NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report for 18 September to 24 September 2011, CDC Week 38

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.

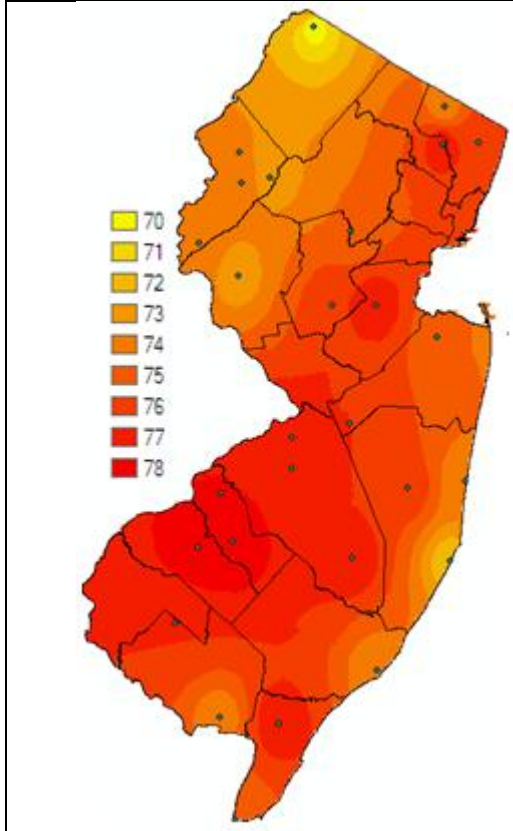
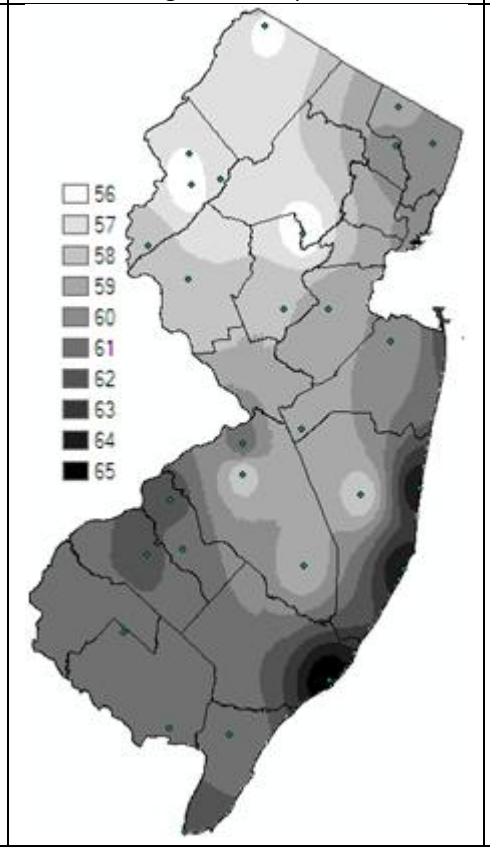
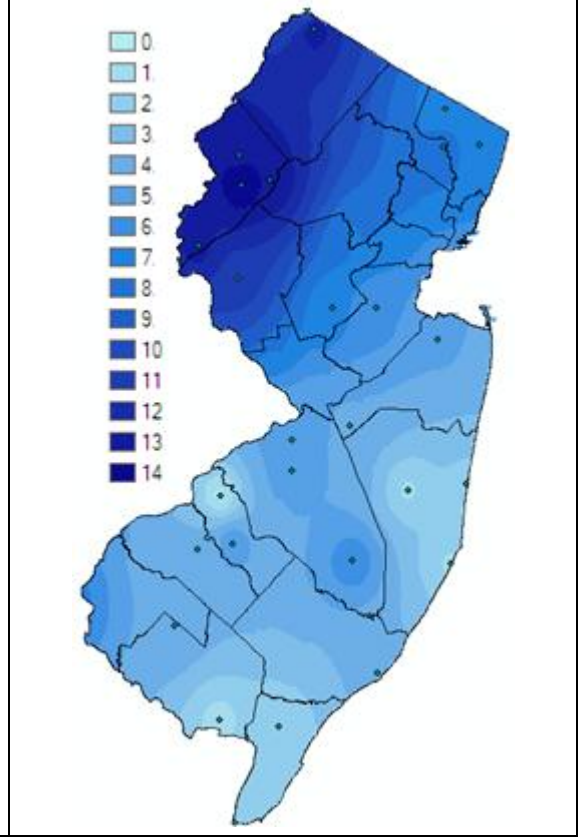
Summary Table – Week 38

	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	**14.10**	**1.87**	**4**	**4.14**	**1.73**	**3**	**0.00**	**0.01**	**0**	**0.00**	**0.42**	**0**
Coastal	**7.92**	**4.72**	**2**	**6.43**	**4.76**	**1**	**0.00**	**0.01**	**0**	**2.10**	**4.38**	**0**
Delaware Bayshore	**6.37**	**3.59**	**2**	**9.94**	**6.02**	**2**	**0.00**	**0.01**	**0**	**2.17**	**5.27**	**0**
Delaware River Basin	**0.00**	**2.55**	**0**	**0.00**	**3.20**	**0**	**0.00**	**0.12**	**0**	**0.00**	**0.04**	**0**
New York Metro	**1.43**	**1.89**	**0**	**6.39**	**4.97**	**1**	**0.00**	**0.01**	**0**	**0.26**	**0.11**	**3**
North Central Rural	**0.63**	**0.31**	**3**	**0.78**	**0.26**	**4**	**0.00**	**0.00**	**0**	**0.00**	**0.00**	**0**
Northwest Rural	**27.29**	**11.27**	**3**	**4.03**	**1.64**	**3**	**0.00**	**0.02**	**0**	**0.00**	**0.00**	**0**
Philadelphia Metro	**13.79**	**8.72**	**2**	**7.07**	**2.38**	**4**	**0.00**	**0.01**	**0**	**0.00**	**0.00**	**0**
Pinelands	**3.03**	**1.27**	**3**	**2.65**	**2.04**	**1**	**0.00**	**0.02**	**0**	**0.03**	**0.16**	**0**
Suburban Corridor	**3.85**	**5.87**	**0**	**2.39**	**2.26**	**1**	**0.00**	**0.02**	**0**	**0.03**	**0.01**	**4**

*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: Floodwater species (*Aedes vexans*) continue to respond to rainfall, but not with as great departures from historical values as with the last few weeks. *Culex* species are also higher than historical values in most regions. *Aedes sollicitans* is higher in two regions, but at low population levels and *Coquillettidia perturbans* is essentially gone for the season.

