NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report for 10 July to 16 July 2011, CDC Week 28

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.

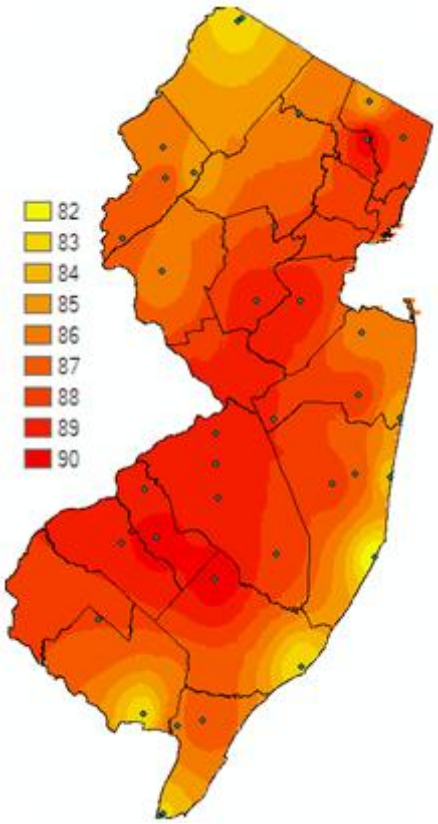
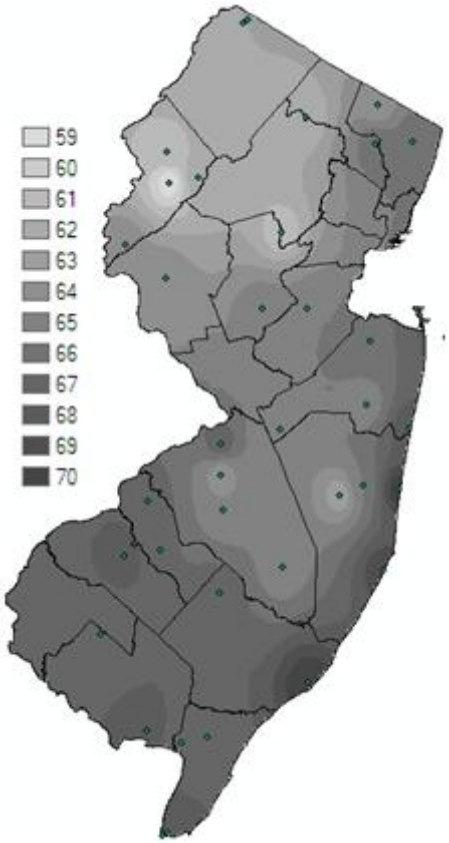
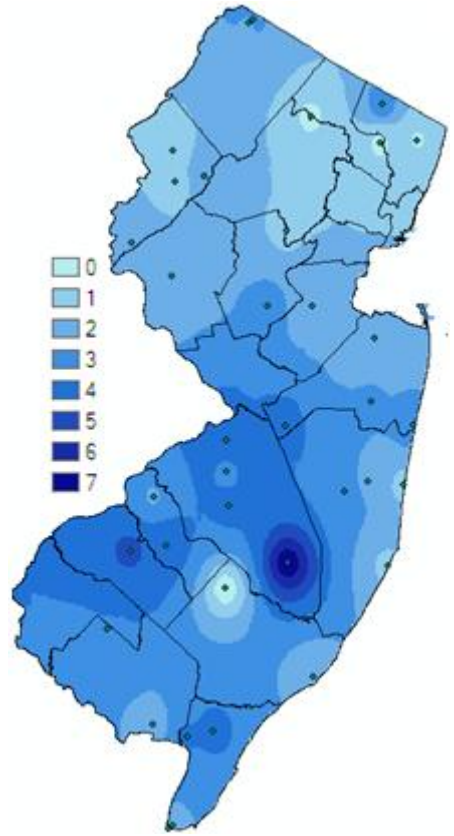
Summary Table – Week 28

	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	**0.86**	**2.84**	**0**	**0.36**	**2.98**	**0**	**0.52**	**0.43**	**1**	**0.05**	**0.10**	**0**
Coastal	**2.95**	**4.64**	**0**	**2.38**	**6.18**	**0**	**0.02**	**0.68**	**0**	**35.14**	**5.66**	**4**
Delaware Bayshore	**2.06**	**2.11**	**0**	**32.66**	**14.02**	**3**	**2.14**	**2.30**	**0**	**6.63**	**26.99**	**0**
Delaware River Basin	**4.93**	**10.11**	**0**	**0.21**	**2.01**	**0**	**0.50**	**0.17**	**4**	**0.00**	**0.11**	**0**
New York Metro	**0.61**	**6.69**	**0**	**5.29**	**10.62**	**0**	**0.01**	**0.28**	**0**	**0.37**	**0.23**	**2**
North Central Rural	**0.31**	**0.61**	**0**	**0.35**	**0.89**	**0**	**0.02**	**0.03**	**0**	**0.00**	**0.00**	**0**
Northwest Rural	**33.83**	**25.71**	**1**	**4.97**	**6.13**	**0**	**2.12**	**1.18**	**2**	**0.00**	**0.00**	**0**
Philadelphia Metro	**0.75**	**14.17**	**0**	**1.93**	**7.11**	**0**	**0.04**	**0.51**	**0**	**0.00**	**0.00**	**0**
Pinelands	**1.03**	**1.74**	**0**	**1.96**	**3.01**	**0**	**0.38**	**0.82**	**0**	**0.06**	**0.08**	**0**
Suburban Corridor	**1.66**	**8.52**	**0**	**2.44**	**3.34**	**0**	**0.41**	**0.56**	**0**	**0.00**	**0.00**	**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: *Aedes vexans* abundances again increased significantly over historical values in the Northwest Rural region. Higher numbers were seen for *Culex* species in the Delaware Bayshore region. *Coquillettidia perturbans* abundances were higher in the Agricultural, the Delaware River Basin and the Northwest Rural. *Aedes sollicitans* continues to be higher in the Coastal region as well as the New York Metro and Suburban Corridor.

