NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report for 14 August to 20 August 2011, CDC Week 33

Prepared by Lisa M. Reed, Scott Crans and Mark Robson
Center for Vector Biology

This New Jersey Agricultural Experiment Station report is supported by Rutgers University, Hatch funds,
funding from the NJ State Mosquito Control Commission and with the participation of the 21 county mosquito control agencies of New Jersey.

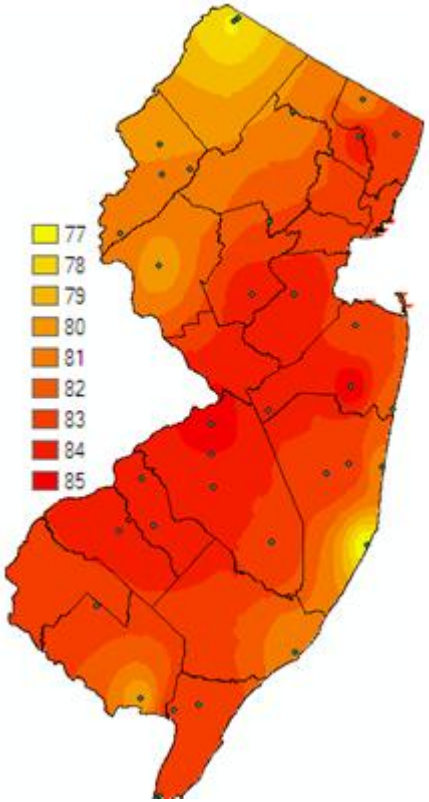
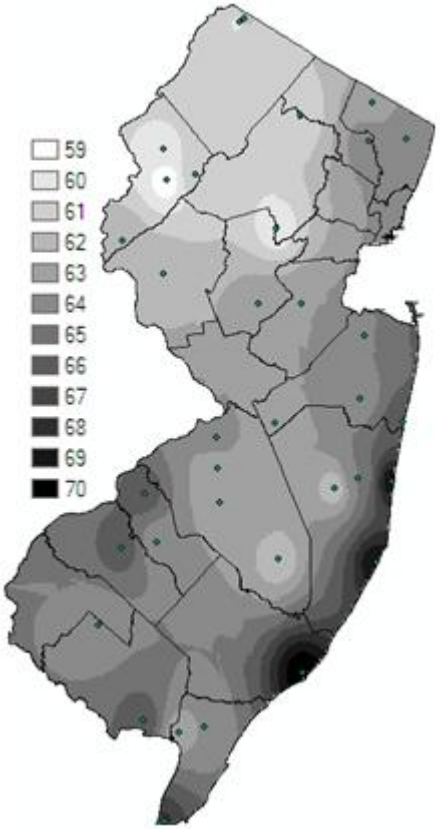
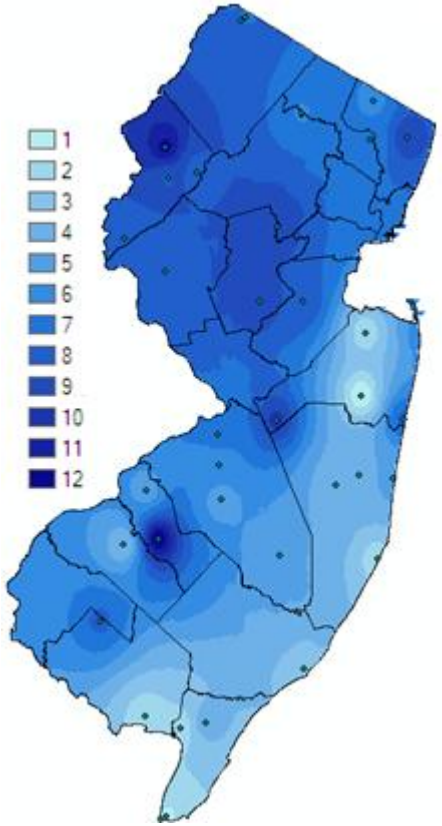
Summary Table – Week 33

	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	**0.71**	**1.94**	**0**	**1.29**	**3.03**	**0**	**0.43**	**0.15**	**4**	**0.02**	**0.19**	**0**
Coastal	**0.46**	**2.36**	**0**	**2.52**	**5.61**	**0**	**0.00**	**0.19**	**0**	**6.49**	**7.13**	**0**
Delaware Bayshore	**1.11**	**1.26**	**0**	**14.82**	**8.36**	**2**	**0.03**	**0.45**	**0**	**4.91**	**9.26**	**0**
Delaware River Basin	**4.21**	**4.04**	**1**	**1.00**	**2.52**	**0**	**0.00**	**0.69**	**0**	**0.00**	**0.00**	**0**
New York Metro	**0.60**	**4.91**	**0**	**3.57**	**7.87**	**0**	**0.03**	**0.10**	**0**	**0.06**	**0.09**	**0**
North Central Rural	**0.18**	**1.05**	**0**	**0.53**	**1.12**	**0**	**0.00**	**0.01**	**0**	**0.00**	**0.00**	**0**
Northwest Rural	**6.37**	**9.36**	**0**	**6.31**	**5.22**	**1**	**0.33**	**0.72**	**0**	**0.00**	**0.00**	**0**
Philadelphia Metro	**6.18**	**8.56**	**0**	**2.18**	**3.06**	**0**	**0.04**	**0.05**	**0**	**0.00**	**0.00**	**0**
Pinelands	**0.77**	**1.13**	**0**	**2.34**	**2.89**	**0**	**0.47**	**0.27**	**2**	**0.29**	**0.07**	**4**
Suburban Corridor	**0.42**	**8.37**	**0**	**1.79**	**1.51**	**1**	**0.01**	**0.49**	**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.

State Summary: Apart from *Culex* in the Delaware Bayshore, abundances for these species were either only moderately elevated above historical levels or were on the low level (less than 1 per trap per night).

