RUTGERS
New Jersey Agricultural Experiment Station

NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report for 29 August to 4 September 2010, CDC Week 35

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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.

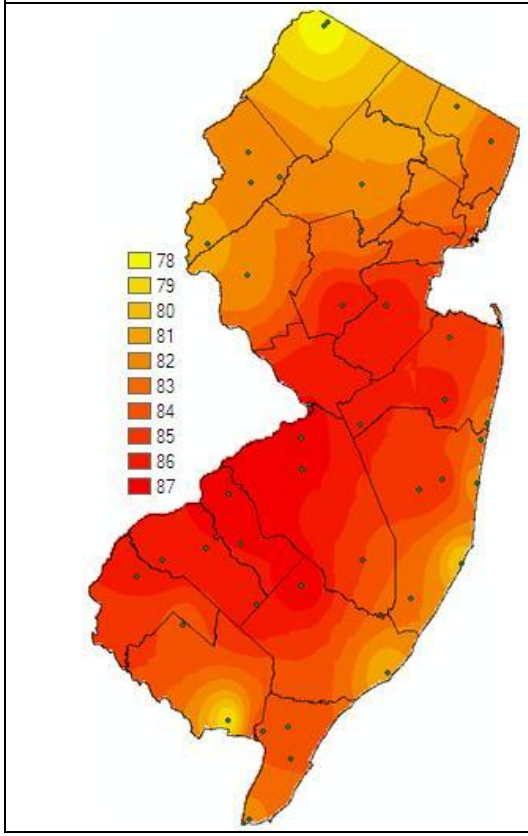
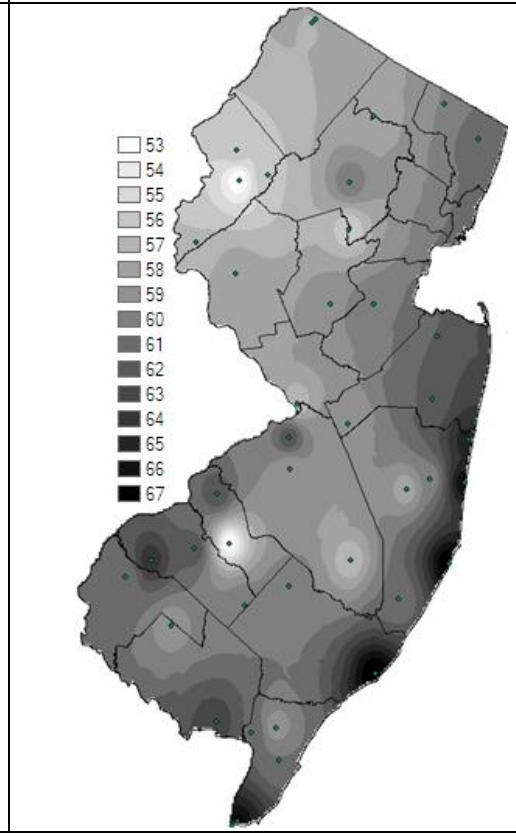
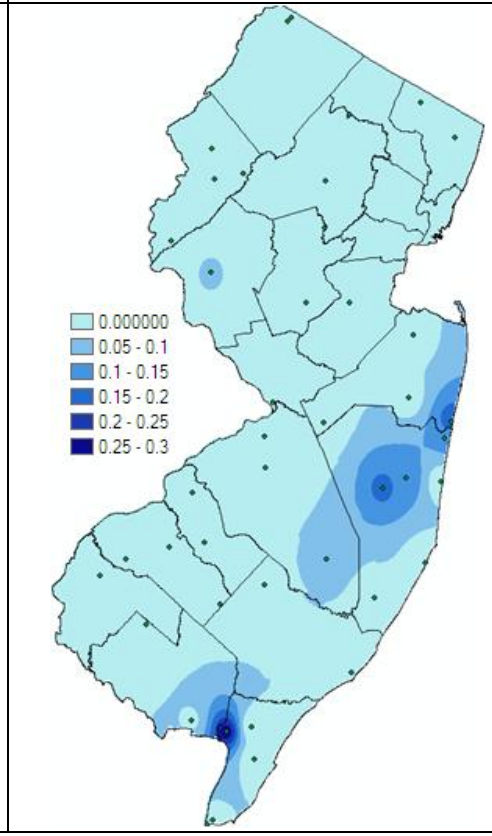
Summary table – Week 35

	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	**0.60**	**0.90**	**0**	**2.19**	**3.38**	**0**	**0.00**	**0.05**	**0**	**0.00**	**0.48**	**0**
Coastal	**1.81**	**0.91**	**2**	**2.60**	**3.11**	**0**	**0.00**	**0.81**	**0**	**10.27**	**8.59**	**1**
Delaware Bayshore	**2.46**	**0.57**	**4**	**10.46**	**10.90**	**0**	**0.09**	**0.26**	**0**	**1.03**	**7.16**	**0**
Delaware River Basin	**6.07**	**5.39**	**1**	**1.21**	**11.08**	**0**	**0.64**	**0.19**	**4**	**0.21**	**<0.01**	**4**
New York Metro	**0.17**	**2.98**	**0**	**4.10**	**6.45**	**0**	**0.03**	**0.19**	**0**	**0.29**	**0.45**	**0**
North Central Rural	**0.06**	**0.16**	**0**	**0.10**	**0.57**	**0**	**0.00**	**0.01**	**0**	**0.00**	**0.00**	**0**
Northwest Rural	**1.89**	**4.40**	**0**	**1.49**	**4.59**	**0**	**0.26**	**0.10**	**4**	**0.00**	**0.00**	**0**
Philadelphia Metro	**0.38**	**4.72**	**0**	**0.74**	**2.50**	**0**	**0.00**	**0.07**	**0**	**0.00**	**0.00**	**0**
Pinelands	**0.12**	**0.62**	**0**	**0.29**	**1.49**	**0**	**0.30**	**0.22**	**1**	**0.22**	**0.50**	**0**
Suburban Corridor	**0.13**	**2.15**	**0**	**0.45**	**2.49**	**0**	**0.03**	**0.24**	**0**	**0.00**	**0.02**	**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: Three pestiferous species are showing increased activity. *Aedes vexans* is above historical trends in the Coastal, Delaware Bayshore and Delaware River Basin. *Coquillettidia perturbans* is at higher than average trends in the Delaware River Basin, the Northwestern Rural and the Pinelands regions. *Aedes sollicitans* populations are higher than the historical trends in the Coastal and Delaware River Basin.

Climate Factors

Average High Temperatures	Average Low Temperatures	Total Precipitation
		

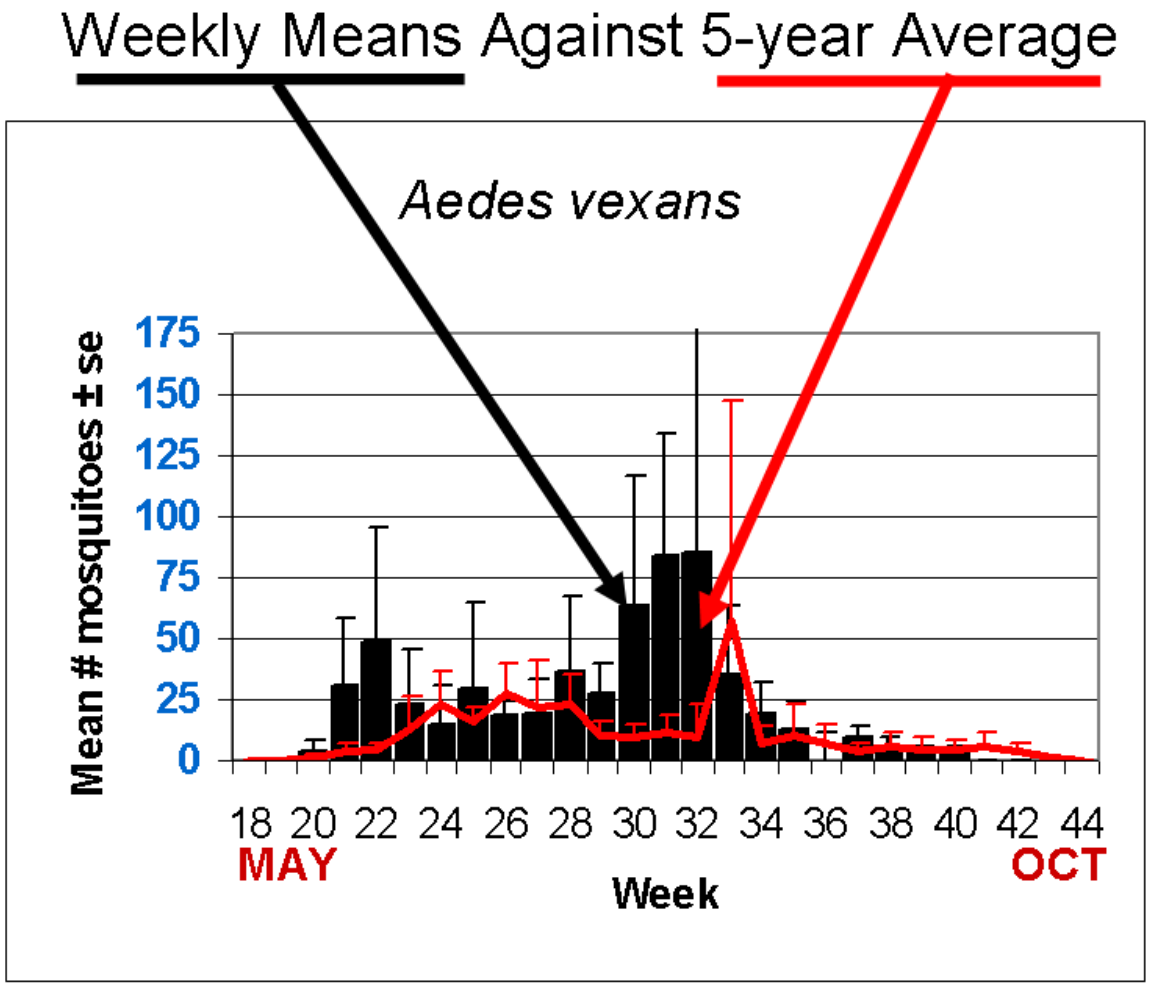
The three figures show the interpolation of average maximum and minimum temperature and total precipitation for September 1-9, 2010 in New Jersey. Data points are from 40 weather stations maintained through the New Jersey Weather & Climate Network and the State Climatologist. Interpolation between points was performed using ArcMap 9.2.

