RUTGERS
New Jersey Agricultural Experiment Station

NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report for 20 September to 26 September 2009, CDC Weeks 37

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Center for Vector Biology

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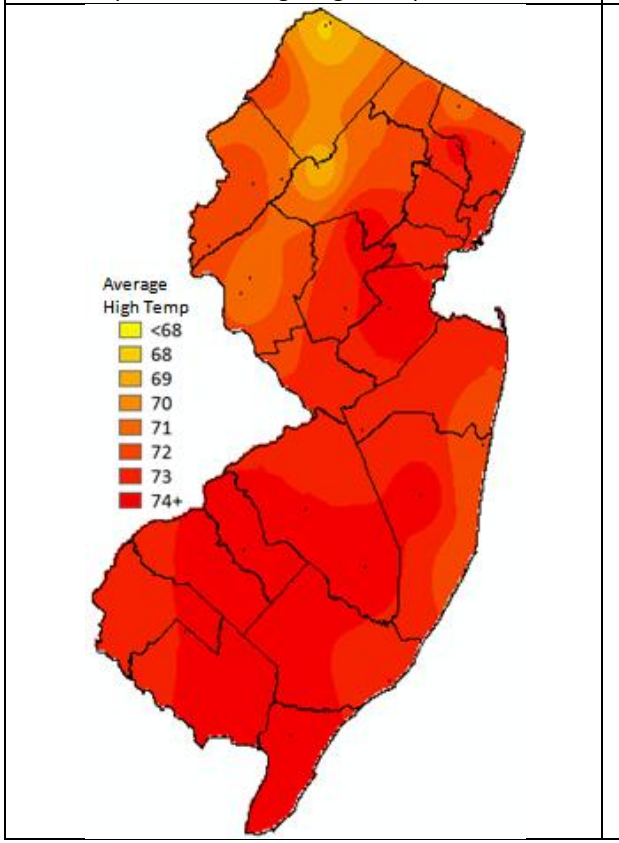
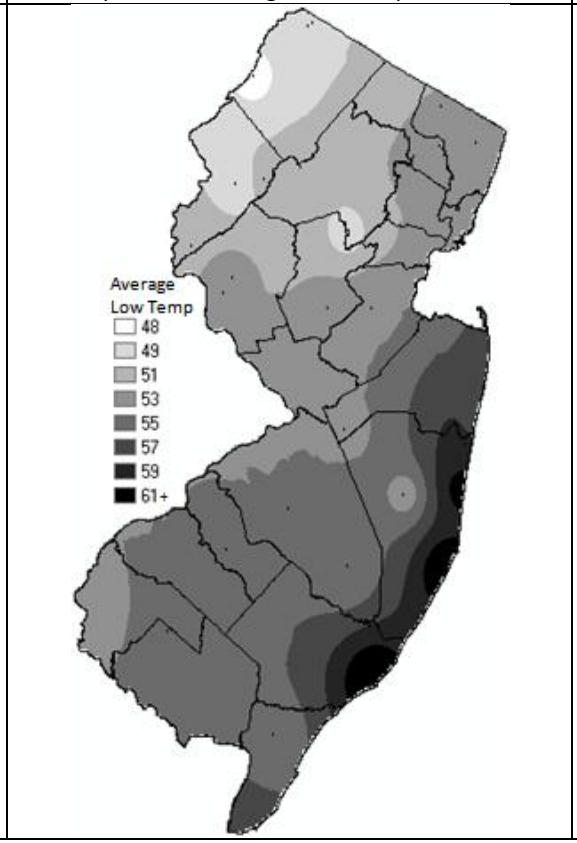
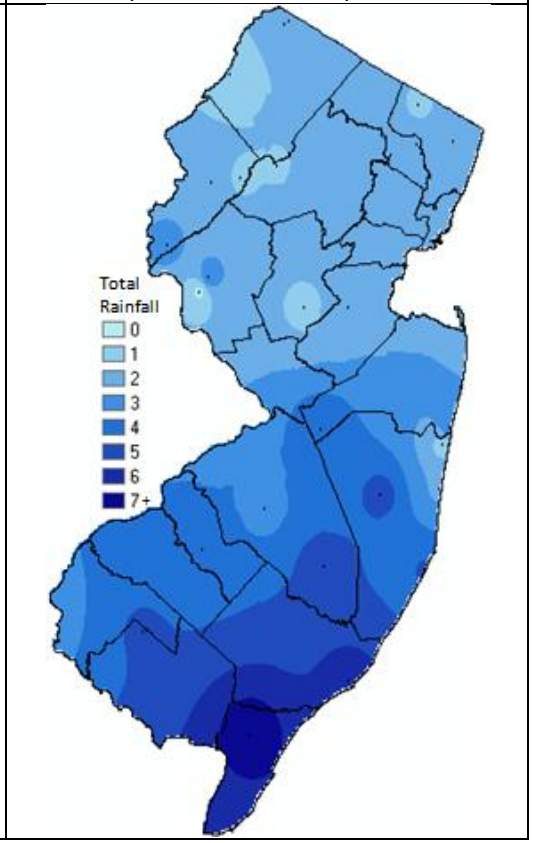
Summary table – Week 38

	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	**0.36**	**2.16**	**0**	**0.57**	**3.11**	**0**	**0.00**	**<0.01**	**0**	**0.02**	**0.54**	**0**
Coastal	**4.05**	**3.52**	**1**	**6.00**	**3.56**	**2**	**0.00**	**0.02**	**0**	**2.95**	**5.79**	**0**
Delaware Bayshore	**8.54**	**0.98**	**4**	**8.49**	**6.85**	**1**	**0.00**	**<0.01**	**0**	**0.86**	**6.92**	**0**
Delaware River Basin	**0.61**	**4.20**	**0**	**0.71**	**11.05**	**0**	**0.00**	**0.18**	**0**	**0.14**	**0.03**	**0**
New York Metro	**0.61**	**2.67**	**0**	**1.93**	**5.38**	**0**	**0.00**	**<0.01**	**0**	**0.00**	**0.12**	**0**
North Central Rural	**0.00**	**0.36**	**0**	**0.06**	**0.28**	**0**	**0.00**	**0.00**	**0**	**0.00**	**0.00**	**0**
Northwest Rural	**1.37**	**11.21**	**0**	**0.14**	**1.56**	**0**	**0.00**	**<0.01**	**0**	**0.00**	**0.00**	**0**
Philadelphia Metro	**3.12**	**9.04**	**0**	**0.50**	**2.89**	**0**	**0.00**	**0.07**	**0**	**0.00**	**0.00**	**0**
Pinelands	**0.52**	**1.02**	**0**	**2.40**	**1.70**	**1**	**0.00**	**0.05**	**0**	**0.00**	**0.06**	**0**
Suburban Corridor	**0.21**	**5.26**	**0**	**0.29**	**3.86**	**0**	**0.00**	**0.07**	**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: *Aedes vexans* shifted increased activity from North New Jersey to the southern portions, such as in the Coastal and Delaware Bayshore in regions. *Culex* species also were in greater abundance in the Delaware Bayshore region as well as in the Pinelands.

