RUTGERS
New Jersey Agricultural Experiment Station

NEW JERSEY ADULT MOSQUITO SURVEILLANCE
Report for 31 August to 06 September 2008, CDC Week 36

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Center for Vector Biology

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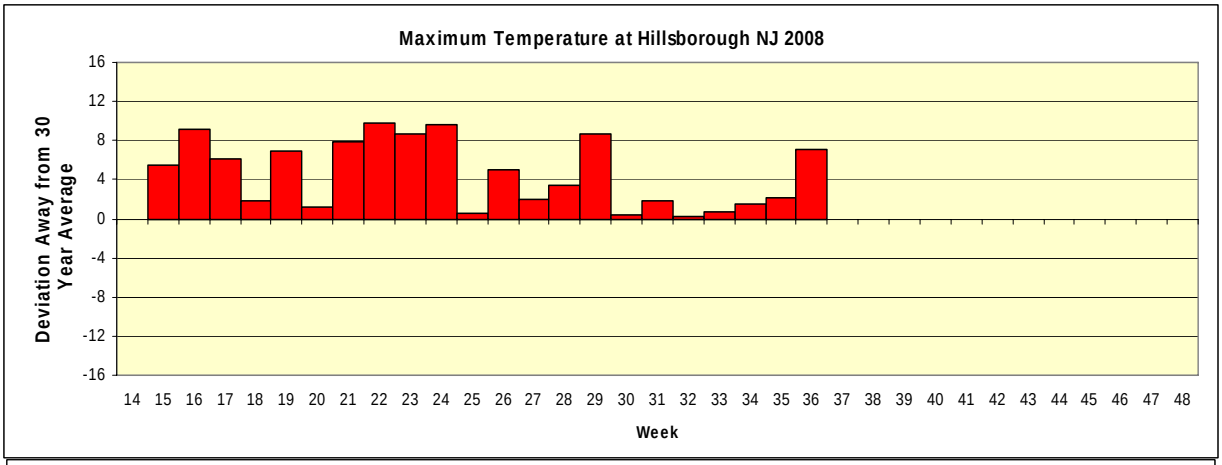
Summary table – Week 36

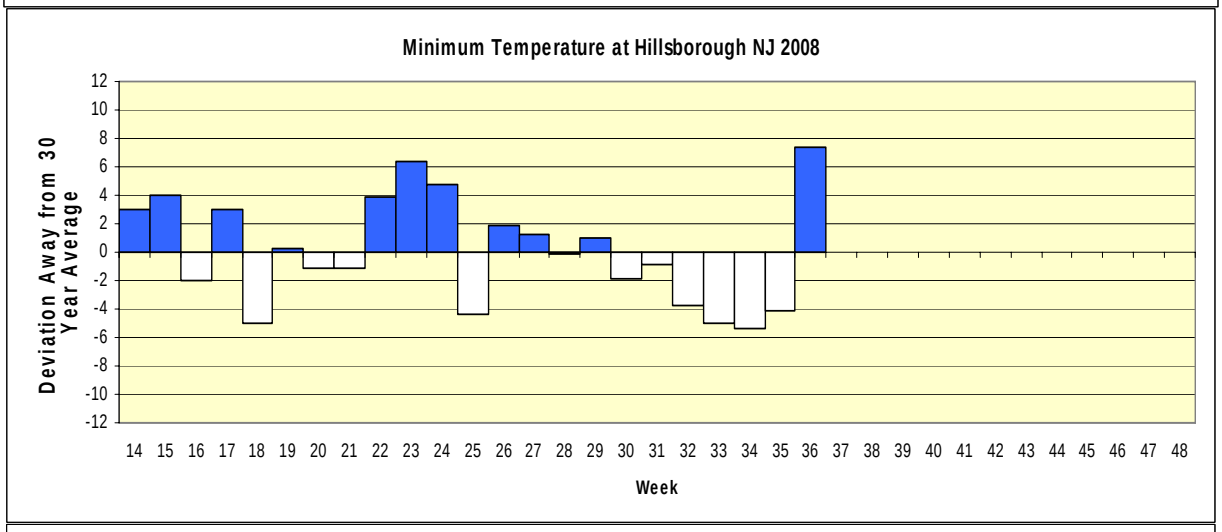
	Aedes vexans			*Culex* Mix			*Coquillettidia perturbans*			*Aedes sollicitans*		
Region	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase
Agricultural	**0.07**	**2.70**	**0**	**0.29**	**7.42**	**0**	**0.02**	**0.04**	**0**	**0.00**	**2.57**	**0**
Coastal	**0.87**	**2.56**	**0**	**5.24**	**1.95**	**4**	**0.00**	**0.82**	**0**	**1.79**	**12.29**	**0**
Delaware Bayshore	**0.48**	**0.79**	**0**	**3.07**	**12.43**	**0**	**0.07**	**0.33**	**0**	**0.24**	**7.16**	**0**
Delaware River Basin	**0.00**	**9.34**	**0**	**0.00**	**11.54**	**0**	**0.00**	**0.19**	**0**	**0.00**	**0.00**	**0**
New York Metro	**0.63**	**2.58**	**0**	**8.16**	**5.30**	**2**	**0.29**	**0.08**	**4**	**0.00**	**0.73**	**0**
North Central Rural	**0.08**	**0.60**	**0**	**0.22**	**0.58**	**0**	**0.00**	**< 0.01**	**0**	**0.00**	**0.00**	**0**
Northwest Rural	**1.51**	**13.72**	**0**	**1.20**	**5.04**	**0**	**0.03**	**0.10**	**0**	**0.00**	**0.00**	**0**
Philadelphia Metro	**1.48**	**10.96**	**0**	**1.50**	**3.25**	**0**	**0.03**	**0.19**	**0**	**0.00**	**0.00**	**0**
Pinelands	**0.22**	**2.51**	**0**	**0.34**	**2.53**	**0**	**0.01**	**0.16**	**0**	**0.05**	**0.29**	**0**
Suburban Corridor	**1.47**	**3.43**	**0**	**4.09**	**1.74**	**3**	**0.10**	**0.30**	**0**	**0.03**	**0.02**	**2**

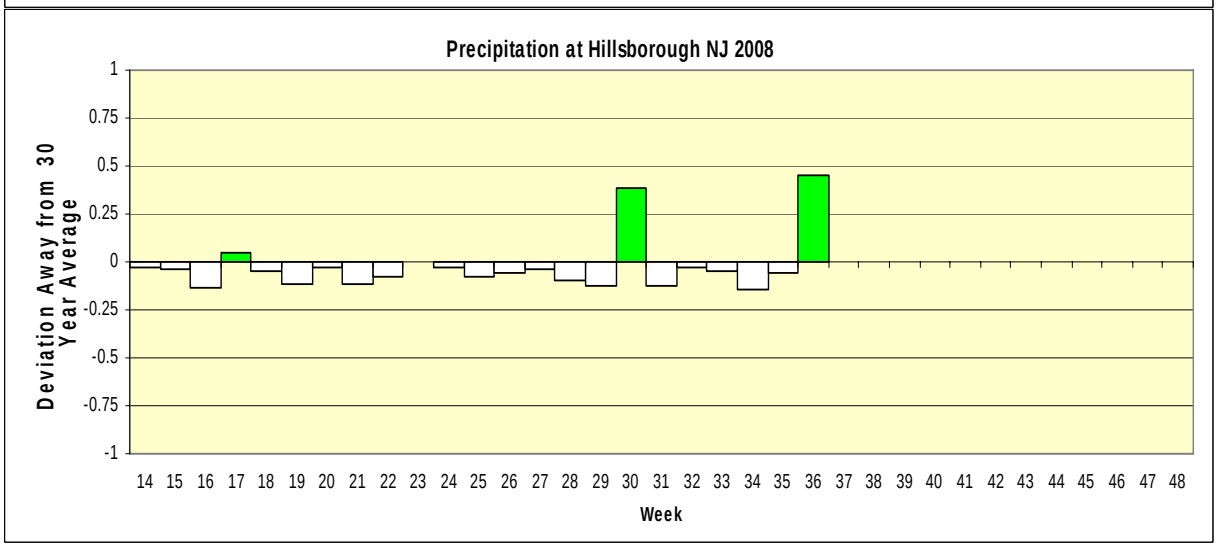
*Averages represent data from, at most, the previous 5 years. Increase is a scale of current values from historical values where no difference or a decrease is represented by 0 (blue), up to 50% greater difference by 1 (green), up to 100% greater difference by 2 (yellow), up to 150% greater difference 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* species activity in the urbanized regions is higher than historical values. This comes at a time when detection of positive WNV pools has been increasing. Human cases have occurred in New Jersey. In addition, positive EEE pools have been detected at two sites in southern New Jersey. Activity is also higher for *Coq. perturbans* in the New York Metro region, which is somewhat later for this species in this area.