Climate Factors

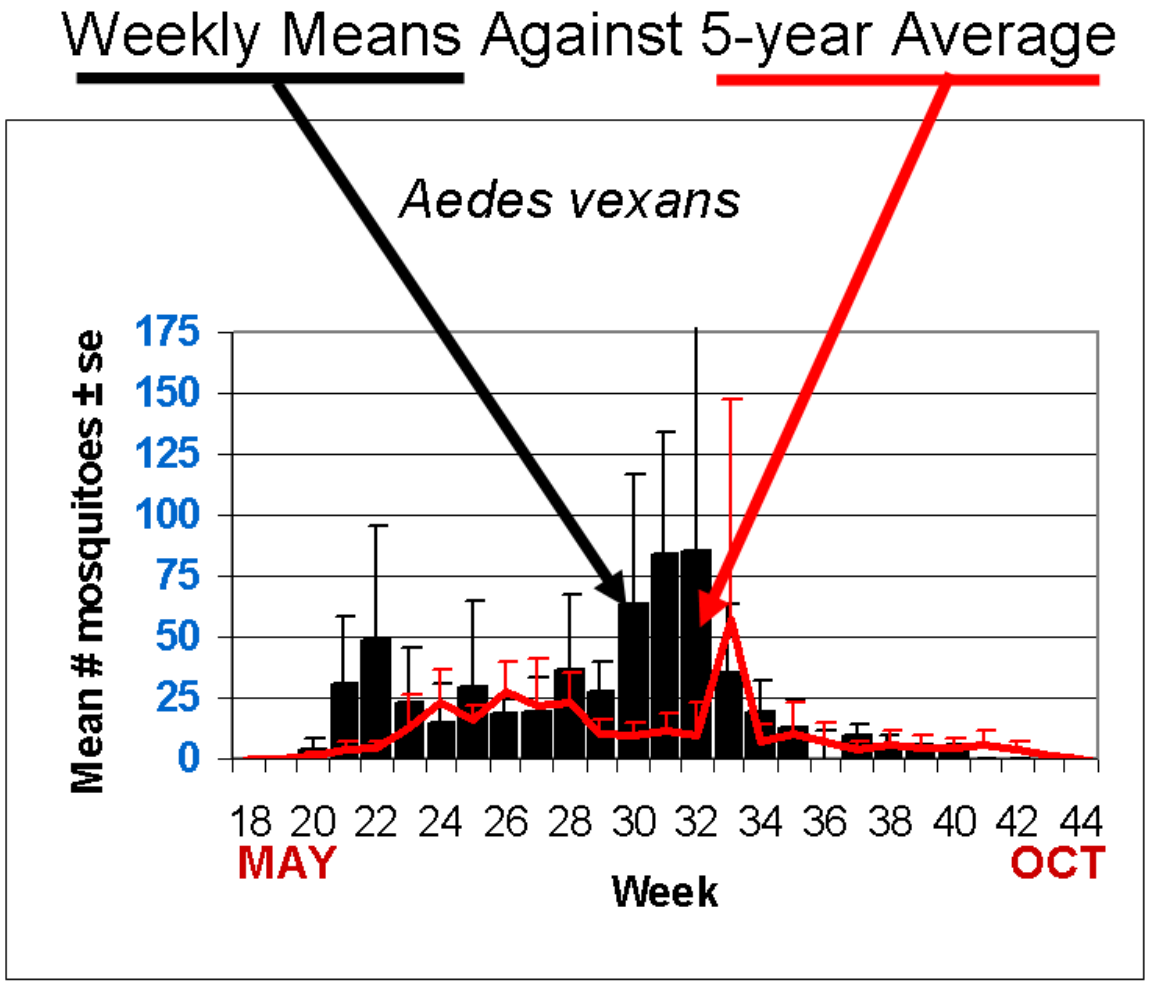
Average High Temperature	Average Low Temperature	Total Precipitation
		

The three figures show the interpolation of average maximum and minimum temperature and total precipitation from 1 July to 22 July, 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.

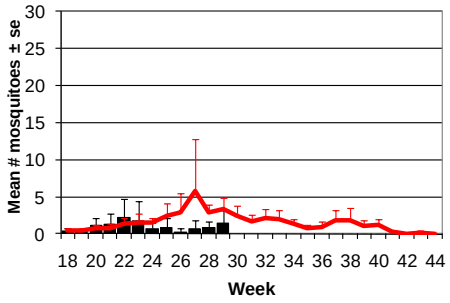
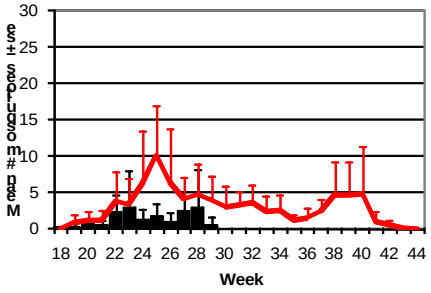
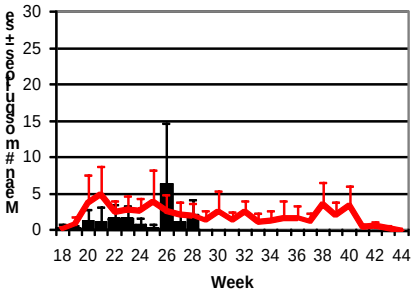
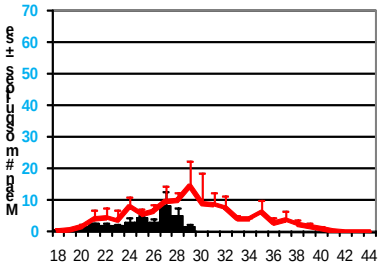
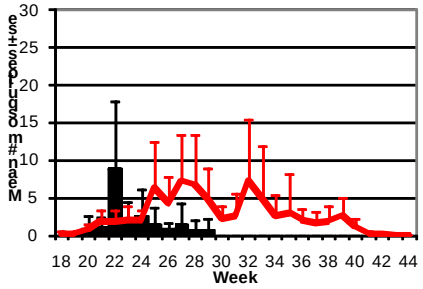
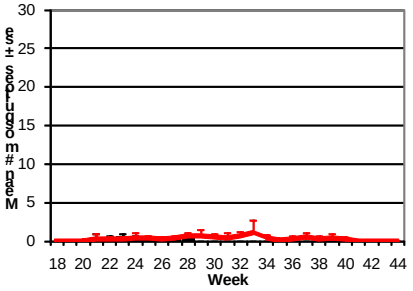
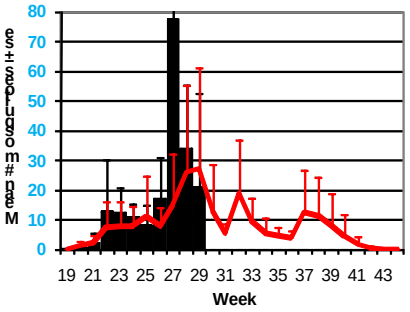
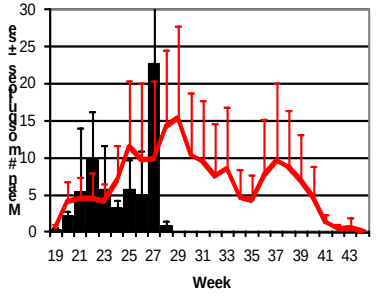
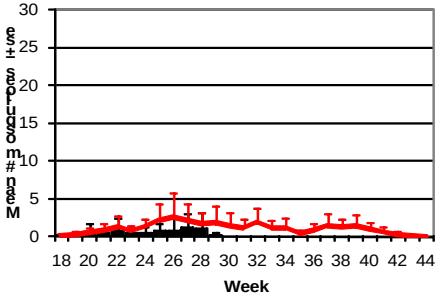
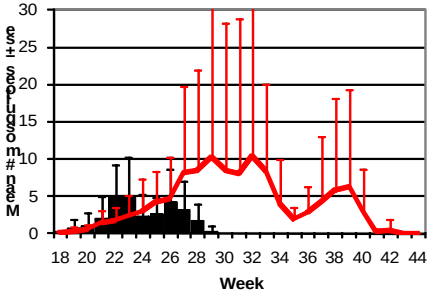
Average high temperatures increased as New Jersey went into a heatwave. Average low temperatures were warmer than last week and were highest along the coastal region (moderating effects of large bodies of water – i.e., the Atlantic Ocean). Precipitation patterns continue to have more rainfall to the southern portions of New Jersey than in the previous month. Most places received only a small amount or no rainfall this past week.