Climate Factors

September Average High Temperatures	September Average Low Temperatures	September Total Precipitation
		

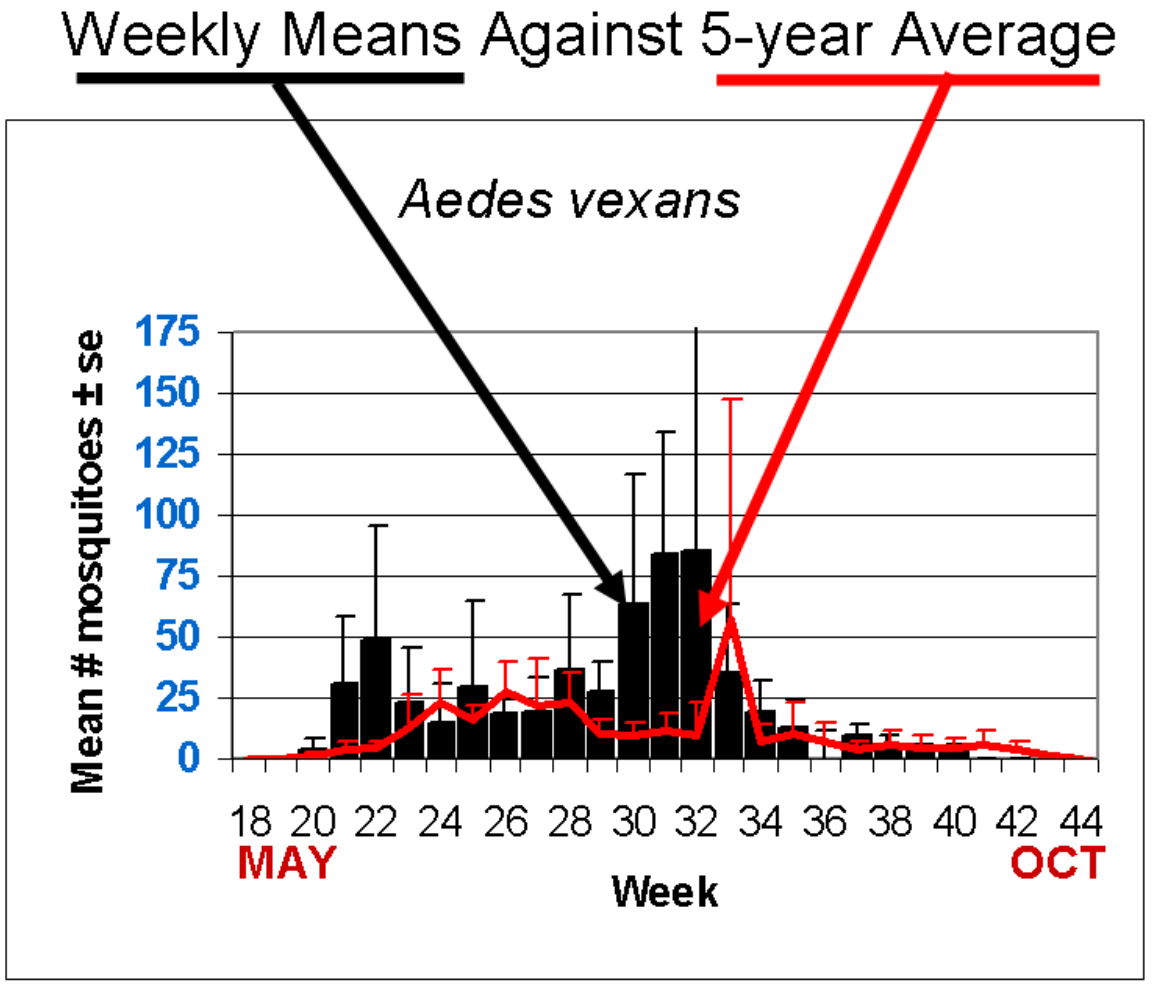
The three figures show the interpolation of average maximum and minimum temperature and total precipitation for the first two weeks of September in New Jersey. Data points are from 35 weather stations maintained through the New Jersey Weather & Climate Network and the State Climatologist. Interpolation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

In September, average high temperatures were highest the Pinelands and 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.

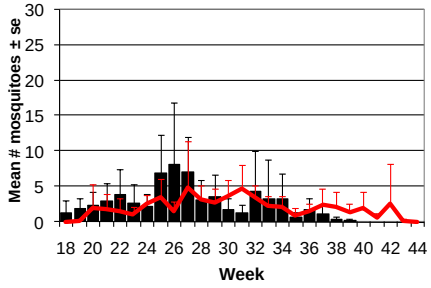
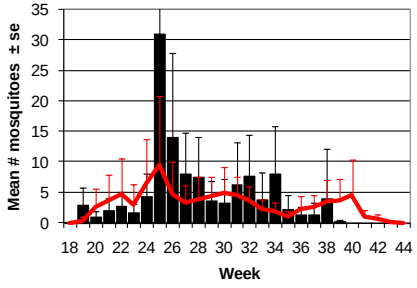
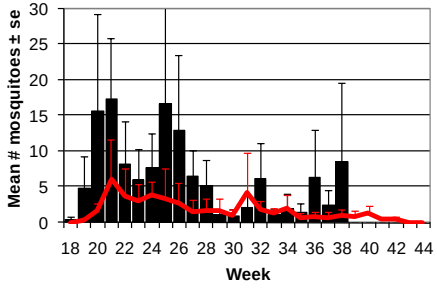
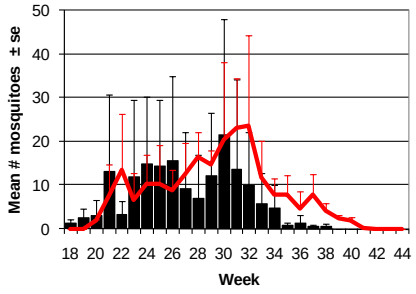
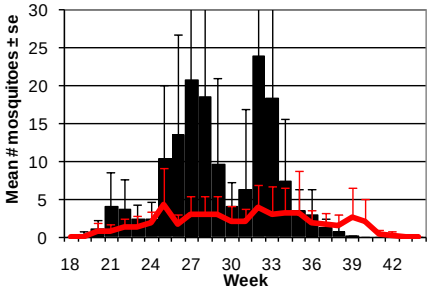
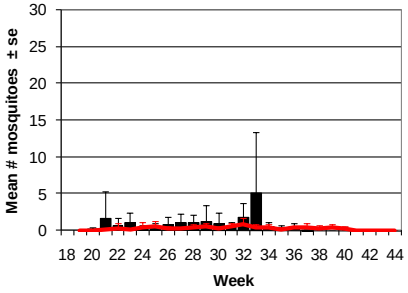
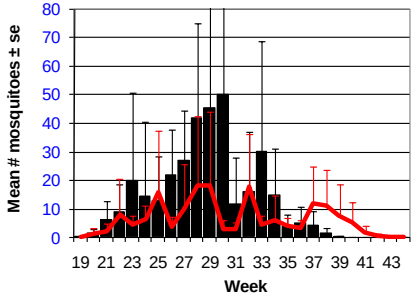
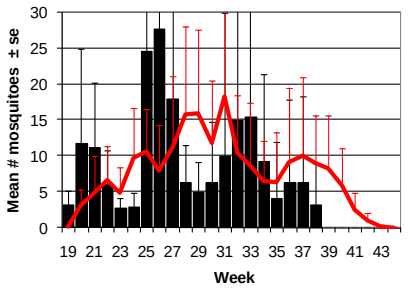
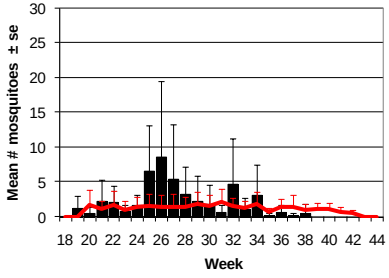
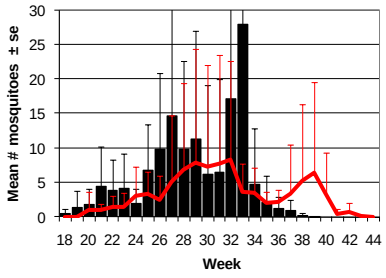
NJ Weather & Climate NETWORK