Climate Factors

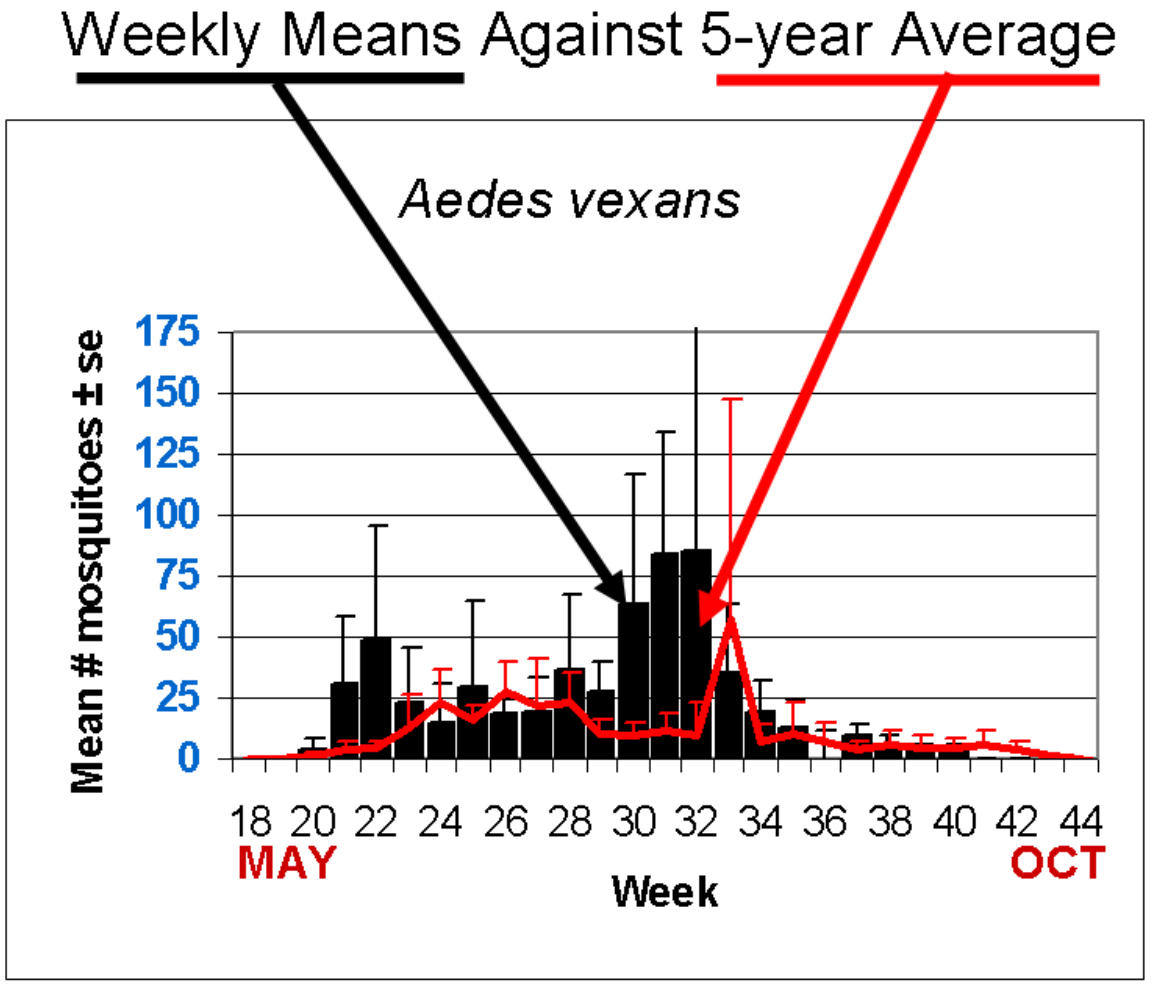
Average High Temperature	Average Low Temperature	Total Precipitation
		

The three figures show the interpolation of average maximum and minimum temperature and total precipitation through 1 September to 22 September, 2011 in New Jersey. Data points are from about 32 weather stations maintained through the New Jersey Weather & Climate Network and the State Climatologist. Interpolation between points was performed using ArcMap 10. Several stations were eliminated from the maps due to going offline (recognizably incomplete data) from Hurricane Irene.

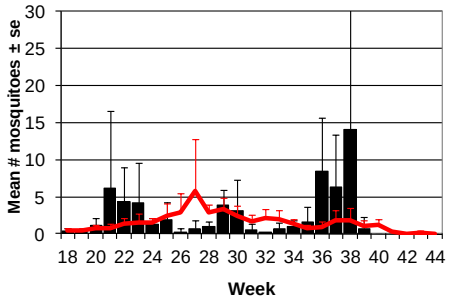
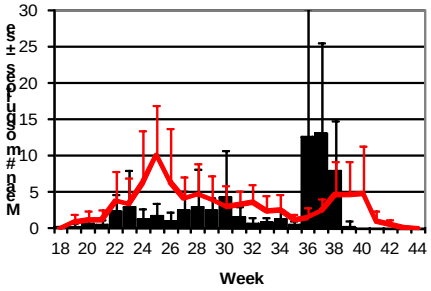
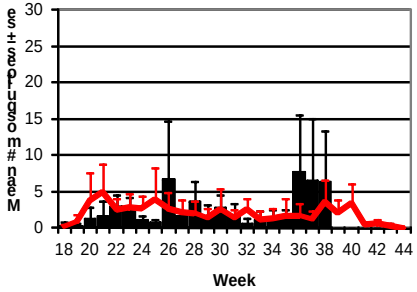
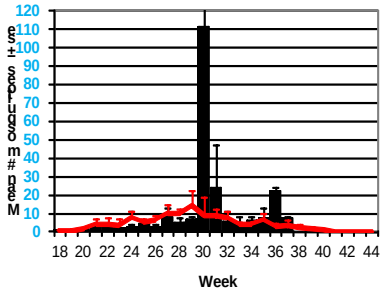
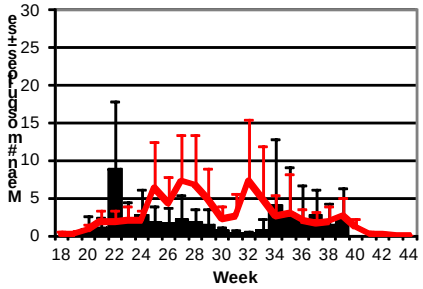
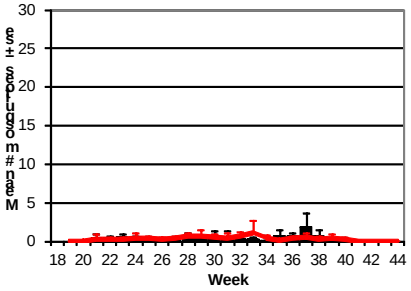
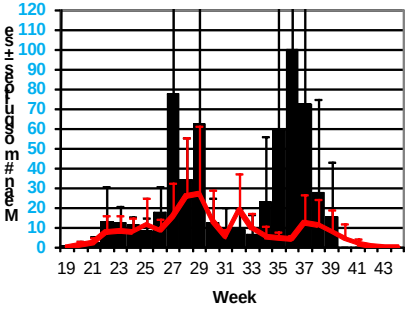
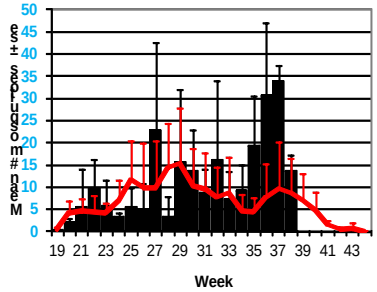
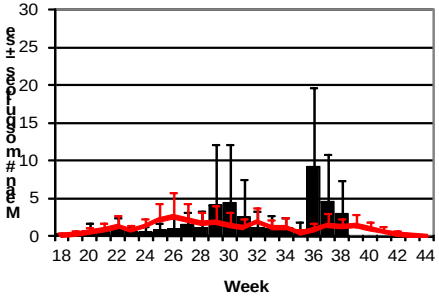
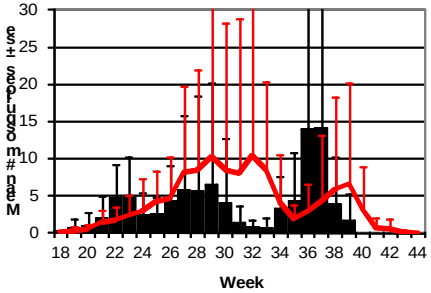
Average high and low temperatures increased slightly from the previous week. Precipitation increased considerably from the previous week, with most sites receiving at least an inch of rain. Several areas in the northern half of the state received several inches of rainfall.

