NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report for 19 June to 25 June 2011, CDC Week 25

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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.

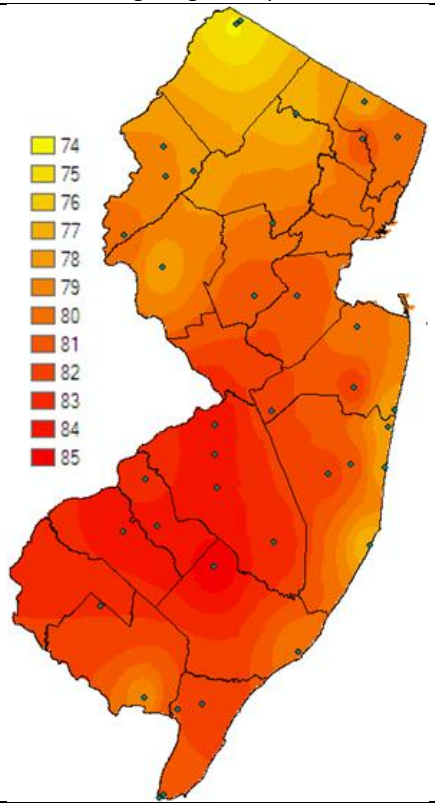
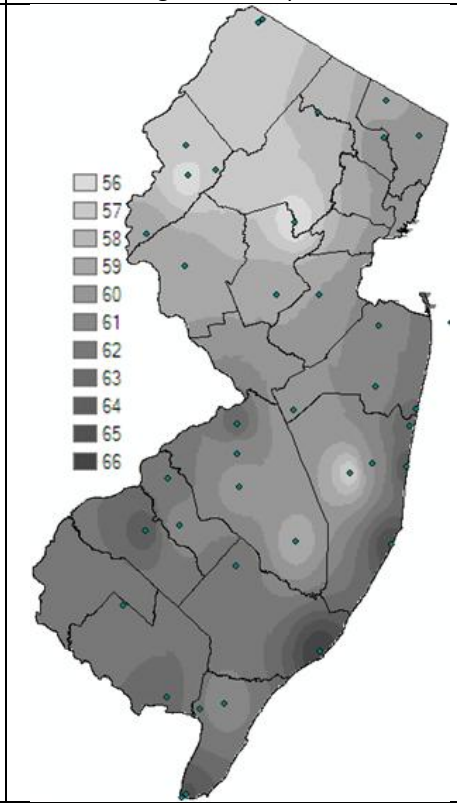
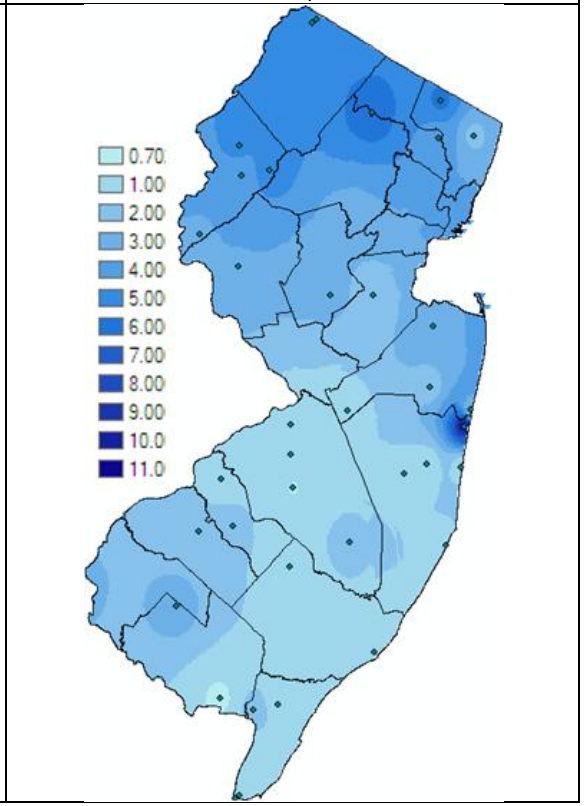
Summary Table – Week 25

	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	**0.81**	**2.48**	**0**	**1.05**	**3.23**	**0**	**0.26**	**0.47**	**0**	**0.00**	**0.07**	**0**
Coastal	**1.68**	**10.08**	**0**	**9.00**	**14.23**	**0**	**0.67**	**1.32**	**0**	**22.83**	**4.86**	**4**
Delaware Bayshore	**0.31**	**3.97**	**0**	**29.37**	**15.41**	**2**	**9.23**	**3.89**	**3**	**9.11**	**4.78**	**2**
Delaware River Basin	**3.57**	**5.57**	**0**	**0.43**	**3.09**	**0**	**1.57**	**0.26**	**4**	**0.00**	**0.04**	**0**
New York Metro	**1.47**	**6.25**	**0**	**6.39**	**10.95**	**0**	**0.21**	**0.57**	**0**	**0.37**	**0.49**	**0**
North Central Rural	**0.10**	**0.34**	**0**	**0.37**	**1.25**	**0**	**0.02**	**0.03**	**0**	**0.00**	**0.00**	**0**
Northwest Rural	**6.63**	**10.92**	**0**	**15.51**	**3.83**	**4**	**0.52**	**0.74**	**0**	**0.00**	**0.00**	**0**
Philadelphia Metro	**5.64**	**11.58**	**0**	**9.50**	**8.81**	**1**	**0.36**	**2.10**	**0**	**0.00**	**0.00**	**0**
Pinelands	**0.52**	**2.22**	**0**	**1.92**	**3.46**	**0**	**0.55**	**1.34**	**0**	**0.38**	**0.06**	**4**
Suburban Corridor	**1.55**	**4.18**	**0**	**3.88**	**3.37**	**1**	**0.23**	**1.30**	**0**	**0.03**	**0.02**	**2**

*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: Significant increases occurred in three of the pestiferous species above. For *Culex* Mix, higher numbers were observed in the Northwest Rural, the Delaware Bayshore, with slightly higher numbers in Philadelphia Metro and the Suburban Corridor. *Coquillettidia perturbans* was also observed with high abundance in the Delaware Bayshore and River Basin. *Aedes sollicitans* numbers were high in the two regions of traditionally significant values, the Coastal and Delaware Bayshore. Their numbers were also higher in the Pinelands and Suburban Corridor.

