NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report for 22 June to 28 June 2014, CDC Week 26

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Center for Vector Biology

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funding from the NJ State Mosquito Control Commission and with the participation of the 21 county mosquito control agencies of New Jersey.

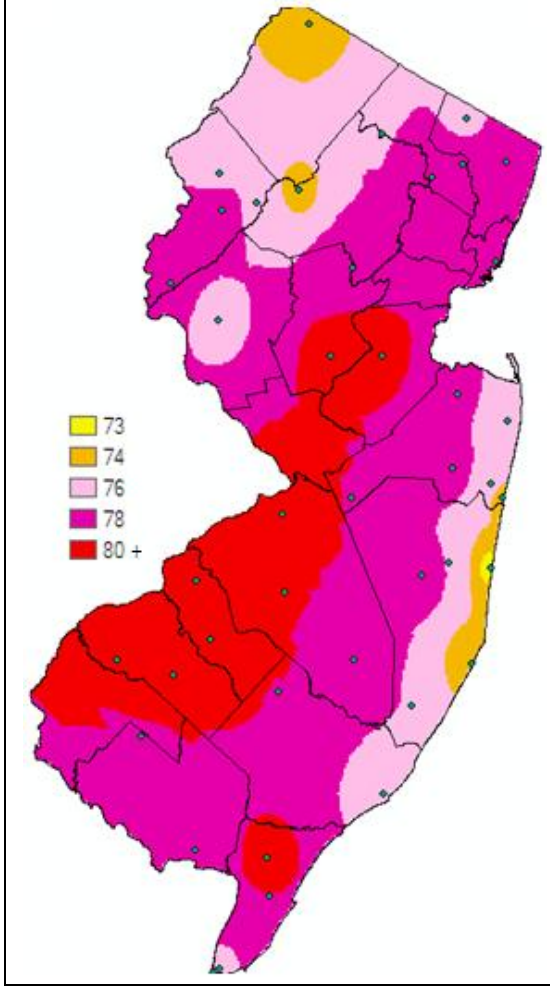
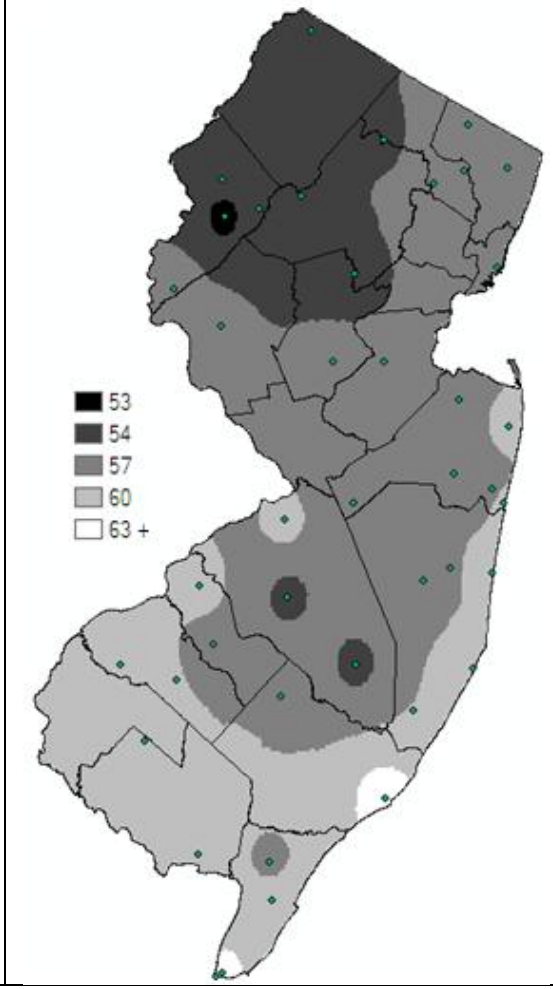
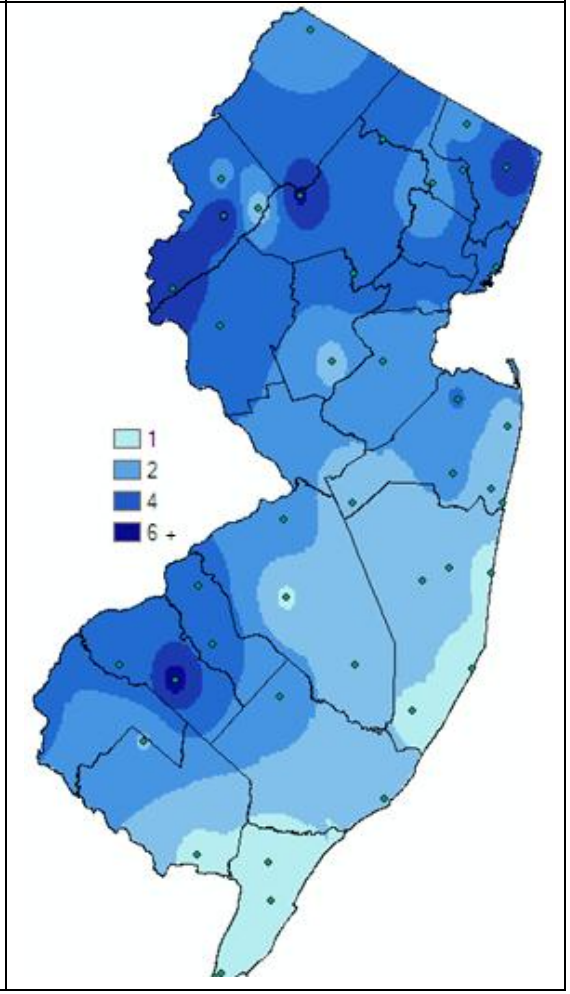
Summary Table – Week 26

	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	**4.06**	**3.59**	**1**	**1.57**	**2.04**	**0**	**0.60**	**0.30**	**3**	**0.00**	**0.01**	**0**
Coastal	**0.13**	**5.14**	**0**	**0.32**	**7.85**	**0**	**0.00**	**0.20**	**0**	**0.38**	**10.63**	**0**
Delaware Bayshore	**0.57**	**7.03**	**0**	**3.37**	**19.46**	**0**	**0.00**	**2.99**	**0**	**0.80**	**4.99**	**0**
Delaware River Basin	**0.43**	**13.31**	**0**	**1.50**	**1.31**	**1**	**0.07**	**0.31**	**0**	**0.00**	**0.07**	**0**
New York Metro	**8.46**	**2.09**	**4**	**3.73**	**2.74**	**1**	**0.00**	**0.11**	**0**	**0.84**	**0.57**	**1**
North Central Rural	**0.45**	**0.64**	**0**	**1.06**	**1.68**	**0**	**0.16**	**0.07**	**3**	**0.00**	**0.00**	**0**
Northwest Rural	**0.11**	**14.97**	**0**	**0.17**	**5.67**	**0**	**0.02**	**2.93**	**0**	**0.00**	**0.00**	**0**
Philadelphia Metro	**nd**	**13.49**	**0**	**nd**	**6.39**	**0**	**nd**	**0.35**	**0**	**nd**	**0.00**	**0**
Pinelands	**0.09**	**2.65**	**0**	**0.09**	**3.02**	**0**	**0.12**	**0.94**	**0**	**0.00**	**0.07**	**0**
Suburban Corridor	**1.68**	**6.61**	**0**	**0.44**	**3.77**	**0**	**0.77**	**1.07**	**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. nd=no data reported.

State Summary: Several populations of the more significant pestiferous species in New Jersey were significantly above historical levels, most notably *Aedes vexans* in the New York Metropolitan region and *Coquillettidia perturbans* in both the Agricultural and North Central Rural regions.

