NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report for 31 July to 6 August 2011, CDC Week 31

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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.

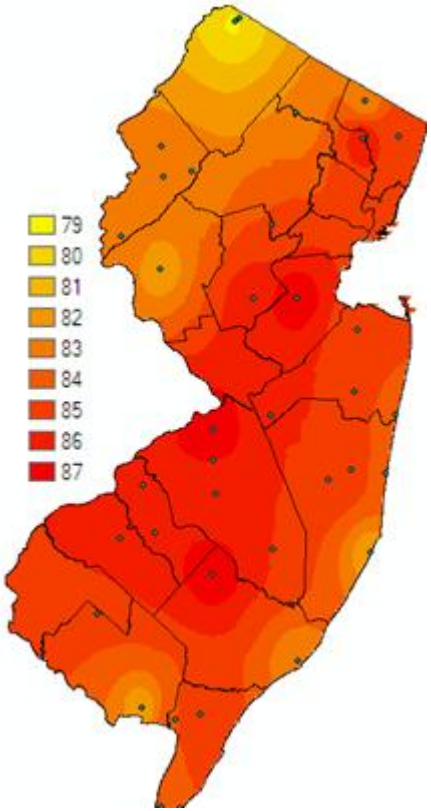
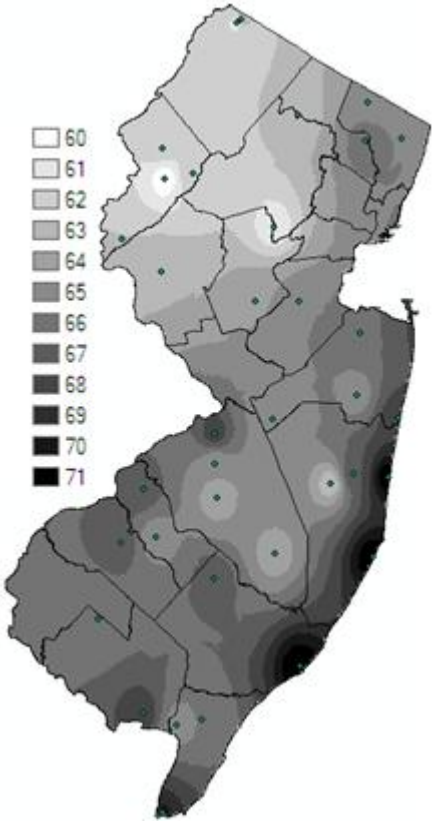
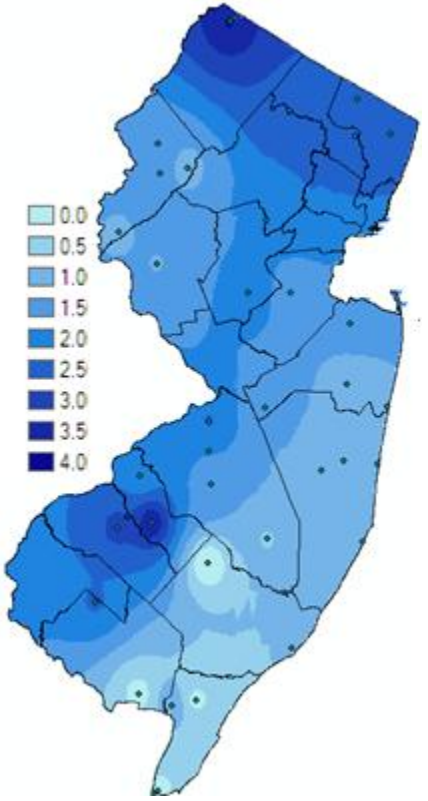
Summary Table – Week 31

	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	**0.36**	**1.64**	**0**	**0.60**	**3.99**	**0**	**0.71**	**0.16**	**4**	**0.00**	**1.50**	**0**
Coastal	**1.56**	**3.35**	**0**	**1.83**	**5.40**	**0**	**0.02**	**0.12**	**0**	**10.41**	**16.05**	**0**
Delaware Bayshore	**1.80**	**1.36**	**1**	**15.40**	**10.70**	**1**	**0.14**	**0.66**	**0**	**1.17**	**8.72**	**0**
Delaware River Basin	**0.00**	**8.66**	**0**	**0.00**	**1.76**	**0**	**0.00**	**0.34**	**0**	**0.00**	**0.14**	**0**
New York Metro	**0.31**	**2.57**	**0**	**3.19**	**8.43**	**0**	**0.07**	**0.06**	**1**	**0.14**	**0.31**	**0**
North Central Rural	**0.41**	**0.46**	**0**	**0.45**	**0.92**	**0**	**0.00**	**<0.01**	**0**	**0.00**	**0.00**	**0**
Northwest Rural	**8.91**	**5.42**	**2**	**3.60**	**3.41**	**1**	**0.52**	**1.00**	**0**	**0.00**	**0.00**	**0**
Philadelphia Metro	**8.64**	**9.49**	**0**	**2.54**	**3.59**	**0**	**0.00**	**0.27**	**0**	**0.00**	**0.00**	**0**
Pinelands	**2.14**	**1.21**	**2**	**3.65**	**2.06**	**2**	**0.57**	**0.41**	**1**	**0.39**	**0.08**	**4**
Suburban Corridor	**0.65**	**8.03**	**0**	**1.08**	**2.23**	**0**	**0.03**	**0.43**	**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: Activity for the four pestiferous species continued in several regions. *Aedes vexans* numbers were elevated in the Delaware Bayshore, Northwest Rural and the Pinelands region as were *Culex* species. *Coquillettidia perturbans* also showed a significant increase in the Agricultural as well as the New York Metropolitan and the Pinelands regions. *Aedes sollicitans* has increased activity in the Pinelands.

