RUTGERS
New Jersey Agricultural Experiment Station

NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report for 25 July to 31 July 2010, CDC Week 30

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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.

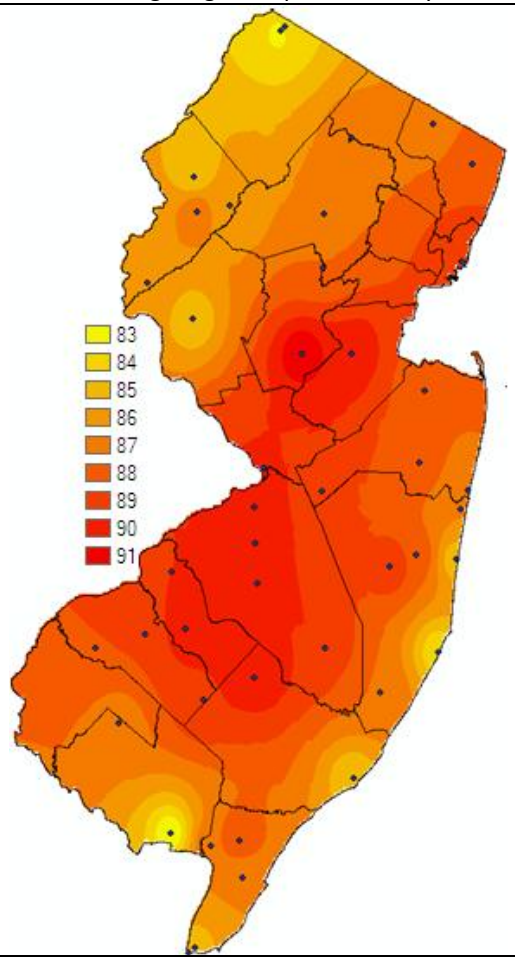
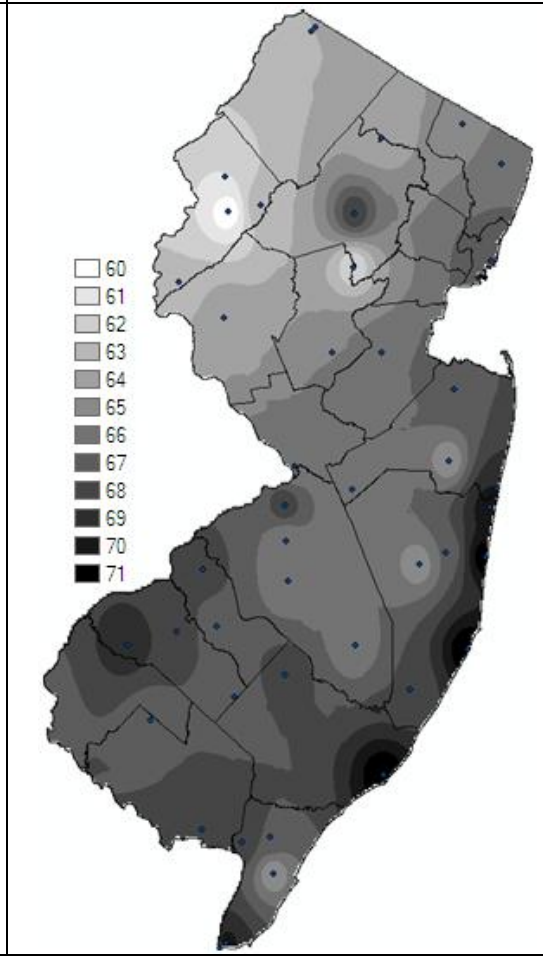
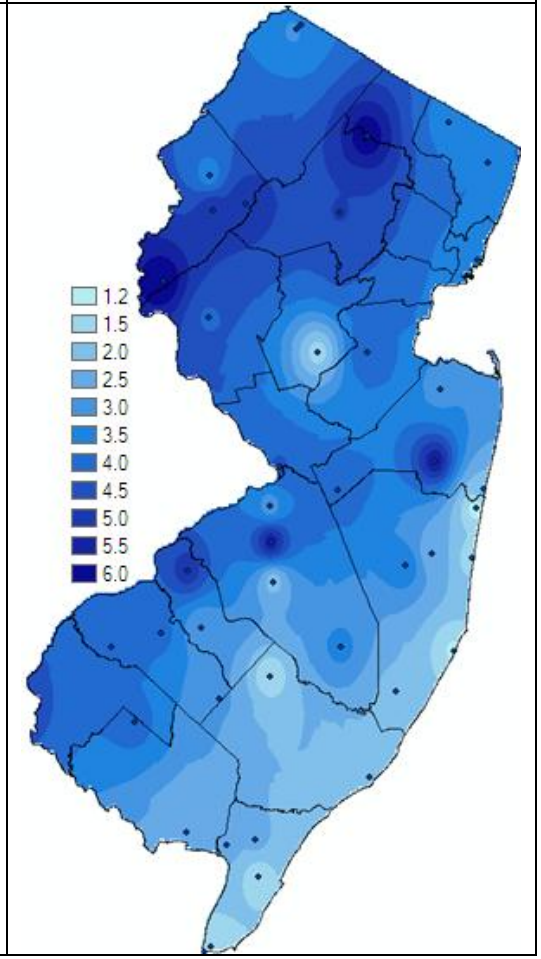
Summary table – Week 30

	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	**3.81**	**2.10**	**2**	**1.07**	**3.40**	**0**	**0.24**	**0.19**	**1**	**0.31**	**0.73**	**0**
Coastal	**1.79**	**4.17**	**0**	**1.00**	**4.42**	**0**	**0.03**	**0.66**	**0**	**15.32**	**20.63**	**0**
Delaware Bayshore	**10.69**	**1.18**	**4**	**9.03**	**19.51**	**0**	**0.37**	**1.95**	**0**	**5.26**	**13.70**	**0**
Delaware River Basin	**23.50**	**8.11**	**4**	**2.86**	**2.13**	**1**	**2.29**	**0.11**	**4**	**0.29**	**<0.01**	**0**
New York Metro	**0.50**	**2.39**	**0**	**1.84**	**9.18**	**0**	**0.04**	**0.04**	**0**	**0.67**	**0.67**	**0**
North Central Rural	**0.78**	**0.44**	**2**	**0.27**	**0.55**	**0**	**0.04**	**0.02**	**3**	**0.00**	**0.00**	**0**
Northwest Rural	**6.77**	**11.47**	**0**	**1.94**	**6.94**	**0**	**0.24**	**1.15**	**0**	**0.00**	**0.00**	**0**
Philadelphia Metro	**3.21**	**11.31**	**0**	**0.21**	**4.04**	**0**	**0.00**	**0.17**	**0**	**0.00**	**0.00**	**0**
Pinelands	**0.52**	**2.08**	**0**	**0.79**	**2.91**	**0**	**0.26**	**0.80**	**0**	**0.03**	**0.14**	**0**
Suburban Corridor	**13.15**	**6.36**	**3**	**0.47**	**2.49**	**0**	**0.18**	**0.28**	**0**	**0.00**	**<0.01**	**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: While *Aedes sollicitans* populations declined after last week's increased activity, *Aedes vexans* populations increased for several regions. *Culex* Mix in the Delaware River Basin increased activity and *Coquillettidia perturbans* appears to have a last burst of activity in the Agricultural, Delaware River Basin and the North Central Rural regions.

Climate Factors

Average High Temperatures July	Average Low Temperatures July	Total Precipitation July
		