ONJSC at Rutgers University

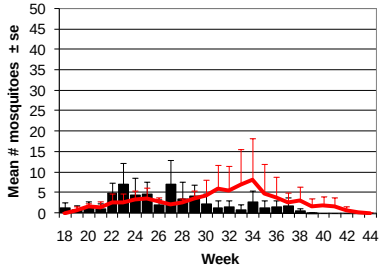
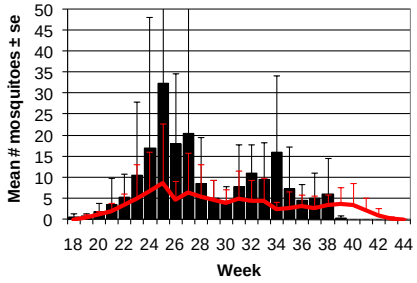
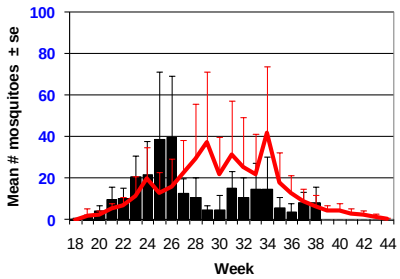
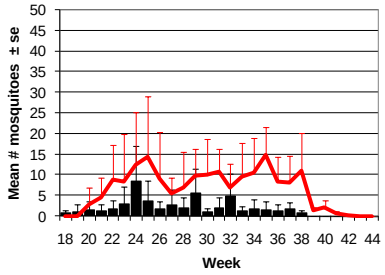
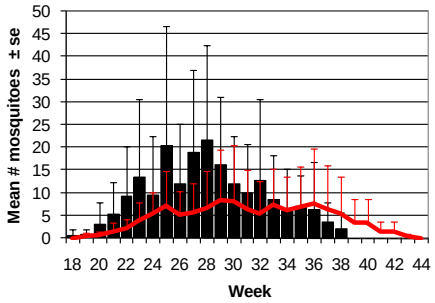
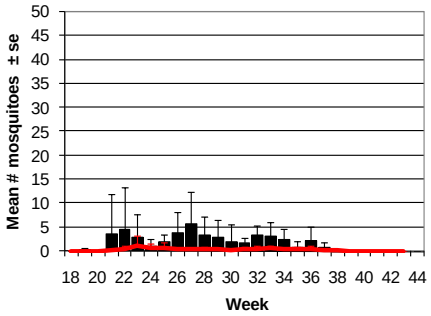
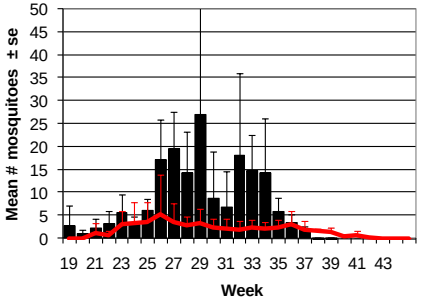
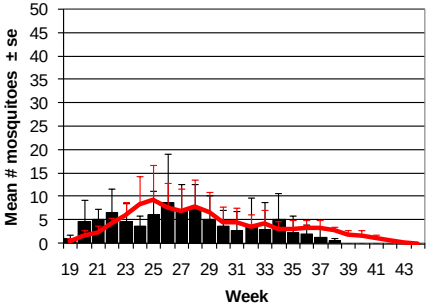
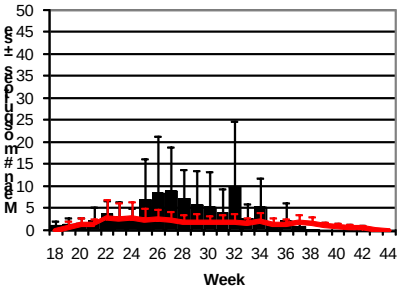
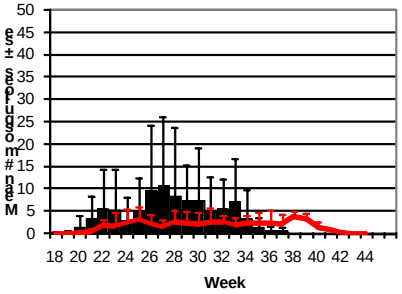
The Species Graphs: The species graph pages include a graph with two plots for each of the ten regions defined on the first page (Agricultural, Coastal, Delaware Bayshore, Delaware River, New York Metro, North-Central, Northwestern, Philadelphia Metro, Pinelands, and Suburban Corridor). Below is an example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