Climate Factors

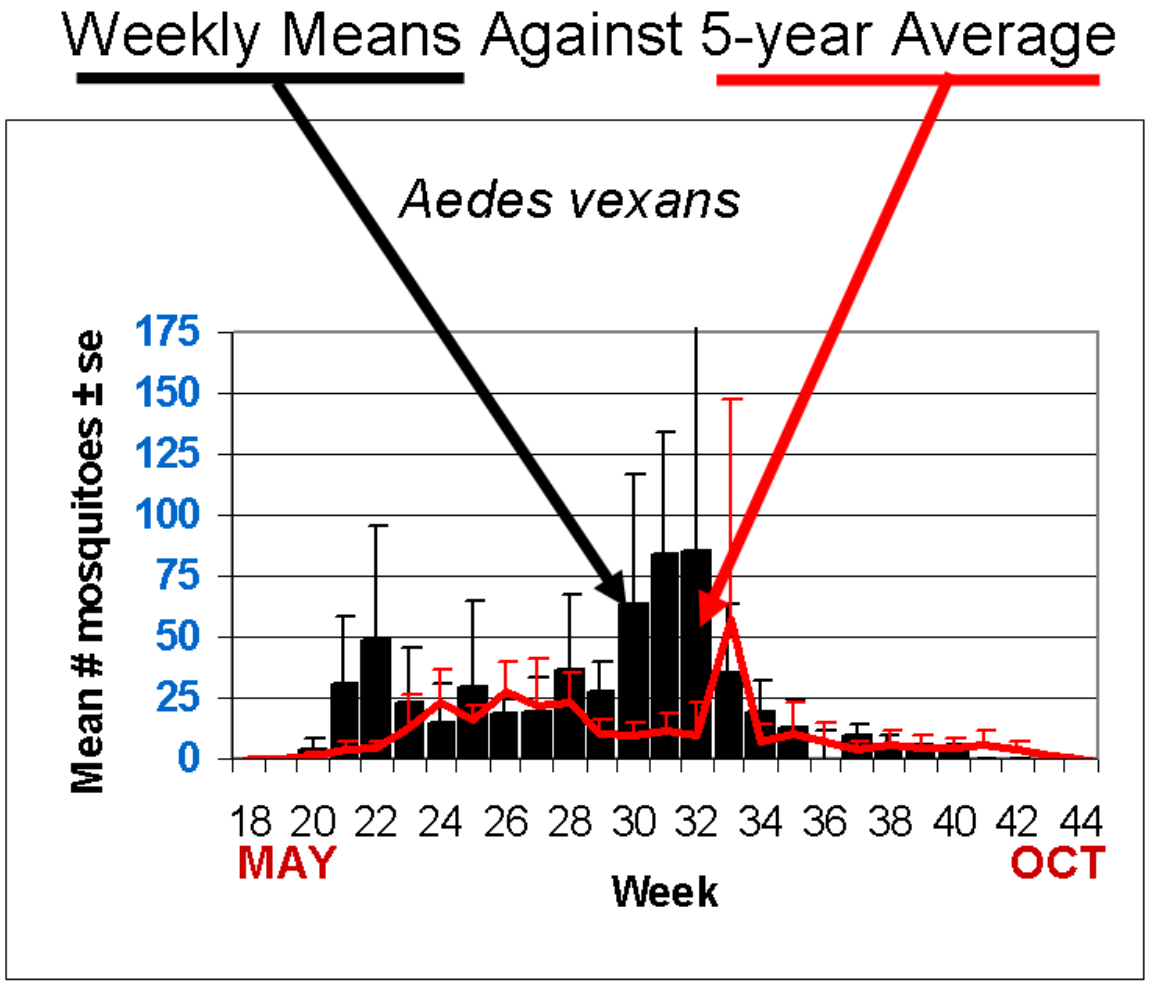
Average High Temperature	Average Low Temperature	Total Precipitation
		

The three figures show the interpolation of average maximum and minimum temperature and total precipitation from 1 August to 11 August, 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.

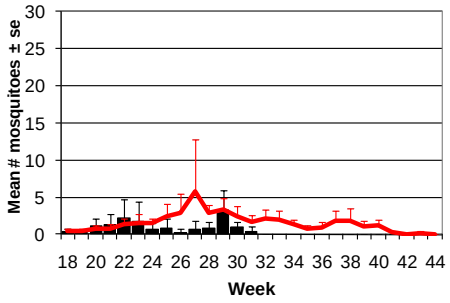
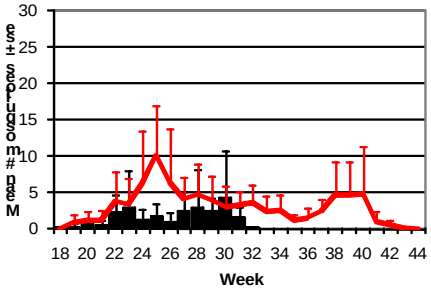
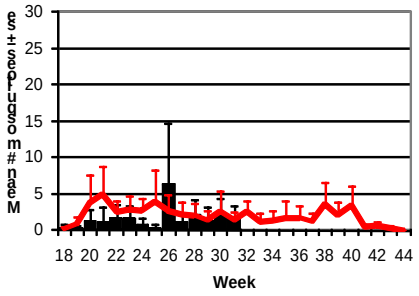
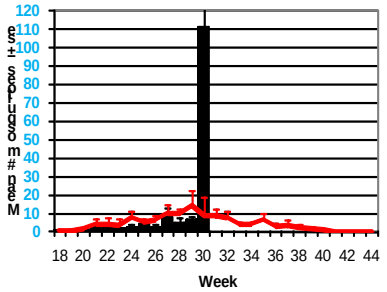
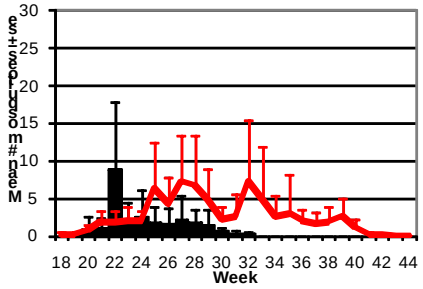
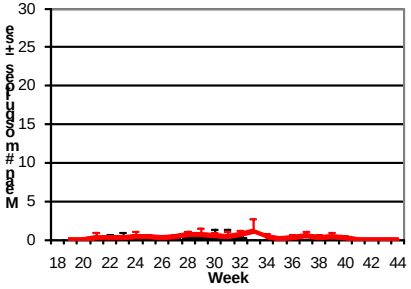
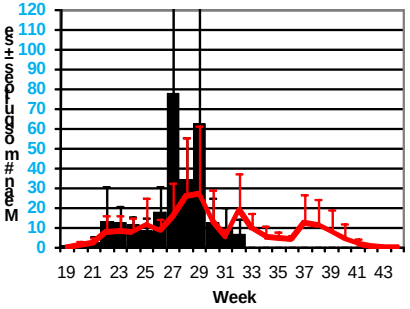
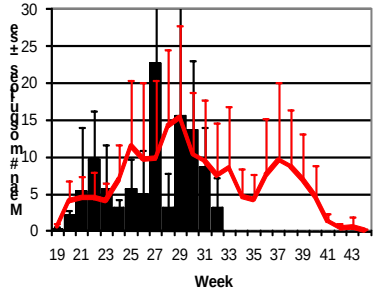
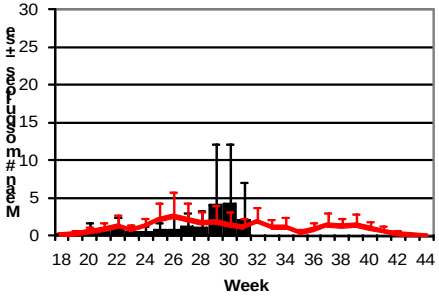
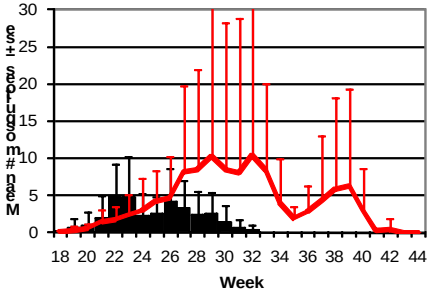
Average high and low temperatures varied little from the previous week. Precipitation increased throughout the state, but smallest amounts came to the southeastern portion of the state while Camden/Gloucester and the northern portion of the state had the highest increases.