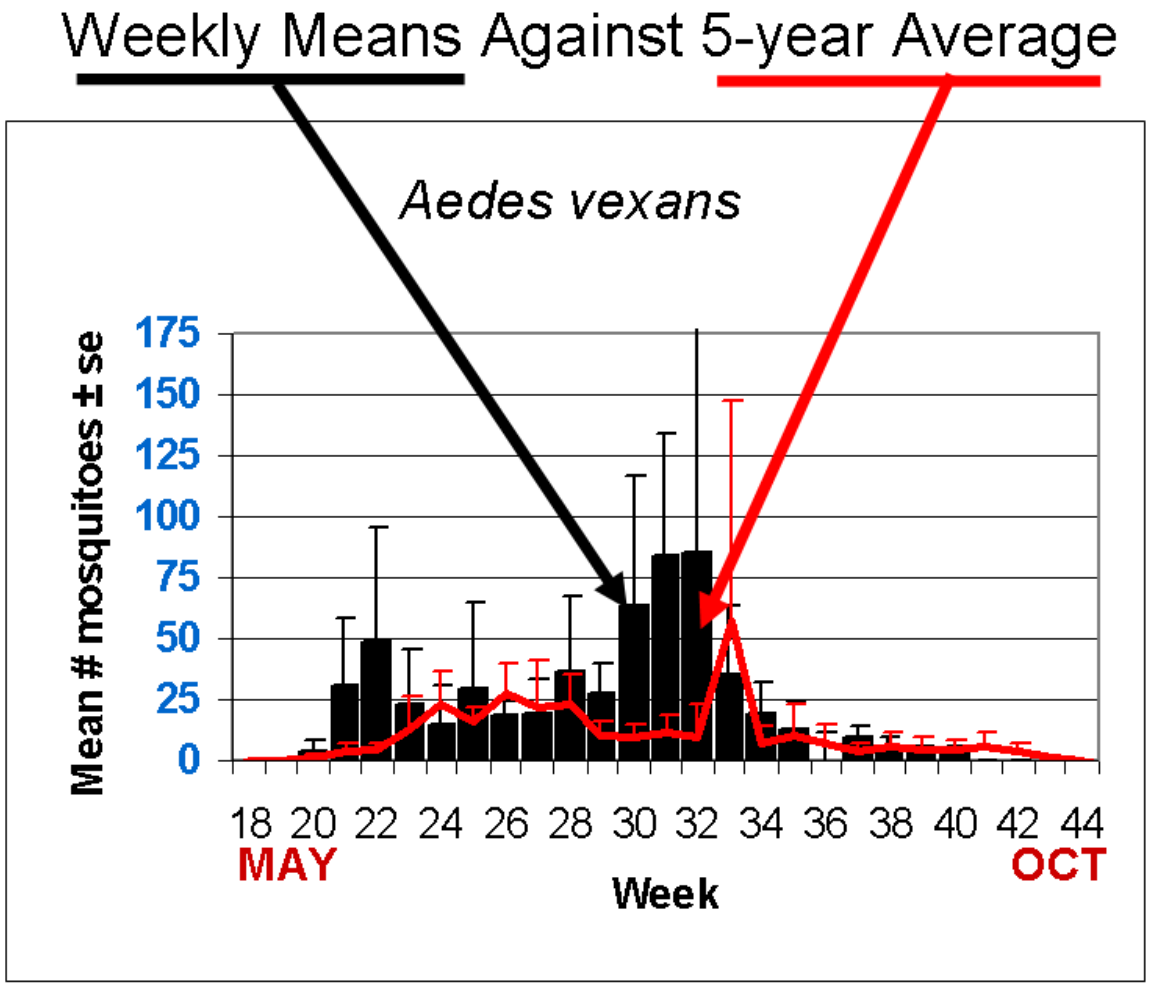
The three figures show the interpolation of average maximum and minimum temperature and total precipitation for July, 2010 in New Jersey. Data points are from 40 weather stations maintained through the New Jersey Weather & Climate Network and the State Climatologist. Interpolation between points was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

July ended with slightly cooler days and some precipitation. Average temperatures for the month either stayed the same as last week or decreased one degree. As with last week, coastal and higher elevation areas are cooler during the day, but the coastal areas retain heat during the night. Less rain fell to the southern coastal areas.

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



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

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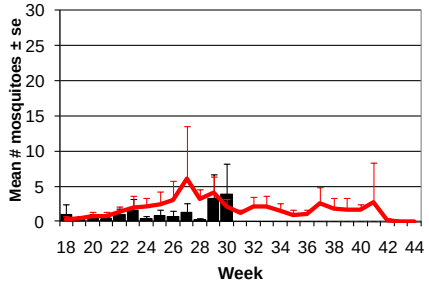
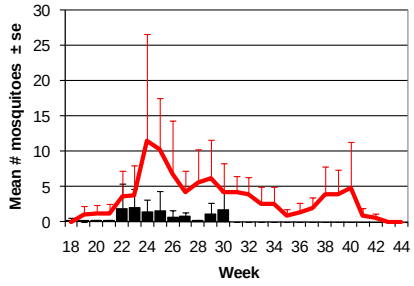
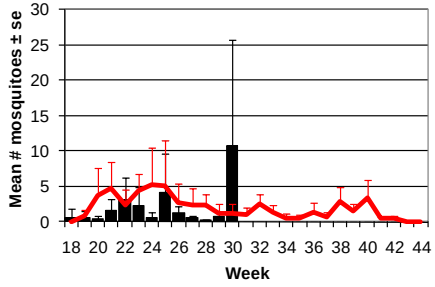
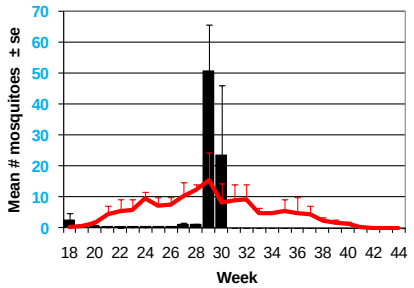
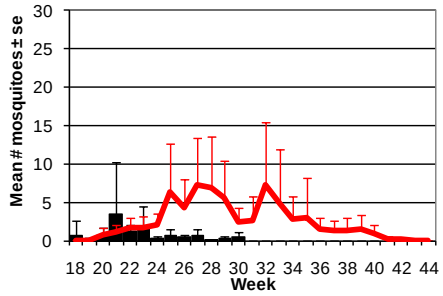
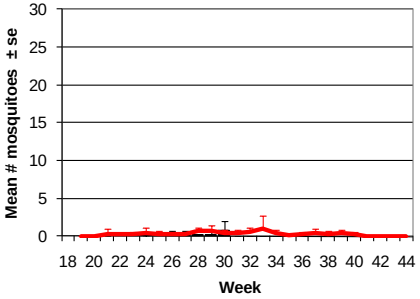
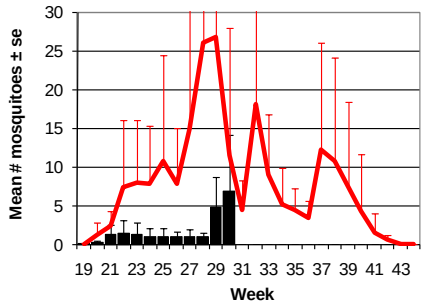
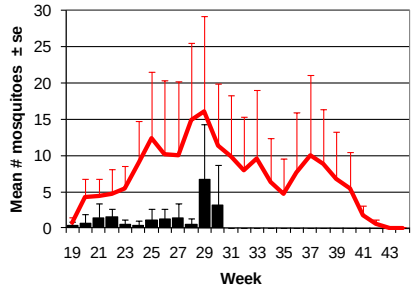
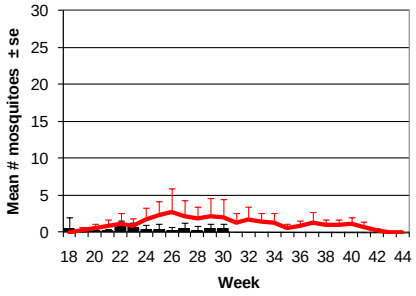
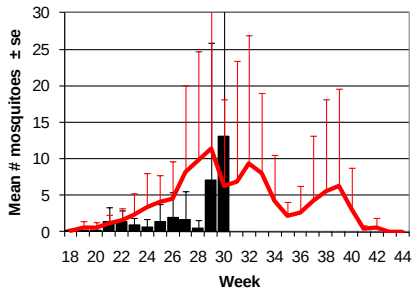
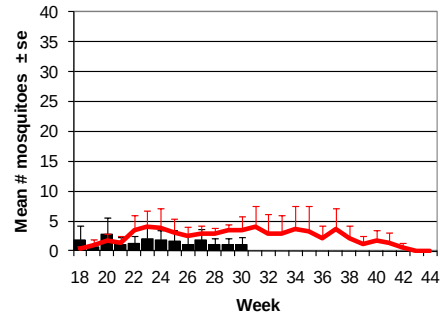
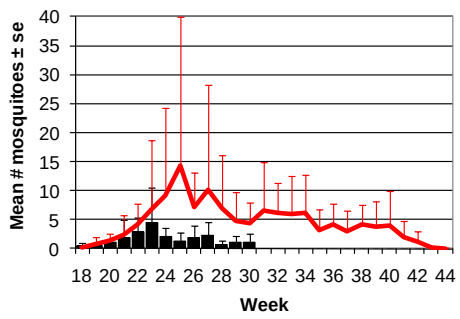
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes vexans* populations increased dramatically in several regions after rainfall occurred in greater amounts over the past few weeks. The Agricultural, Coastal, Delaware Bayshore, Delaware River Basin, Northwestern Rural, Philadelphia Metro and the Suburban Corridor all experienced this increase. Dredge spoils in the Delaware River Basin appear to be under operation again, contributing to the significant increases observed there.	

