NEW JERSEY STATEWIDE SURVEILLANCE

Week 39 Report for 25 September to 1 October, 2006

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Purpose: Data from 84 New Jersey light traps contributed by county mosquito control agencies are used to calculate trends in mosquito populations for species of nuisance or health concerns.

Calculations are based on regional distributions, with emphasis on mosquito habitat and land use. Trends will allow a statewide evaluation of changing mosquito populations, in response to control and/or changes in habitat.

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Figure 1a: Map of ten regions selected for the New Jersey Surveillance Program overlaid with county borders.

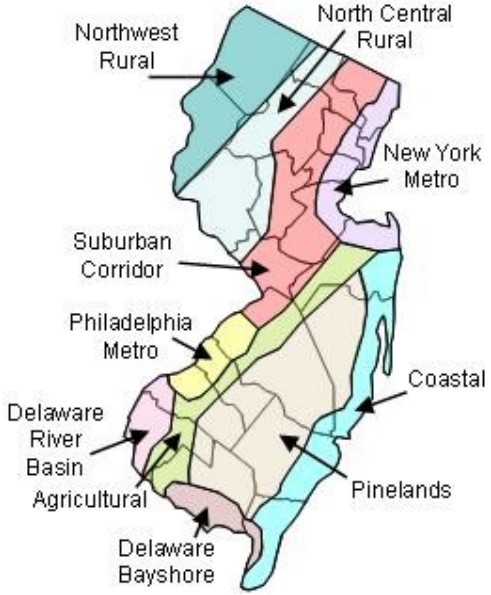


Figure 1b. Trap lat-long locations.

Summary table – Week 39

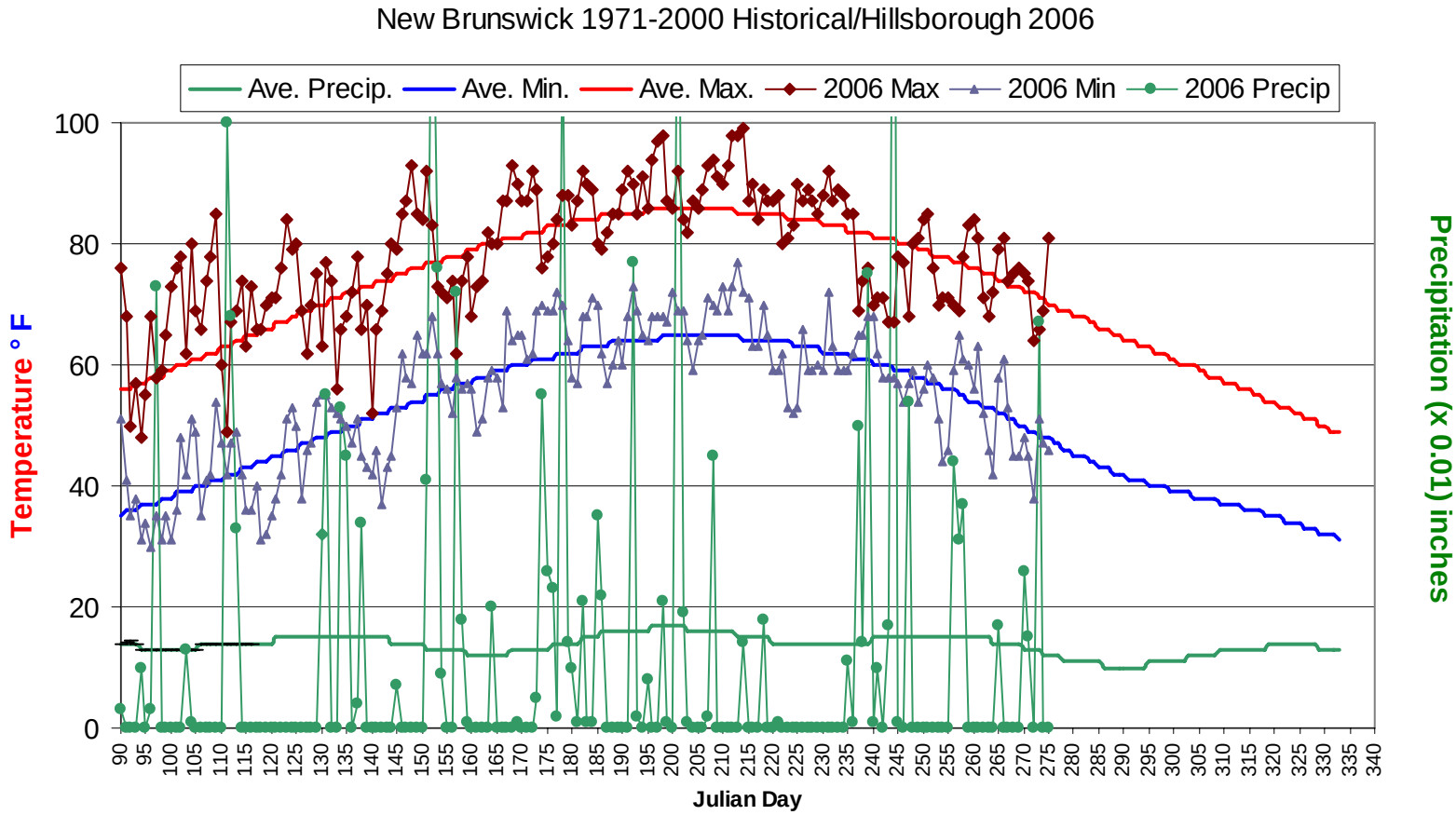
	Aedes vexans		*Culex complex*		*Coquillettidia perturbans*		*Ochlerotatus sollicitans*	
Region	This Week	Average*	This Week	Average*	This Week	Average*	This Week	Average*
Agricultural	**0.48**	**2.17**	**1.40**	**8.23**	**0.00**	**0.00**	**0.21**	**0.44**
Coastal	**7.11**	**2.41**	**2.27**	**1.63**	**0.00**	**0.01**	**0.79**	**9.01**
Delaware Bayshore	**0.00**	**0.17**	**2.71**	**4.26**	**0.00**	**0.00**	**5.76**	**0.60**
Delaware River Basin	**9.36**	**4.30**	**3.43**	**2.97**	**0.00**	**0.05**	**0.00**	**0.05**
New York Metro	**1.46**	**1.77**	**1.57**	**2.75**	**0.00**	**<0.01**	**0.06**	**0.27**
North Central Rural	**0.10**	**0.21**	**0.08**	**0.20**	**0.00**	**0.01**	**0.00**	**0.00**
Northwest Rural	**3.00**	**2.84**	**0.05**	**0.86**	**0.00**	**0.02**	**0.00**	**0.00**
Philadelphia Metro	**5.86**	**8.27**	**0.62**	**2.14**	**0.00**	**0.03**	**0.00**	**0.00**
Pinelands	**0.76**	**1.47**	**0.49**	**1.90**	**0.00**	**0.04**	**0.01**	**0.14**
Suburban Corridor	**17.10**	**1.56**	**1.19**	**1.54**	**0.00**	**0.04**	**0.00**	**0.07**

* 5-year running mean.