NJ Weather & Climate NETWORK ONJSC at Rutgers University

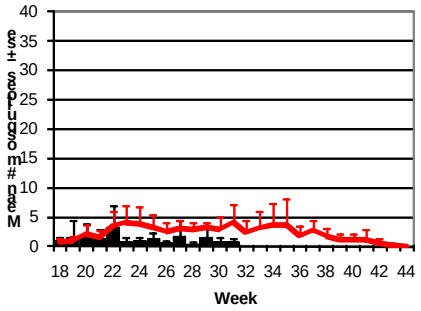
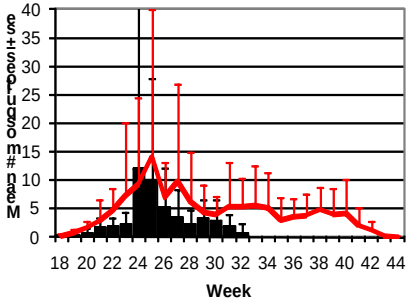
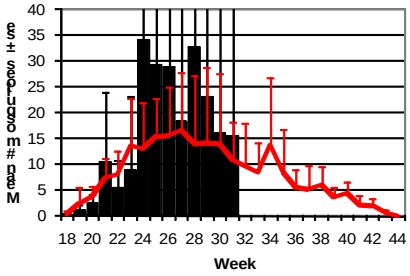
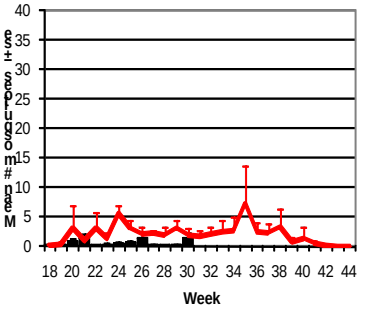
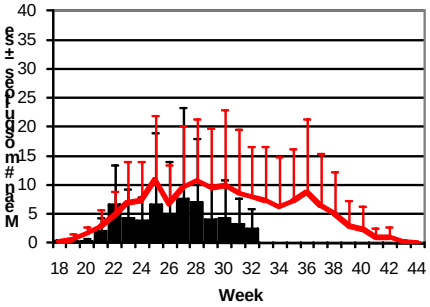
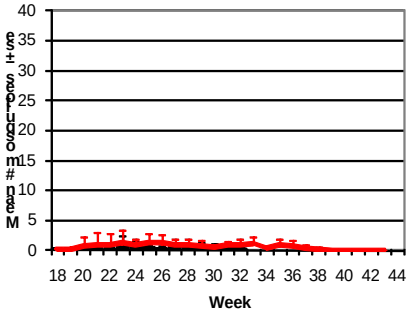
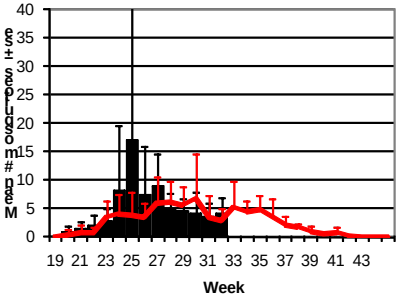
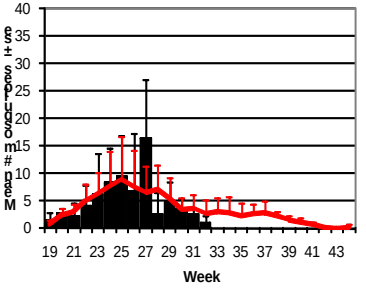
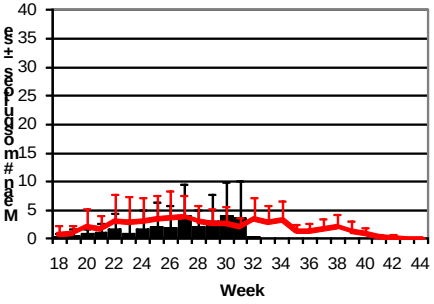
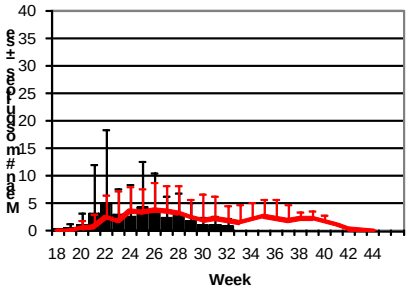
The Species Graphs: The species graph pages include a graph with two plots for each of the ten regions defined on the first page (Agricultural, Coastal, Delaware Bayshore, Delaware River, New York Metro, North-Central, Northwestern, Philadelphia Metro, Pinelands, and Suburban Corridor). Below is an example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



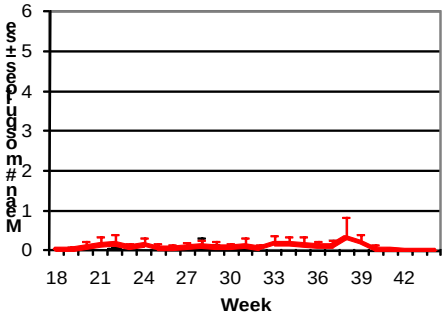
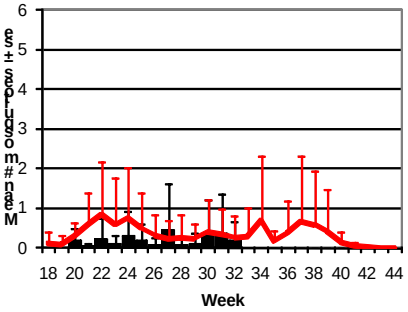
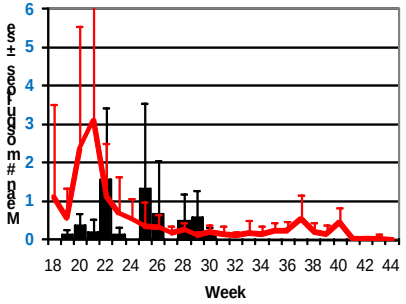
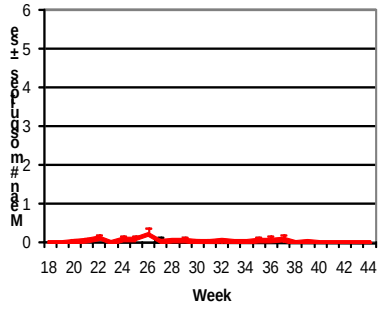
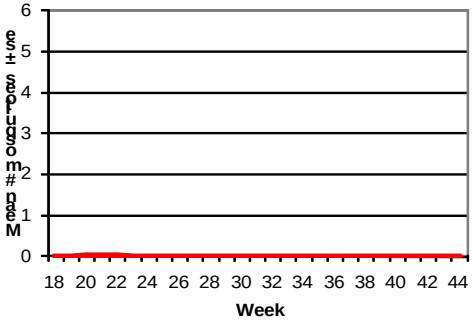
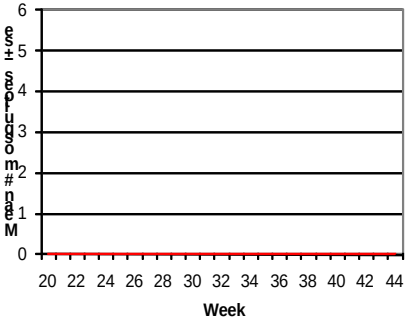
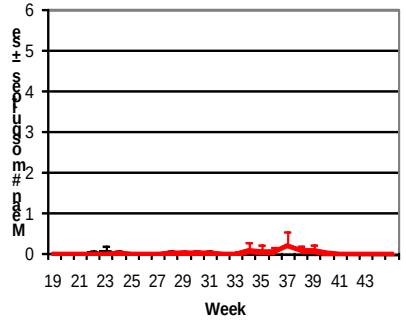
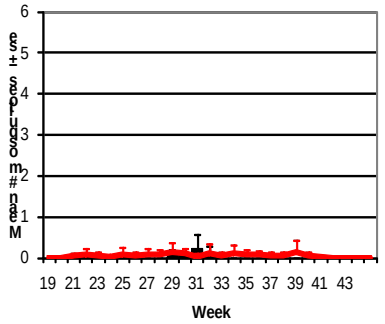
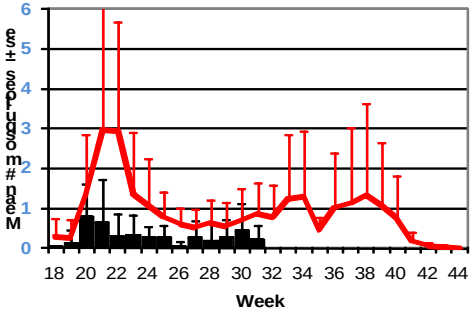
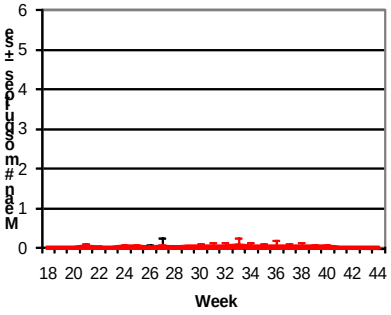
Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes vexans* populations were higher than historical trends in several regions, but without the enormous numbers that can sometimes be seen. Higher activity occurred in the Delaware Bayshore, Northwestern Rural and Pinelands regions as localized populations respond moderately to moderate precipitation events.	