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

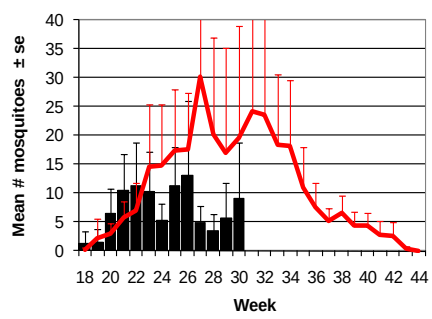
Agricultural



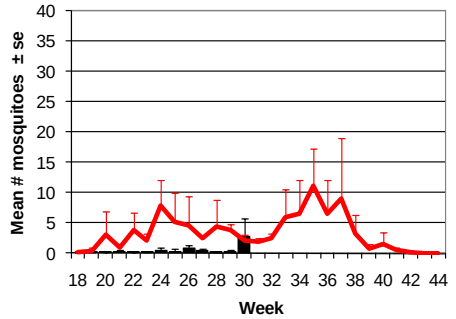
Coastal



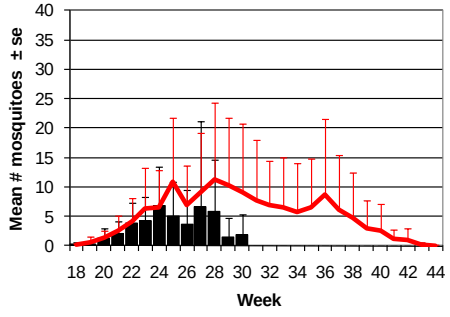
Delaware Bayshore



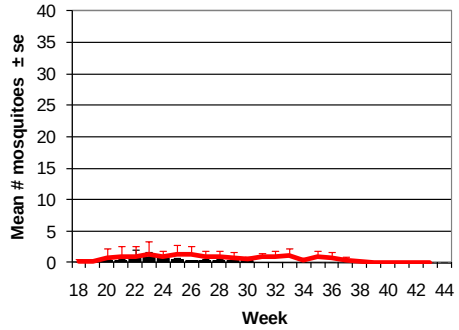
Delaware River Basin



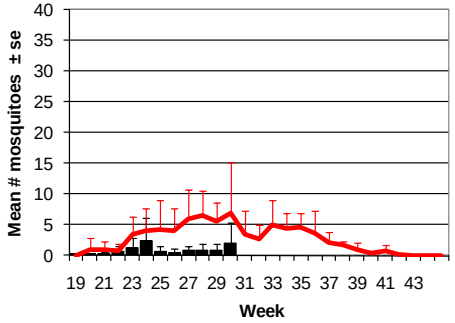
New York Metro



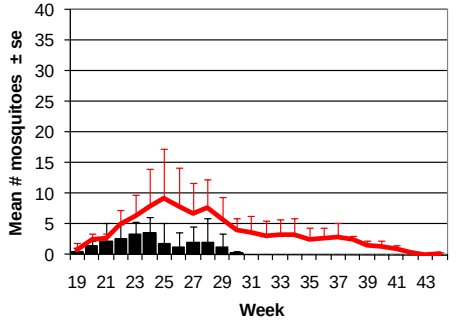
North Central Rural



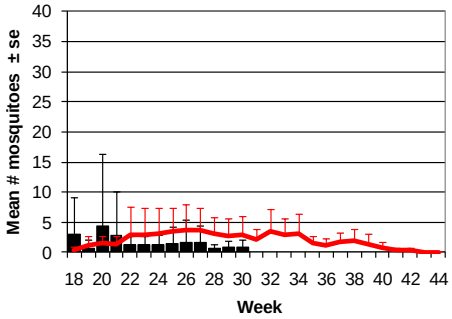
Northwestern Rural



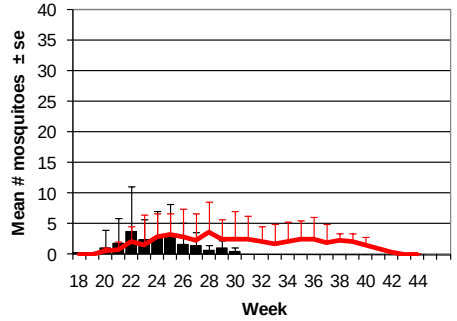
Philadelphia Metro



Pinelands



Suburban Corridor

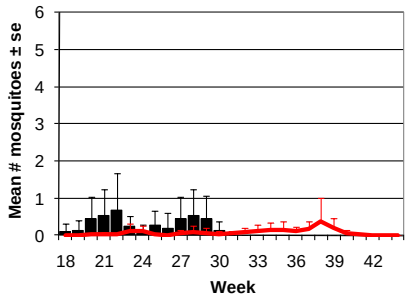
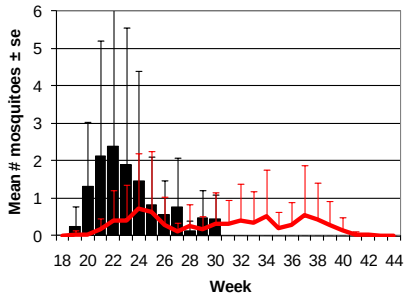
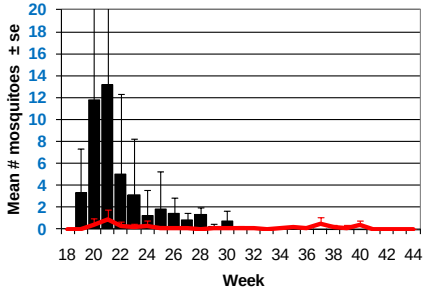
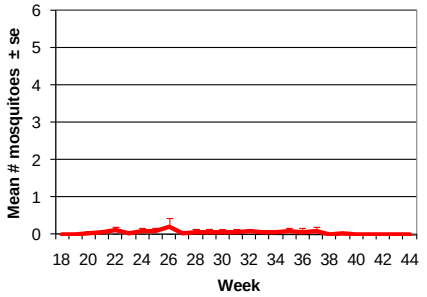
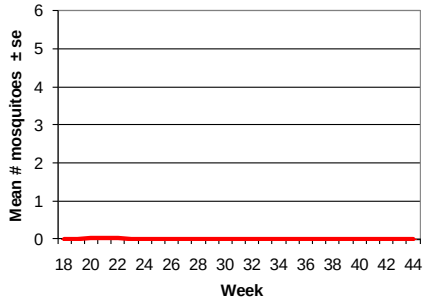
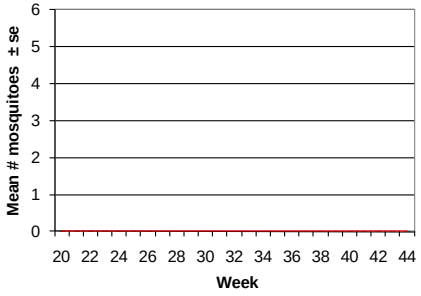
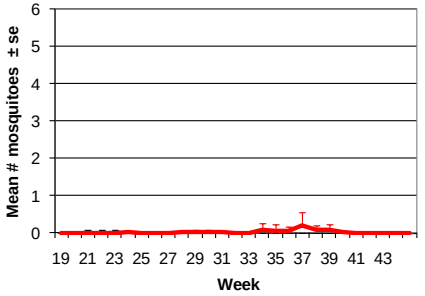
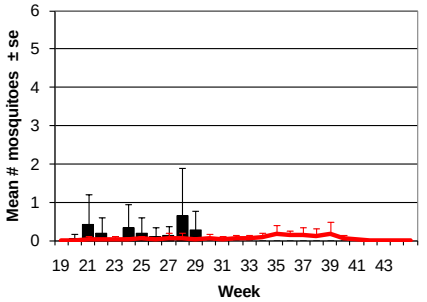
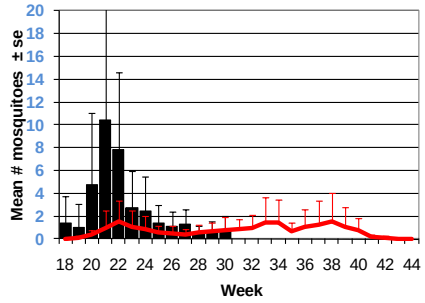
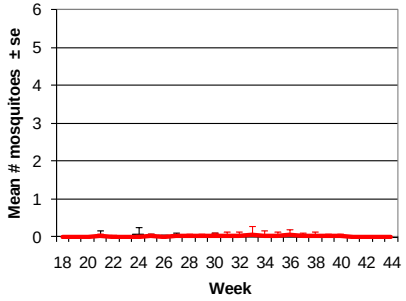