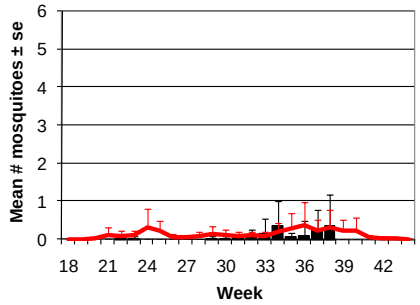
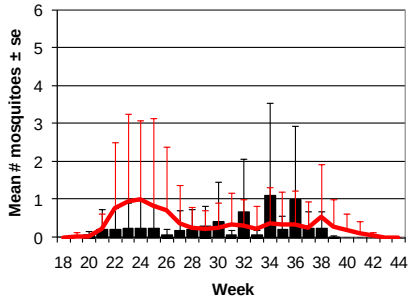
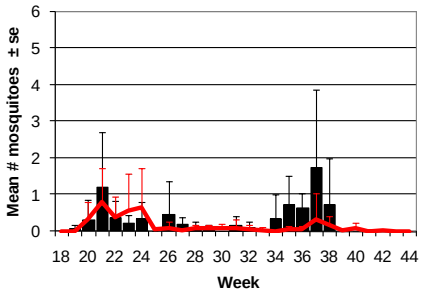
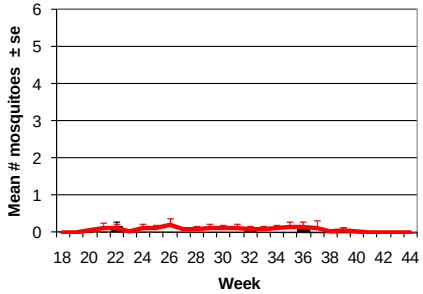
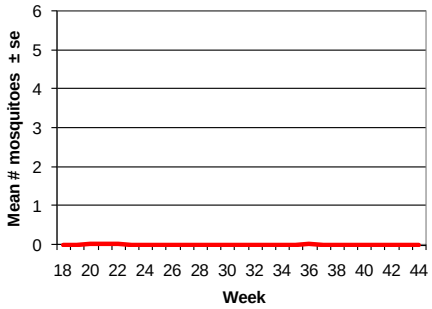
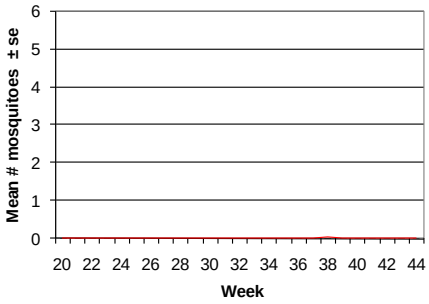
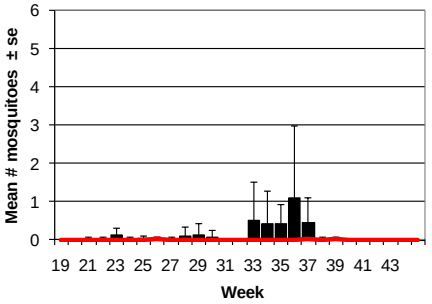
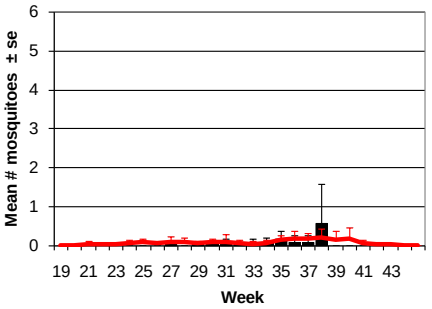
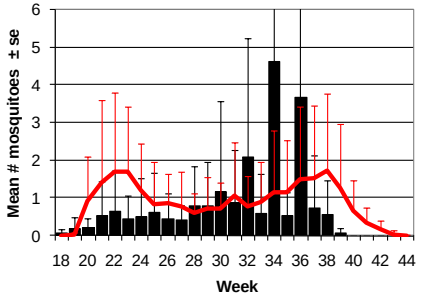
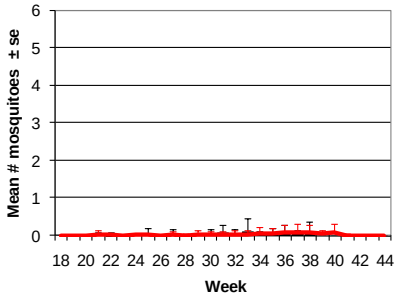
Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes vexans* populations continue to decrease through much of the state. The Coastal and Delaware Bayshore showed an increase in *Ae. vexans* activity but elsewhere in the state, populations have decreased noticeably. Recent decreases in nighttime temperatures will need to drop and remain low to end the season for this mosquito.	

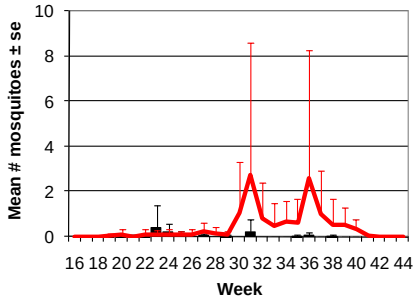
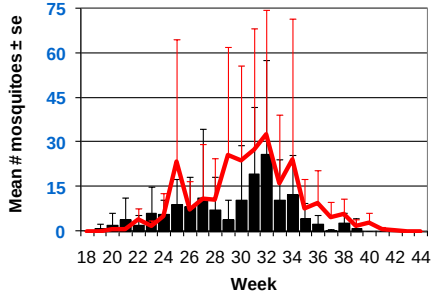
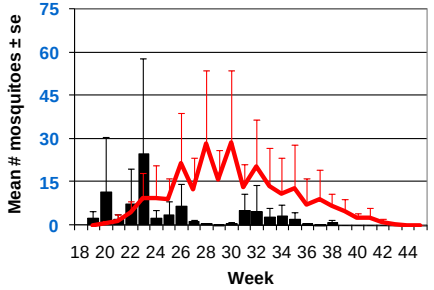
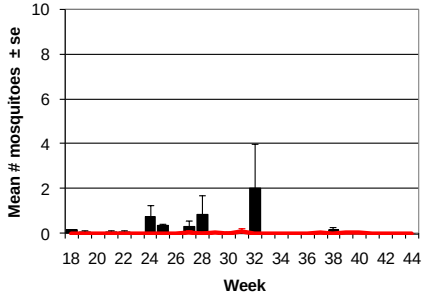
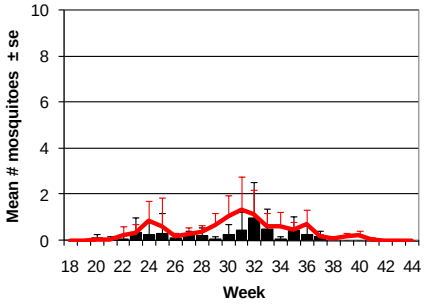
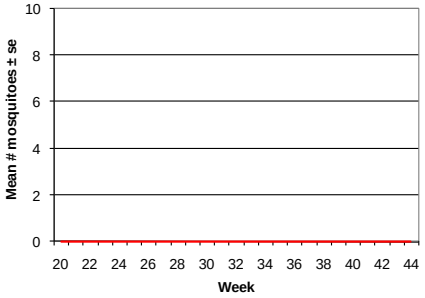
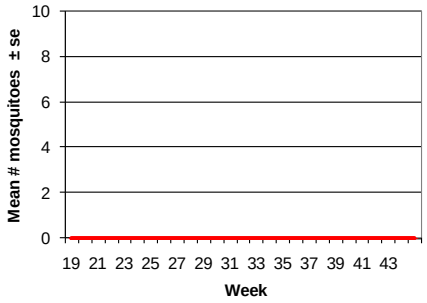
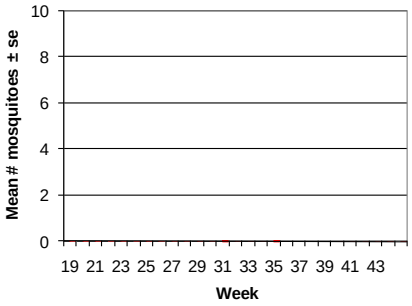
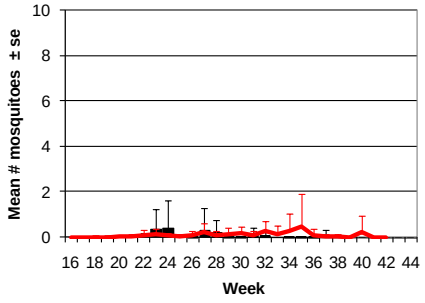
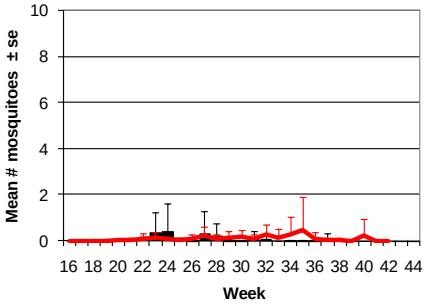
Culex Mix – Permanent Water Species
Multivoltine *Culex*/*Anopheles* (*Cx. pipiens* Type)

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Culex* abundance continues to be higher than historical levels in the Coastal region while the New York Metropolitan region appears to finally be decreasing in activity. Mated females should be seeking hibernaculae to overwinter in.	

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, show a significant peak in activity late in the second half of the season, such as in the Coastal, Delaware Bayshore, Northwestern Rural and the Pinelands regions. During this season of high eastern equine encephalitis activity here in New Jersey and up and down the eastern US, this second generation is likely the engine that helped generate amplification of virus in juvenile birds.	

