NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report for 4 September to 10 September 2011, CDC Week 36

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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.

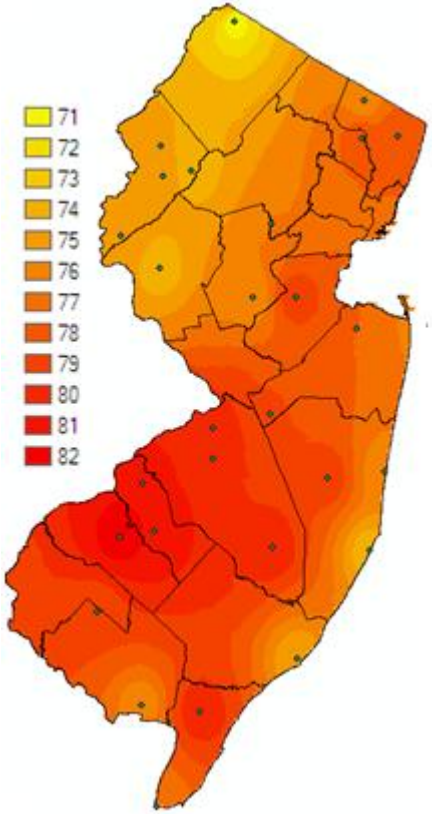
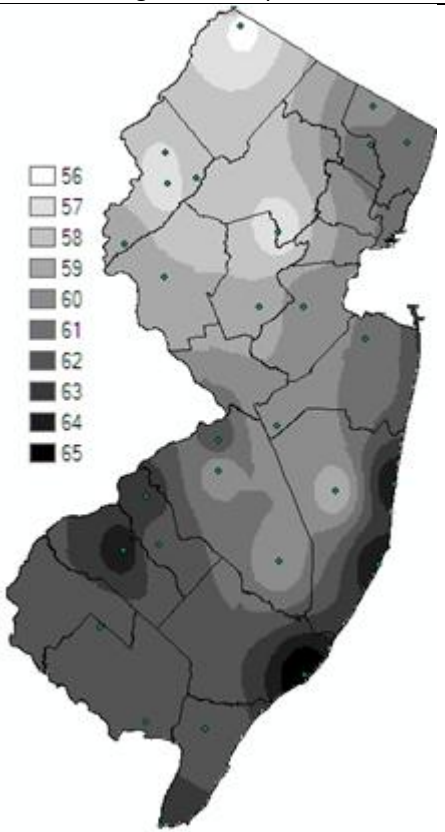
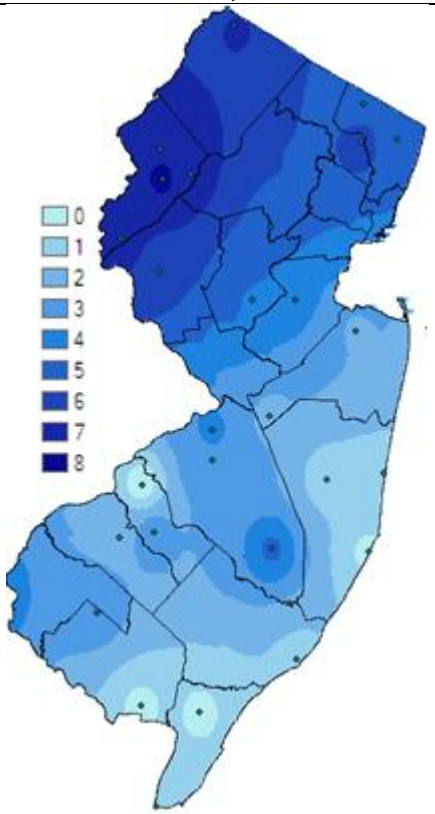
Summary Table – Week 36

