will indicate that a control application has occurred, but this will occur when most or all of the traps in a region undergo treatment – otherwise, standard error bars will increase as some traps are catching mosquitoes while others do not). Recent day and night time temperatures have remain high to quicken larval development of these fast growing mosquitoes.	

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

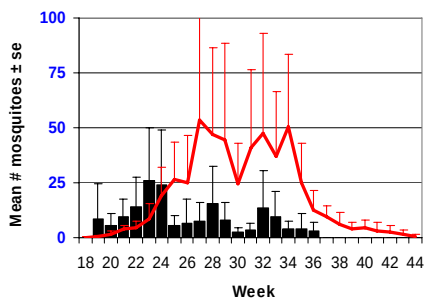
Agricultural



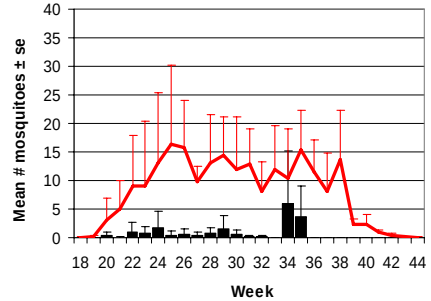
Coastal



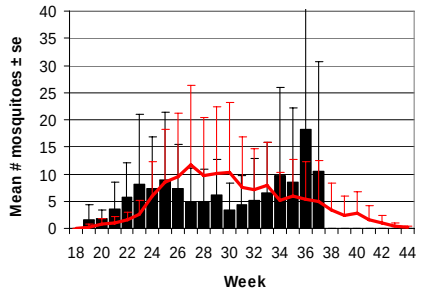
Delaware Bayshore



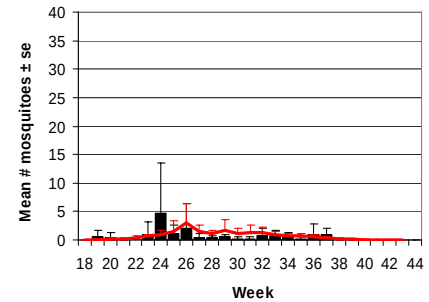
Delaware River Basin



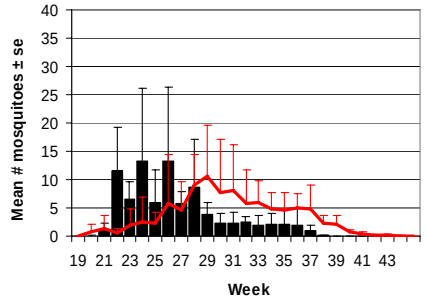
New York Metro



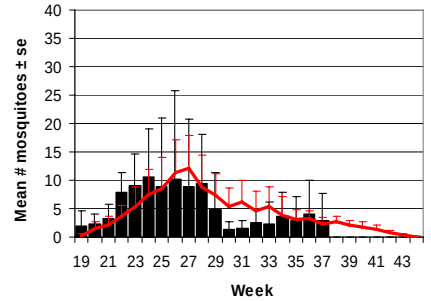
North Central Rural



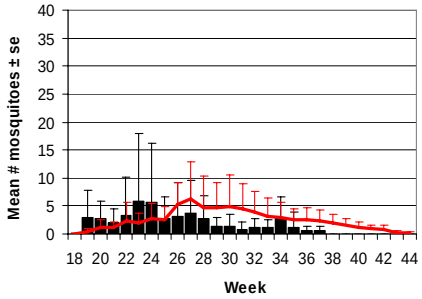
Northwestern Rural



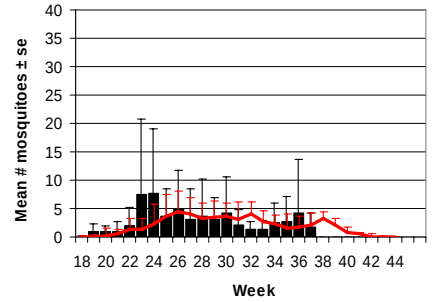
Philadelphia Metro



Pinelands



Suburban Corridor

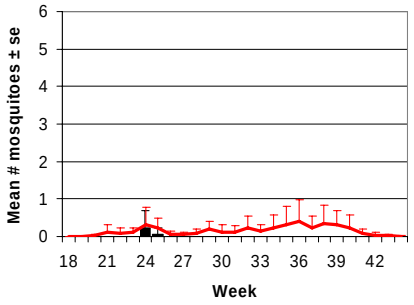


Comments

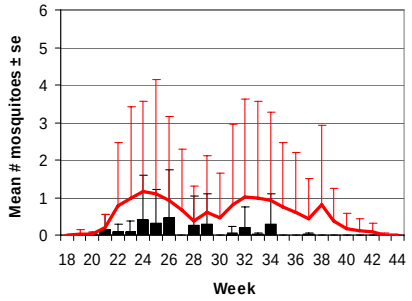
Culex populations are beginning to show rebounding patterns toward historical data, such as in the two metropolitan areas and the Pinelands region. This comes during a period when MFIR values for mixed *Culex* samples sent in to PHEL for West Nile testing are at or above 7. This group is composed of *Cx. pipiens* and *Cx. restuans* (mostly bird feeders) as well as the more varied bird and mammal feeder, *Cx. salinarius*. Of the three, *Cx. pipiens* has the greatest MFIR values. At this same time, mammalian feeding increases in *Cx. pipiens* as females make their way into overwintering sites (basements, for example).