Climate Deviations

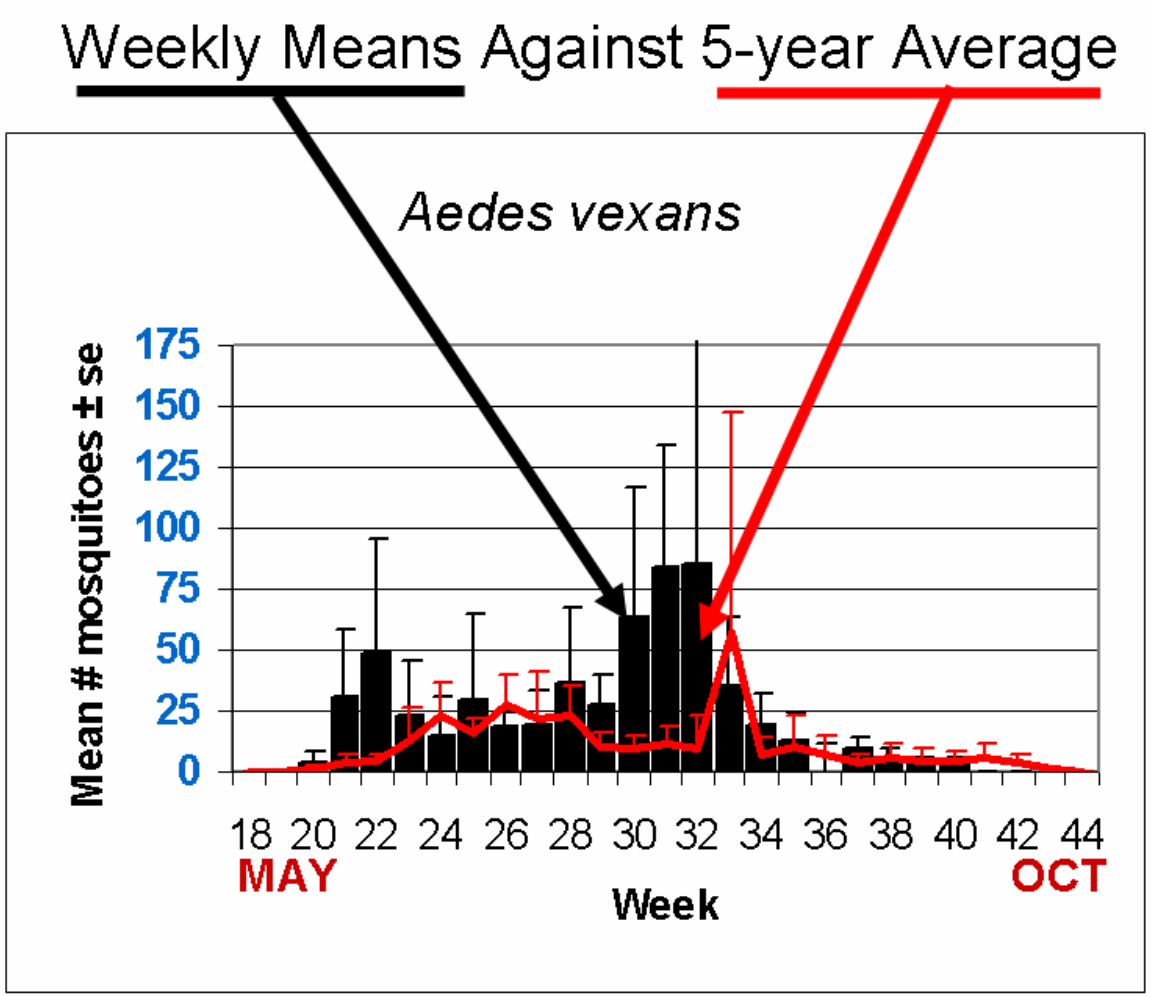






The figures show the average maximum temperature, minimum temperature and precipitation deviations from 30 year averages. Current data are from the Hillsborough NJ weather station (a station close to central NJ which recorded all three parameters and was available online at the NJ state climatologist) 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, Mercer, Middlesex, 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)

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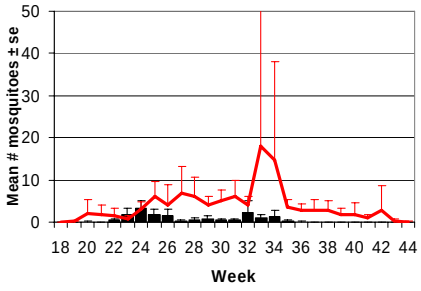
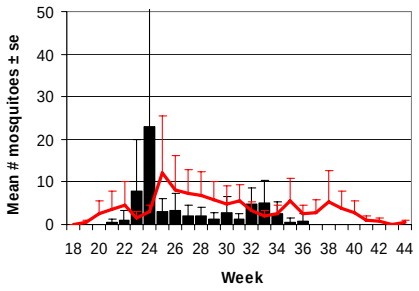
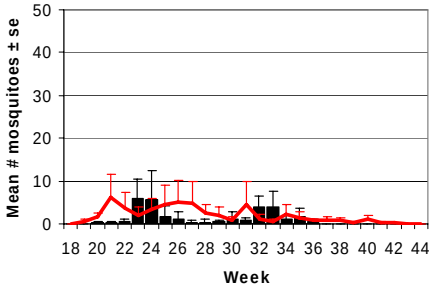
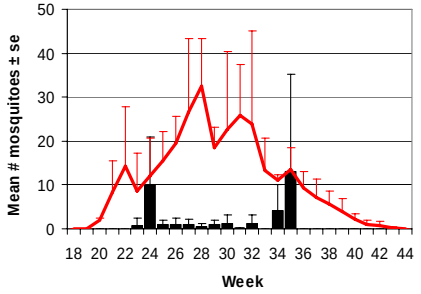
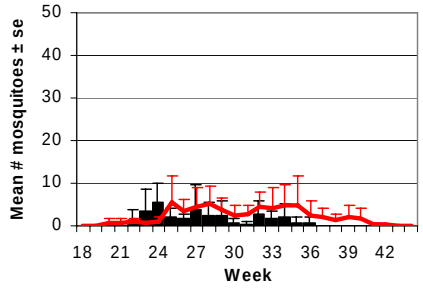
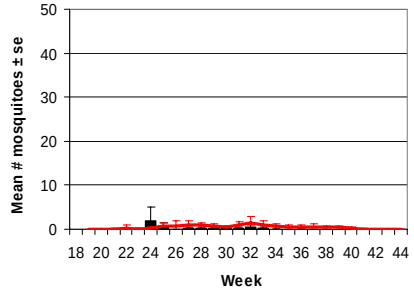
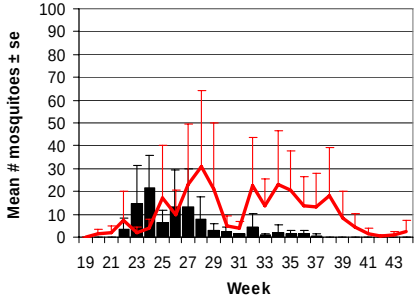
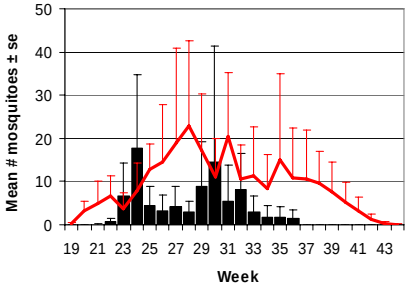
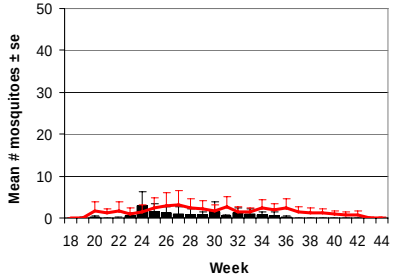
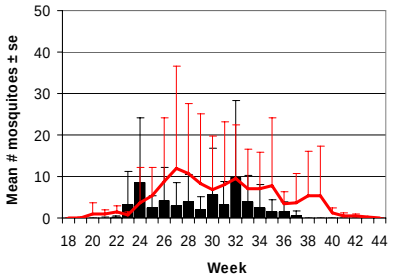
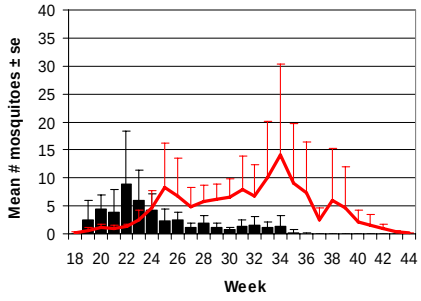
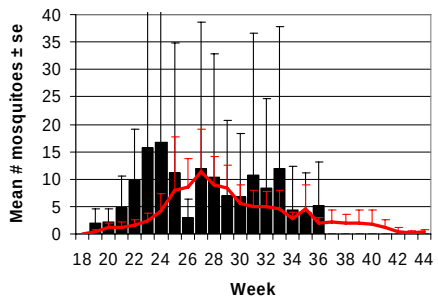
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes vexans* populations should have received the conditions required for significant emergences with the passage of Tropical Storm Hanna. Although less rainfall may have occurred than expected, some areas received several inches of rain in a twenty-four hour period. Both day and night-time temperatures have also been above average. If this can be sustained and eggs/larvae not have been washed away, then large numbers of floodwater mosquitoes should emerge.	