	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	**4.90**	**0.97**	**4**	**3.48**	**1.77**	**2**	**0.02**	**0.02**	**0**	**0.00**	**2.29**	**0**
Coastal	**12.62**	**1.58**	**4**	**7.03**	**3.52**	**2**	**0.00**	**0.01**	**0**	**3.71**	**3.77**	**0**
Delaware Bayshore	**7.66**	**1.74**	**4**	**7.34**	**5.61**	**1**	**0.00**	**0.16**	**0**	**4.37**	**4.79**	**0**
Delaware River Basin	**0.00**	**2.92**	**0**	**0.00**	**2.44**	**0**	**0.00**	**0.04**	**0**	**0.00**	**0.00**	**0**
New York Metro	**2.01**	**2.03**	**0**	**1.99**	**8.79**	**0**	**0.00**	**0.18**	**0**	**0.03**	**0.26**	**0**
North Central Rural	**0.22**	**0.36**	**0**	**0.51**	**0.76**	**0**	**0.00**	**0.01**	**0**	**0.00**	**0.00**	**0**
Northwest Rural	**99.43**	**3.96**	**4**	**6.63**	**3.48**	**2**	**0.24**	**0.10**	**3**	**0.00**	**0.00**	**0**
Philadelphia Metro	**25.86**	**7.59**	**4**	**7.79**	**2.62**	**4**	**0.00**	**0.05**	**0**	**0.00**	**0.00**	**0**
Pinelands	**8.65**	**0.85**	**4**	**5.79**	**1.33**	**4**	**0.06**	**0.03**	**3**	**0.09**	**0.28**	**0**
Suburban Corridor	**12.28**	**2.94**	**4**	**2.12**	**2.26**	**0**	**0.03**	**0.22**	**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: Floodwater species such as *Aedes vexans* responded to the influx of water with significantly higher populations in many regions. Some data is still coming in and for those areas not reporting higher populations, this is expected to change. *Culex* populations also increased, but at lower rates. *Coquillettidia perturbans* showed higher populations in the Northwest Rural and Pinelands, but this species is at the end of its season.

Climate Factors

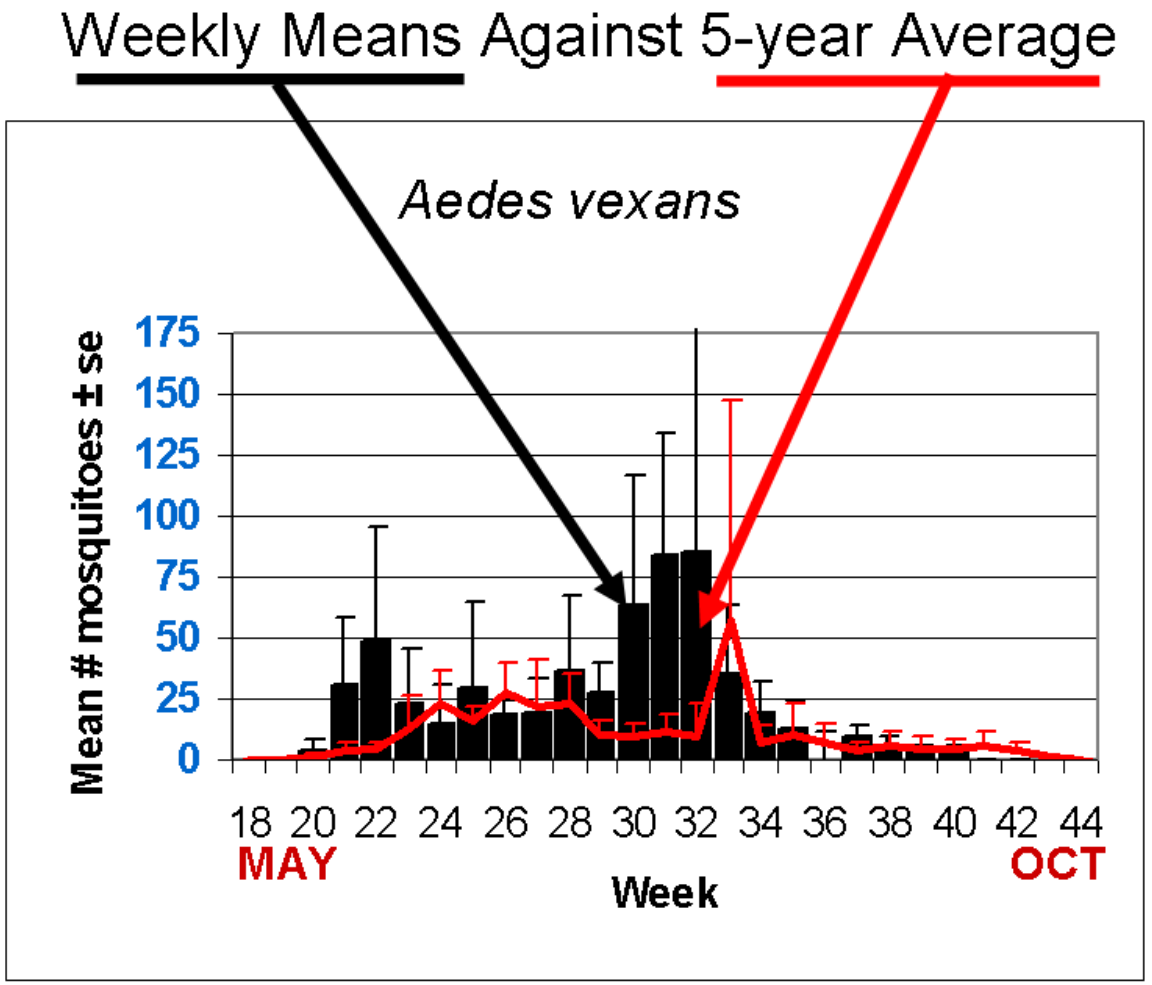
Average High Temperature	Average Low Temperature	Total Precipitation
		