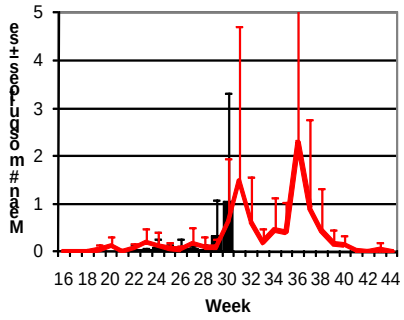
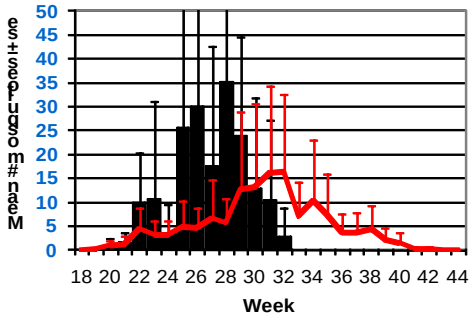
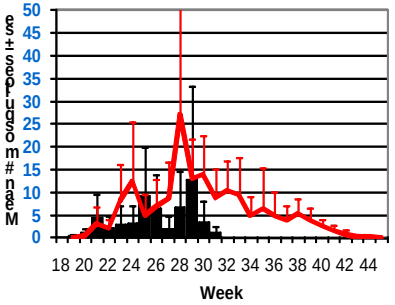
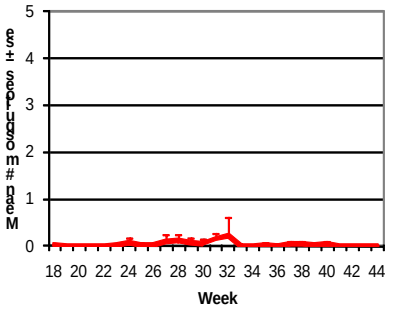
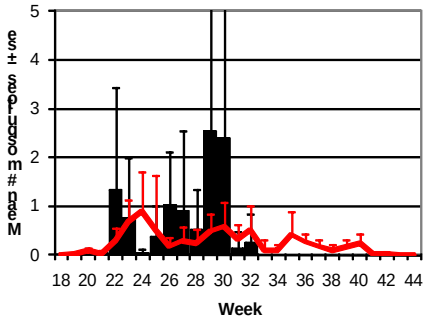
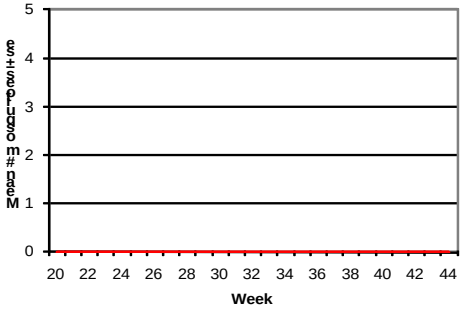
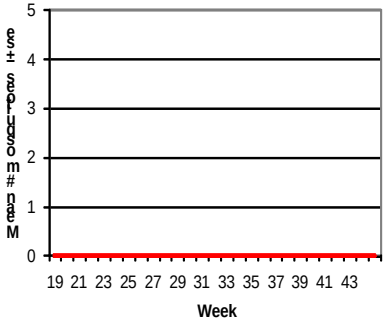
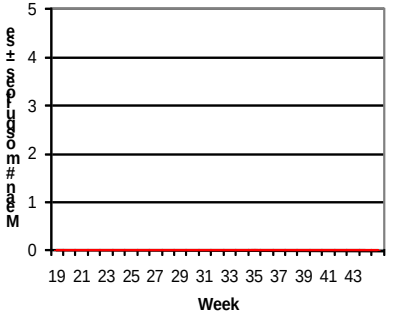
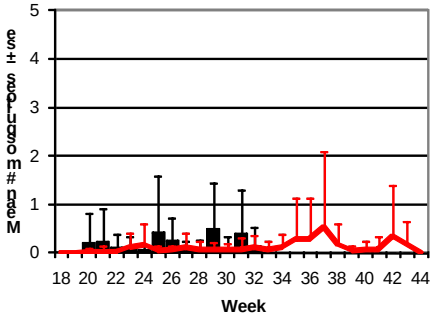
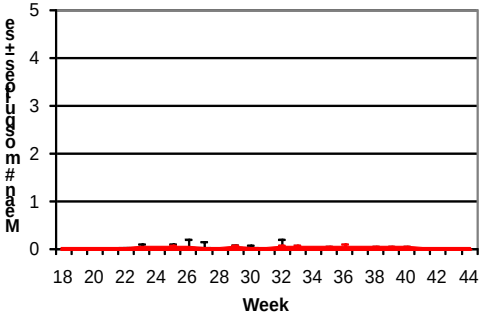
Culex Mix – Permanent Water Species
Multivoltine *Culex/Anopheles* (*Cx. pipiens* Type)

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. As with *Aedes vexans*, *Culex* species increased in the Delaware Bayshore, Northwest Rural and Pinelands regions. Increases were modest over historical trends. Some areas are still experiencing lower population levels, such as the New York Metro area. West Nile virus has been detected in this group for several weeks, and the number of detected pools increased from the previous week as the summer progresses.	