NJ Weather & Climate NETWORK ONJSC at Rutgers University

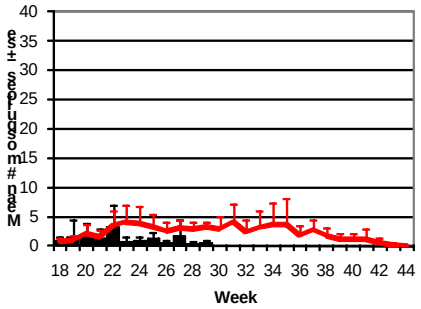
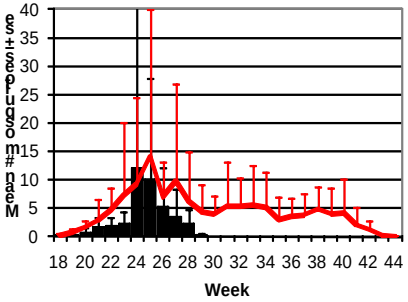
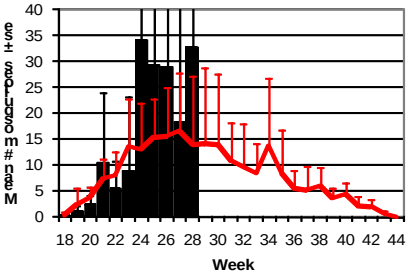
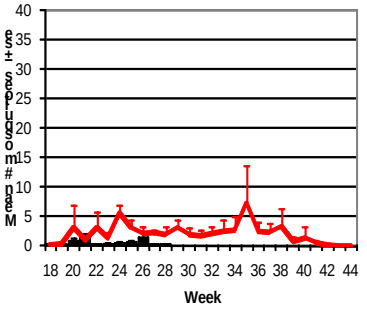
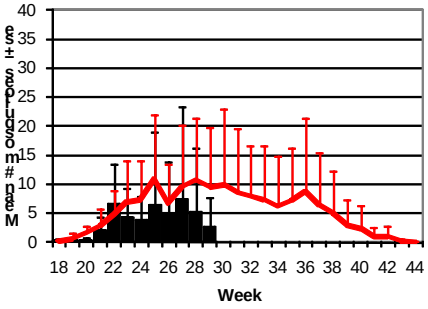
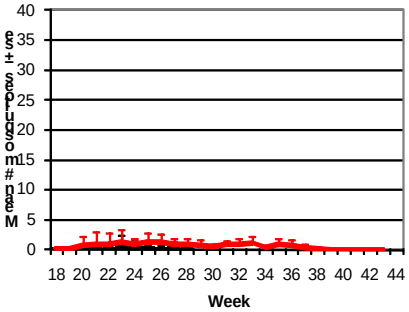
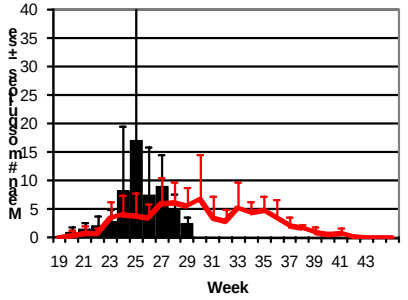
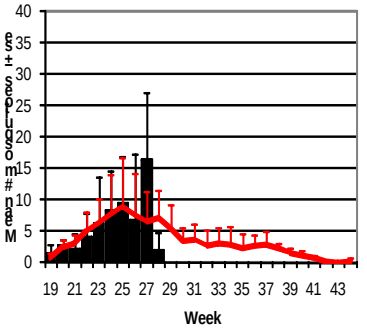
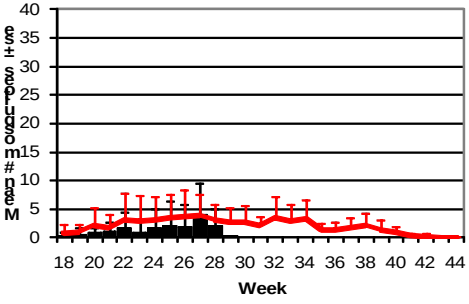
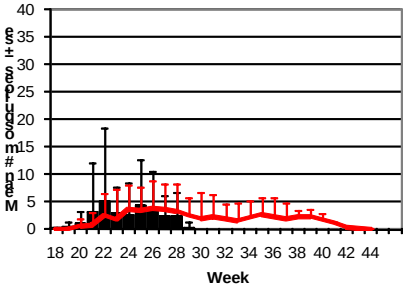
The Species Graphs: The species graph pages include a graph with two plots for each of the ten regions defined on the first page (Agricultural, Coastal, Delaware Bayshore, Delaware River, New York Metro, North-Central, Northwestern, Philadelphia Metro, Pinelands, and Suburban Corridor). Below is an example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



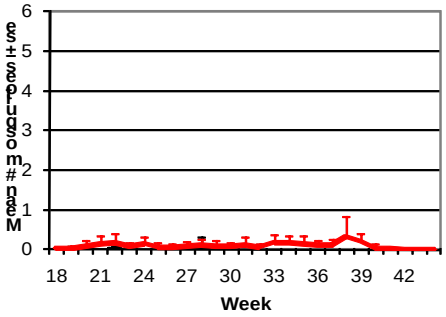
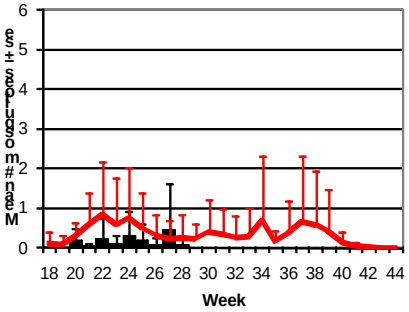
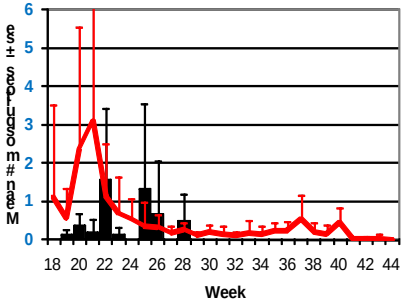
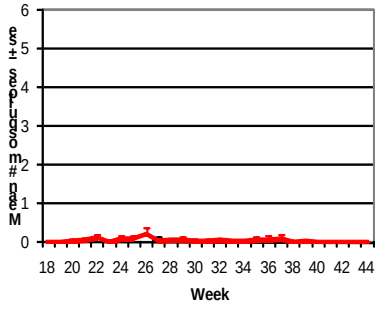
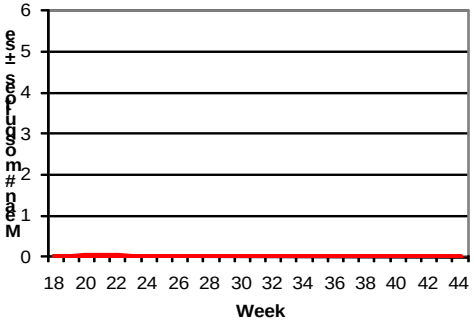
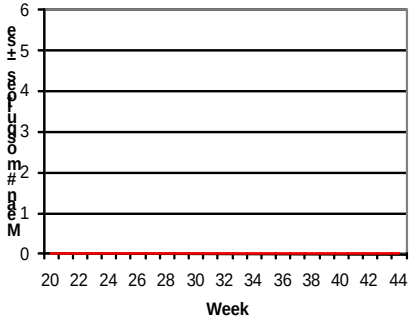
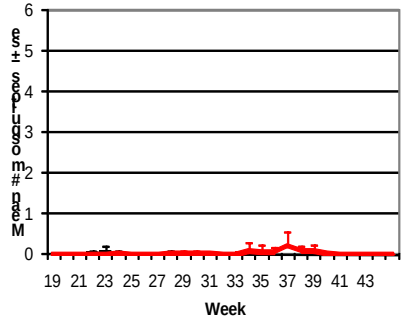
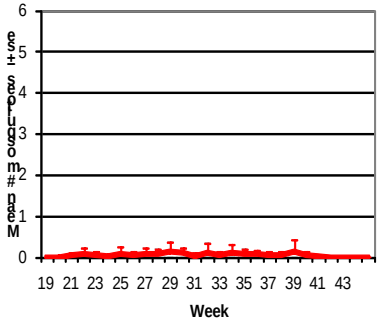
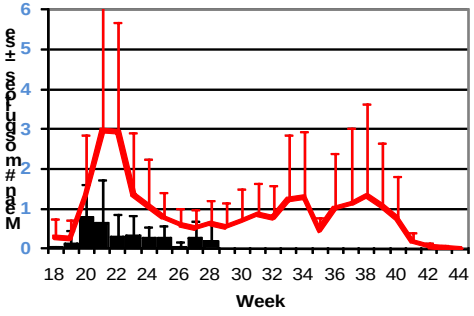
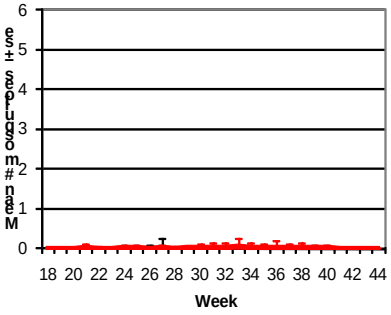
Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes vexans* populations continued to be above historical values in the Northwest Rural region, although the abundances are quite a bit lower than the previous week. Populations in other regions such as the Agricultural region are seeing levels of *Ae. vexans* in lower abundances. The Northwest Rural is not the only area to produce significant broods. Places were flooding occurs, particularly structures like the dredge spoils in the Delaware River Basin, can produce epic broods, especially if these areas dry to the point of having cracked soil and then flood.	