Climate Factors

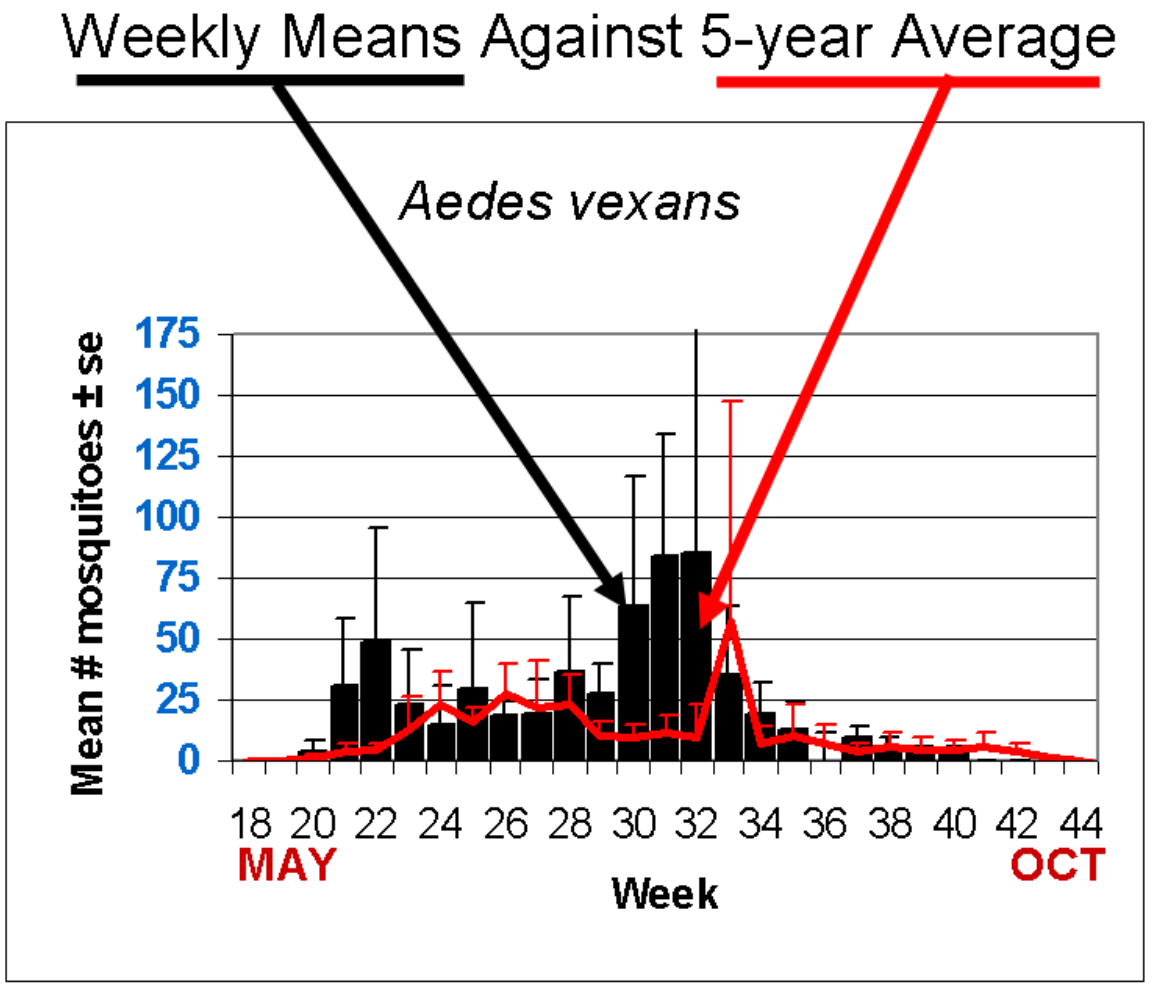
Average High Temperature	Average Low Temperature	Total Precipitation
		

The three figures show the interpolation of average maximum and minimum temperature and total precipitation from 1 June to 30 June, 2011 in New Jersey. Data points are from about 37 weather stations maintained through the New Jersey Weather & Climate Network and the State Climatologist. Interpolation between points was performed using ArcMap 10.

Average high temperatures continue to remain much the same as the previous week. Average low temperatures were slightly warmer than last week and were highest along the coastal region (moderating effects of large bodies of water – i.e., the Atlantic Ocean) and interior toward the Delaware River. The northern half of New Jersey continued to experience higher rainfall and the difference between north and south in terms of precipitation continued to grow (note scale change from about 4 inches to over 11 inches). Highest rainfall was from Point Pleasant. In general, it was warmest in the urban/suburban areas during the day, warmer along the coast at night and wetter in the north.

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 these weeks are from Atlantic, Bergen, Burlington, Camden, Cape May, Essex, Hunterdon, Middlesex, Monmouth, Morris, Ocean, Salem, Somerset Sussex, Union and Warren counties. Last week included Atlantic, Bergen, Burlington, Camden, Cape May, Essex, Hudson, Hunterdon, Middlesex, 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)