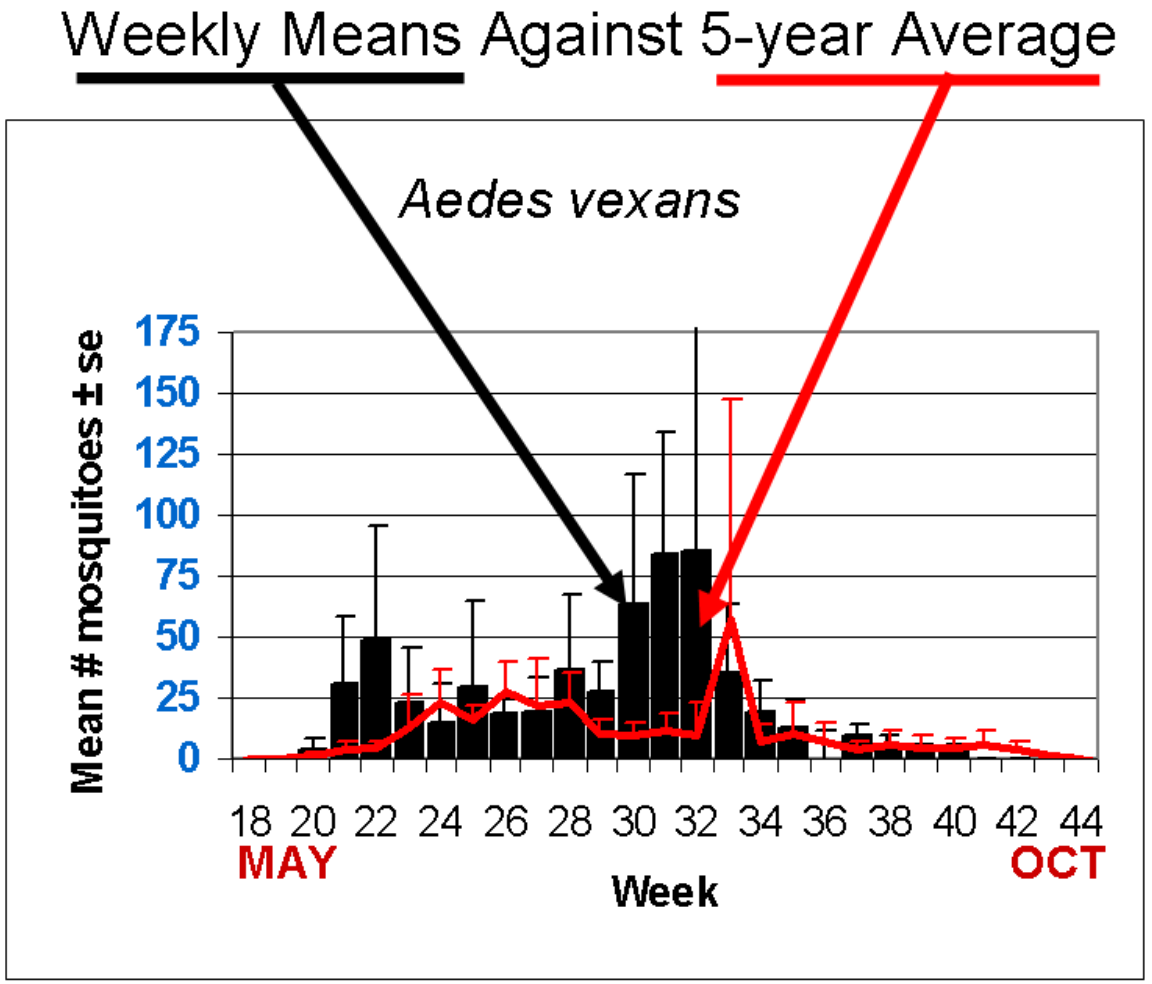
Climate Factors

Average High Temperature	Average Low Temperature	Total Precipitation
		

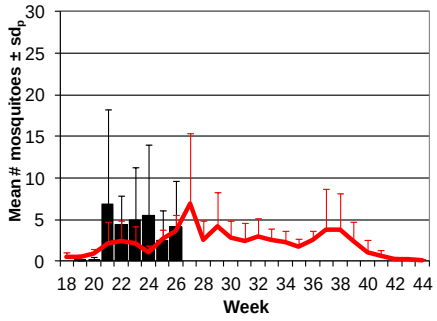
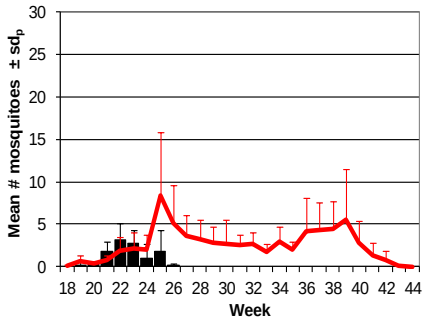
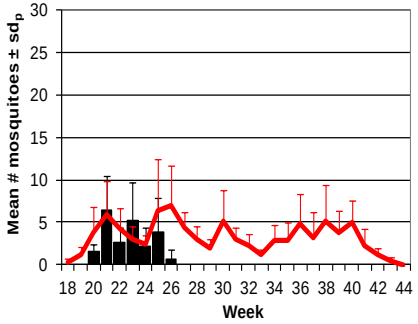
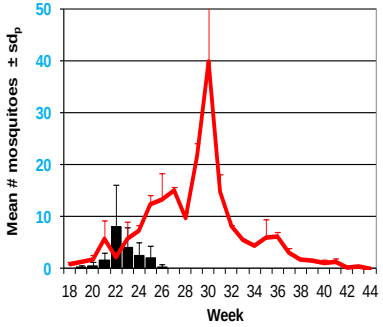
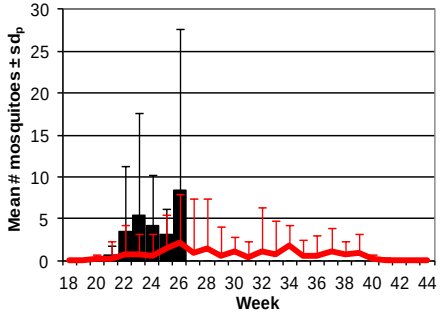
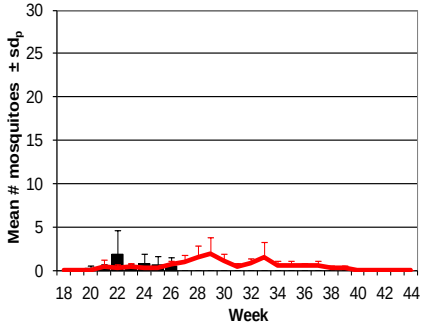
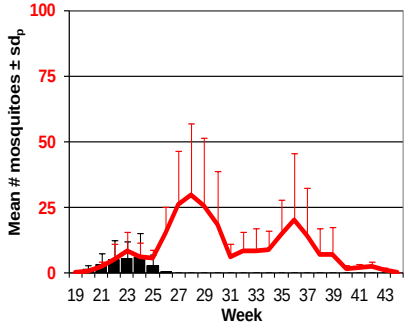
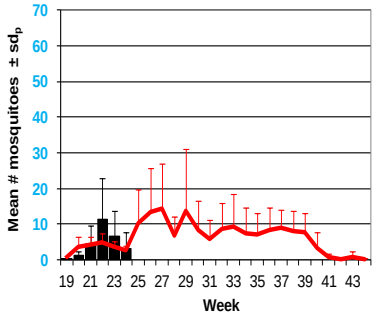
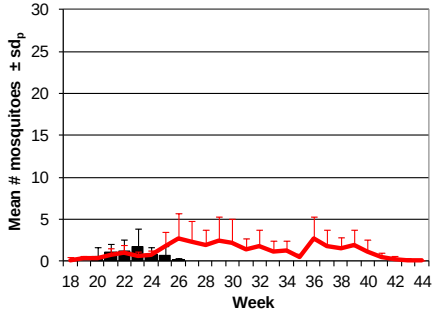
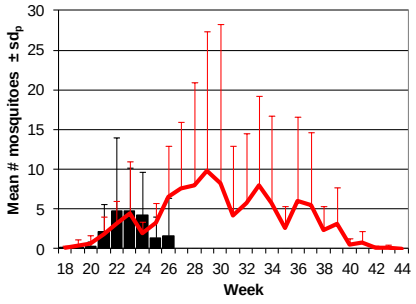
The three figures show the interpolation of average maximum (°F) and minimum temperature (°F) and total precipitation (inches) for 31 days prior to 27 June 2014 in New Jersey. Data points are from about 41 weather stations maintained through the New Jersey Weather & Climate Network and the State Climatologist. Interpolation between points was performed using ArcMap 10.1.

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 Essex, Monmouth, Morris, Salem and Warren counties. Data for the previous week are from Atlantic, Bergen, Burlington, Cape May, Essex, Monmouth, Morris, Ocean, Salem, Somerset, Union and Warren counties.

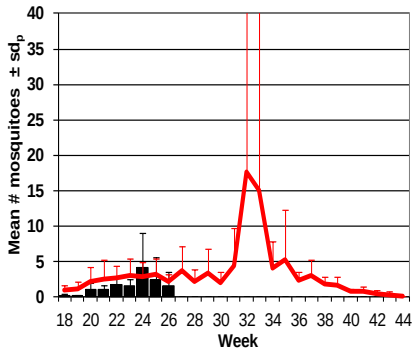


Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

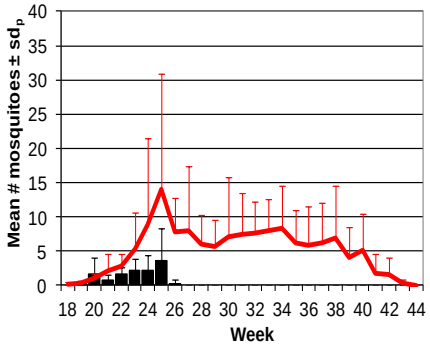
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		Aedes vexans populations were significantly higher in the New York Metropolitan region this past week. One factor that contributed to these higher abundances were activities at one site that limited the ability for control to be conducted and subsequently, populations were much higher than normally seen. Agricultural regions also showed minor increases. Most precipitation over the last 30 days were largely in the west and northern parts of the state (page 2 graphs), and the US drought monitor program for NJ shows no dry conditions at the current time: http://droughtmonitor.unl.edu/Home/StateDroughtMonitor.aspx?NJ	