Graphs include *Ae. vexans, Culex* complex (*Cx. pipiens, Cx. restuans, and Cx. salinarius*), *Oc. sollicitans, Cs. melanura and Top Ten.*

11 of 21 counties in one or both weeks; 20 of 21 counties reporting.

Climate Data

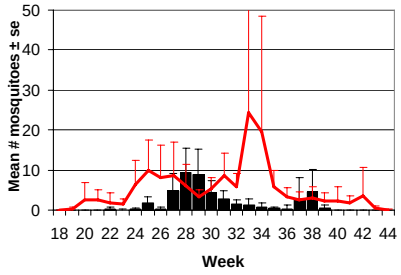
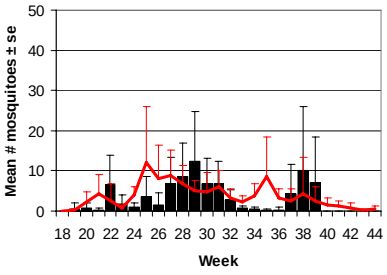
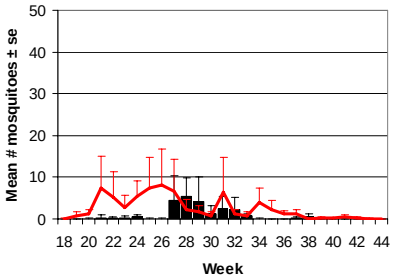
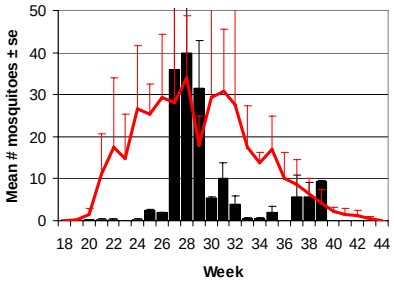
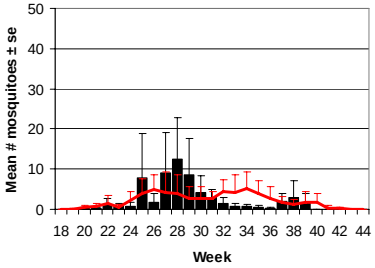
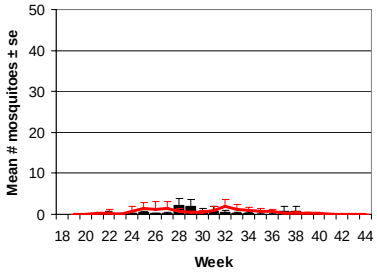
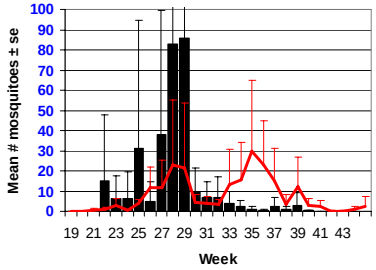
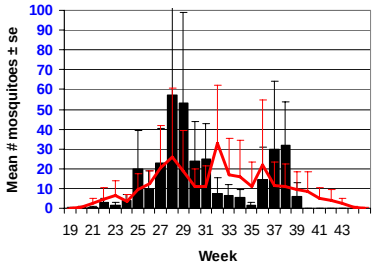
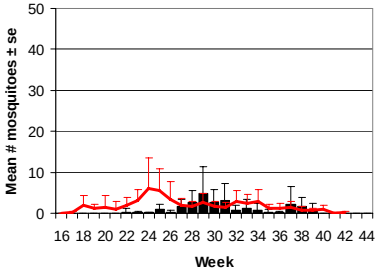
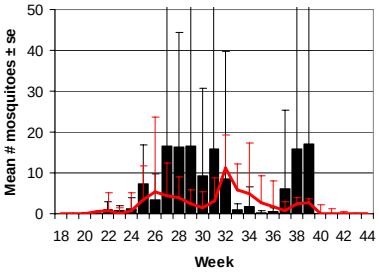


This figure shows historical average maximum and minimum temperatures and average precipitation recorded in the New Brunswick, NJ weather station over a recent 30 year period. Also graphed are the current year's minimum and maximum temperatures as recorded at the Hillsborough NJ weather station (a station close to central NJ which recorded all three parameters and was available online at the NJ state climatologist).

The state climatologist has an extensive amount of climatological historical data as well as stations reporting current conditions and forecasts:

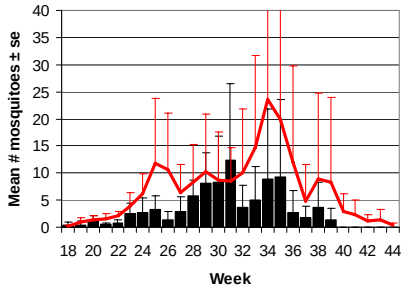
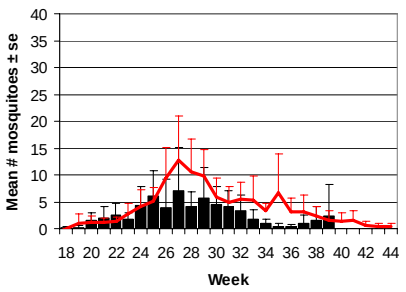
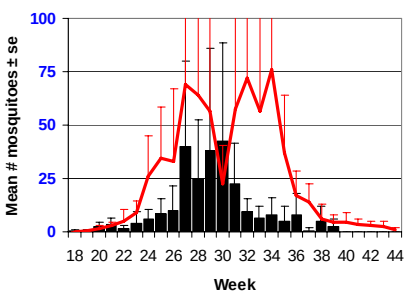
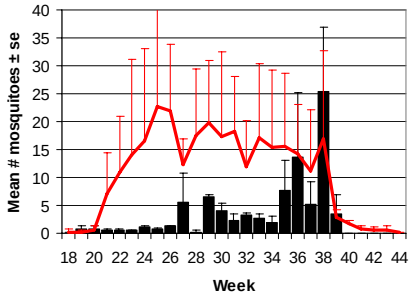
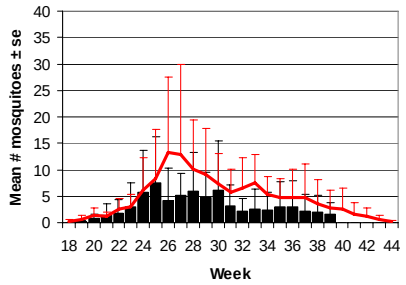
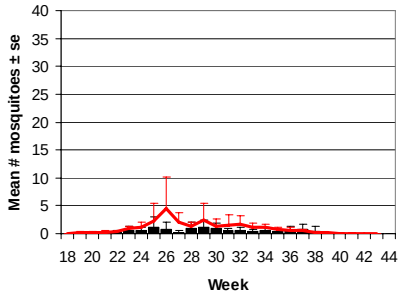
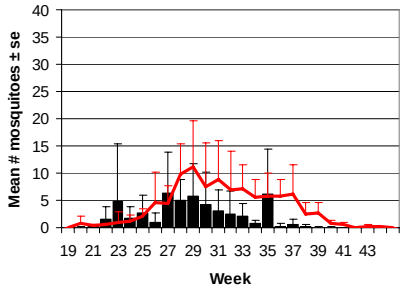
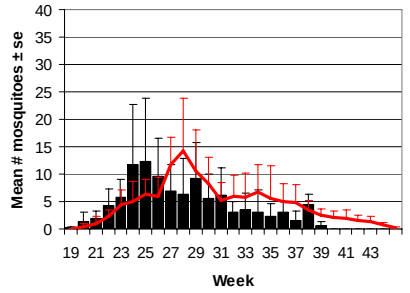
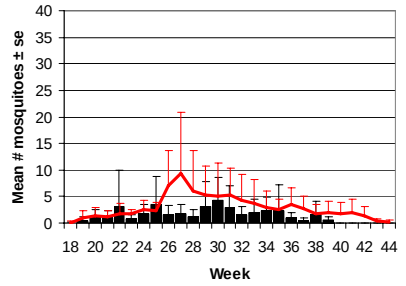
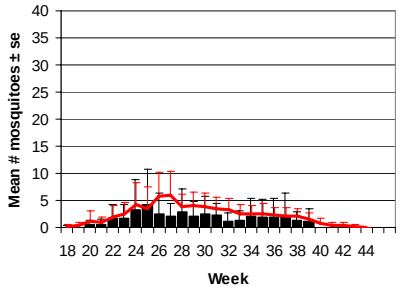
http://climate.rutgers.edu/stateclim/

Aedes vexans - Fresh Floodwater Species

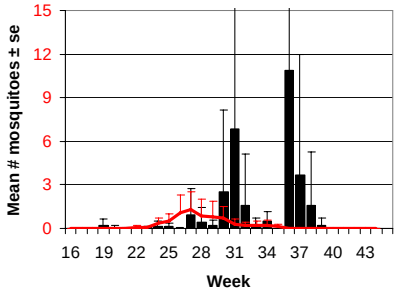
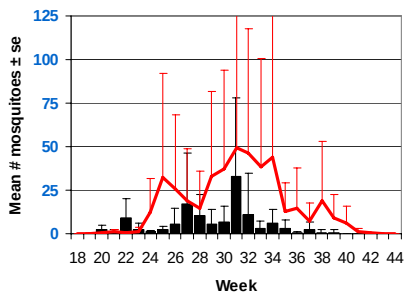
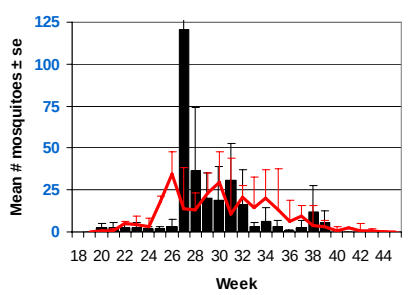
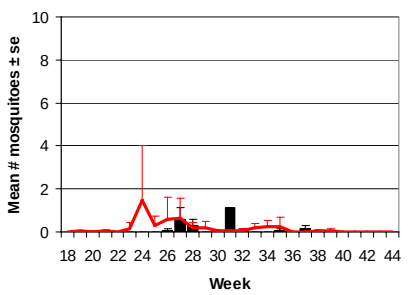
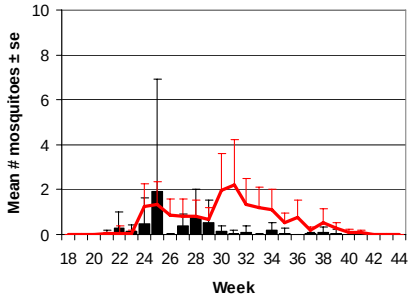
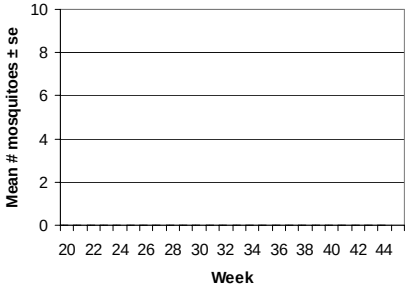
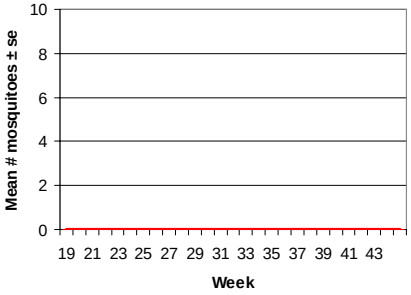
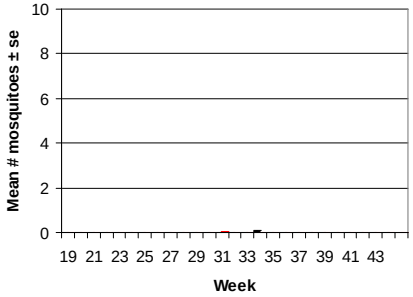
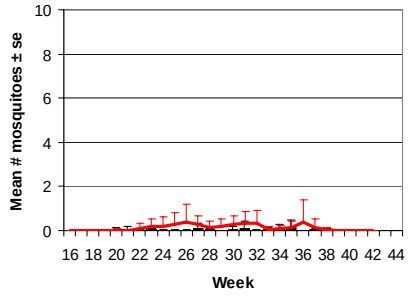
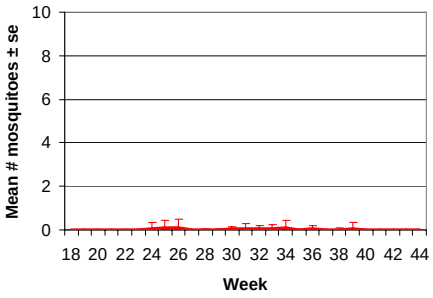
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes vexans* populations continue their significant emergences, particularly through the Suburban Corridor, Philadelphia Metro and the Delaware River Basin. Significant emergences can occur, particularly after a period of drought due to 1) the sudden availability of eggs that previously have not had the opportunity to hatch due to their location and 2) higher rainfalls amounts from passing tropical storms that create larger habitat, especially in areas not regularly under water. This results in water covering those previously unavailable eggs, hatching and emergence. Females require a carbohydrate feeding prior to their first blood meal, but those that partake of that significant first meal can produce a considerable number of egg rafts during their 3-month life.	