Comments

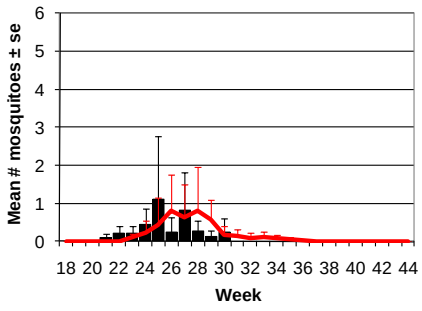
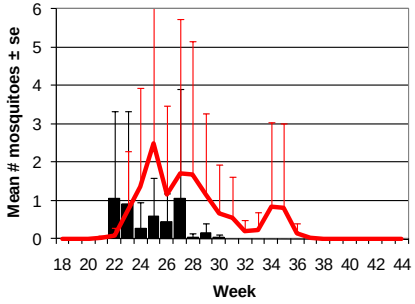
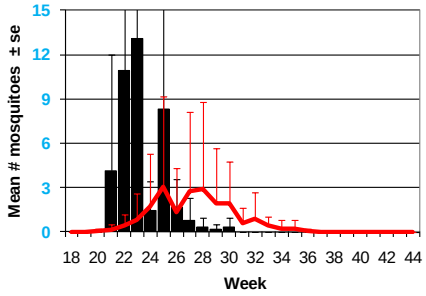
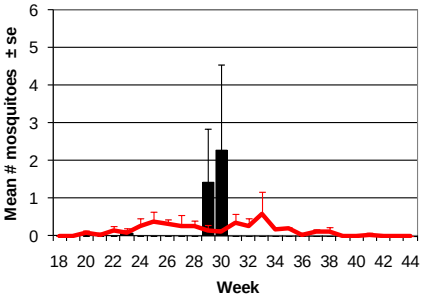
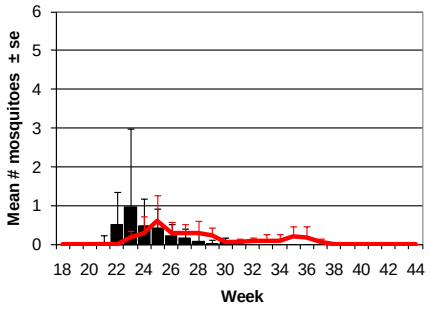
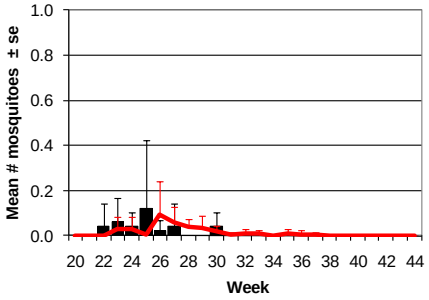
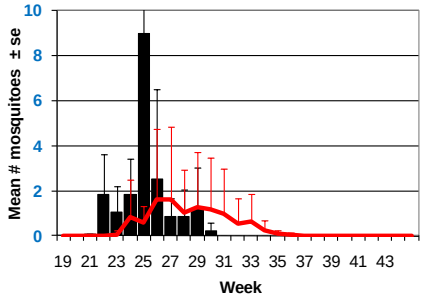
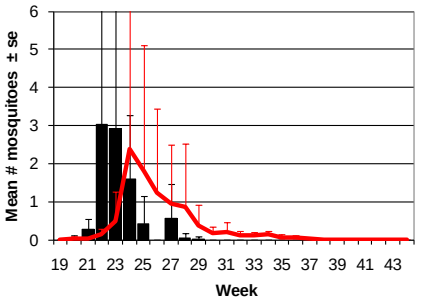
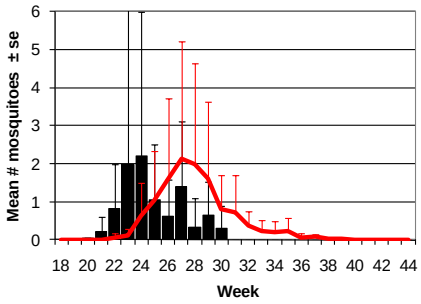
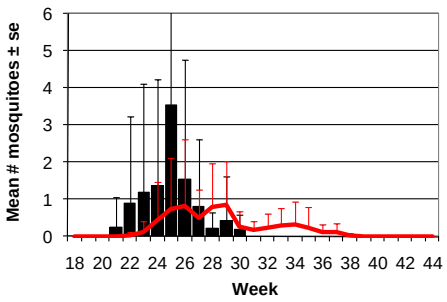
Culex Mix is represented by three species of *Culex* mosquitoes: *Cx. pipiens, Cx. restuans* and *Cx. salinarius*. These mosquitoes are usually grouped together as there is considerable difficulty in separating them to species easily after travelling through the grind of the light trap, often in the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

Population increases have occurred in the Delaware Bayshore and River Basin. Increases were also observed in the Northwestern Rural region. While rainfall appears not to have been significant enough to form anything other than ephemeral pools (to which floodwater species responded), a more significant rainfall would likely be needed to return permanent water species to historical values at their highest point.

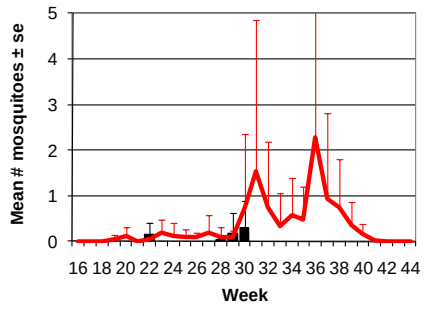
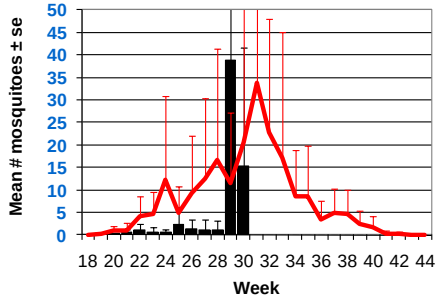
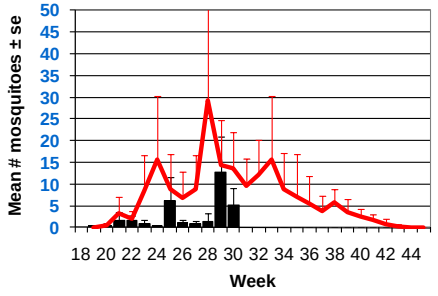
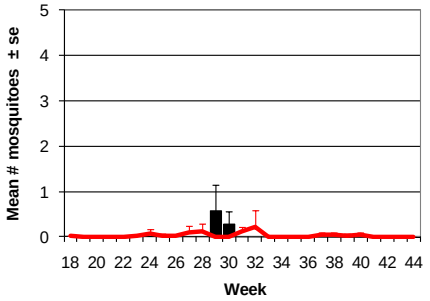
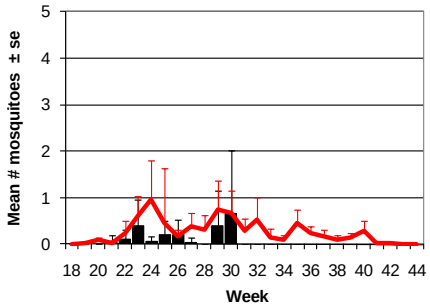
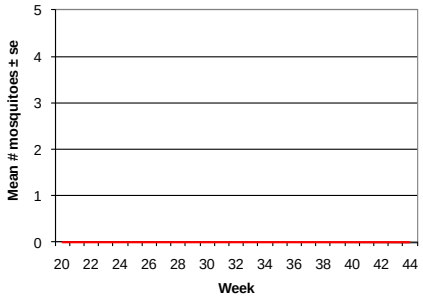
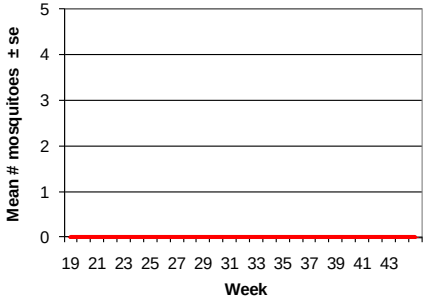
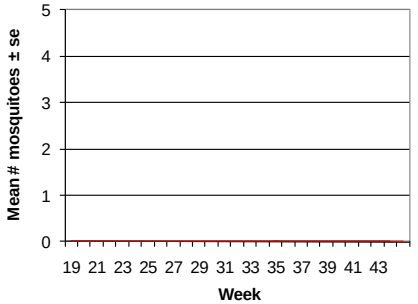
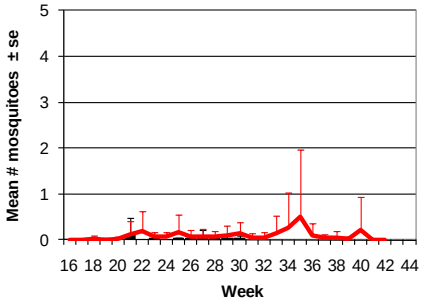
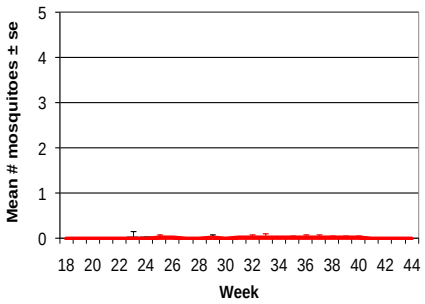
Culiseta melanura – Miscellaneous Group Unique (*Cs. melanura* Type)

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. EEE activity remained at what it was from the previous week, although US activity is increasing.	

