RUTGERS
New Jersey Agricultural Experiment Station

NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report for 1 August to 7 August 2010, CDC Week 31

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Center for Vector Biology

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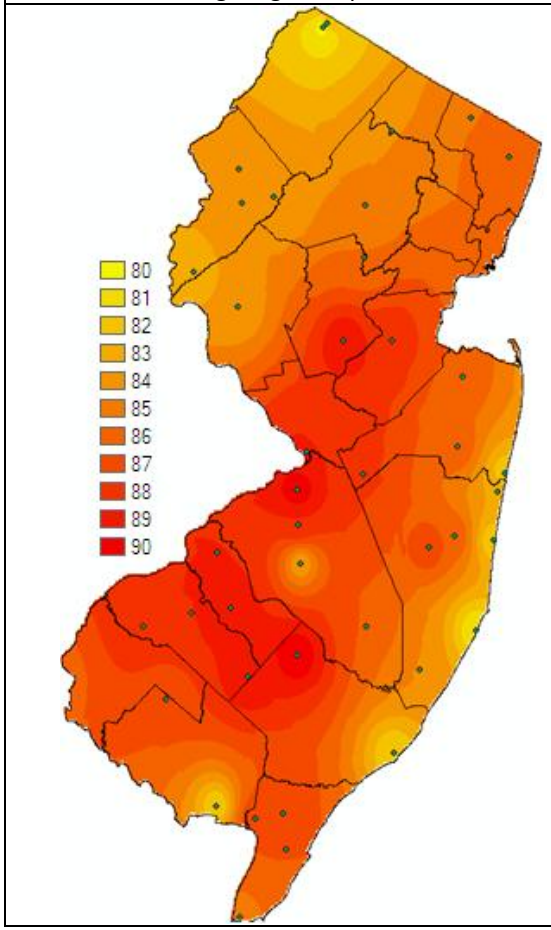
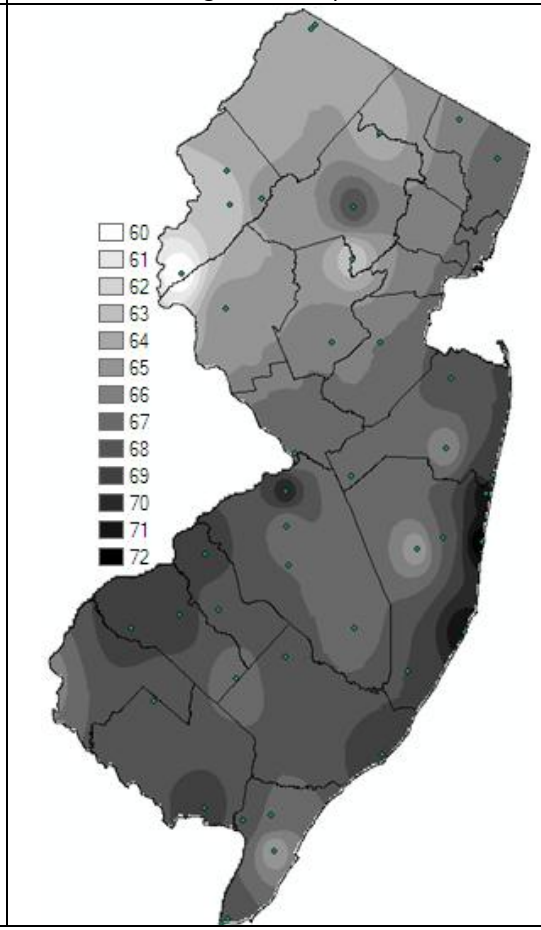
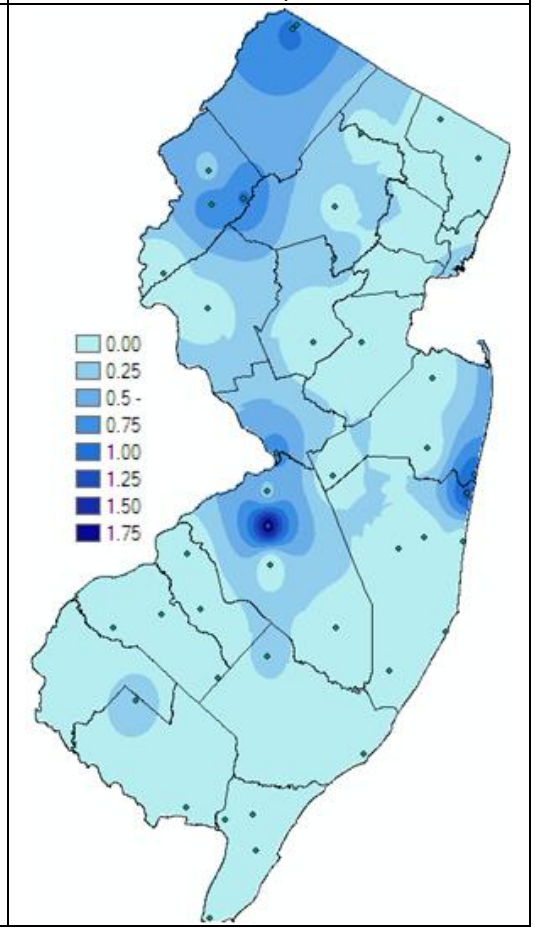
Summary table – Week 31

	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	**1.24**	**1.25**	**0**	**1.00**	**4.06**	**0**	**0.00**	**0.13**	**0**	**0.00**	**1.53**	**0**
Coastal	**1.08**	**4.22**	**0**	**0.41**	**6.58**	**0**	**0.06**	**0.55**	**0**	**4.08**	**33.71**	**0**
Delaware Bayshore	**1.17**	**1.02**	**1**	**1.03**	**24.25**	**0**	**0.63**	**0.58**	**1**	**0.69**	**9.50**	**0**
Delaware River Basin	**0.00**	**9.14**	**0**	**0.00**	**1.86**	**0**	**0.00**	**0.34**	**0**	**0.00**	**0.11**	**0**
New York Metro	**0.59**	**2.68**	**0**	**3.31**	**7.79**	**0**	**0.04**	**0.05**	**0**	**0.13**	**0.28**	**0**
North Central Rural	**0.80**	**0.40**	**3**	**0.24**	**0.94**	**0**	**0.02**	**0.00**	**4**	**0.00**	**0.00**	**0**
Northwest Rural	**4.74**	**4.46**	**1**	**2.11**	**3.39**	**0**	**0.38**	**0.97**	**0**	**0.00**	**0.00**	**0**
Philadelphia Metro	**2.90**	**9.94**	**0**	**0.79**	**3.72**	**0**	**0.80**	**0.20**	**4**	**0.00**	**0.00**	**0**
Pinelands	**0.87**	**1.31**	**0**	**0.82**	**2.15**	**0**	**0.48**	**0.71**	**0**	**0.04**	**0.06**	**0**
Suburban Corridor	**0.78**	**6.81**	**0**	**0.54**	**2.49**	**0**	**0.03**	**0.18**	**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: *Aedes vexans* populations continued to be higher than historical trends for the Delaware Bayshore, North Central Rural and the Northwestern Rural regions. Both *Culex* Mix and *Aedes sollicitans* numbers were lower than historical trends while *Coquillettidia perturbans* showed some activity toward the end of their cycle in the Delaware Bayshore, North Central Rural and Philadelphia Metro regions.