The first week in September showed definite cooling trends in the evening. As usual, coastal and higher elevation areas are cooler during the day, but the coastal areas retain heat during the night. Precipitation was minor as Tropical Storm Earl passed by almost unnoticed.

NJ Weather & Climate NETWORK

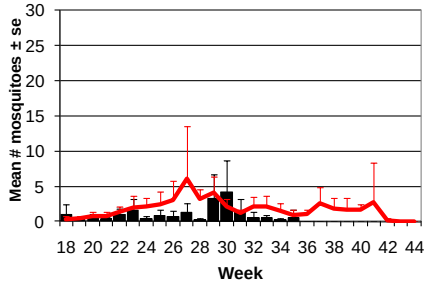
ONJSC at Rutgers University

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, Essex, Hudson, Middlesex, Morris, Ocean, Salem, Somerset, Sussex, Union and Warren counties. Note: Previous week's data are from Atlantic, Bergen, Burlington, Camden, Cape May, Essex, Hudson, Hunterdon, Middlesex, Monmouth, Morris, Ocean, Salem, Somerset, Sussex, Union and Warren counties.

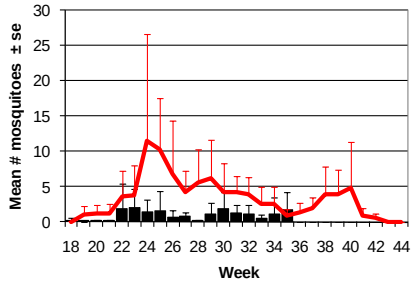


Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

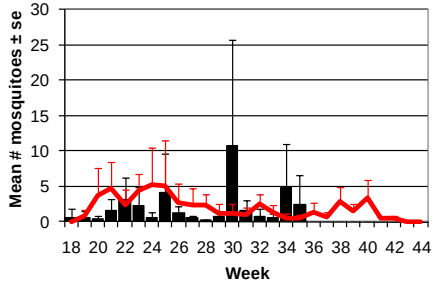
Agricultural



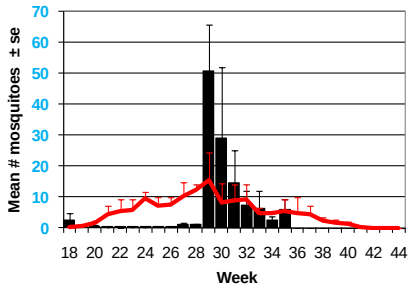
Coastal



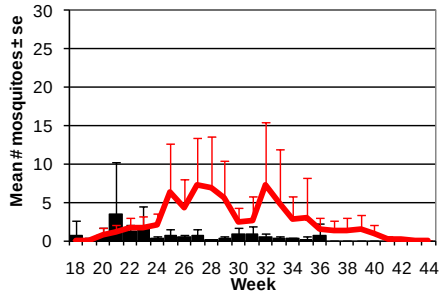
Delaware Bayshore



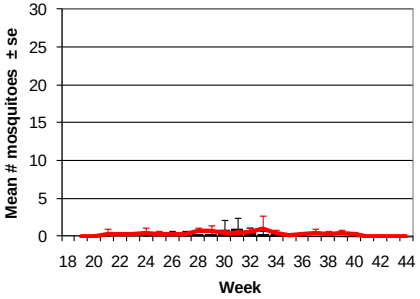
Delaware River Basin



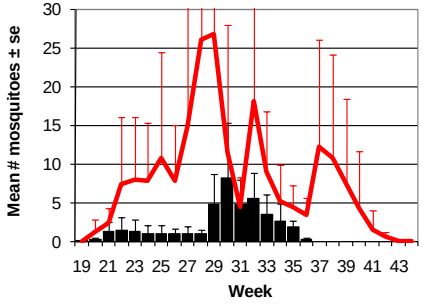
New York Metro



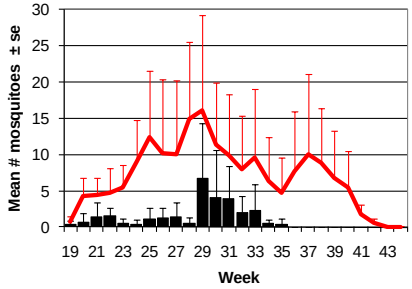
North Central Rural



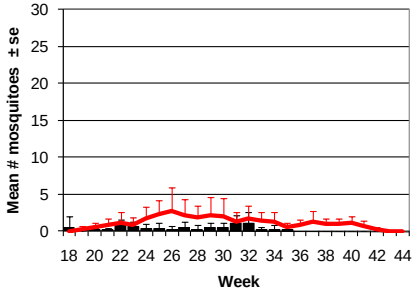
Northwestern Rural



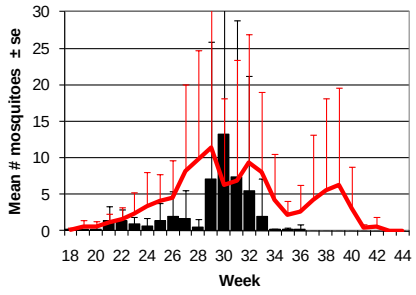
Philadelphia Metro



Pinelands



Suburban Corridor

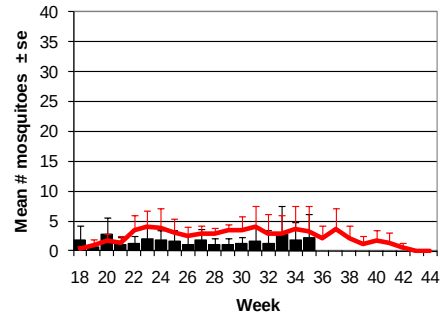


Comments

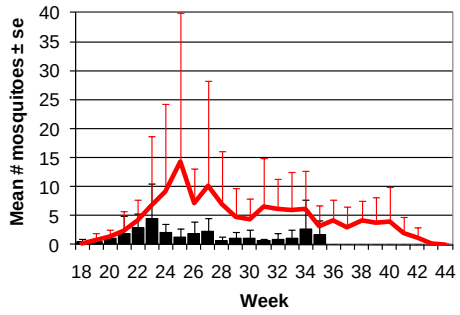
While *Aedes vexans* populations are generally lower than historical values throughout much of the state, a few regions did show increased activity. The Coastal and Delaware Bayshore regions, with a barely glancing blow from Tropical Storm Earl, has shown increased activity when historical values are generally low. The Delaware River Basin activities are likely tied to dredge spoil activity. Ephemeral floodwater habitat for this and other floodwater species has been lacking due to the prolonged drought conditions.