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

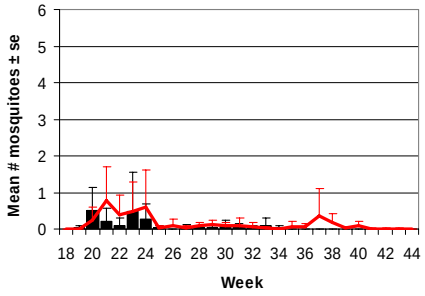
Agricultural



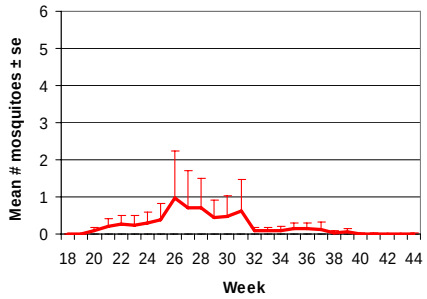
Coastal



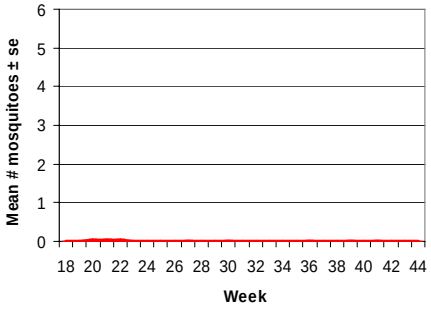
Delaware Bayshore



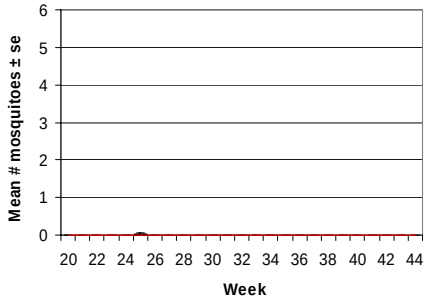
Delaware River Basin



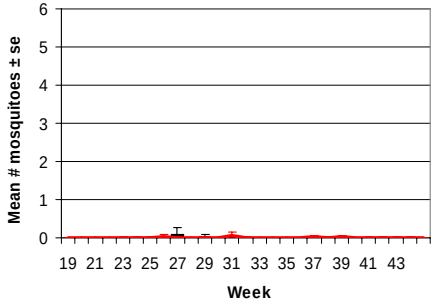
New York Metro



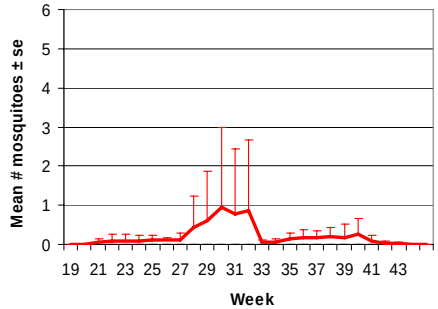
North Central Rural



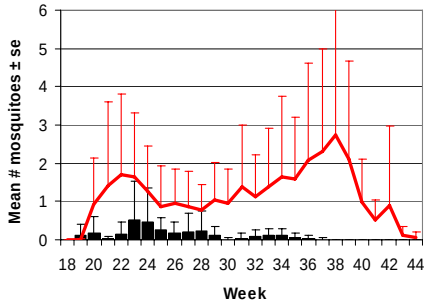
Northwestern Rural



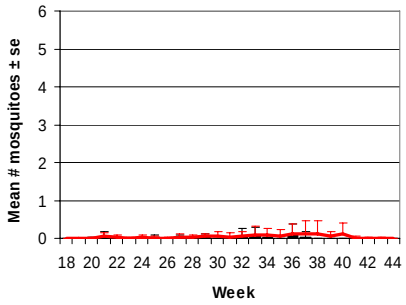
Philadelphia Metro



Pinelands



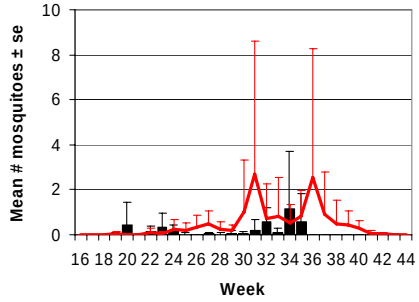
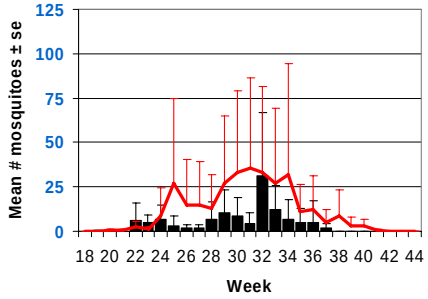
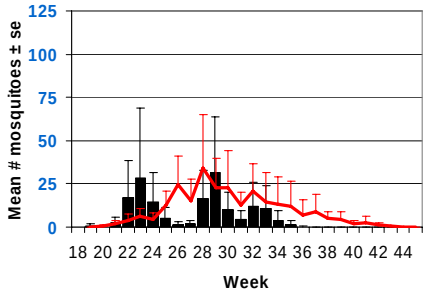
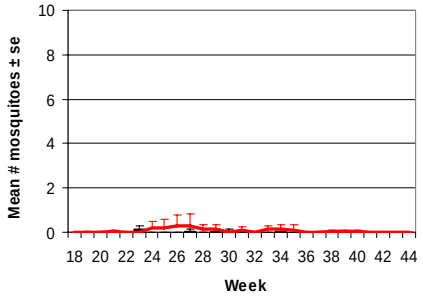
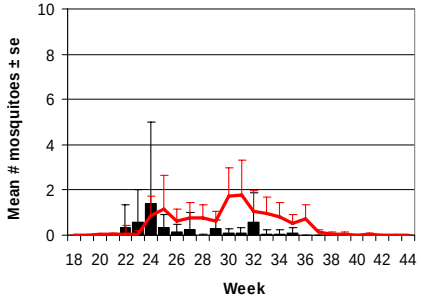
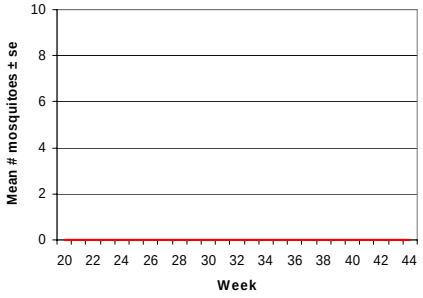
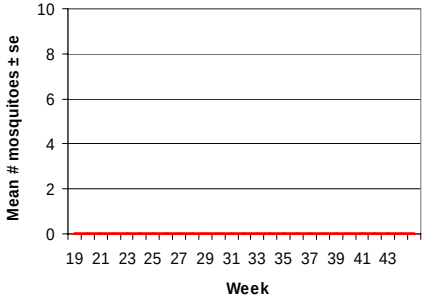
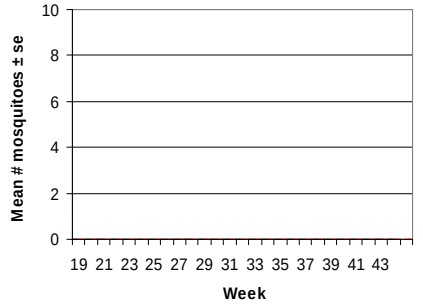
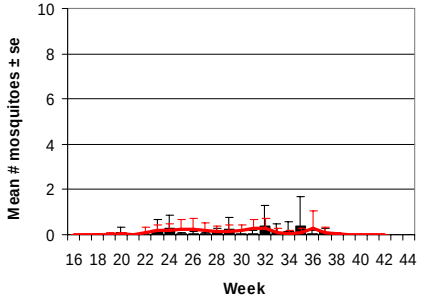
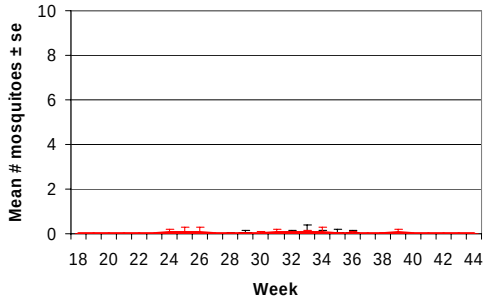
Suburban Corridor