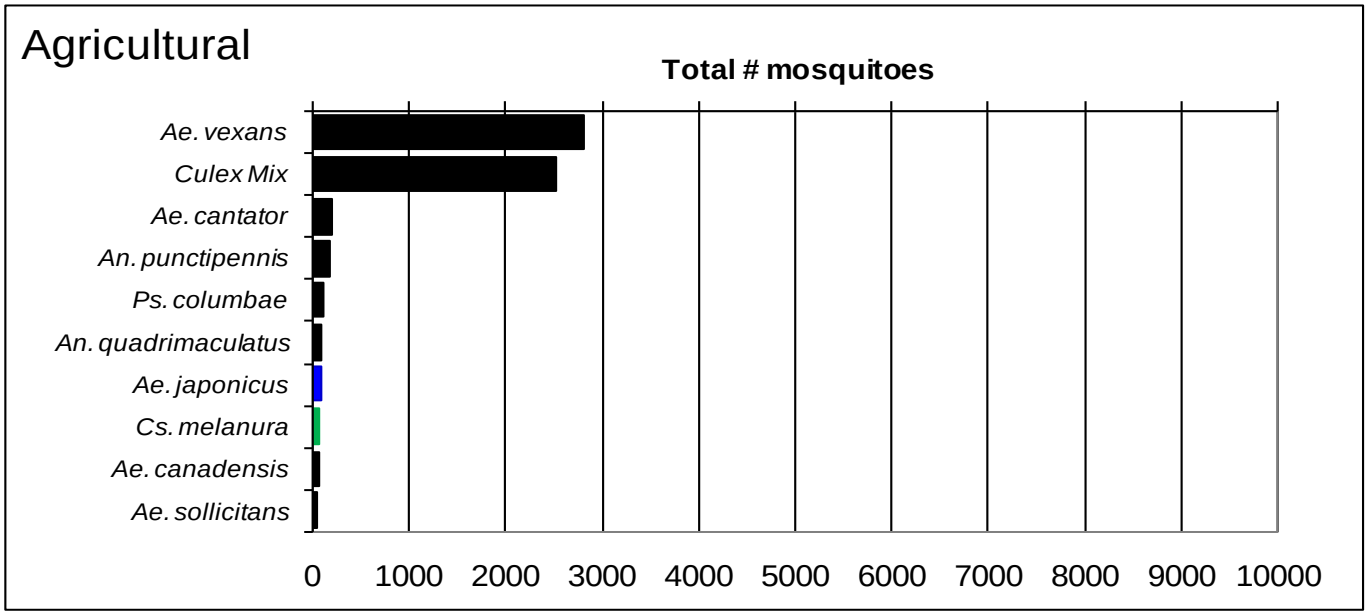
Aedes sollicitans - Salt Floodwater Species
Multivoltine Aedine (*Ae. sollicitans* Type)

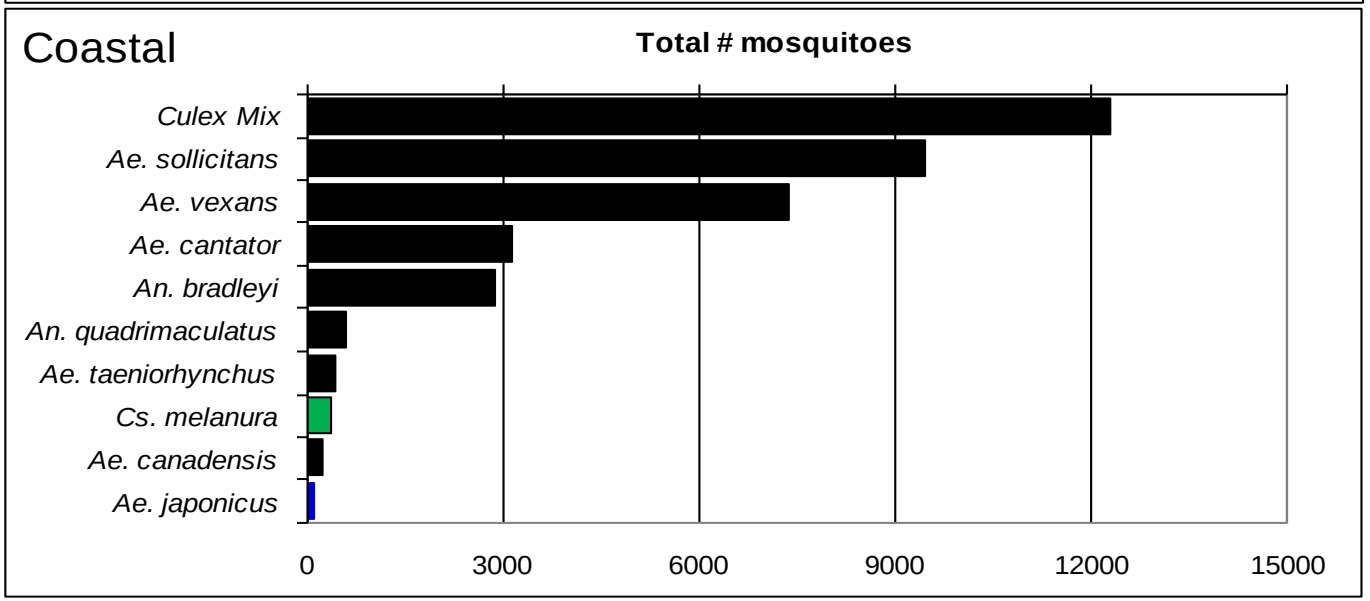
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes sollicitans* populations appear to be making the final and minor emergence for the season. The host preference studies indicate that *Aedes sollicitans* is opportunistic is what it hostseeks (Crans et al, 1996, The Blood-Feeding Habits of Aedes sollicitans (Walker) in Relation to Eastern Equine Encephalitis Virus in Coastal Areas of New Jersey, II. Results of Experiments with Caged Mosquitoes and the Effects of Temperature and Physiological Age on Host Selection. Journal of Vector Ecology 21: 1-5, and parous females is more likely to take a mammalian bloodmeal. As they shift activity to earlier in the day, they encounter humans and the complaints escalate. Next Full Moon: 4 October.	