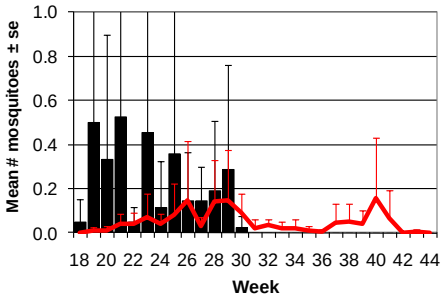
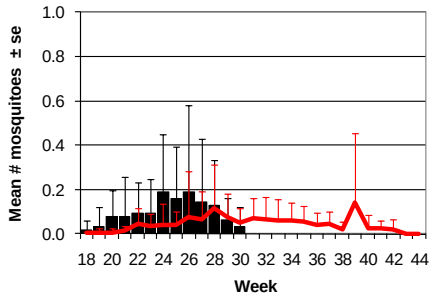
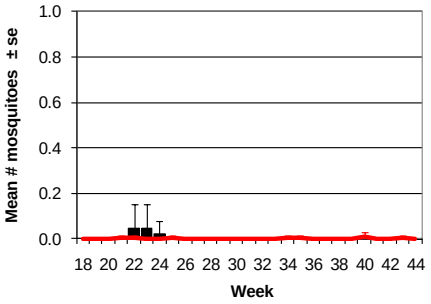
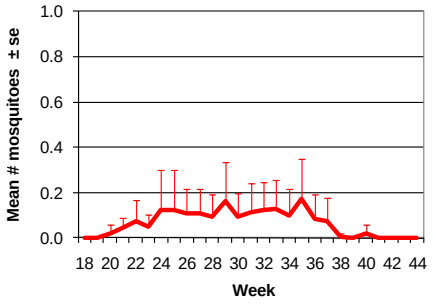
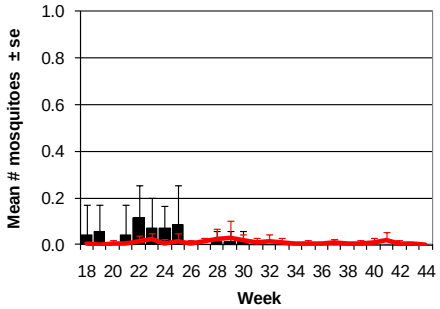
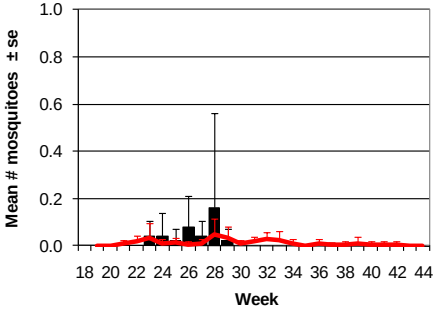
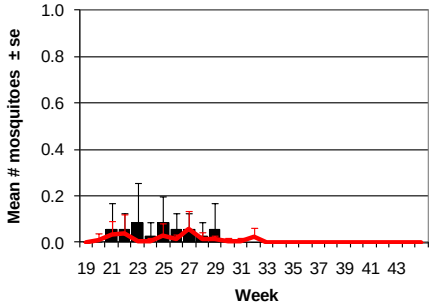
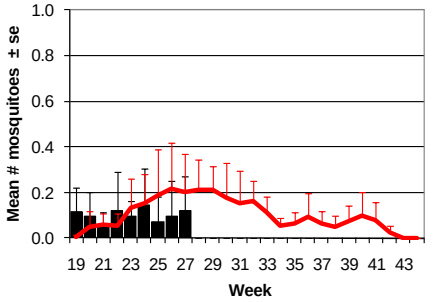
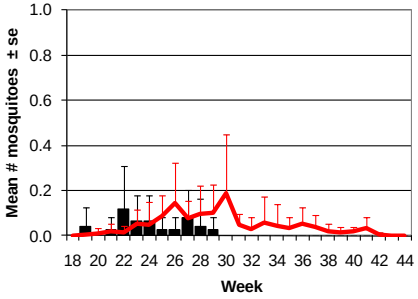
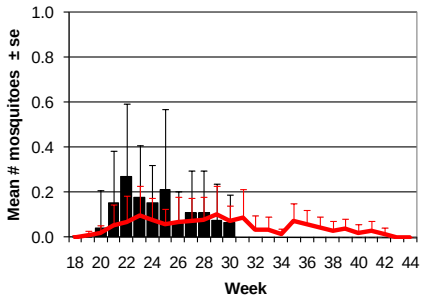
Coquillettidia perturbans – Miscellaneous Group
Monotypic (*Coq. perturbans* Type)

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 decrease throughout the state. Populations in the Delaware River Basin became apparent after rainfall and dredge spoil activity occurred.	

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* population numbers declined in the Coastal, Delaware Bayshore and Delaware River Basin after a significant increase to their highest levels of the season. New York Metropolitan region and the Agricultural region both continued to show increases.	

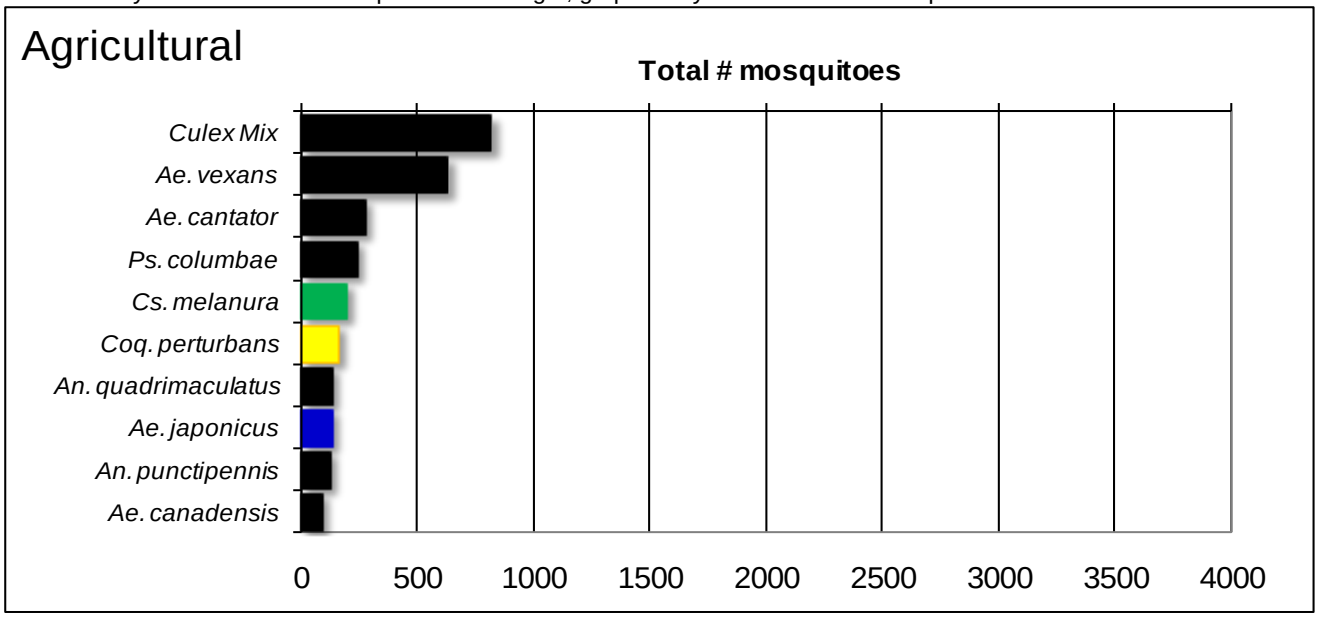
Aedes japonicus – Container Species
Multivoltine Aedine (*Ae. triseriatus* Type)