The three figures show the interpolation of average maximum and minimum temperature and total precipitation through 1 September to 16 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.

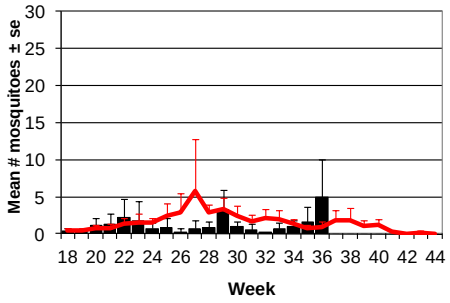
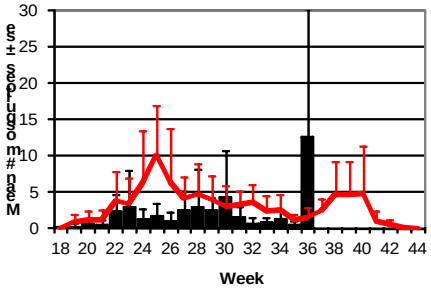
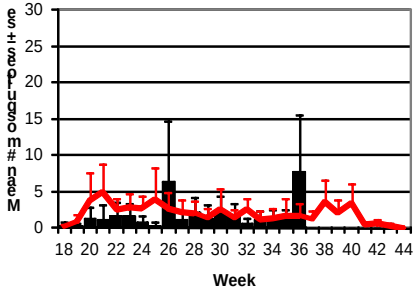
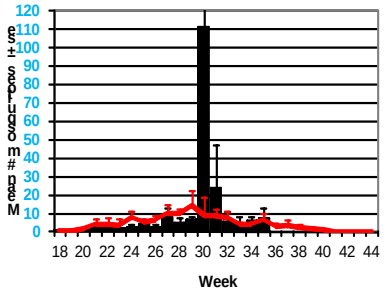
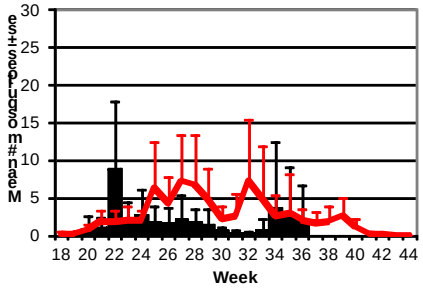
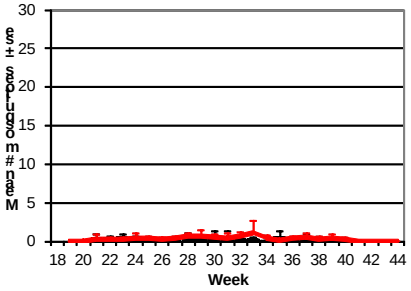
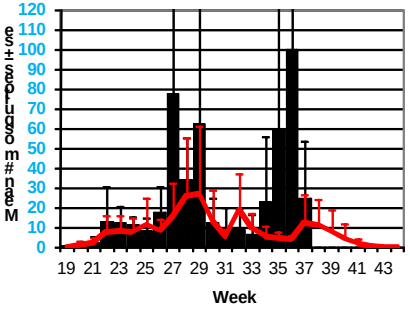
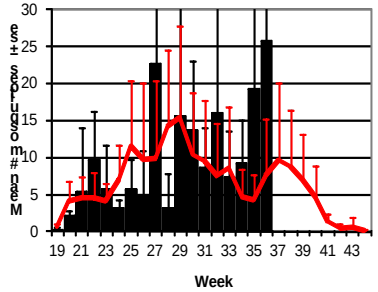
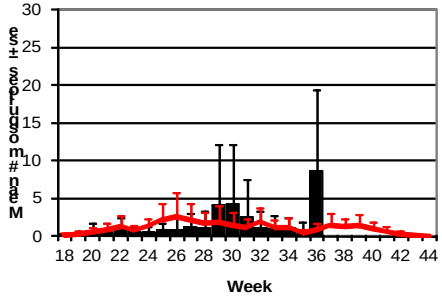
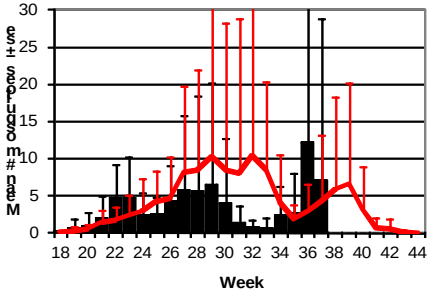
Average high and low temperatures remain similar to the previous week. Precipitation increased slightly from the previous week. A cold front passed through on the 15th.