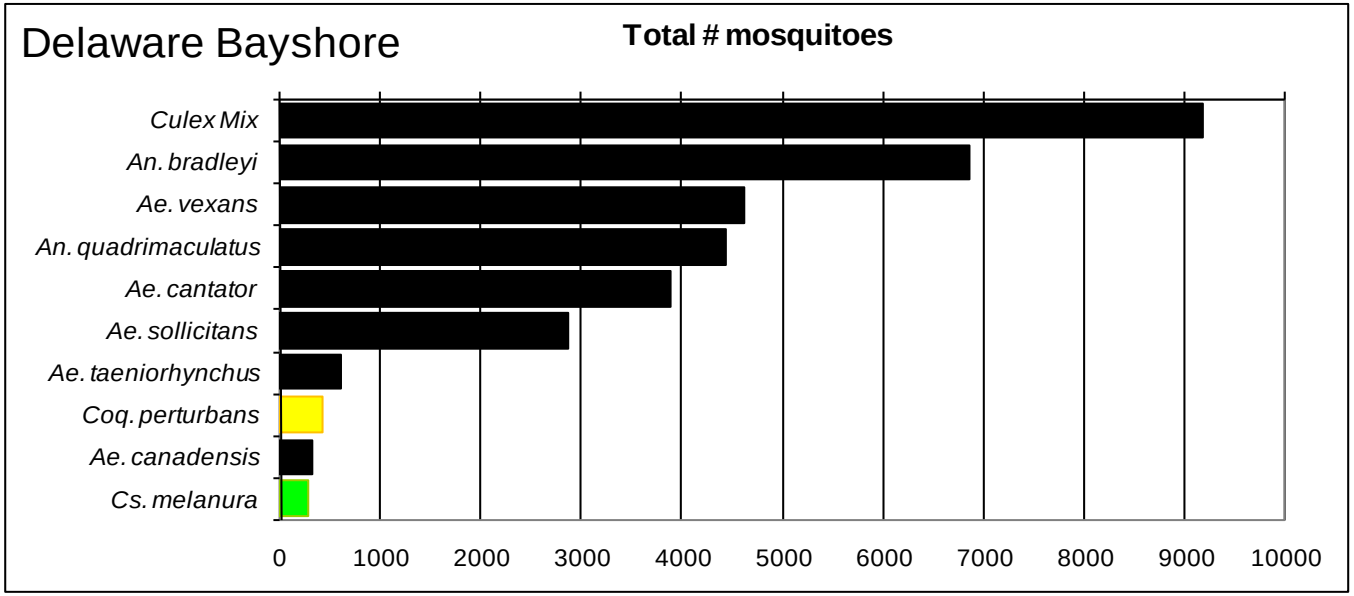
WNV *EEE*

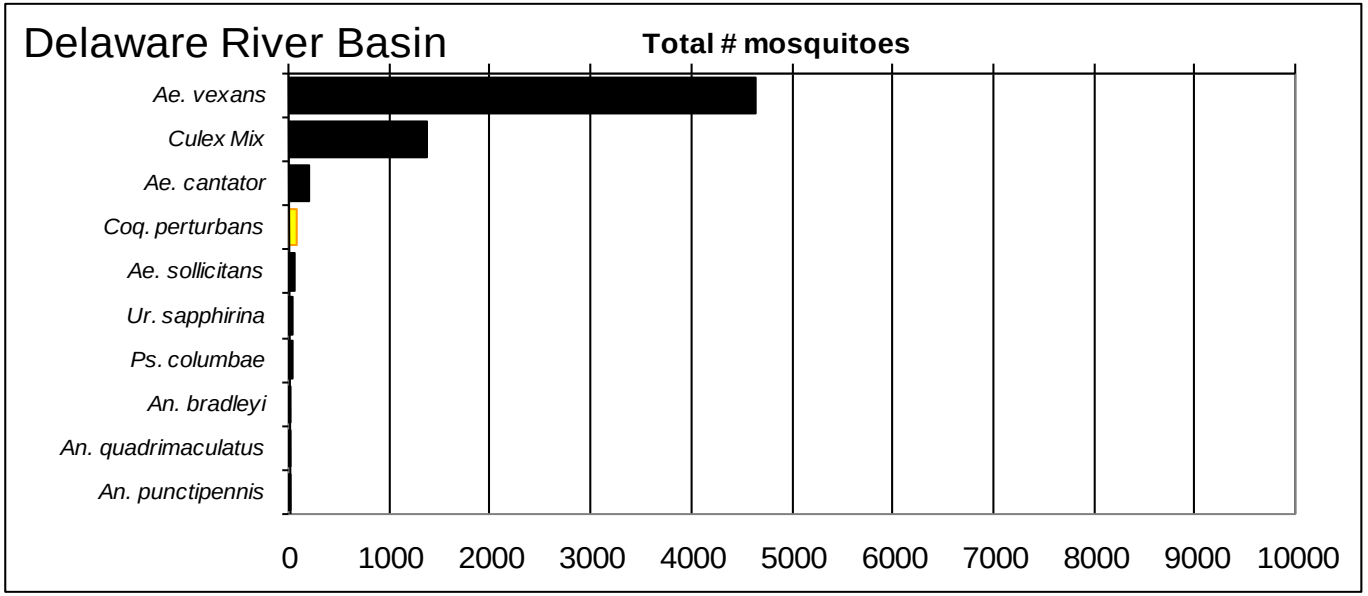
Top Ten Mosquito Species/Region - *Ae. albopictus,* *Ae. japonicus (invasives);* *Cs. melanura or Cx. erraticus* *Coq. perturbans*

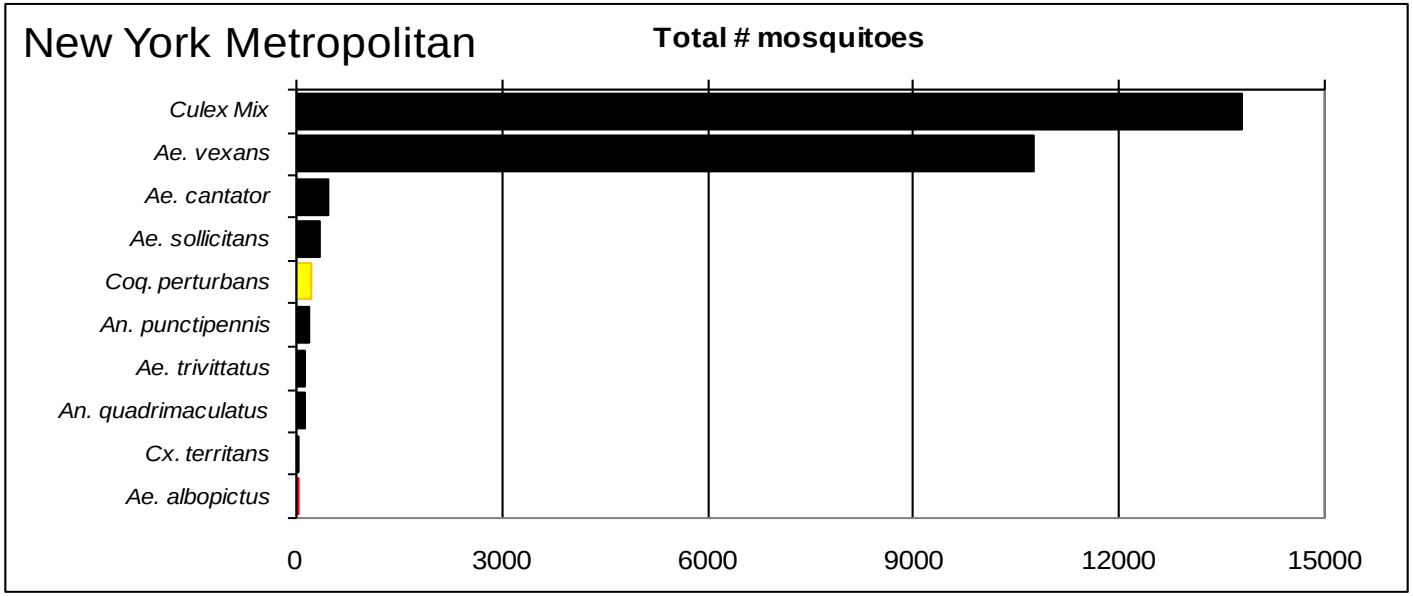
Note: In early season when fewer species are caught, graphs may show less than ten species listed.