Briegel, Waltert, and Kuhn. 2001 Reproductive Physiology of *Aedes (Aedimorphus) vexans* (Diptera: Culicidae) in relation to flight potential. J. Medical Entomology, 38(4):557-565.

Culex Complex - Multivoltine Culex Species

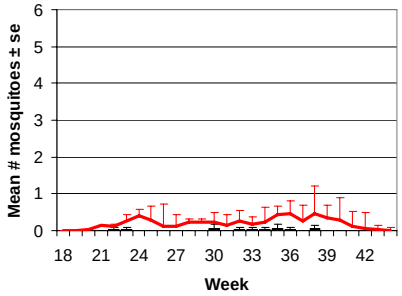
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Culex Mix* (*Cx. pipiens, Cx. restuans, and Cx. salinarius*) continues their long, slow seasonal decline. While these species' seeming participation in the WNV cycle is coming to an end, amplification in and transmission from the vertebrate hosts can continue well into November, particularly for horses.	

Ochlerotatus sollicitans - Salt Marsh Floodwater Species

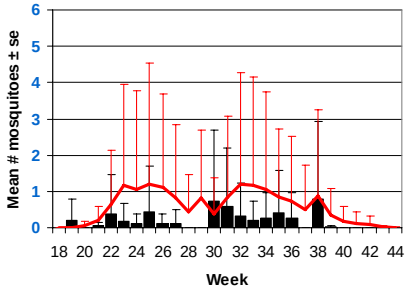
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Ochlerotatus sollicitans* continues to decline through most active regions in a significant manner.	