NJ Weather & Climate NETWORK ONJSC at Rutgers University

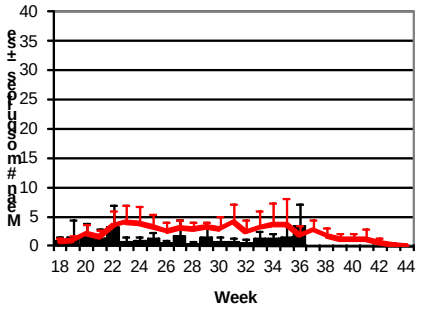
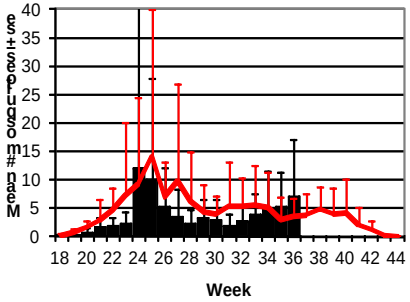
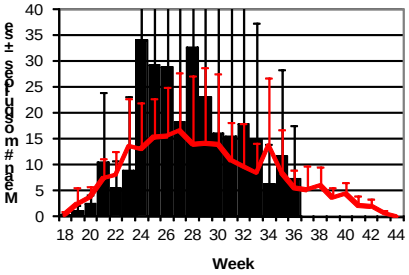
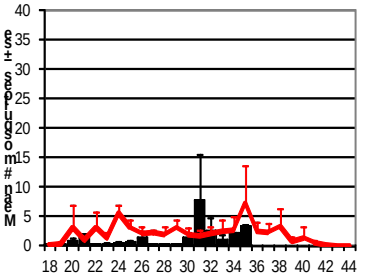
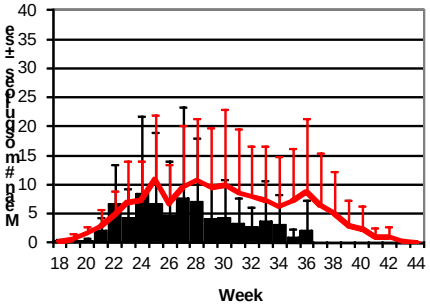
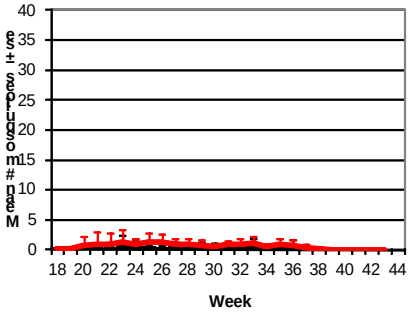
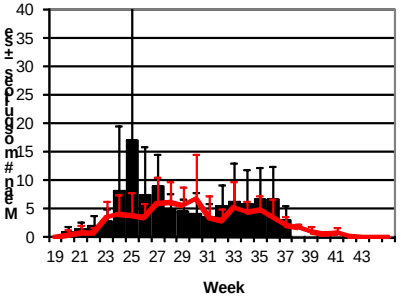
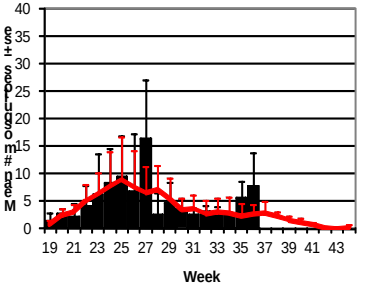
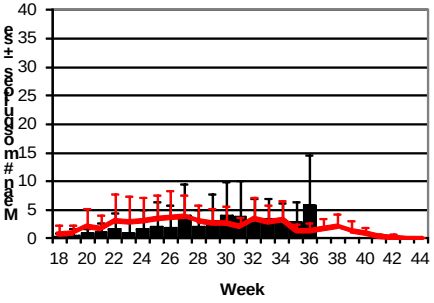
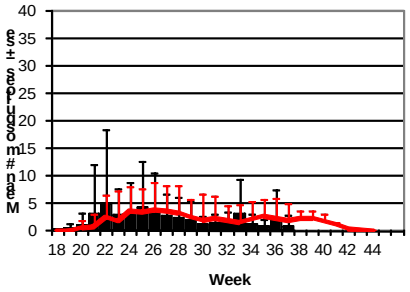
The Species Graphs: The species graph pages include a graph with two plots for each of the ten regions defined on the first page (Agricultural, Coastal, Delaware Bayshore, Delaware River, New York Metro, North-Central, Northwestern, Philadelphia Metro, Pinelands, and Suburban Corridor). Below is an example 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, Mercer, Monmouth, Morris, Ocean, Somerset, Sussex and Union counties. Previous week included Atlantic, Bergen, Burlington, Camden, Cape May, Essex, Mercer, Monmouth, Morris, Ocean, Salem, and Sussex counties. Note: County data is sent in at a variety of times during the week. Also note: Hurricane Irene disrupted many services for a wide portion of New Jersey. Several counties were unable to retrieve samples due to power outage, inaccessibility of traps and the need to deal with the more immediate needs of local situations.