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

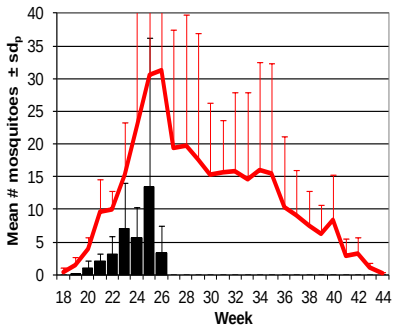
Agricultural



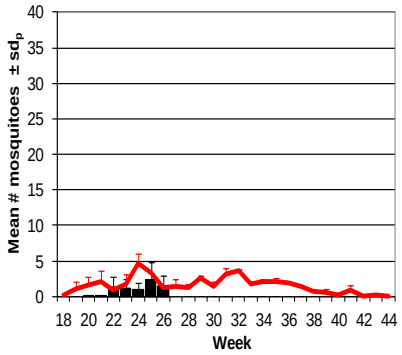
Coastal



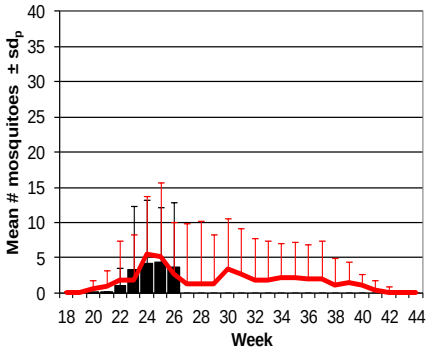
Delaware Bayshore



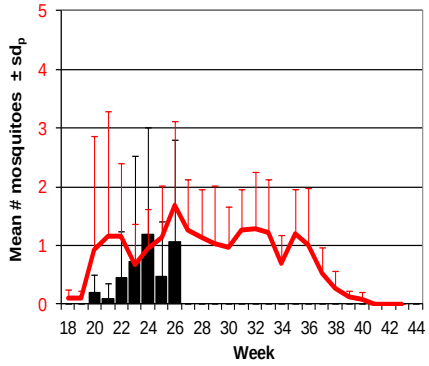
Delaware River Basin



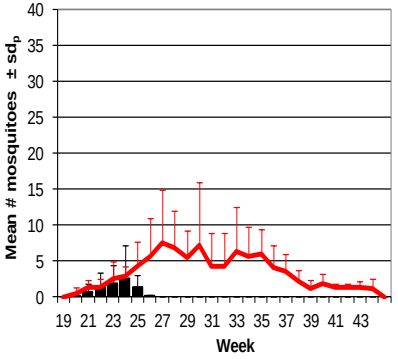
New York Metro



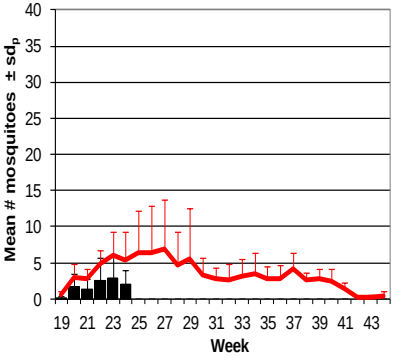
North Central Rural



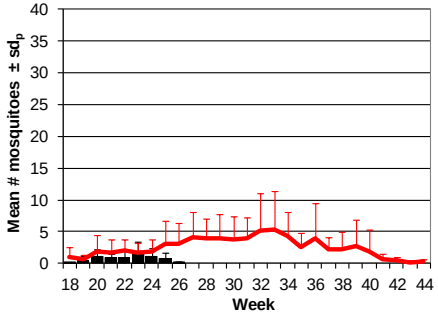
Northwestern Rural



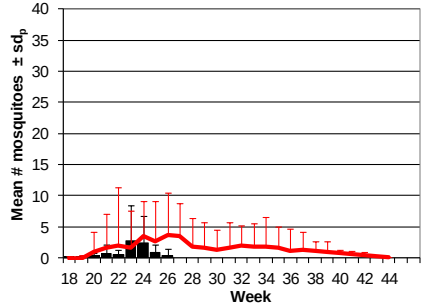
Philadelphia Metro



Pinelands



Suburban Corridor

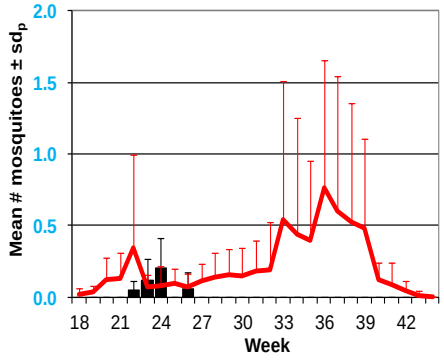


Comments

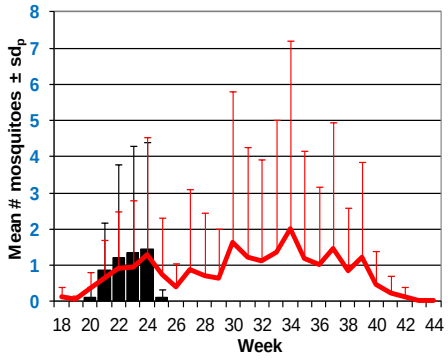
Culex Mix is composed of *Culex pipiens, Cx. restuans* and *Cx. salinarius*. These three species (especially *pipiens* and *restuans*) are often difficult to tell apart after encountering the damaging blades of the New Jersey light trap. *Culex* populations appear to trend close to average values for most regions (values above historical levels for the Delaware River Basin and the New York Metropolitan, but not significantly). Trends in the Coastal and Delaware Bayshore appear to be significantly lower than historical values for the current week at this time.