Climate Factors

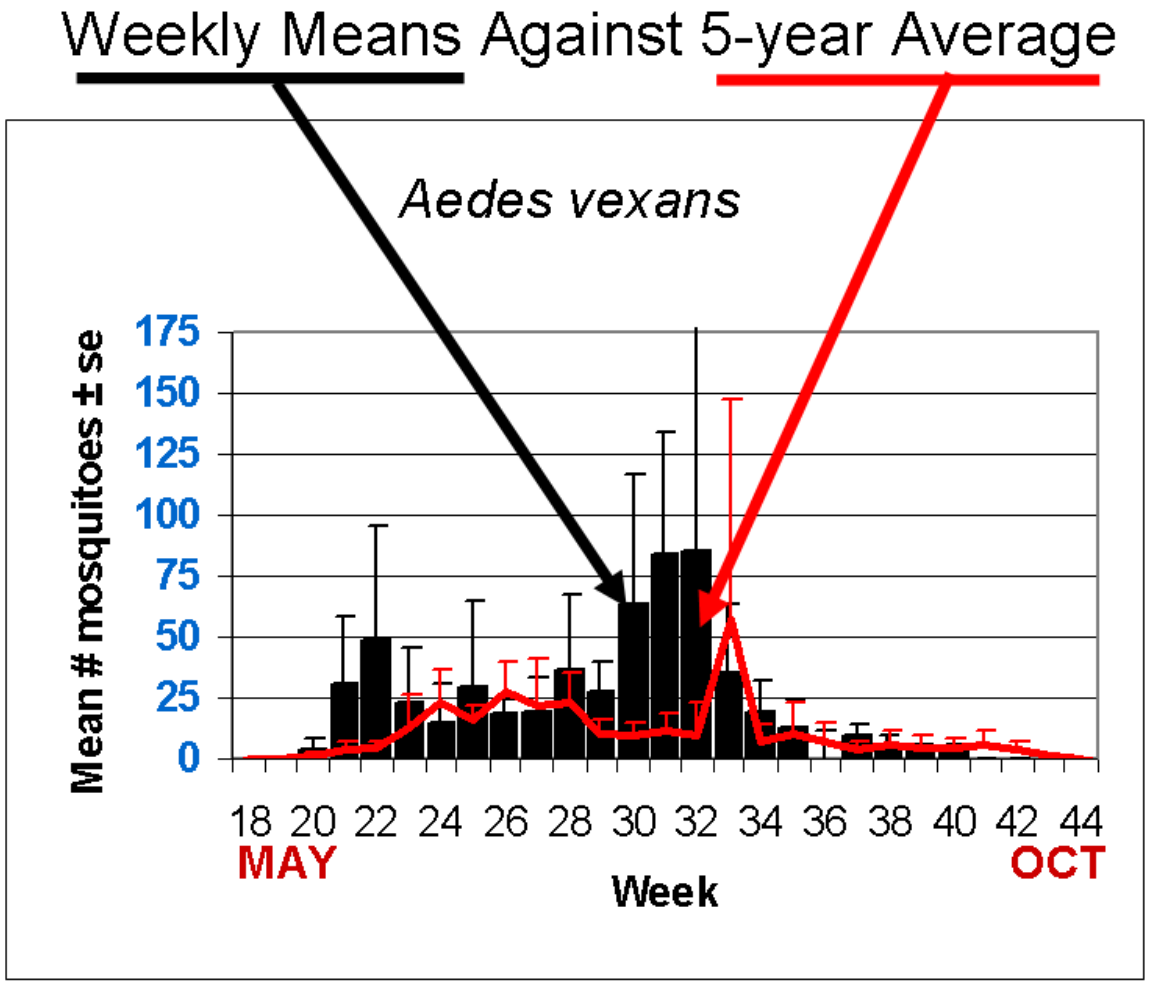
Average High Temperature	Average Low Temperature	Total Precipitation
		

The three figures show the interpolation of average maximum and minimum temperature and total precipitation from 1 August to 19 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 were only slightly different from the previous report. Precipitation increased as much of the state continued to see rainfall. Rainfall was the highest on the western and northern portions of the states. The drier areas in the south and along the coast will likely gain much in rainfall as Hurricane Irene is scheduled to pass through this coming weekend.

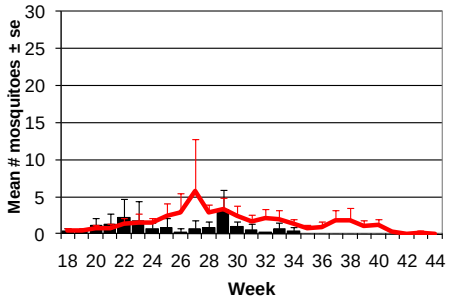
NJ Weather & Climate NETWORK ONJSC at Rutgers University

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 Bergen, Burlington, Camden, Cape May, Hunterdon, Middlesex, Monmouth, Morris, Ocean, Salem, Somerset, Sussex, Union and Warren counties. Last week included Bergen, Burlington, Camden, Cape May, Essex, Hunterdon, 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.