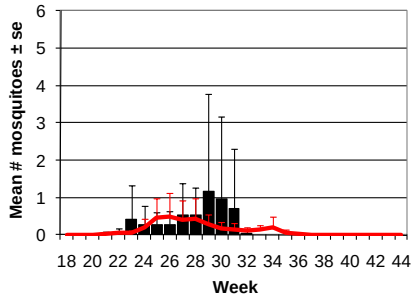
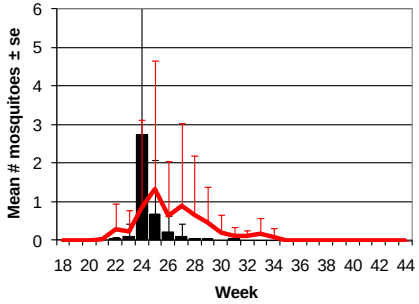
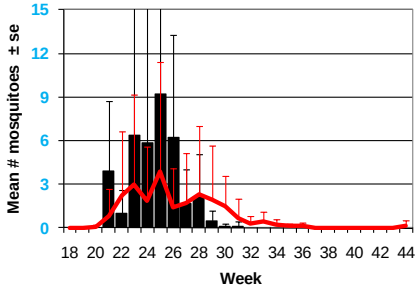
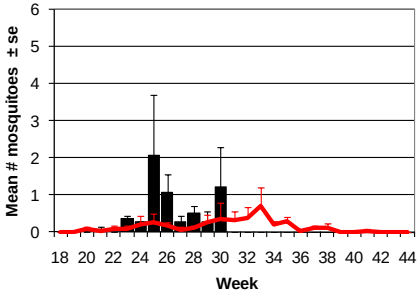
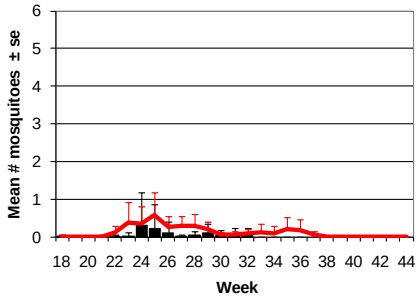
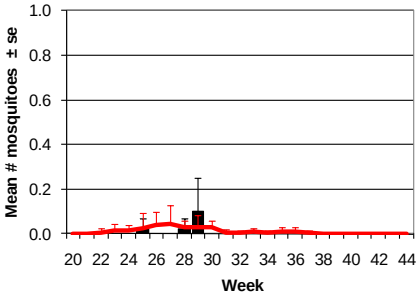
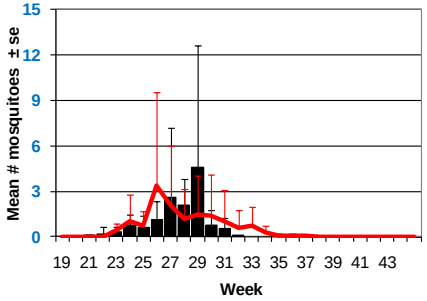
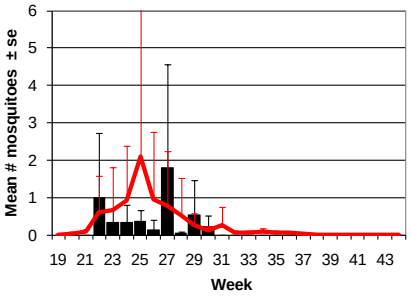
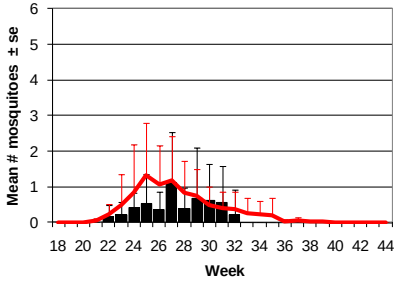
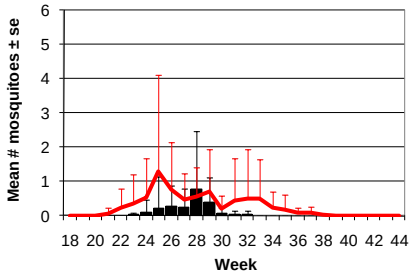
Culiseta melanura – Miscellaneous Group Unique (*Cs. melanura* Type)

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 continue to show low numbers as compared to historical trends. No detection of EEE virus has been found in New Jersey to date, although activity has occurred in other states, including detection in mosquito pools and transmission to mammals.	

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

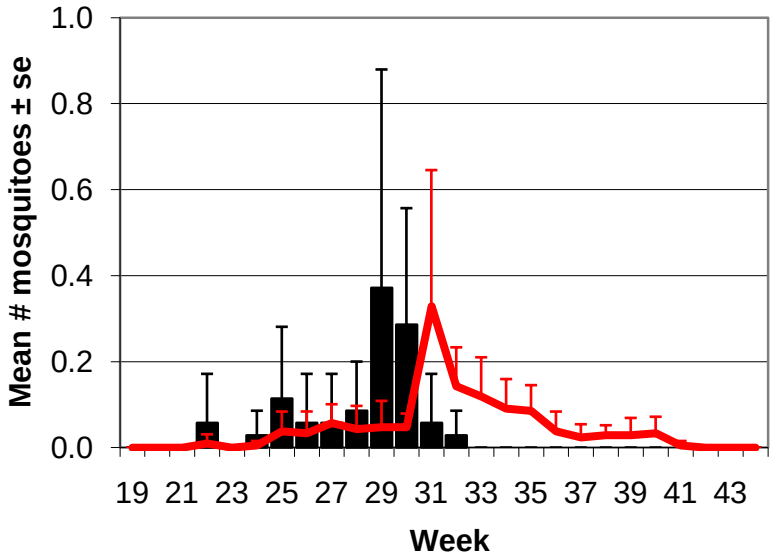
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes sollicitans* population abundances in the Pinelands were the only region where populations exceeded historical trends. This species can migrate inland, producing problems and complaints away from coastal natal areas in their search for nectar and mates. Numbers in both the coastal and Delaware Bayshore are expected to rise as the next brood emerges after the next full moon tide (tomorrow). Next Full Moon: 13 August.	

Coquillettidia perturbans
Monotypic (*Coq. perturbans* Type)

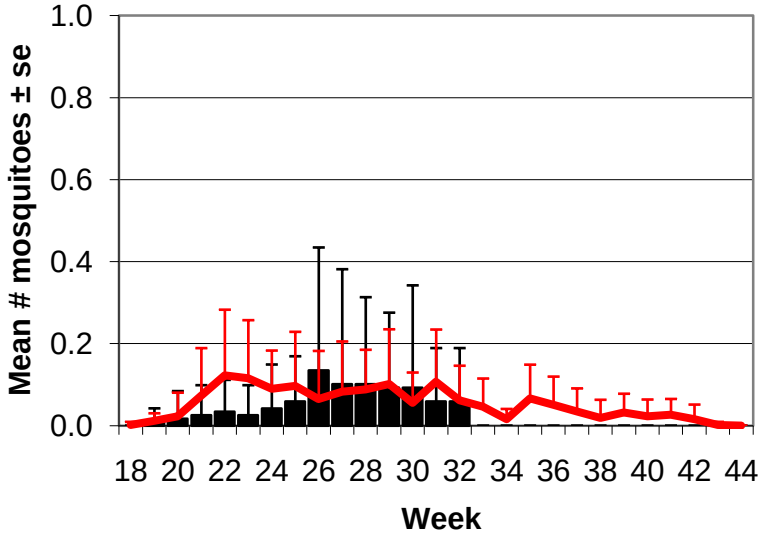
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Coquillettidia perturbans* numbers have increased in the Agricultural region for several weeks and are higher in the New York and Pinelands region as well. This species has been suspected in playing a role for inland transmission of EEE. This could be worrying particularly in the Agricultural area and especially for unvaccinated horses. At the moment, EEE activity has not been detected in New Jersey, although other states have reported animal cases as well as detection in mosquito pools.	

Container species *Aedes albopictus* and *Aedes japonicus*: These two species have been documented to be competent vectors for West Nile virus and other encephalitic diseases. They are not caught in New Jersey light traps in large numbers but *Ae. japonicus* has been shown to reflect general population trends, albeit at much lower numbers.