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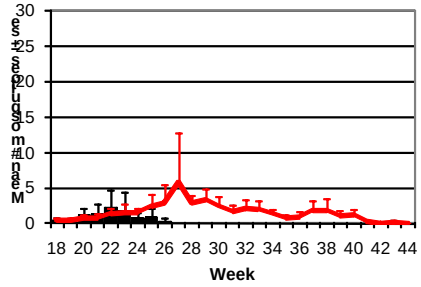
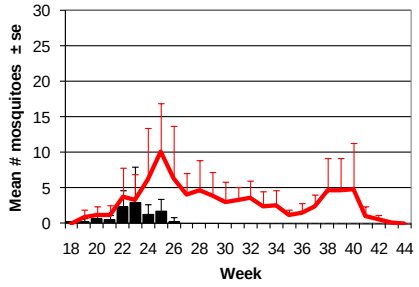
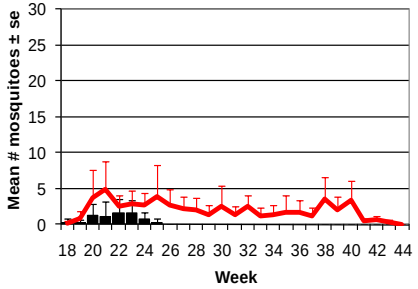
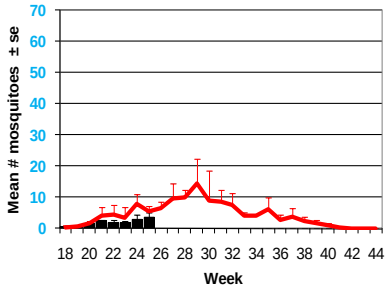
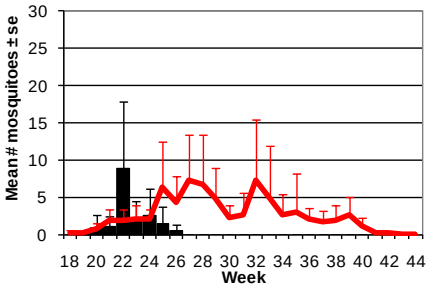
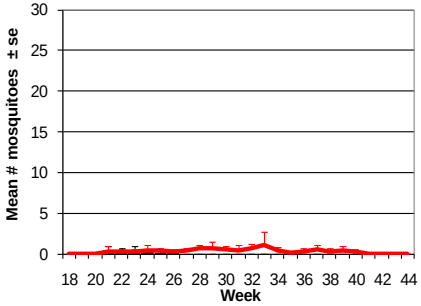
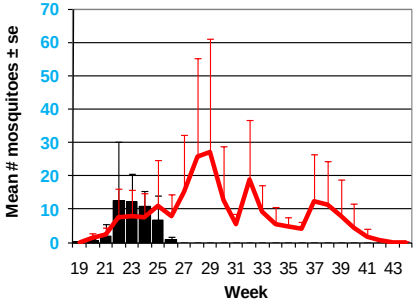
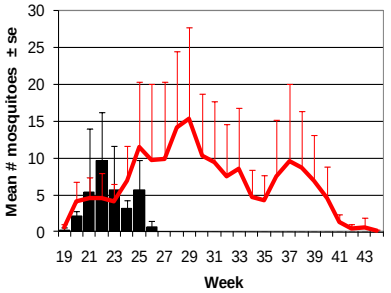
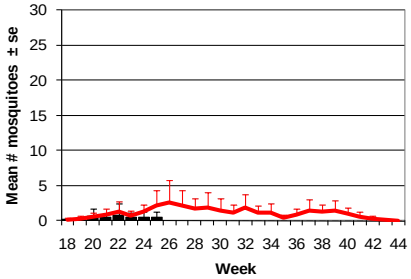
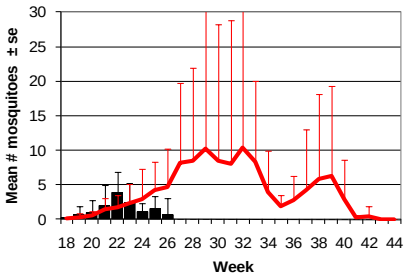
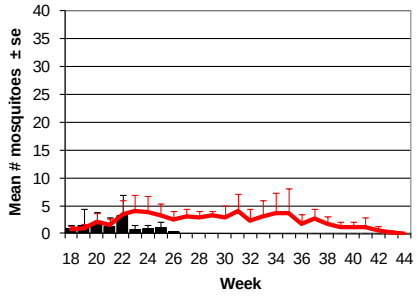
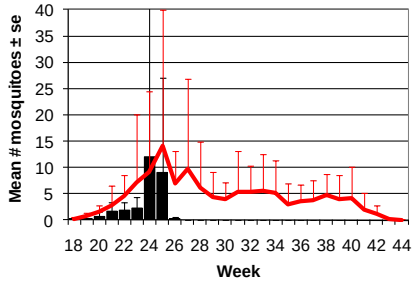
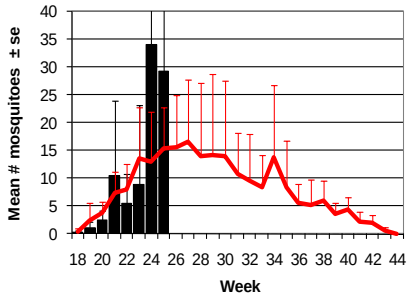
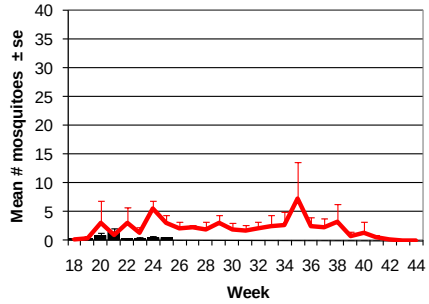
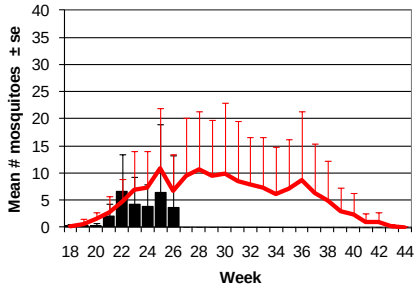
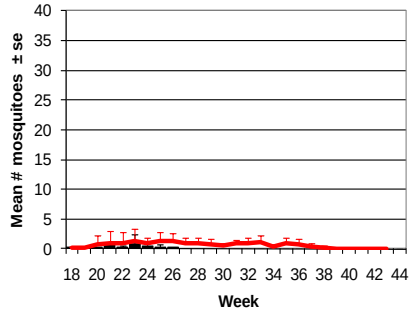
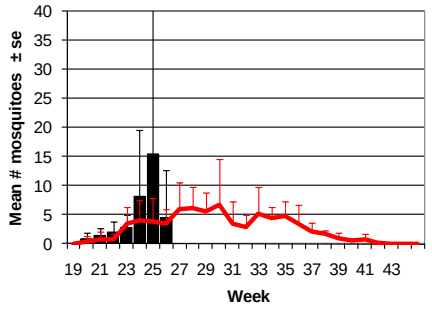
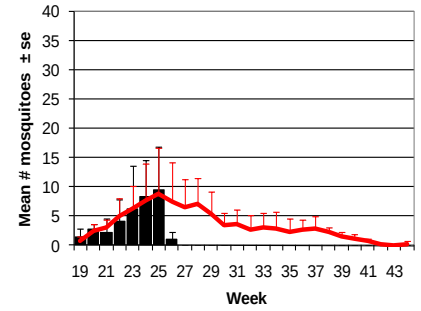
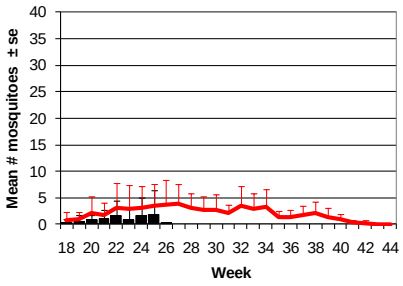
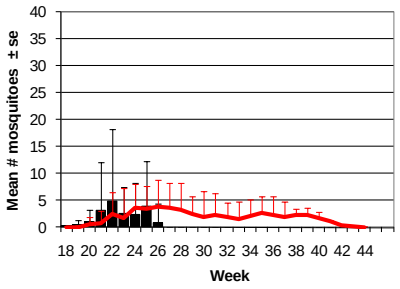
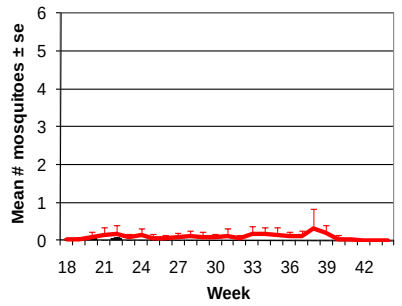
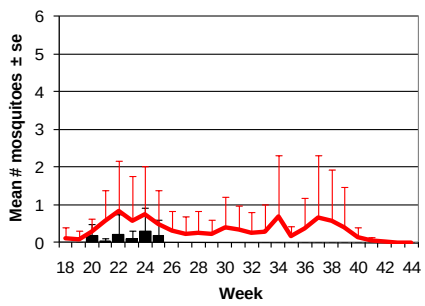
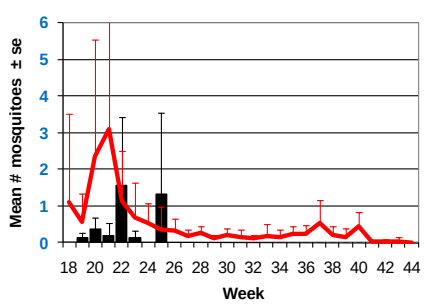
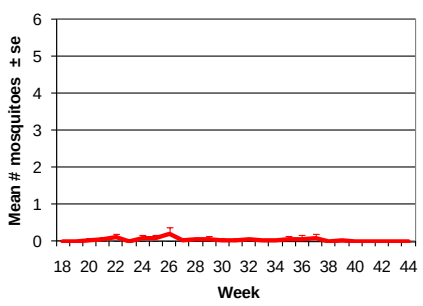
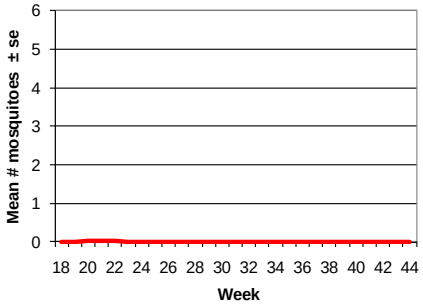
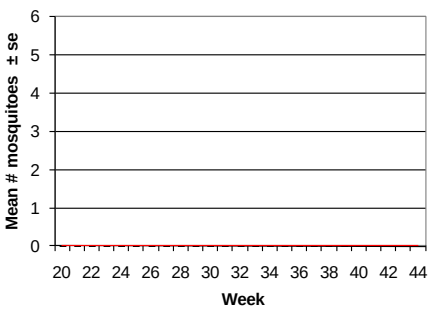
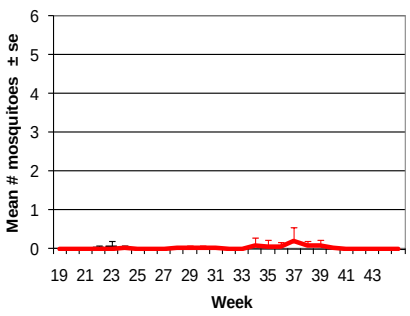
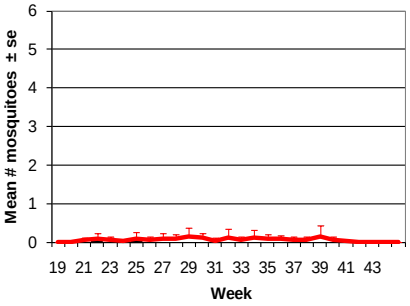
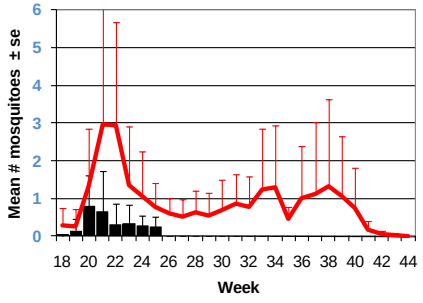
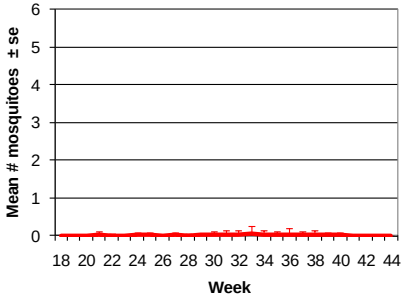
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes vexans* populations continue to show values around or below historical levels, with lower values toward the southern regions of the state, perhaps reflecting the precipitation gradient observed so far. This fresh floodwater species can exploit both manmade and natural habitats where water accumulates quickly, including agricultural fields that use flood irrigation (Curtis and Frank 1981) and structures such as dredge spoils and floodplains.	