Climate Factors

Average High Temperatures	Average Low Temperatures	Total Precipitation
		

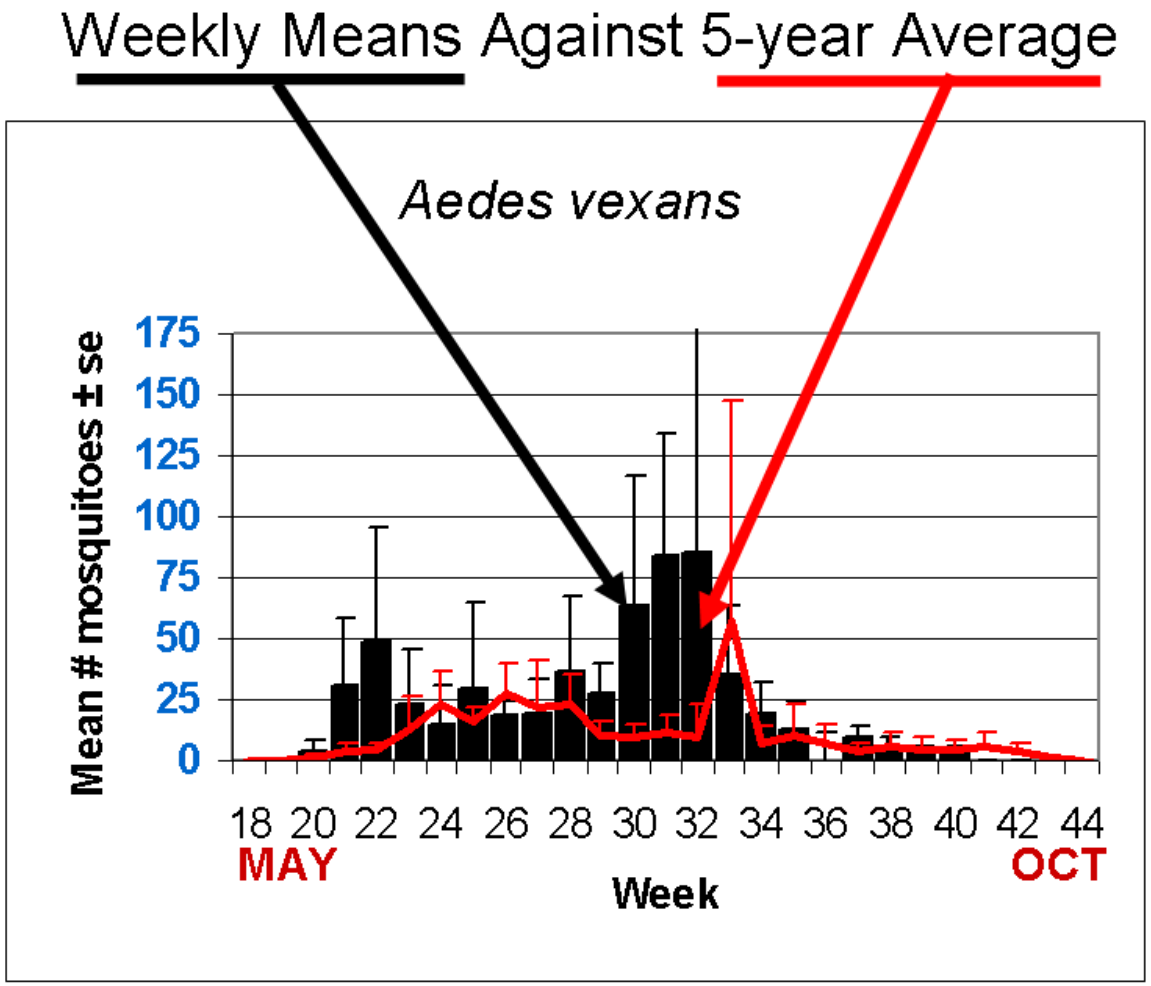
The three figures show the interpolation of average maximum and minimum temperature and total precipitation for August 1-11, 2010 in New Jersey. Data points are from 40 weather stations maintained through the New Jersey Weather & Climate Network and the State Climatologist. Interpolation between points was performed using ArcMap 9.2.

August began with variable daytime temperatures from July, warmer nights and little precipitation. As with last week, coastal and higher elevation areas are cooler during the day, but the coastal areas retain heat during the night. More rain fell to the northwestern part of the state as well as a portion of the coastal areas.

NJ Weather & Climate NETWORK

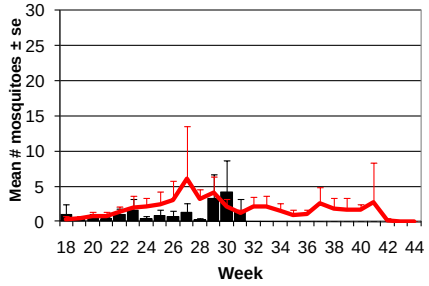
ONJSC at Rutgers University

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

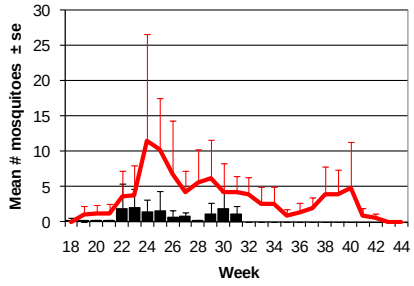


Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

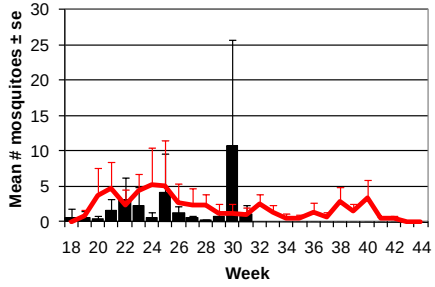
Agricultural



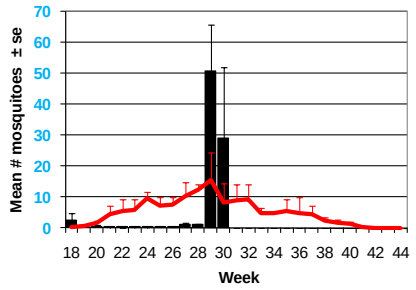
Coastal



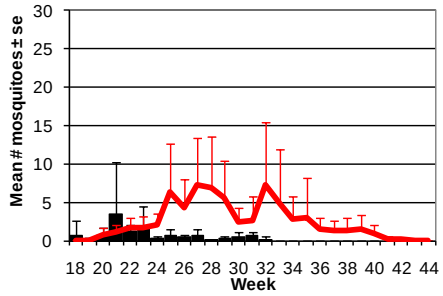
Delaware Bayshore



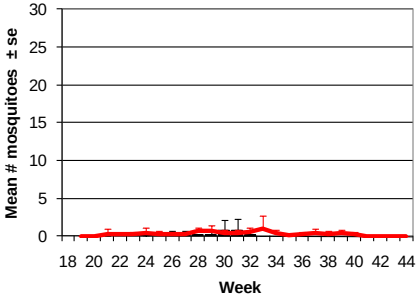
Delaware River Basin



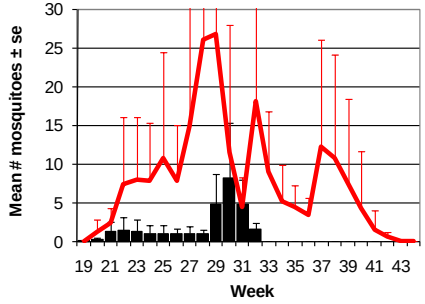
New York Metro



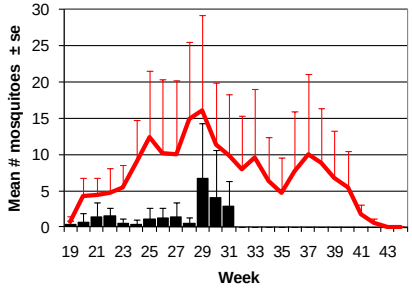
North Central Rural



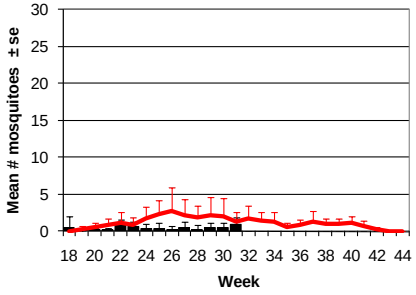
Northwestern Rural



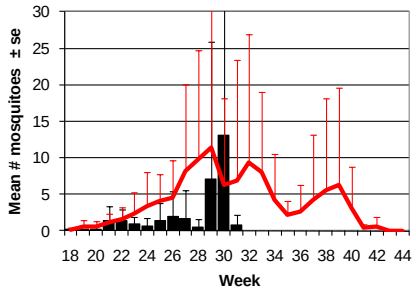
Philadelphia Metro



Pinelands



Suburban Corridor

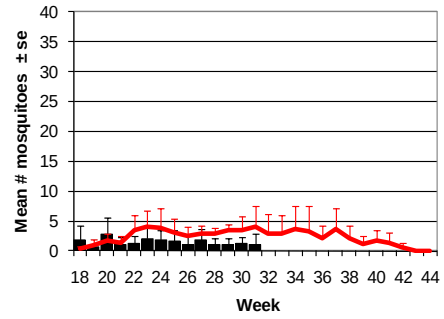


Comments

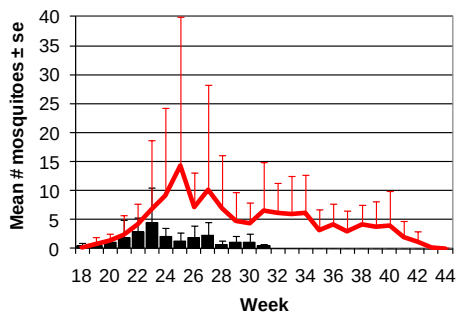
Although numbers were small compared to other regions, the *Aedes vexans* populations were higher there than historical trends. Also, the Delaware Bayshore showed higher than historical activity. Elsewhere, this floodwater species has shown little activity this year, apart from recent increases in numbers from two to three weeks ago.