Aedes albopictus in the Philadelphia Metro region



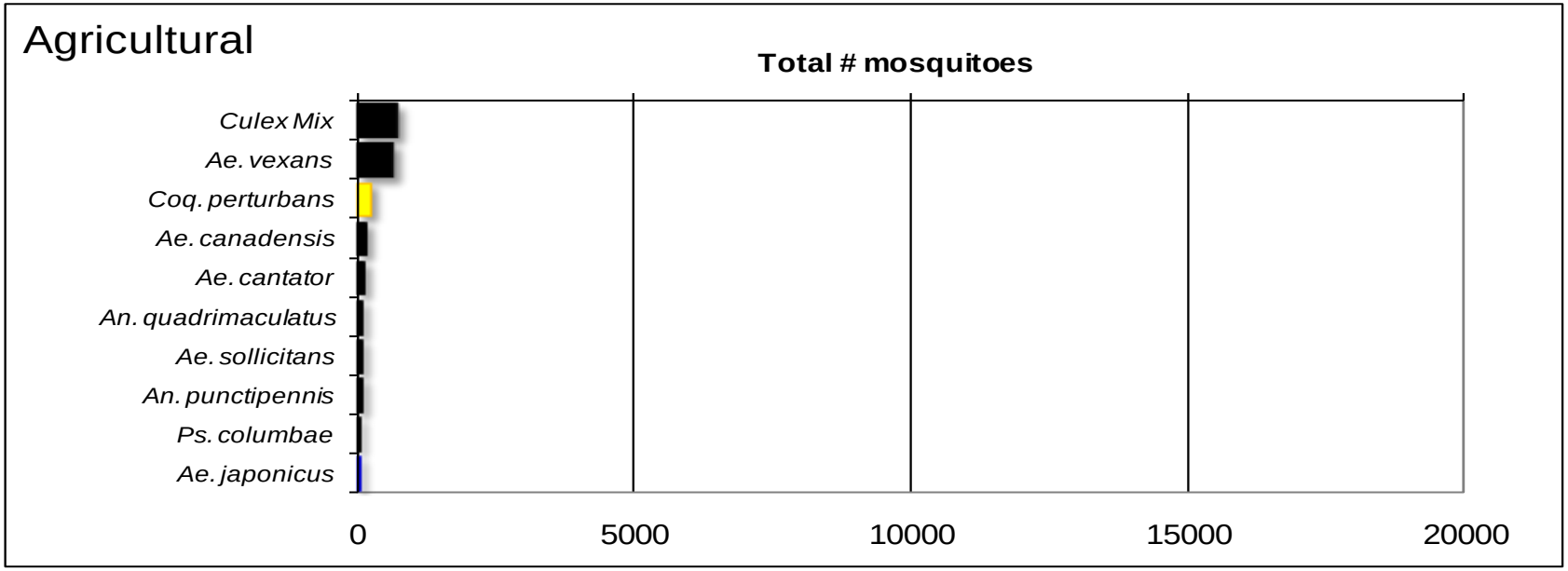
Aedes japonicus in the Suburban Corridor

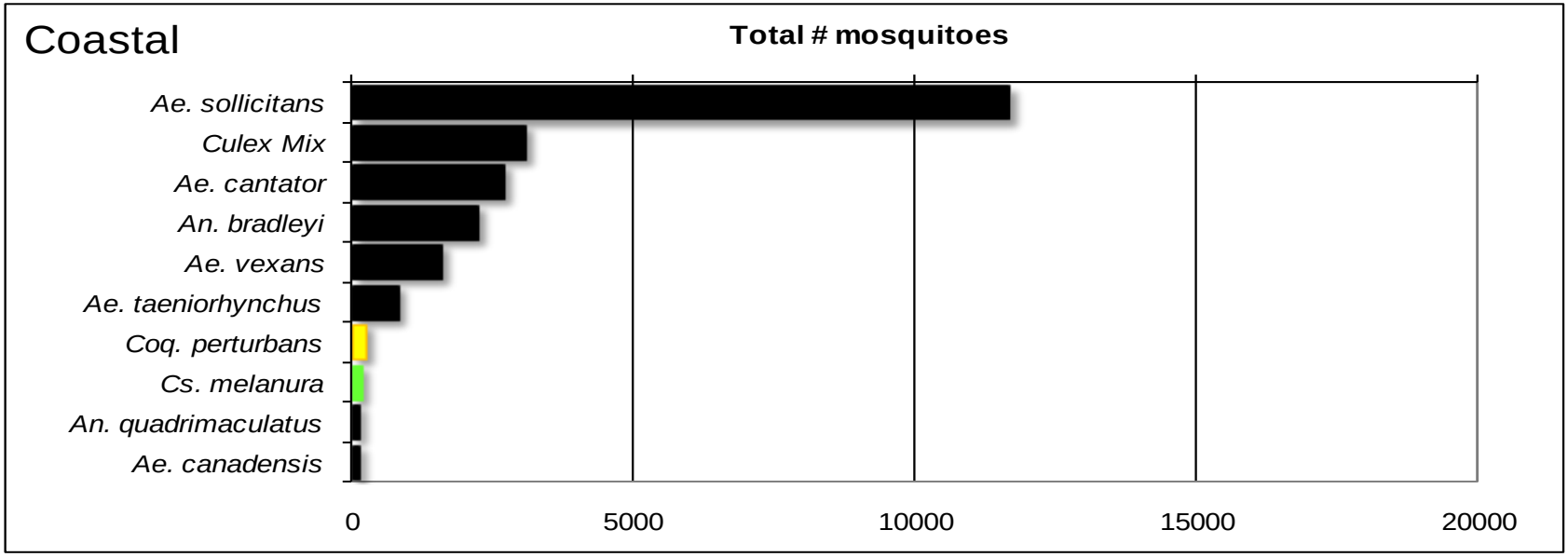


WNV *EEE*

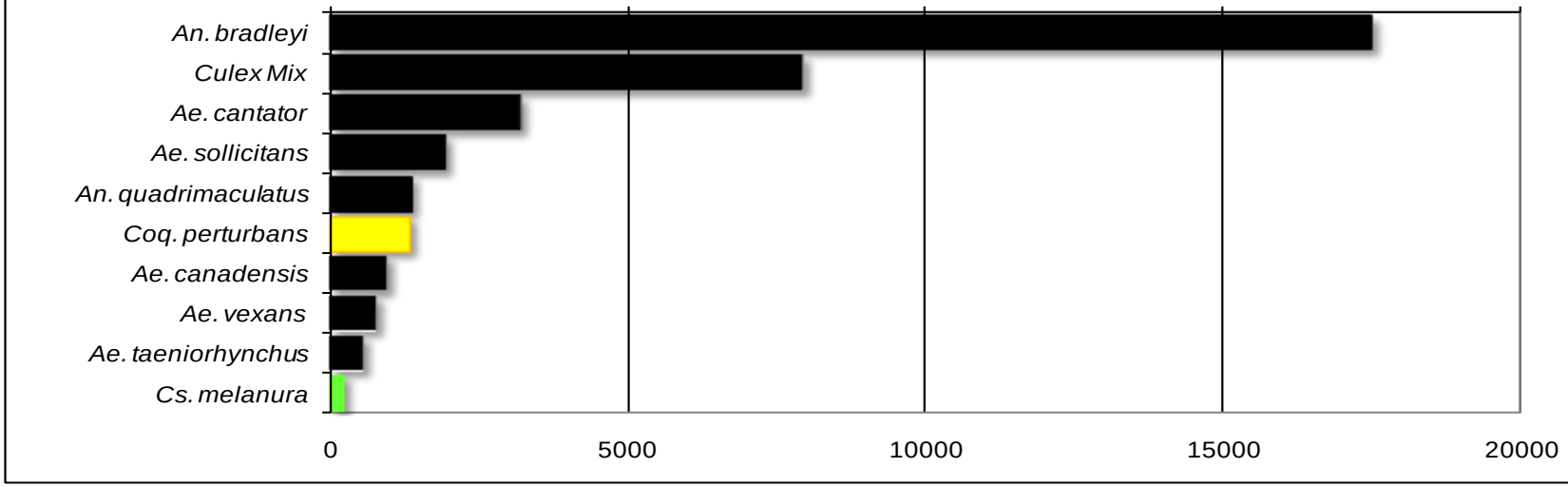
Top Ten Mosquito Species/Region - *Ae. albopictus,* *Ae. japonicus (invasives);* *Cs. melanura or Cx. erraticus* *Coq. perturbans*