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

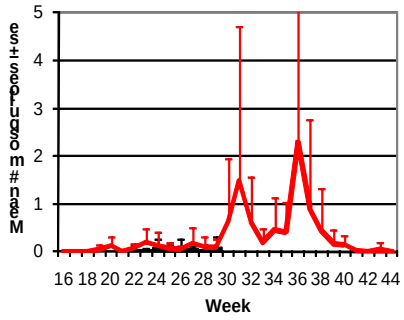
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Culex* Mix is composed of *Culex pipiens, Cx. restuans* and *Cx. salinarius*. These three species (especially *pipiens* and *restuans*) are often difficult to tell apart after encountering the damaging blades of the New Jersey light trap. The Delaware Bayshore is experiencing significant number of *Cx. salinarius* as well as *Culex* classified as Mix. *Cx. salinarius* is an efficient vector of SLE as well as WNV.	

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

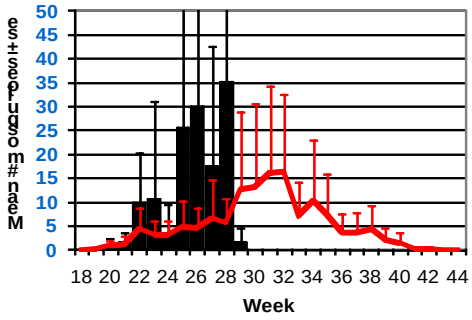
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Culiseta melanura* is the enzootic ornithophilic vector of eastern equine encephalitis. *Cs. melanura* populations continue to remain below historical trends in most areas. This week, in the Delaware Bayshore region, the populations have exceeded historical values. However, there has not been consistency with this pattern, with some weeks well above historical trends, and others well below. Resting boxes also show a trend toward lower numbers.	