NJ Weather & Climate NETWORK ONJSC at Rutgers University

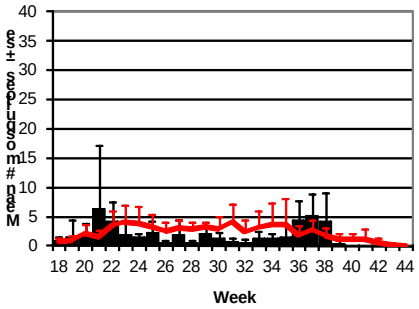
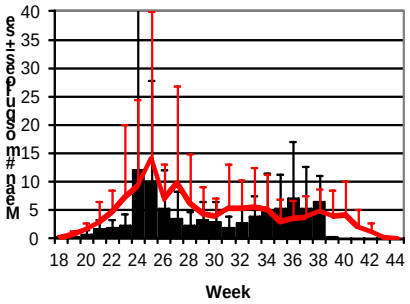
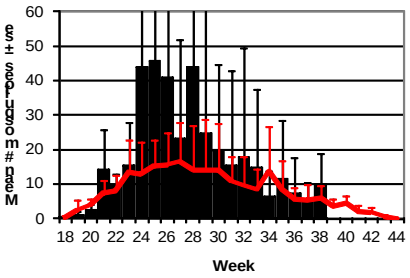
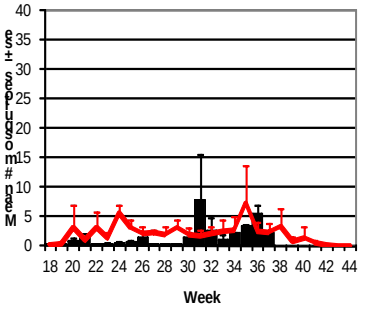
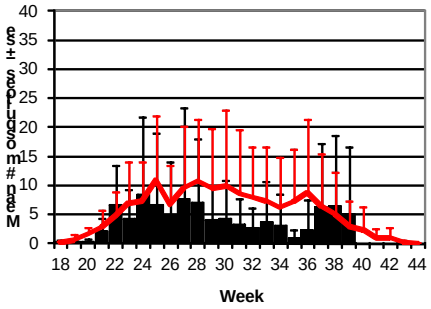
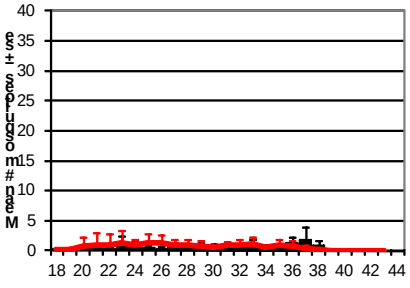
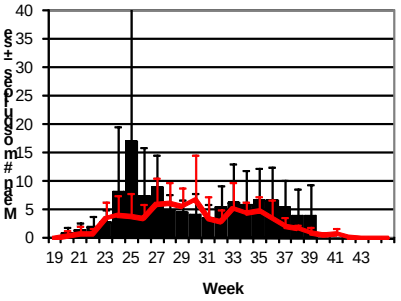
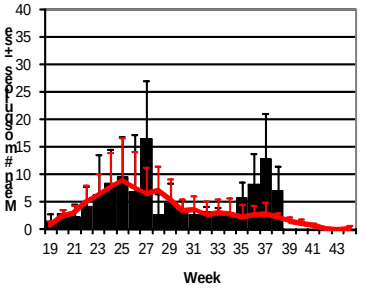
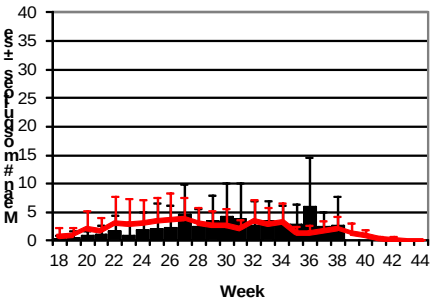
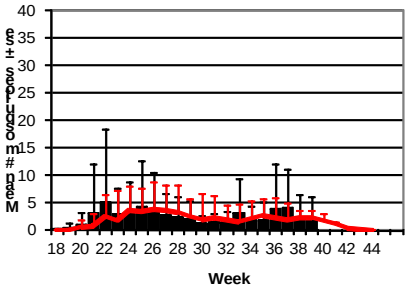
The Species Graphs: The species graph pages include a graph with two plots for each of the ten regions defined on the first page (Agricultural, Coastal, Delaware Bayshore, Delaware River, New York Metro, North-Central, Northwestern, Philadelphia Metro, Pinelands, and Suburban Corridor). Below is an example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