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

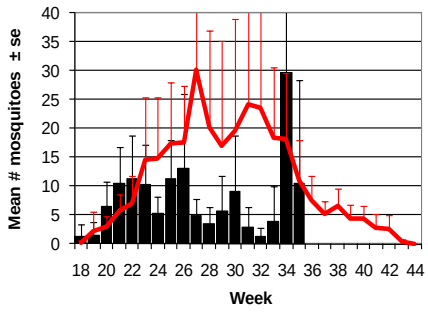
Agricultural



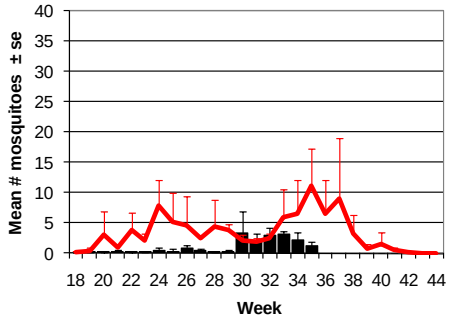
Coastal



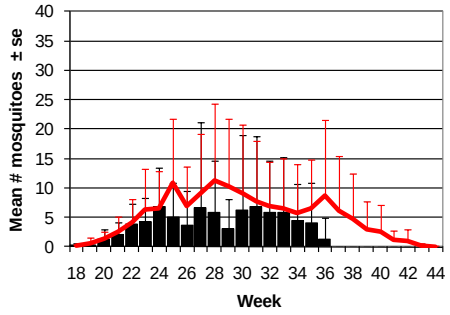
Delaware Bayshore



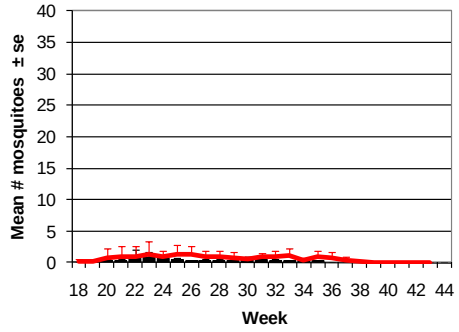
Delaware River Basin



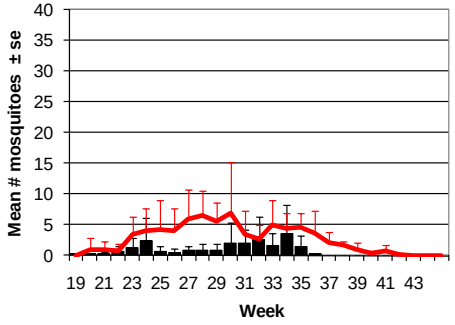
New York Metro



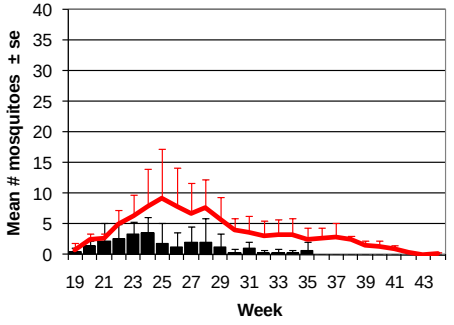
North Central Rural



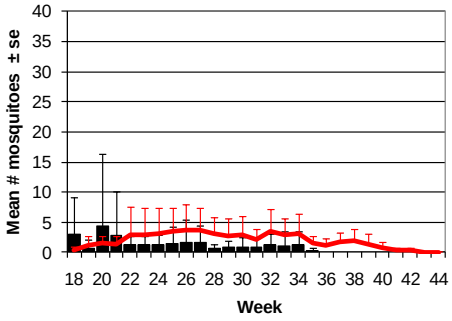
Northwestern Rural



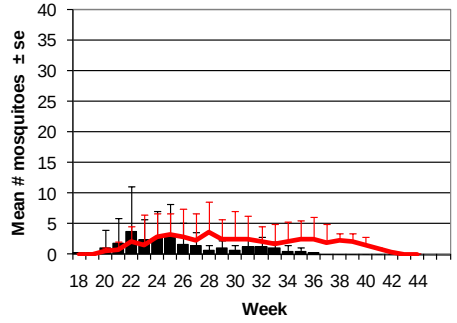
Philadelphia Metro



Pinelands



Suburban Corridor

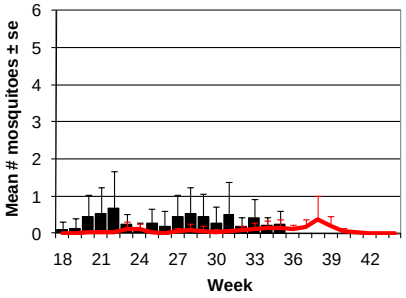
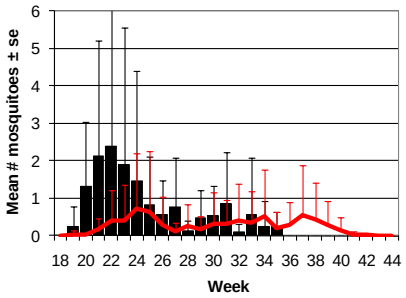
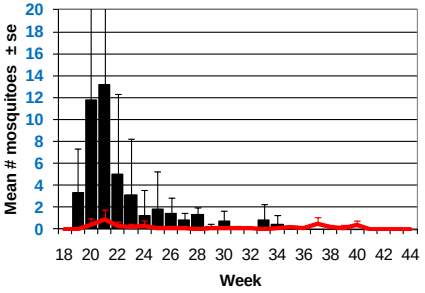
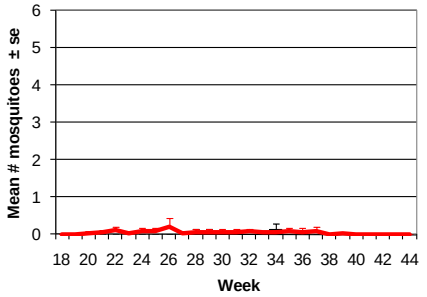
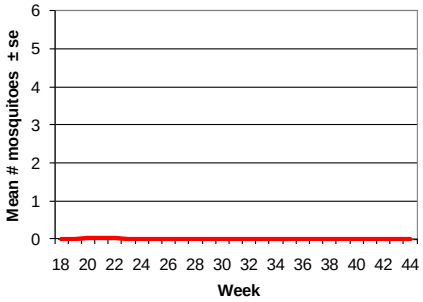
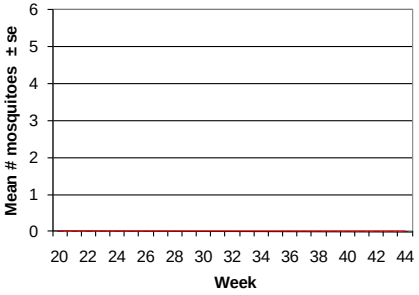
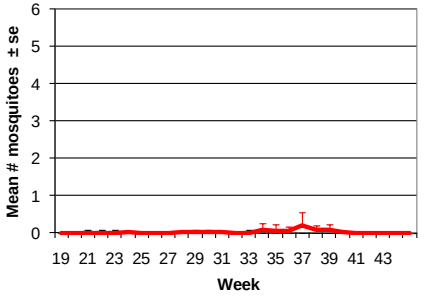
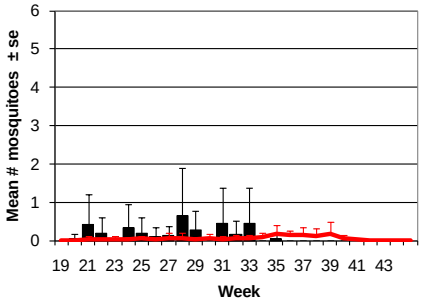
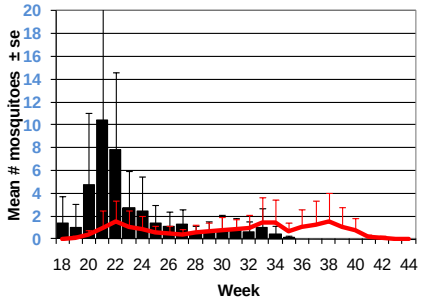
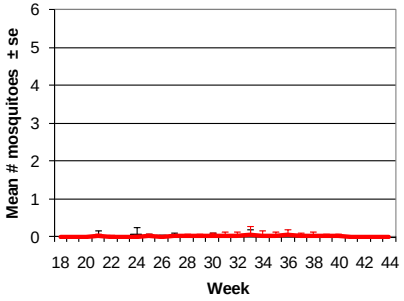