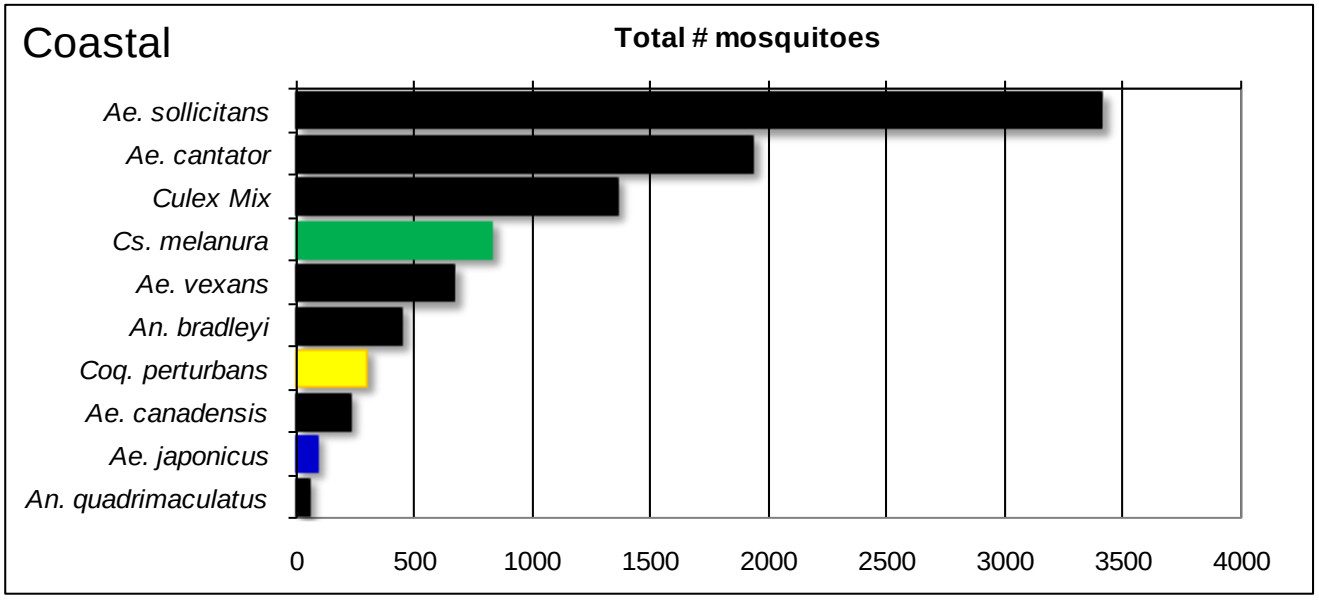
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes japonicus*, a hardy cold-tolerant species, having shown higher than historical numbers for several regions over several weeks, appear to be at or declined from historical values for most regions.	

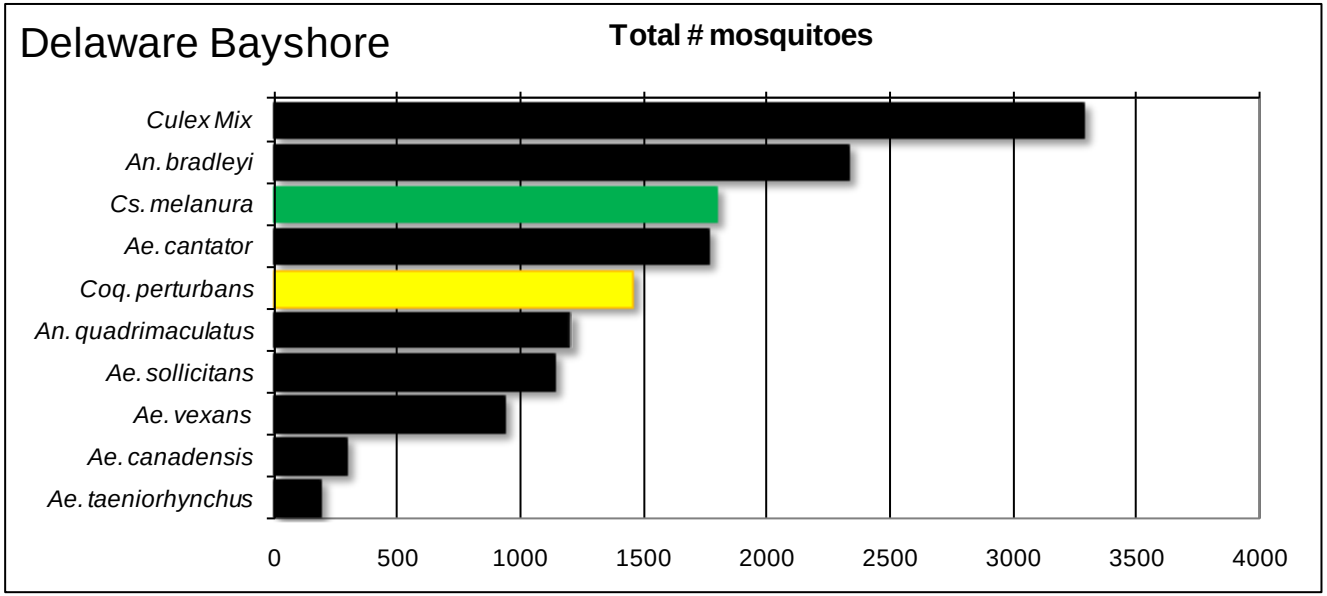
WNV *EEE*

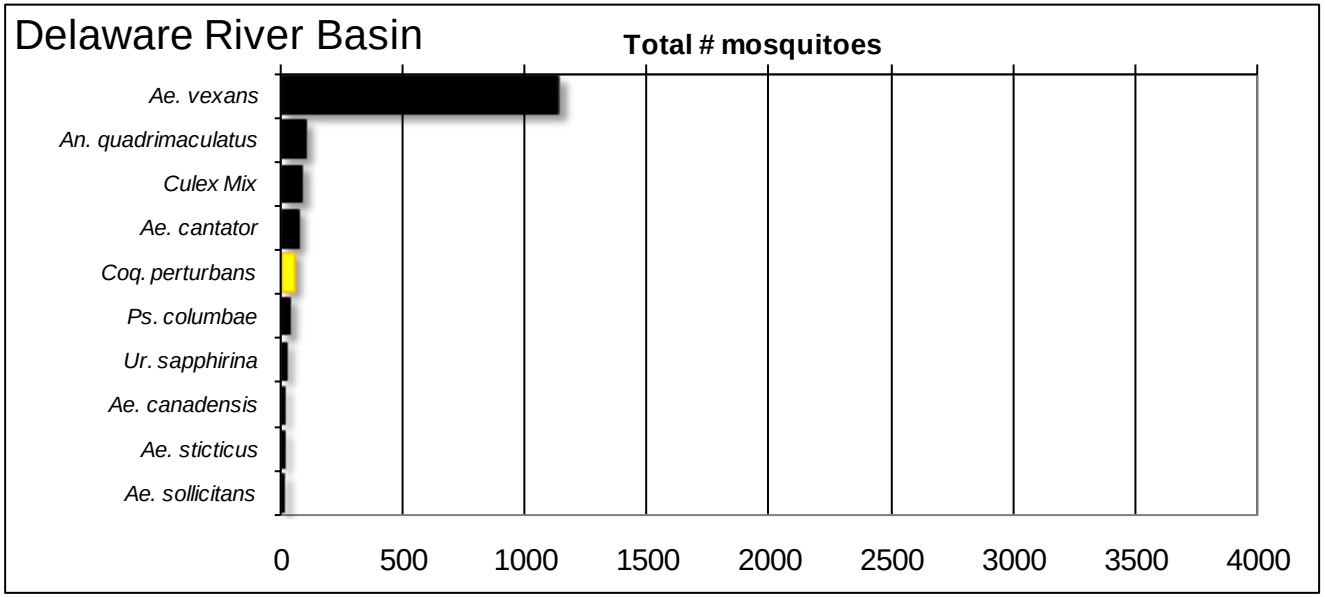
Top Ten Cumulative Mosquito Species/Region - *Ae. albopictus,* *Ae. japonicus (invasives);* *Cs. melanura or Cx. erraticus* *Coq. perturbans*