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

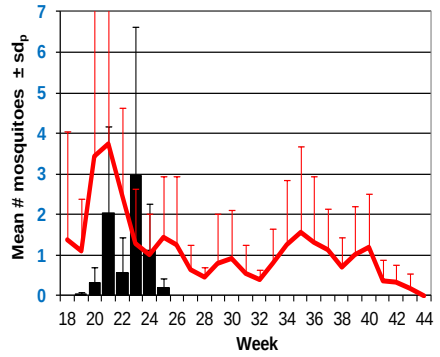
Agricultural



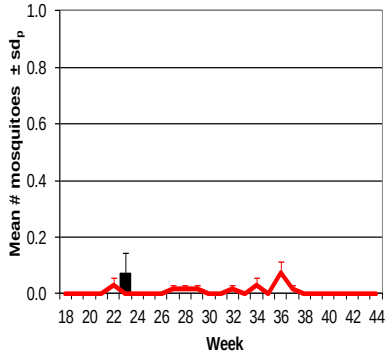
Coastal



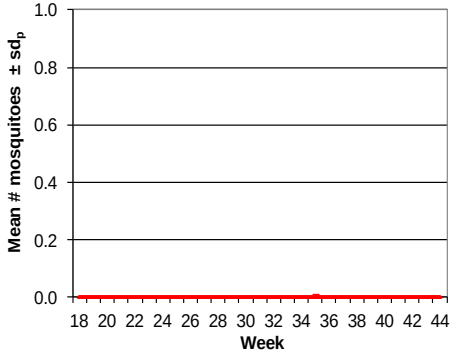
Delaware Bayshore



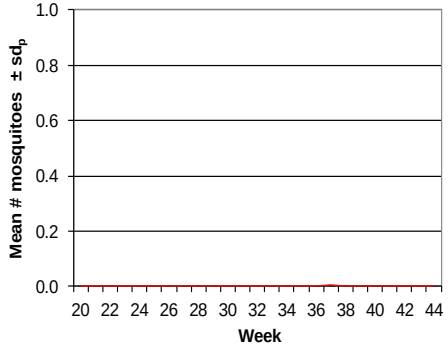
Delaware River Basin



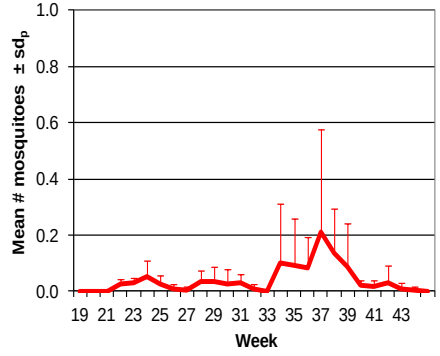
New York Metro



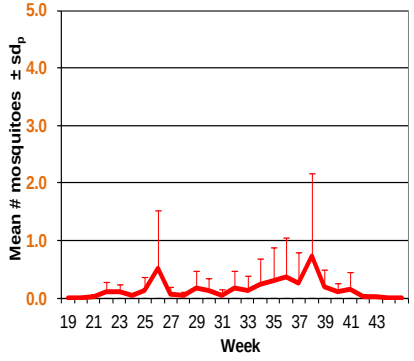
North Central Rural



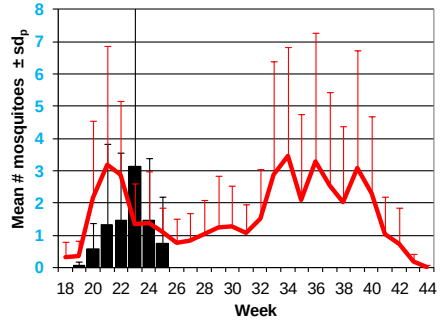
Northwestern Rural



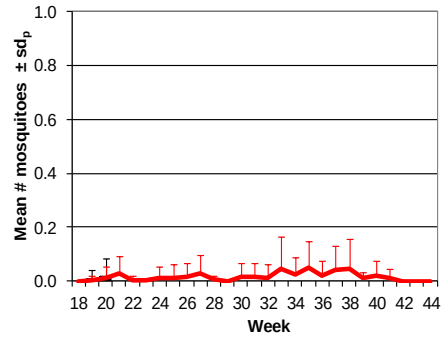
Philadelphia Metro



Pinelands



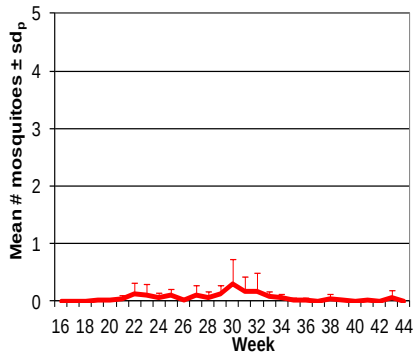
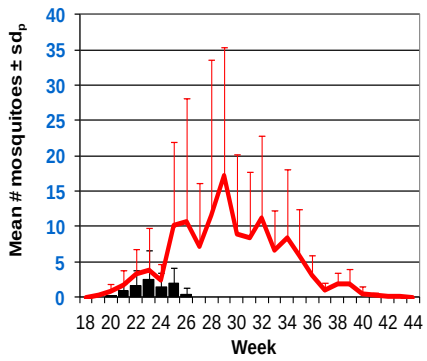
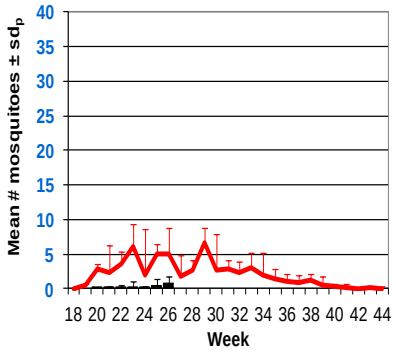
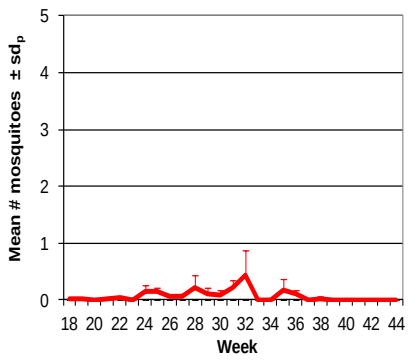
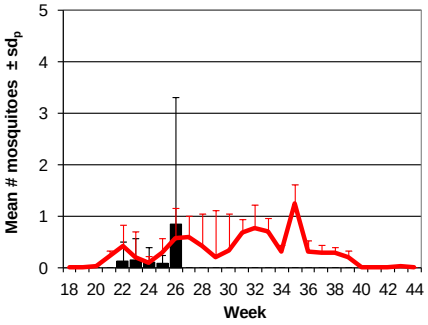
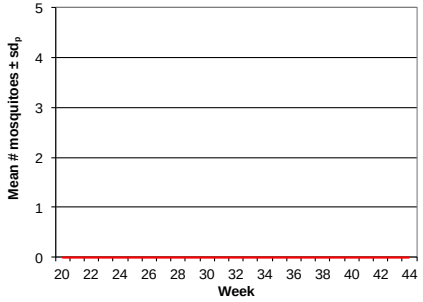
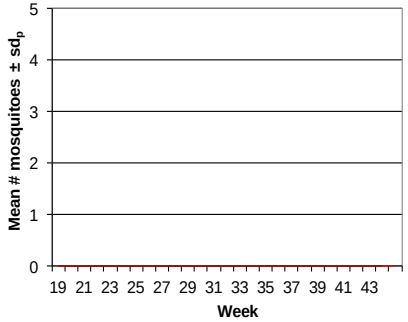
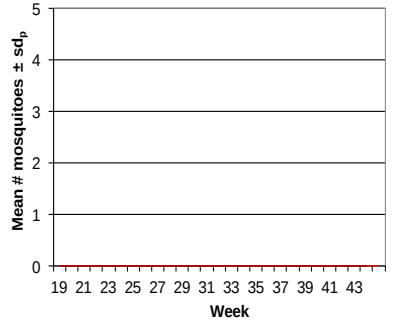
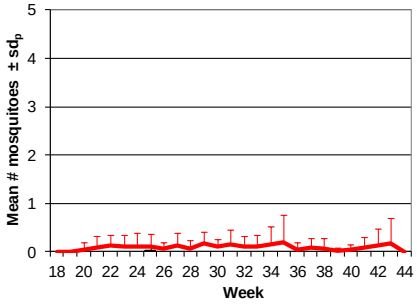
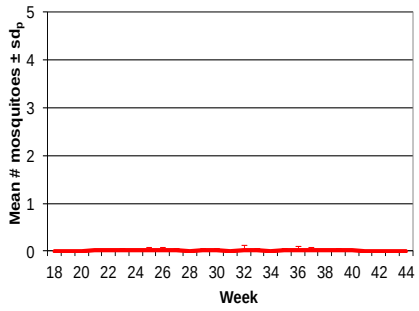
Suburban Corridor



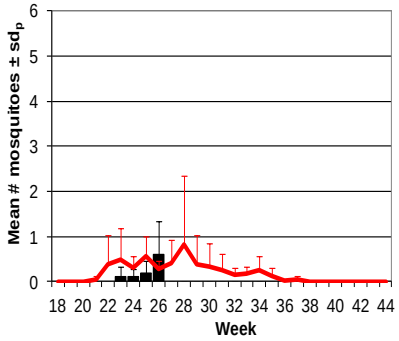
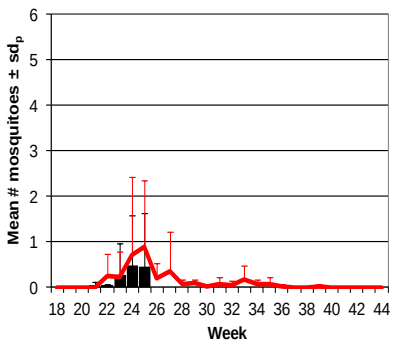
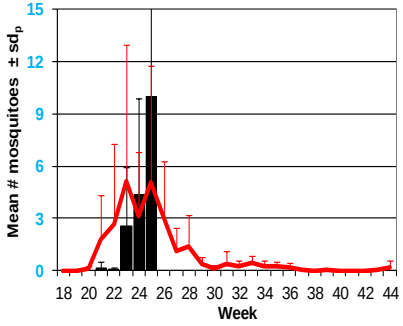
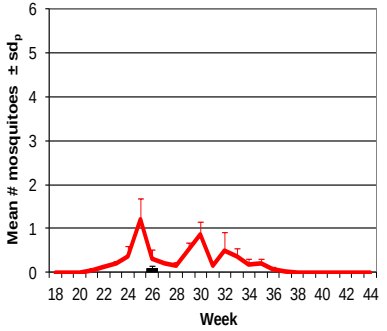
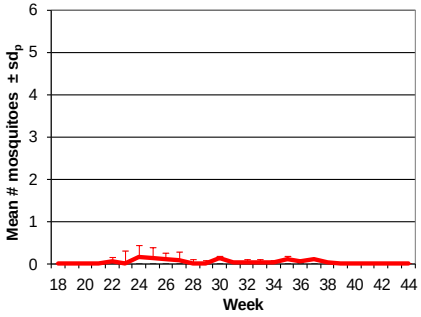
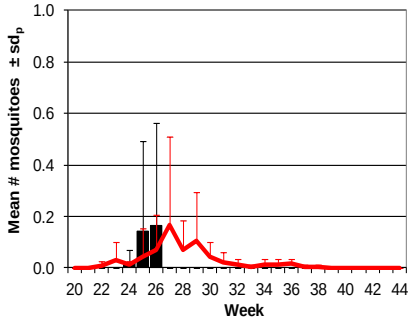
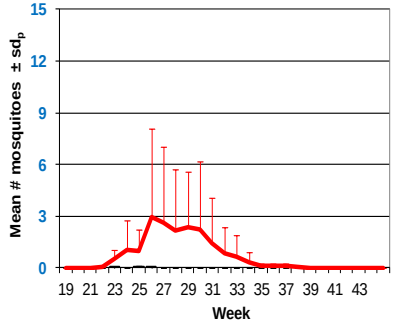
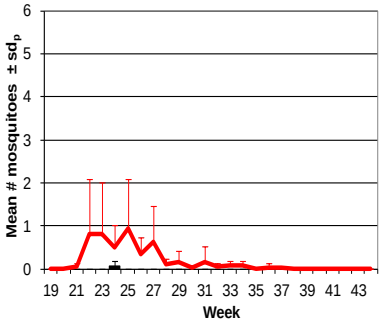
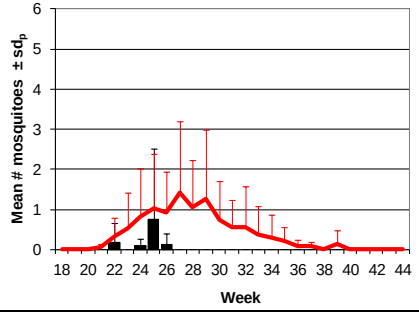
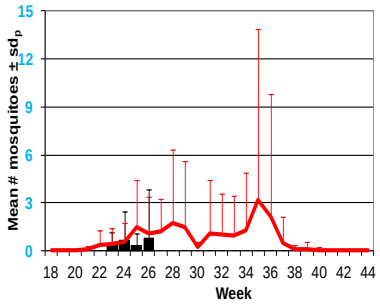
Comments

Culiseta melanura is the enzootic ornithophilic vector of eastern equine encephalitis. *Cs. melanura* populations in the Coastal and Delaware Bayshore regions appear to be below historical values with the current dataset but may trend upwards as the dataset becomes more complete. Currently, there is no reported EEE activity in the state.