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

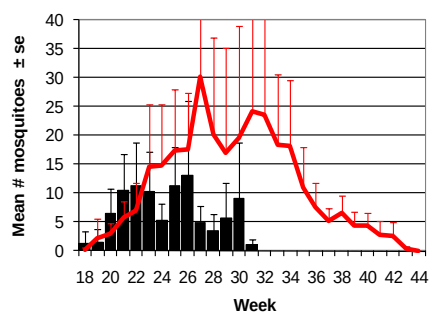
Agricultural



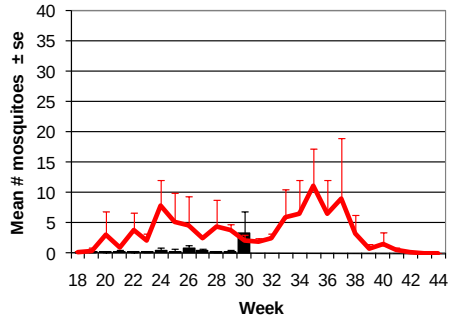
Coastal



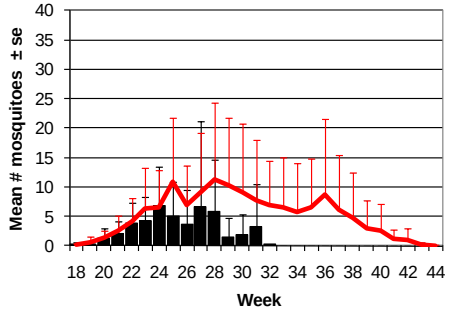
Delaware Bayshore



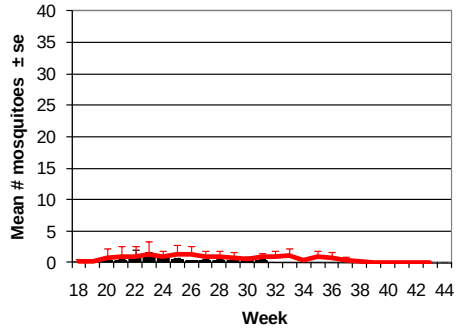
Delaware River Basin



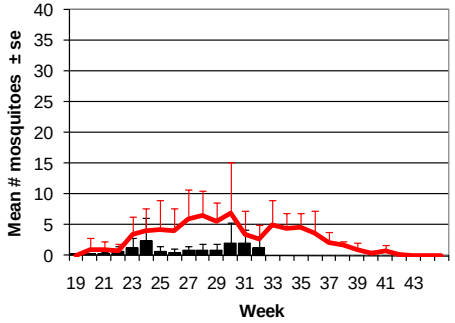
New York Metro



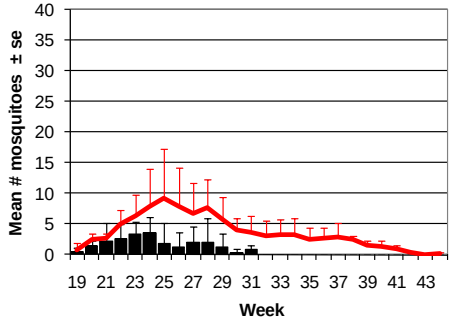
North Central Rural



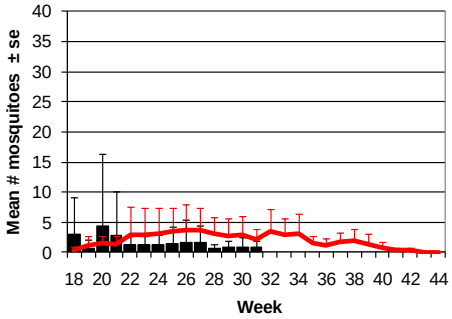
Northwestern Rural



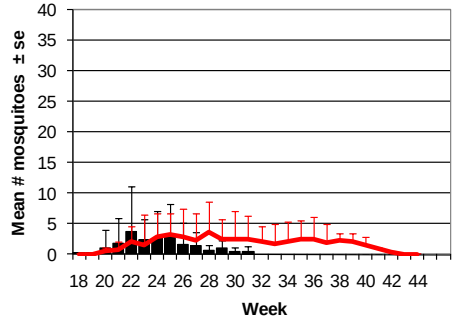
Philadelphia Metro



Pinelands



Suburban Corridor

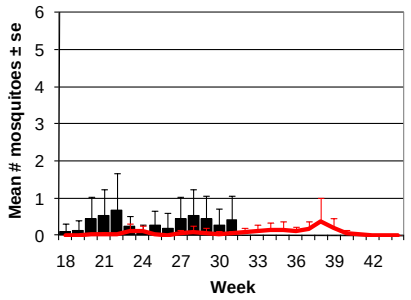
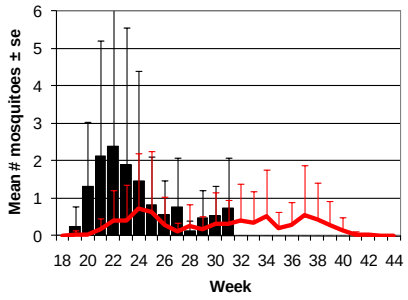
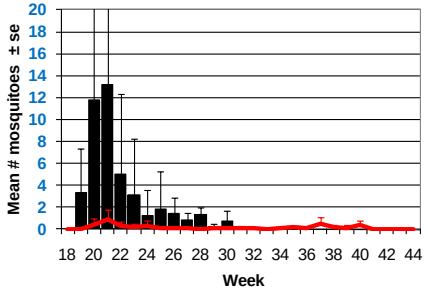
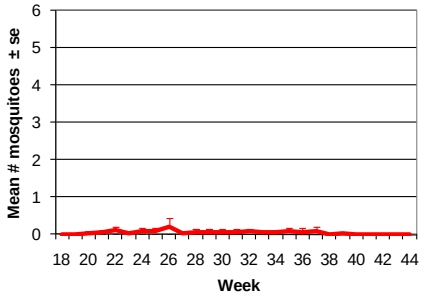
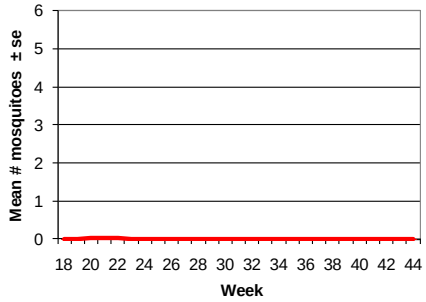
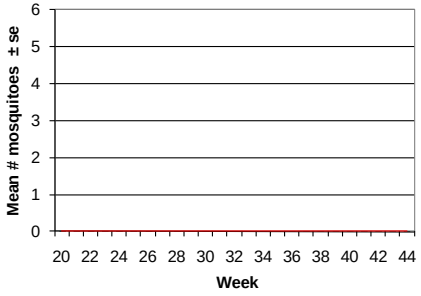
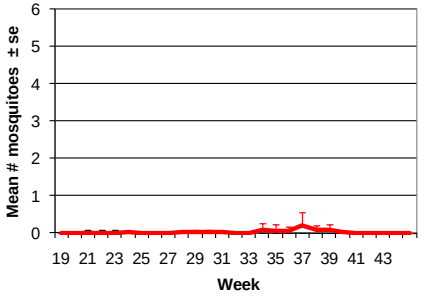
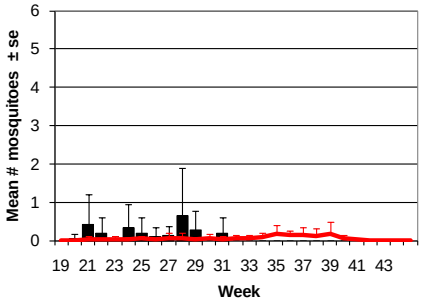
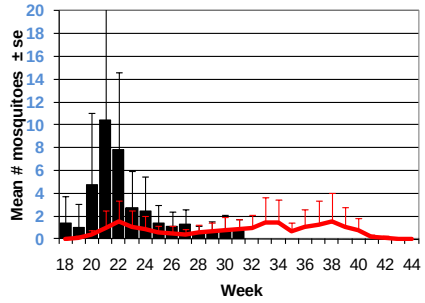
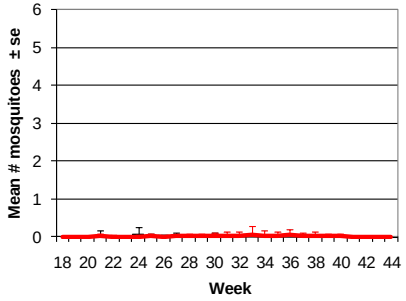