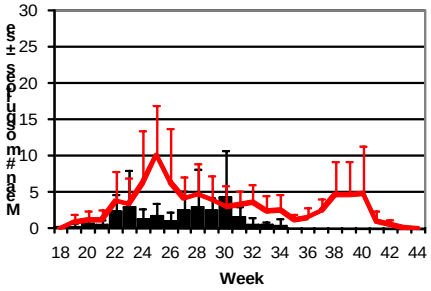


Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

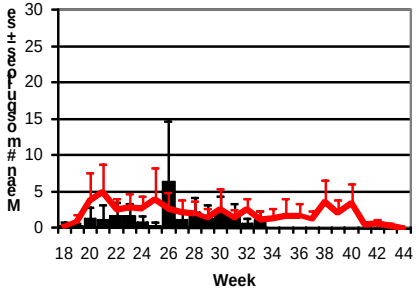
Agricultural



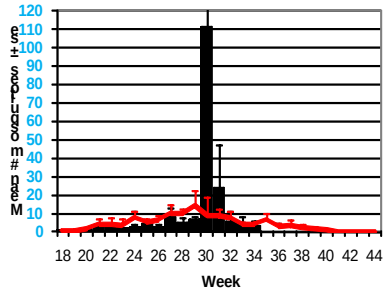
Coastal



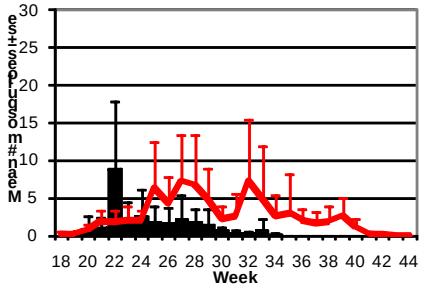
Delaware Bayshore



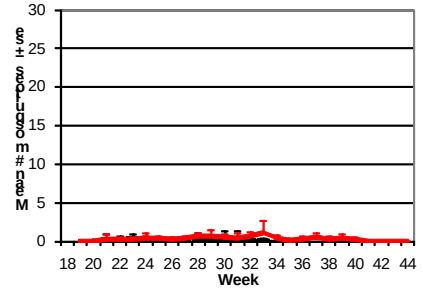
Delaware River Basin



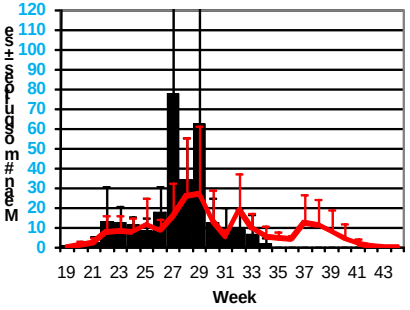
New York Metro



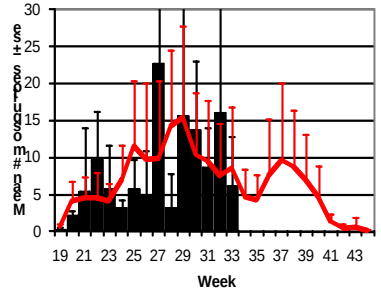
North Central Rural



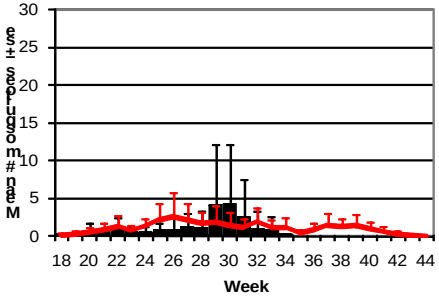
Northwestern Rural



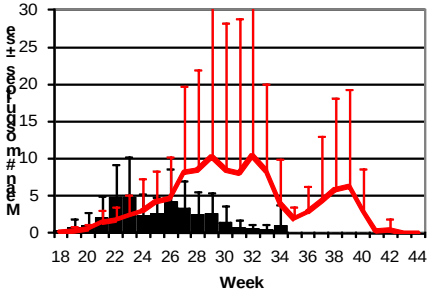
Philadelphia Metro



Pinelands



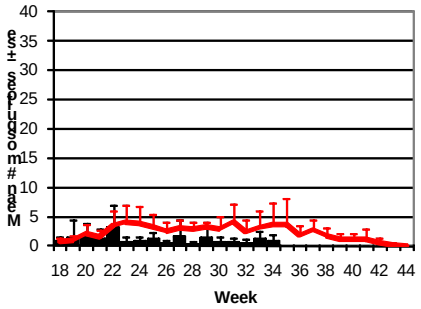
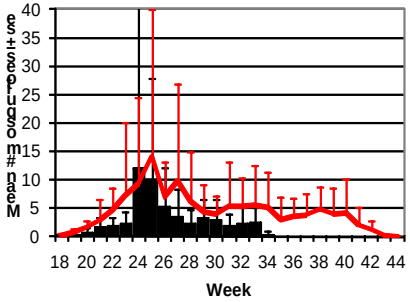
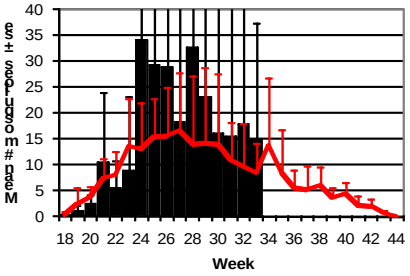
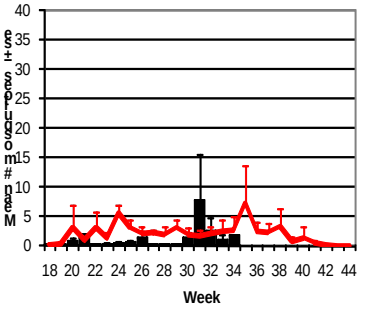
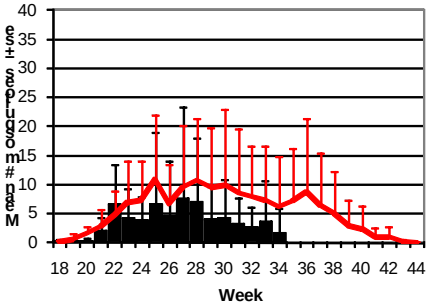
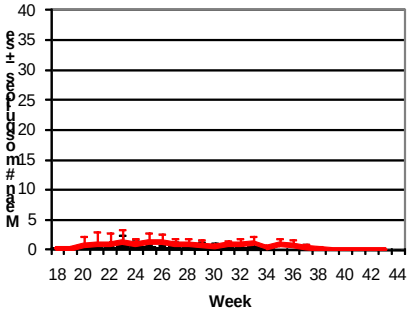
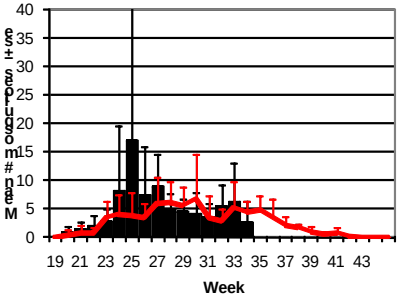
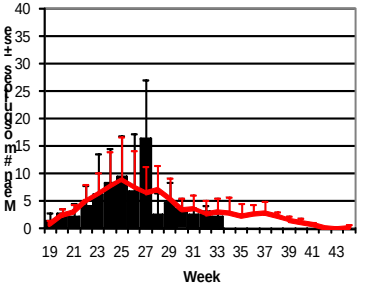
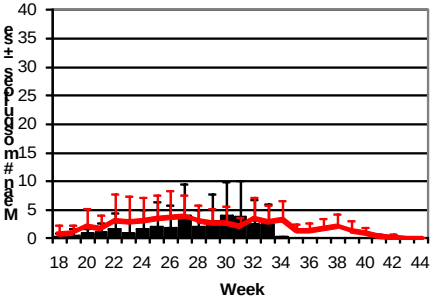
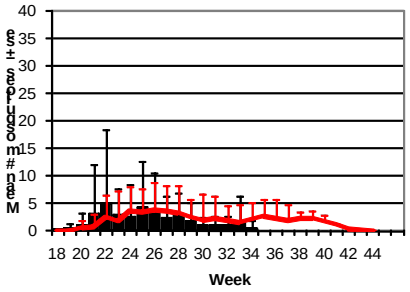
Suburban Corridor



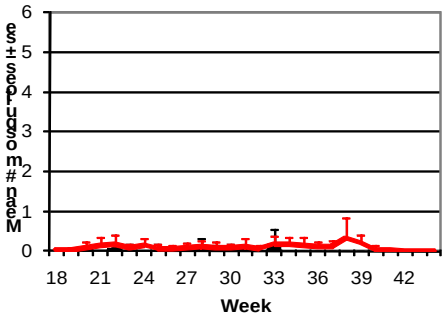
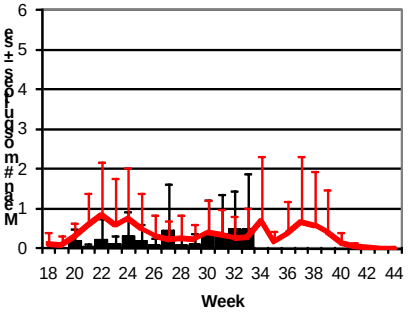
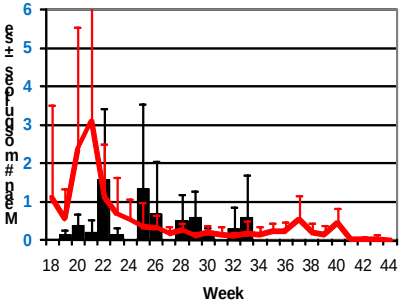
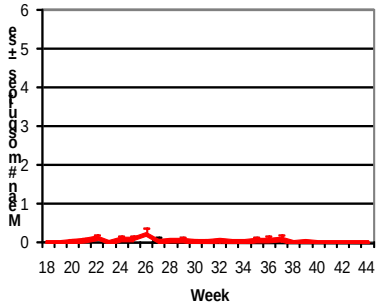
Comments

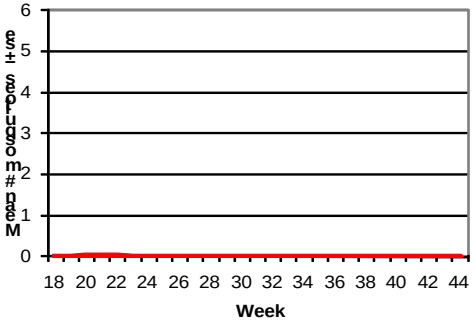
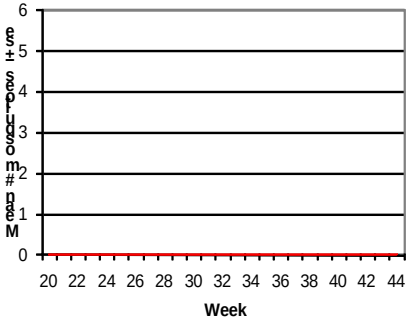
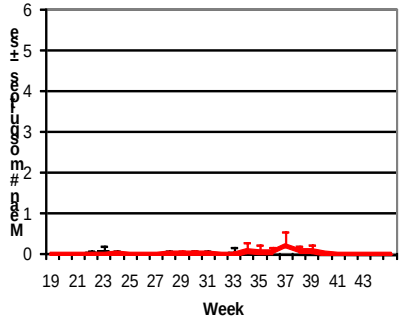
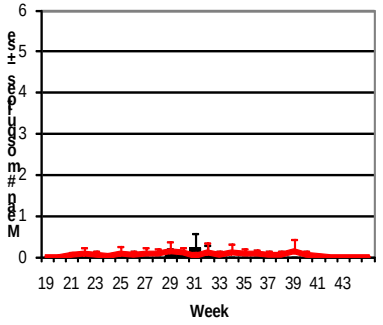
Aedes vexans populations were elevated only in the Delaware River Basin in modest amounts over the historical trends. Anticipated increases in several areas that saw significant rainfall did not occur. The passing of Hurricane Irene to the east along the New Jersey shore should increase the amount of precipitation to those areas that have been drier than in the northern/western parts of the state, and again, emergence of floodwater species, both fresh and salt, can be anticipated.