Culiseta melanura – Miscellaneous Group

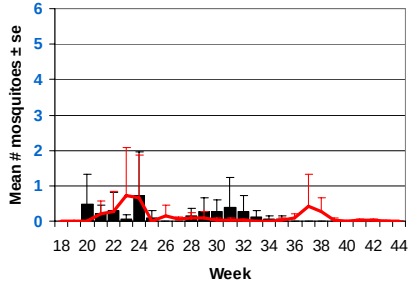
Agricultural



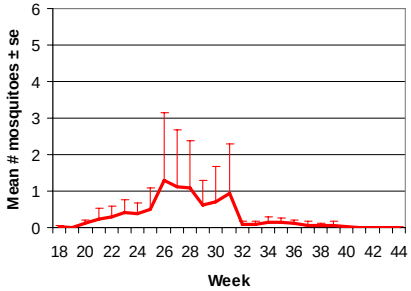
Coastal



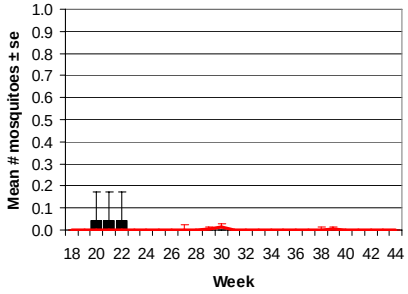
Delaware Bayshore



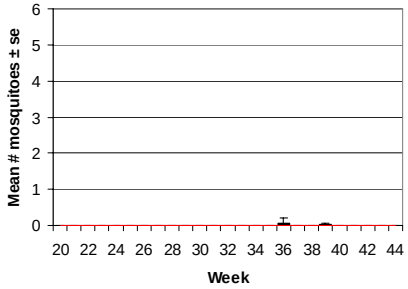
Delaware River Basin



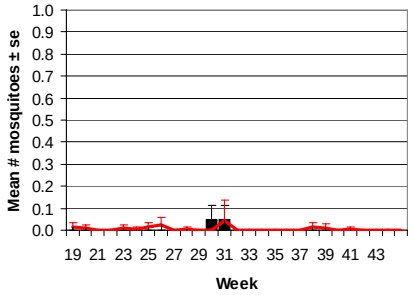
New York Metro



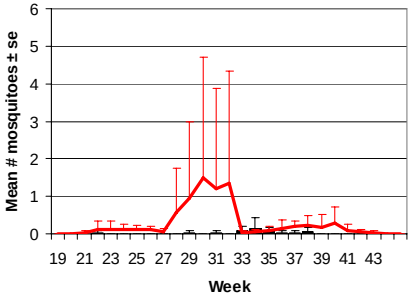
North Central Rural



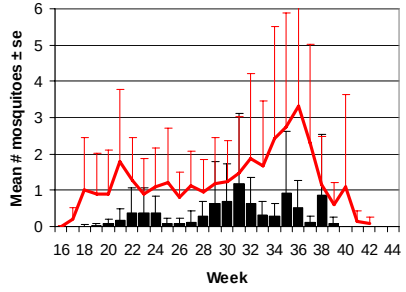
Northwestern Rural



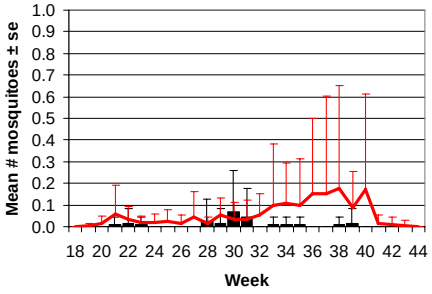
Philadelphia Metro



Pinelands



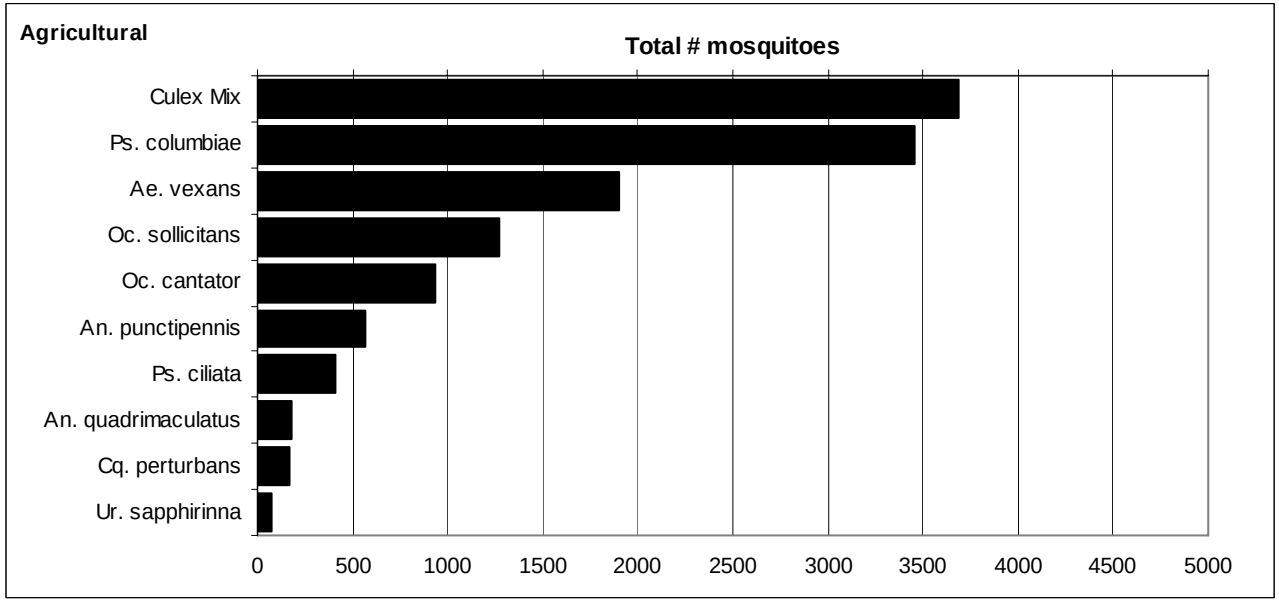
Suburban Corridor

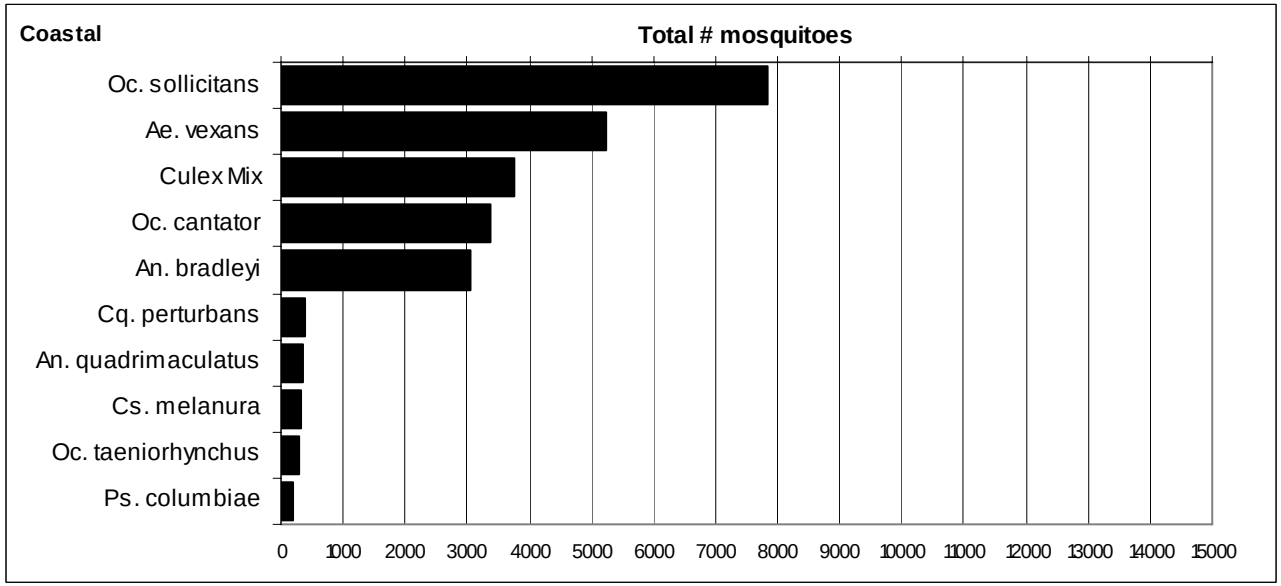


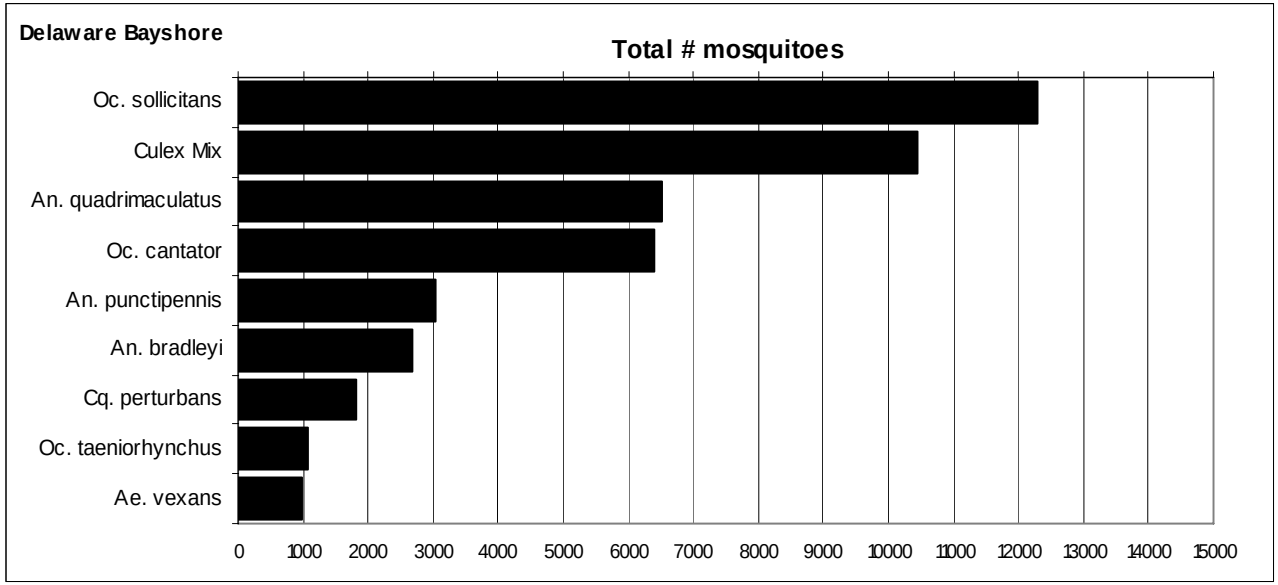
