RUTGERS
New Jersey Agricultural Experiment Station

NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report for 27 September to 3 October 2009, CDC Weeks 39

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Center for Vector Biology

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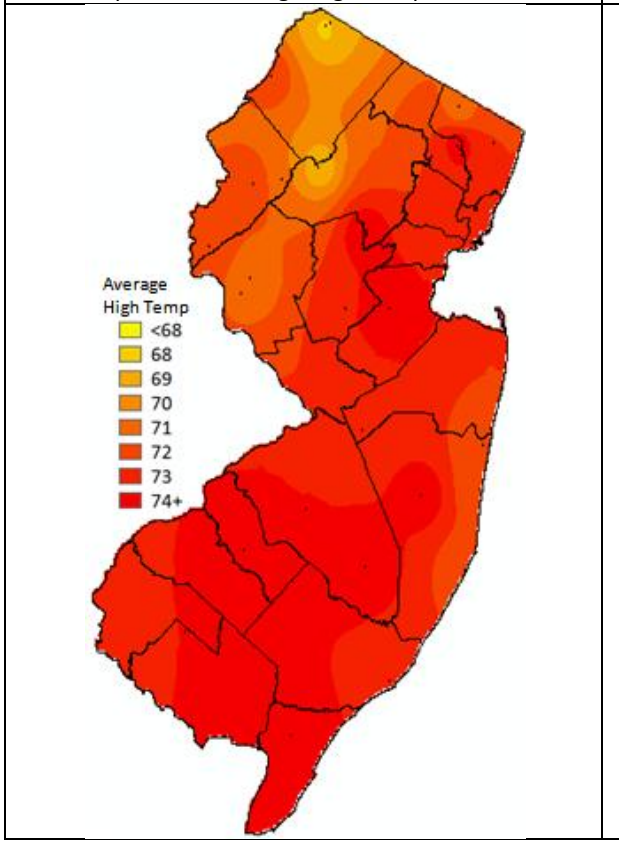
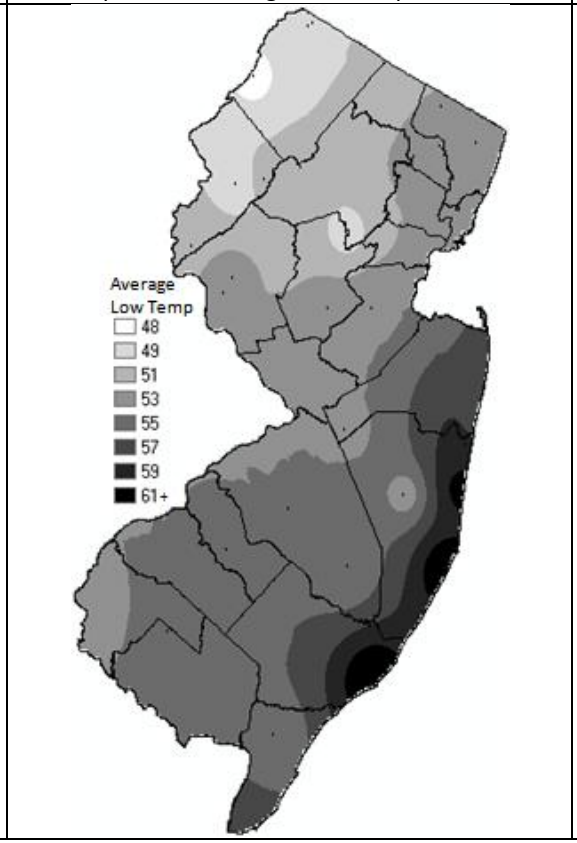
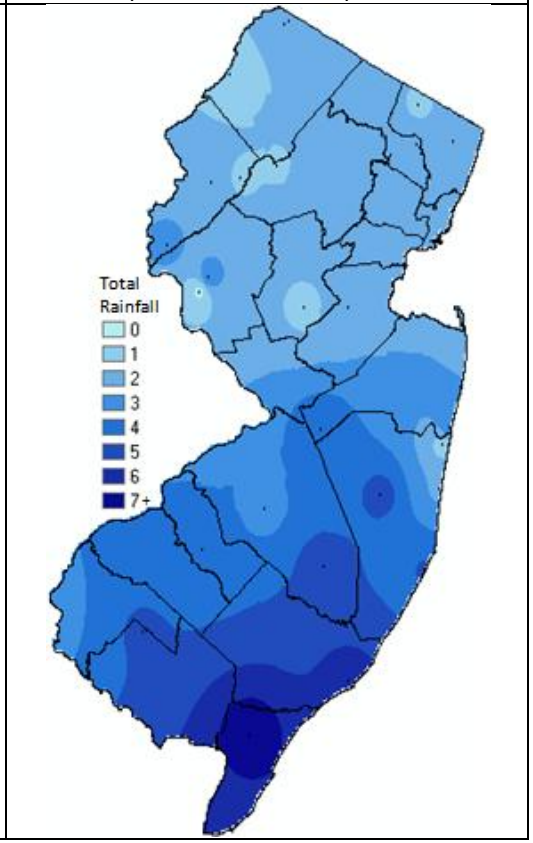
Summary table – Week 39

	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	**0.45**	**1.38**	**0**	**0.26**	**1.70**	**0**	**0.00**	**<0.01**	**0**	**0.02**	**0.50**	**0**
Coastal	**1.03**	**3.71**	**0**	**0.70**	**3.73**	**0**	**0.00**	**<0.01**	**0**	**1.98**	**1.90**	**1**
Delaware Bayshore	**1.60**	**0.84**	**2**	**2.06**	**4.58**	**0**	**0.00**	**0.01**	**0**	**0.20**	**4.86**	**0**
Delaware River Basin	**0.00**	**2.54**	**0**	**0.00**	**1.36**	**0**	**0.00**	**0.03**	**0**	**0.00**	**0.04**	**0**
New York Metro	**0.29**	**2.67**	**0**	**1.19**	**3.37**	**0**	**0.00**	**0.01**	**0**	**0.00**	**0.19**	**0**
North Central Rural	**0.04**	**0.45**	**0**	**0.12**	**0.11**	**1**	**0.00**	**0.00**	**0**	**0.00**	**0.00**	**0**
Northwest Rural	**0.17**	**7.55**	**0**	**0.11**	**1.46**	**0**	**0.00**	**<0.01**	**0**	**0.00**	**0.00**	**0**
Philadelphia Metro	**1.24**	**8.30**	**0**	**0.26**	**1.97**	**0**	**0.00**	**0.01**	**0**	**0.00**	**0.00**	**0**
Pinelands	**0.06**	**1.10**	**0**	**0.08**	**1.11**	**0**	**0.01**	**0.03**	**0**	**0.00**	**0.02**	**0**
Suburban Corridor	**0.35**	**6.36**	**0**	**0.36**	**3.26**	**0**	**0.00**	**0.02**	**0**	**0.00**	**0.06**	**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: *Aedes vexans* continued to show higher activity than historical in the Delaware Bayshore region. *Culex* species also were in barely greater abundance in the North Central and the Coastal region showed slightly elevated activity in *Aedes sollicitans* at the end of this season.