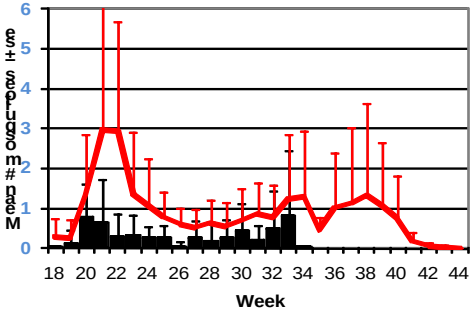
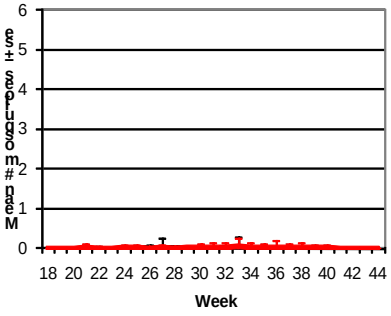
Culex Mix – Permanent Water Species
Multivoltine *Culex/Anopheles* (*Cx. pipiens* Type)

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. The Delaware Bayshore continues to see higher than historical numbers of *Culex* in the region, mostly attributable to *Culex salinarius*. The Northwestern and Suburban Corridor also has seen a smaller increase over historical values. The number of positive pools has increased with both *Culex* species (enzootic) and potential bridge vectors being detected.	

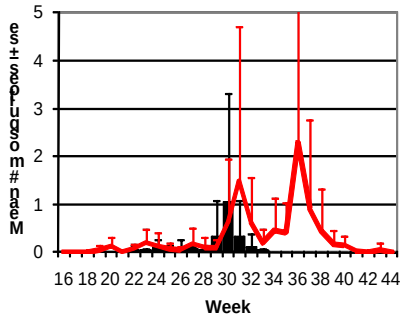
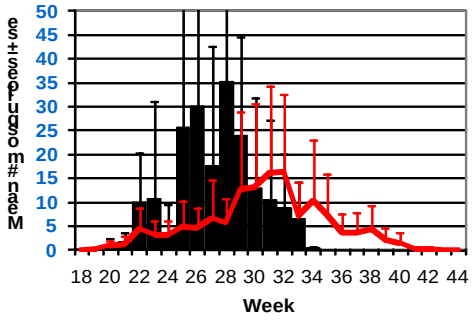
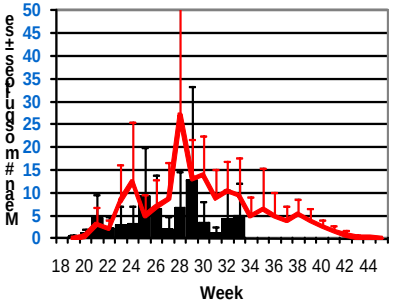
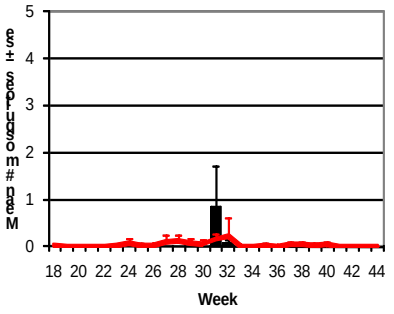
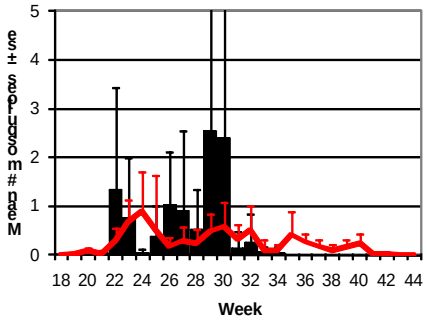
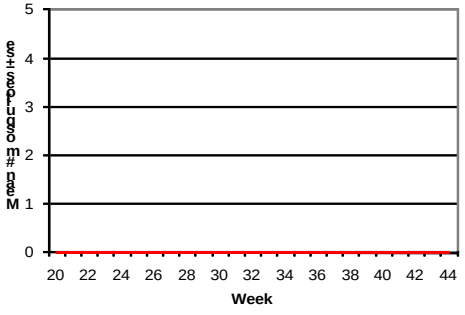
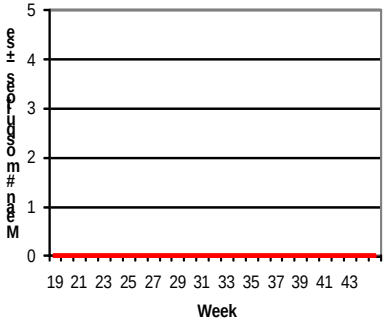
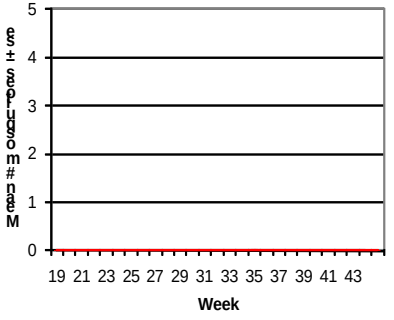
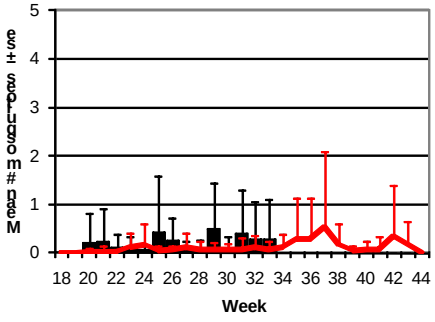
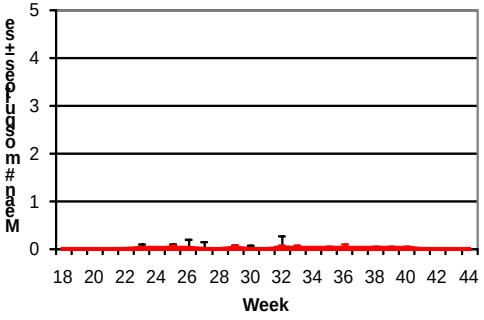
Culiseta melanura – Miscellaneous Group Unique (*Cs. melanura* Type)