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

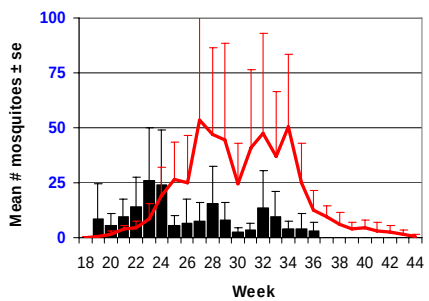
Agricultural



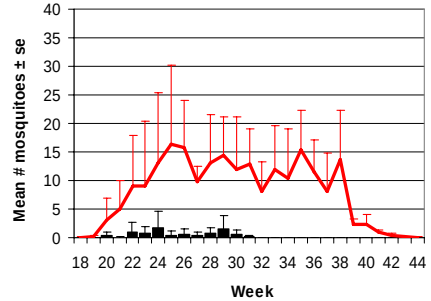
Coastal



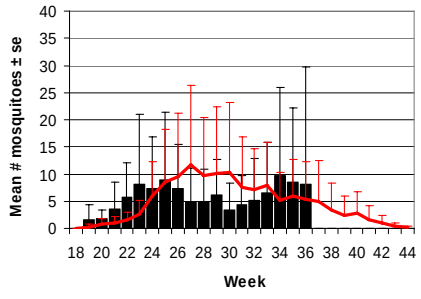
Delaware Bayshore



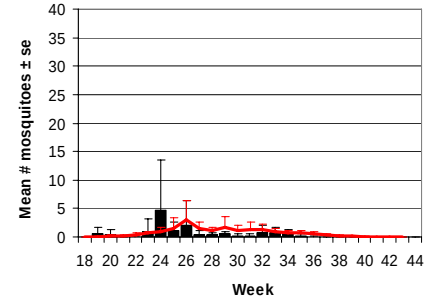
Delaware River Basin



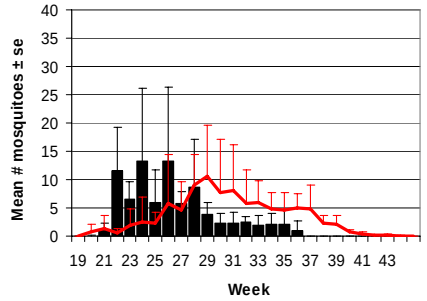
New York Metro



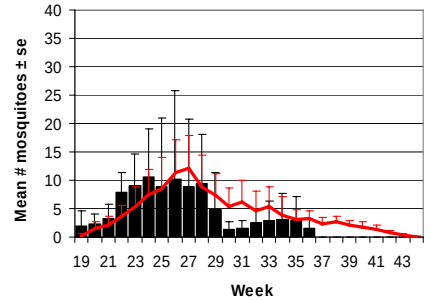
North Central Rural



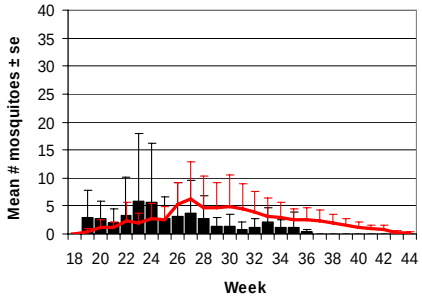
Northwestern Rural



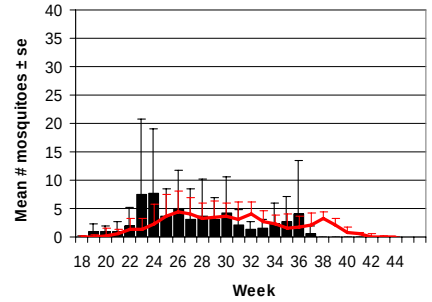
Philadelphia Metro



Pinelands



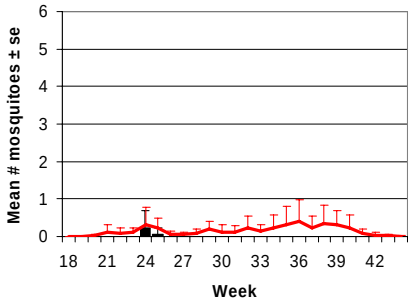
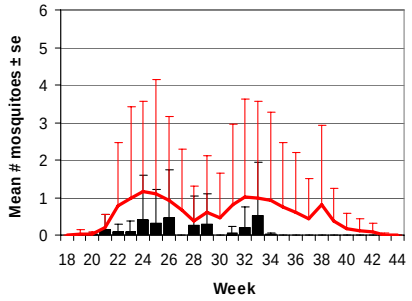
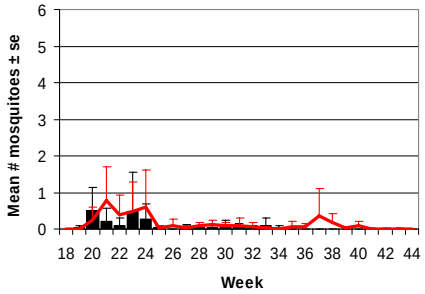
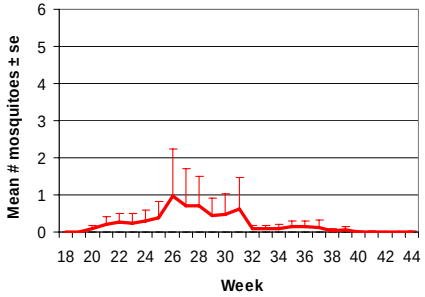
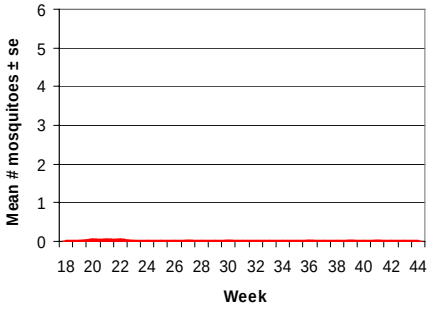
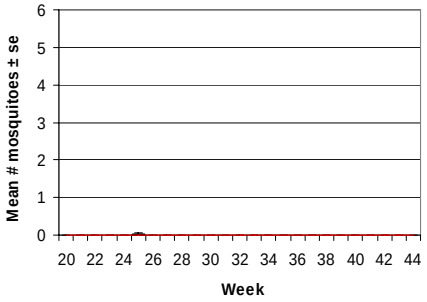
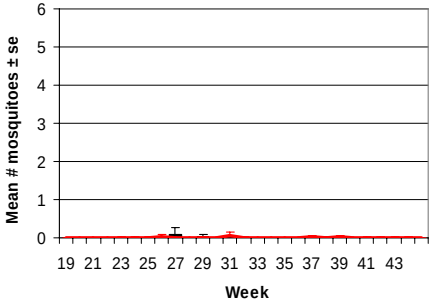
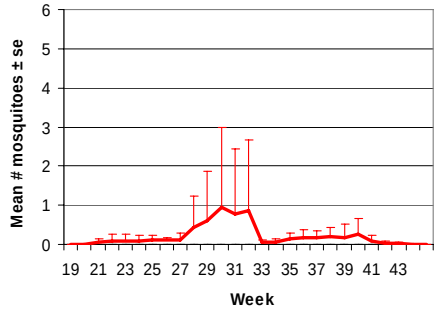
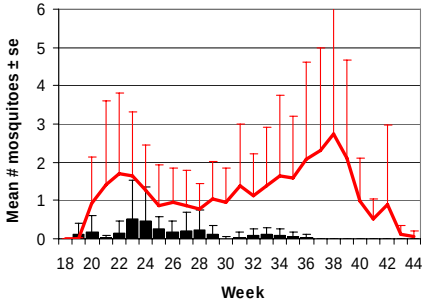
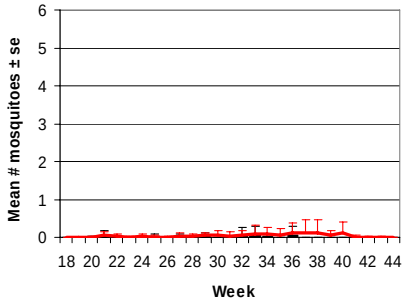
Suburban Corridor