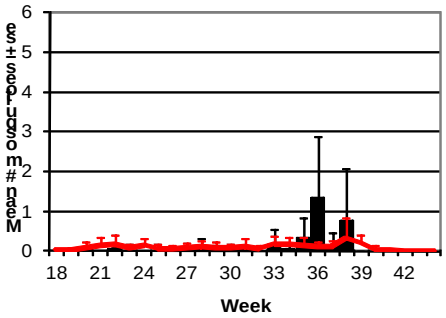
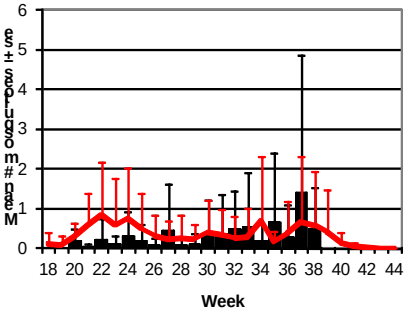
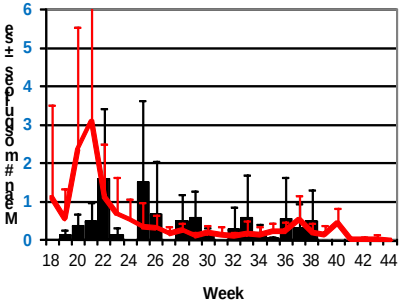
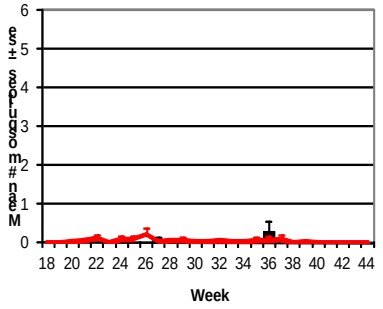
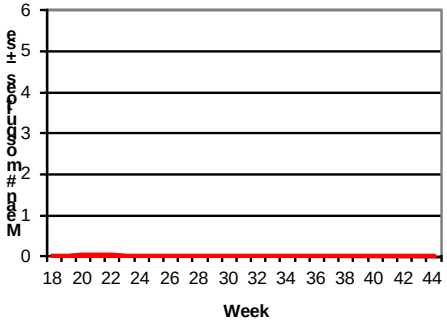
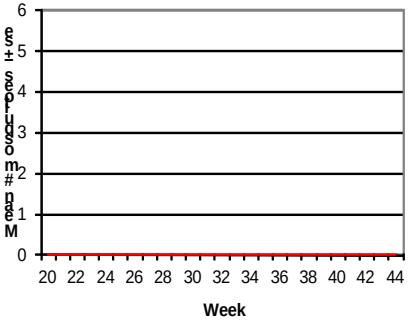
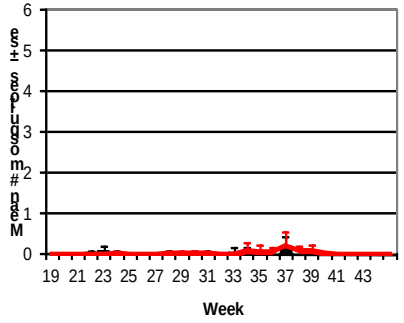
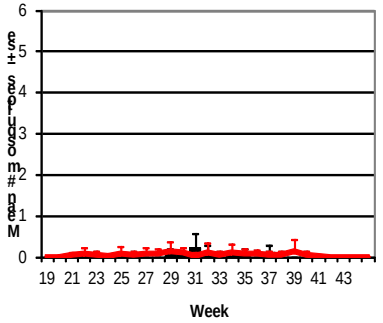
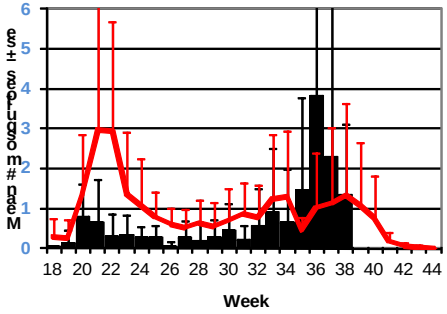
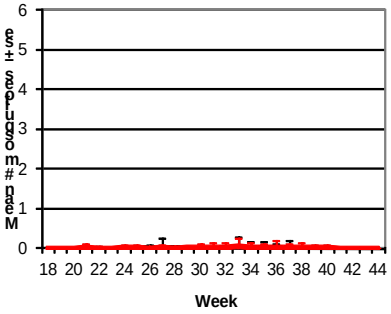
Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		With rains continuing into September, this floodwater species also continues to post higher than average population abundances in most regions. However, their numbers are not as great a divergence from historical values as the previous few weeks. Temperatures have risen slightly since the previous week, but a cold front with additional precipitation is passing through the area and may impact populations.	

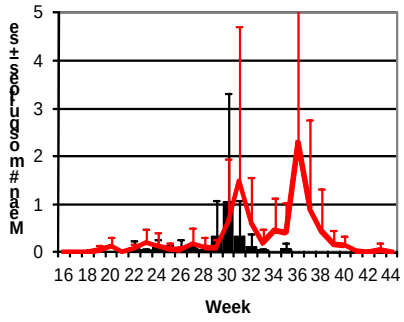
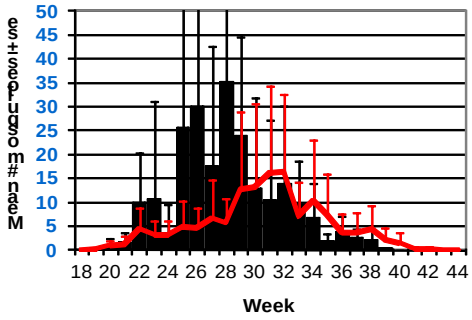
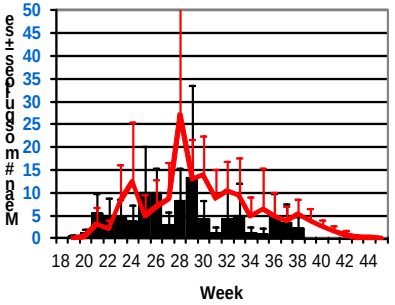
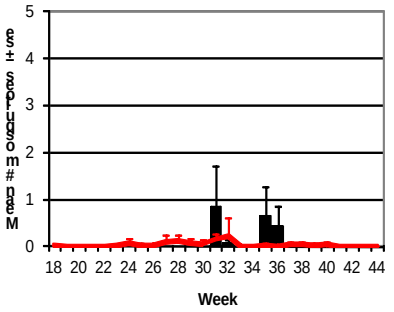
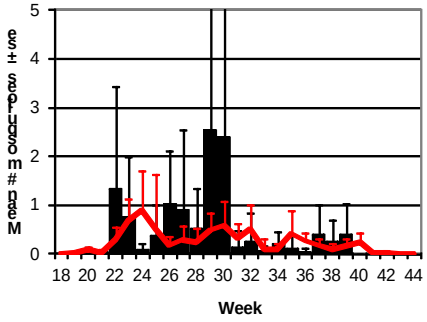
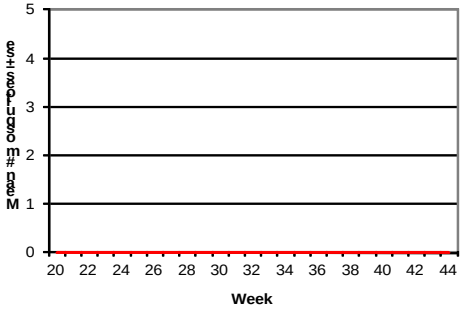
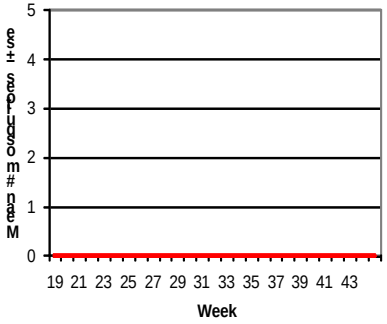
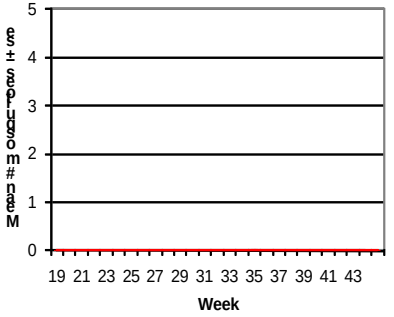
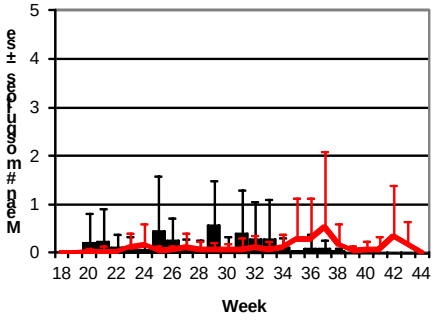
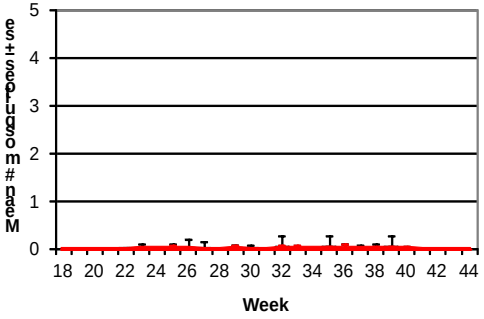
Culex Mix – Permanent Water Species
Multivoltine *Culex/Anopheles* (*Cx. pipiens* Type)

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 continue to be above historical levels in 9 of the 10 regions while paradoxically continuing to decline as the season progesses.	