Comments

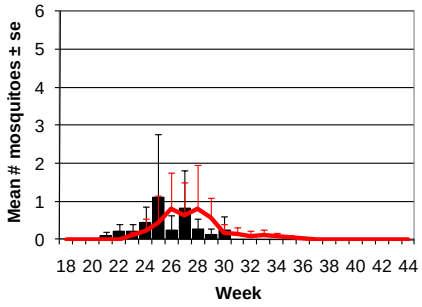
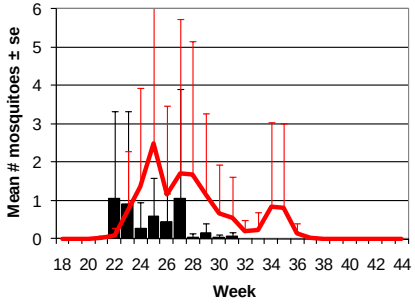
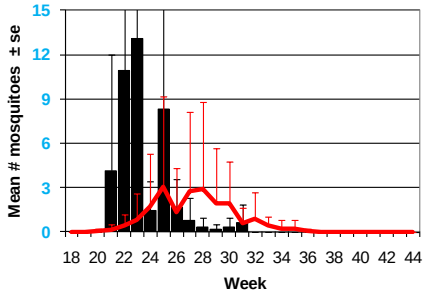
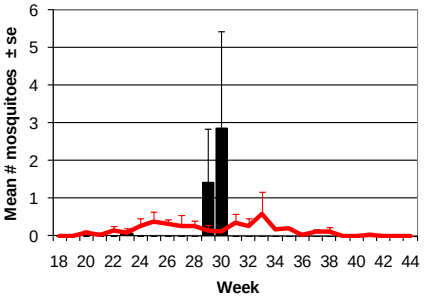
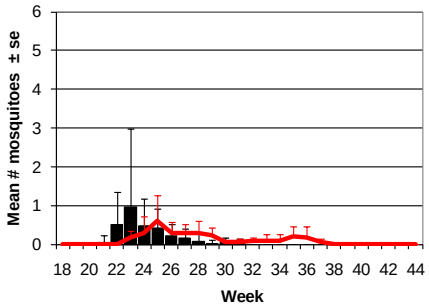
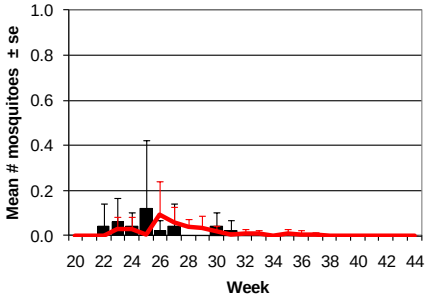
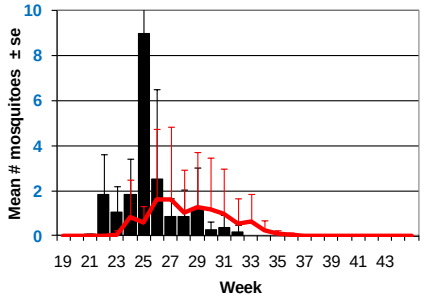
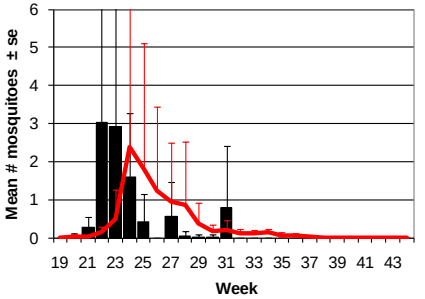
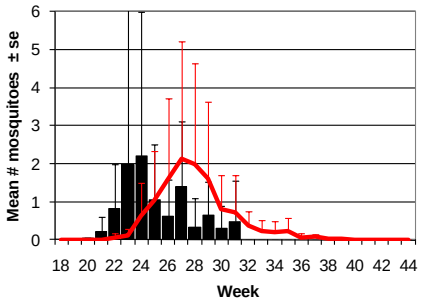
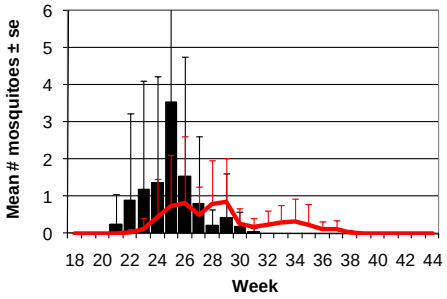
Culex Mix is represented by three species of *Culex* mosquitoes: *Cx. pipiens, Cx. restuans* and *Cx. salinarius*. These mosquitoes are usually grouped together as there is considerable difficulty in separating them to species easily after travelling through the grind of the light trap, often in the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

Culex Mix continues to show a variable response throughout the state. Numbers are near to historical values in regions such as the Pinelands and the Suburban Corridor, but considerably lower in the Delaware River Basin and the Coastal regions. Apart from some early activity in the Delaware Bayshore, no region has shown higher than normal activity. This is in apparent contrast to the increased WNV activity seen this year, illustrating that sheer numbers are not the only factor in determining virus activity.

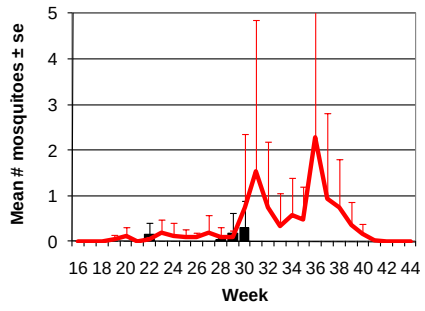
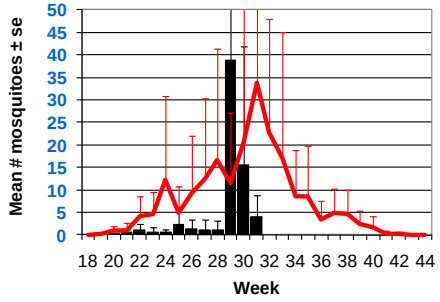
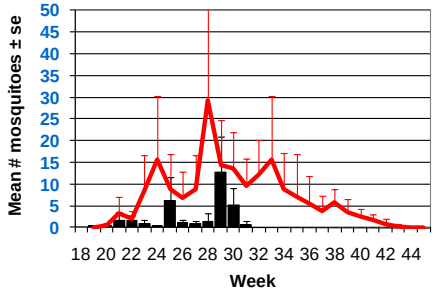
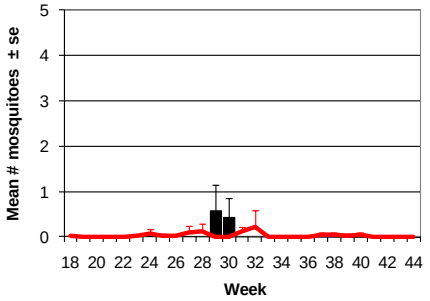
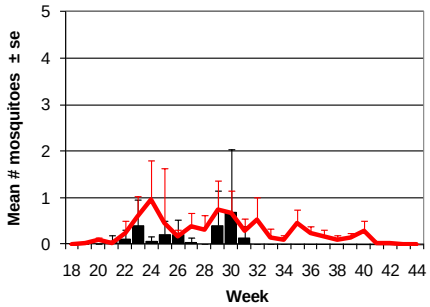
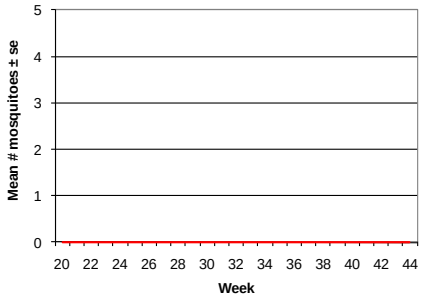
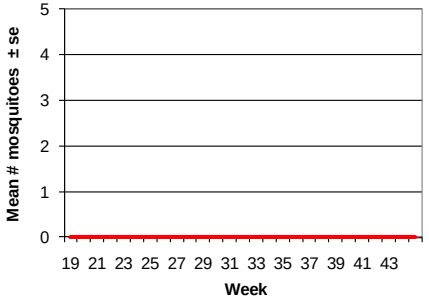
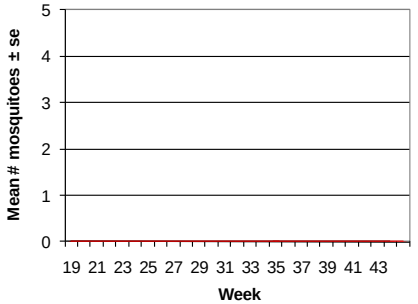
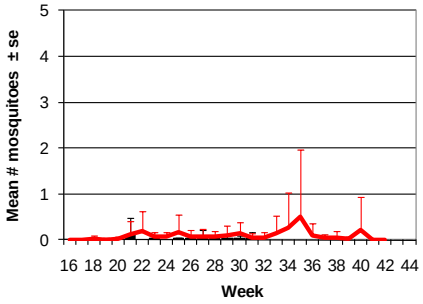
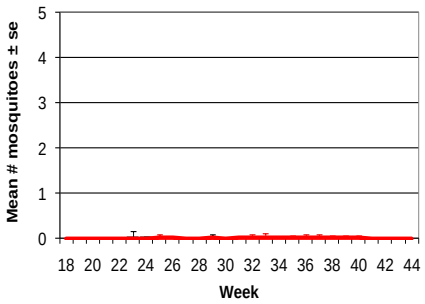
Culiseta melanura – Miscellaneous Group Unique (*Cs. melanura* Type)

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 increased in the state this week as numbers appear to slowly rise, following historical trends toward the second generation.	