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

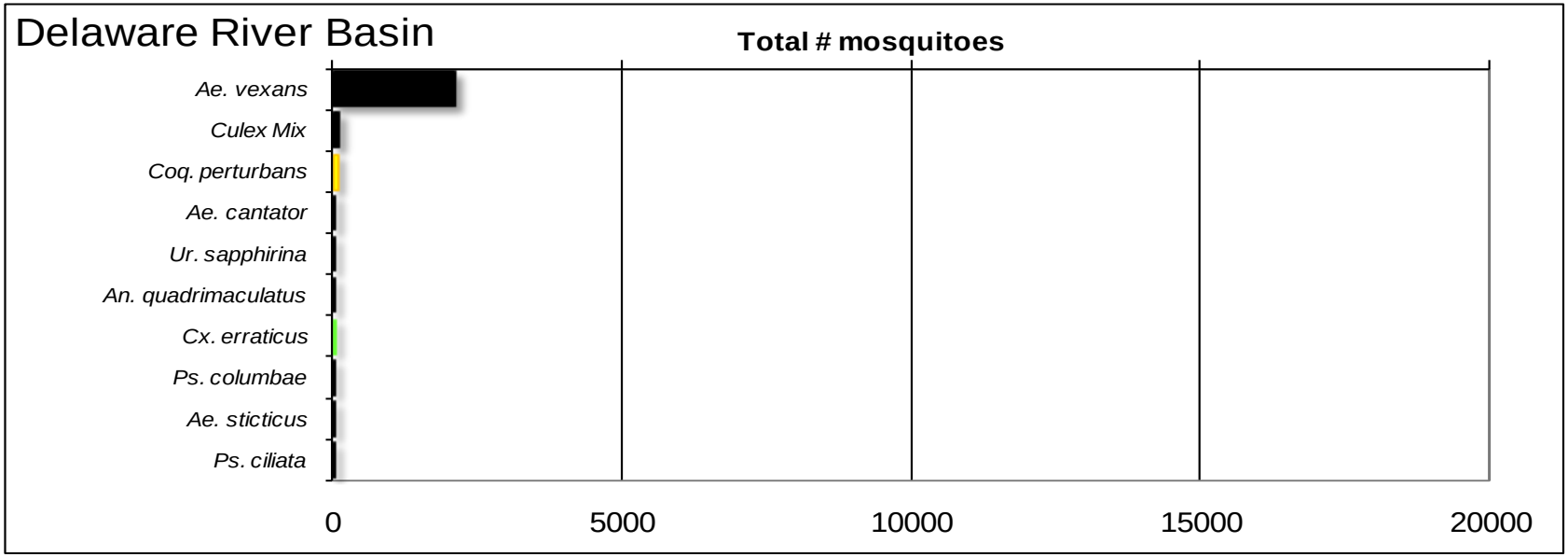




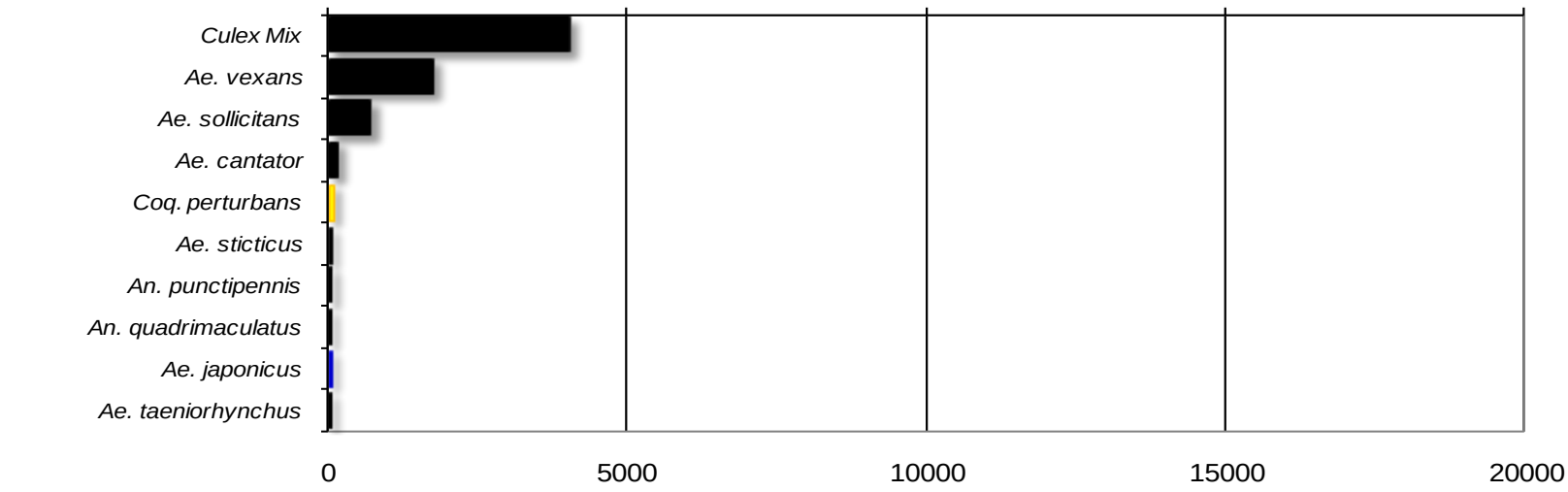
Delaware Bayshore



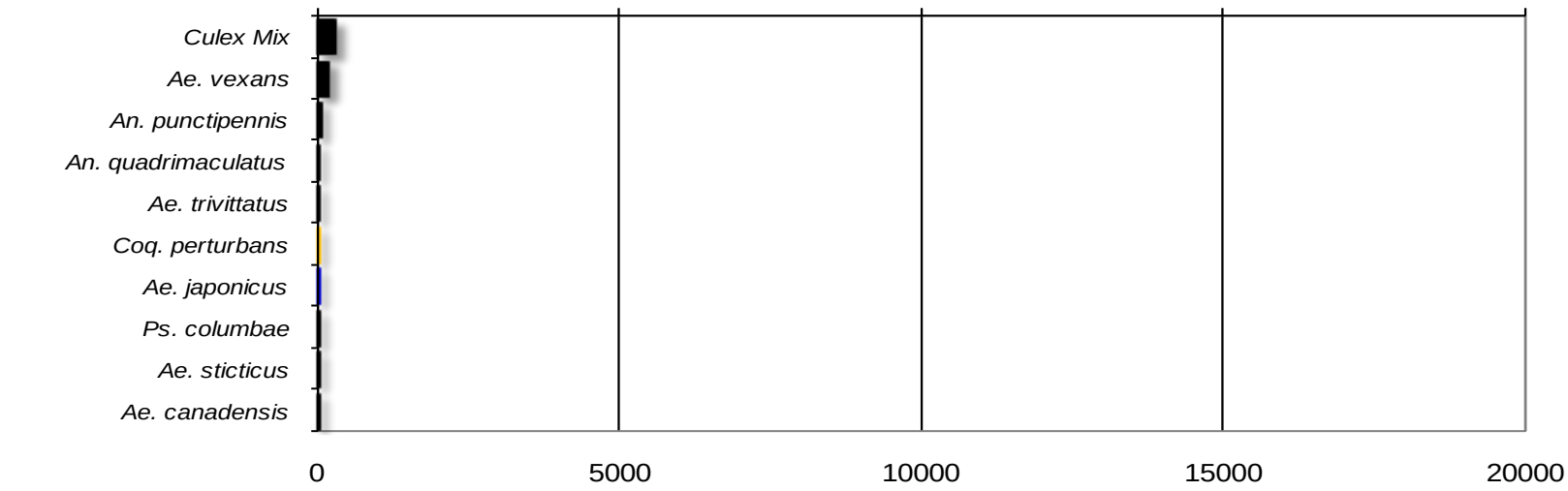
Delaware River Basin