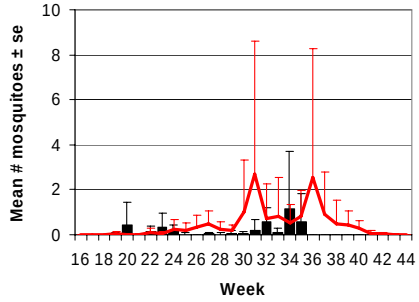
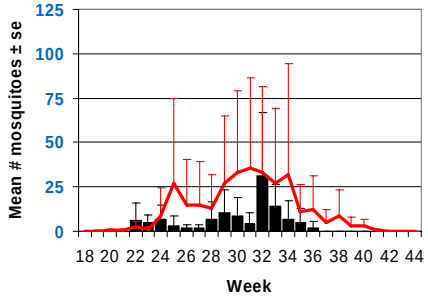
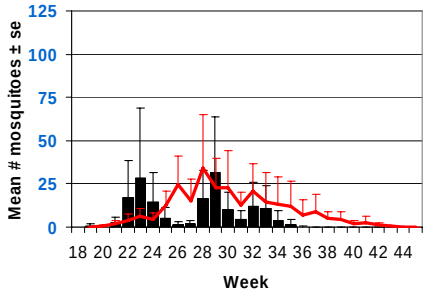
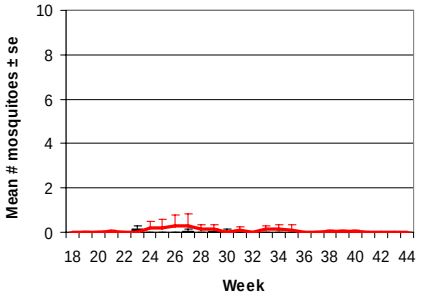
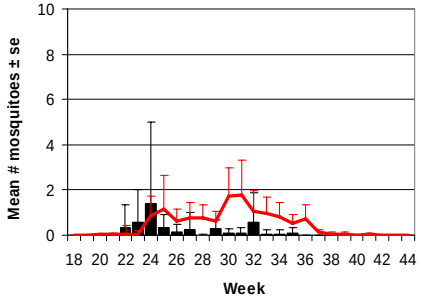
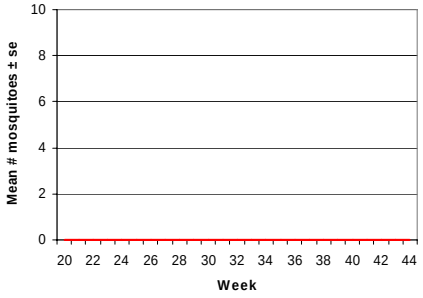
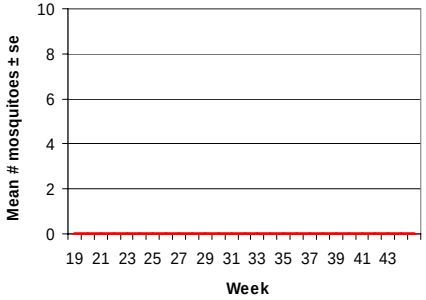
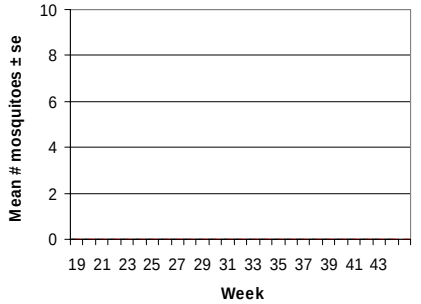
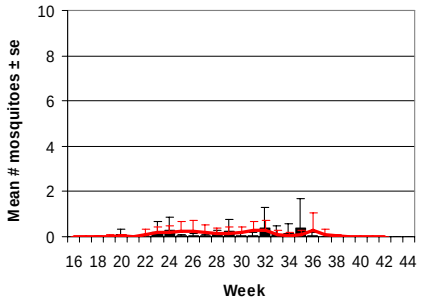
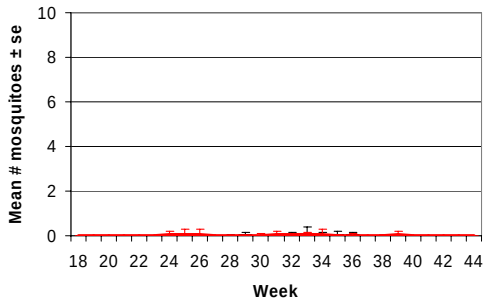
Comments

Culex populations (*Cx. pipiens, Cx. restuans* and *Cx. salinarius*) continue their slow decline as females begin entering hibernaculae used for overwintering. Populations in the Coastal, New York Metro and the Suburban corridor have been larger than historical values (although the metropolitan region are will within confidence intervals of both values and therefore not likely considered different from historical values). In addition to the larger populations around urban and suburban areas, these mosquitoes are also associated with high WN minimum field infection rates in recent weeks.