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			

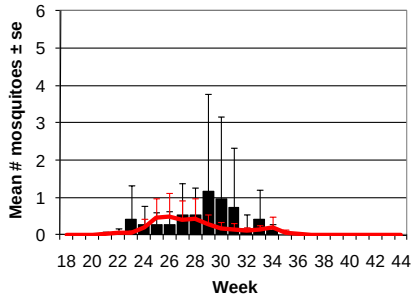
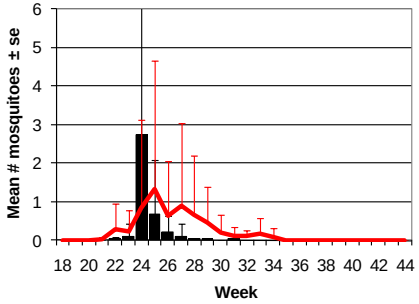
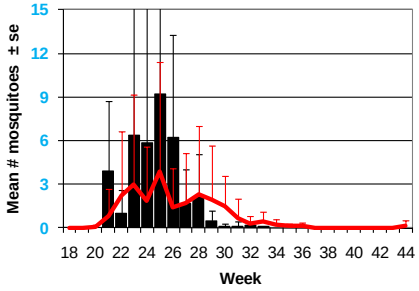
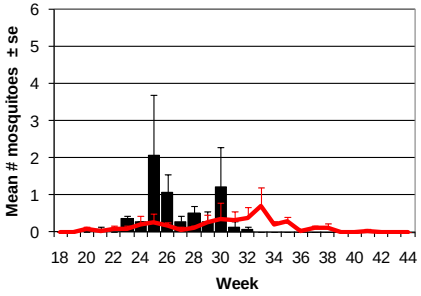
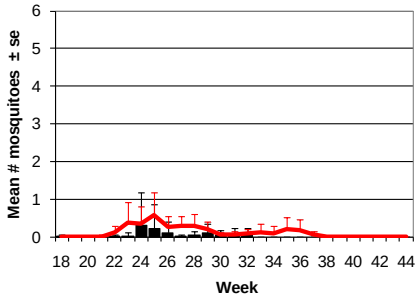
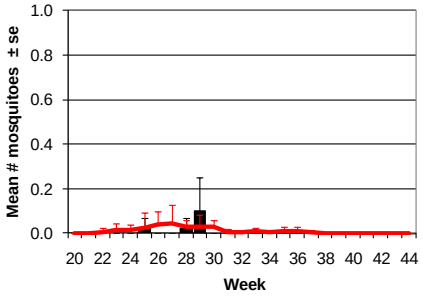
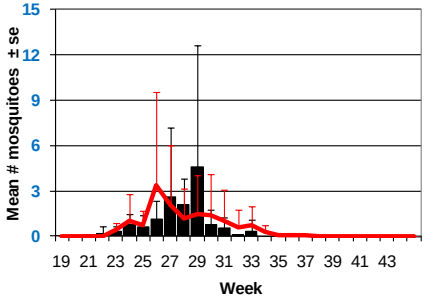
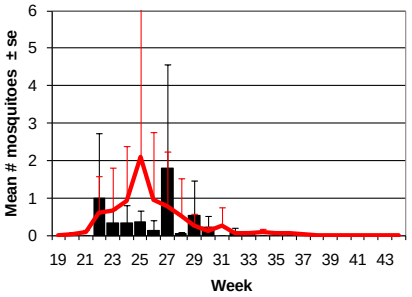
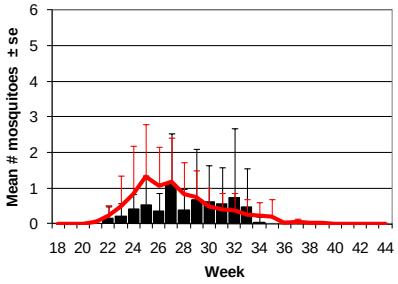
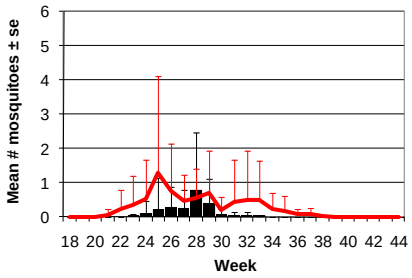
New York Metro	North Central Rural	Northwestern Rural	Philadelphia Metro
			

Pinelands	Suburban Corridor	Comments
		*Culiseta melanura* is the enzootic ornithophilic vector of eastern equine encephalitis. *Cs. melanura* abundances continue to show small increases from the previous week in the regions that typically have the higher abundances (Coastal, Delaware Bayshore and the Pinelands). These trends have been harder to detect in resting box populations, where this species is normally found in higher numbers. EEE activity continues to increase around 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* population abundances were only higher in the Pinelands than historically expected but adjustments are likely to occur for the Coastal region in the next report. Hurricane Irene can have an effect on coastal populations as this and other salt floodwater species respond not only to lunar tidal action but also to precipitation. Next Full Moon: 12 September.	

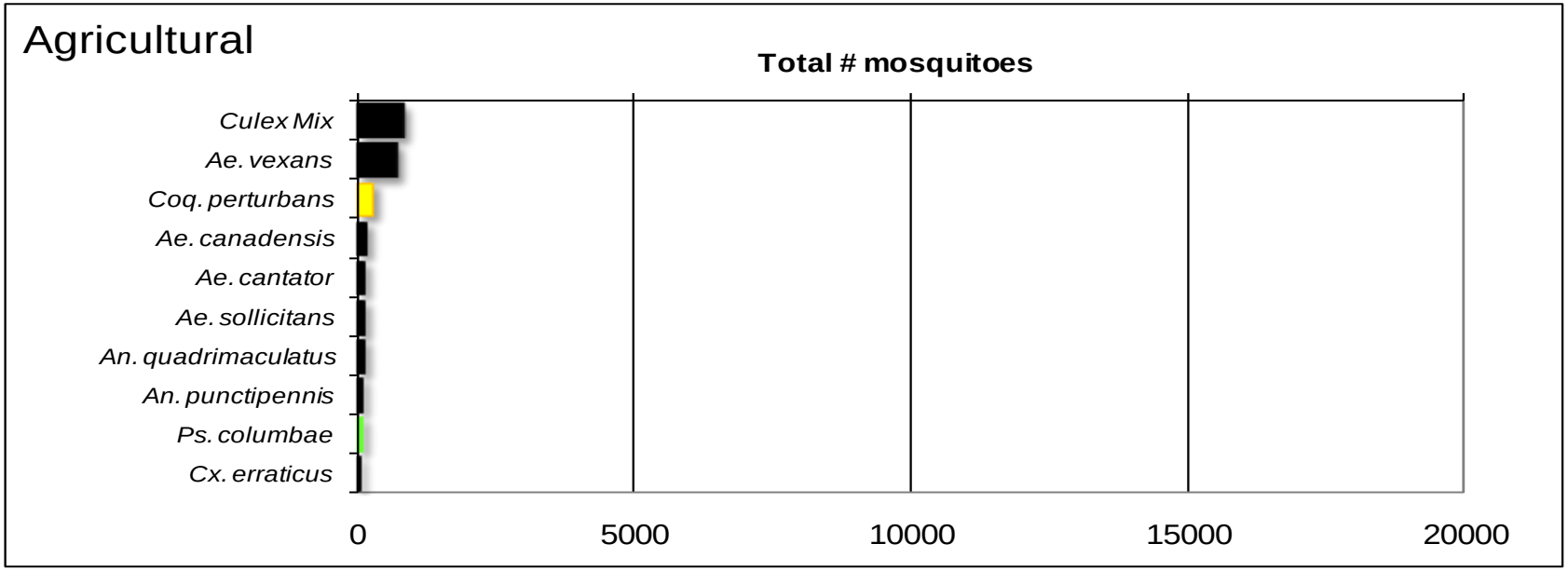
Coquillettidia perturbans
Monotypic (*Coq. perturbans* Type)