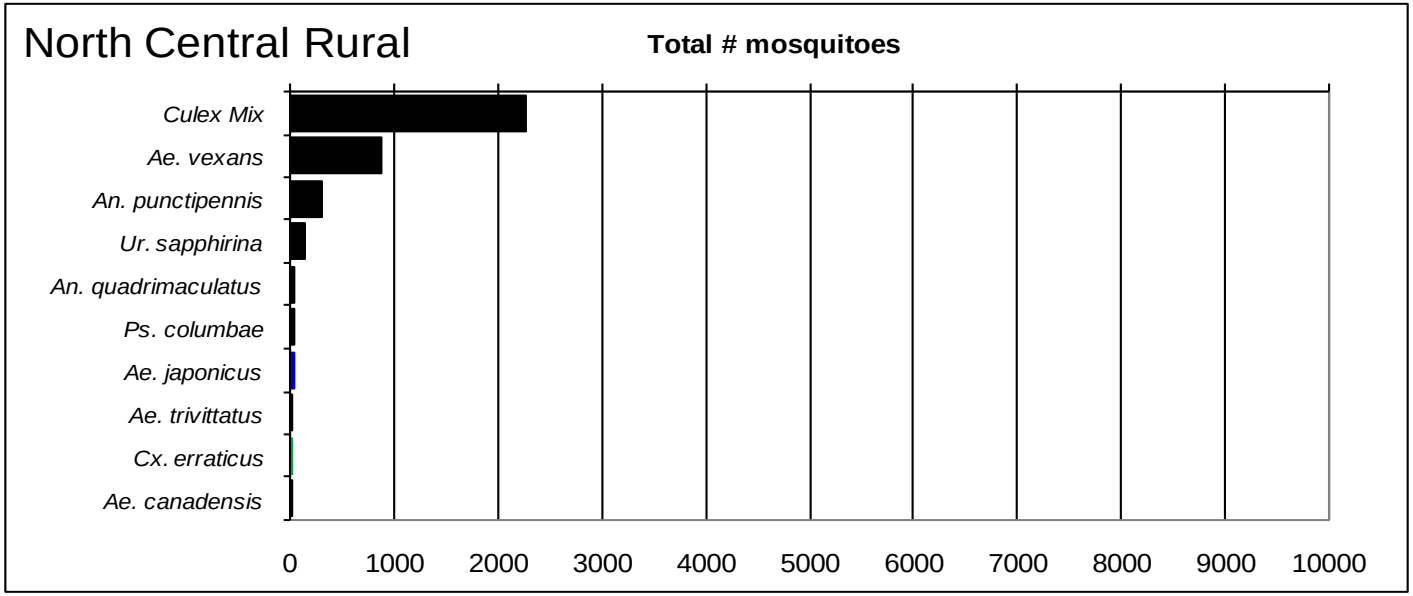




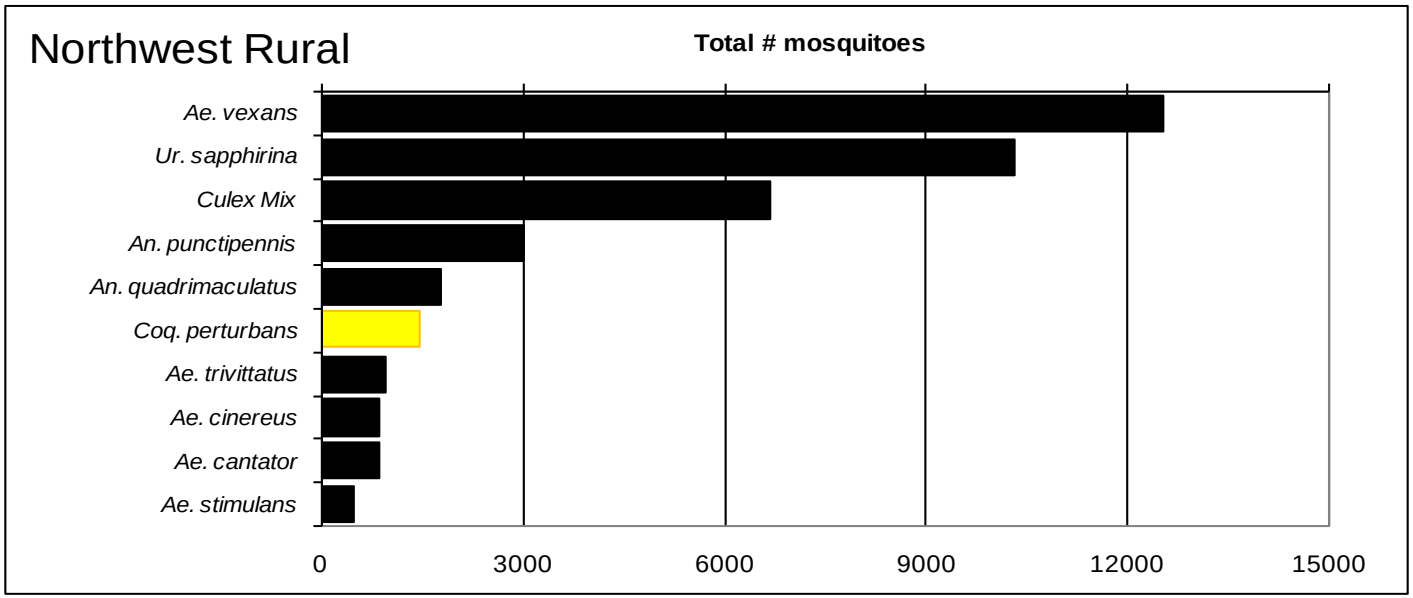

Delaware Bayshore
Total # mosquitoes
Culex Mix
An. bradleyi
Ae. vexans
An. quadrimaculatus
Ae. cantator
Ae. sollicitans
Ae. taeniorhynchus
Coq. perturbans
Ae. canadensis
Cs. melanura
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