Comments

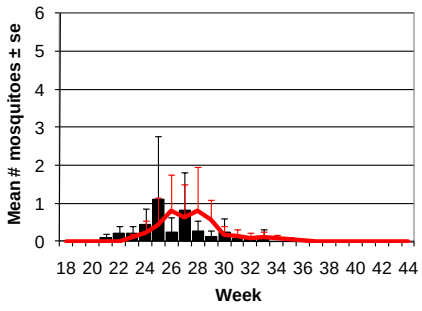
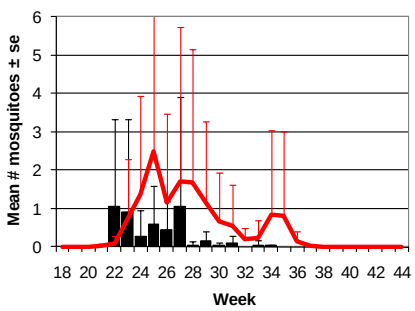
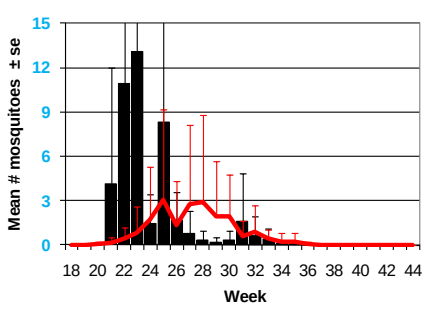
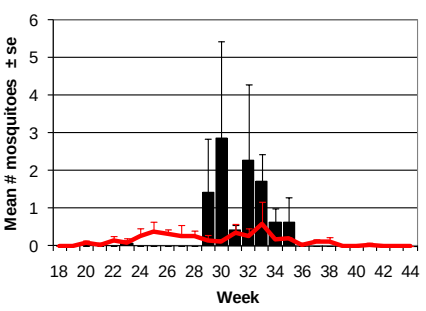
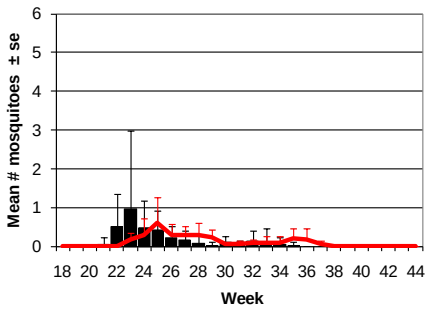
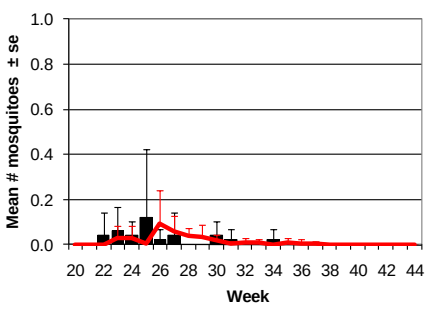
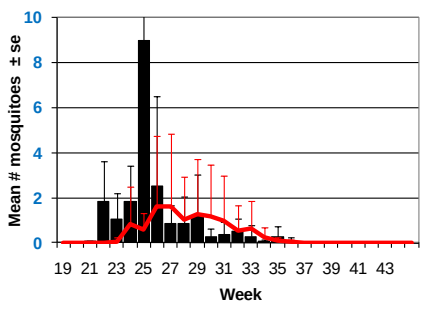
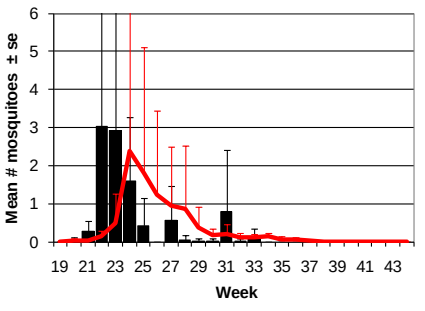
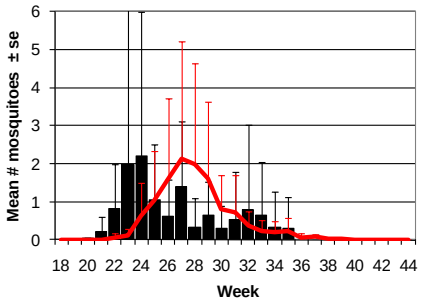
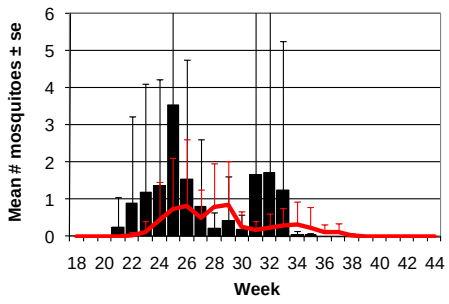
Culex Mix is represented by three species of *Culex* mosquitoes: *Cx. pipiens, Cx. restuans* and *Cx. salinarius*. These mosquitoes are usually grouped together as there is considerable difficulty in separating them to species easily after travelling through the grind of the light trap, often in the company of protesting moths and beetles.

Culex Mix species population numbers are creeping up toward historical levels only because those trends are beginning to decline. This period marks the change in *Culex* and other species that overwinter as inseminated females as these individuals begin entering hibernaculae. Fat bodies that help them survive through the winter in diapause are built up from a diet of nectar.

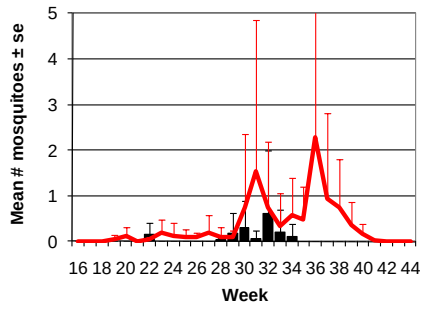
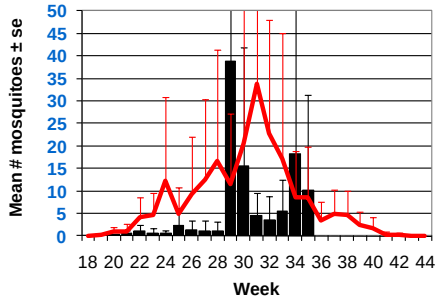
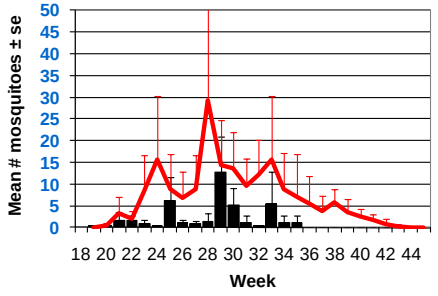
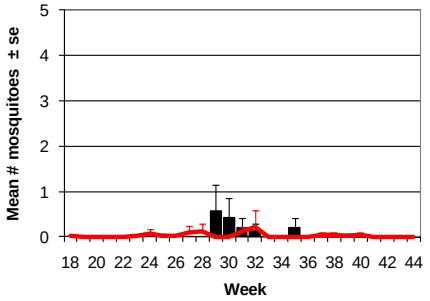
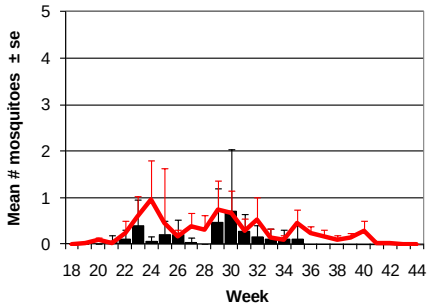
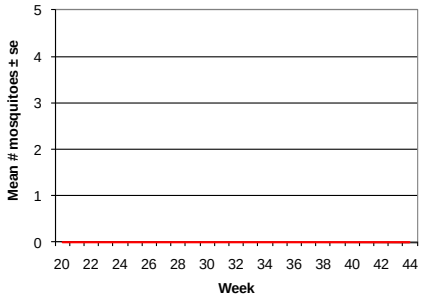
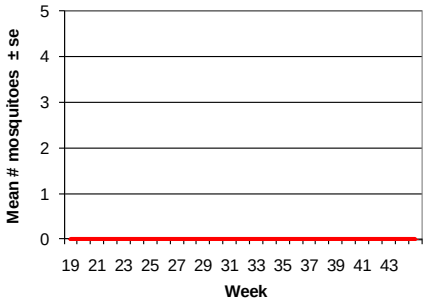
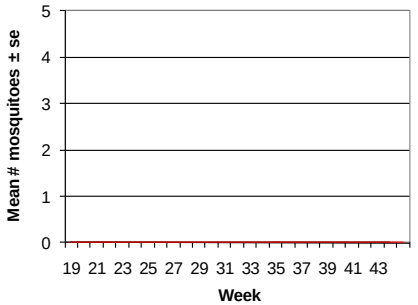
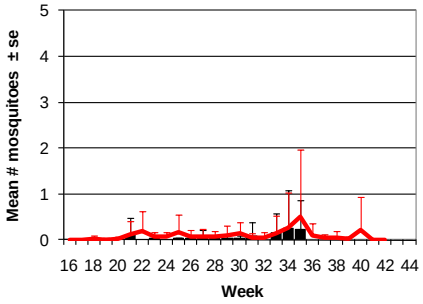
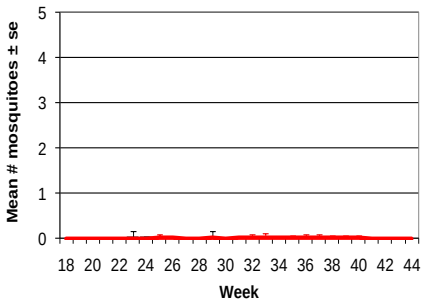
Culiseta melanura – Miscellaneous Group Unique (*Cs. melanura* Type)

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Culiseta melanura*, the enzootic ornithophilic vector of eastern equine encephalitis, continues to remain around historic trends in areas that they are normally found. The unusually high spring populations appears to not have translated into high second generation populations, possibly due to the lingering drought conditions that the state has undergone.	