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 were slightly higher in the Pinelands region, but declined from the previous week. Agricultural numbers were also higher than historical values as were Coastal populations.	

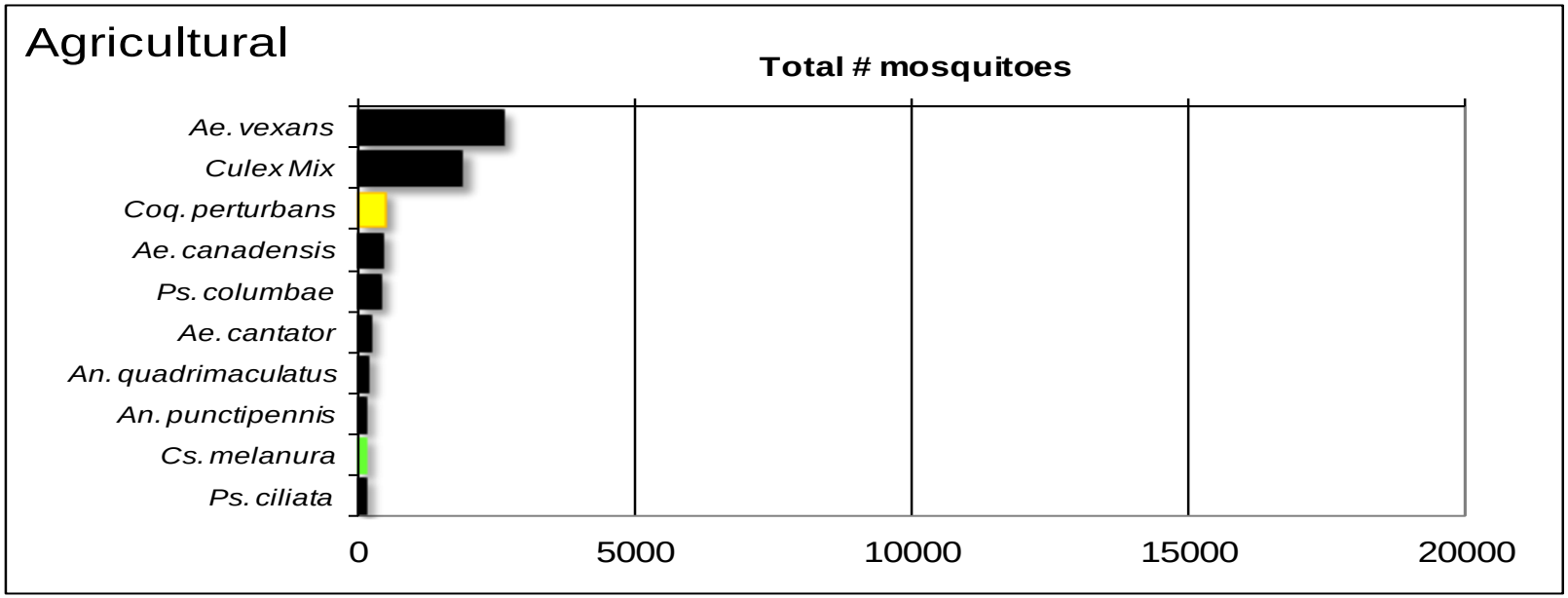
Aedes sollicitans - Salt Floodwater Species
Multivoltine Aedine (*Ae. sollicitans* Type)

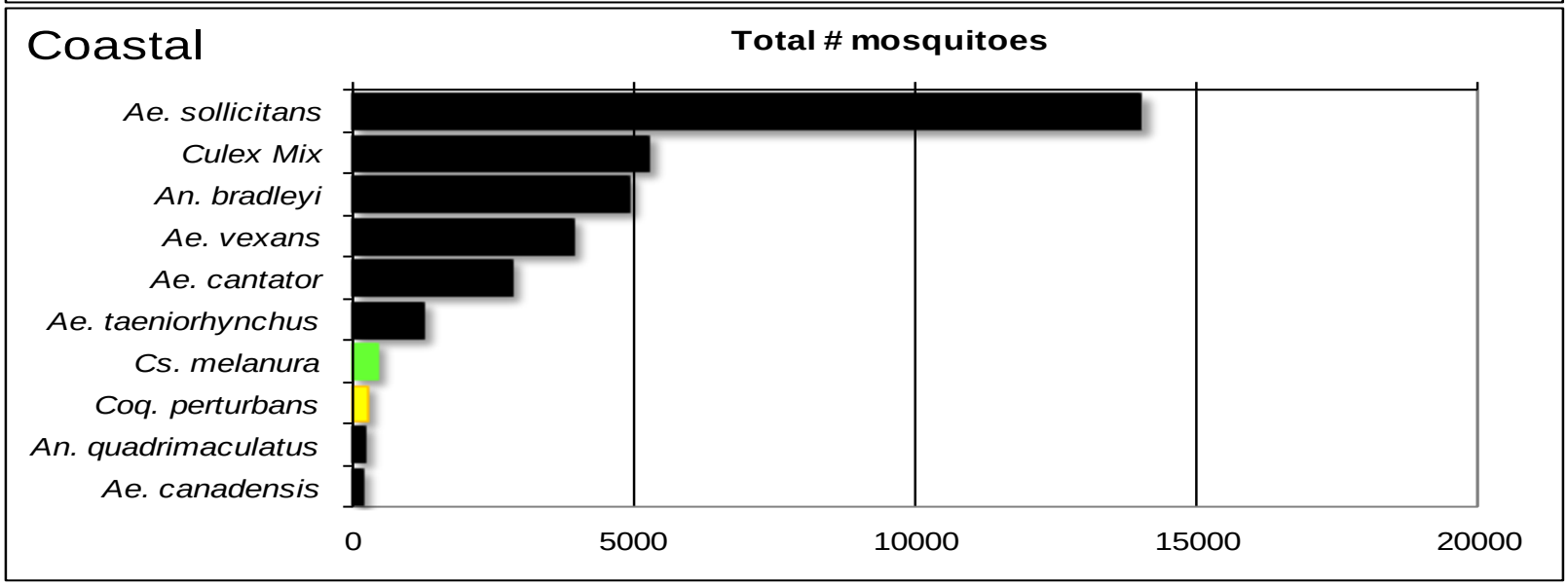
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes sollicitans* populations continued to be higher in the New York Metropolitan and Suburban Corridor, while populations elsewhere were below historical values.	