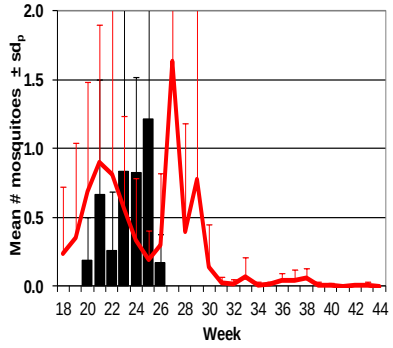
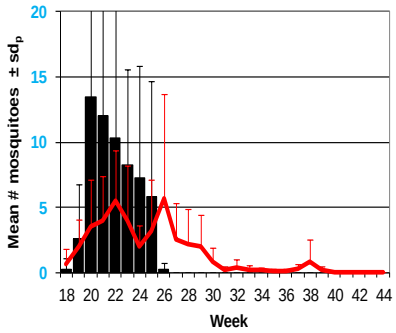
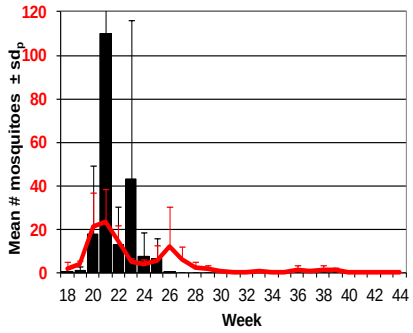
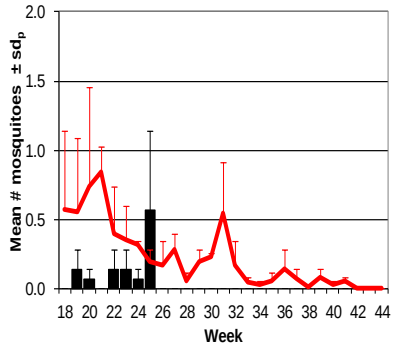
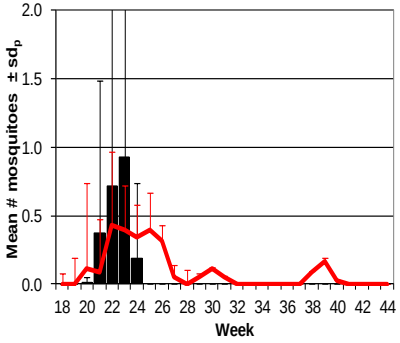
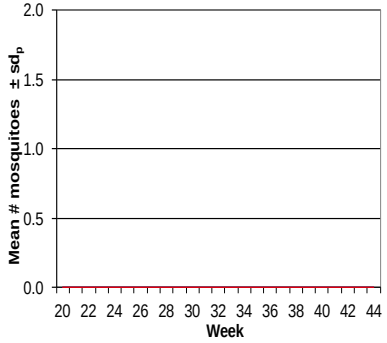
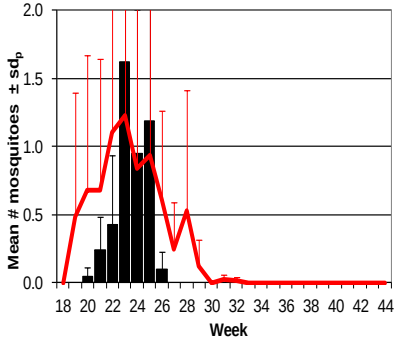
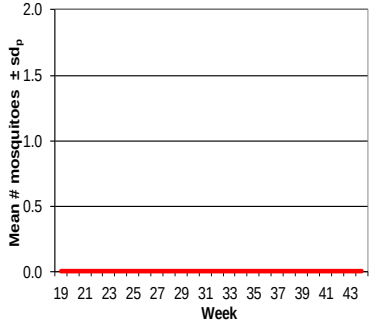
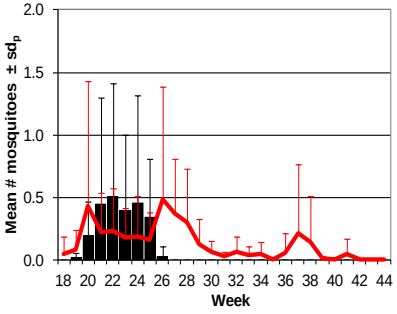
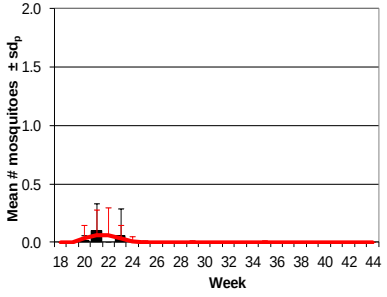
Aedes sollicitans - Salt Floodwater Species
Multivoltine Aedine (*Ae. sollicitans* Type)

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes sollicitans* is a salt floodwater species and responds to both lunar tidal patterns as well as rainfall. Coastal and particularly the Delaware Bayshore populations continue their low abundances in comparison to historical trends. The New York Metropolitan region, on the other hand, is showing higher than normal abundances. Next full moon is 12 July.	

Coquillettidia perturbans
Monotypic (*Coquillettidia 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 are located in cattail swamps and other wetlands with emergent vegetation, often making control of their numbers dependent on controlling water depth. In the Delaware Bayshore region, this species had a pronounced emergence during Week 25. During the current week, the Agricultural and North Central Rural regions experienced higher numbers. Elsewhere, population levels are either at or below historical trends.	

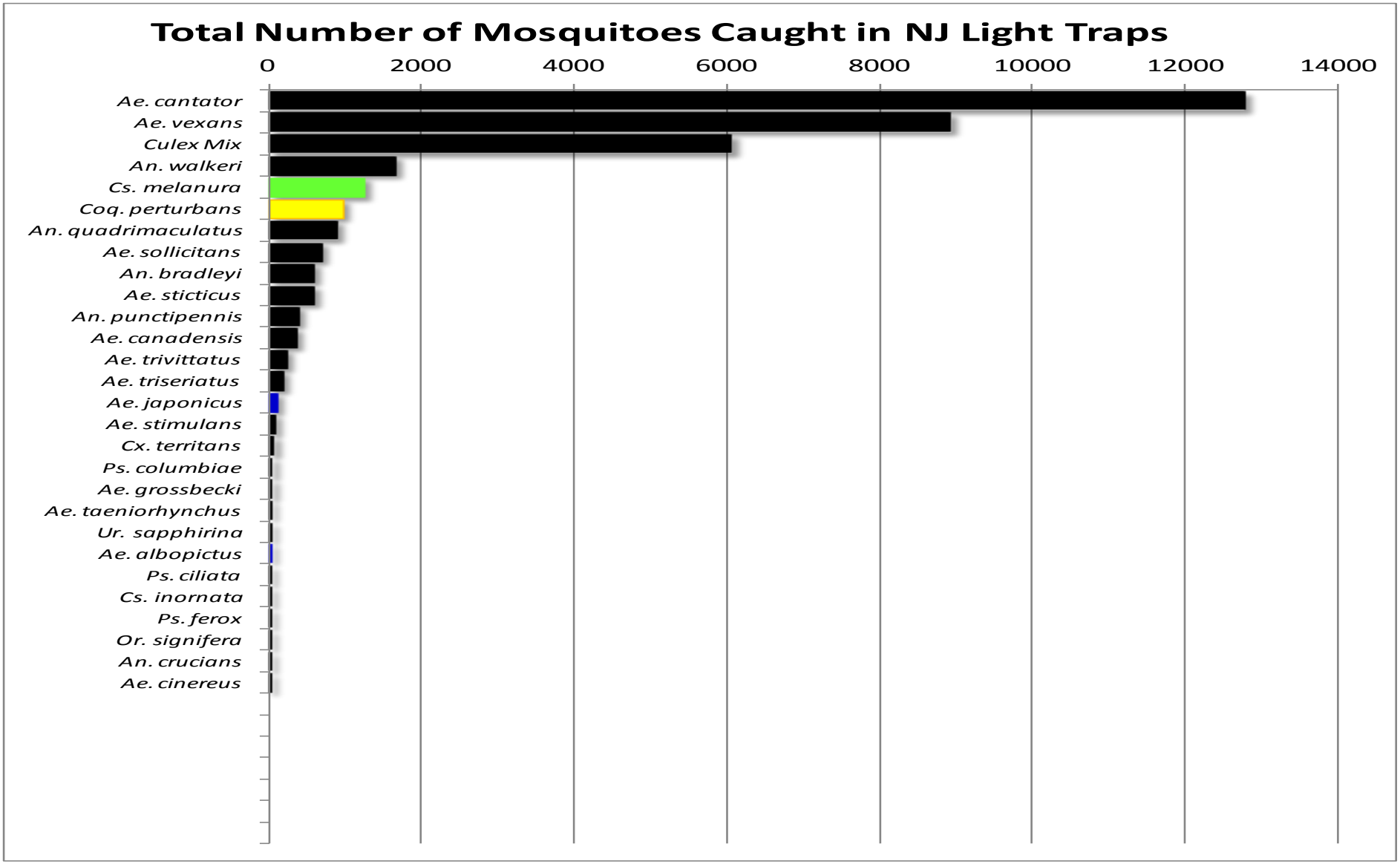
Aedes cantator
Multivoltine Aedine (*Ae. sollicitans* Type)

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes cantator* is a salt floodwater species. Occupying similar habitat, *Ae. cantator* finds its niche by emerging earlier than *Ae. sollicitans.* Numbers continue to decline for this species, except for the Delaware River Basin, where a significant emergence occurred the previous week (Week 25).	