Climate Factors

September Average High Temperatures	September Average Low Temperatures	September Total Precipitation
		

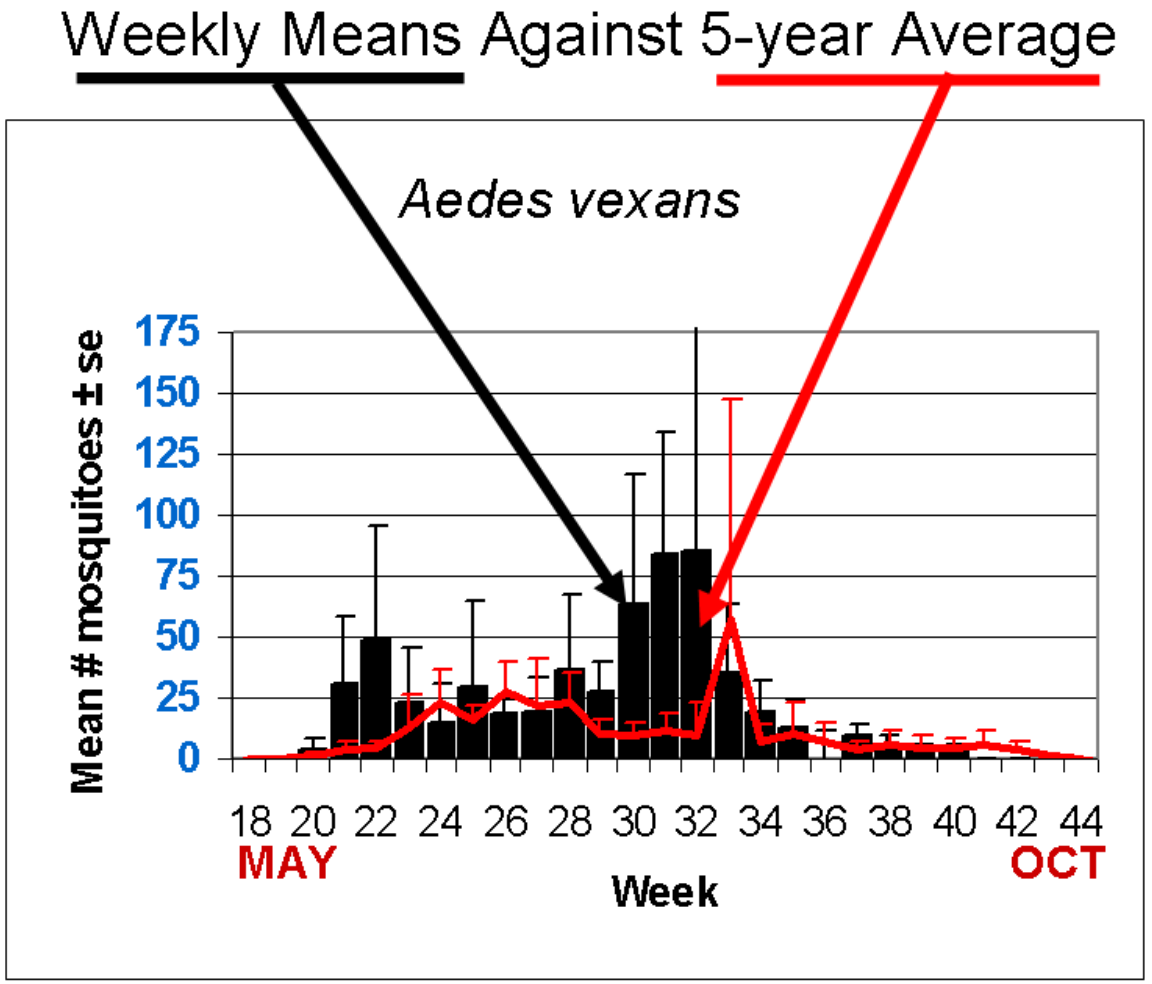
The three figures show the interpolation of average maximum and minimum temperature and total precipitation for the first two weeks of September in New Jersey. Data points are from 35 weather stations maintained through the New Jersey Weather & Climate Network and the State Climatologist. Interpolation between points was performed using ArcMap 9.2.

In September, average high temperatures were highest the Pinelands and parts of the Suburban Corridor. Average low temperatures were again highest along the coastal region. The southern half of New Jersey experienced higher rainfall. In general, it was warmest in the Pinelands and the suburbs during the day, warmer along the coast at night and wetter in the south.

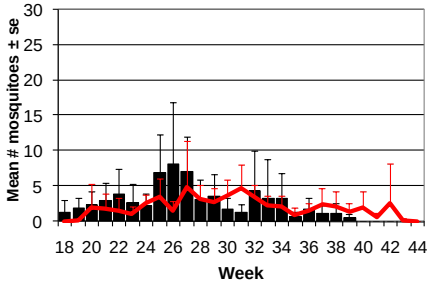
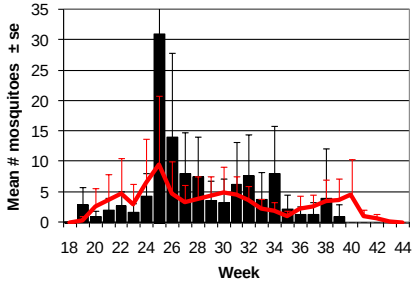
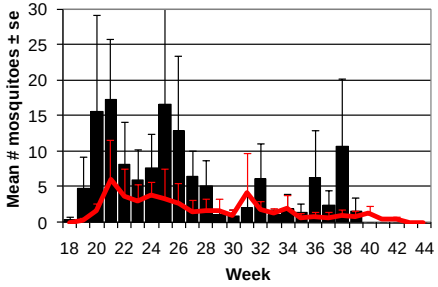
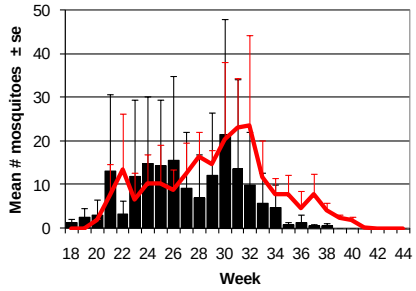
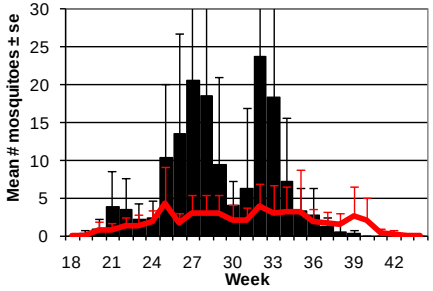
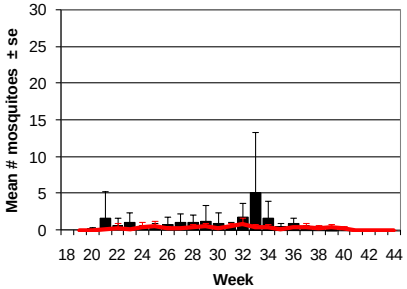
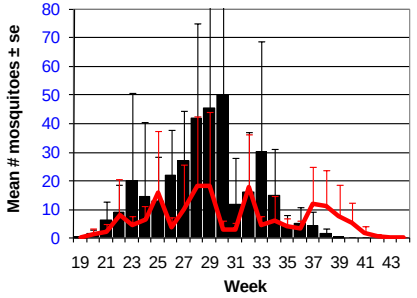
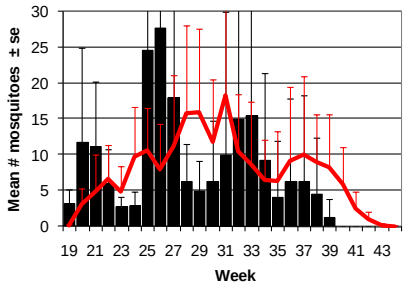
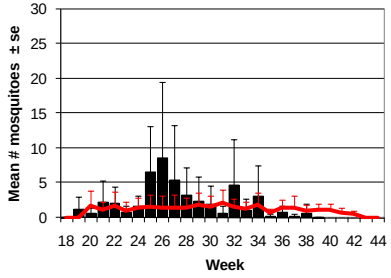
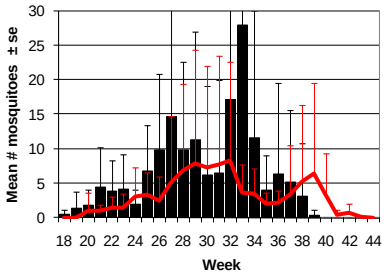
NJ Weather & Climate NETWORK