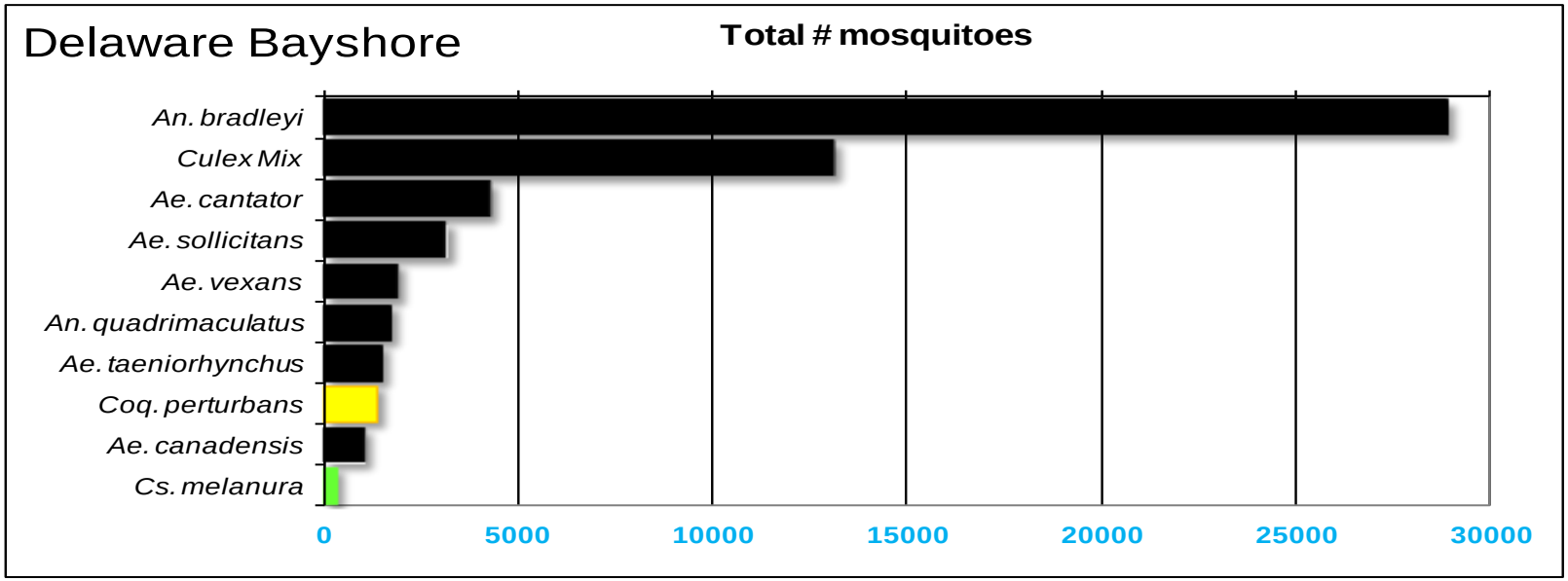
WNV *EEE*

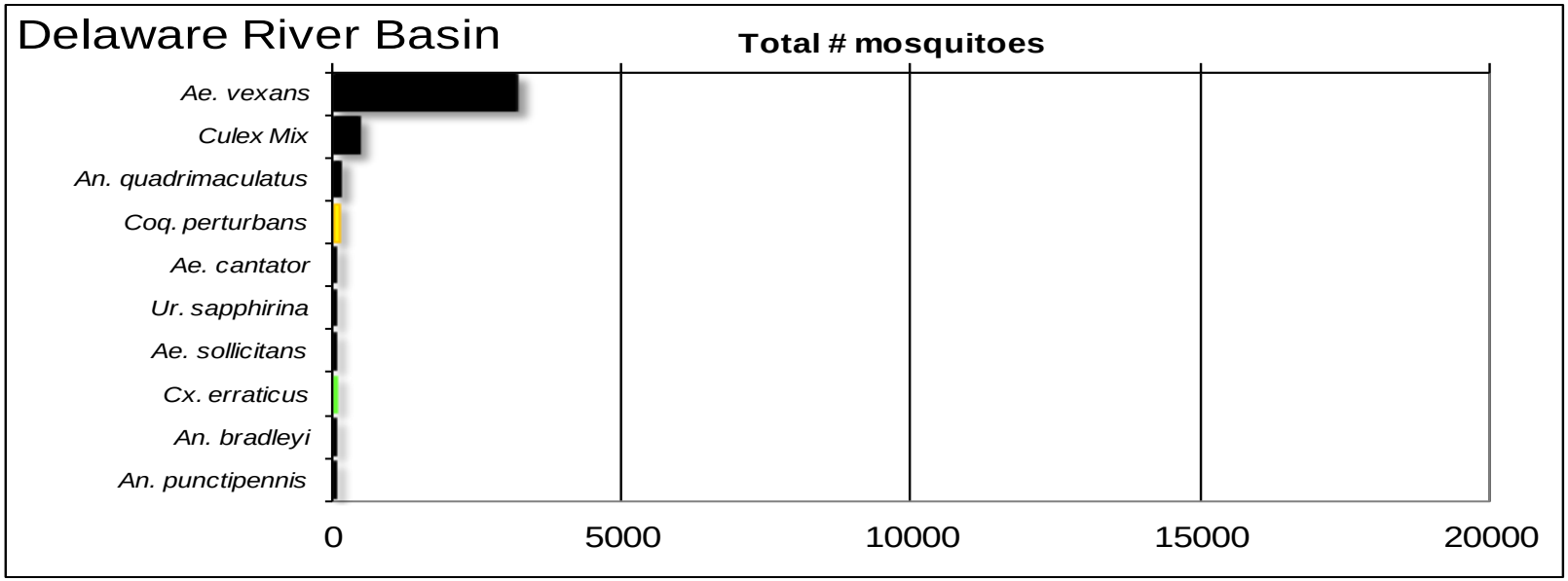
Top Ten Mosquito Species/Region - *Ae. albopictus,* *Ae. japonicus (invasives);* *Cs. melanura or Cx. erraticus* *Coq. perturbans*