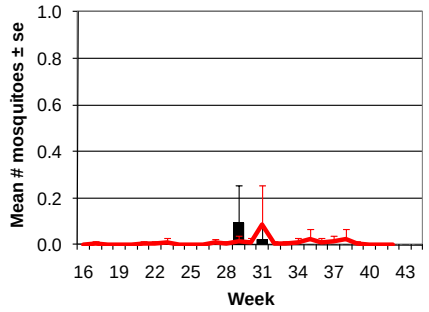
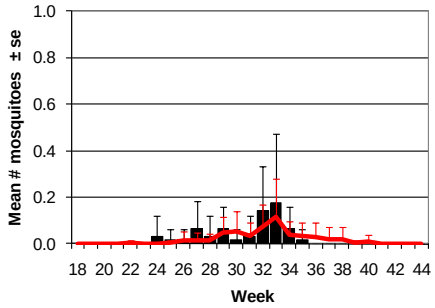
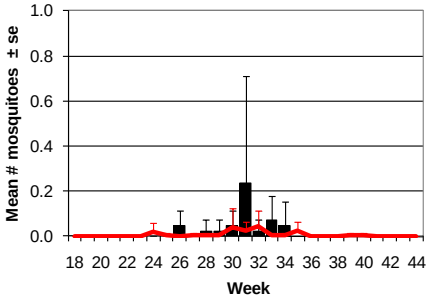
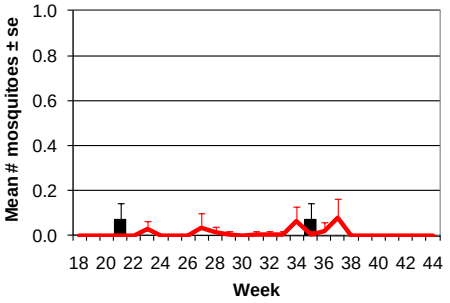
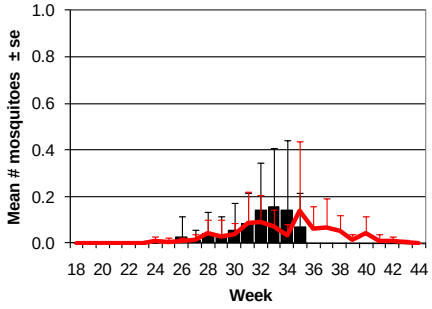
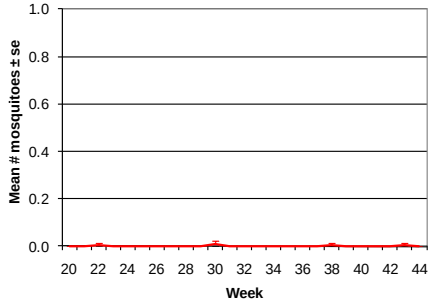
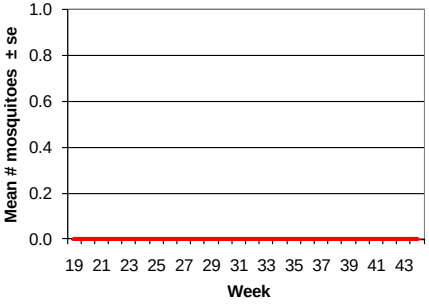
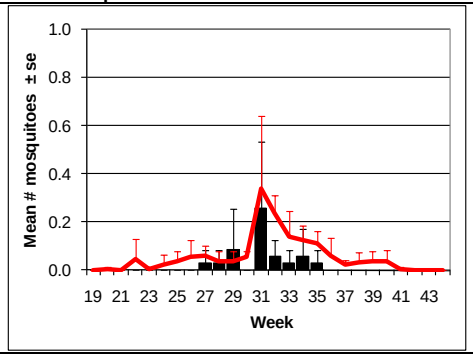
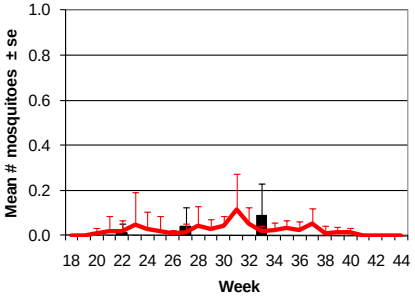
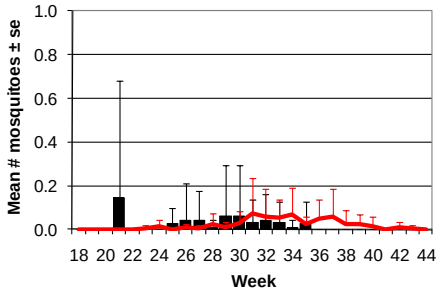
Coquillettidia perturbans – Miscellaneous Group Monotypic (*Coq. perturbans* Type)

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Coquillettidia perturbans* populations continue to show higher than historical trends in some regions at a time when populations in the state are generally in a decline. This is unusual as there was early season activity for this species in several areas. Permanent water habitat likely aided in the extended survival of this species. Higher than historical populations showed up again this week in the Delaware River Basin, Northwest Rural and the Pinelands.	

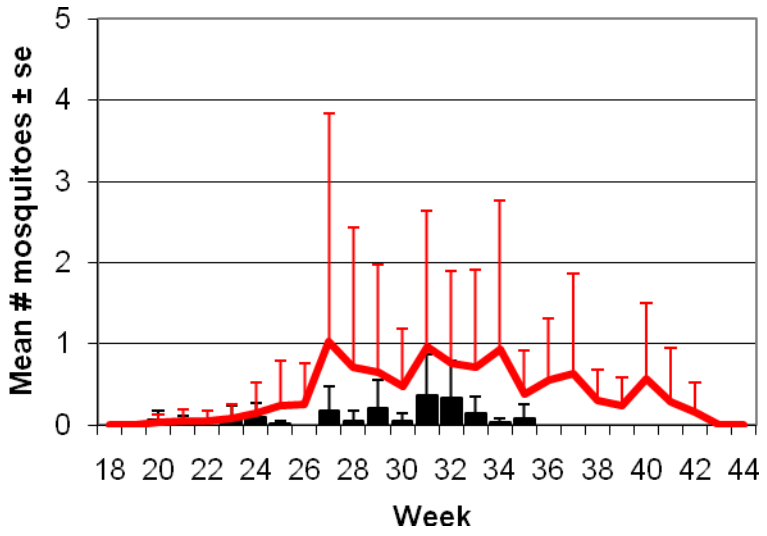
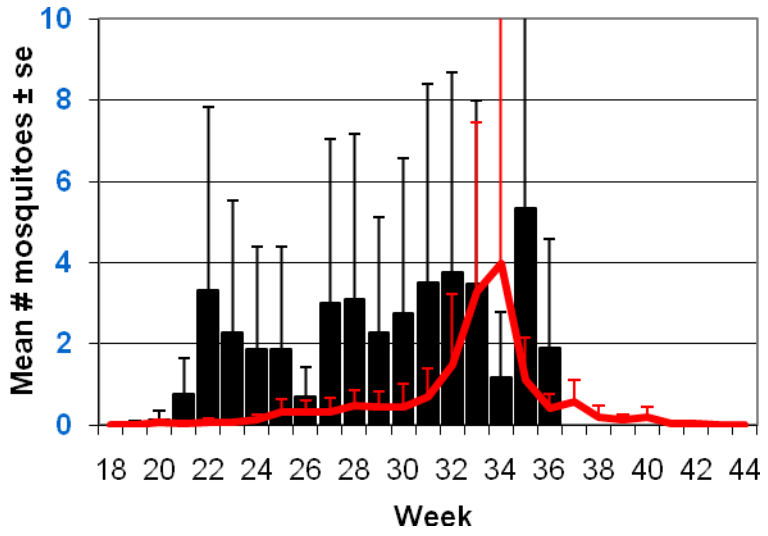
Aedes sollicitans - Salt Floodwater Species
Multivoltine Aedine (*Ae. sollicitans* Type)

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes sollicitans* populations were higher than historical values in the Coastal and Delaware River Basin regions. This species may begin to generate complaints as host-seeking begins during the daylight period and cooler weather encourages outdoor activity. September 23rd is the next full moon.	

Aedes albopictus – Container Species
Multivoltine Aedine (*Ae. triseriatus* Type)

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes albopictus*, the Asian Tiger Mosquito, increased activity over historical trends in the Delaware River Basin and the Suburban Corridor. This species is currently the only non-ornithophilic species to have WNV detected in it this season. It is an aggressive biter. The Asian Tiger Mosquito is not cold tolerant and will disappear once cooler temperatures arrive.	