ONJSC at Rutgers University

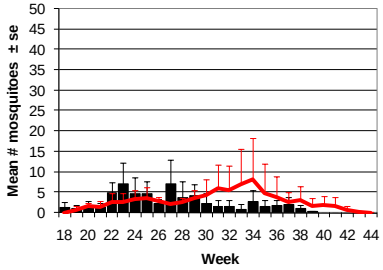
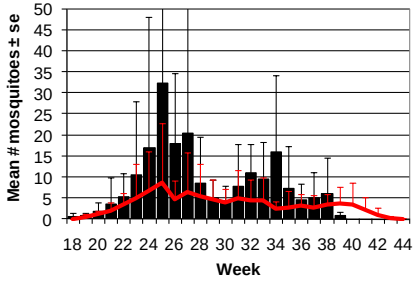
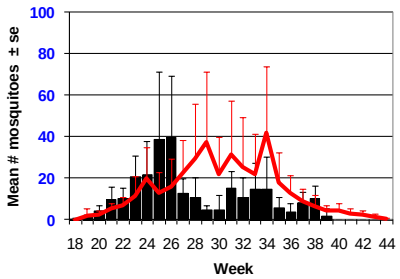
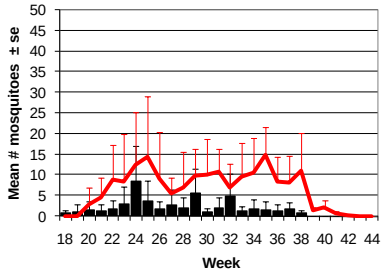
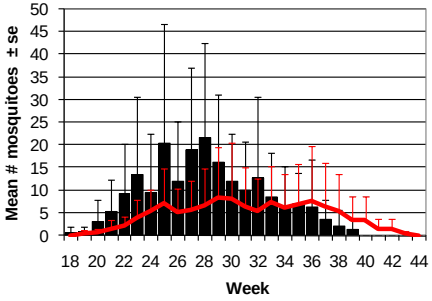
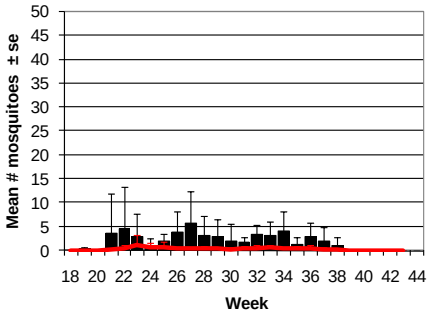
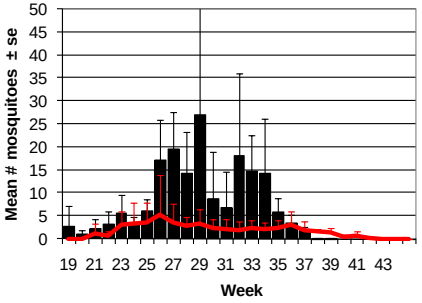
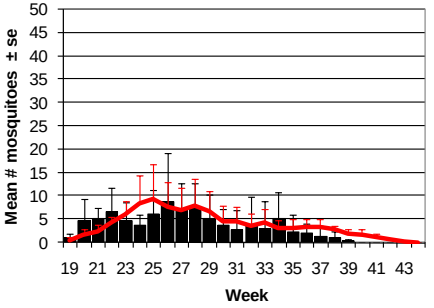
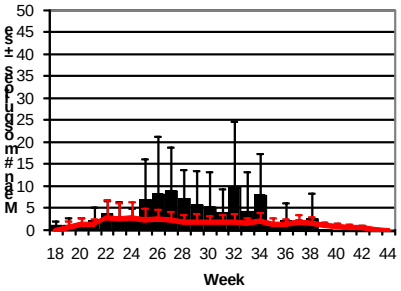
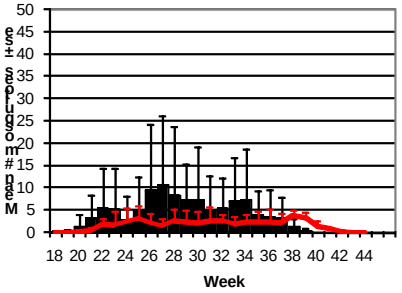
The Species Graphs: The species graph pages include a graph with two plots for each of the ten regions defined on the first page (Agricultural, Coastal, Delaware Bayshore, Delaware River, New York Metro, North-Central, Northwestern, Philadelphia Metro, Pinelands, and Suburban Corridor). Below is an example 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, Cumberland, Hudson, Hunterdon, Mercer, Monmouth, Morris, Ocean, Somerset and Warren counties. Note: County data is sent in at a variety of times during the week.



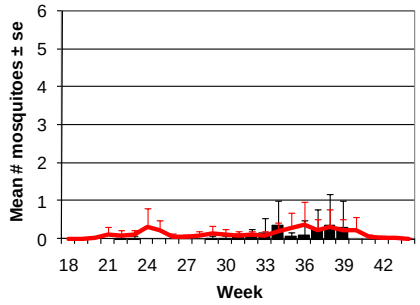
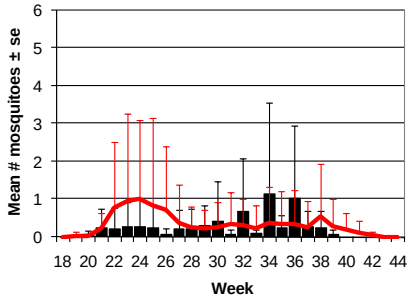
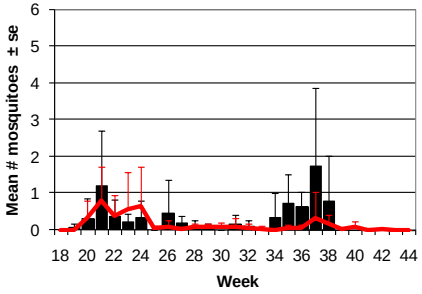
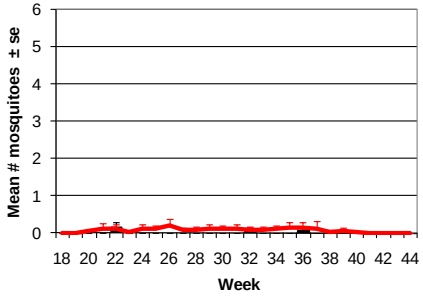
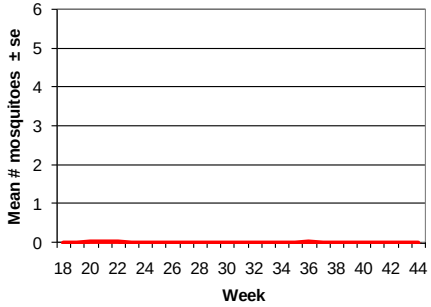
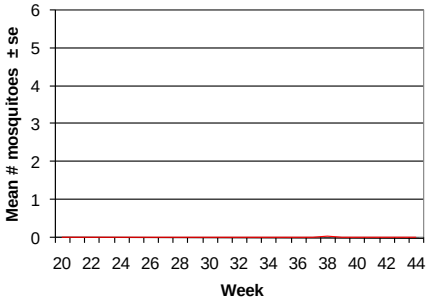
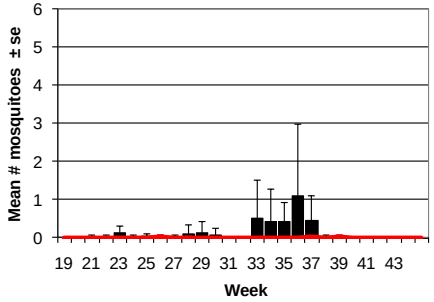
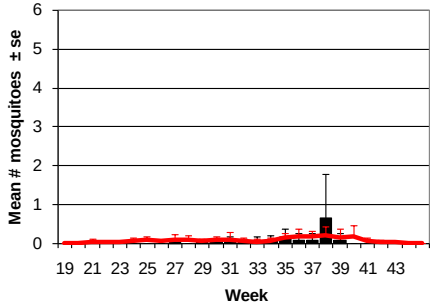
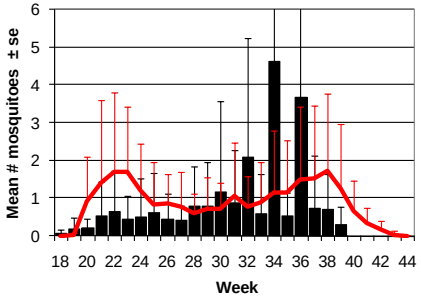
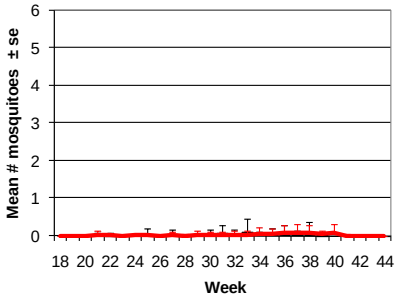
Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes vexans* populations continue to decrease through much of the state. The Delaware Bayshore showed a slight increase in *Ae. vexans* activity but this was low compared to the previous week.	