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

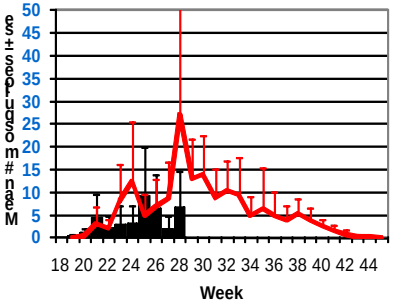
Agricultural



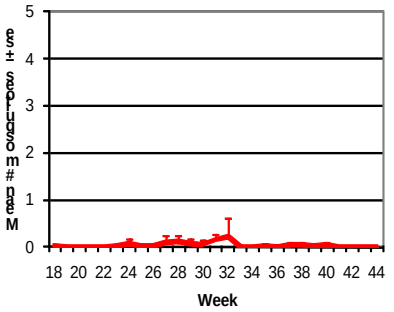
Coastal



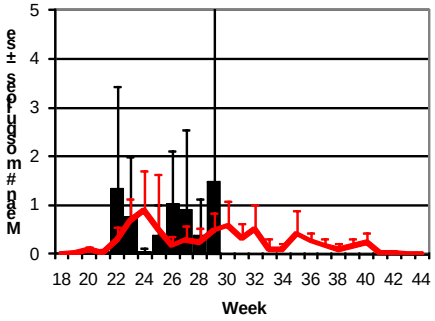
Delaware Bayshore



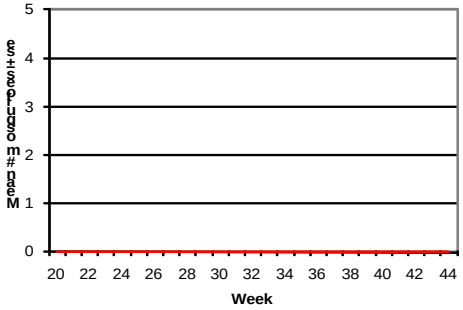
Delaware River Basin



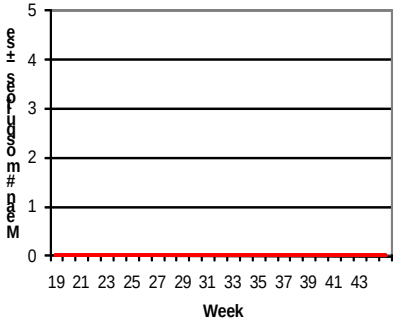
New York Metro



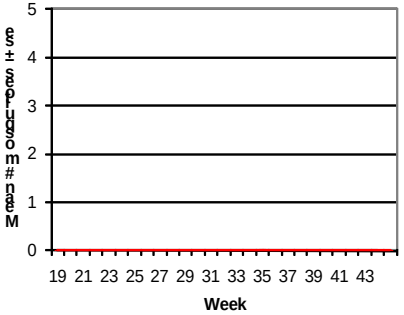
North Central Rural



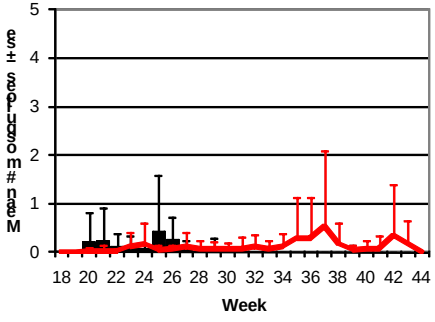
Northwestern Rural



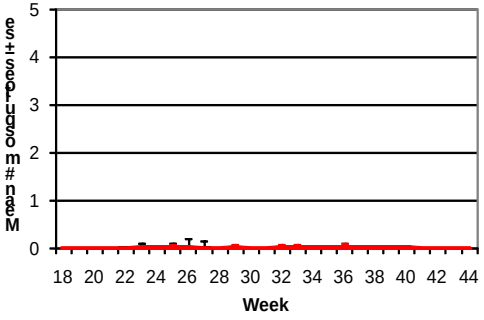
Philadelphia Metro



Pinelands



Suburban Corridor

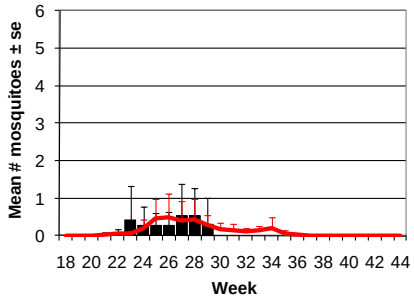
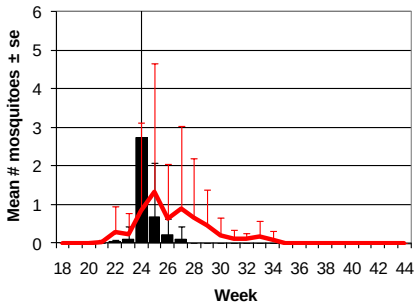
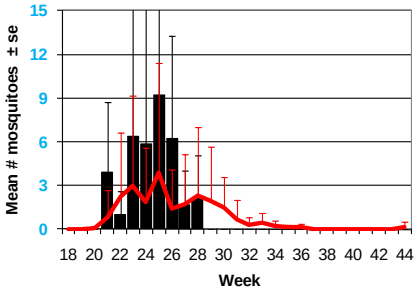
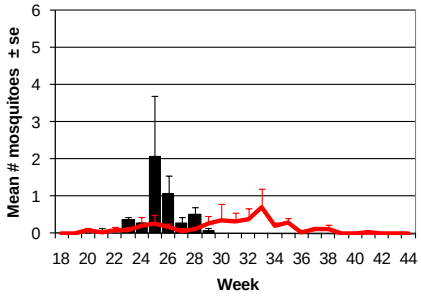
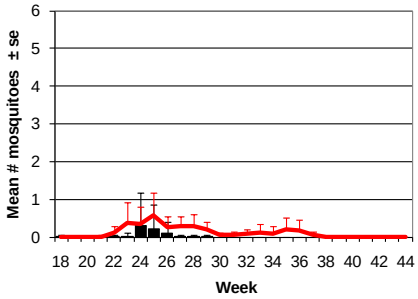
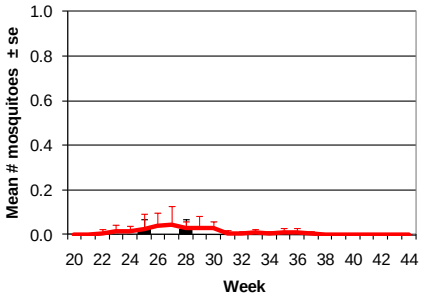
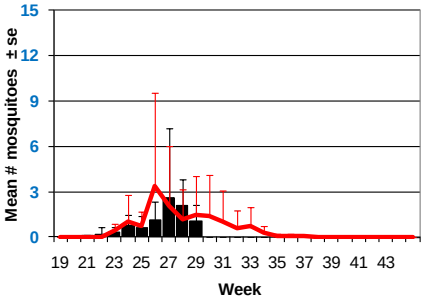
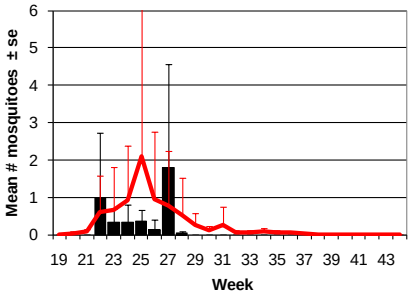
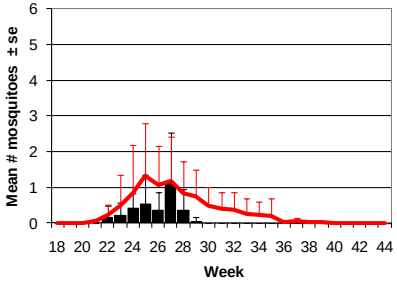
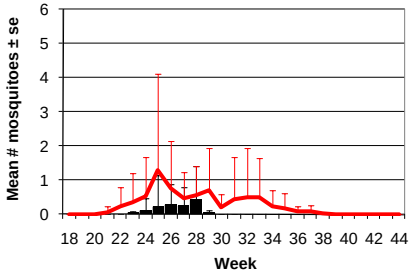


Comments

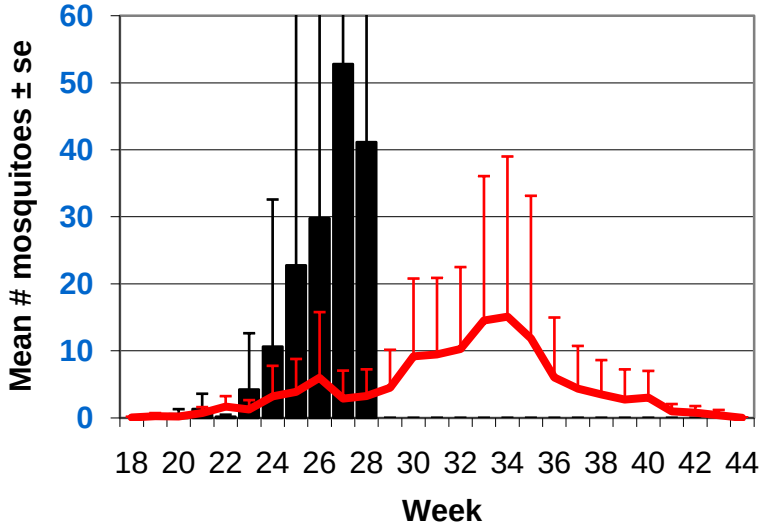
Aedes sollicitans population abundances in the Coastal region increased again in 5 of the nine sites that contribute to this region, with some increases that were very significant. The New York Metro region also saw a significant increase (which continued onto this current report week). However, the Delaware Bayshore numbers were not higher than historical values, but were evident of the third brood emerging.

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* abundances were higher in the Agricultural, Delaware River Basin and the Northwest Rural regions as compared to historical values.	

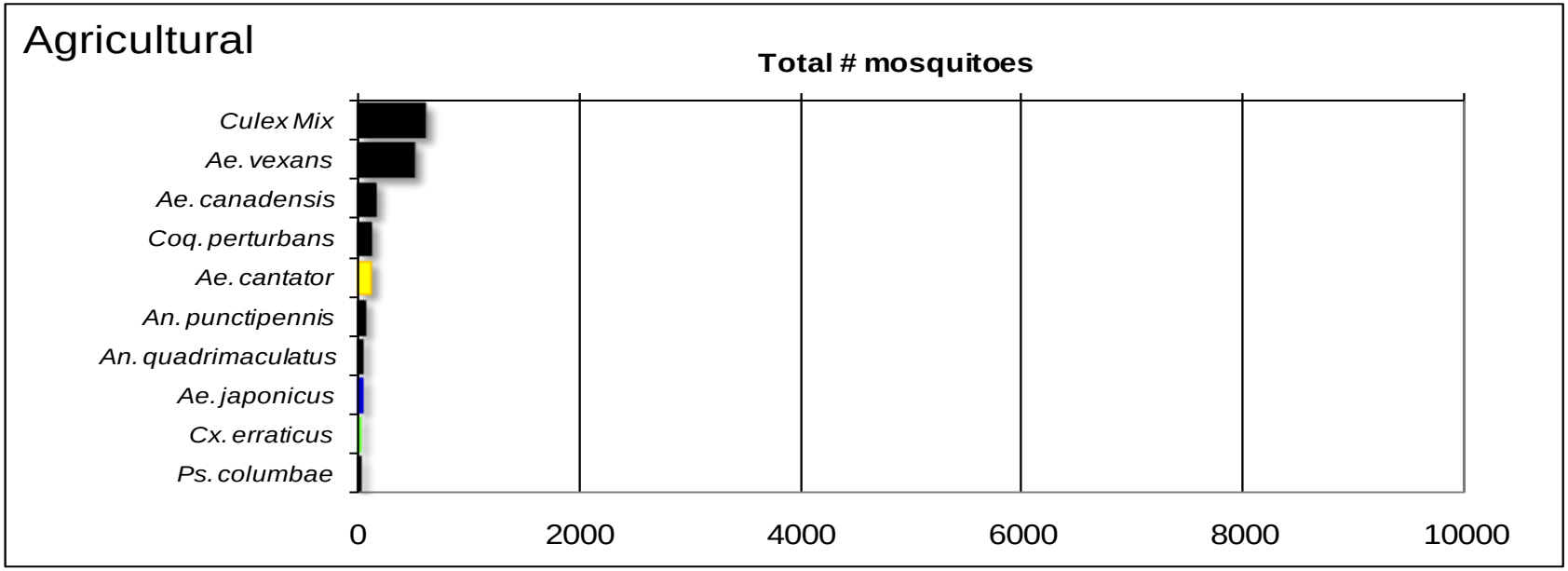
Anopheles bradleyi in the Delaware Bayshore: In addition to large numbers of *Aedes sollicitans* and *Culex salinarius*, this region can host significant numbers of *An. bradleyi*, as can be seen in the graph below. As with *Culex* Mix, this species is often clumped together with *Anopheles crucians* (*crucians* complex). As *An. bradleyi* can tolerate brackish water, the high numbers seen at this saltmarsh site are likely this species.