Curtis and Frank 1981 Establishment f *Aedes vexans* in citrus groves of southeastern Florida. Environmental Entomology, 10: 180-182.

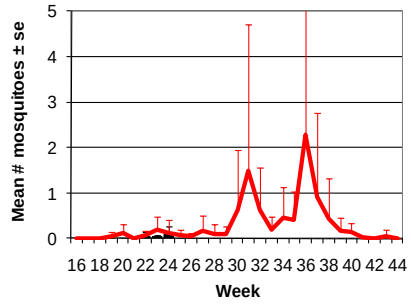
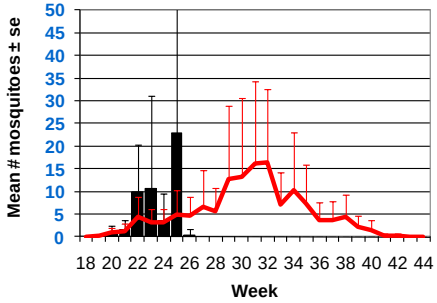
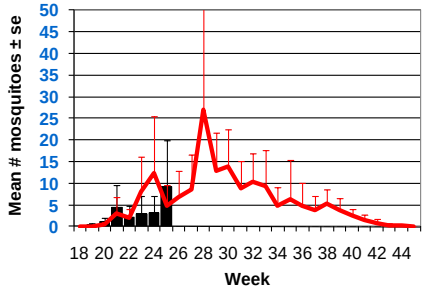
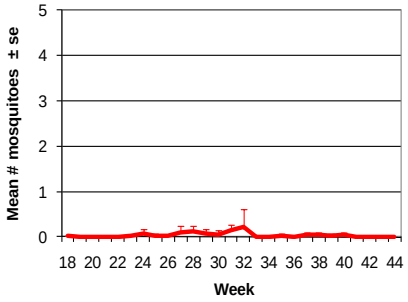
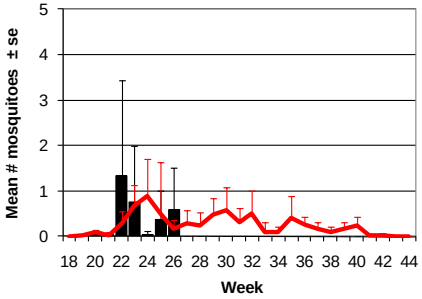
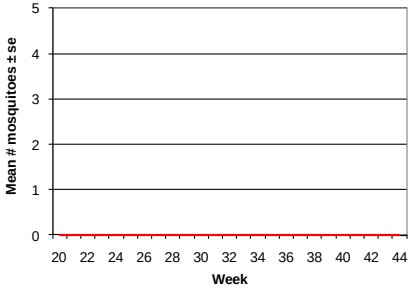
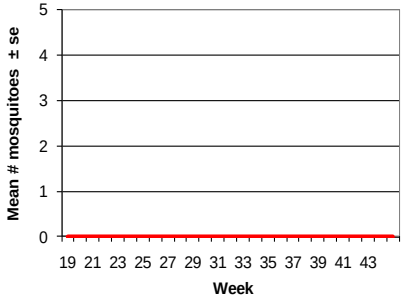
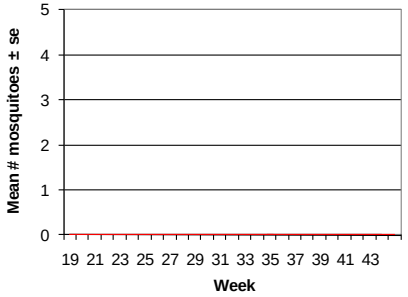
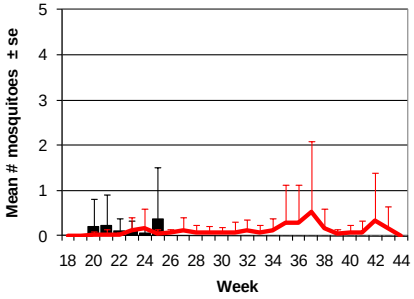
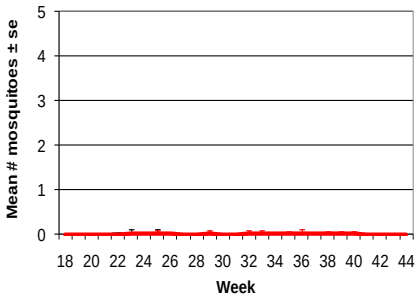
Culex Mix – Permanent Water Species
Multivoltine *Culex*/*Anopheles* (*Cx. pipiens* Type)

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. Currently, some local populations in the Delaware Bayshore and Northwestern Rural are experiencing significant increases while other sites within those regions as well as other regions are at or slightly below historical values.	