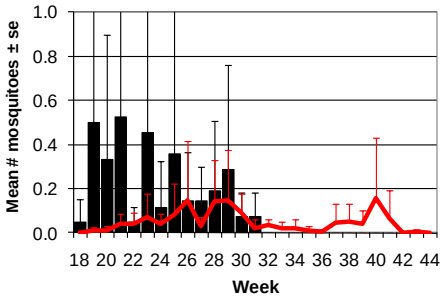
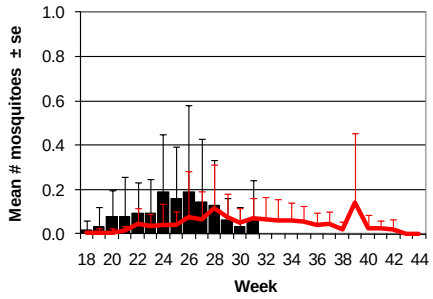
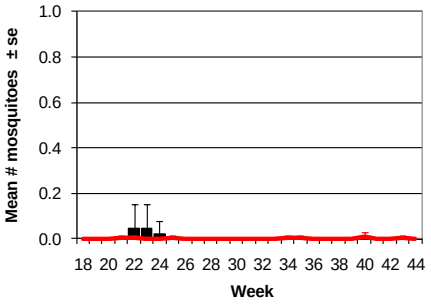
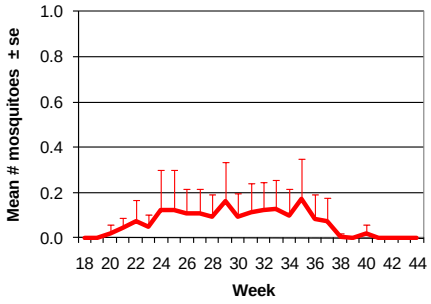
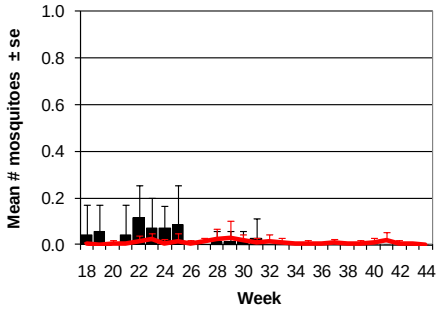
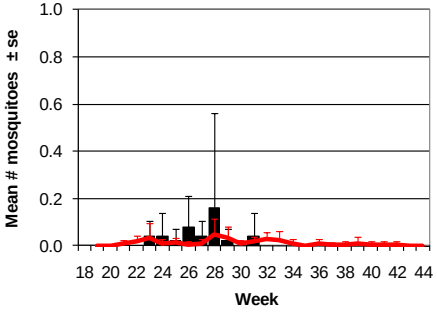
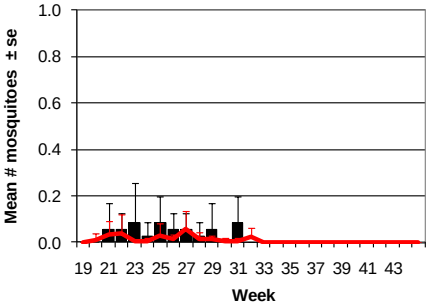
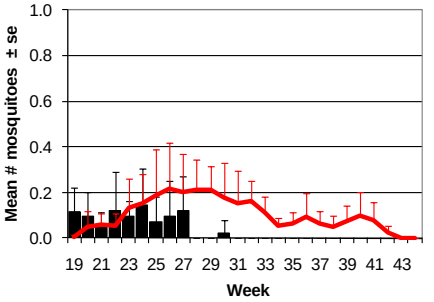
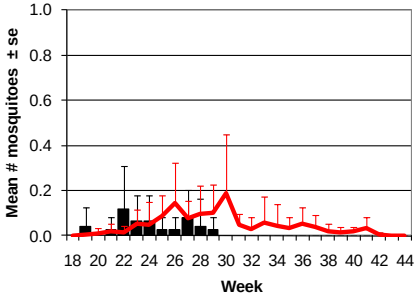
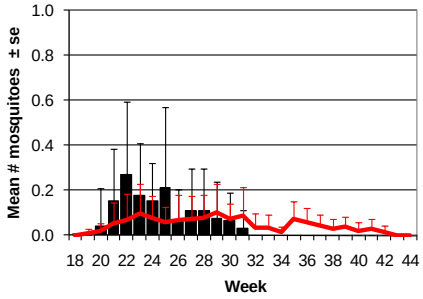
Coquillettidia perturbans – Miscellaneous Group
Monotypic (*Coq. perturbans* Type)

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Coquillettidia perturbans* populations generally continue to decrease throughout the state, although some increases were seen, particularly in the Philadelphia Metro, where numbers were considerably higher than historic values. For some years, late summer emergences can occur.	

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 all regions. July 26th was the last full moon, occurring the previous week 30.	

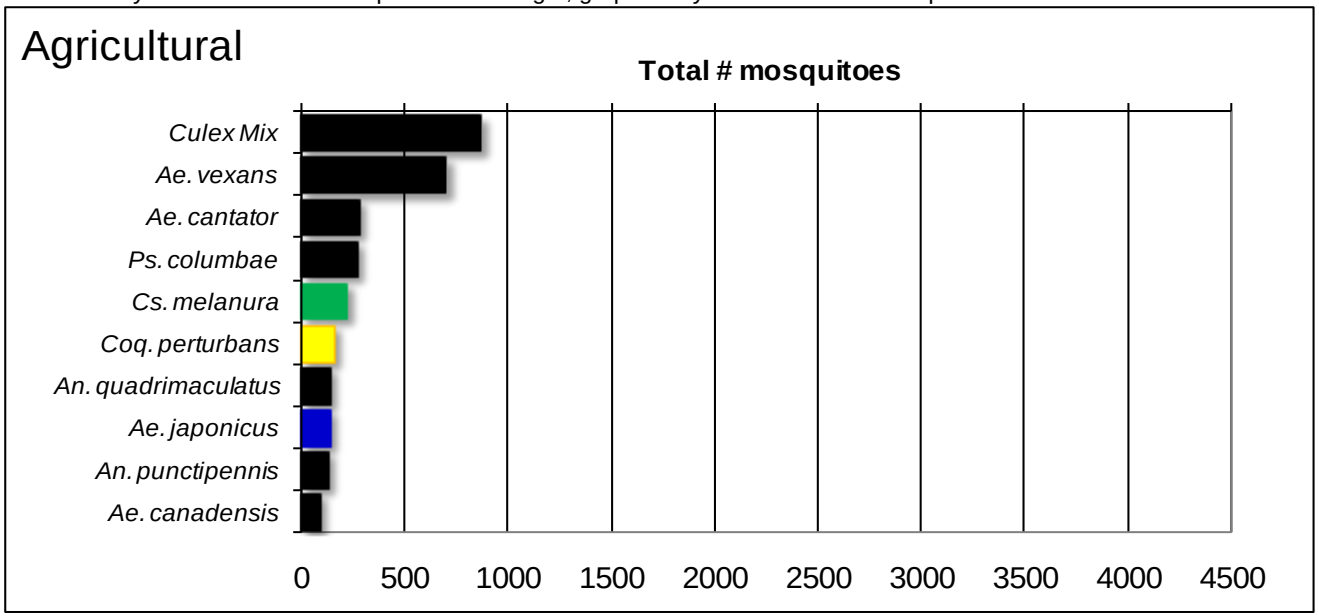
Aedes japonicus – Container Species
Multivoltine Aedine (*Ae. triseriatus* Type)