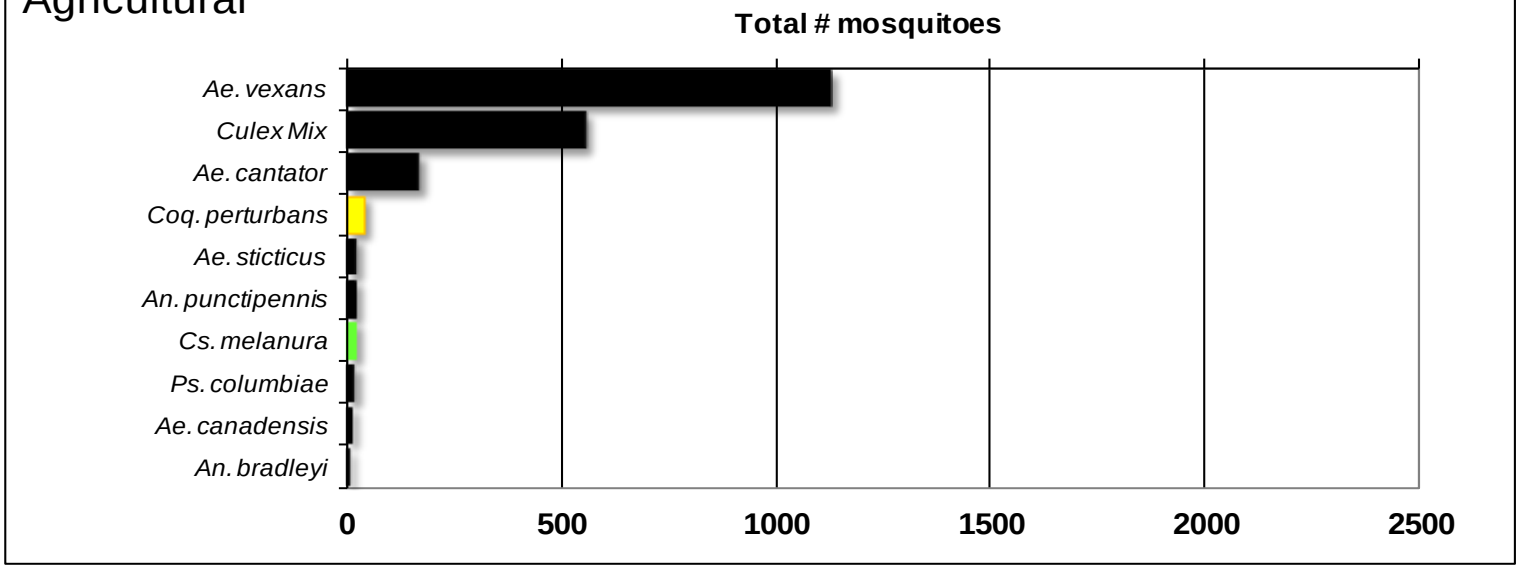
WNV *EEE*

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

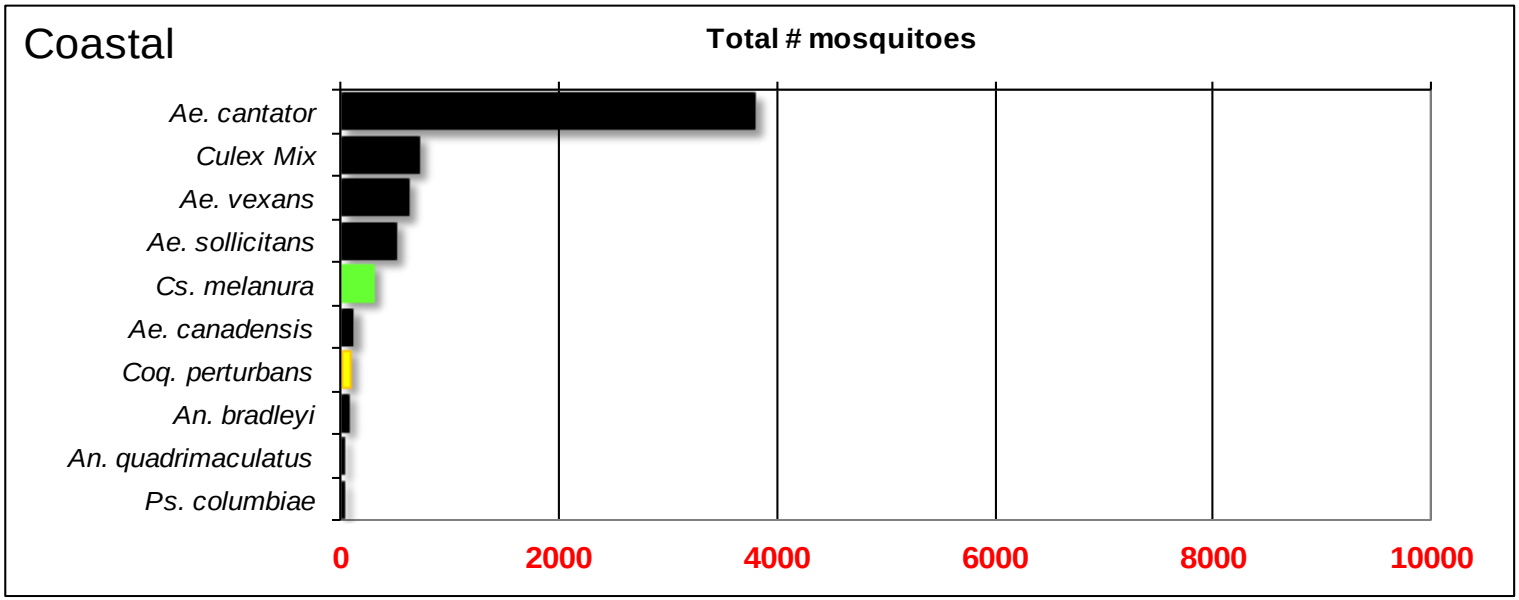
Note: In early season when fewer species are caught, graphs may show less than ten species/region or 25 statewide.