Comments

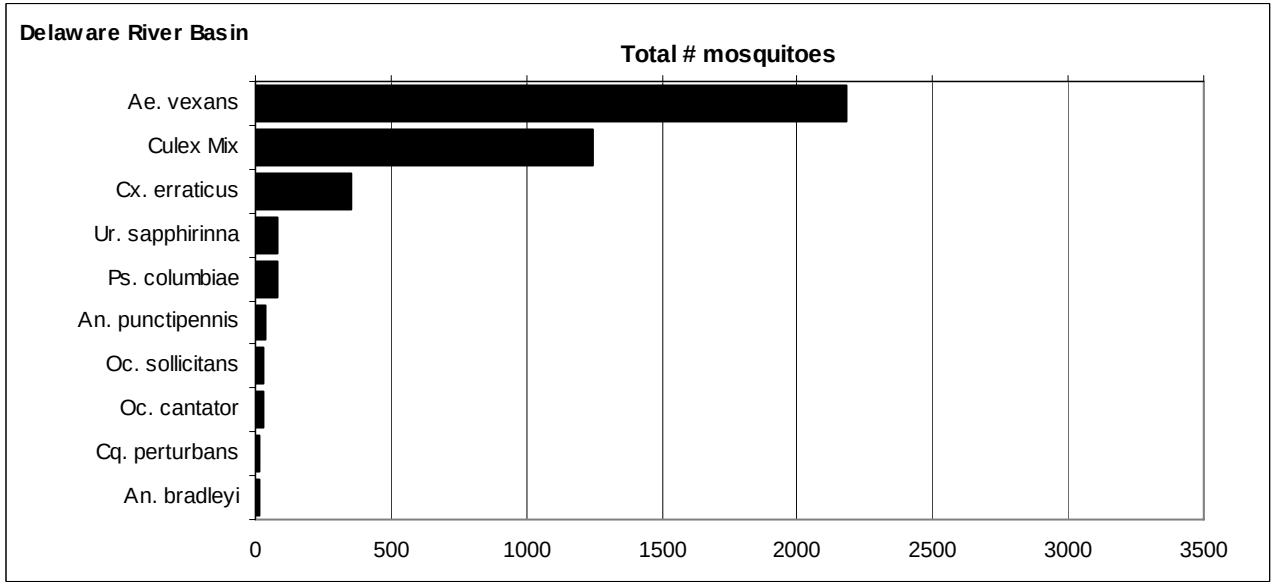
Culiseta melanura populations throughout the state were generally lower than normally seen, yet were of a sufficient size to generate mosquito pools that were positive for EEE, indicating transmission to and amplification occurring in the vertebrate host system. In addition, other indicators of unusual population activity include the early emergence and observation of *Cs. melanura* in the New York Metro region's light traps and a later-than-typical rise in the population in the vector surveillance resting boxes.

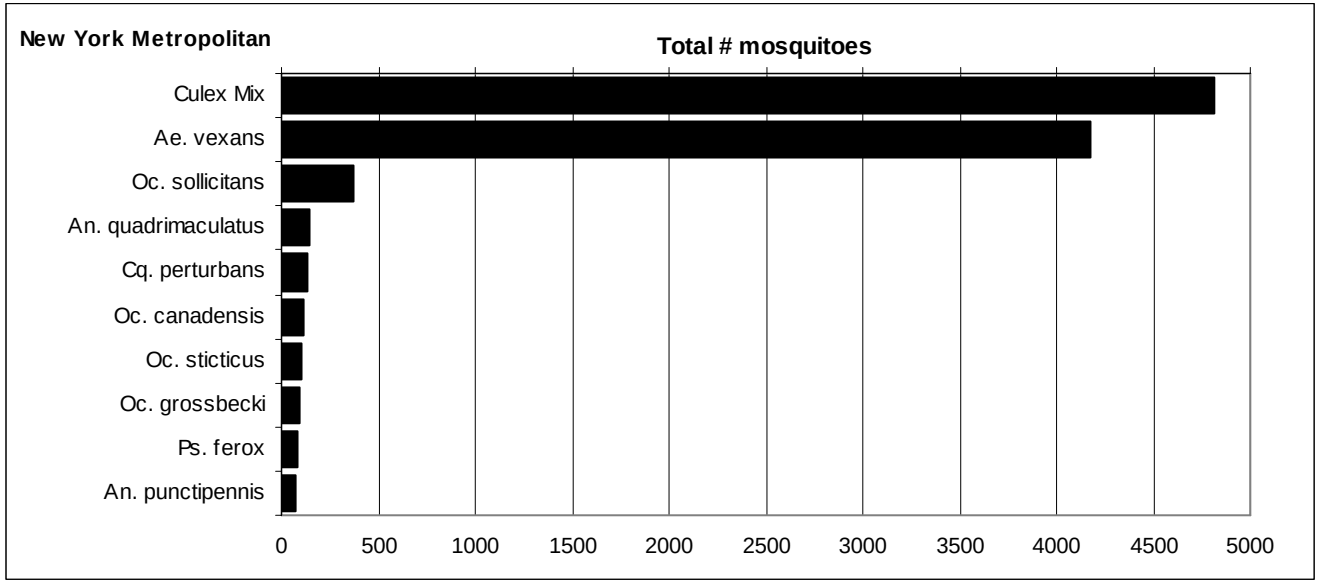
Top Ten cumulative species for each region to date.