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

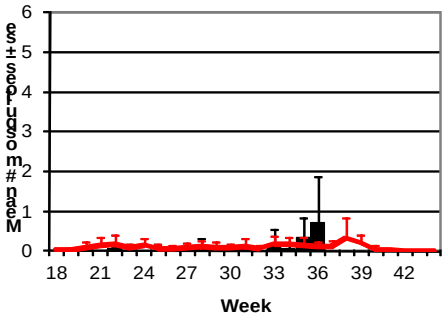
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		The impact of the waters brought in by the hurricane and other weather systems has become evident as *Aedes vexans* has emerged in substantial numbers in many regions: Agricultural, Coastal, Delaware Bayshore, Northwestern Rural, Philadelphia Metropolitan, Pinelands and Suburban Corridor. Some data is still coming in from areas not reporting high populations and so this may change. This species ability to exploit suddenly available habitat is one reason why this is a significant mosquito, occurring as number one or two in abundance for 8 of the 10 regions here in New Jersey.	

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

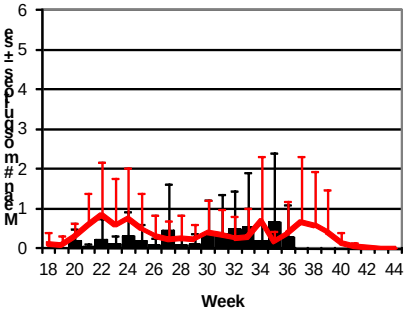
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Culex* Mix is composed of *Culex pipiens, Cx. restuans* and *Cx. salinarius*. These three species (especially *pipiens* and *restuans*) are often difficult to tell apart after encountering the damaging blades of the New Jersey light trap. In five of the ten regions, *Culex* populations appear to have also responded to increased habitat as several populations (Agricultural, Coastal, Delaware Bayshore, Northwest Rural, Philadelphia Metropolitan, and the Pinelands) saw increases over historical values to some degree. Populations for these species are decreasing as mated females seek out hibernaculae in which to overwinter.	