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 have risen slightly in about half of the monitoring sites in the vector surveillance program, but these changes have not yet shown up in light traps involved in this program. However, despite the apparent minimal population, eastern equine encephalitis virus (EEE) was detected in two pools from two separate sites in Salem and Cape May counties. Positive viral pools are detected nearly every year in New Jersey, and the question becomes at what point can/will it develop in horses or humans? Numerous horse cases were found in 1969 without any detection in mosquitoes and a single detection in a free-ranging bird. This contrasts with 2006, where a single detection in *Cs. melanura* occurred a little over one week before a horse within 10 miles became infected. In general, the past few years have shown that single horse case years occur when detection occurs later in the year (past the beginning of August).	

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

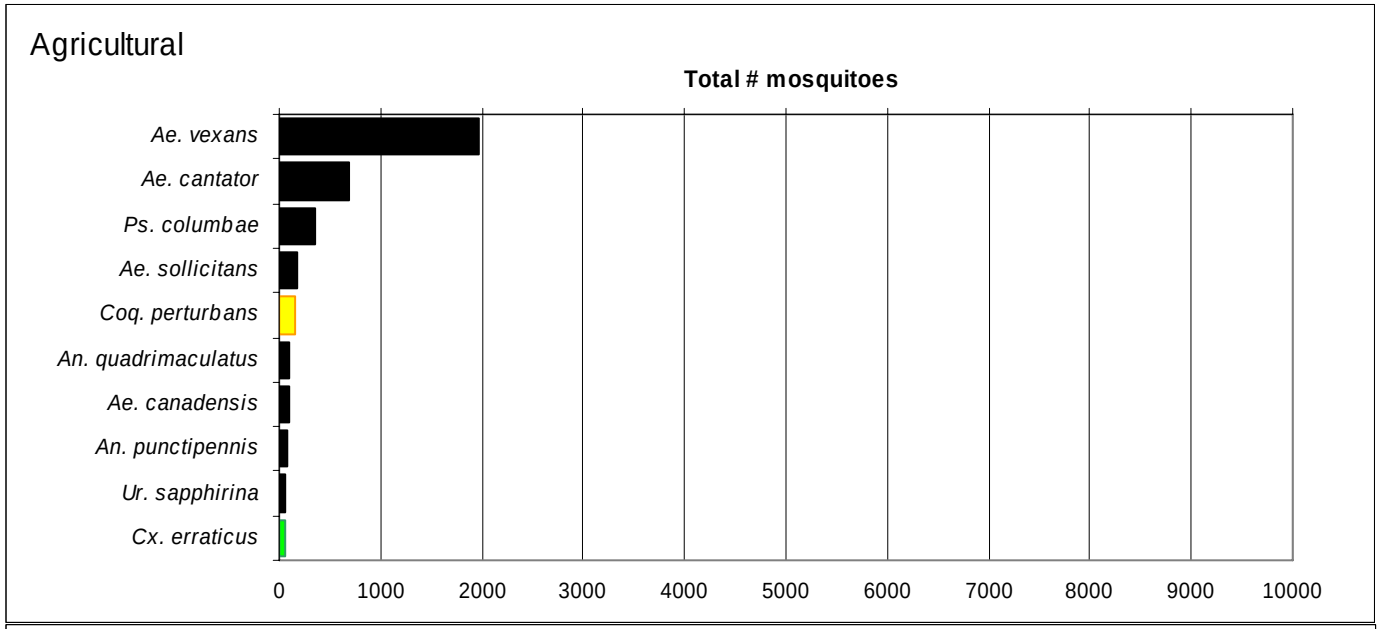
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes sollicitans* populations appear to be decreasing, yet the presence of the remaining populations along coastal habitat can still potentially represent a threat in both terms of nuisance and public health. Crans (et al. 1976) demonstrated that populations that had migrated inland contained nulliparous females that did little biting while coastal populations with increasing percentage of parous females were associated with increased biting. Parous females can be infected with EEE, making coastal populations more likely to infect humans than inland populations. This appears to apply only when EEE virus has been found in *Ae. sollicitans* (Goldfield et al. 1970).	

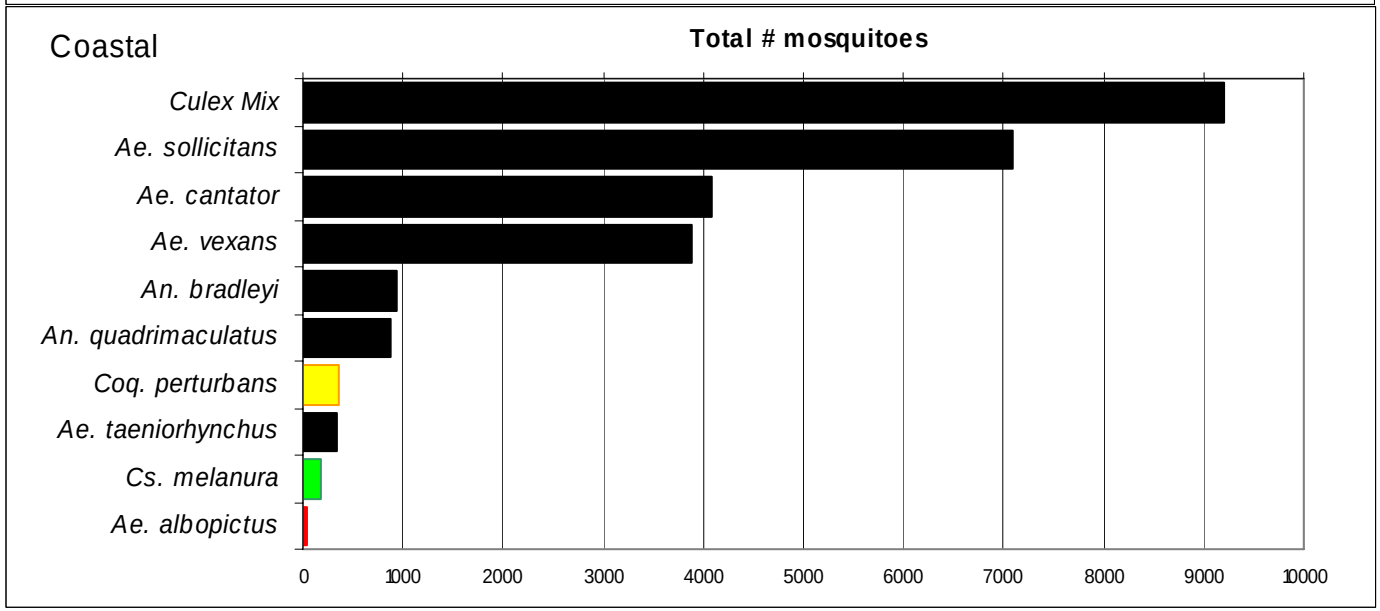
Crans, WJ, Downing, JD, Slaff. ME. 1979 Behavioral changes in the salt marsh mosquito, Aedes sollicitans as a result of physiological age. Mosquito News,36(4):437-445.