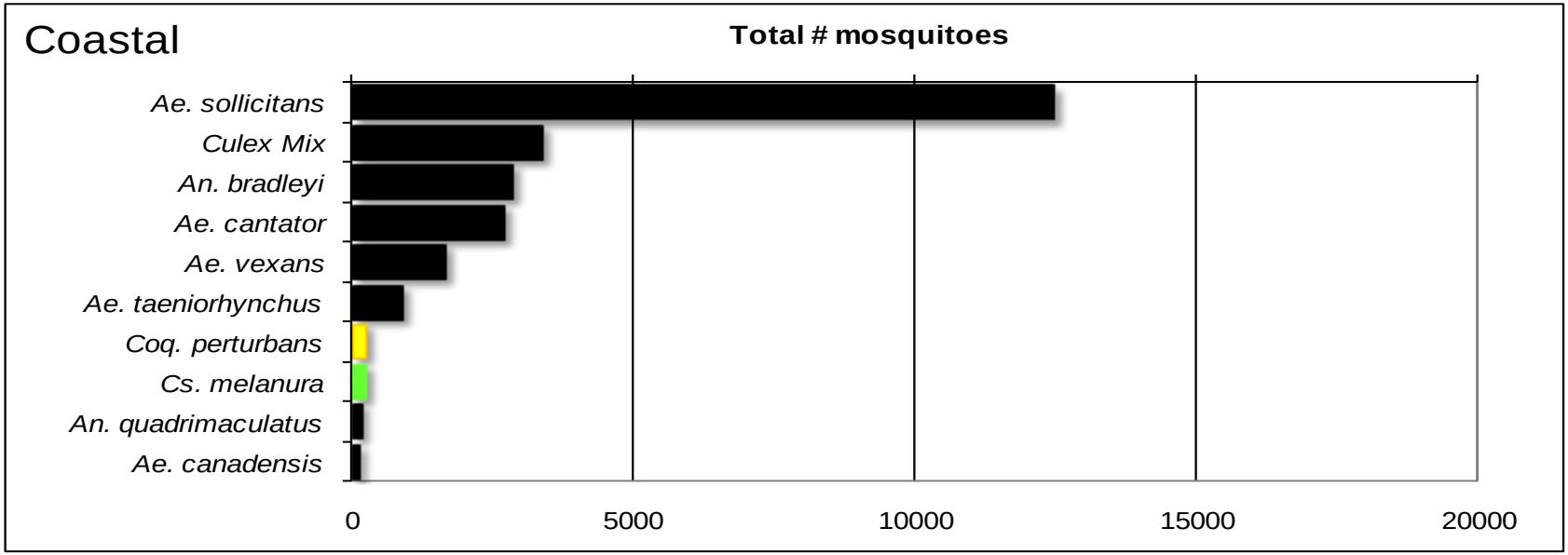
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Coquillettidia perturbans* abundances were higher than historical values in the Agricultural and Pinelands, but this is coming toward the end of this mid-season mosquito. Some *Cq. perturbans* will linger as the season progresses, but the majority of this species will have disappeared well before the first frost.	