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

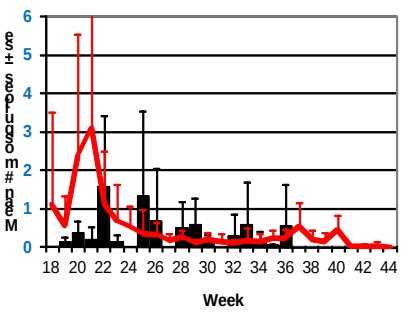
Agricultural



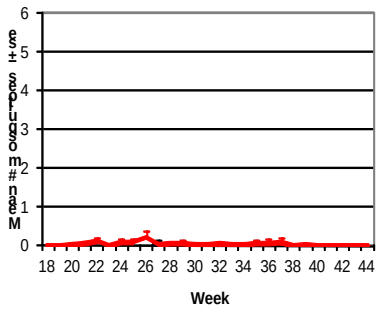
Coastal



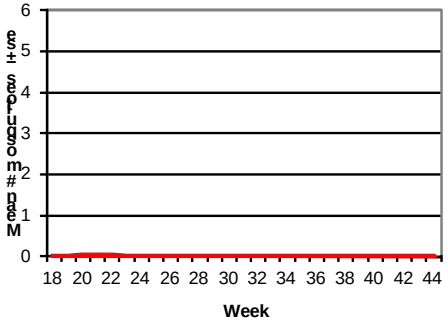
Delaware Bayshore



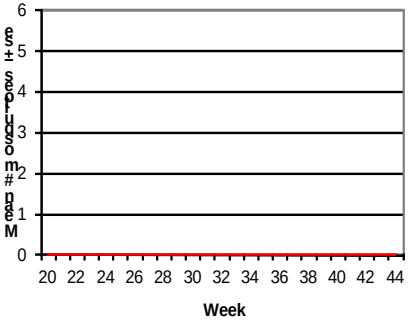
Delaware River Basin



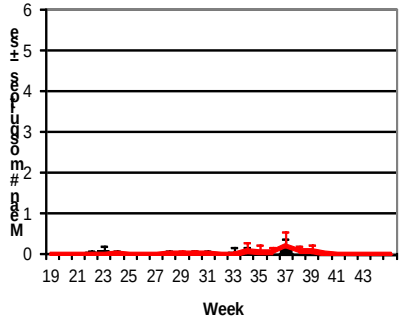
New York Metro



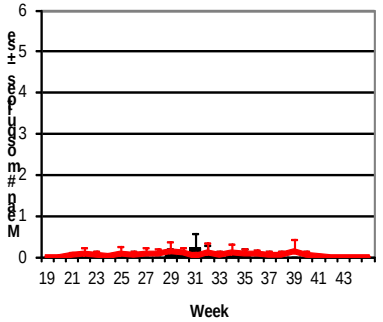
North Central Rural



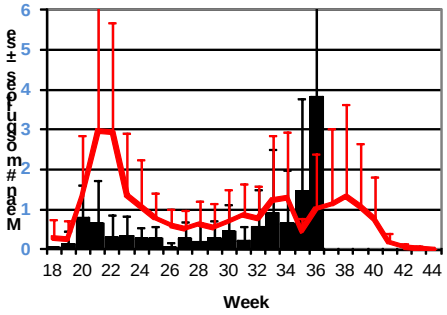
Northwestern Rural



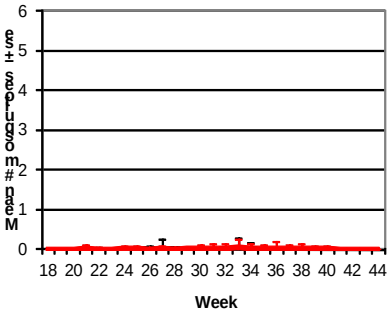
Philadelphia Metro



Pinelands



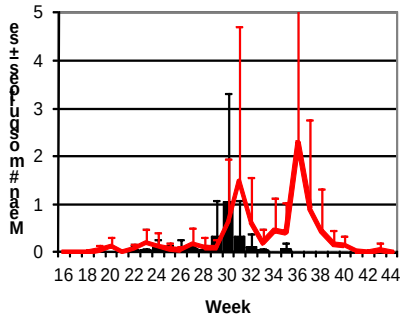
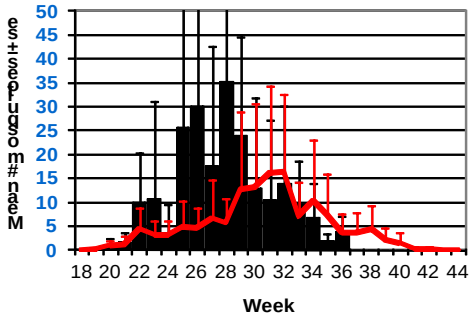
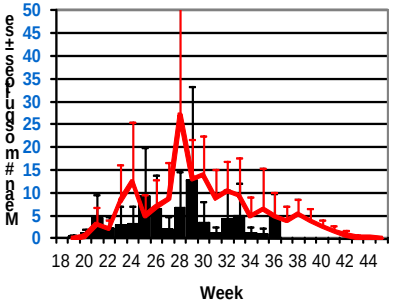
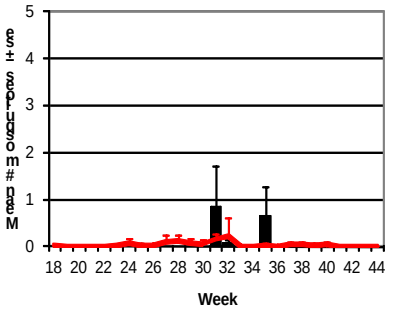
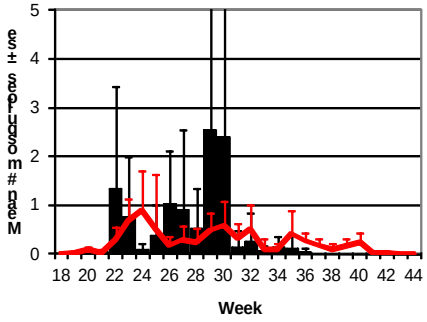