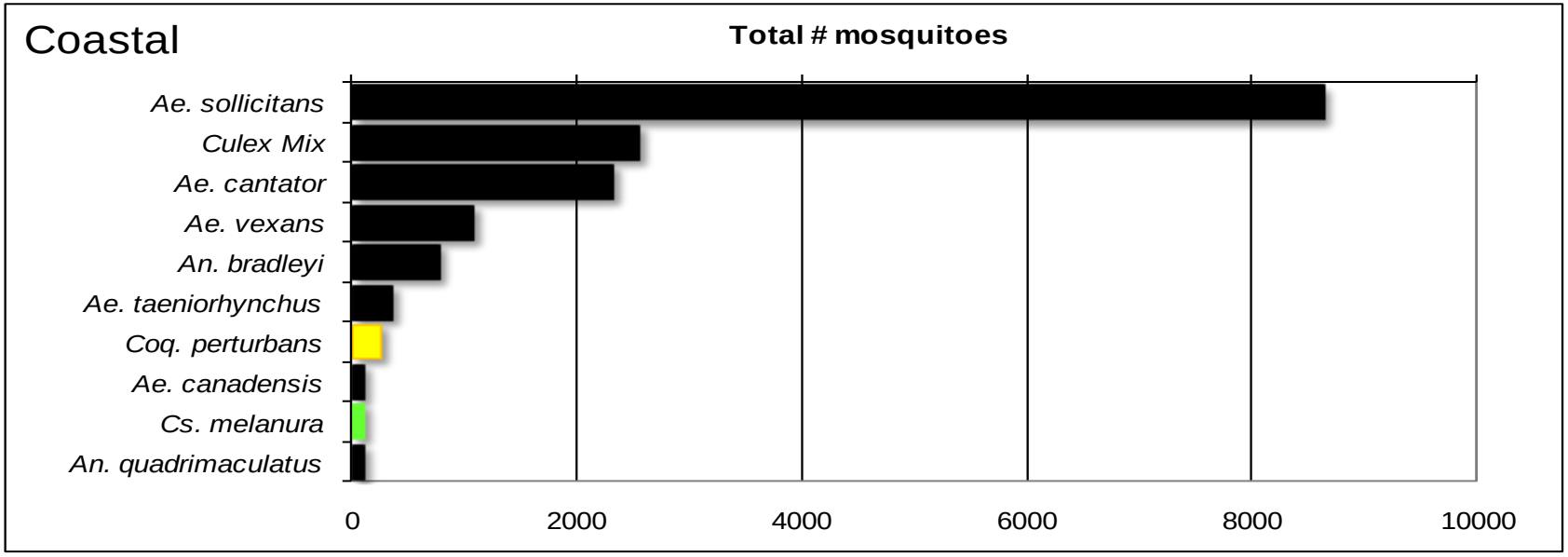


WNV *EEE*

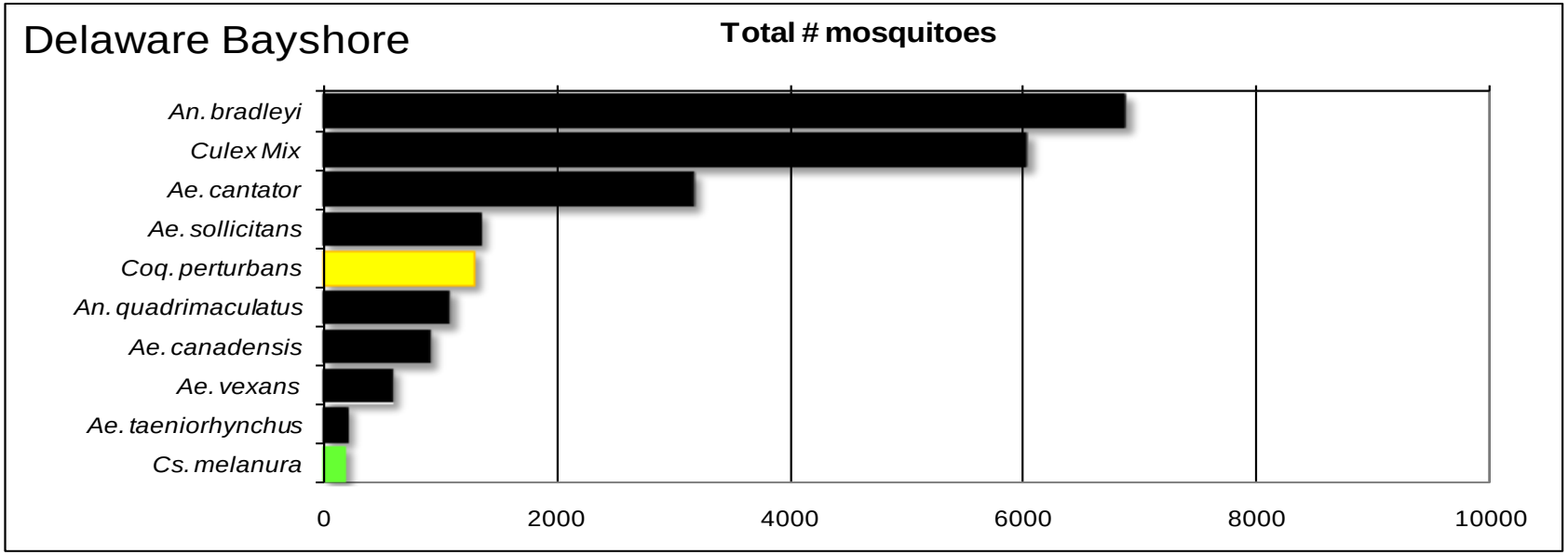
Top Ten Mosquito Species/Region - *Ae. albopictus,* *Ae. japonicus (invasives);* *Cs. melanura or Cx. erraticus* *Coq. perturbans*