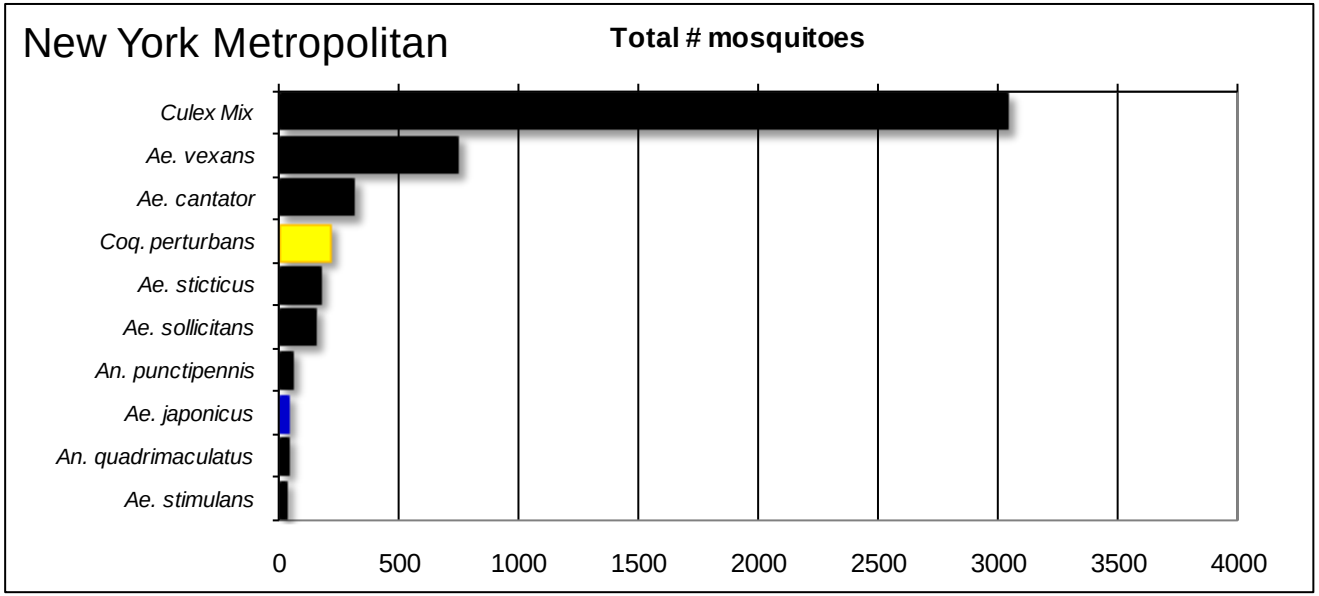
Note: In early season when fewer species are caught, graphs may show less than ten species listed.