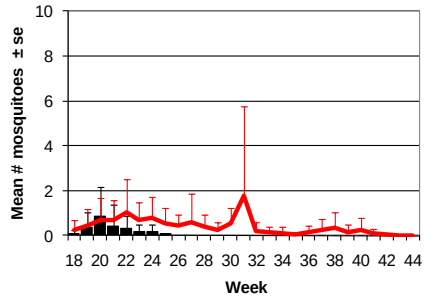
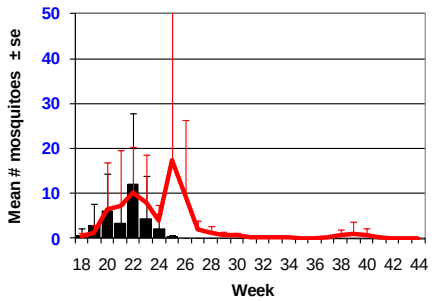
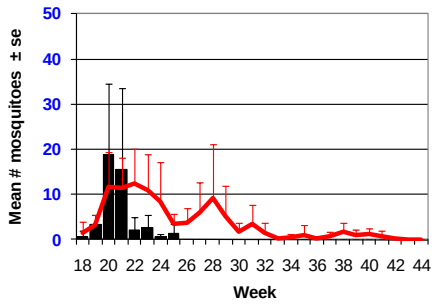
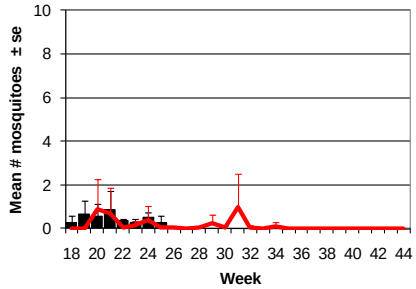
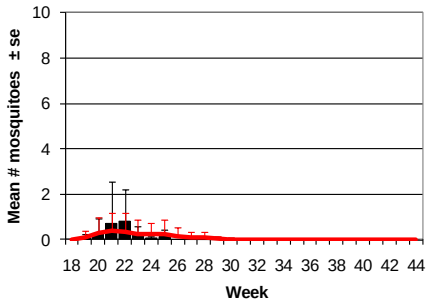
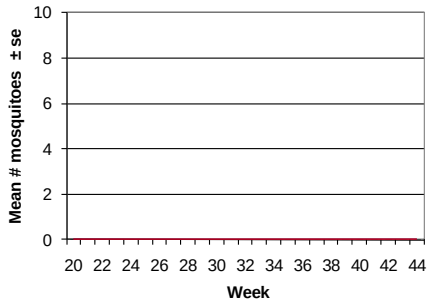
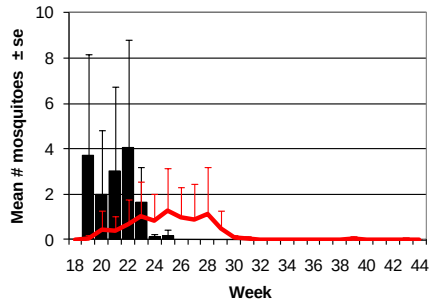
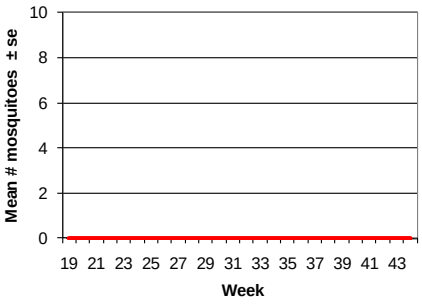
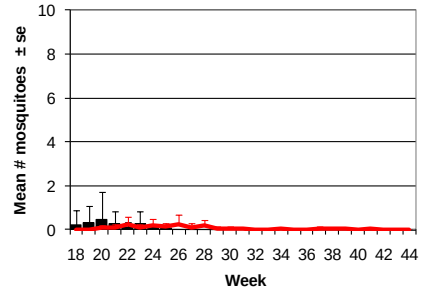
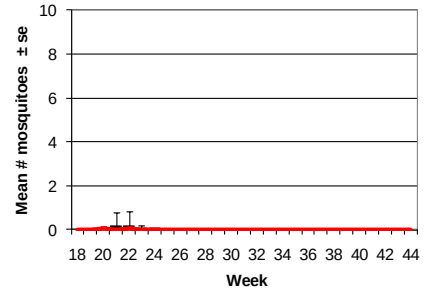
Culiseta melanura – Miscellaneous Group Unique (*Cs. melanura* Type)

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. A possible indication that population levels may not be as low as light trap data suggests is seen in the Delaware Bayshore region. However, while *Cs. melanura* is not normally very attracted to light traps, their numbers in resting boxes has, to this point, also been low. To date, EEE activity has not been recorded this year in New Jersey.	

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 abundances have returned to significant numbers in the Coastal and the Delaware Bayshore regions. Flights into the Pinelands also appear to be ongoing as populations there have begun to increase. (The New York Metro region is also showing an elevation of *Ae. sollicitans* this CDC week 26.) Next Full Moon: 15 July.	

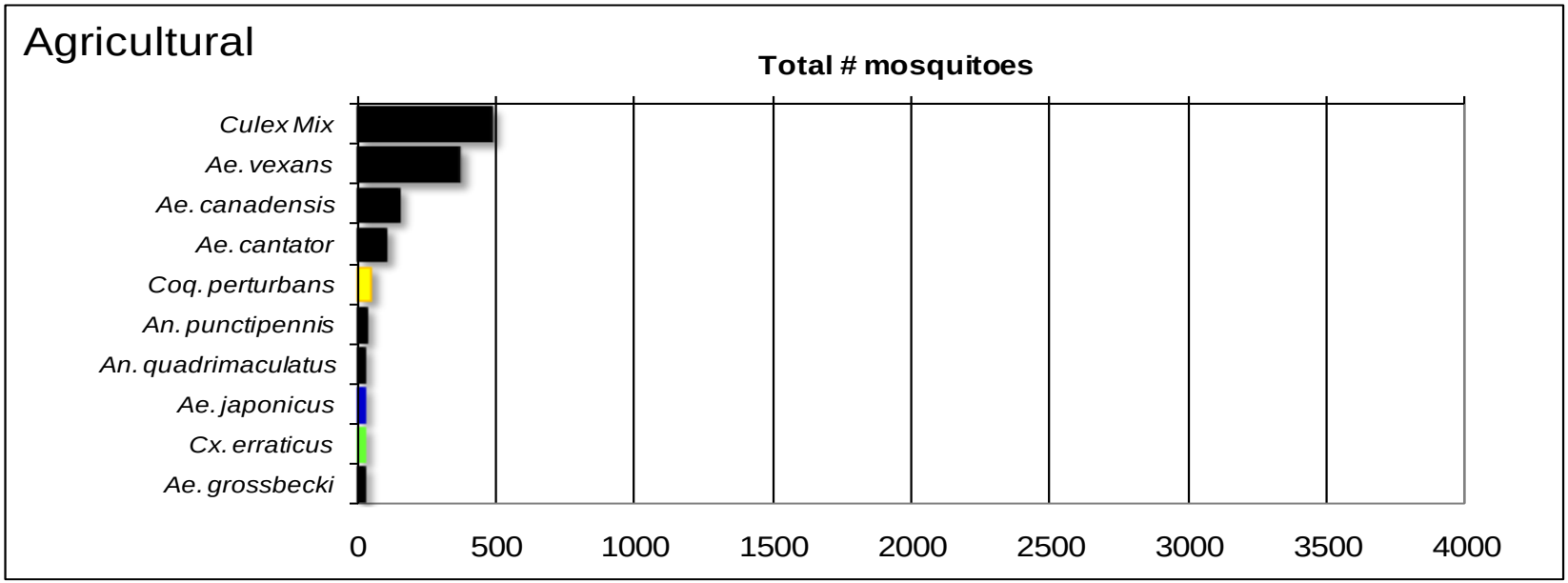
Aedes cantator - Salt Floodwater Species
Multivoltine Aedine (*Ae. sollicitans* Type)