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

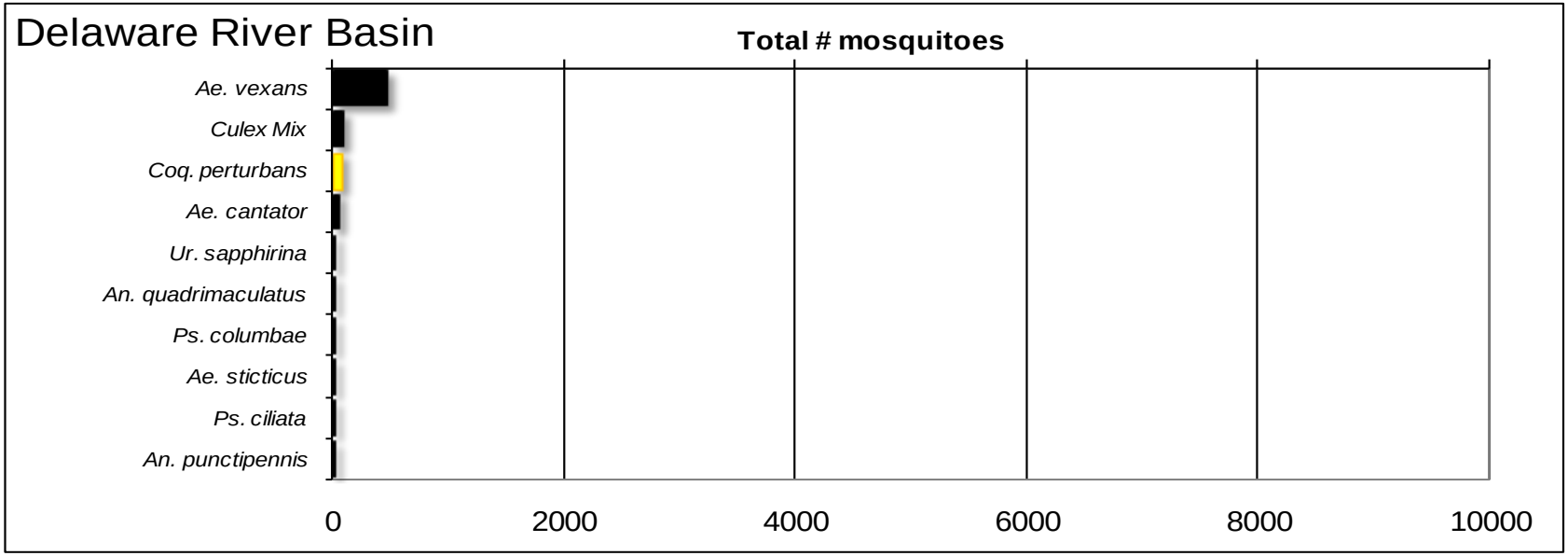




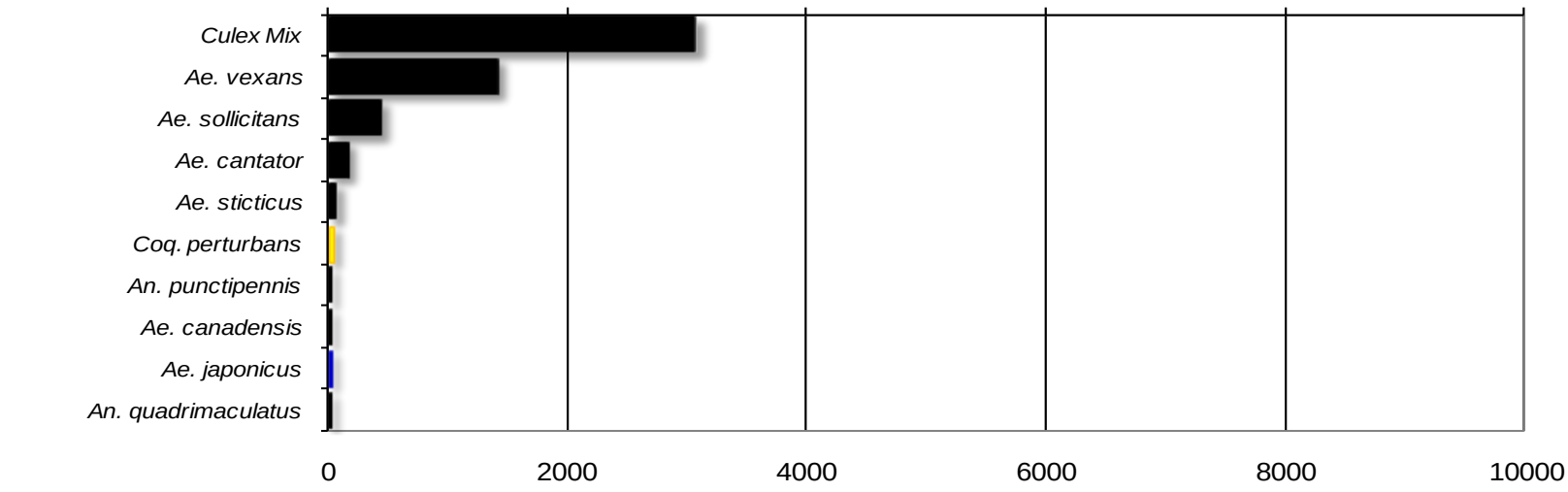
Delaware Bayshore



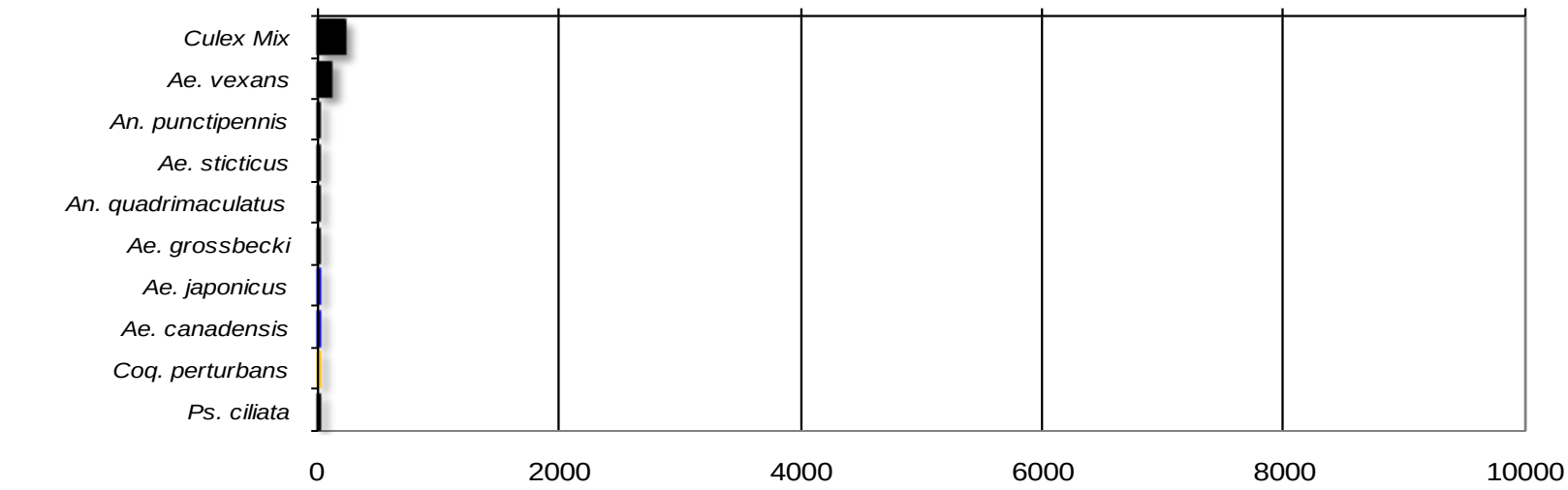
Delaware River Basin