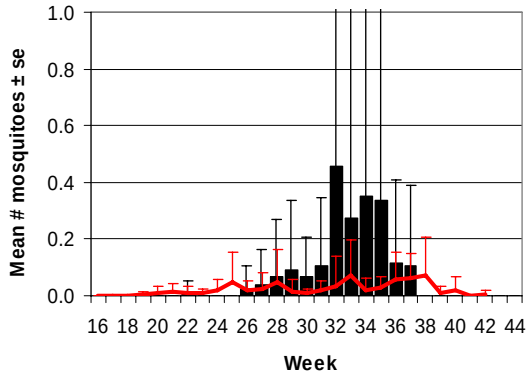
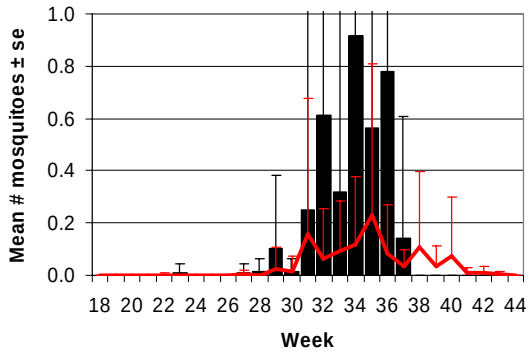
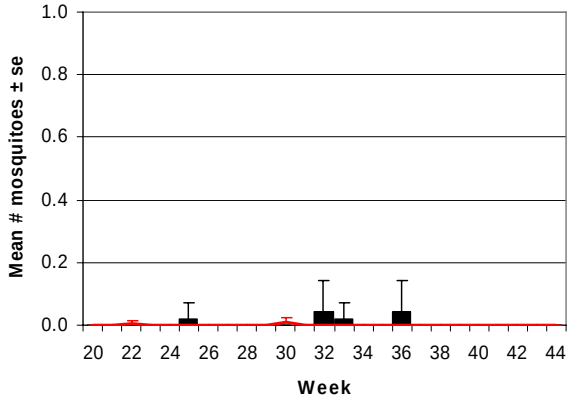


Comments

Culiseta melanura populations remain remarkably low at the two regions where their populations are usually the greatest (the Coastal and Pinelands regions). Despite these low numbers, detection of eastern equine encephalitis of which *Cs. melanura* is the primary enzootic vector, has occurred two different counties. In the vector surveillance program, some of the monitoring sites have showen slight increasses in population levels, yet populations overall are still very low.

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

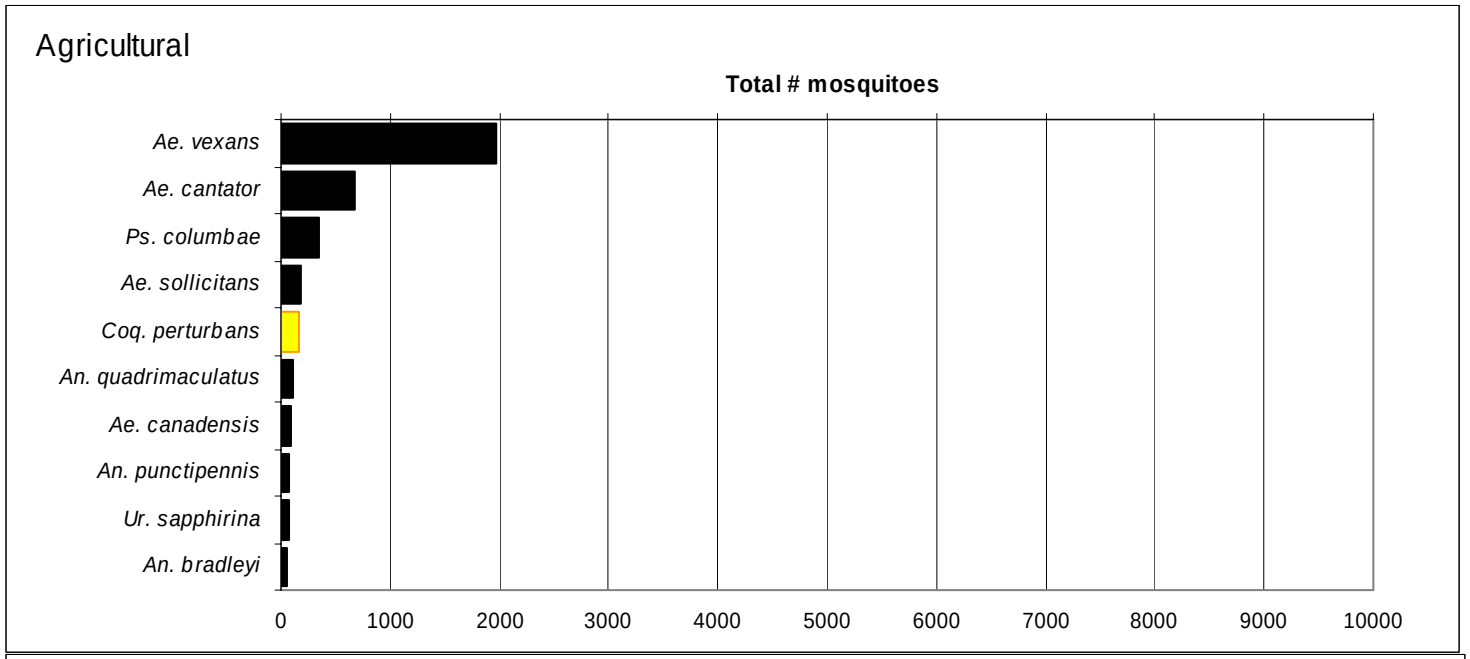
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes sollicitans* future emergences of any significant size is unlikely as the end of the season approaches. While warmer weather might ensure that habitat flooded by the recent full moon (15 Sep) could produce a brood, the coming week shows moderate temperatures in the 70's with night time temperatures dropping to the 50's along the coast. The few adults currently on scene are likely generating some complaints as they switch to earlier feeding times and are more likely to come into contact with humans.	