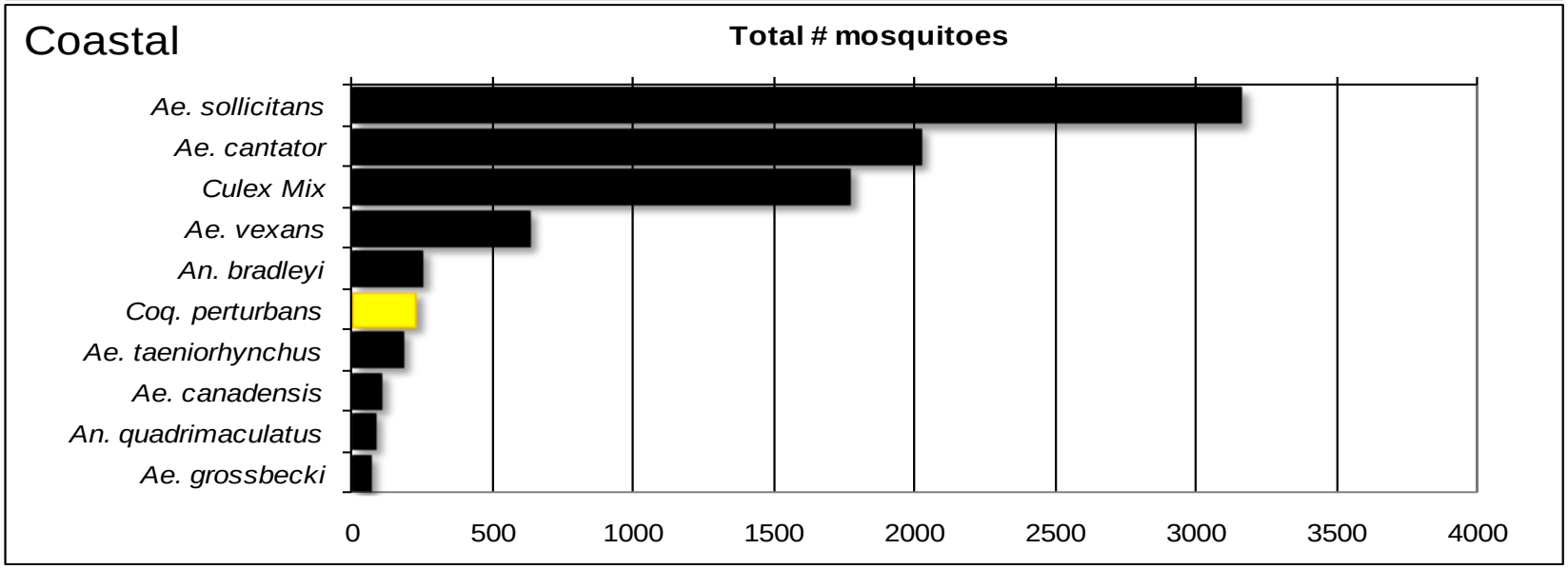
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes cantator* populations appear to be on the decline and this will be the last set of graphs for this species unless unusual activity is observed.	

WNV *EEE*

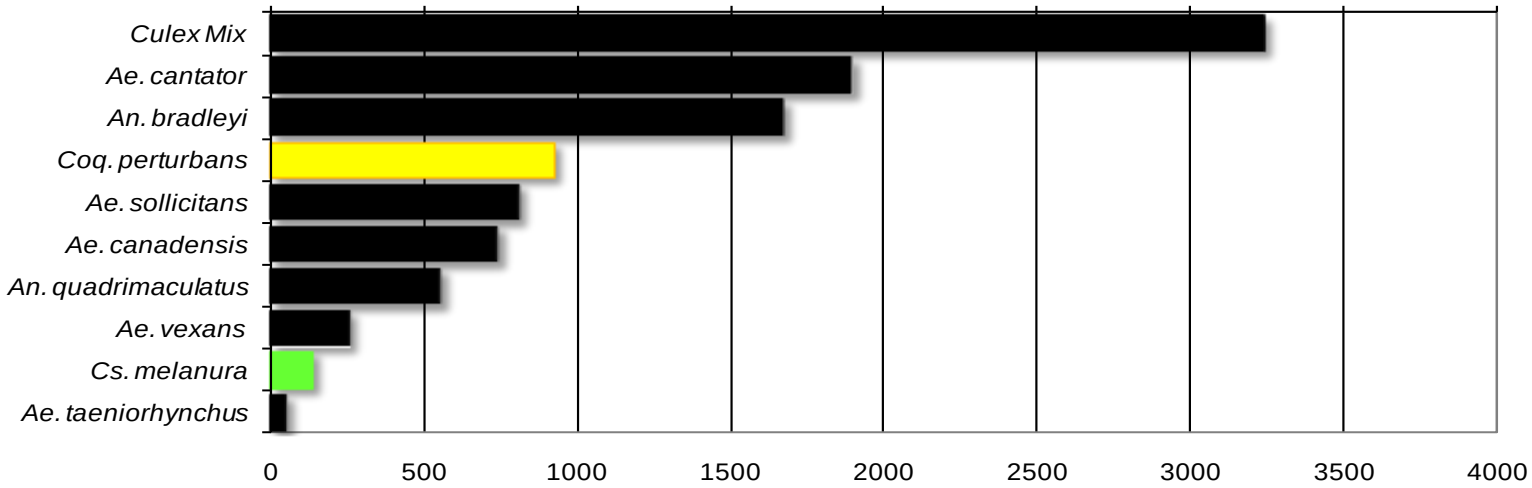
Top Ten Mosquito Species/Region - *Ae. albopictus,* *Ae. japonicus (invasives);* *Cs. melanura or Cx. erraticus* *Coq. perturbans*