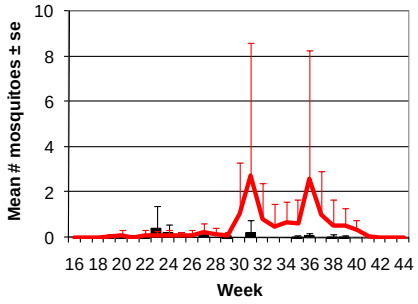
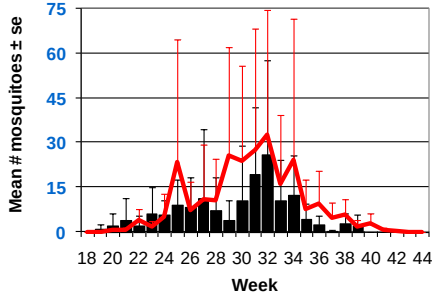
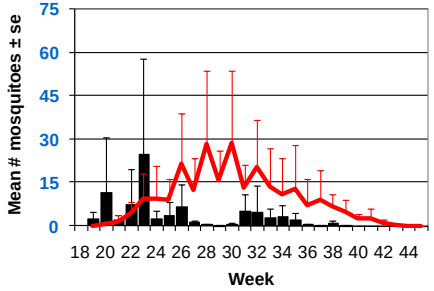
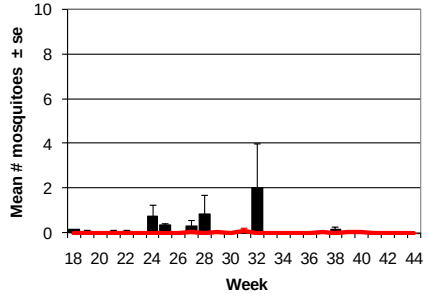
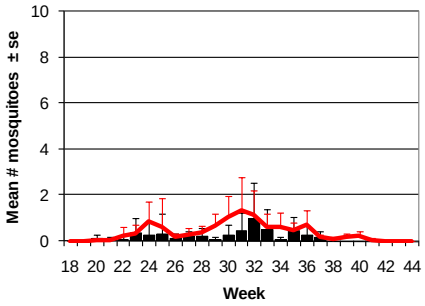
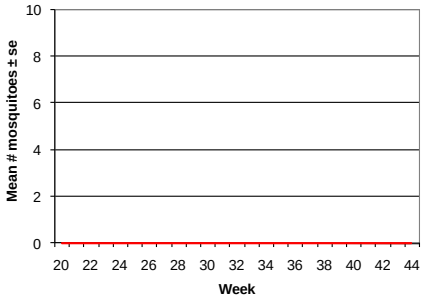
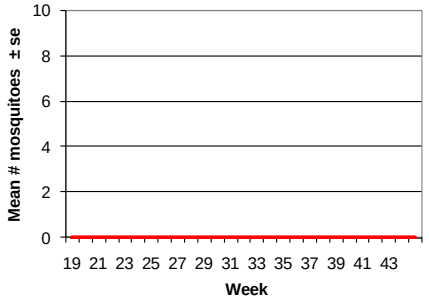
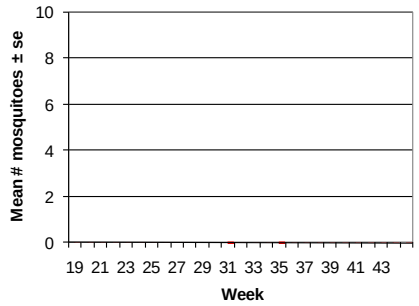
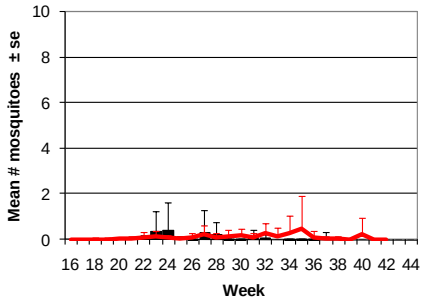
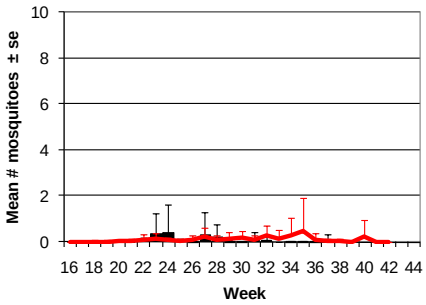
Culex Mix – Permanent Water Species
Multivoltine *Culex*/*Anopheles* (*Cx. pipiens* Type)

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Culex* mosquitoes continue to search and enter overwintering shelters. Populations in most regions, including in favored habitat of New York Metropolitan region, are dropping below the recent historical trends. The exception is in the North Central Rural region, but populations there are currently quite low when compared to either earlier in the season or to other regions.	

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**	
		Populations of *Culiseta melanura*, the enzootic ornithophilic vector of eastern equine encephalitis, appear to be on the decline for areas of high populations, such as the Coastal, Delaware Bayshore and Pinelands regions. However, due to the high number of positive EEE pools from both enzootic (*Cs. melanura*) and potential epizootic vectors (*Aedes japonicus*) have occurred, the use of mosquito repellents and other proactive control measures should be encouraged and done.	

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 making the final and minor emergence for the season. Historical data indicates their presence until late into October. This species has been implicated as a potential bridge vector for eastern and Venezuelan equine encephalitis and dog heartworm. It may also play a role in the little known Cache Valley virus (CVV). While CVV apparently very rarely causes disease in humans (Campbell et al., 2006), about 10 percent of southern New Jersey *Ae. sollicitans* were infected by this virus in the 1980's and they could transmit this bunyavirus to mice (Main and Crans 1986).	