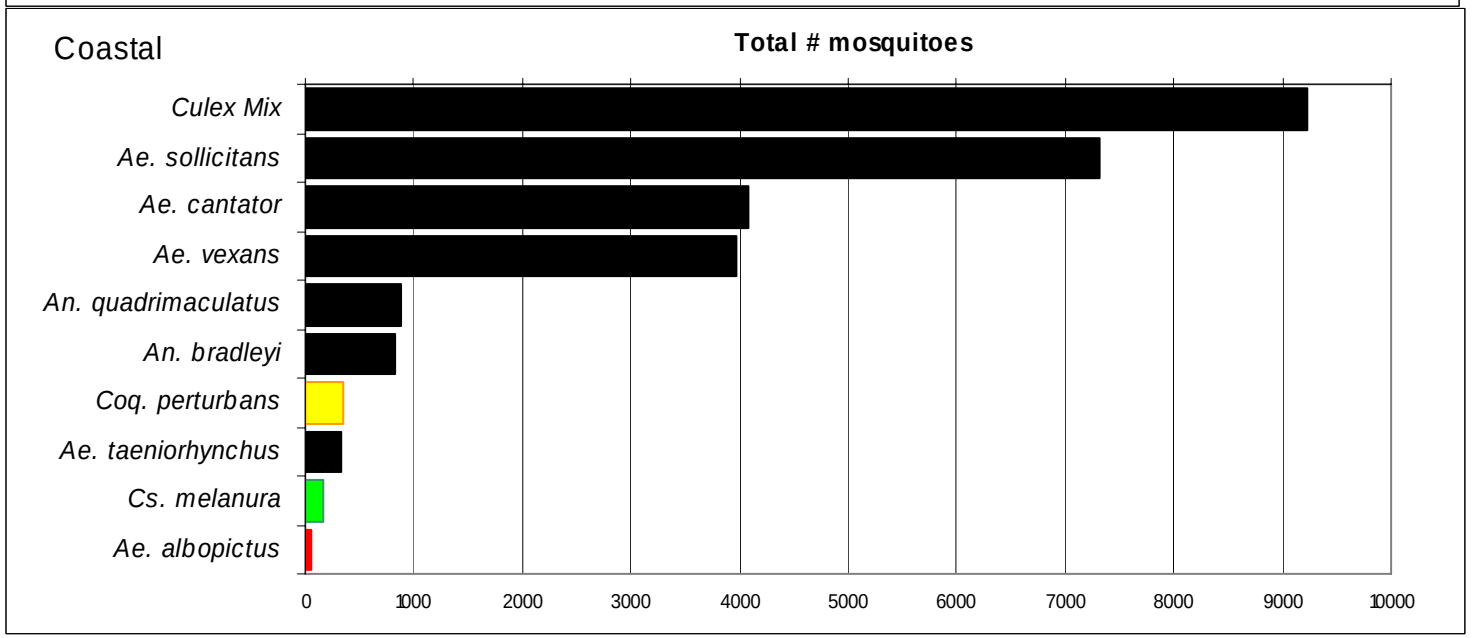
Pinelands *Cx. erraticus*	
Suburbia *Cx. erraticus*	
North Central Rural Cx. erraticus	