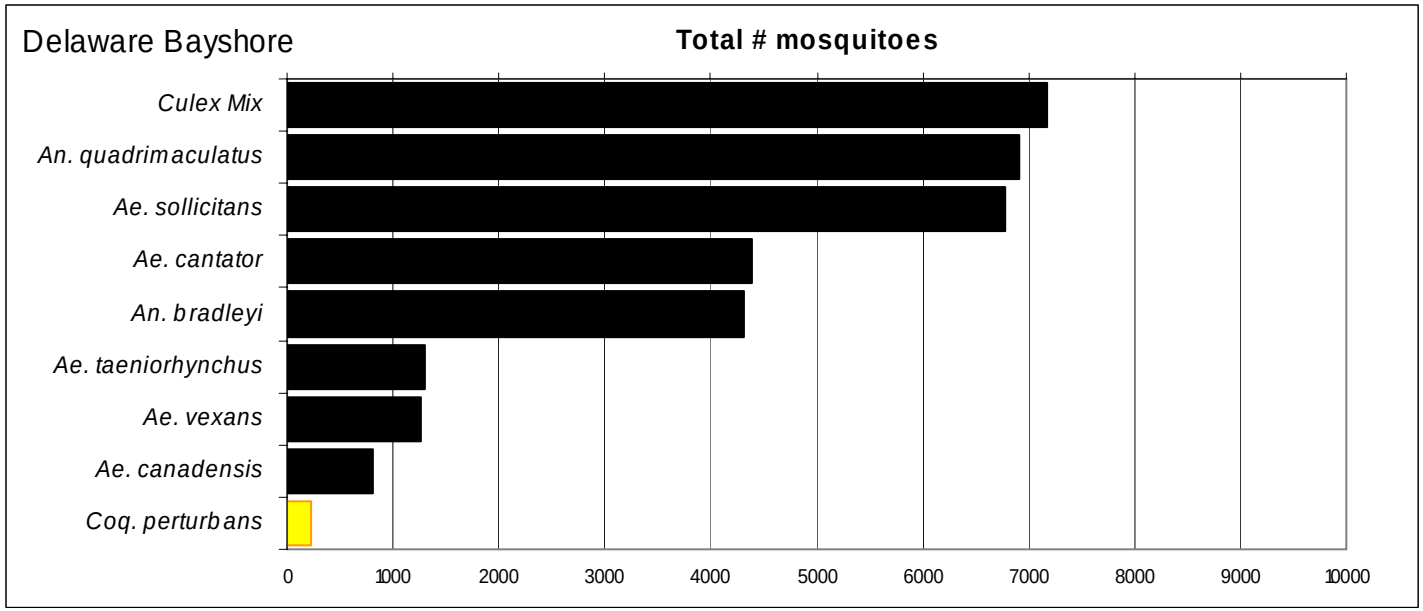
Goldfield, M and Sussman O. 1970 Eastern encephalitis in New Jersey during 1969. Proc. NJMCA 57:11-15.

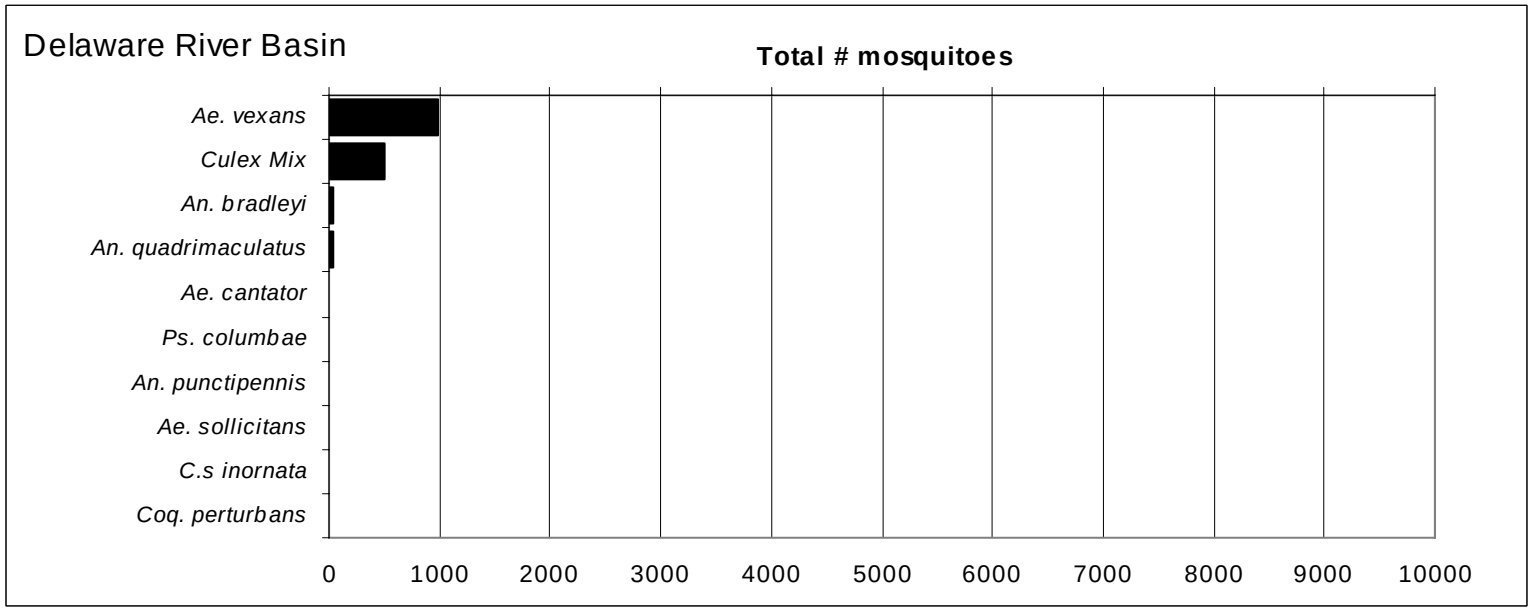
WNV **EEE**

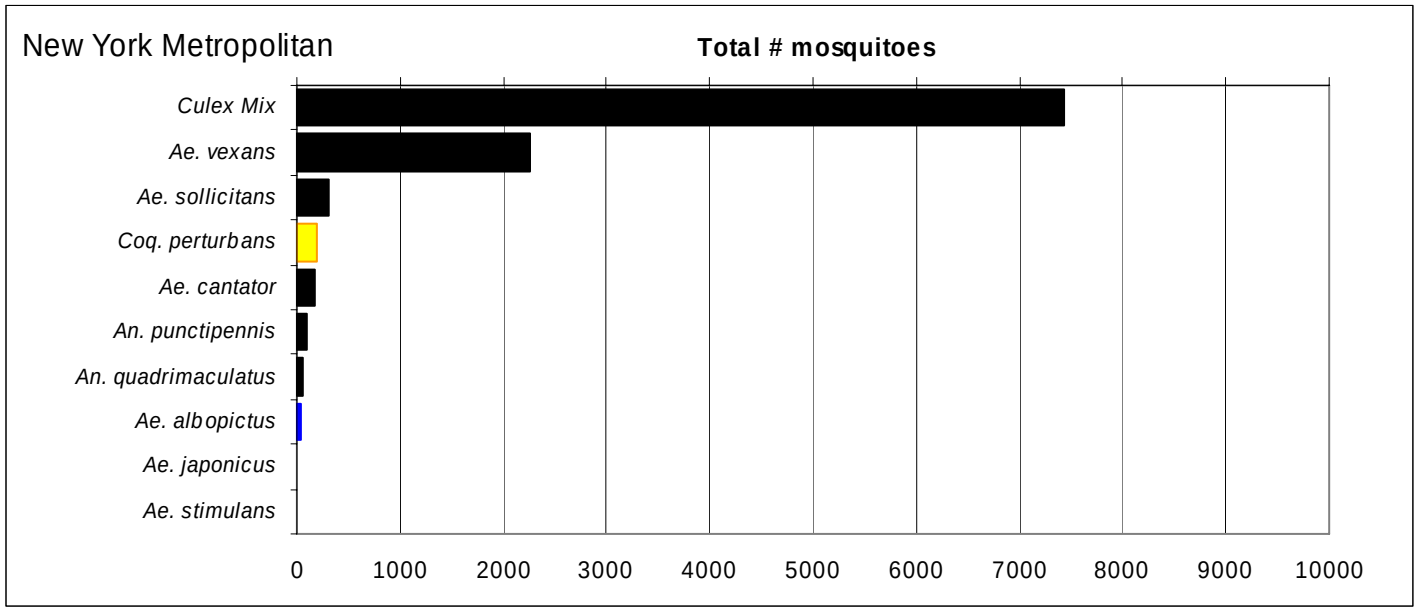
Top Ten Mosquito Species/Region - *Ae. albopictus, Ae. japonicus (invasives), Cs. melanura or Cx. erraticus Coq. perturbans*