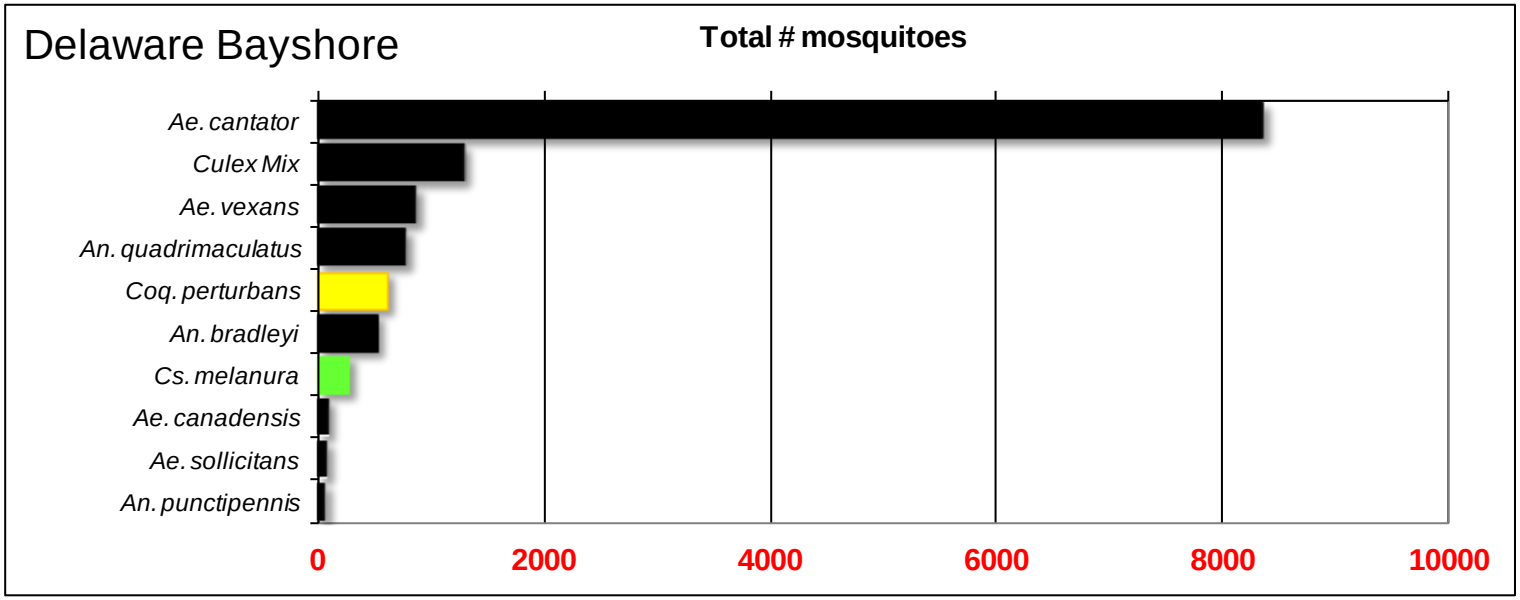


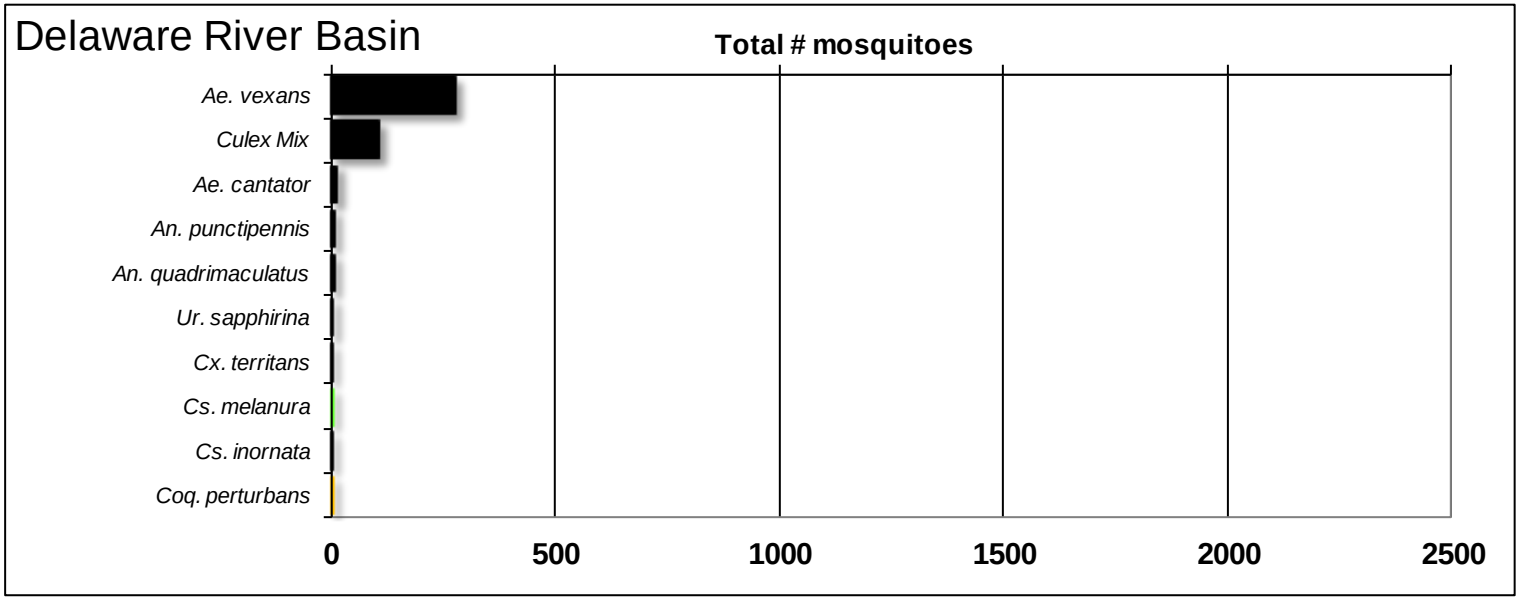
Agricultural

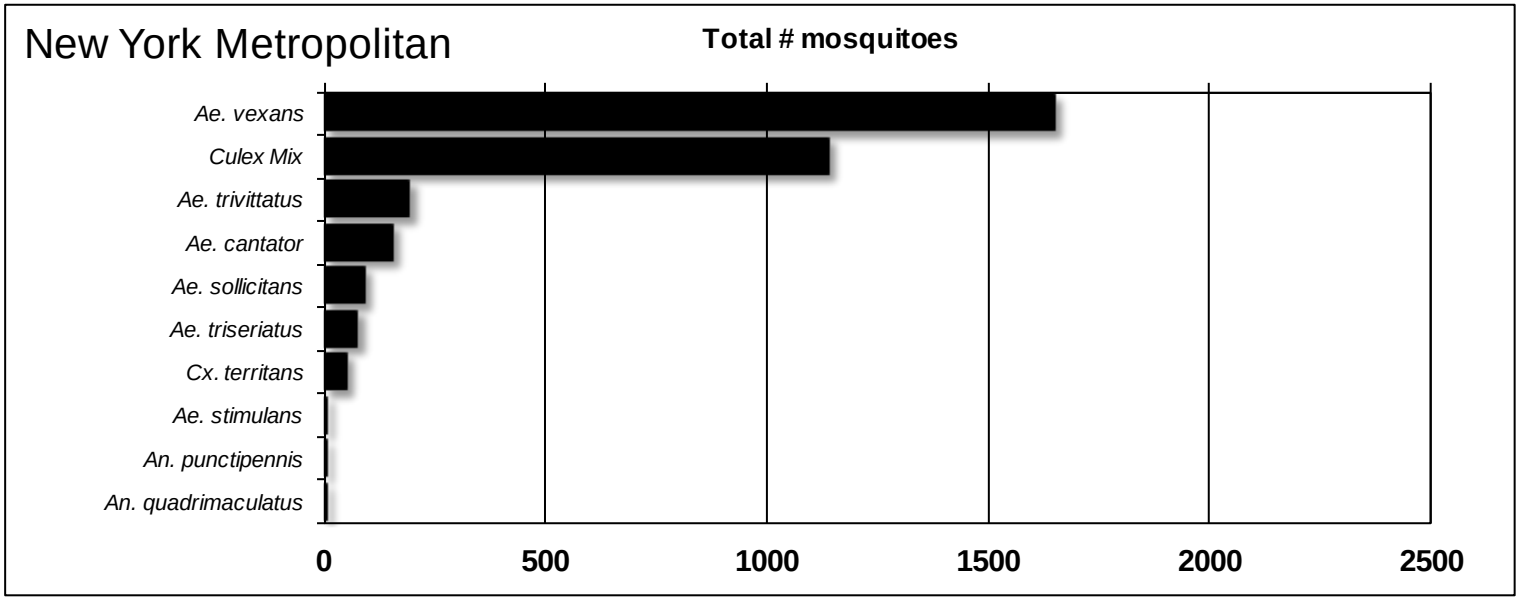


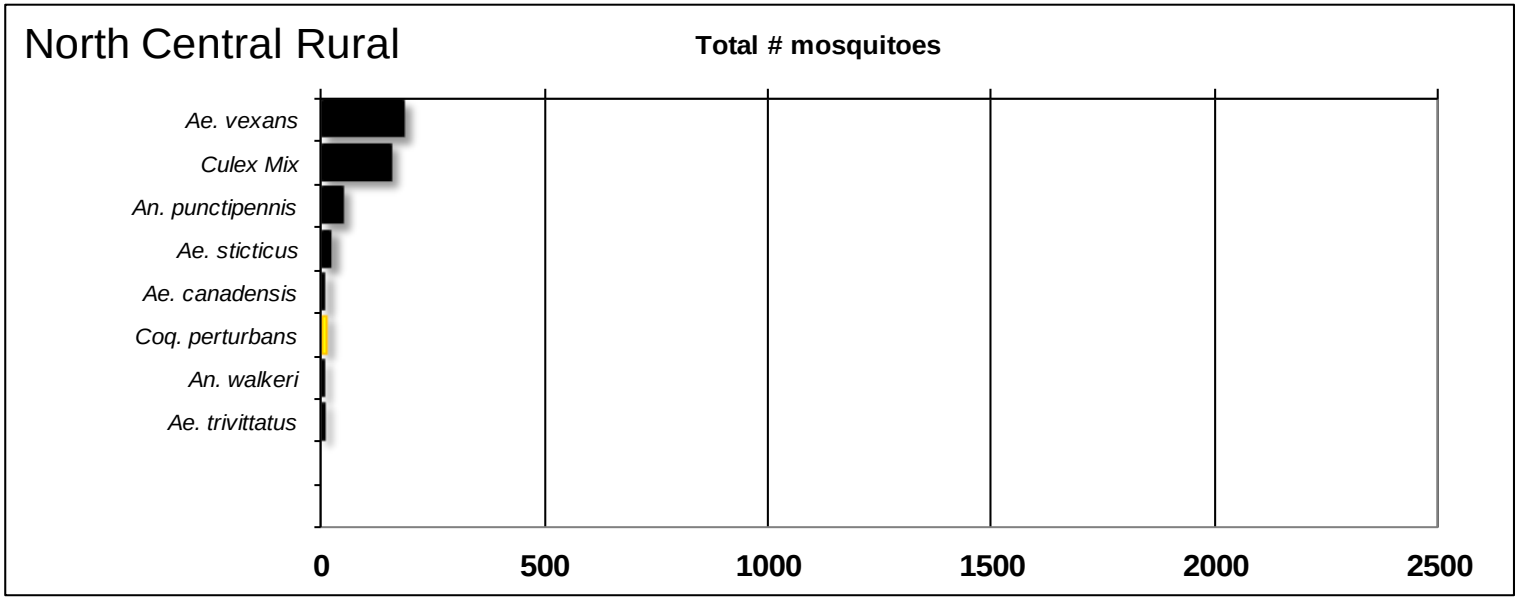
Coastal

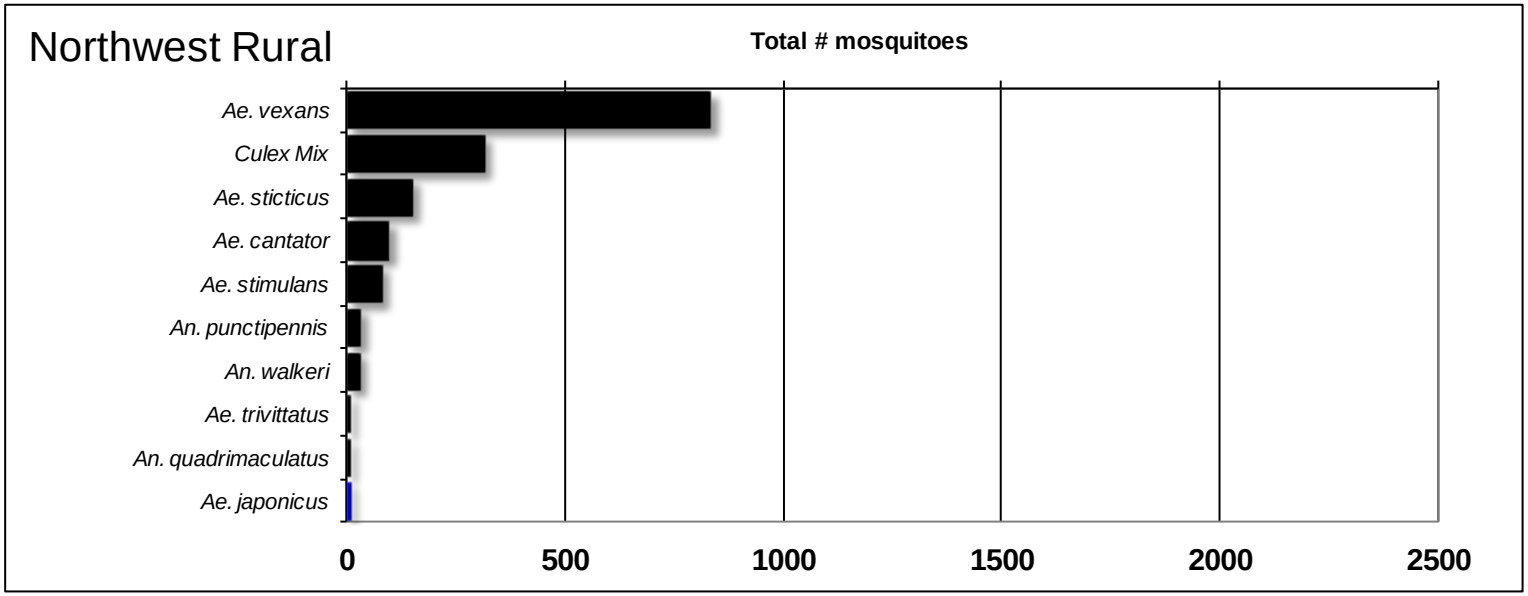


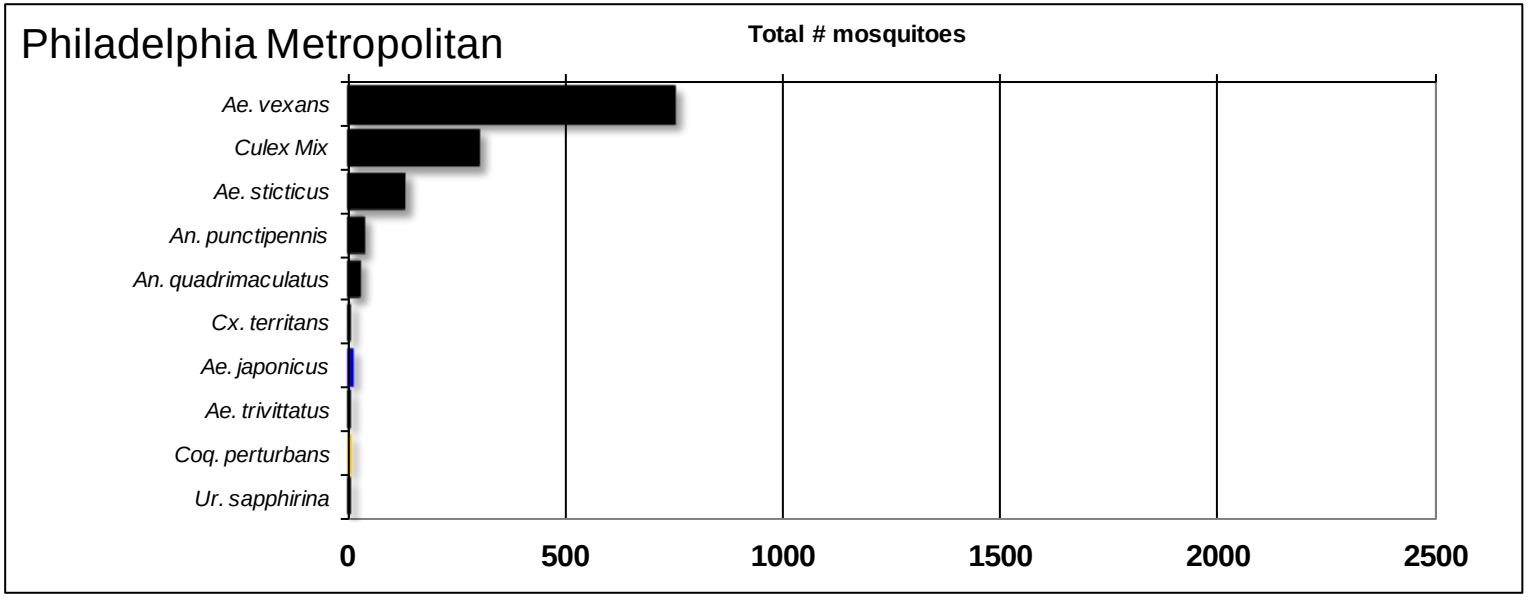

Delaware Bayshore
Total # mosquitoes
Ae. cantator
Culex Mix
Ae. vexans
An. quadrimaculatus
Coq. perturbans
An. bradleyi
Cs. melanura
Ae. canadensis
Ae. sollicitans
An. punctipennis
0
2000
4000
6000
8000
10000

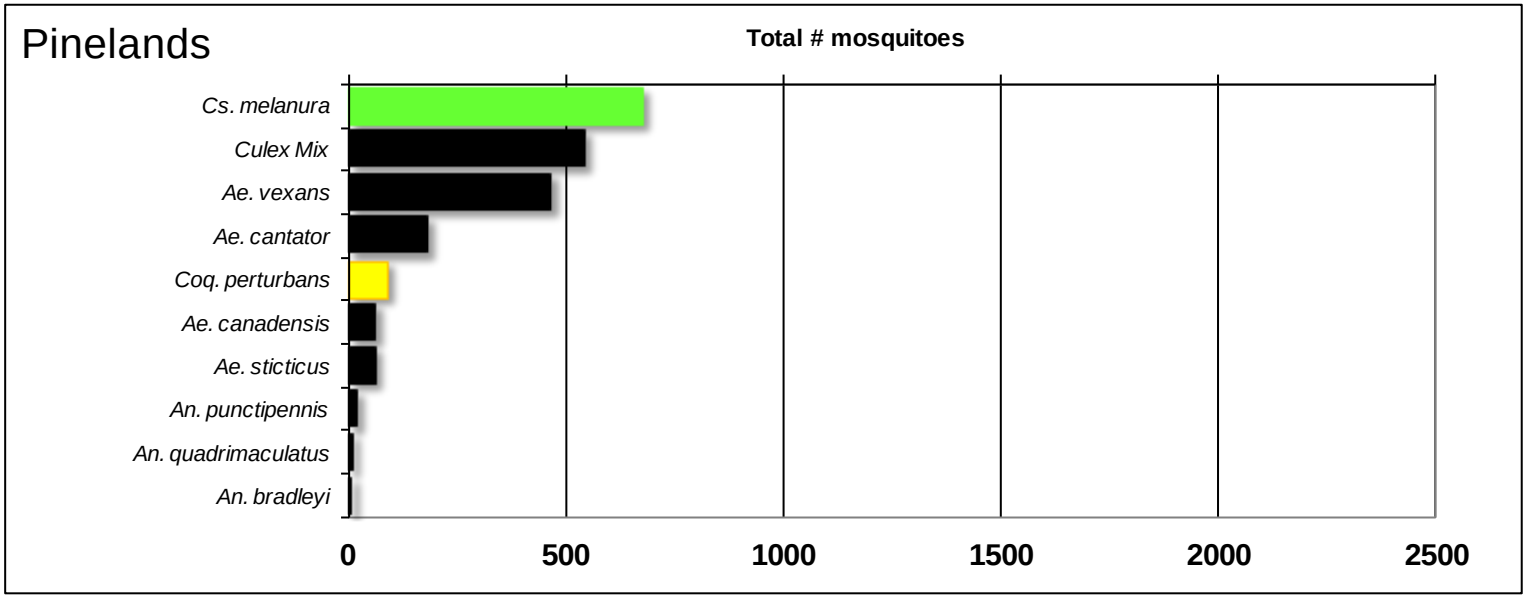

Delaware River Basin
Total # mosquitoes
Ae. vexans
Culex Mix
Ae. cantator
An. punctipennis
An. quadrimaculatus
Ur. sapphirina
Cx. territans
Cs. melanura
Cs. inornata
Coq. perturbans
0
500
1000
1500
2000
2500

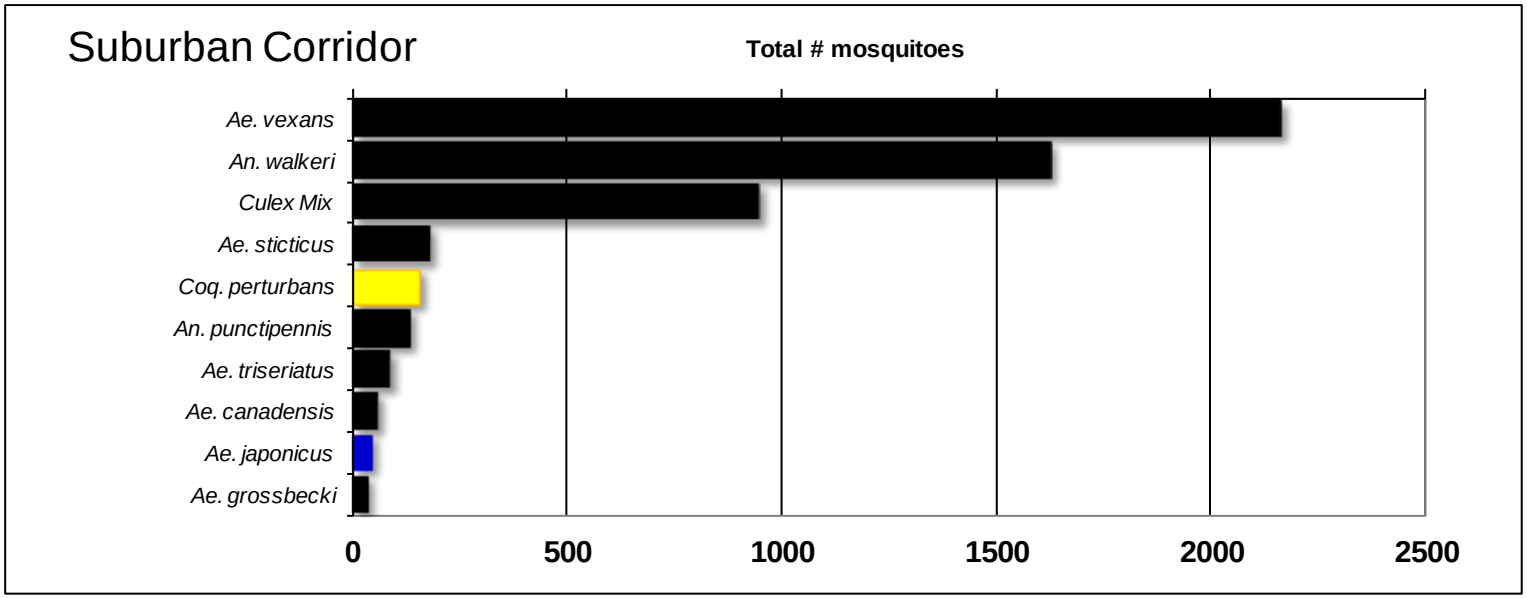

New York Metropolitan
Total # mosquitoes
Ae. vexans
Culex Mix
Ae. trivittatus
Ae. cantator
Ae. sollicitans
Ae. triseriatus
Cx. territans
Ae. stimulans
An. punctipennis
An. quadrimaculatus
0
500
1000
1500
2000
2500


North Central Rural
Total # mosquitoes
Ae. vexans
Culex Mix
An. punctipennis
Ae. sticticus
Ae. canadensis
Coq. perturbans
An. walkeri
Ae. trivittatus
0
500
1000
1500
2000
2500


Northwest Rural
Total # mosquitoes
Ae. vexans
Culex Mix
Ae. sticticus
Ae. cantator
Ae. stimulans
An. punctipennis
An. walkeri
Ae. trivittatus
An. quadrimaculatus
Ae. japonicus
0
500
1000
1500
2000
2500


Philadelphia Metropolitan
Total # mosquitoes
Ae. vexans
Culex Mix
Ae. sticticus
An. punctipennis
An. quadrimaculatus
Cx. territans
Ae. japonicus
Ae. trivittatus
Coq. perturbans
Ur. sapphirina
0
500
1000
1500
2000
2500


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


Suburban Corridor
Total # mosquitoes
Ae. vexans
An. walkeri
Culex Mix
Ae. sticticus
Coq. perturbans
An. punctipennis
Ae. triseriatus
Ae. canadensis
Ae. japonicus
Ae. grossbecki
0
500
1000
1500
2000
2500