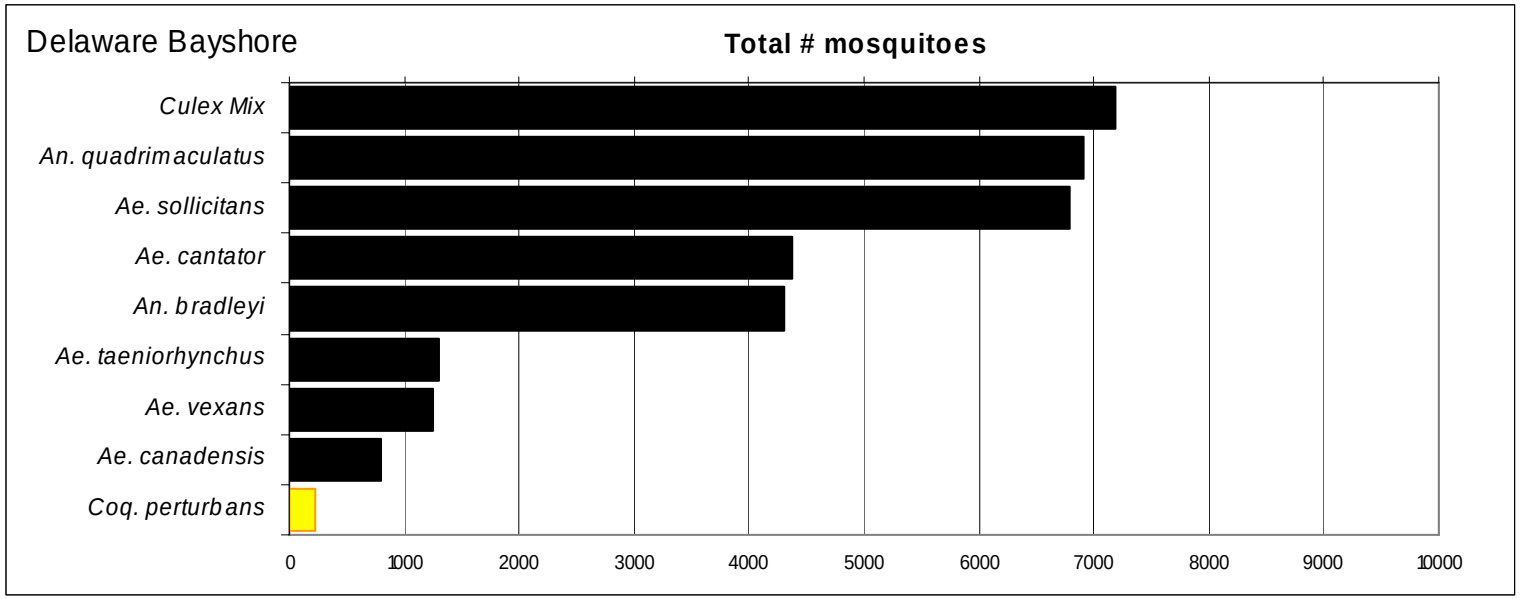
***Culex erraticus* continues to show larger than historical averages, particularly in the Pinelands and Suburan Corridor regions. More significantly, populations are showing up in the northern sections of the state as well, as indicated by the North Central Rural area. We currently do not know what the status is of this southeastern US species with regard to eastern equine encephalitis amplification and transmission in New Jersey.**