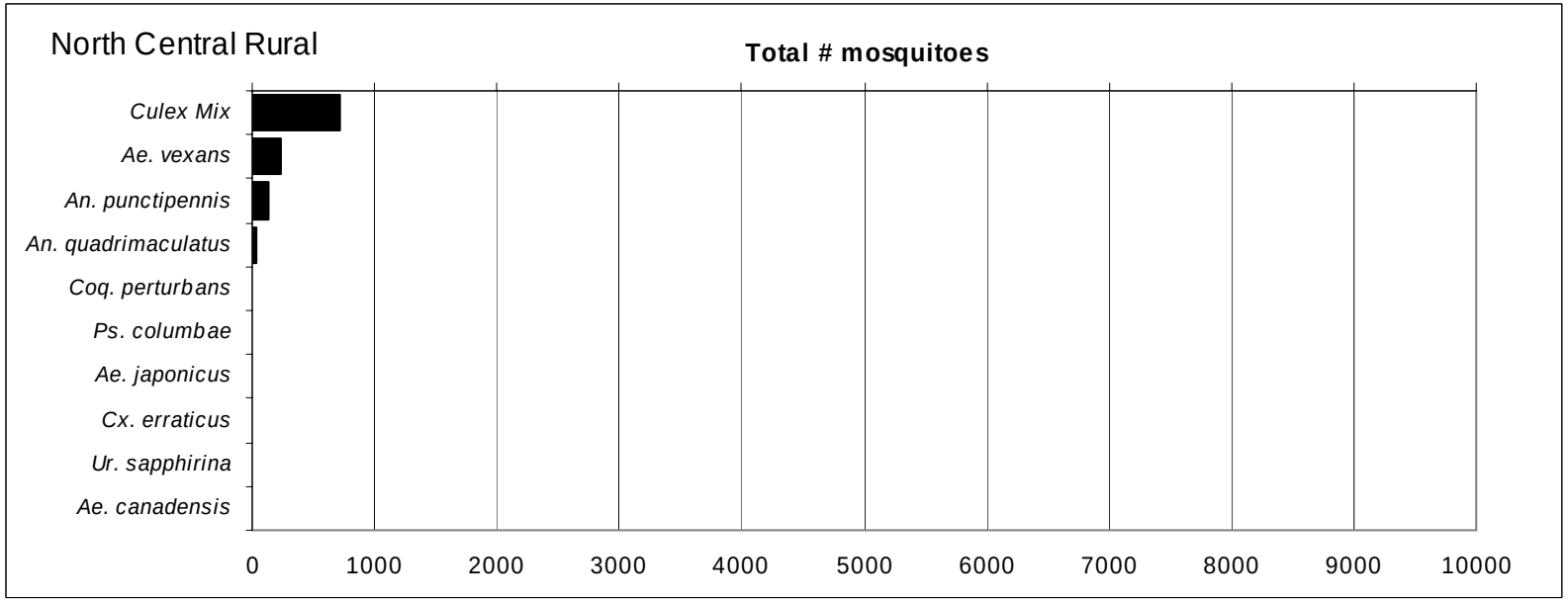


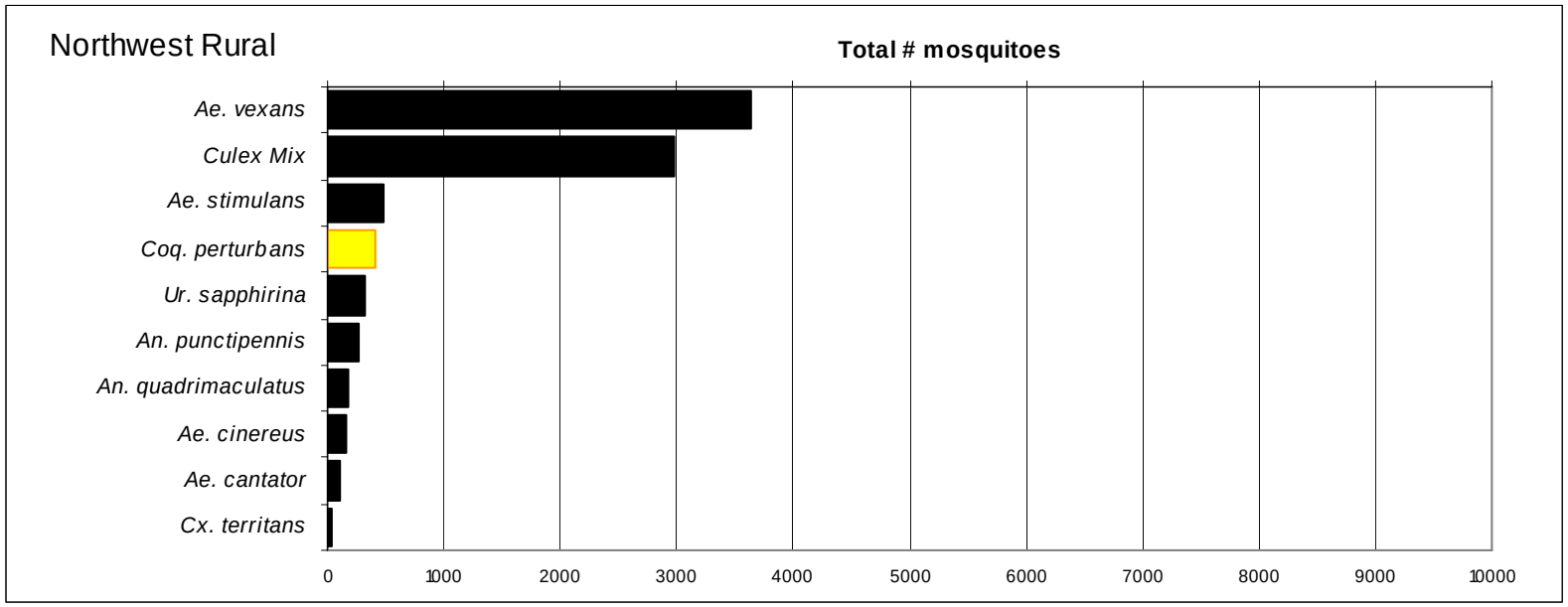


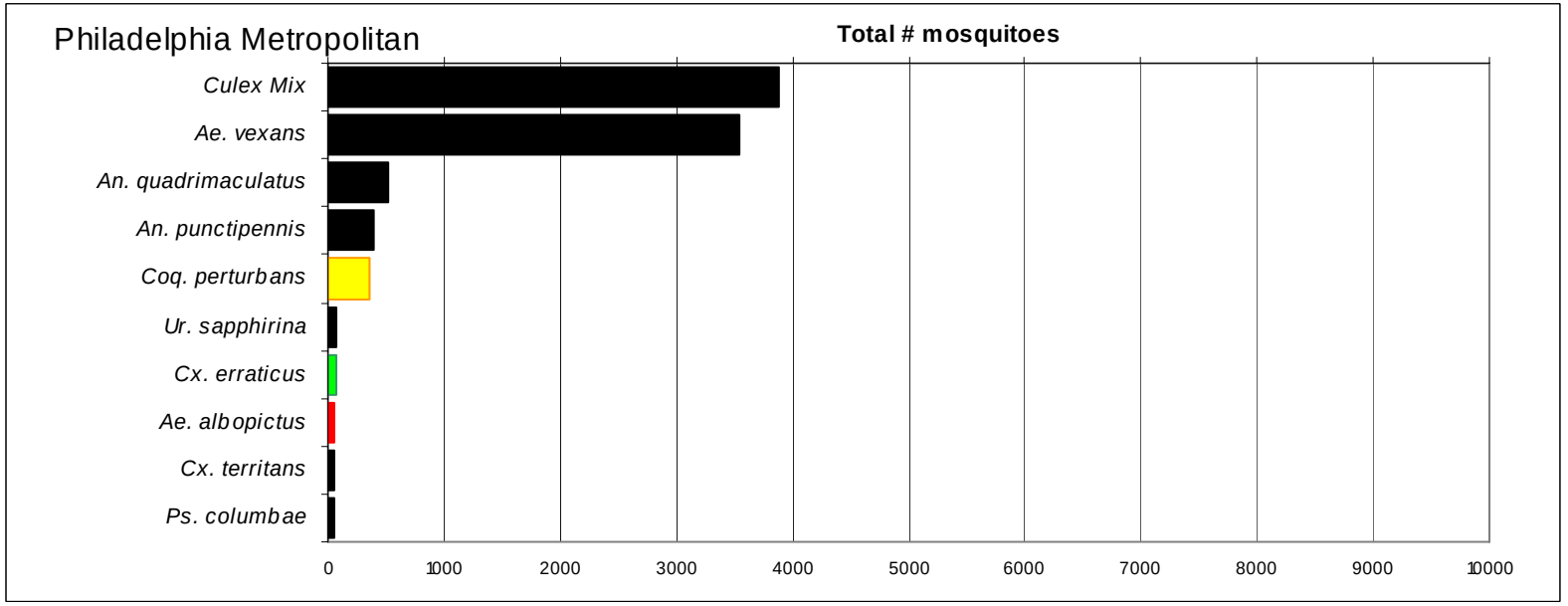

Delaware Bayshore
Total # mosquitoes
Culex Mix
An. quadrimaculatus
Ae. sollicitans
Ae. cantator
An. bradleyi
Ae. taeniorhynchus
Ae. vexans
Ae. canadensis
Coq. perturbans
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

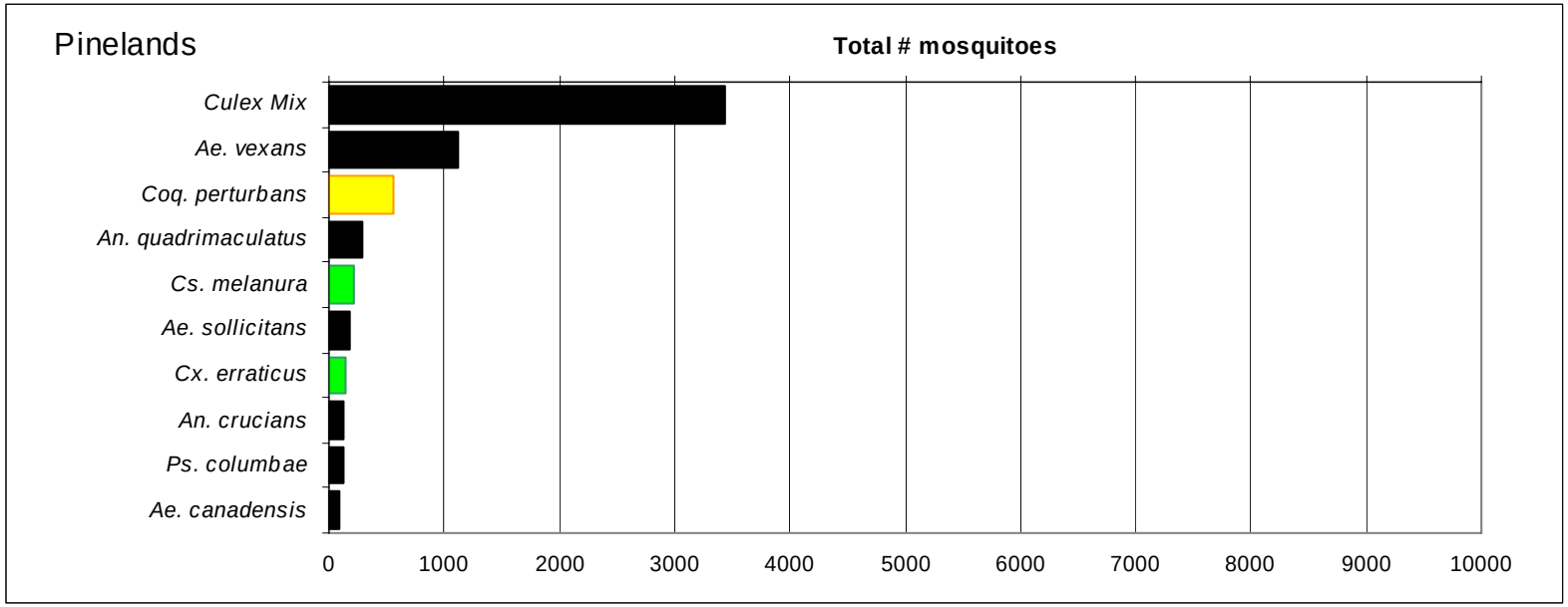

Delaware River Basin
Total # mosquitoes
Ae. vexans
Culex Mix
An. bradleyi
An. quadrimaculatus