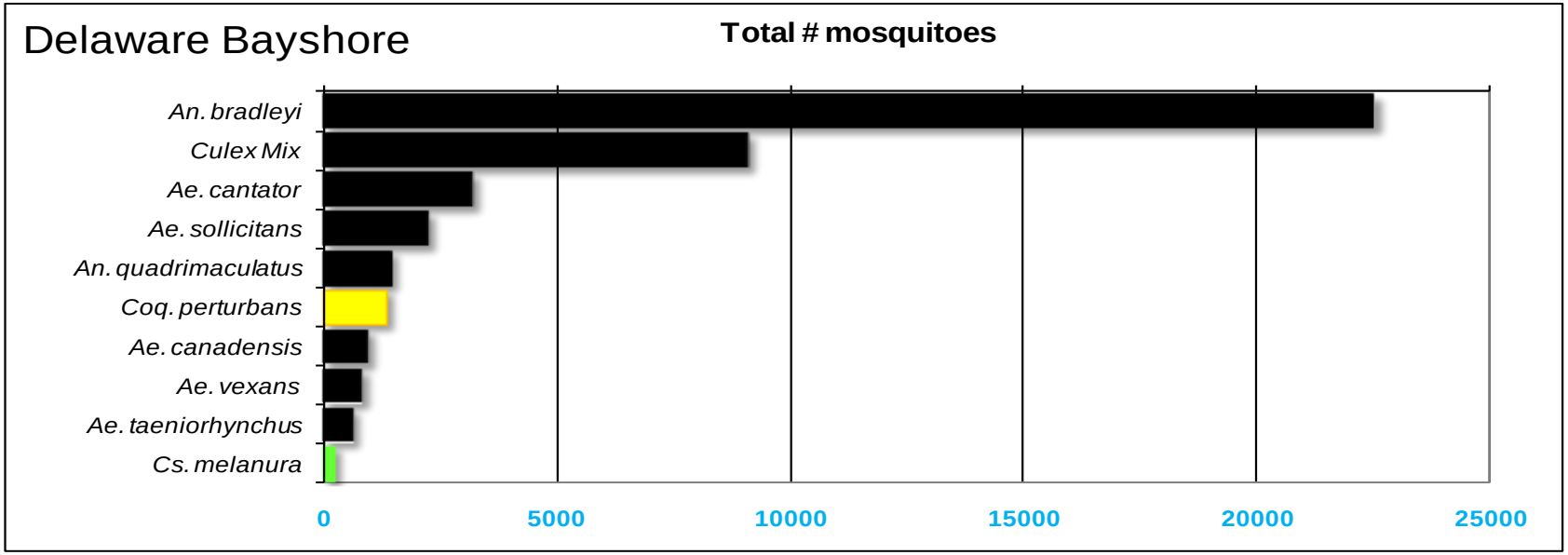
WNV *EEE*

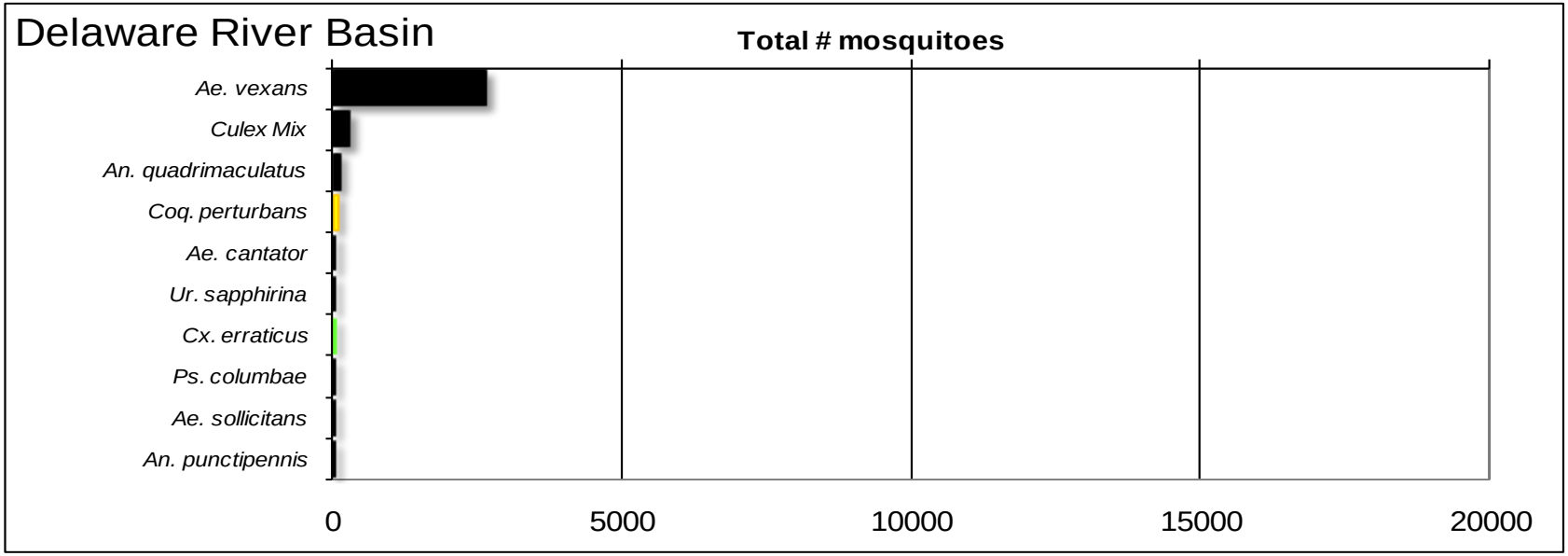
Top Ten Mosquito Species/Region - *Ae. albopictus,* *Ae. japonicus (invasives);* *Cs. melanura or Cx. erraticus* *Coq. perturbans*

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

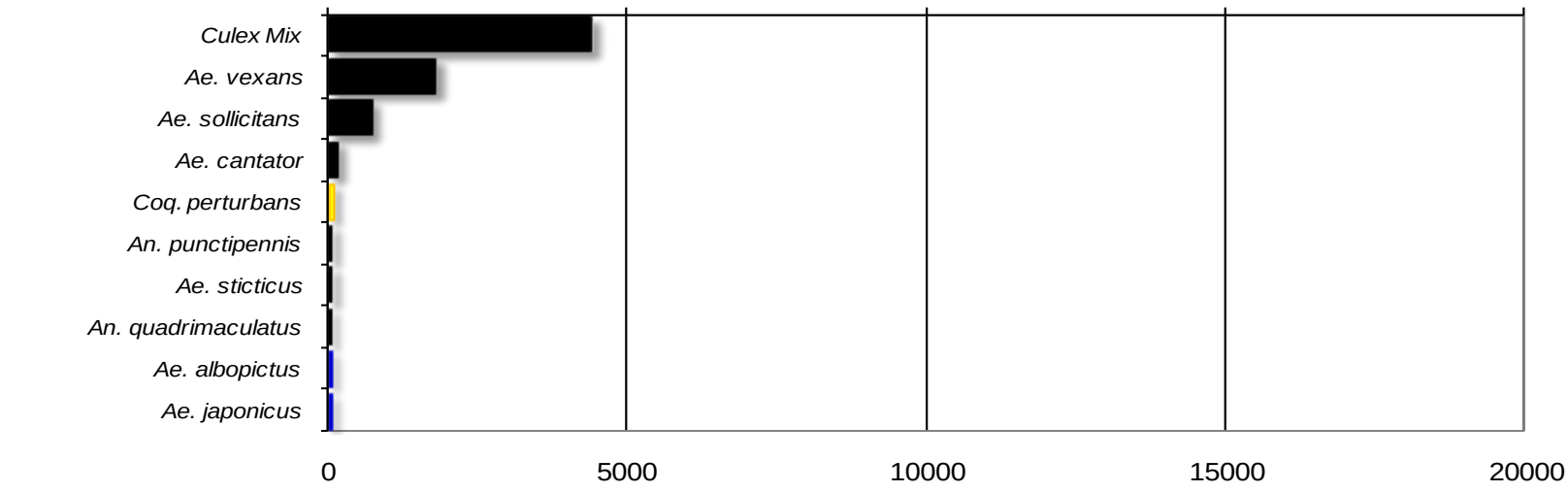




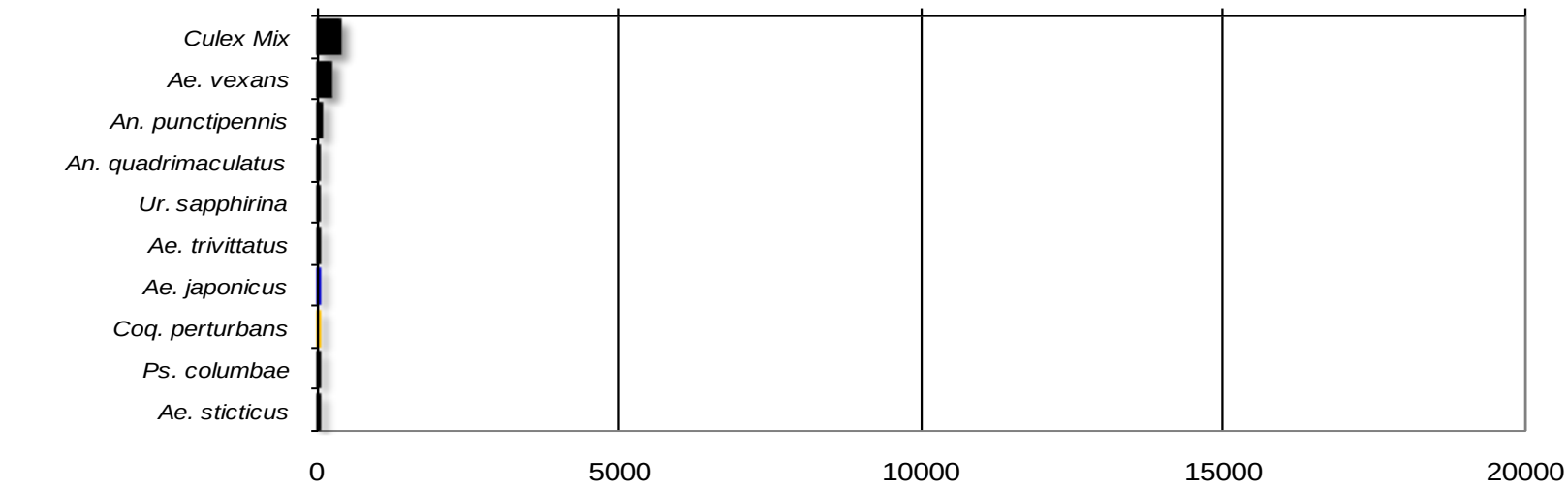

Delaware Bayshore
Total # mosquitoes
An. bradleyi
Culex Mix
Ae. cantator
Ae. sollicitans
An. quadrimaculatus
Coq. perturbans
Ae. canadensis
Ae. vexans
Ae. taeniorhynchus
Cs. melanura
0
5000
10000
15000
20000
25000


Delaware River Basin
Total # mosquitoes
Ae. vexans
Culex Mix
An. quadrimaculatus
Coq. perturbans
Ae. cantator
Ur. sapphirina
Cx. erraticus
Ps. columbae
Ae. sollicitans
An. punctipennis
0
5000
10000
15000
20000