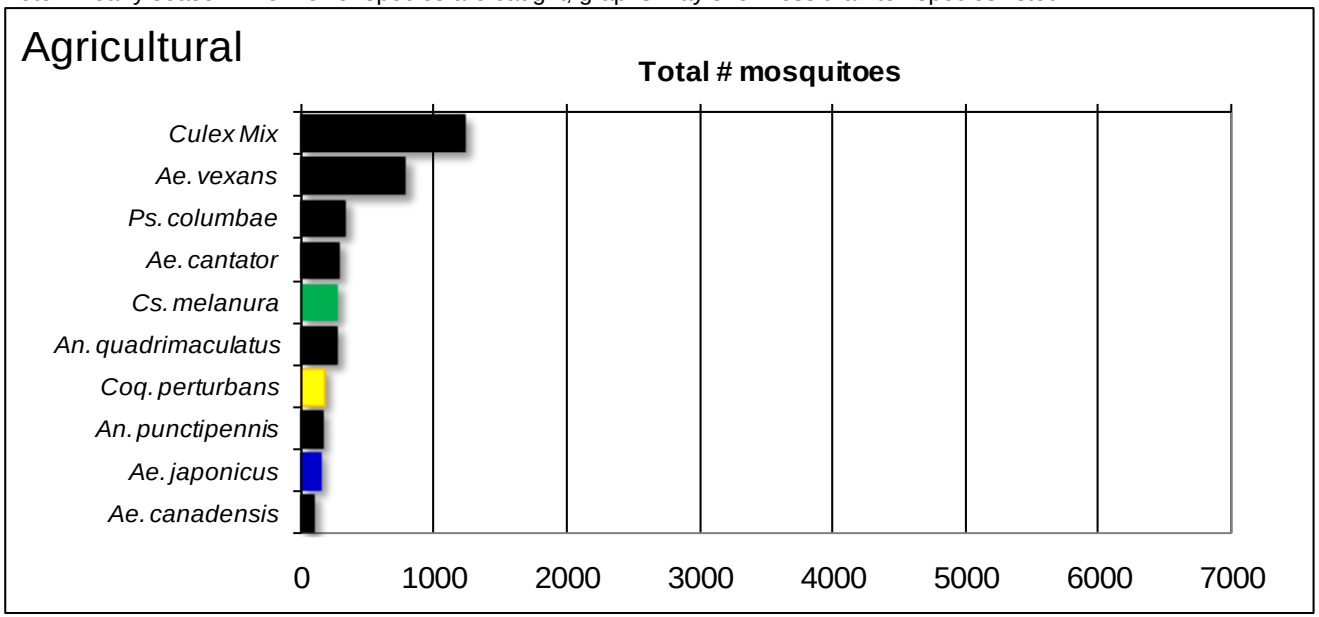
Anopheles quadrimaculatus: Two very different responses to the season from one mosquito. Coastal populations have remained below historical levels while in the Northwestern Rural region, populations were out in force early and appeared to have continued throughout the season (with considerable variability). This species overwinters as inseminated females and was the historic vector of malaria here in New Jersey.

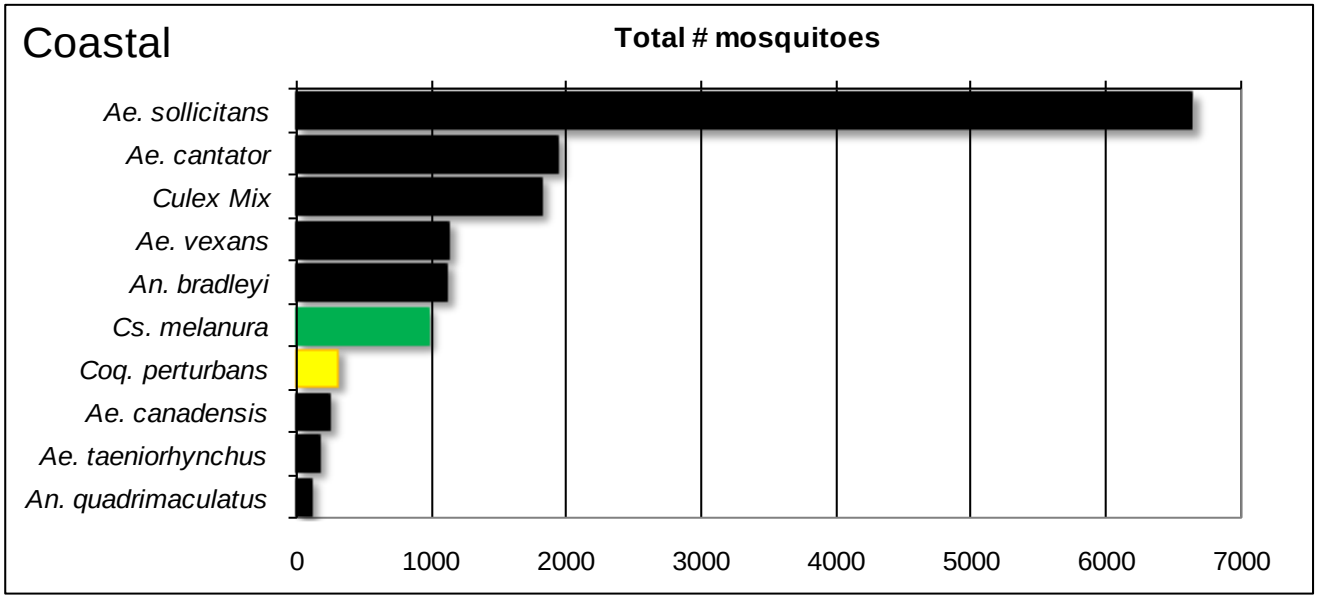
Coastal	Northwestern Rural
	

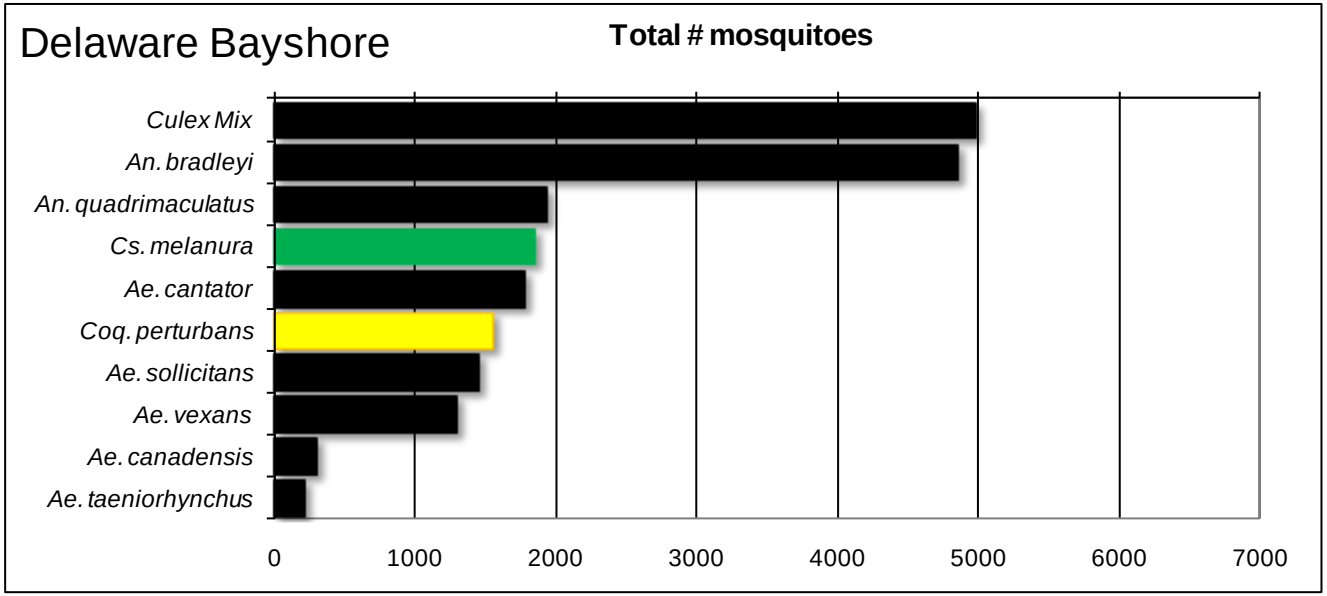
WNV *EEE*

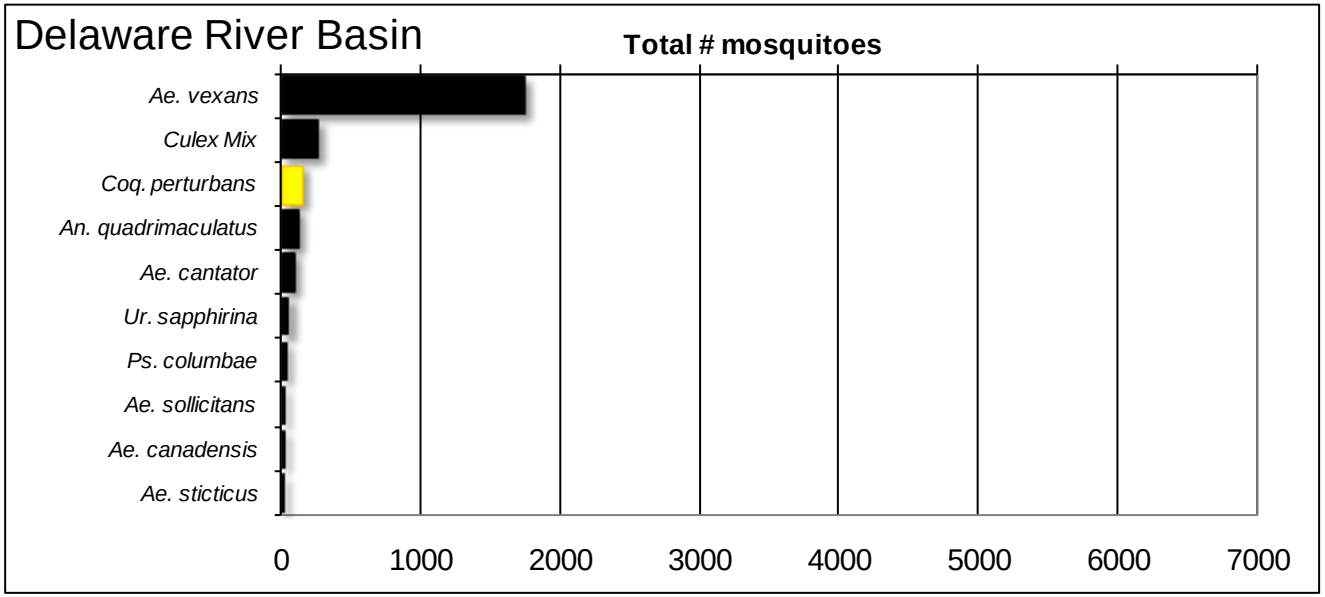
Top Ten Cumulative Mosquito Species/Region - *Ae. albopictus,* *Ae. japonicus (invasives);* *Cs. melanura or Cx. erraticus* *Coq. perturbans*