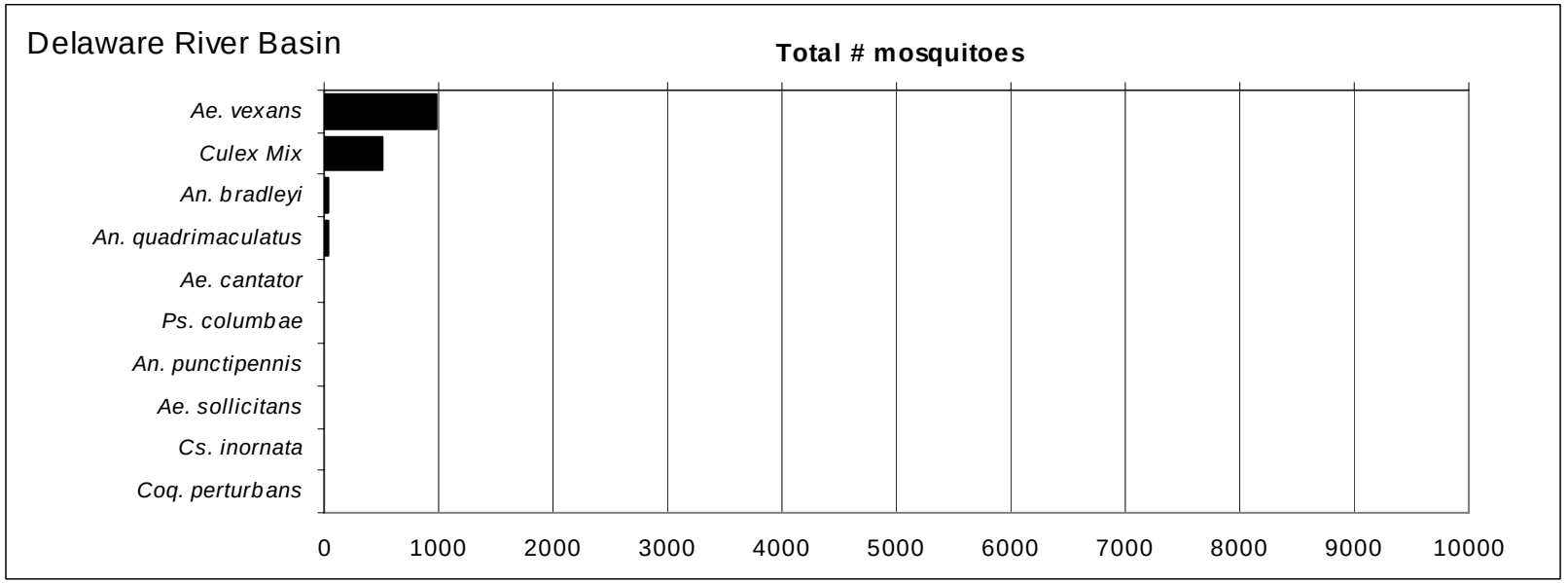
WNV **EEE**

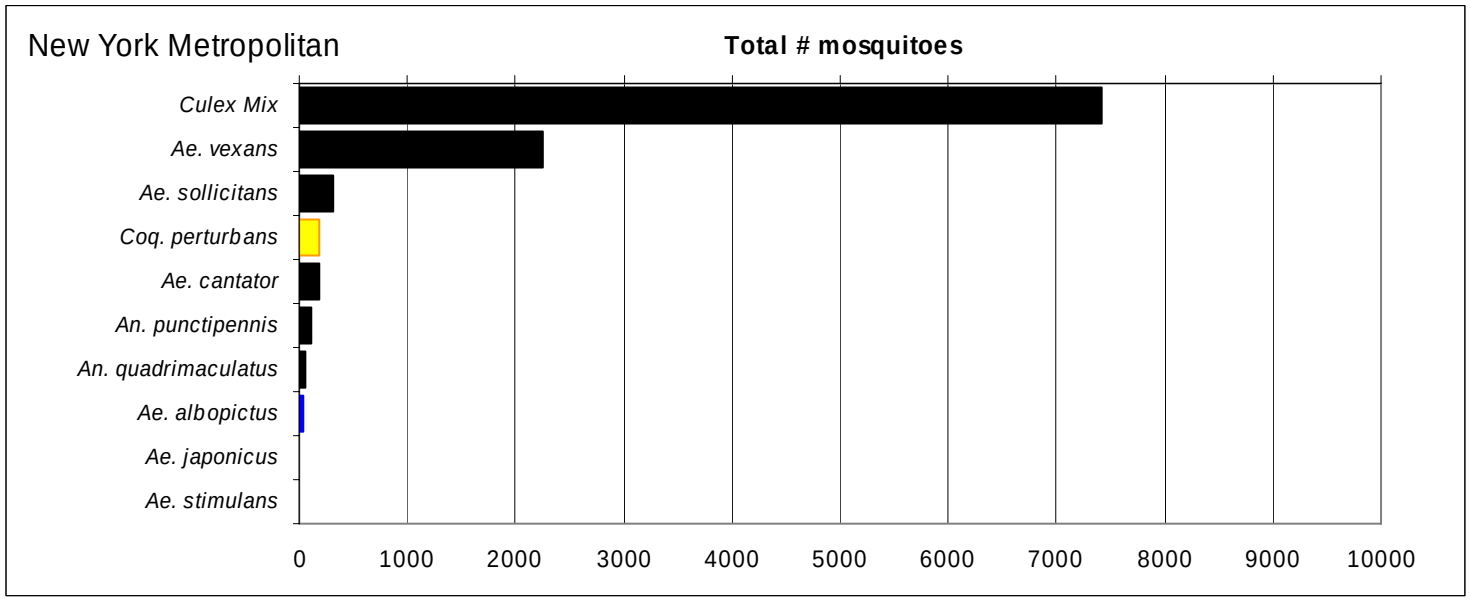
Top Ten Mosquito Species/Region - *Ae. albopictus, Ae. japonicus (invasives); Cs. melanura or Cx. erraticus Coq. perturbans*