Ae. cantator
Ps. columbae
An. punctipennis
Ae. sollicitans
C.s inornata
Coq. perturbans
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

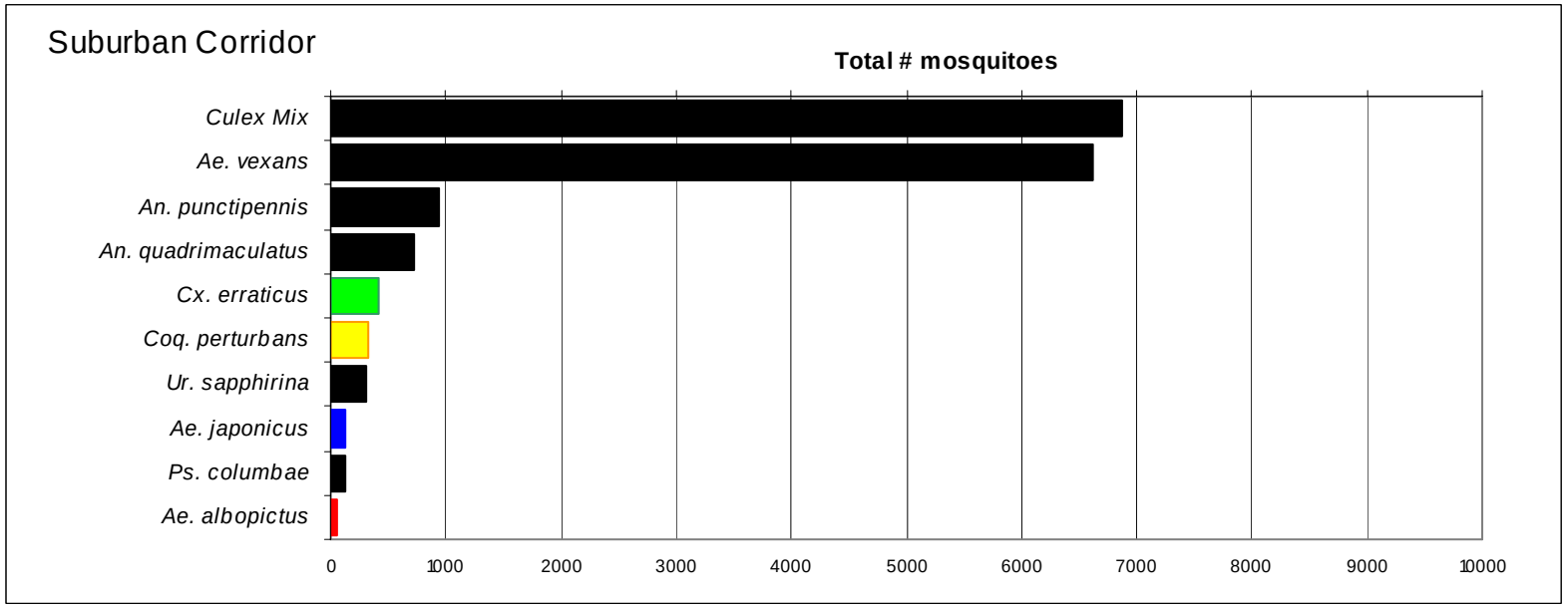

New York Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. sollicitans
Coq. perturbans
Ae. cantator
An. punctipennis
An. quadrimaculatus
Ae. albopictus
Ae. japonicus
Ae. stimulans
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


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