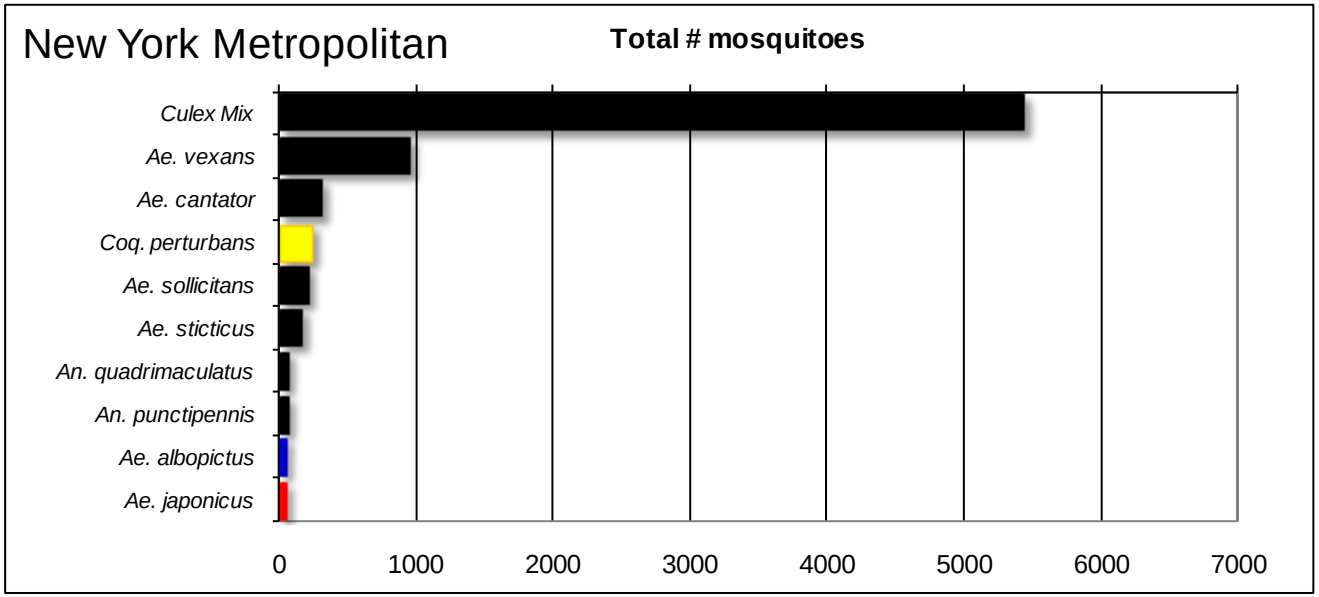
Note: In early season when fewer species are caught, graphs may show less than ten species listed.