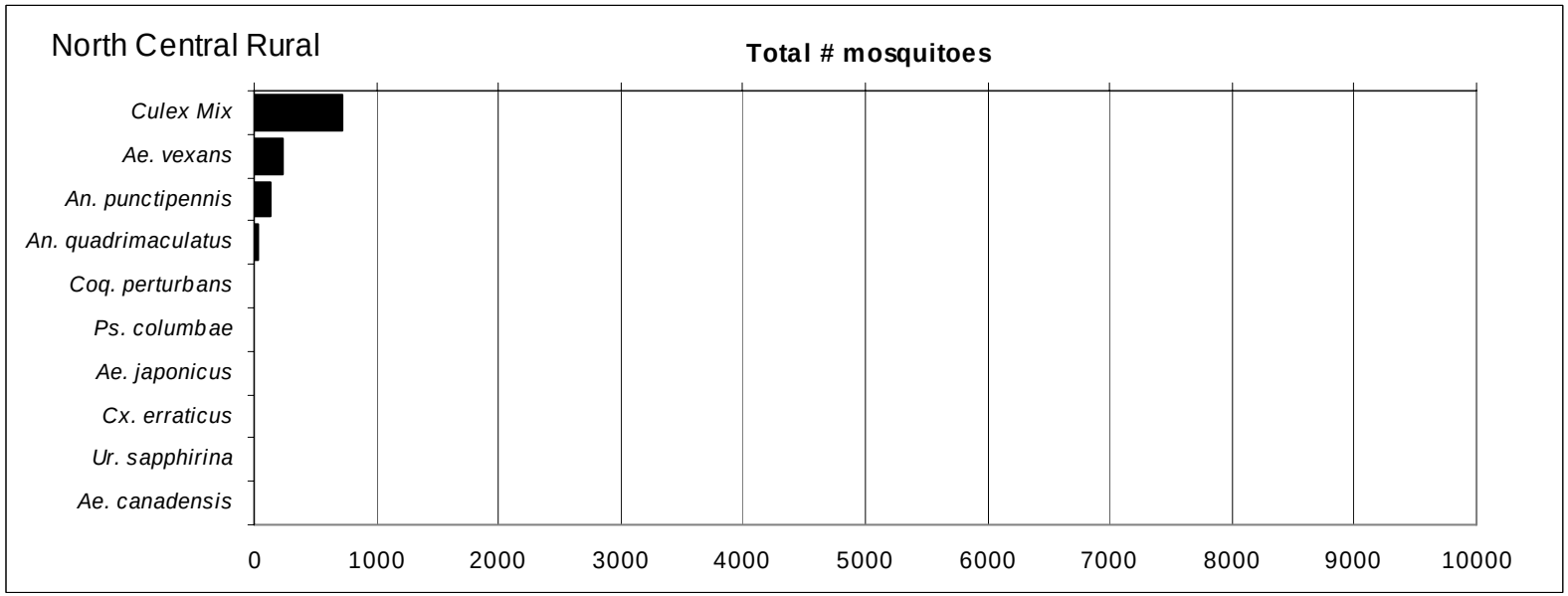


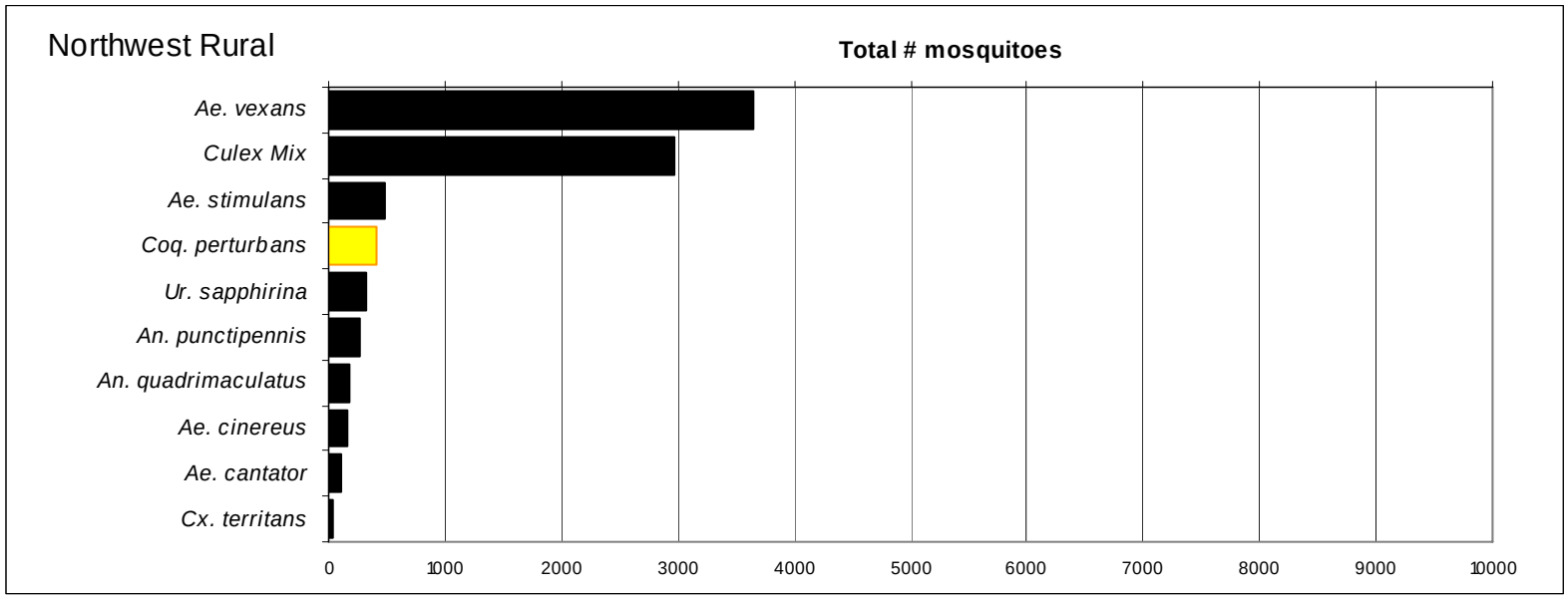


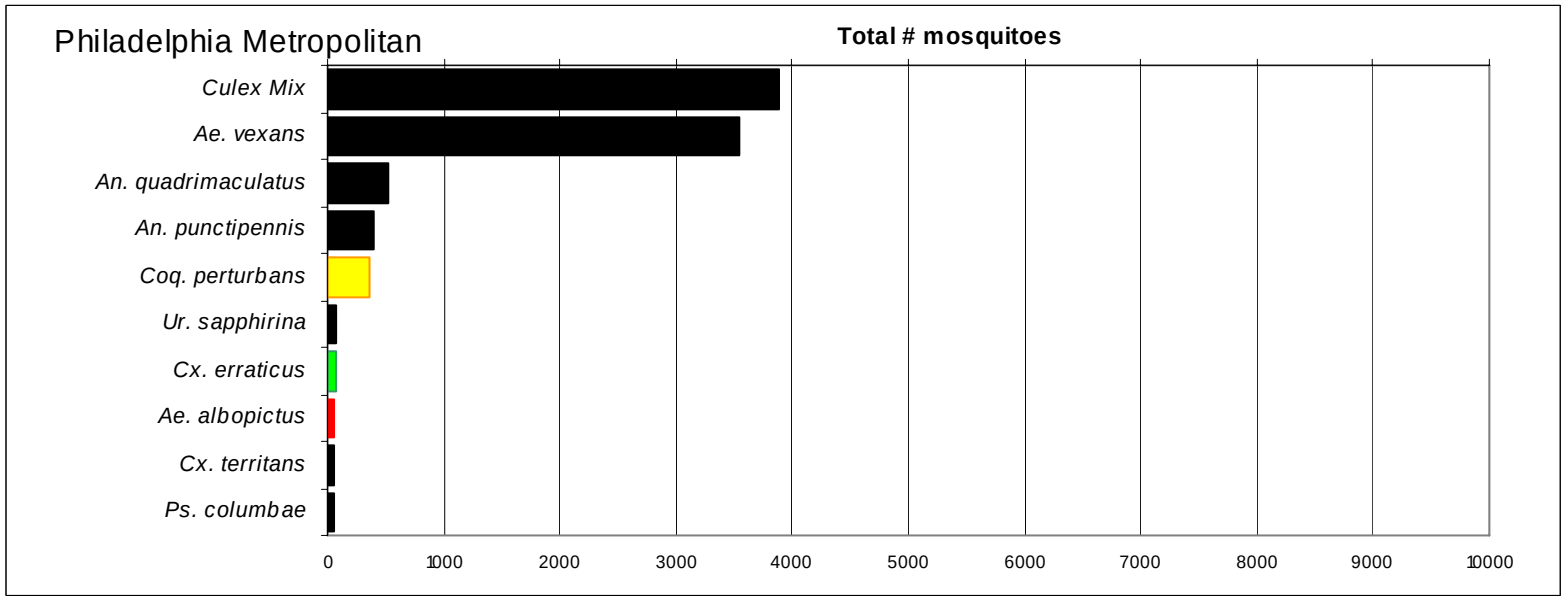

Delaware Bayshore
Total # mosquitoes
Culex Mix
An. quadrimaculatus
Ae. sollicitans
Ae. cantator
An. bradleyi
Ae. taeniorhynchus
Ae. vexans
Ae. canadensis
Coq. perturbans
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