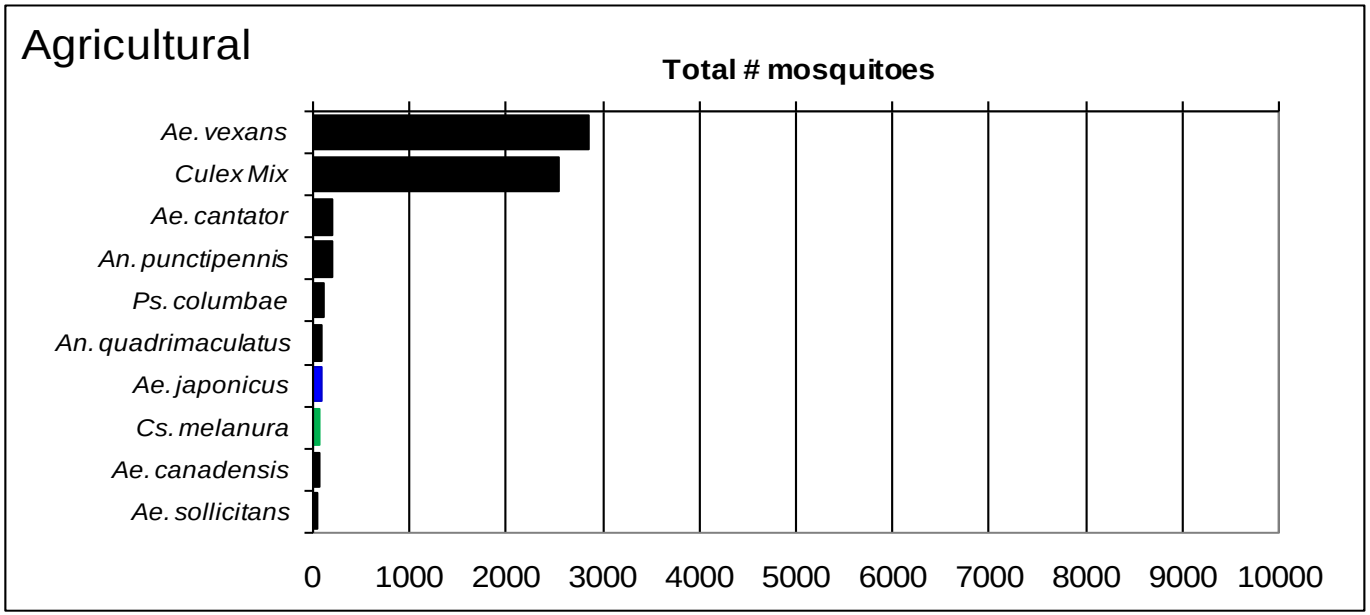
Campbell GL, et al. 2006 Second human case of Cache Valley virus disease. Emerging Infectious Diseases Vol12 [cited 6 October]. Available from http://www.cdc.gov/ncidod/EID/vol12no05/05-1625.htm

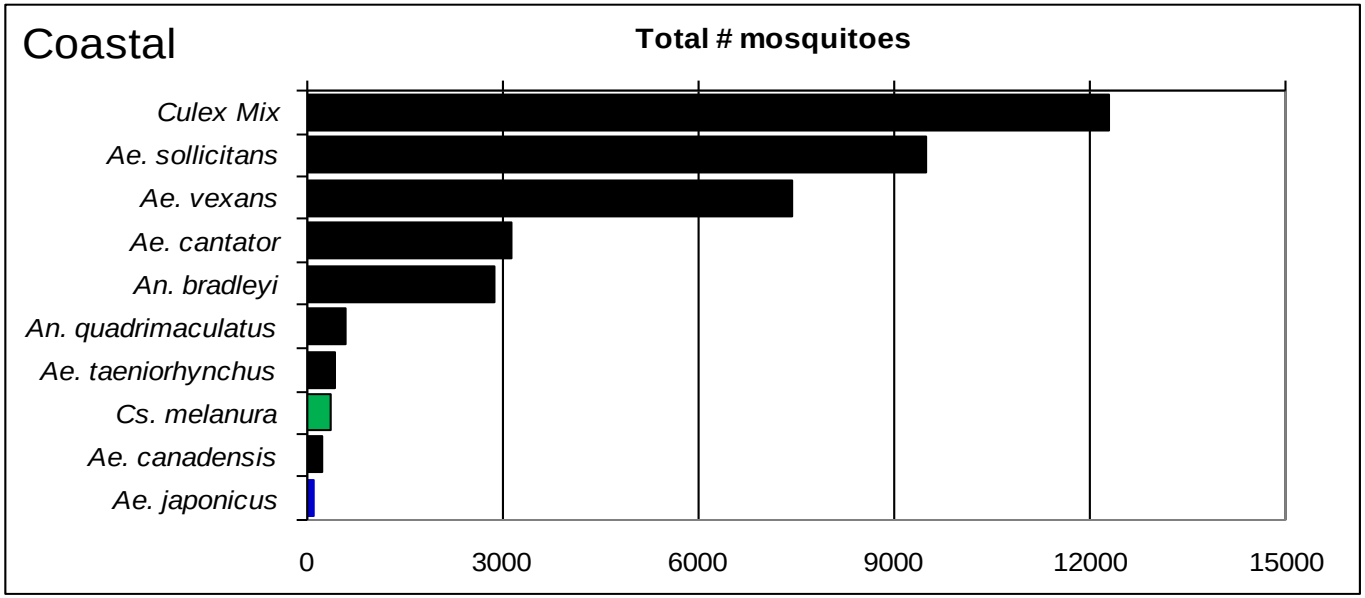
Main, A. J. and W. J. Crans 1986 Cache Valley virus from *Aedes sollicitans* in New Jersey, JAMCA, 2:95-96.