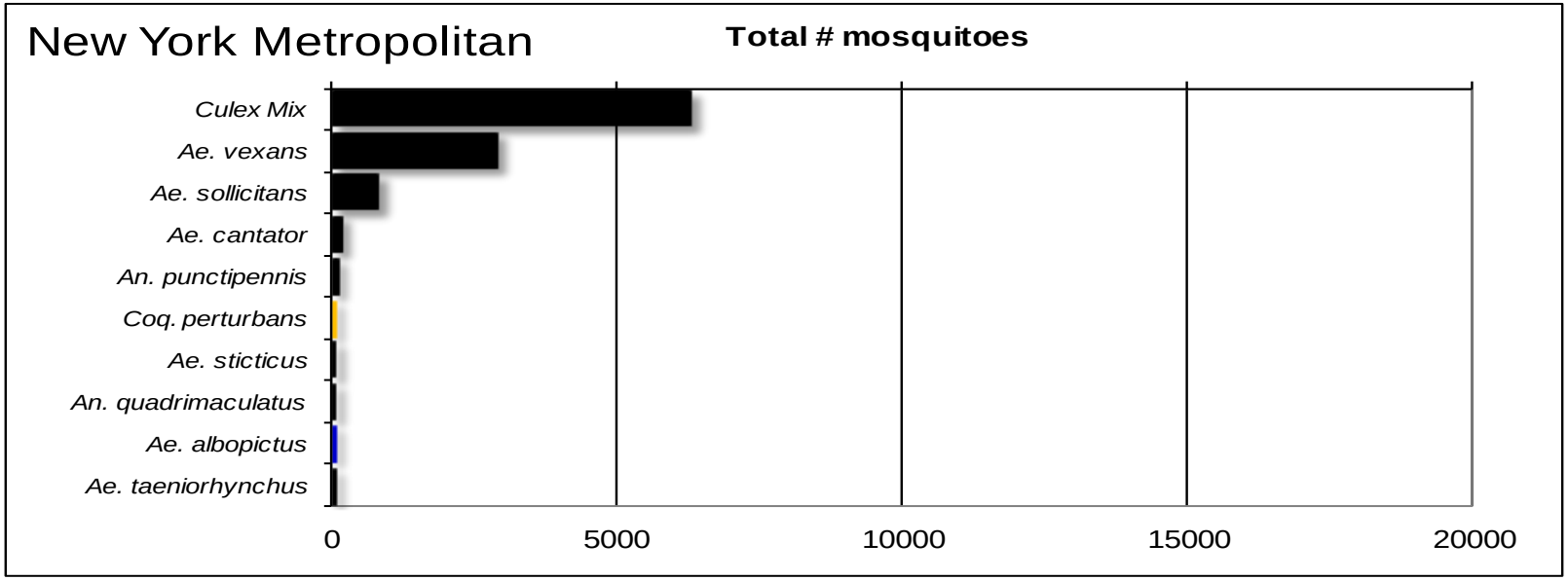
Note: In early season when fewer species are caught, graphs may show less than ten species listed.