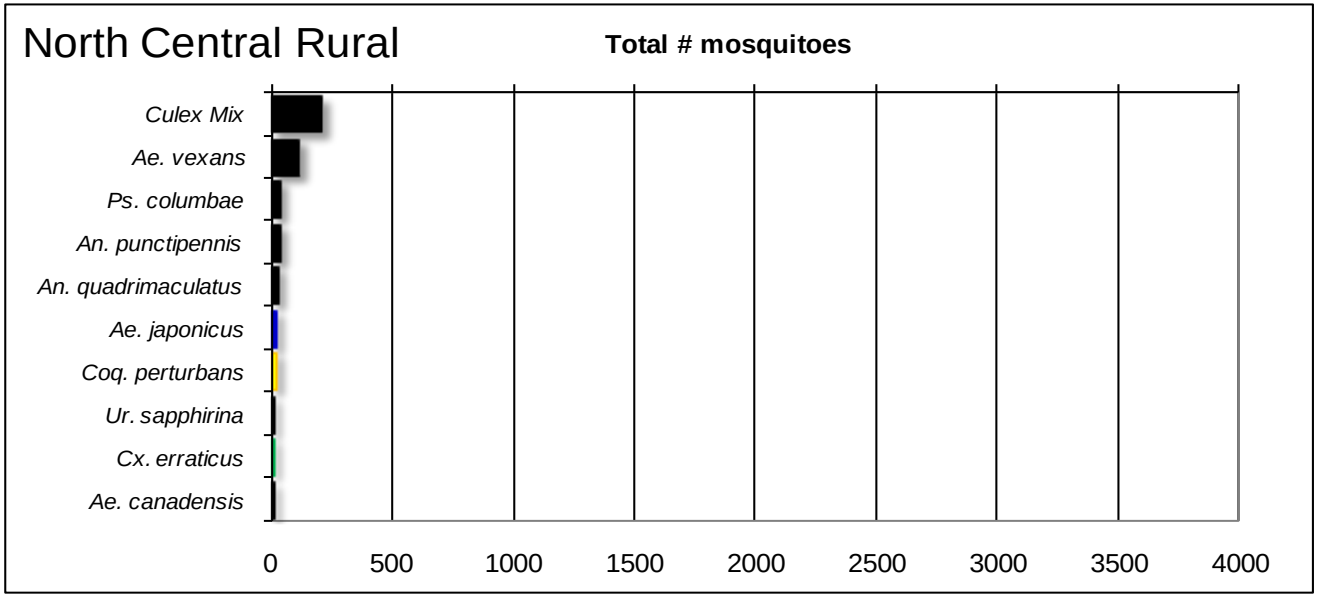


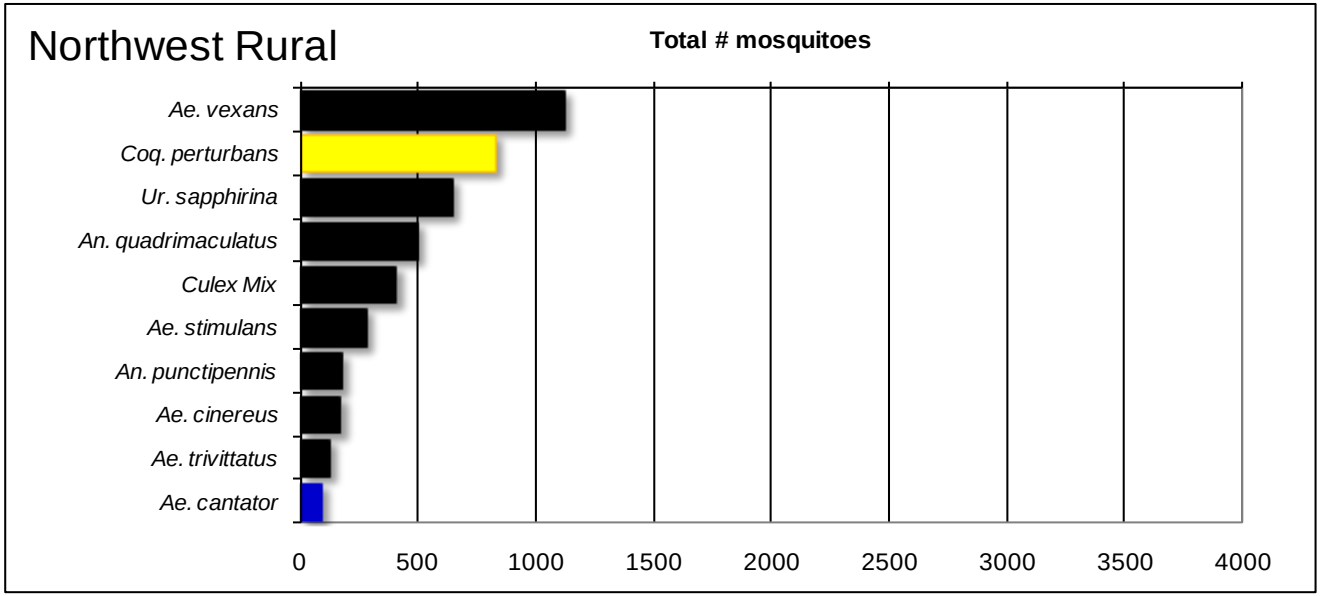


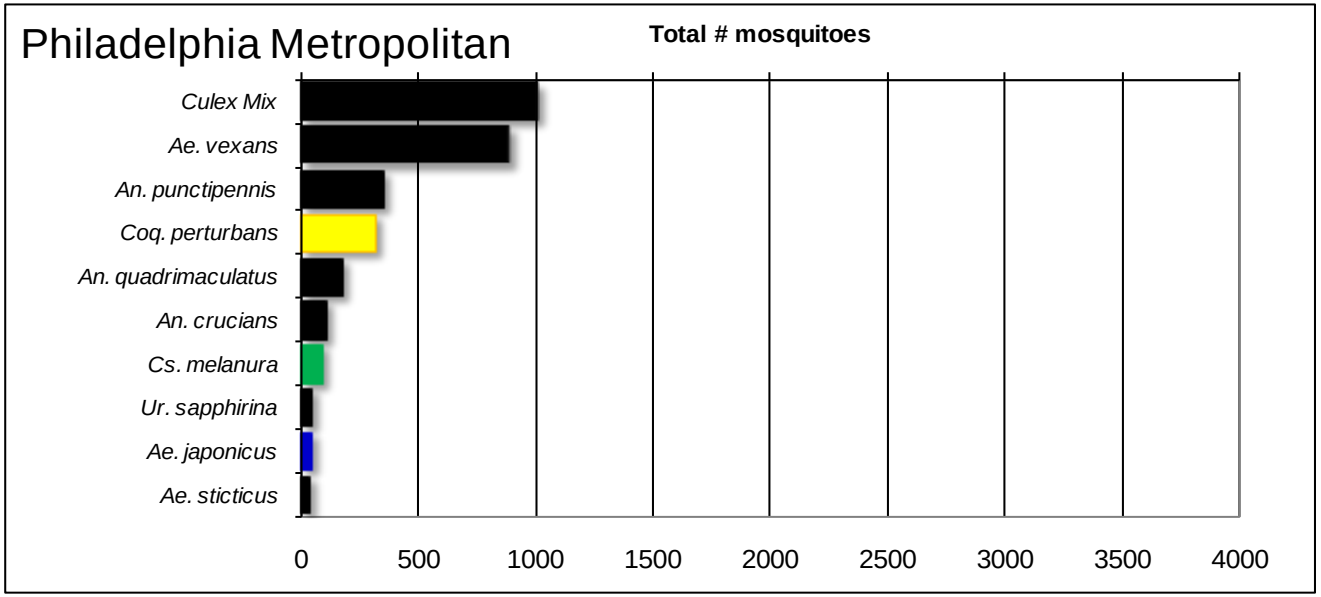

Delaware Bayshore
Total # mosquitoes
Culex Mix
An. bradleyi
Cs. melanura
Ae. cantator
Coq. perturbans
An. quadrimaculatus
Ae. sollicitans
Ae. vexans
Ae. canadensis
Ae. taeniorhynchus
0
500
1000
1500
2000
2500
3000
3500
4000

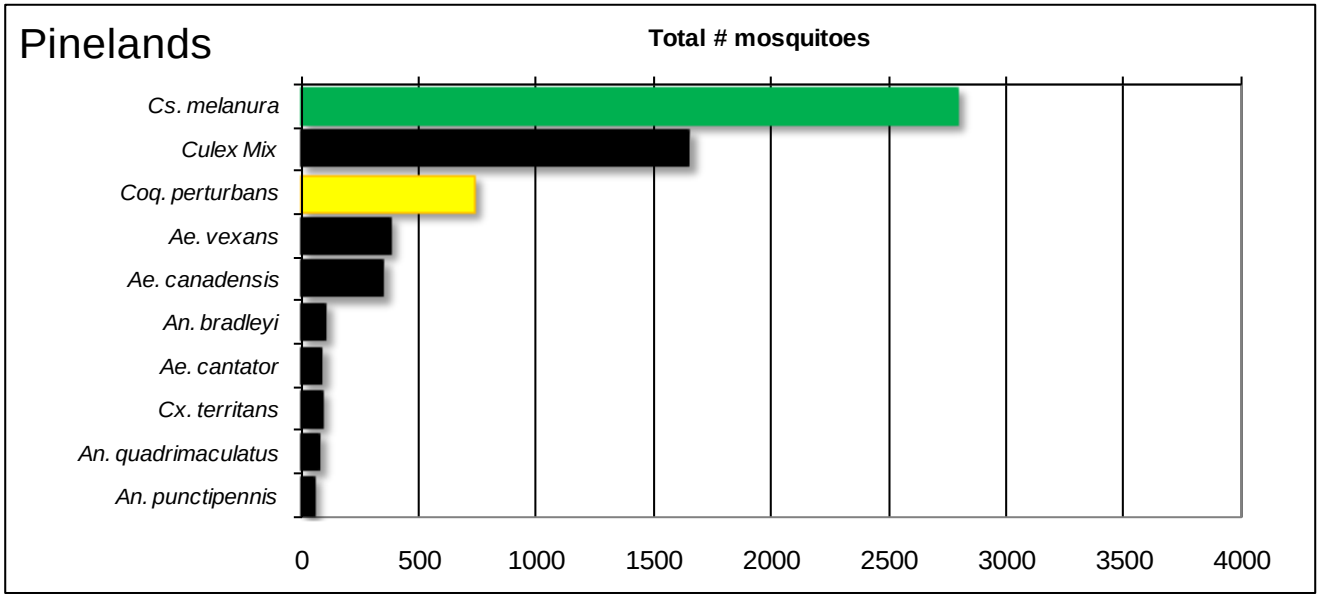

Delaware River Basin
Total # mosquitoes
Ae. vexans
An. quadrimaculatus
Culex Mix
Ae. cantator
Coq. perturbans
Ps. columbae
Ur. sapphirina
Ae. canadensis
Ae. sticticus
Ae. sollicitans
0
500
1000
1500
2000
2500
3000
3500
4000

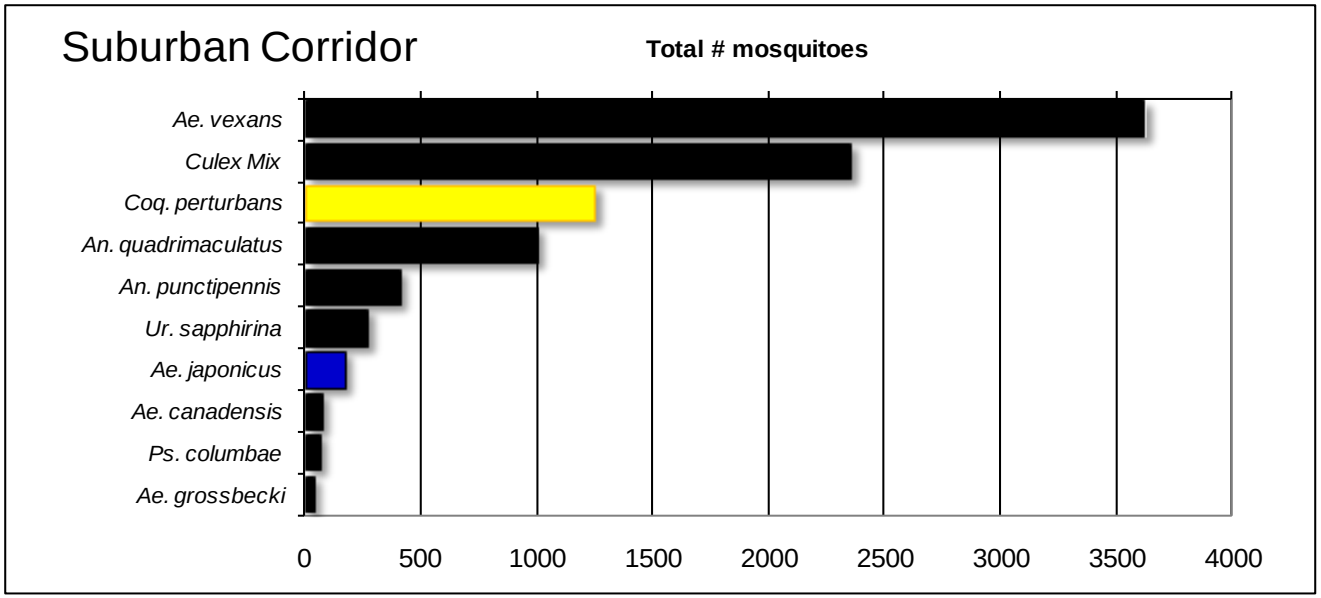

New York Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. cantator
Coq. perturbans
Ae. sticticus
Ae. sollicitans
An. punctipennis
Ae. japonicus
An. quadrimaculatus
Ae. stimulans
0
500
1000
1500
2000
2500
3000
3500
4000


North Central Rural
Total # mosquitoes
Culex Mix
Ae. vexans
Ps. columbae
An. punctipennis
An. quadrimaculatus
Ae. japonicus
Coq. perturbans
Ur. sapphirina
Cx. erraticus
Ae. canadensis
0
500
1000
1500
2000
2500
3000
3500
4000


Northwest Rural
Total # mosquitoes
Ae. vexans
Coq. perturbans
Ur. sapphirina
An. quadrimaculatus
Culex Mix
Ae. stimulans
An. punctipennis
Ae. cinereus
Ae. trivittatus
Ae. cantator
0
500
1000
1500
2000
2500
3000
3500
4000


Philadelphia Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
An. punctipennis
Coq. perturbans
An. quadrimaculatus
An. crucians
Cs. melanura
Ur. sapphirina
Ae. japonicus
Ae. sticticus
0
500
1000
1500
2000
2500
3000
3500
4000


Pinelands
Total # mosquitoes
Cs. melanura
Culex Mix
Coq. perturbans
Ae. vexans
Ae. canadensis
An. bradleyi
Ae. cantator
Cx. territans
An. quadrimaculatus
An. punctipennis
0
500
1000
1500
2000
2500
3000
3500
4000


Suburban Corridor
Total # mosquitoes
Ae. vexans
Culex Mix
Coq. perturbans
An. quadrimaculatus
An. punctipennis
Ur. sapphirina
Ae. japonicus
Ae. canadensis
Ps. columbae
Ae. grossbecki
0
500
1000
1500
2000
2500
3000
3500
4000