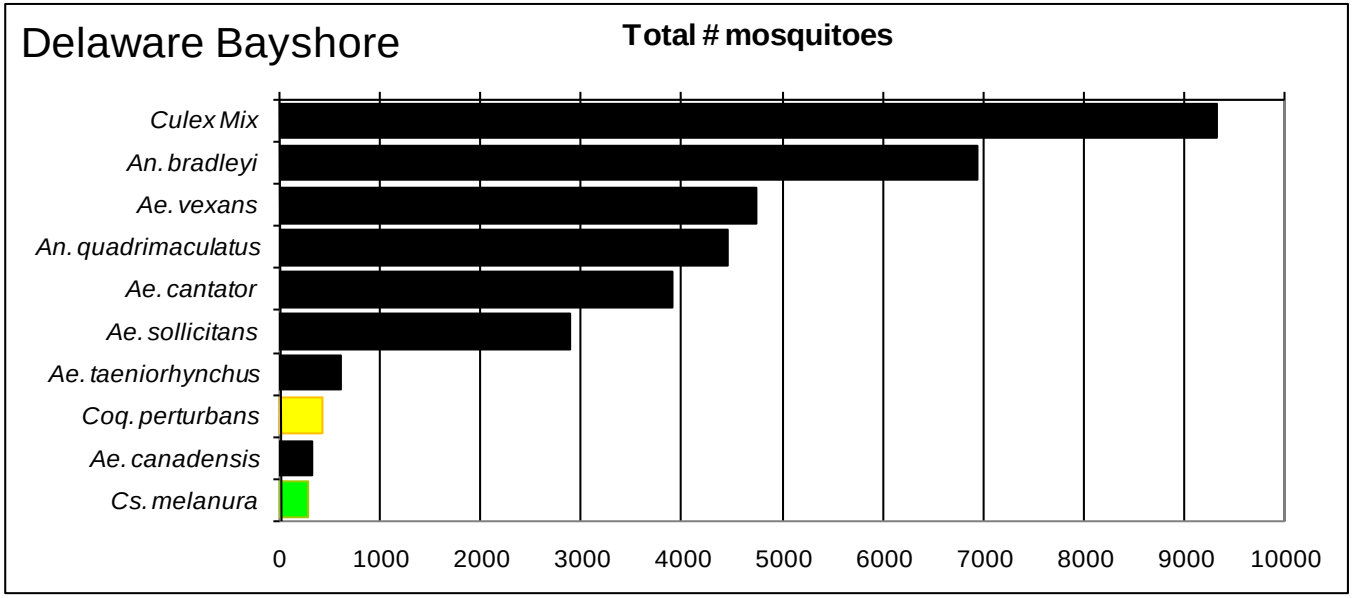
WNV *EEE*

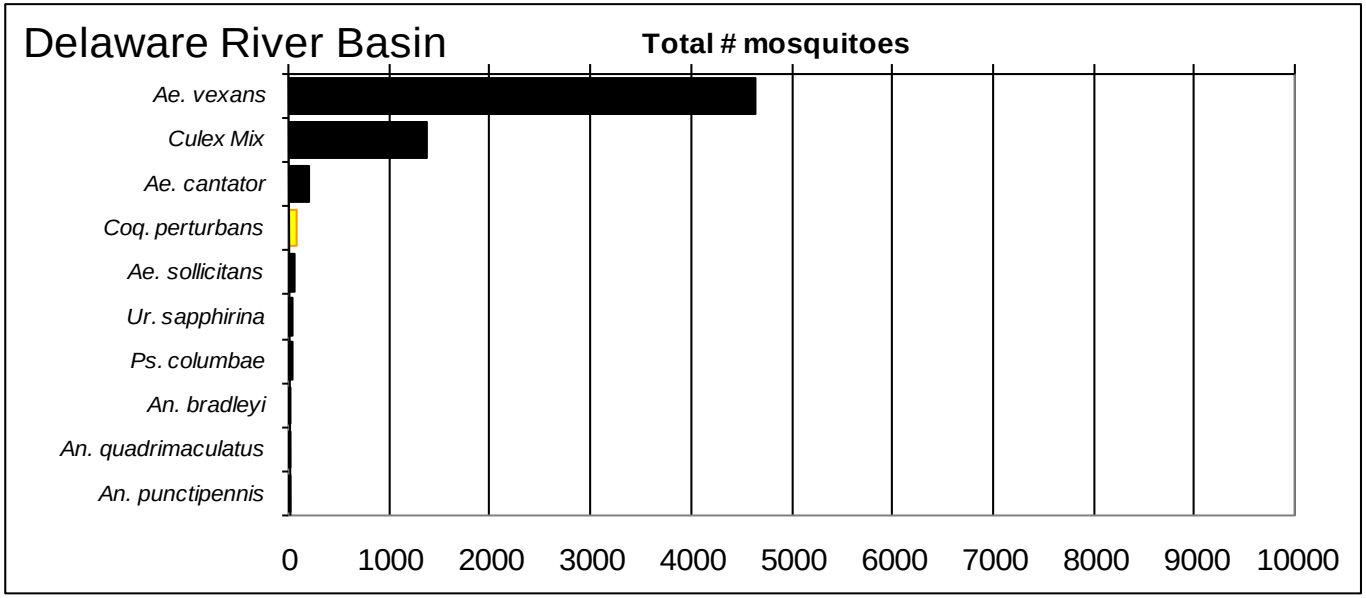
Top Ten Mosquito Species/Region - *Ae. albopictus,* *Ae. japonicus (invasives);* *Cs. melanura or Cx. erraticus* *Coq. perturbans*

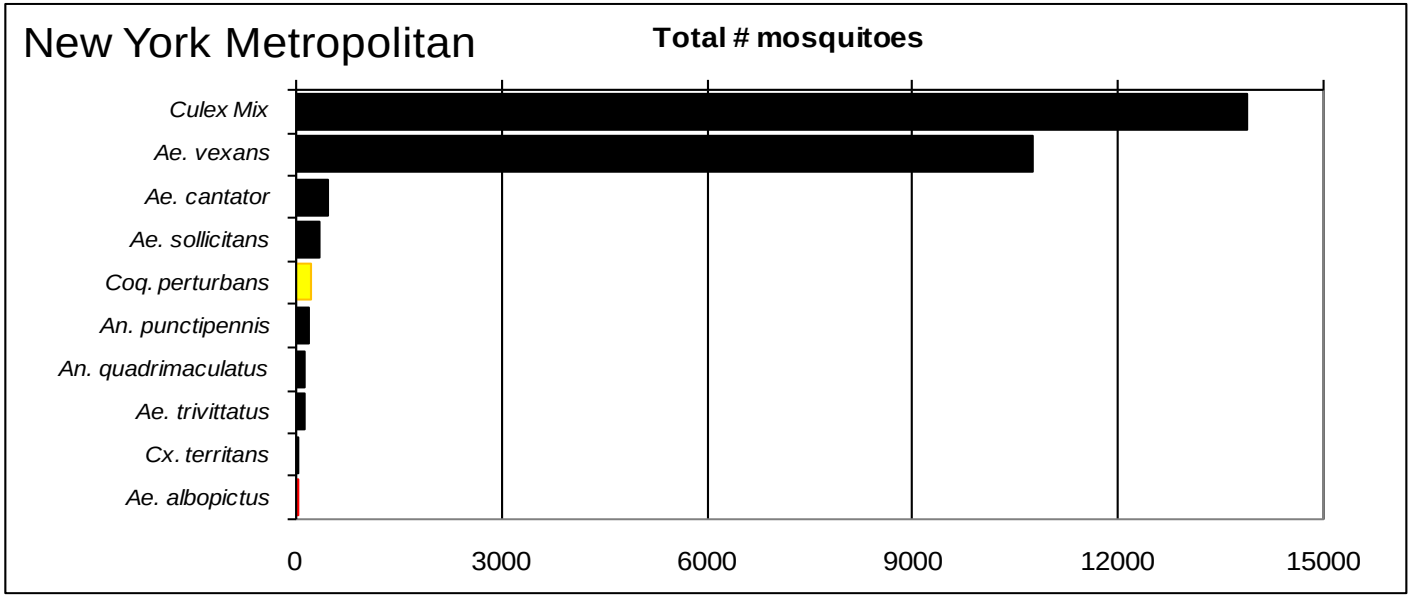
Note: In early season when fewer species are caught, graphs may show less than ten species listed.