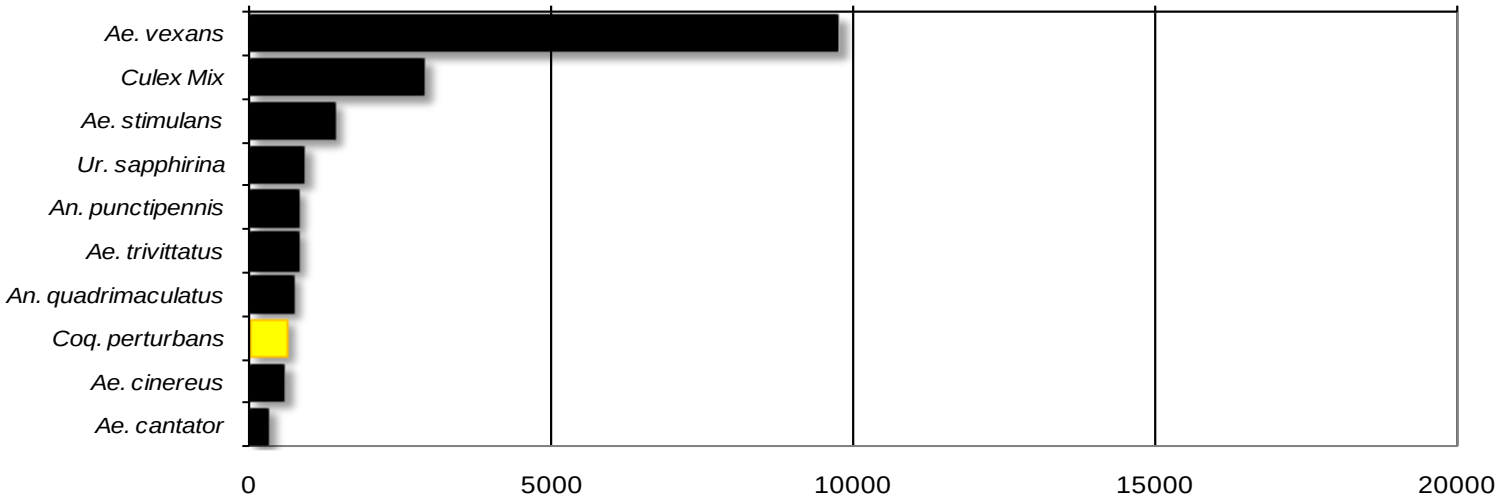
New York Metropolitan



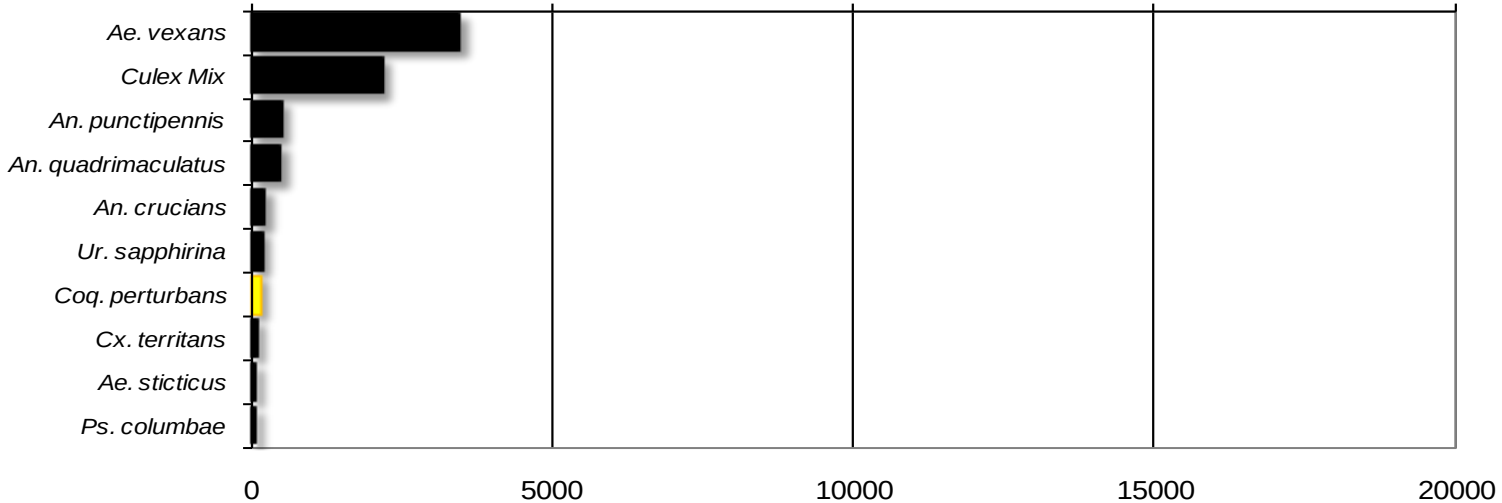
North Central Rural



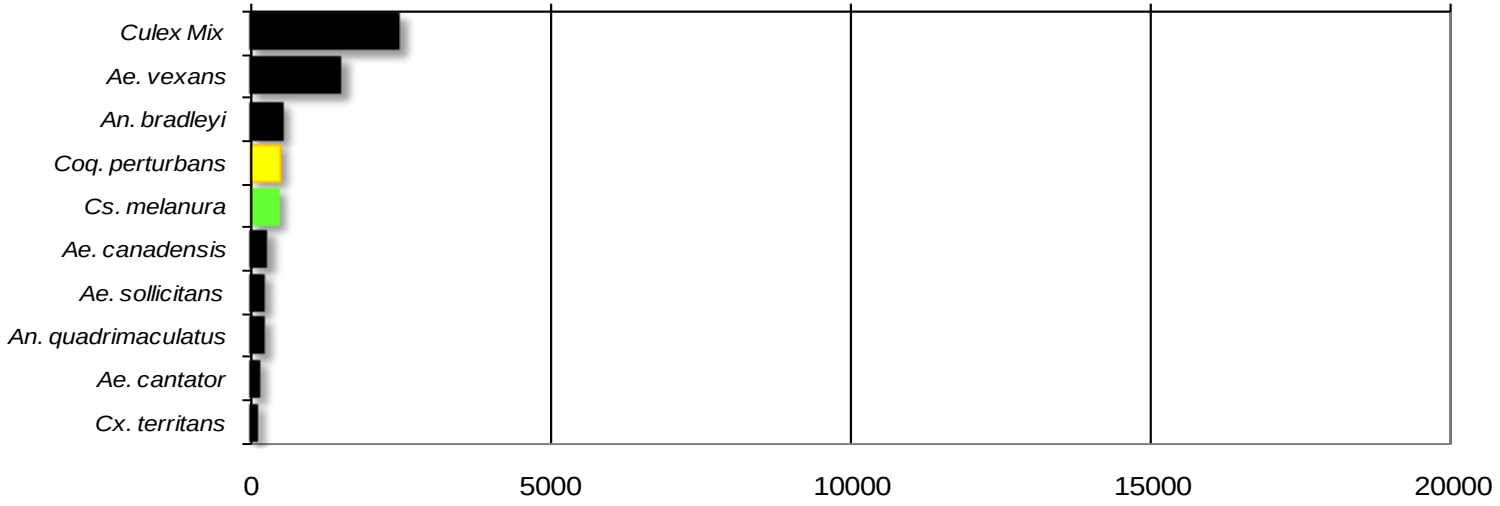
Northwest Rural



Philadelphia Metropolitan



Pinelands



Suburban Corridor