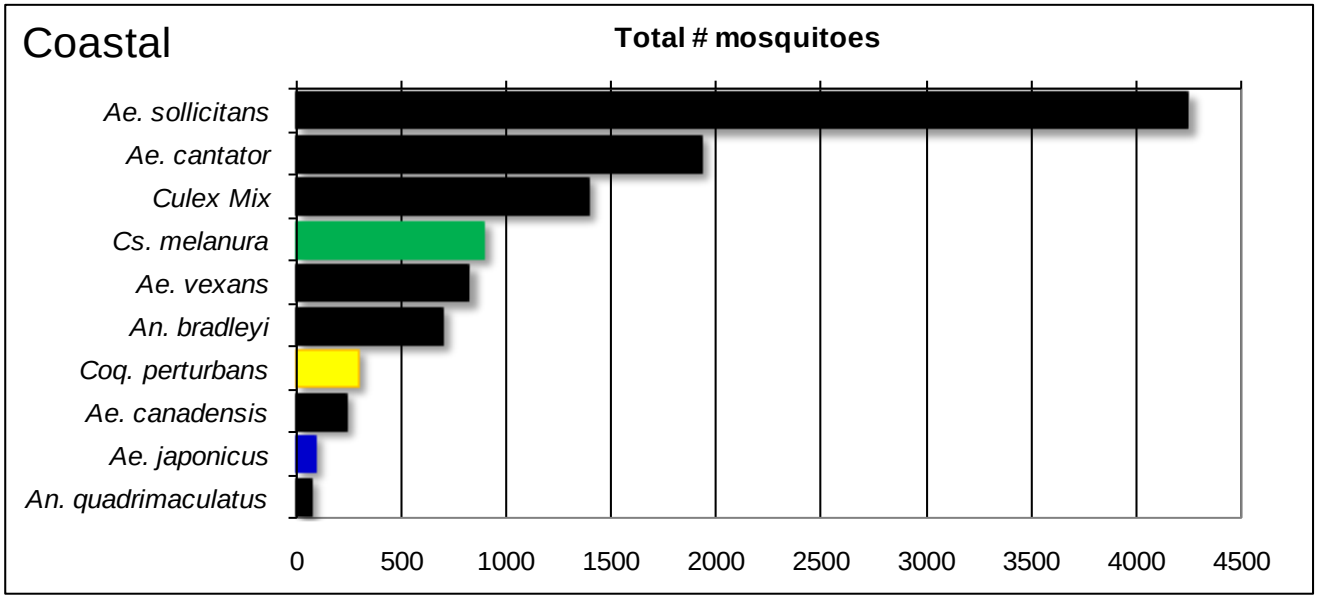
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes japonicus*, a hardy cold-tolerant species, are showing somewhat higher numbers in the Agricultural, New York Metro, North Central Rural and Northwestern Rural regions. This will likely be the last report for the Asian bush mosquito this season.	

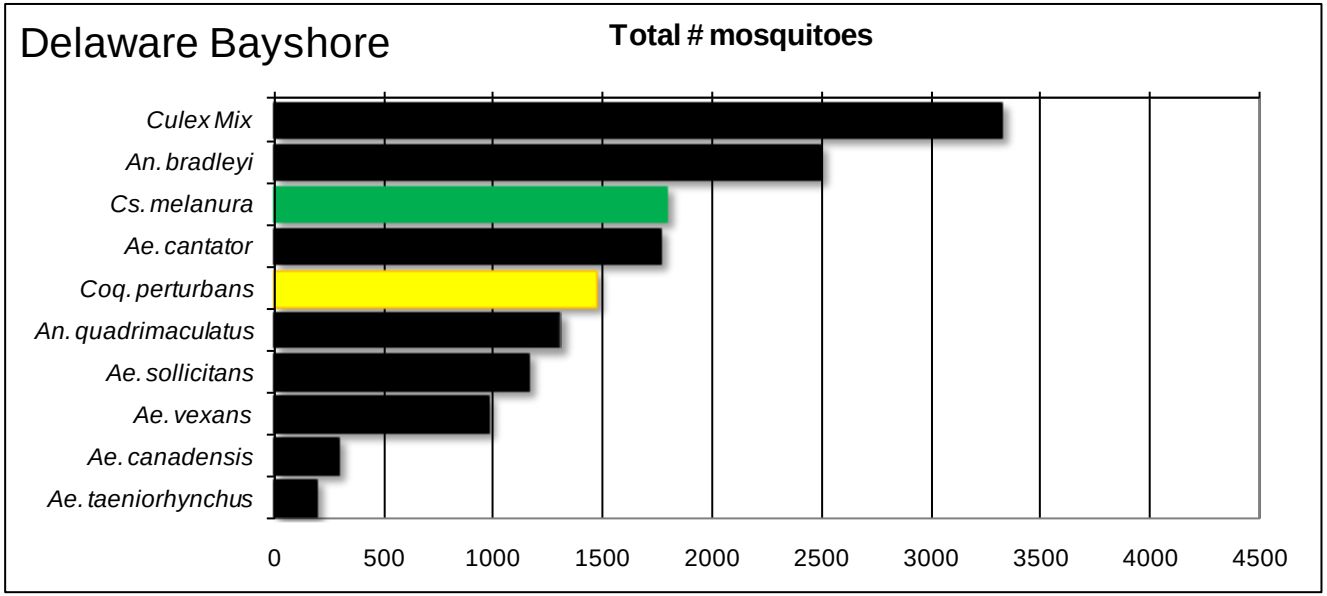
WNV *EEE*

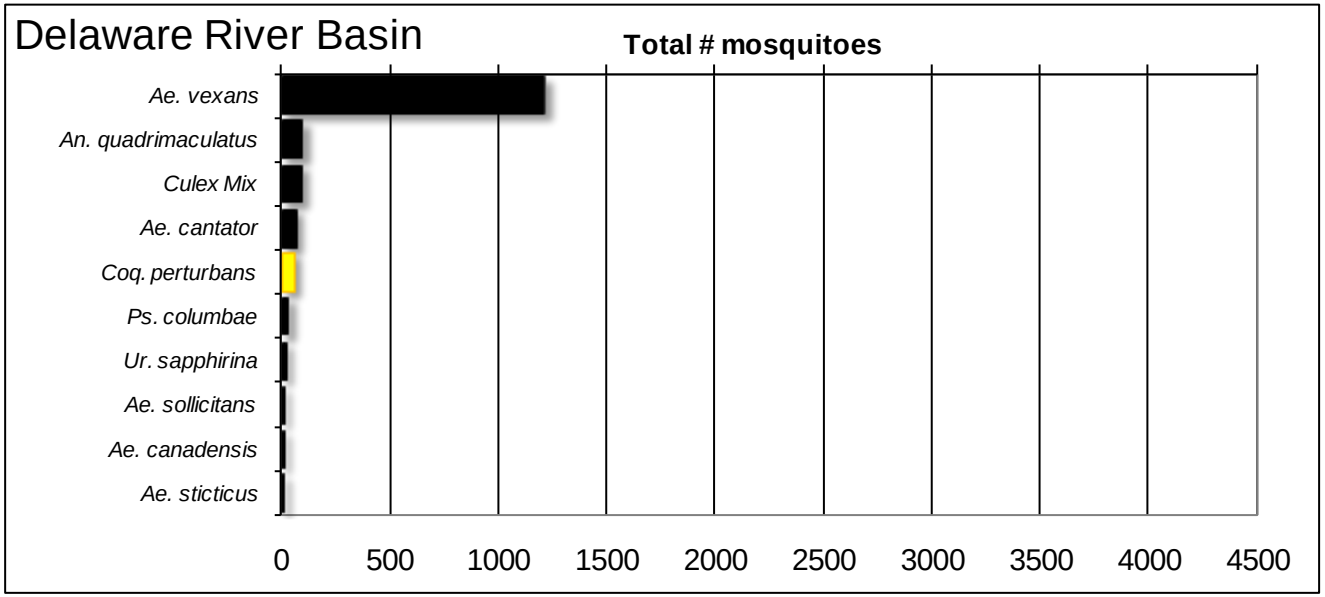
Top Ten Cumulative Mosquito Species/Region - *Ae. albopictus,* *Ae. japonicus (invasives);* *Cs. melanura or Cx. erraticus* *Coq. perturbans*