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

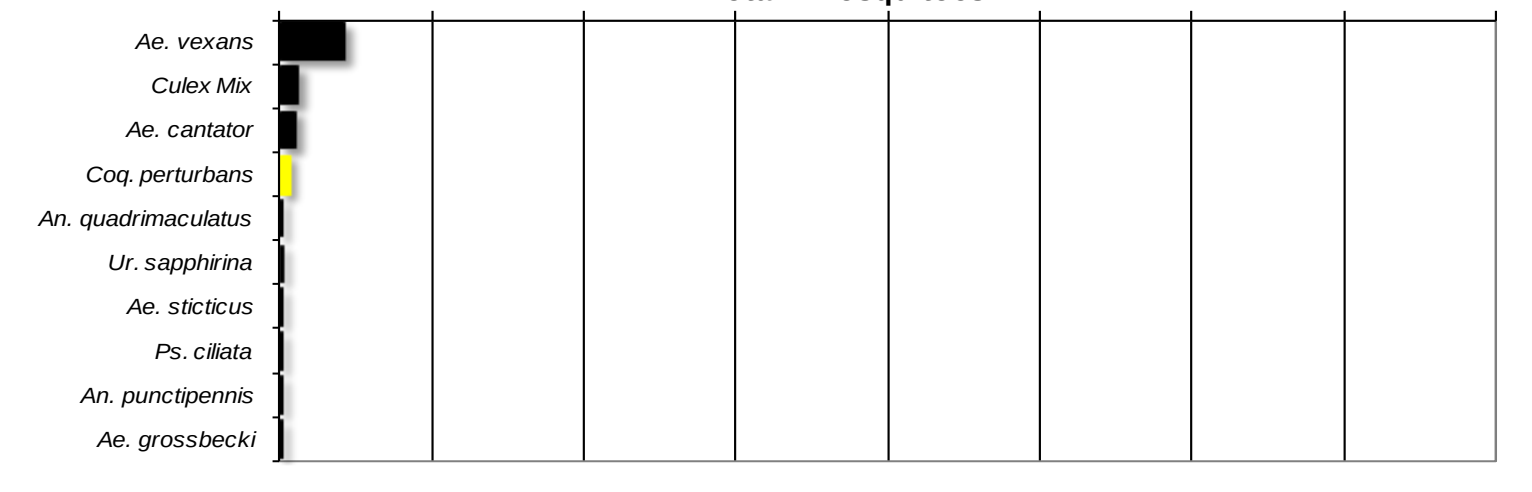




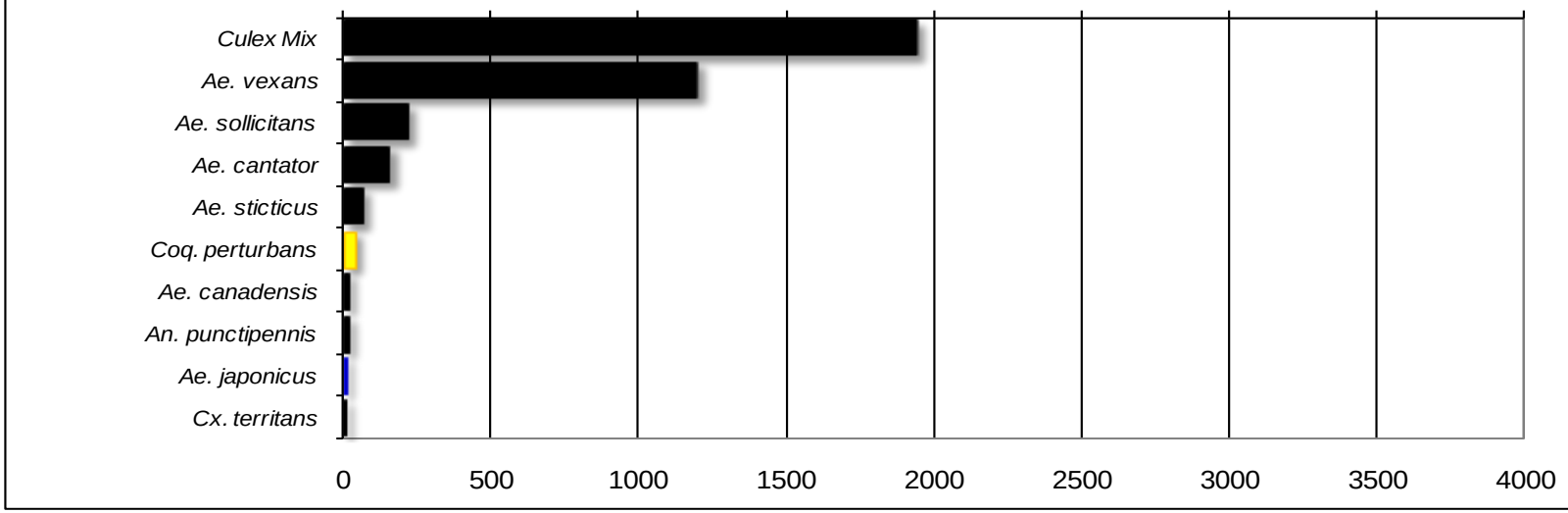
Delaware Bayshore



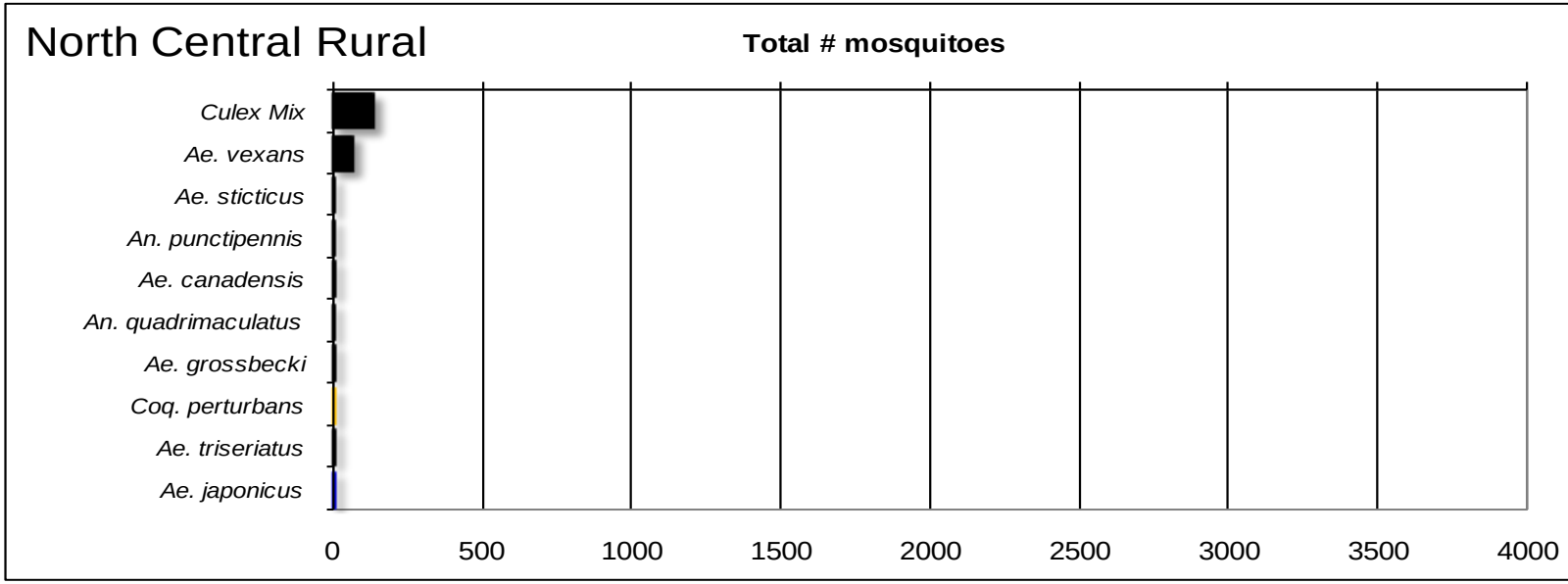
Delaware River Basin