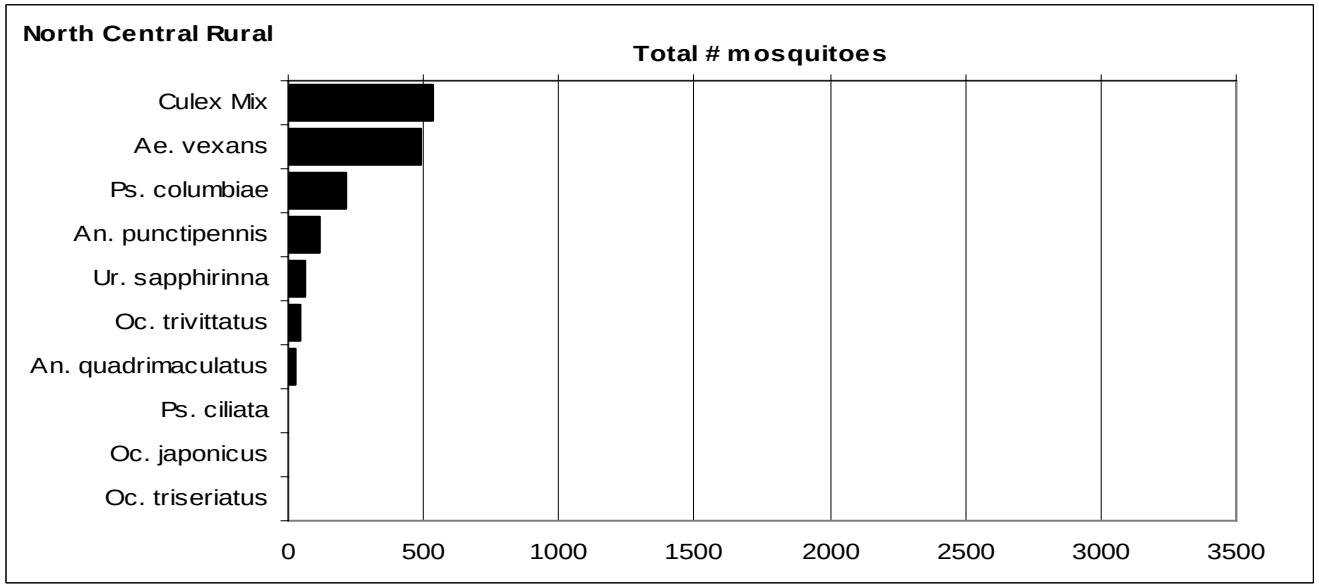


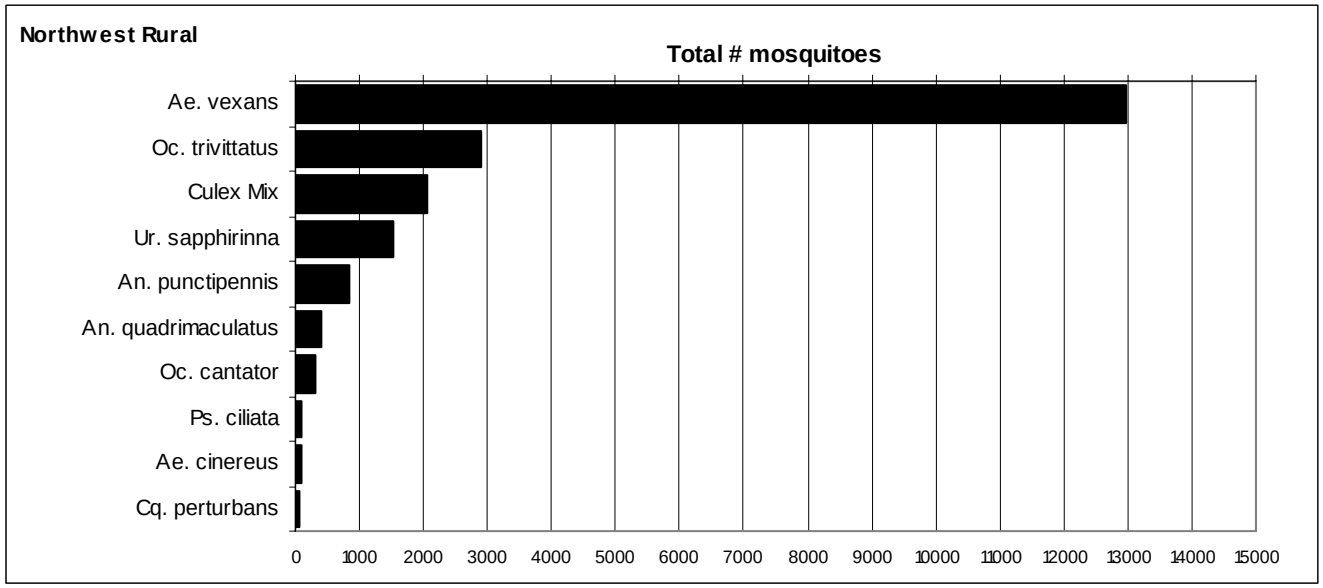


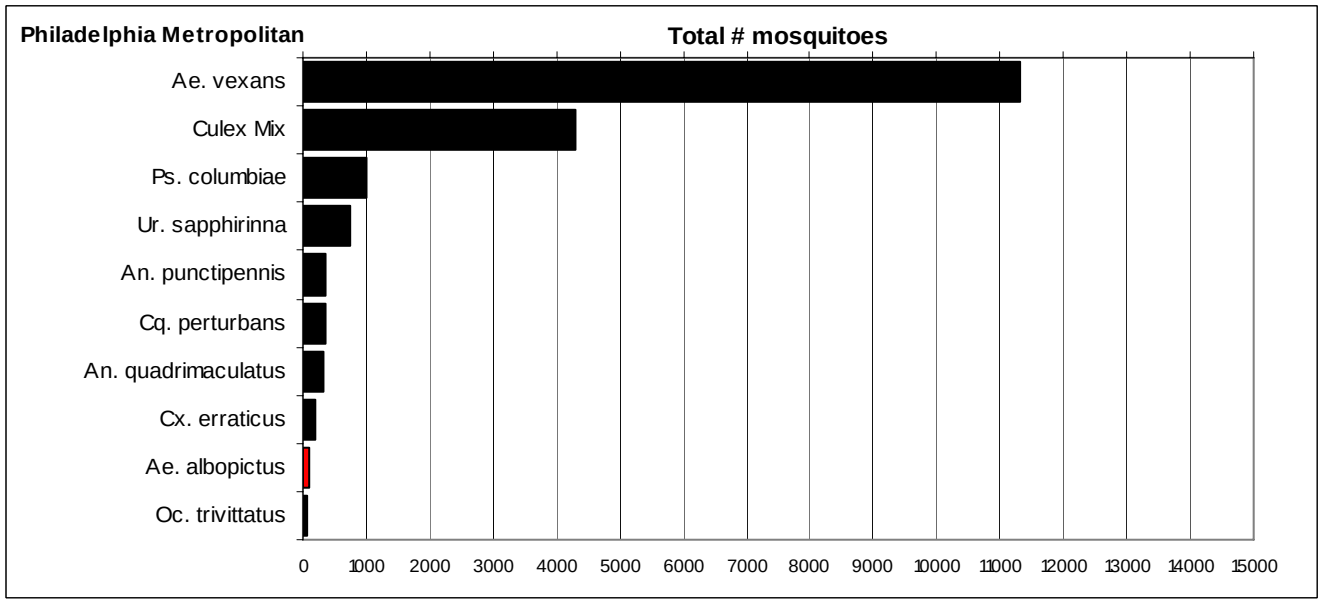

Delaware Bayshore
Total # mosquitoes
Oc. sollicitans
Culex Mix
An. quadrimaculatus
Oc. cantator
An. punctipennis
An. bradleyi
Cq. perturbans
Oc. taeniorhynchus
Ae. vexans
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
11000
12000
13000
14000
15000