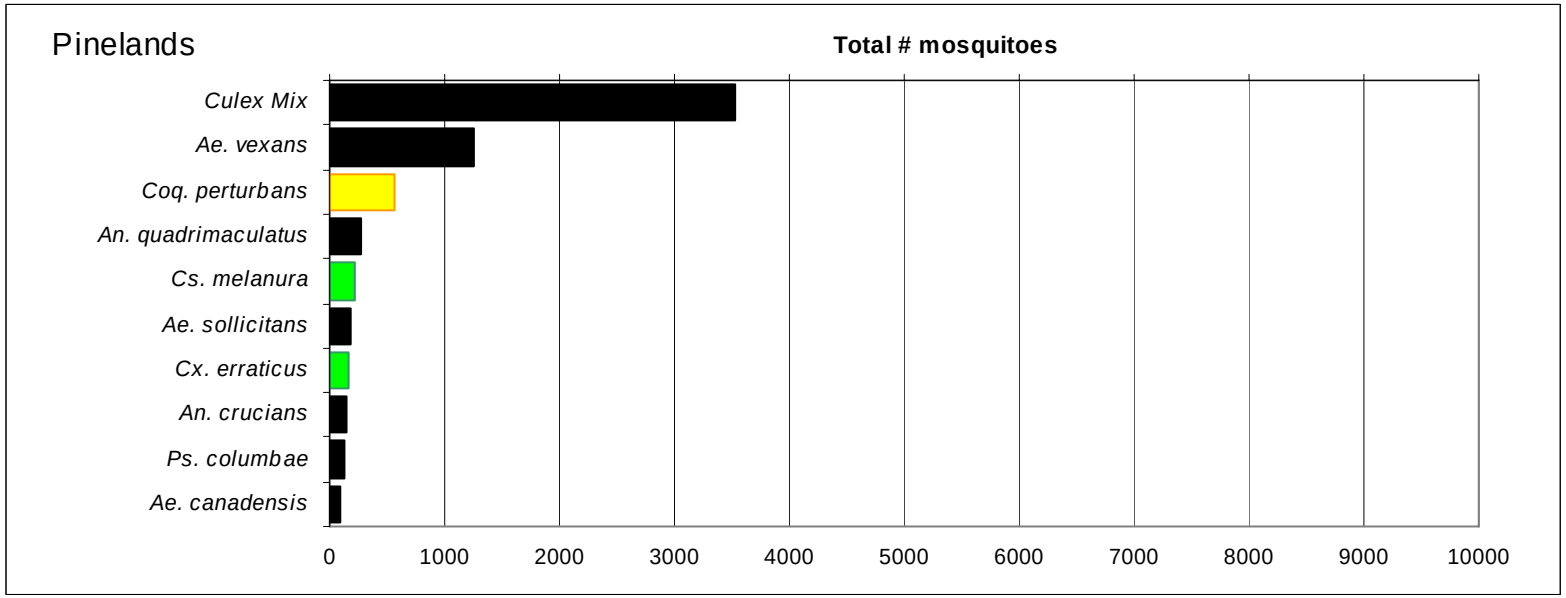

Delaware River Basin
Total # mosquitoes
Ae. vexans
Culex Mix
An. bradleyi
An. quadrimaculatus
Ae. cantator
Ps. columbae
An. punctipennis
Ae. sollicitans
Cs. inornata
Coq. perturbans
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

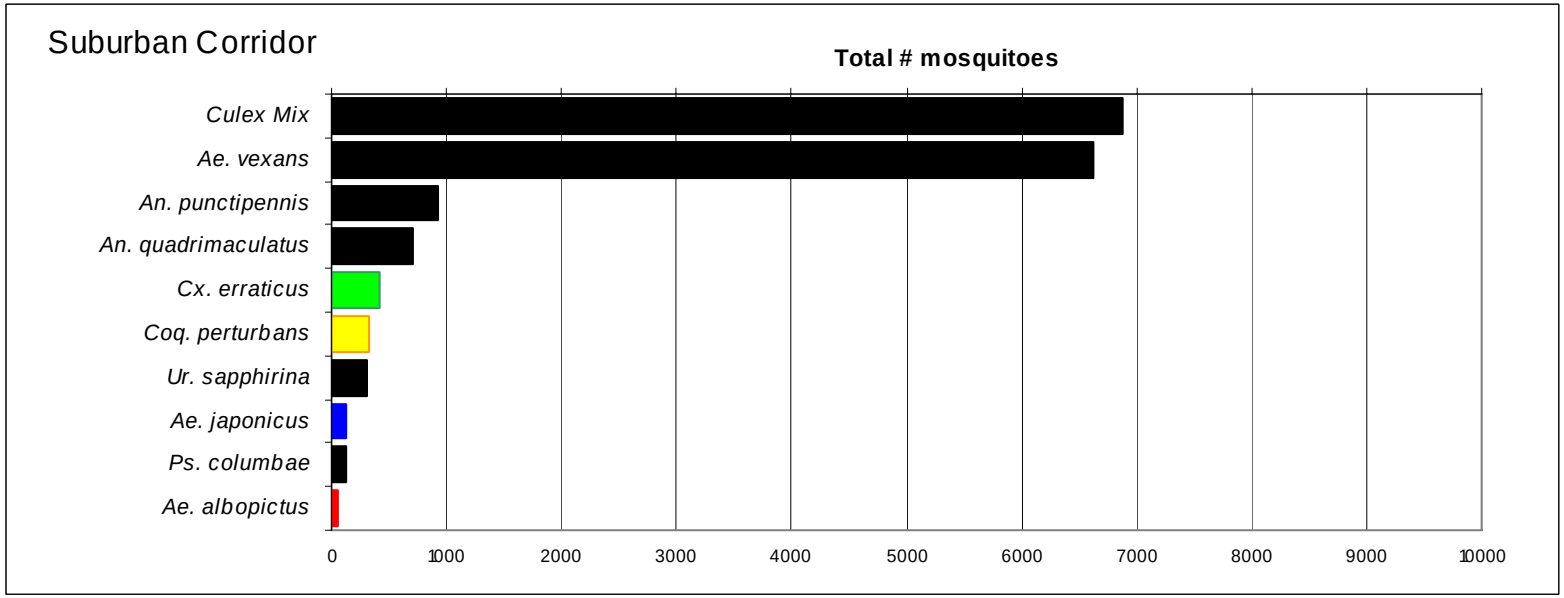

New York Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. sollicitans
Coq. perturbans
Ae. cantator
An. punctipennis
An. quadrimaculatus
Ae. albopictus
Ae. japonicus
Ae. stimulans
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


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