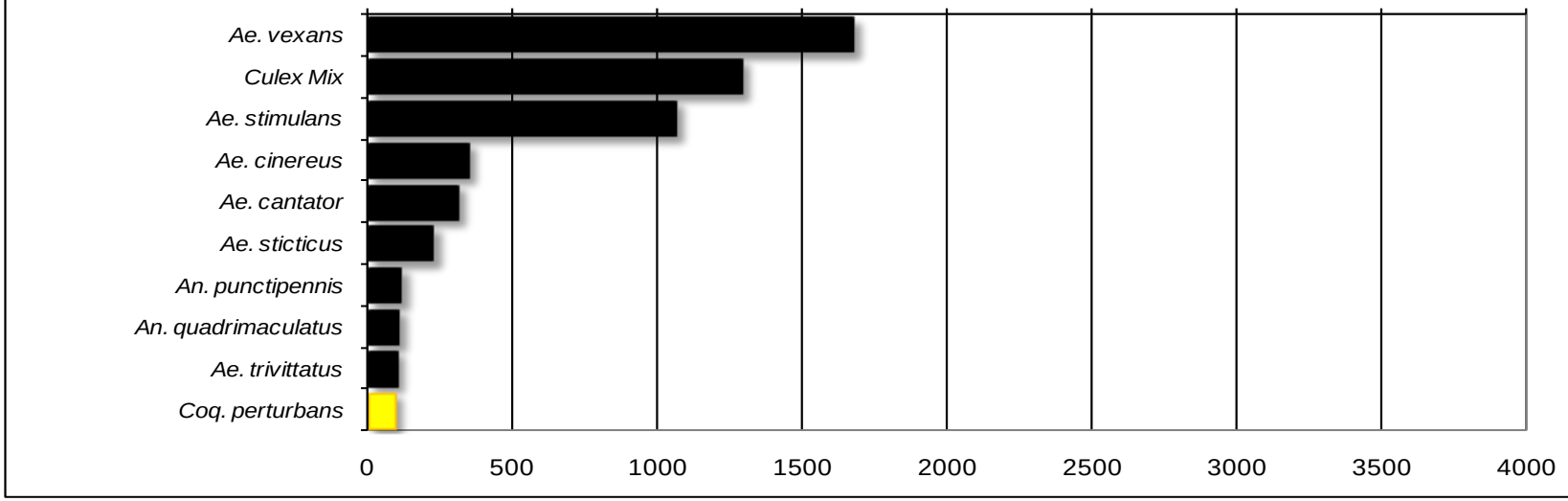
New York Metropolitan



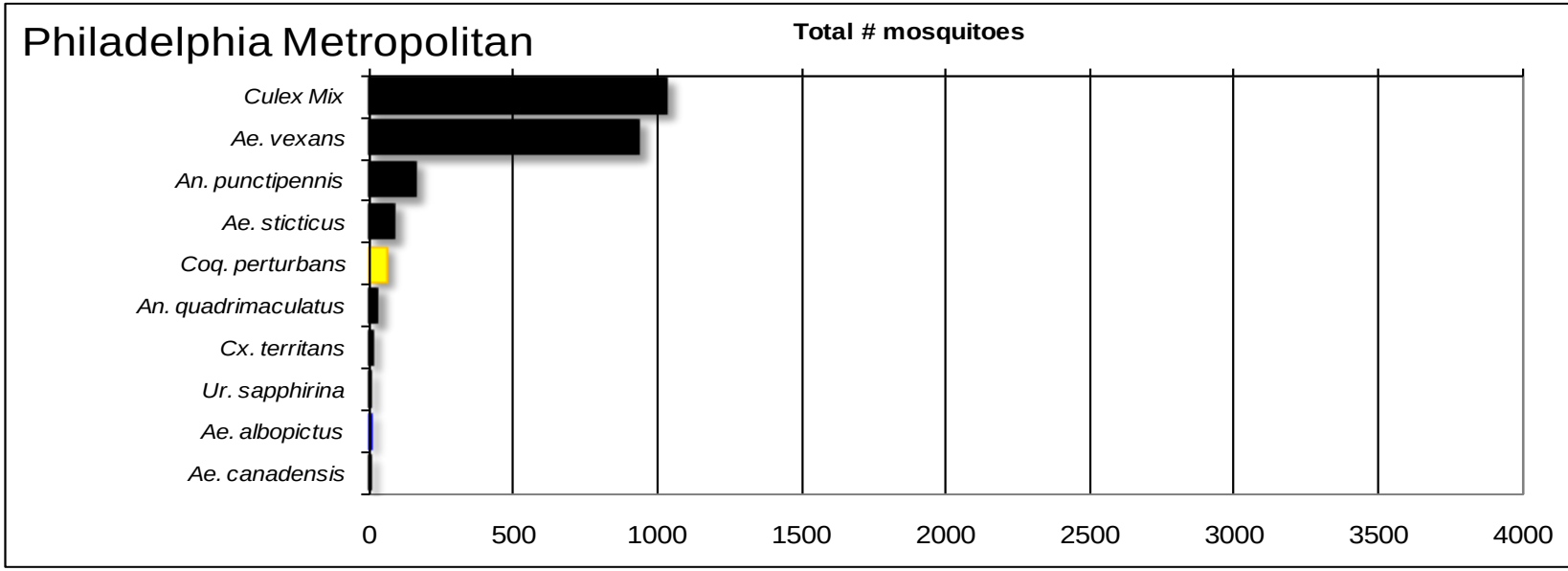
North Central Rural



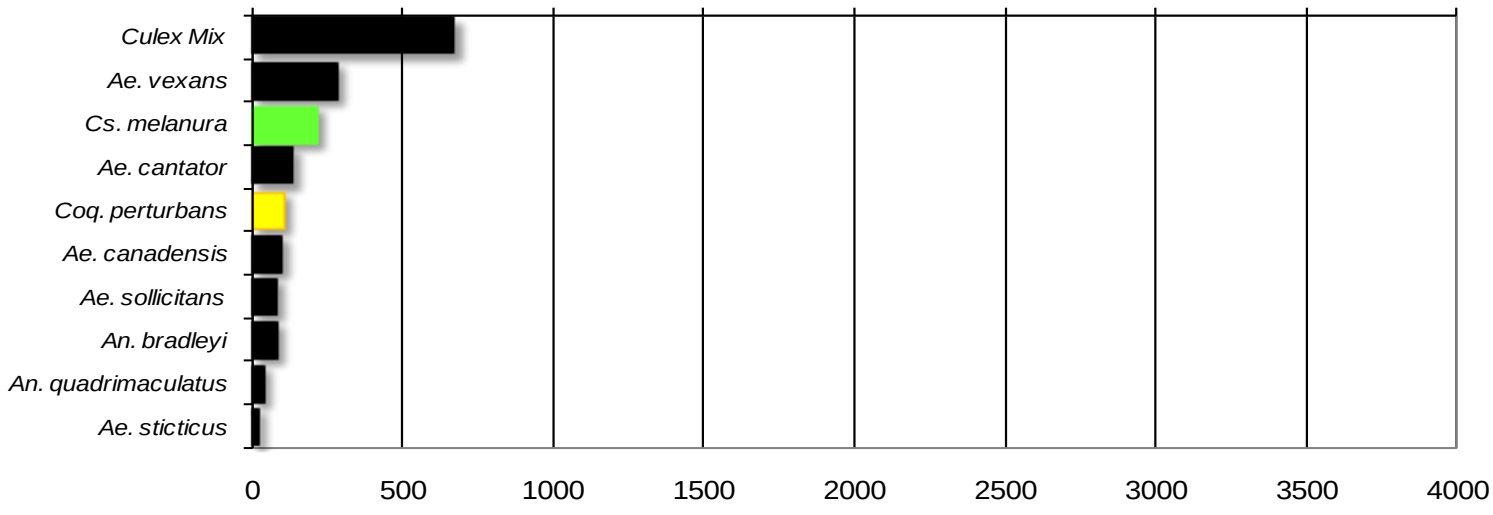
Northwest Rural



Philadelphia Metropolitan



Pinelands



Suburban Corridor