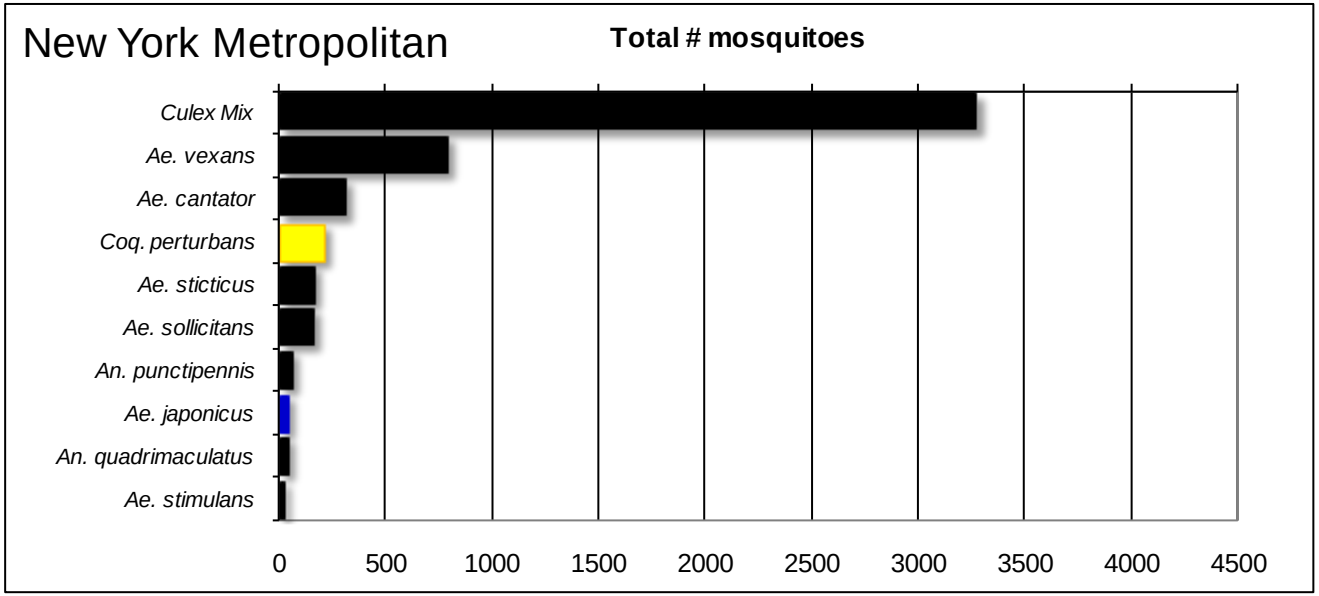
Note: In early season when fewer species are caught, graphs may show less than ten species listed.