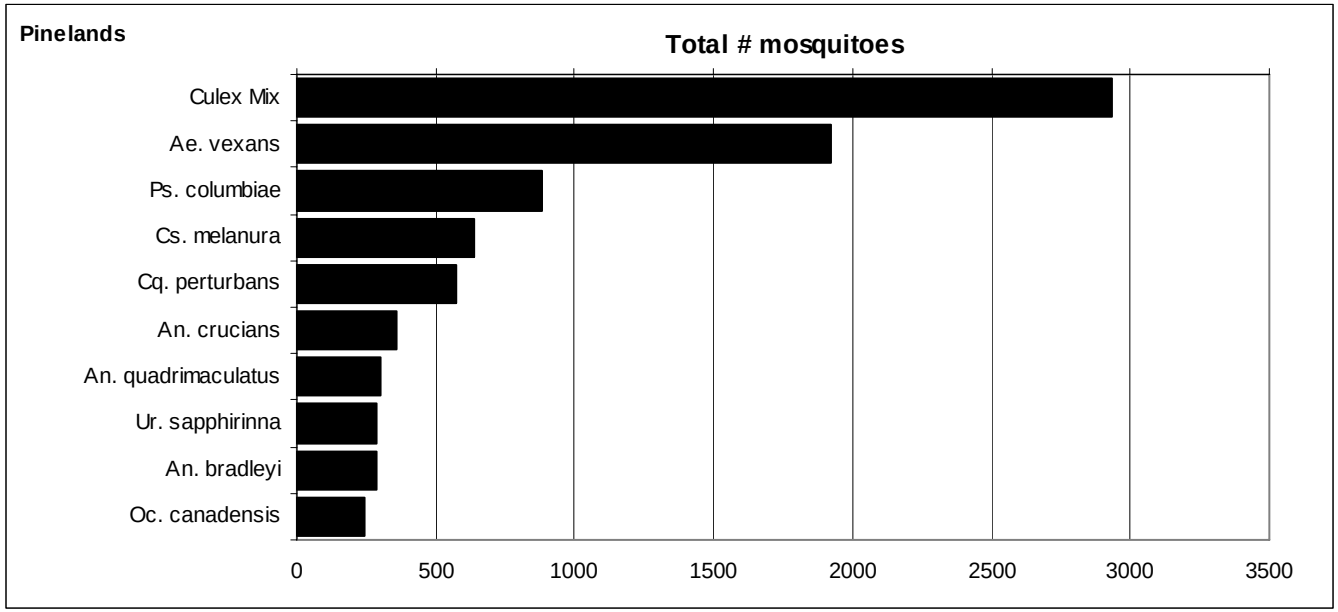

Delaware River Basin
Total # mosquitoes
Ae. vexans
Culex Mix
Cx. erraticus
Ur. sapphirinna
Ps. columbiae
An. punctipennis
Oc. sollicitans
Oc. cantator
Cq. perturbans
An. bradleyi
0
500
1000
1500
2000
2500
3000
3500

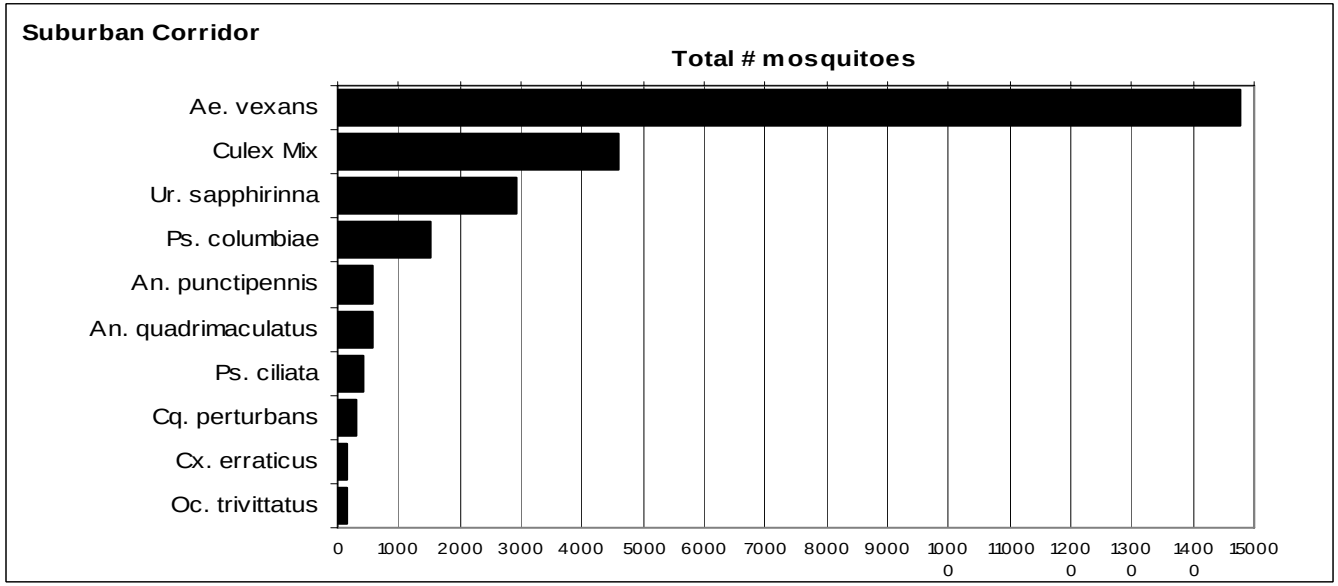

New York Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
Oc. sollicitans
An. quadrimaculatus
Cq. perturbans
Oc. canadensis
Oc. sticticus
Oc. grossbecki
Ps. ferox
An. punctipennis
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000


North Central Rural
Total # mosquitoes
Culex Mix
Ae. vexans
Ps. columbiae
An. punctipennis
Ur. sapphirinna
Oc. trivittatus
An. quadrimaculatus
Ps. ciliata
Oc. japonicus
Oc. triseriatus
0
500
1000
1500
2000
2500
3000
3500


Northwest Rural
Total # mosquitoes
Ae. vexans
Oc. trivittatus
Culex Mix
Ur. sapphirinna
An. punctipennis
An. quadrimaculatus
Oc. cantator
Ps. ciliata
Ae. cinereus
Cq. perturbans
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
11000
12000
13000
14000
15000


Philadelphia Metropolitan
Total # mosquitoes
Ae. vexans
Culex Mix
Ps. columbiae
Ur. sapphirinna
An. punctipennis
Cq. perturbans
An. quadrimaculatus
Cx. erraticus
Ae. albopictus
Oc. trivittatus
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
11000
12000
13000
14000
15000


Pinelands
Total # mosquitoes
Culex Mix
Ae. vexans
Ps. columbiae
Cs. melanura
Cq. perturbans
An. crucians
An. quadrimaculatus
Ur. sapphirinna
An. bradleyi
Oc. canadensis
0
500
1000
1500
2000
2500
3000
3500


Suburban Corridor
Total # mosquitoes
Ae. vexans
Culex Mix
Ur. sapphirinna
Ps. columbiae
An. punctipennis
An. quadrimaculatus
Ps. ciliata
Cq. perturbans
Cx. erraticus
Oc. trivittatus
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
11000
12000
13000
14000
15000