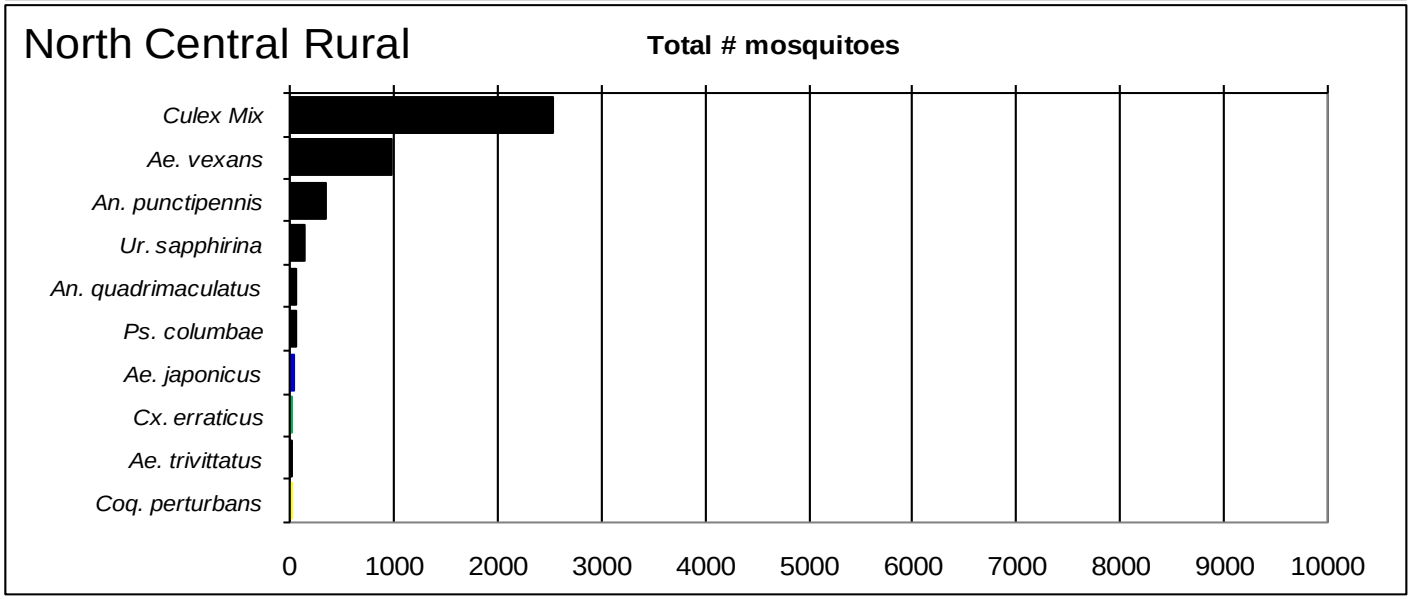


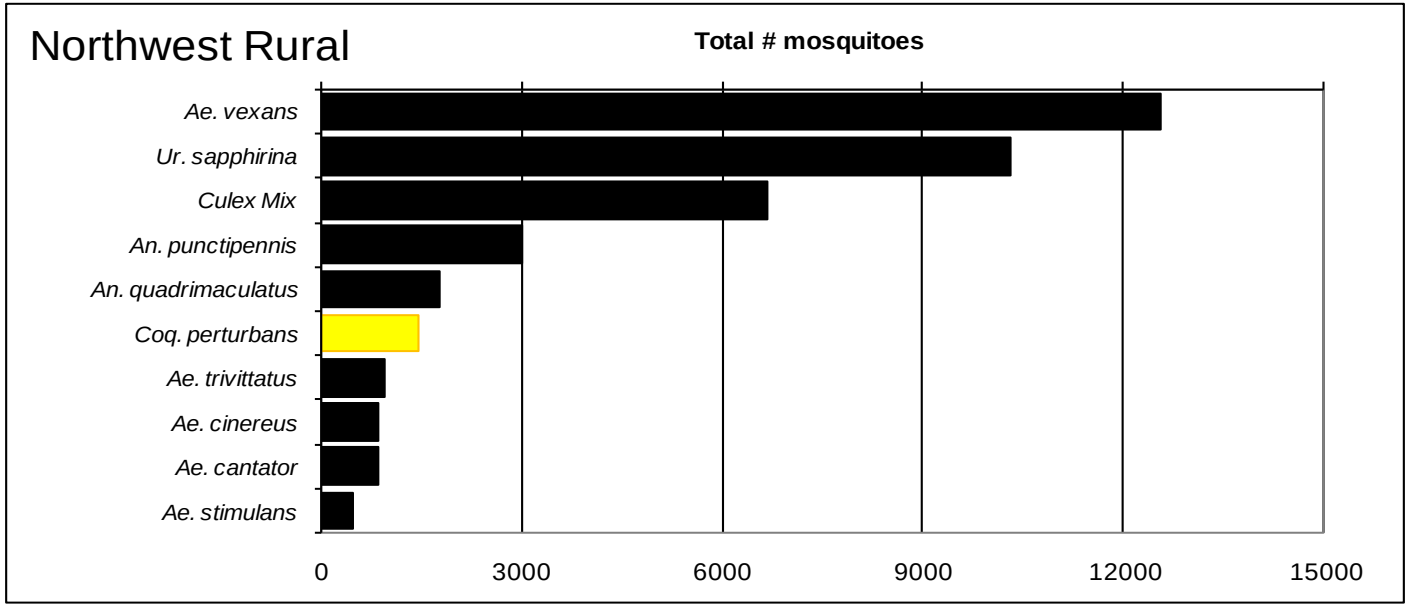


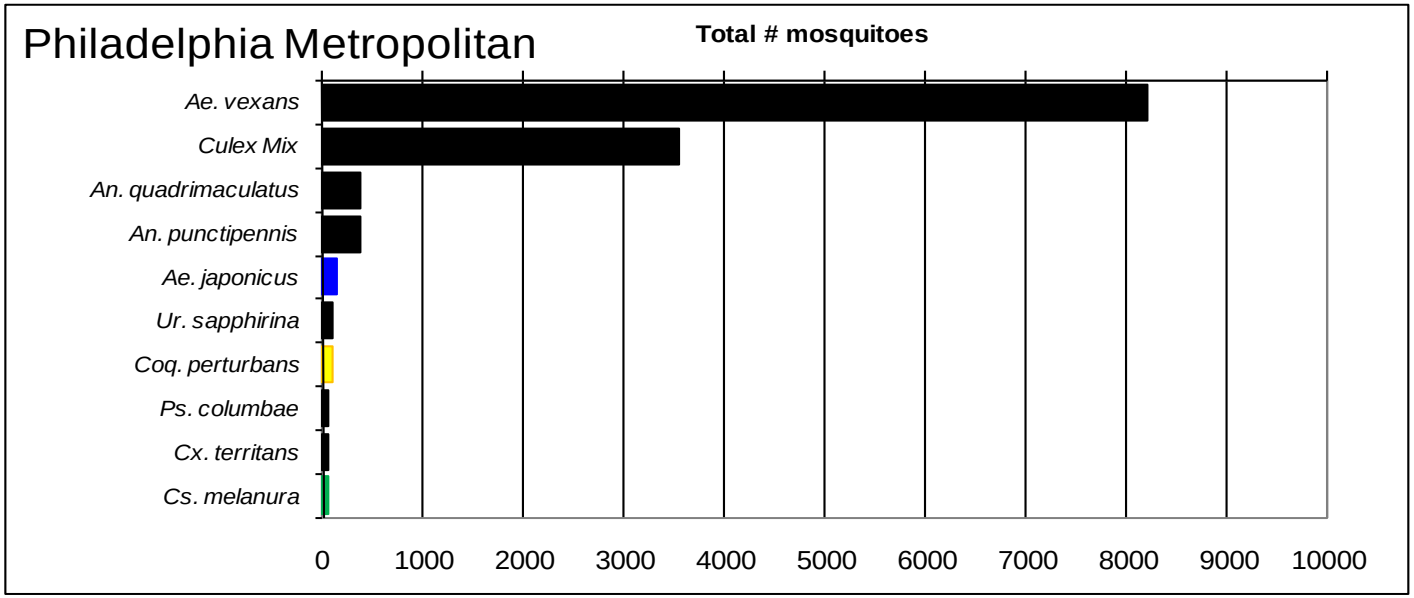

Delaware Bayshore
Total # mosquitoes
Culex Mix
An. bradleyi
Ae. vexans
An. quadrimaculatus
Ae. cantator
Ae. sollicitans
Ae. taeniorhynchus
Coq. perturbans
Ae. canadensis
Cs. melanura
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