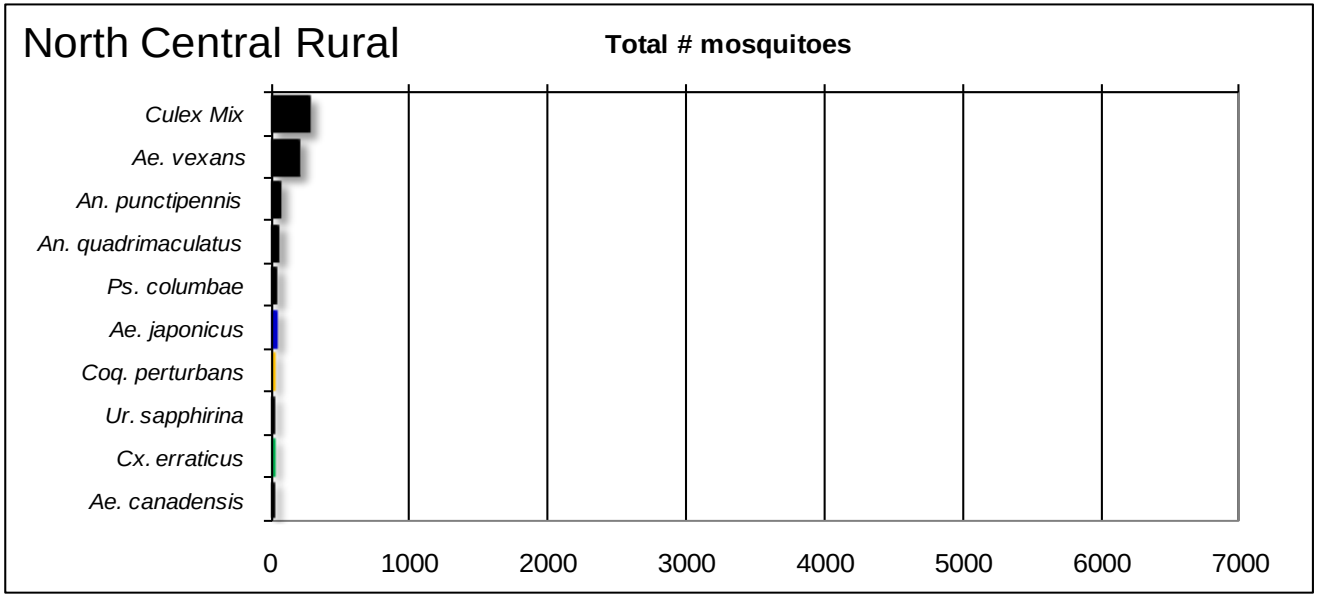


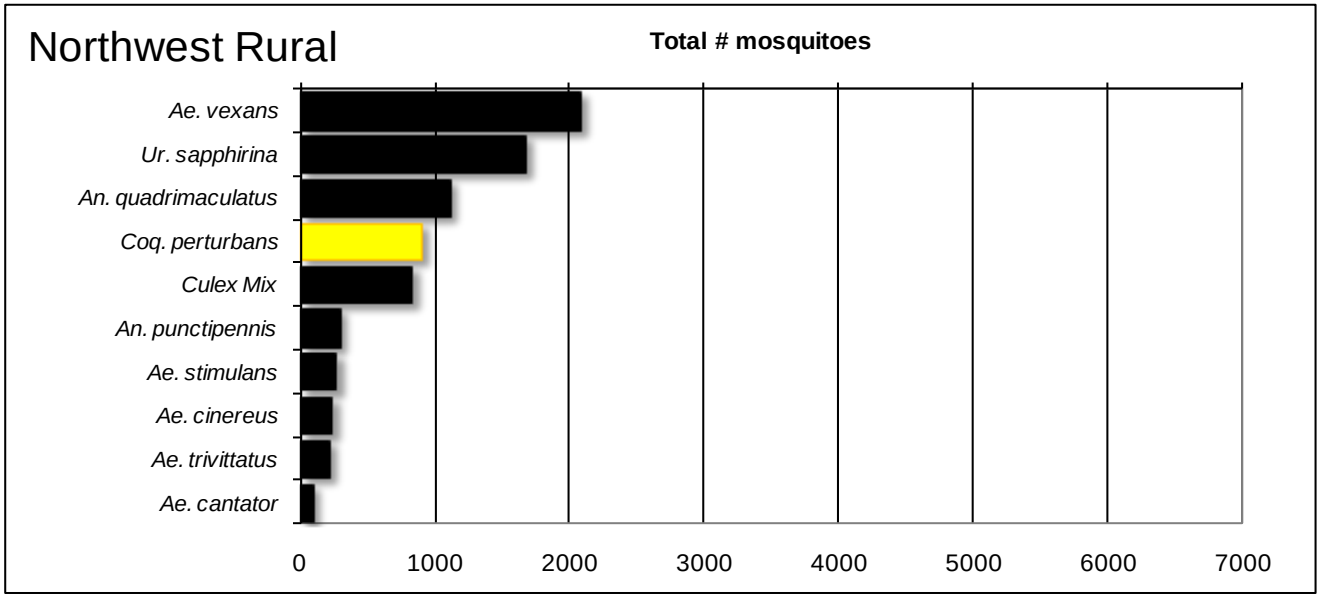


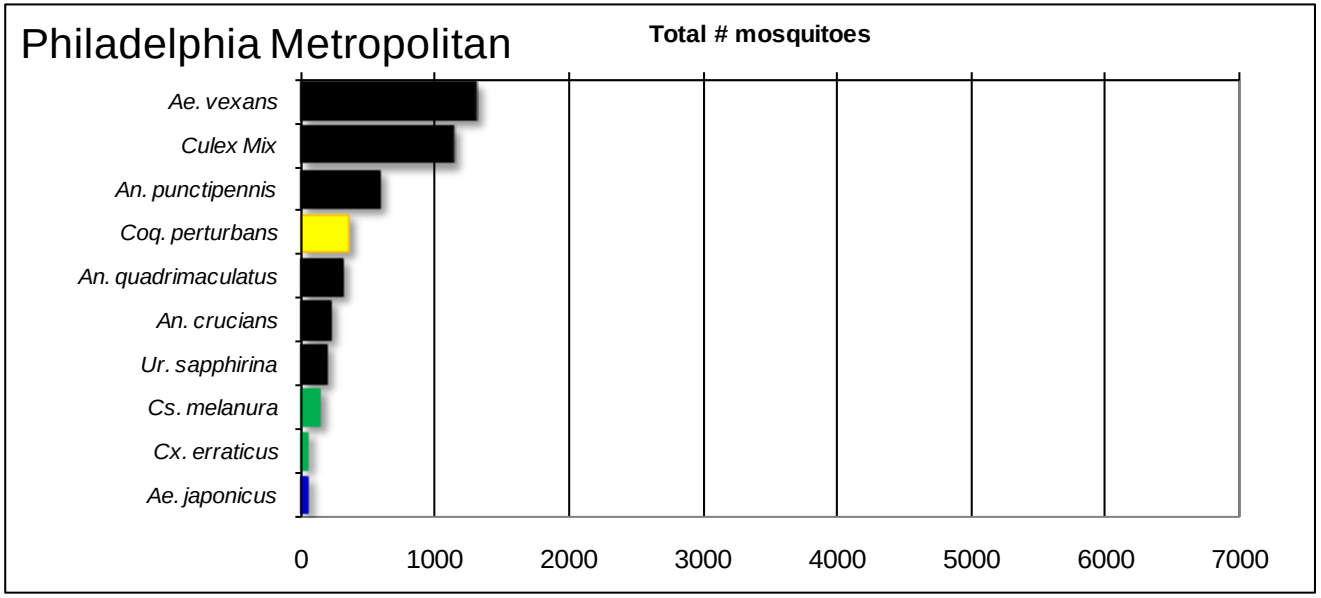

Delaware Bayshore
Total # mosquitoes
Culex Mix
An. bradleyi
An. quadrimaculatus
Cs. melanura
Ae. cantator
Coq. perturbans
Ae. sollicitans
Ae. vexans
Ae. canadensis
Ae. taeniorhynchus
0
1000
2000
3000
4000
5000
6000
7000

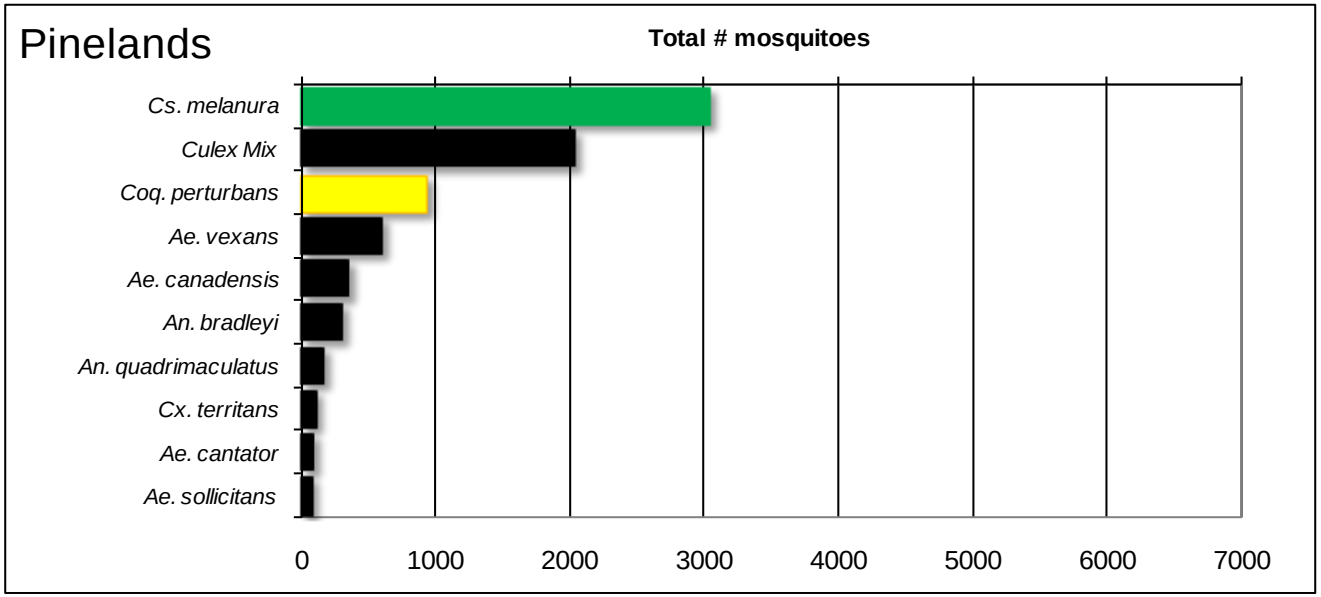

Delaware River Basin
Total # mosquitoes
Ae. vexans
Culex Mix
Coq. perturbans
An. quadrimaculatus
Ae. cantator
Ur. sapphirina
Ps. columbae
Ae. sollicitans
Ae. canadensis
Ae. sticticus
0
1000
2000
3000
4000
5000
6000
7000

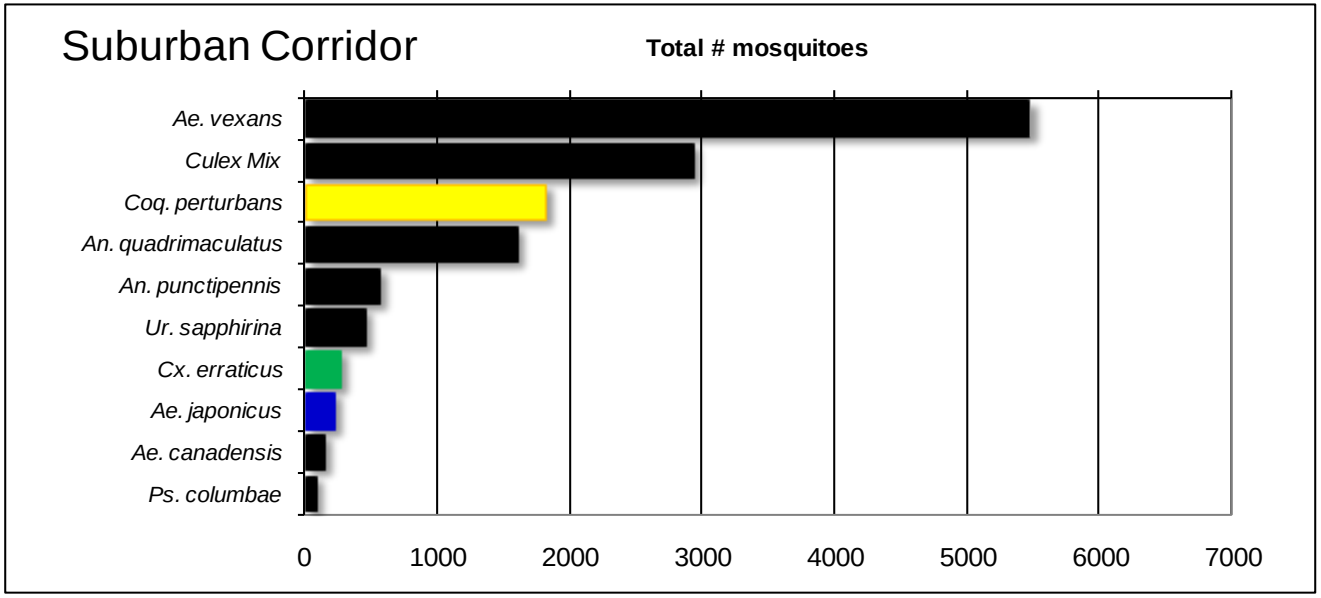

New York Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. cantator
Coq. perturbans
Ae. sollicitans
Ae. sticticus
An. quadrimaculatus
An. punctipennis
Ae. albopictus
Ae. japonicus
0
1000
2000
3000
4000
5000
6000
7000


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


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


Philadelphia Metropolitan
Total # mosquitoes
Ae. vexans
Culex Mix
An. punctipennis
Coq. perturbans
An. quadrimaculatus
An. crucians
Ur. sapphirina
Cs. melanura
Cx. erraticus
Ae. japonicus
0
1000
2000
3000
4000
5000
6000
7000


Pinelands
Total # mosquitoes
Cs. melanura
Culex Mix
Coq. perturbans
Ae. vexans
Ae. canadensis
An. bradleyi
An. quadrimaculatus
Cx. territans
Ae. cantator
Ae. sollicitans
0
1000
2000
3000
4000
5000
6000
7000


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