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

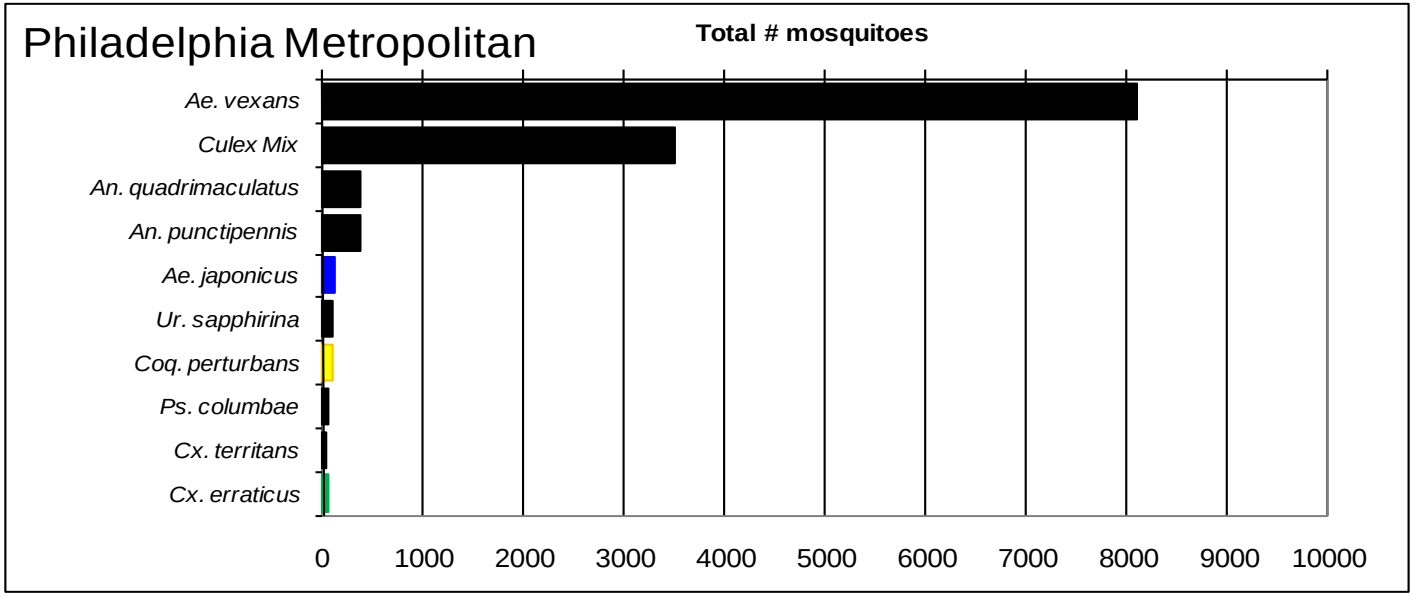

New York Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. cantator
Ae. sollicitans
Coq. perturbans
An. punctipennis
Ae. trivittatus
An. quadrimaculatus
Cx. territans
Ae. albopictus
0
3000
6000
9000
12000
15000

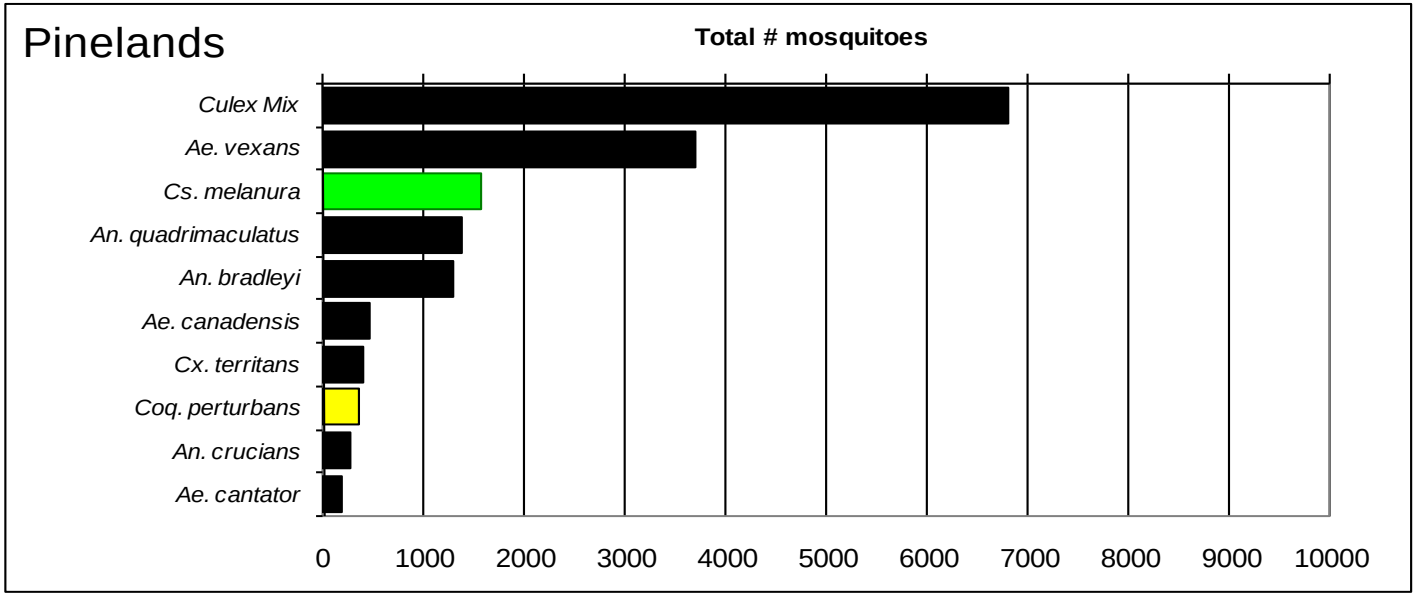

North Central Rural
Total # mosquitoes
Culex Mix
Ae. vexans
An. punctipennis
Ur. sapphirina
An. quadrimaculatus
Ps. columbae
Ae. japonicus
Ae. trivittatus
Cx. erraticus
Ae. canadensis
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

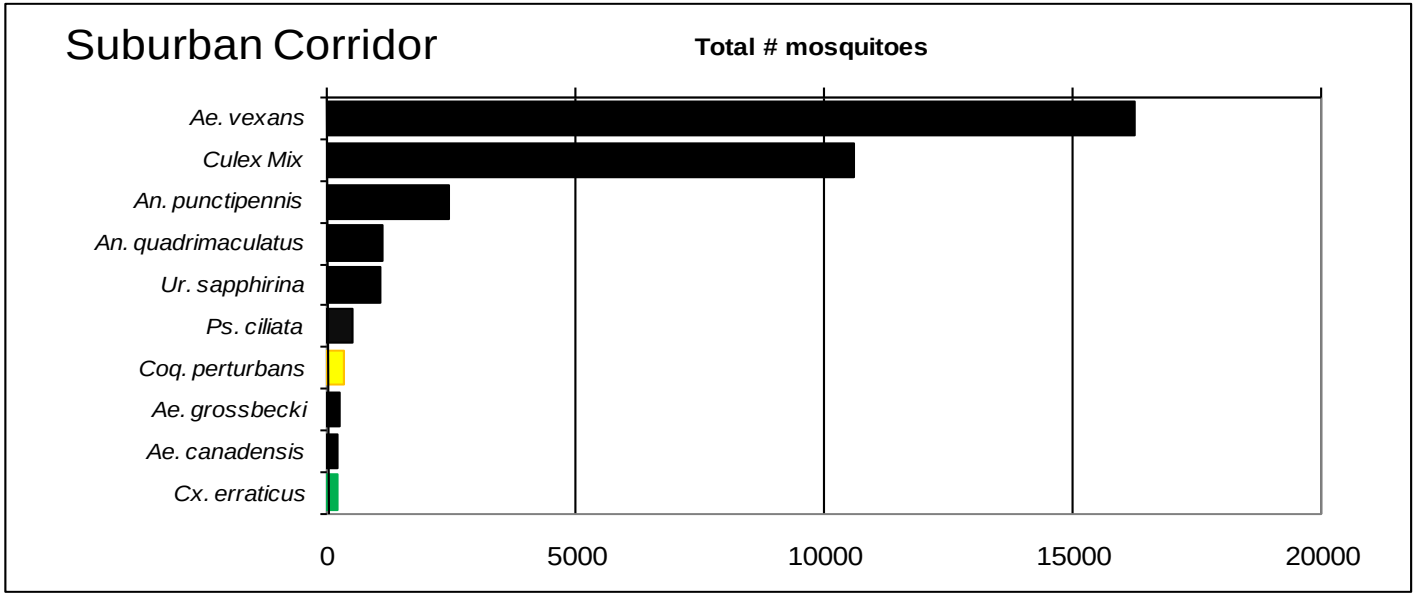
Northwest Rural



Philadelphia Metropolitan




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
An. quadrimaculatus
Ur. sapphirina
Ps. ciliata
Coq. perturbans
Ae. grossbecki
Ae. canadensis
Cx. erraticus
0
5000
10000
15000
20000