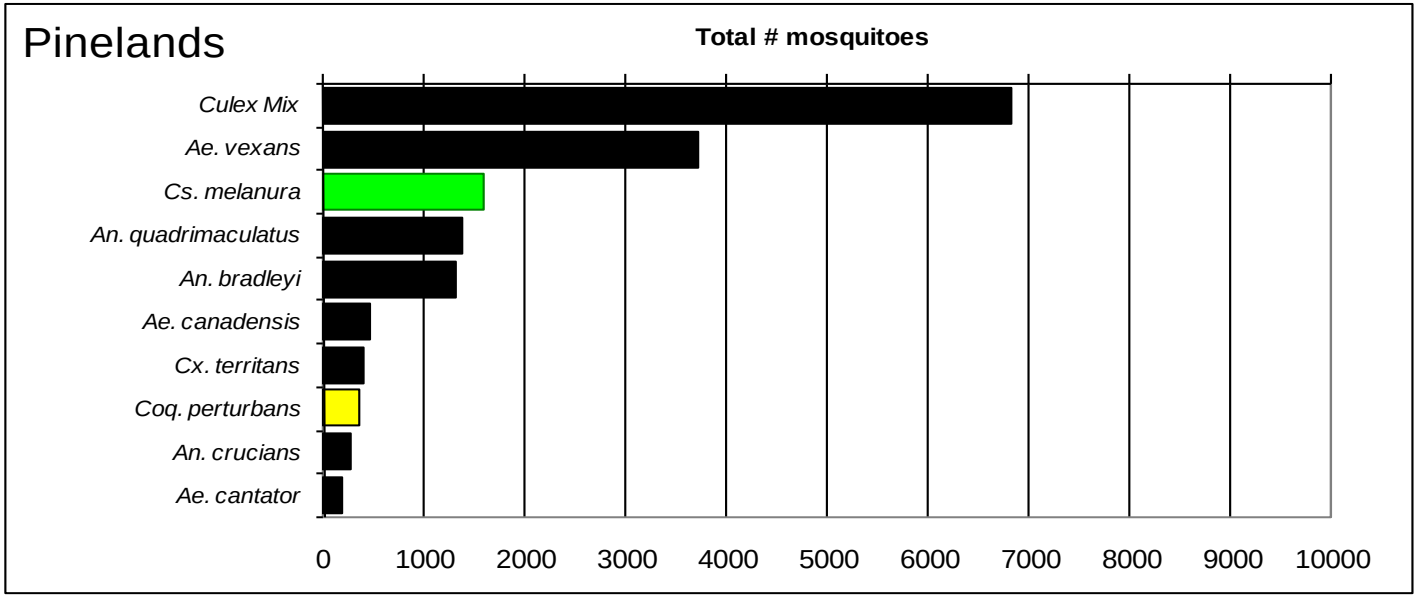

Delaware River Basin
Total # mosquitoes
Ae. vexans
Culex Mix
Ae. cantator
Coq. perturbans
Ae. sollicitans
Ur. sapphirina
Ps. columbae
An. bradleyi
An. quadrimaculatus
An. punctipennis
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

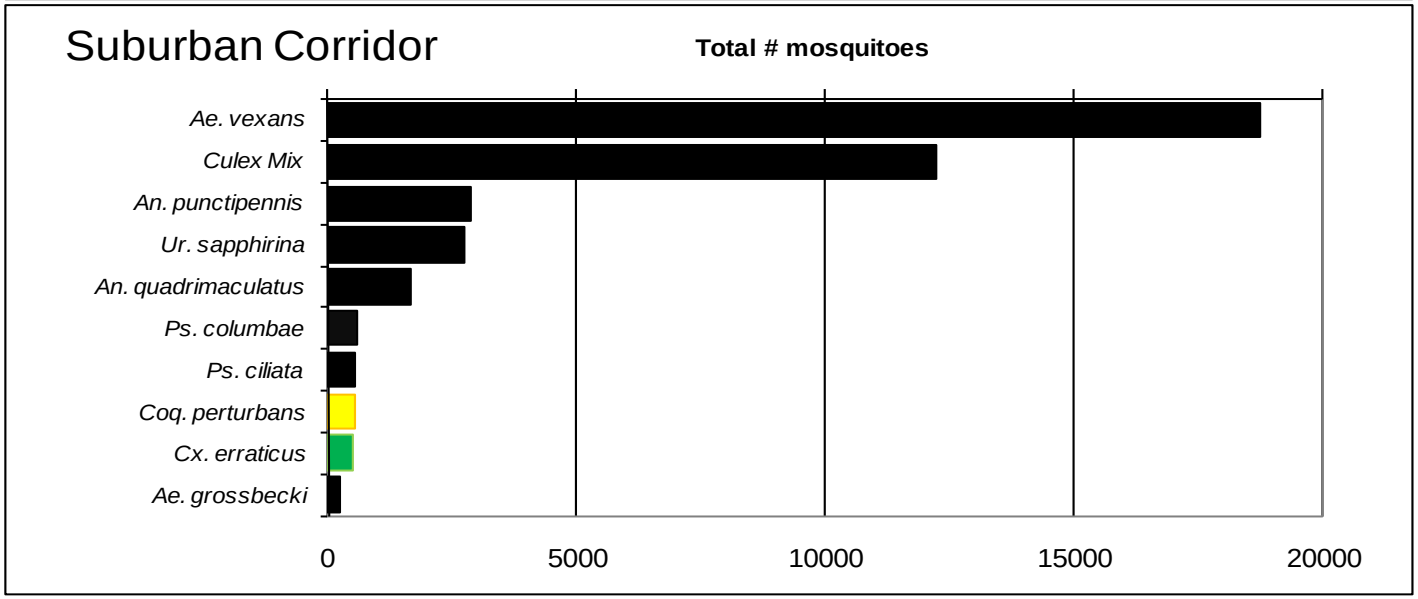

New York Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. cantator
Ae. sollicitans
Coq. perturbans
An. punctipennis
An. quadrimaculatus
Ae. trivittatus
Cx. territans
Ae. albopictus
0
3000
6000
9000
12000
15000


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


Northwest Rural
Total # mosquitoes
Ae. vexans
Ur. sapphirina
Culex Mix
An. punctipennis
An. quadrimaculatus
Coq. perturbans
Ae. trivittatus
Ae. cinereus
Ae. cantator
Ae. stimulans
0
3000
6000
9000
12000
15000


Philadelphia Metropolitan
Total # mosquitoes
Ae. vexans
Culex Mix
An. quadrimaculatus
An. punctipennis
Ae. japonicus
Ur. sapphirina
Coq. perturbans
Ps. columbae
Cx. territans
Cs. melanura
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


Pinelands
Total # mosquitoes
Culex Mix
Ae. vexans
Cs. melanura
An. quadrimaculatus
An. bradleyi
Ae. canadensis
Cx. territans
Coq. perturbans
An. crucians
Ae. cantator
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


Suburban Corridor
Total # mosquitoes
Ae. vexans
Culex Mix
An. punctipennis
Ur. sapphirina
An. quadrimaculatus
Ps. columbae
Ps. ciliata
Coq. perturbans
Cx. erraticus
Ae. grossbecki
0
5000
10000
15000
20000