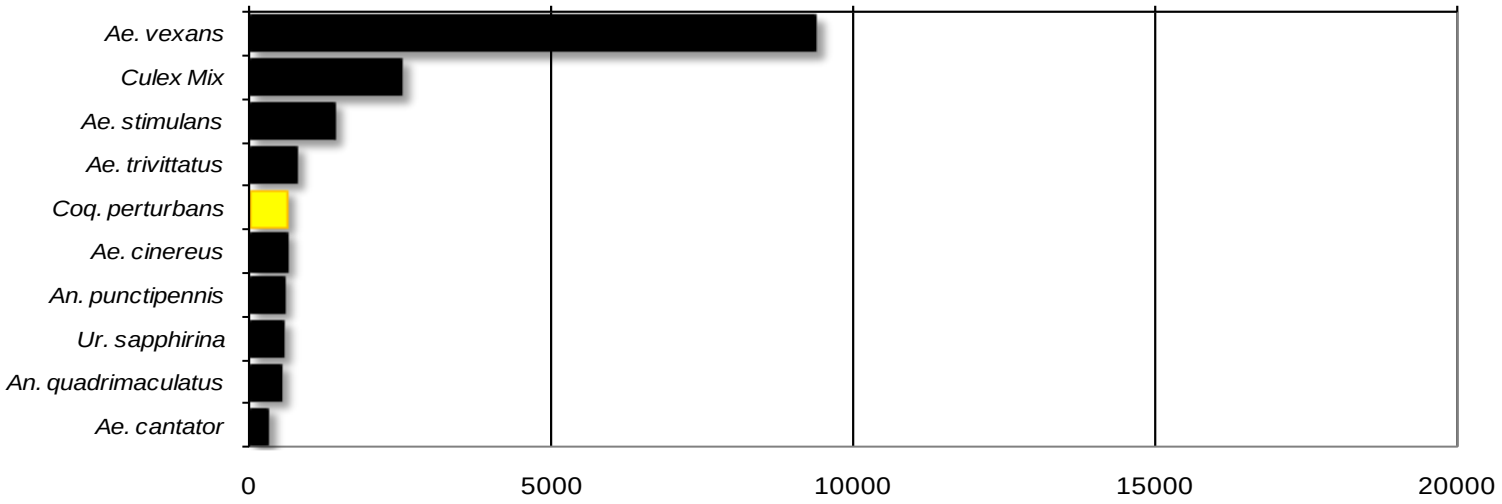
New York Metropolitan



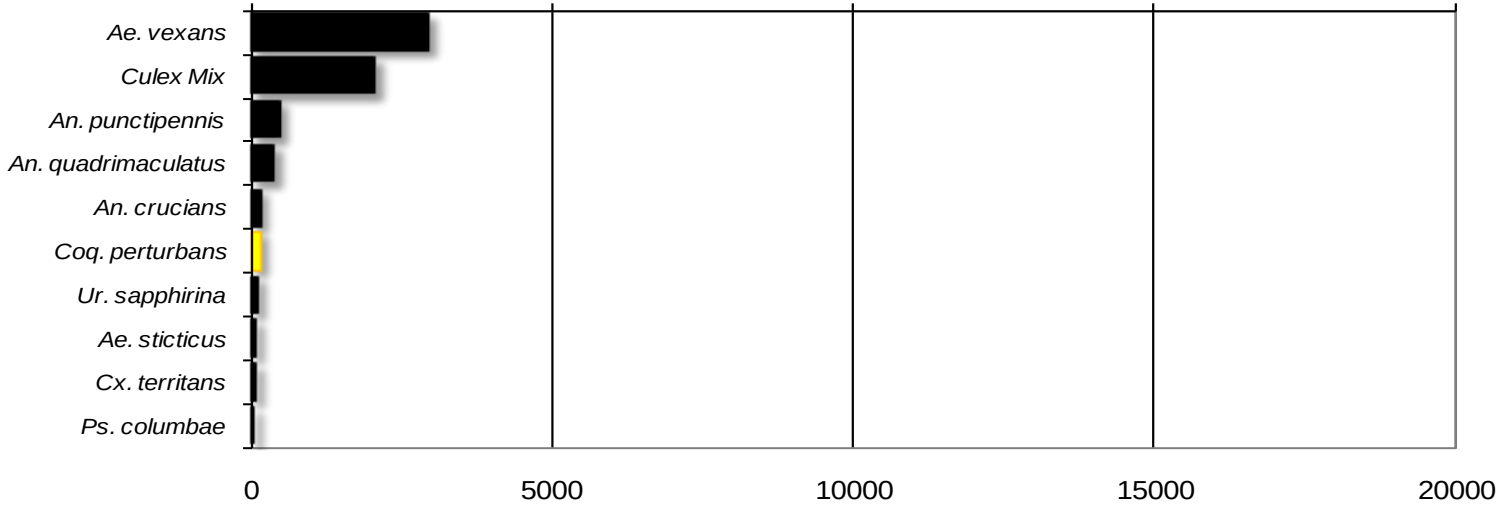
North Central Rural



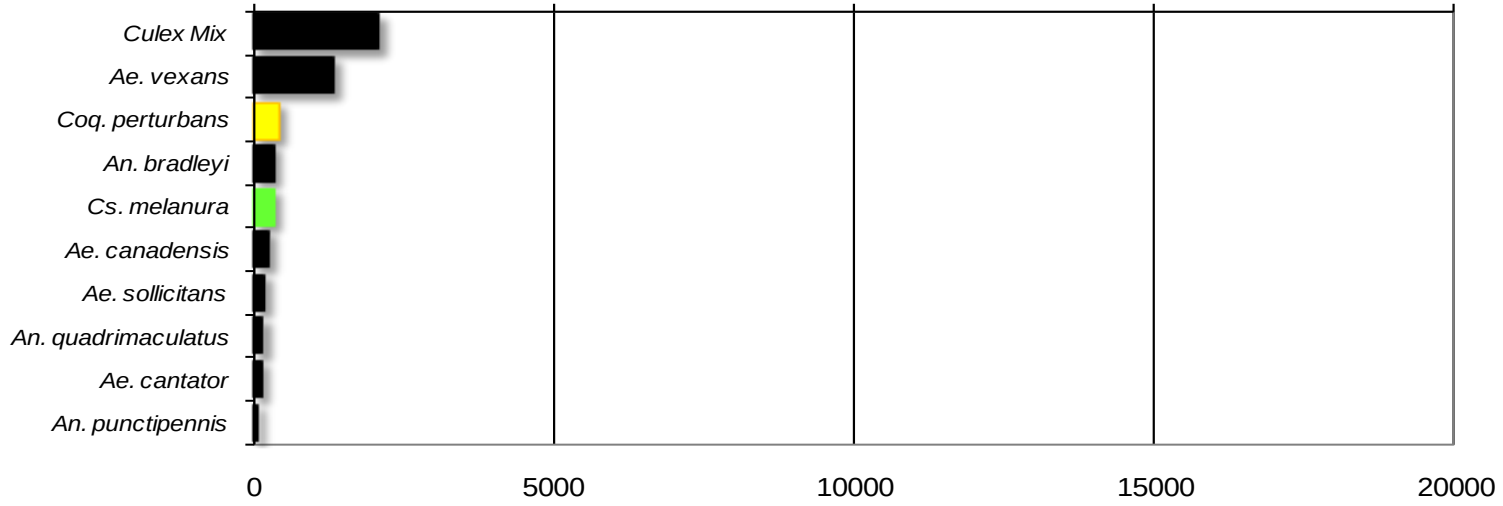
Northwest Rural



Philadelphia Metropolitan



Pinelands



Suburban Corridor