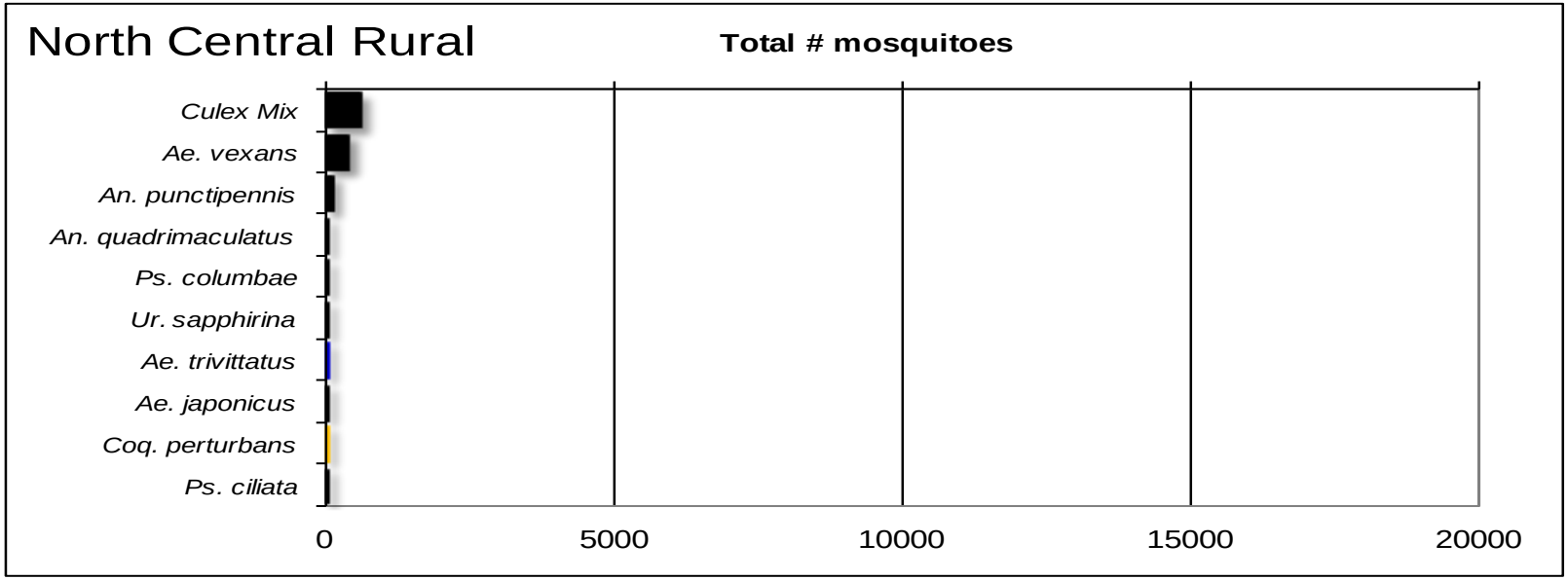




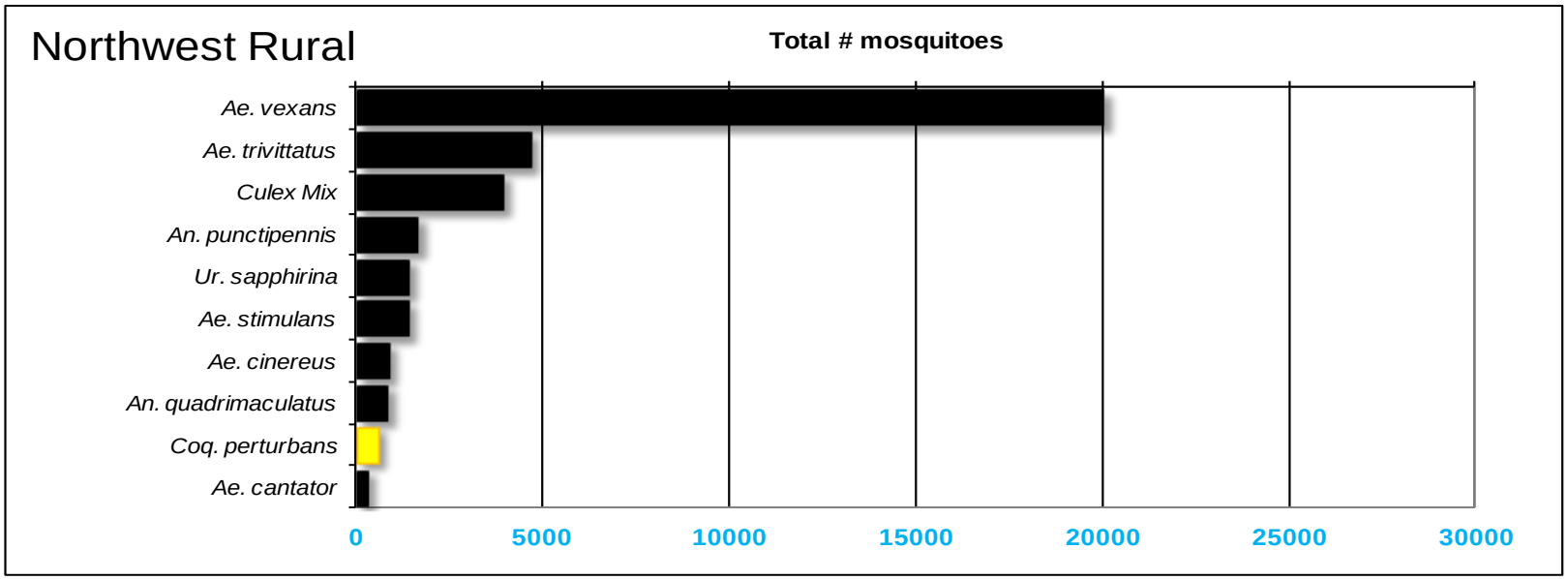

Delaware Bayshore
Total # mosquitoes
An. bradleyi
Culex Mix
Ae. cantator
Ae. sollicitans
Ae. vexans
An. quadrimaculatus
Ae. taeniorhynchus
Coq. perturbans
Ae. canadensis
Cs. melanura
0
5000
10000
15000
20000
25000
30000


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

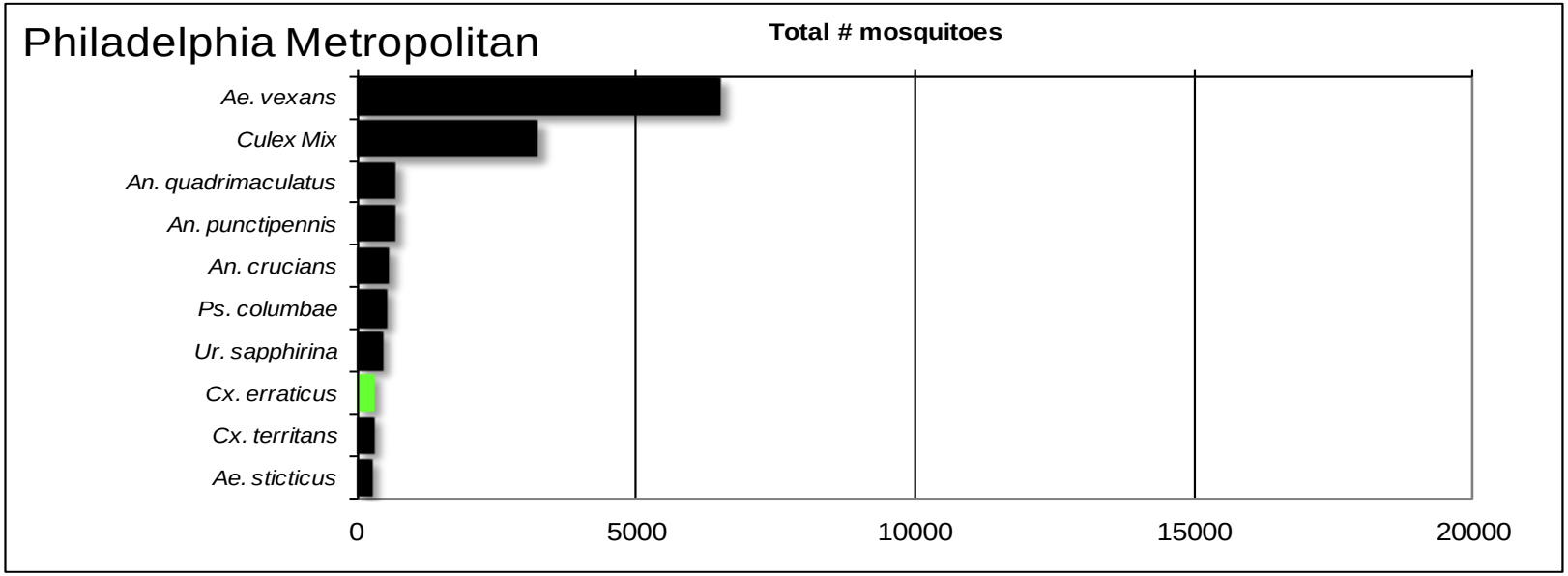

New York Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. sollicitans
Ae. cantator
An. punctipennis
Coq. perturbans
Ae. sticticus
An. quadrimaculatus
Ae. albopictus
Ae. taeniorhynchus
0
5000
10000
15000
20000


North Central Rural
Total # mosquitoes
Culex Mix
Ae. vexans
An. punctipennis
An. quadrimaculatus
Ps. columbae
Ur. sapphirina
Ae. trivittatus
Ae. japonicus
Coq. perturbans
Ps. ciliata
0
5000
10000
15000
20000

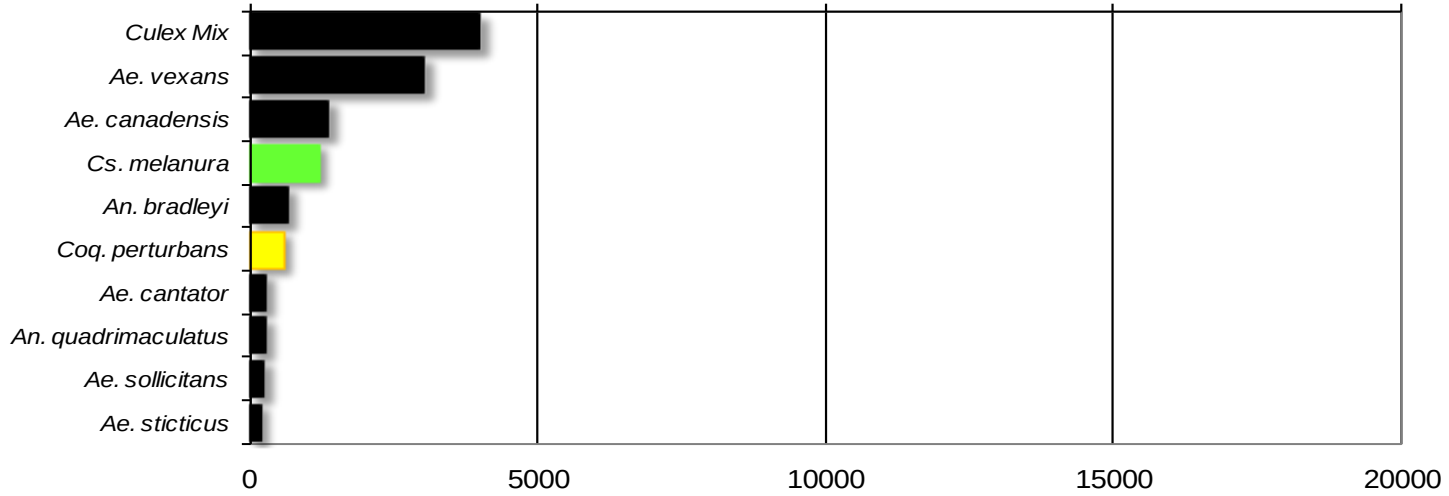
Northwest Rural



Philadelphia Metropolitan



Pinelands



Suburban Corridor