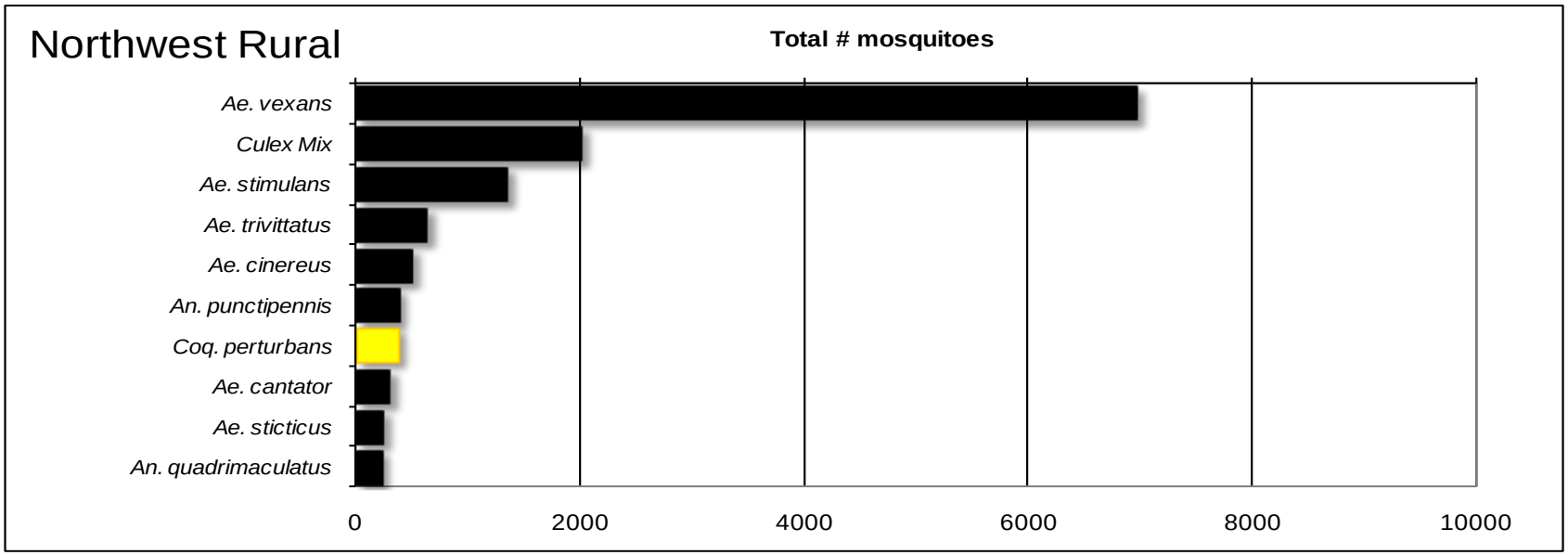
New York Metropolitan



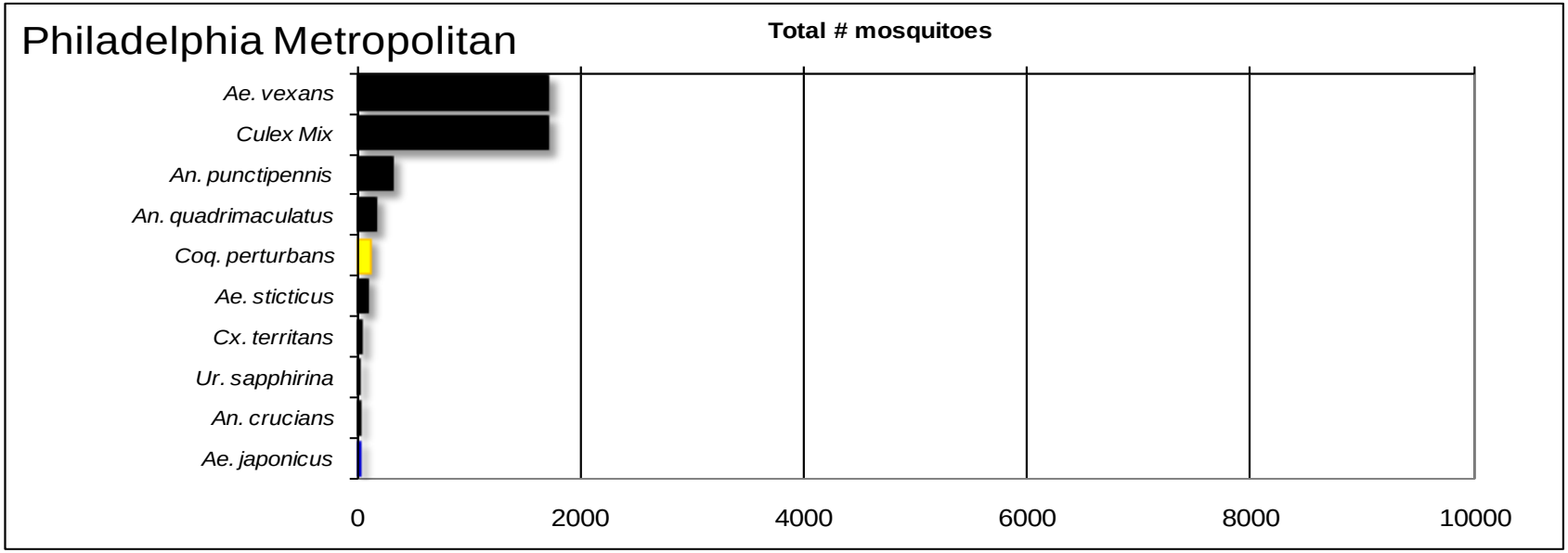
North Central Rural



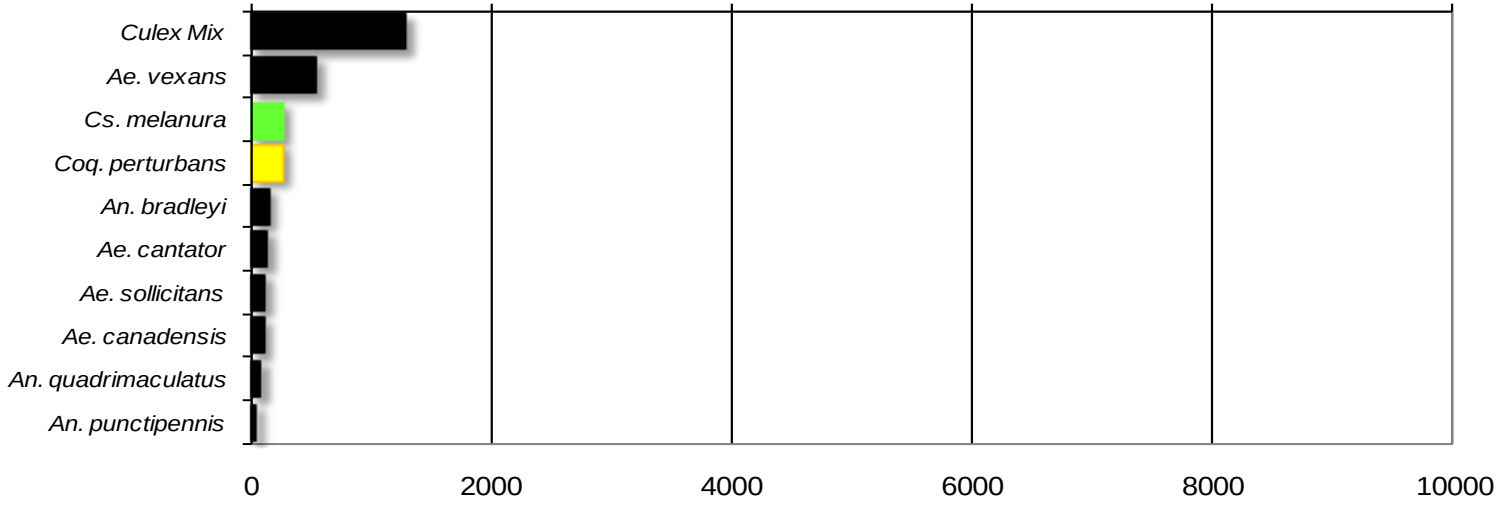
Northwest Rural



Philadelphia Metropolitan



Pinelands



Suburban Corridor