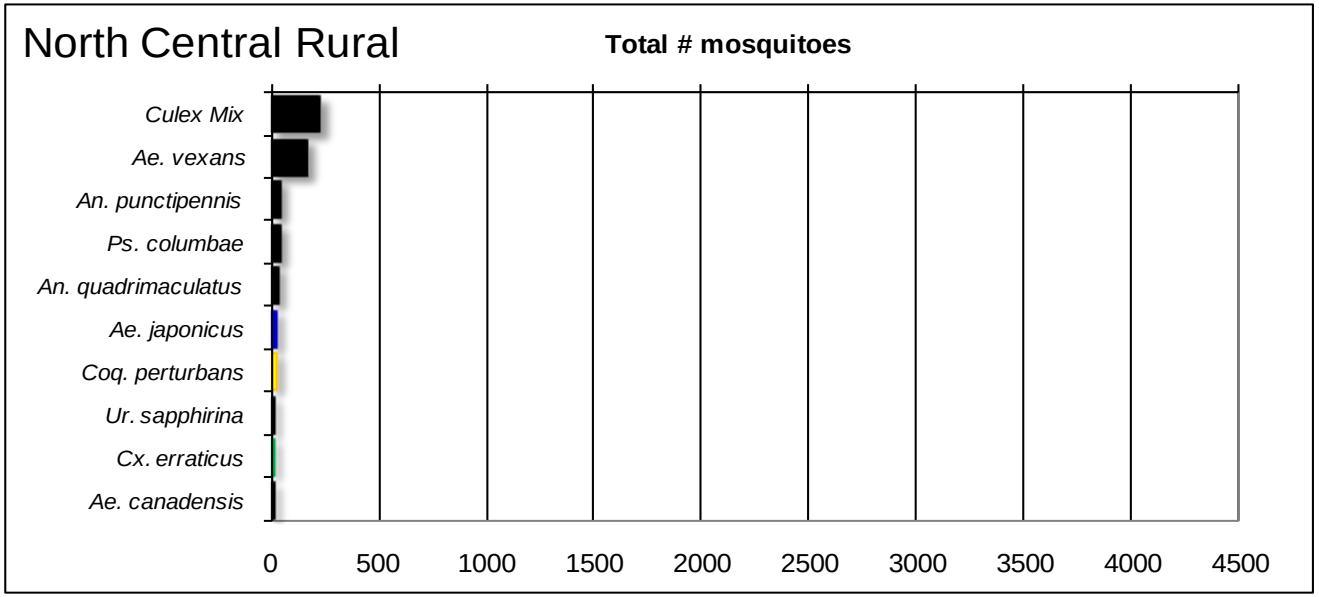


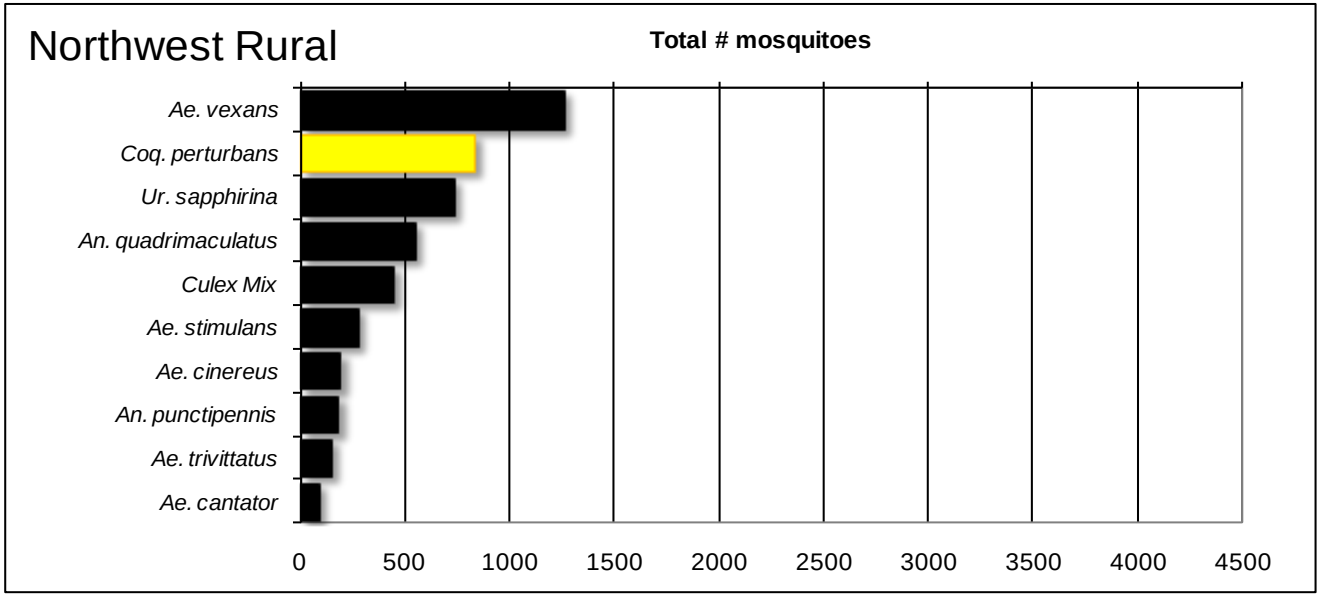


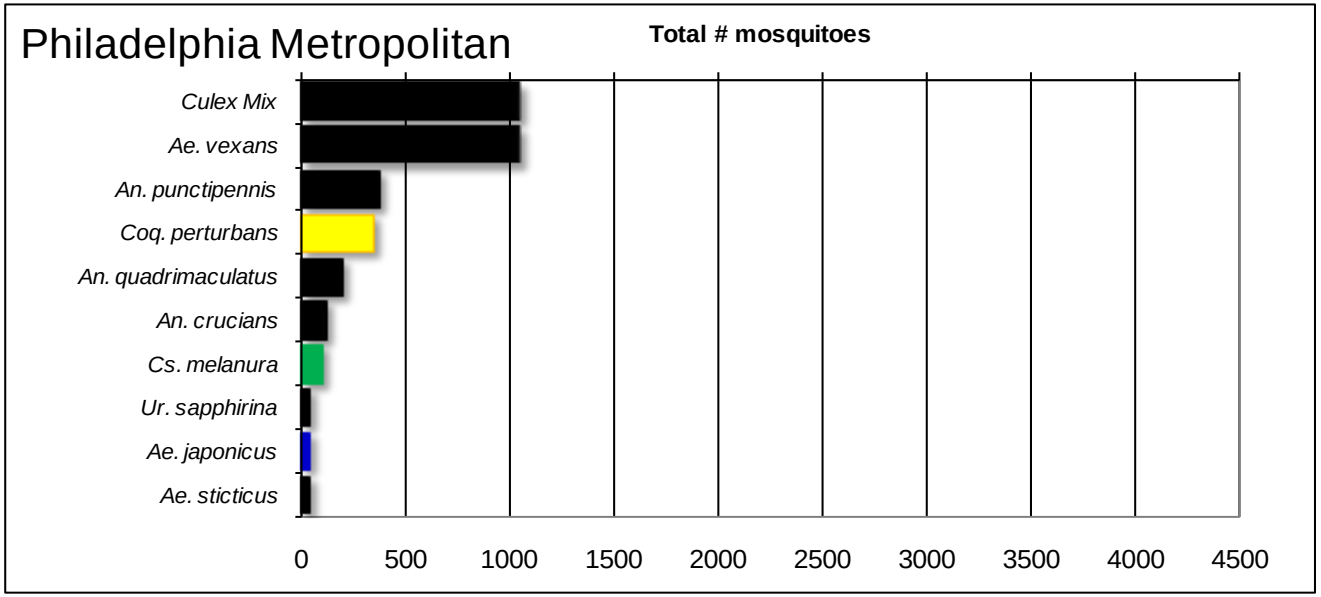

Delaware Bayshore
Total # mosquitoes
Culex Mix
An. bradleyi
Cs. melanura
Ae. cantator
Coq. perturbans
An. quadrimaculatus
Ae. sollicitans
Ae. vexans
Ae. canadensis
Ae. taeniorhynchus
0
500
1000
1500
2000
2500
3000
3500
4000
4500

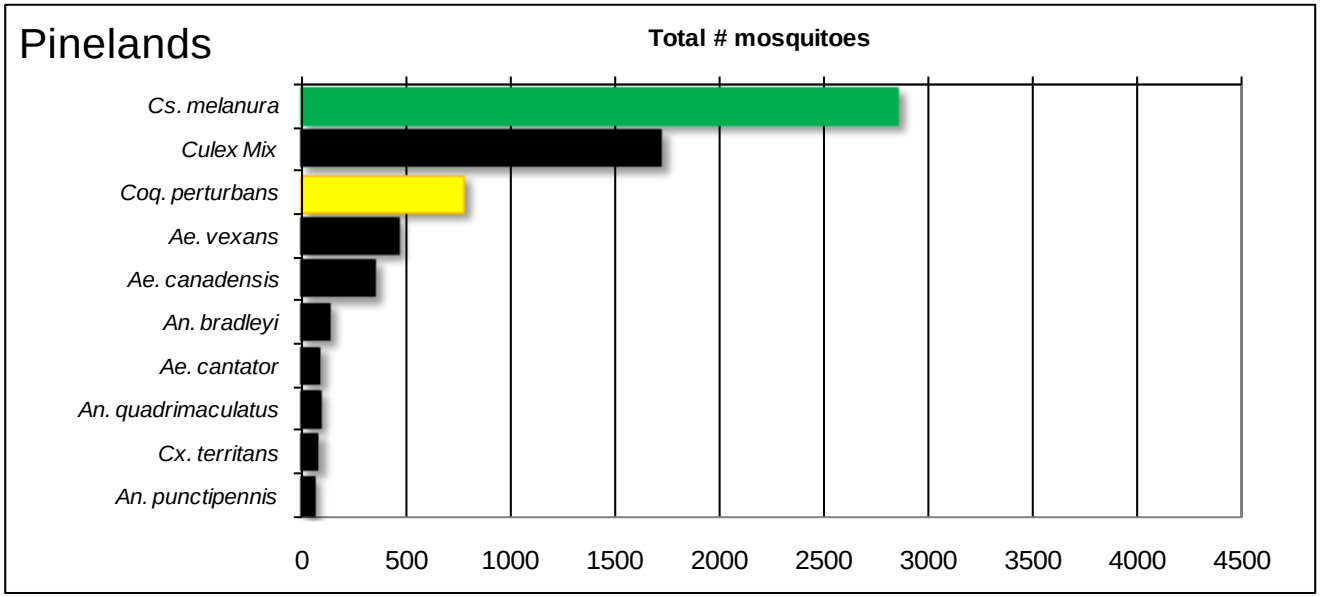

Delaware River Basin
Total # mosquitoes
Ae. vexans
An. quadrimaculatus
Culex Mix
Ae. cantator
Coq. perturbans
Ps. columbae
Ur. sapphirina
Ae. sollicitans
Ae. canadensis
Ae. sticticus
0
500
1000
1500
2000
2500
3000
3500
4000
4500

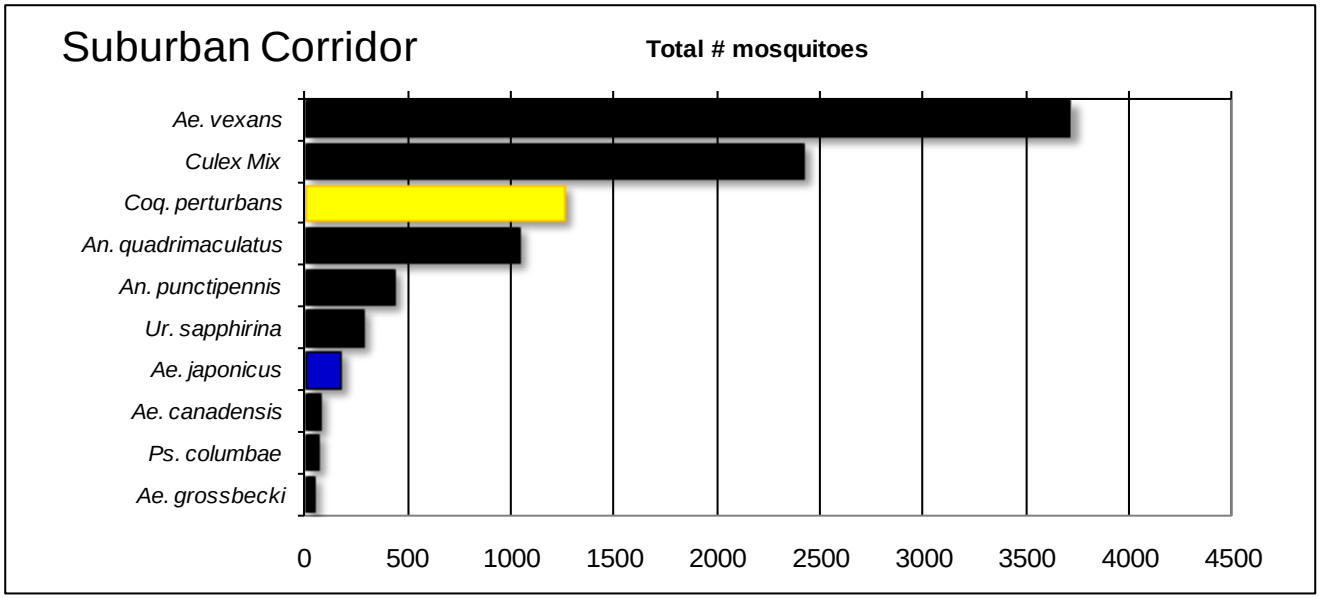

New York Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. cantator
Coq. perturbans
Ae. sticticus
Ae. sollicitans
An. punctipennis
Ae. japonicus
An. quadrimaculatus
Ae. stimulans
0
500
1000
1500
2000
2500
3000
3500
4000
4500


North Central Rural
Total # mosquitoes
Culex Mix
Ae. vexans
An. punctipennis
Ps. columbae
An. quadrimaculatus
Ae. japonicus
Coq. perturbans
Ur. sapphirina
Cx. erraticus
Ae. canadensis
0
500
1000
1500
2000
2500
3000
3500
4000
4500


Northwest Rural
Total # mosquitoes
Ae. vexans
Coq. perturbans
Ur. sapphirina
An. quadrimaculatus
Culex Mix
Ae. stimulans
Ae. cinereus
An. punctipennis
Ae. trivittatus
Ae. cantator
0
500
1000
1500
2000
2500
3000
3500
4000
4500


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
4500


Pinelands
Total # mosquitoes
Cs. melanura
Culex Mix
Coq. perturbans
Ae. vexans
Ae. canadensis
An. bradleyi
Ae. cantator
An. quadrimaculatus
Cx. territans
An. punctipennis
0
500
1000
1500
2000
2500
3000
3500
4000
4500


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
4500