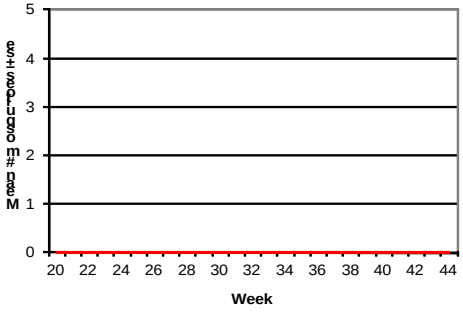
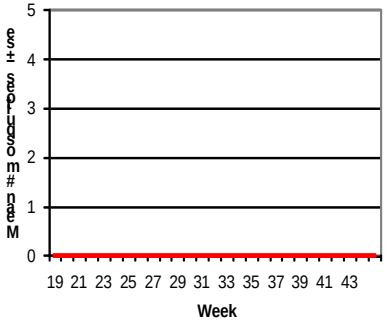
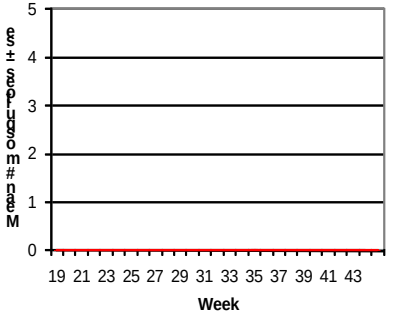
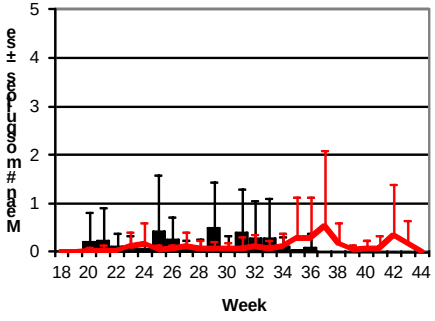
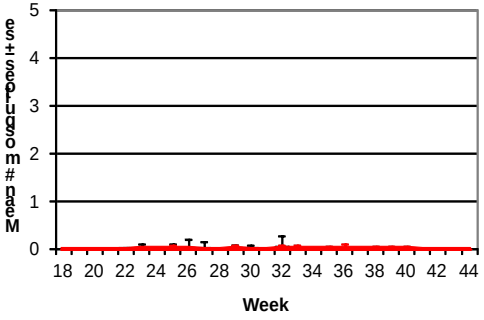
Suburban Corridor



Comments

Culiseta melanura is the enzootic ornithophilic vector of eastern equine encephalitis. *Cs. melanura* abundances have generally been below historical levels, although a significant increase in the Pinelands population has occurred. Smaller increases have also been seen in resting box populations – a source that is usually larger than the light trap populations. This second generation is the one that provides overwintering larvae and helps determine how large next year's spring emergences can potentially be.

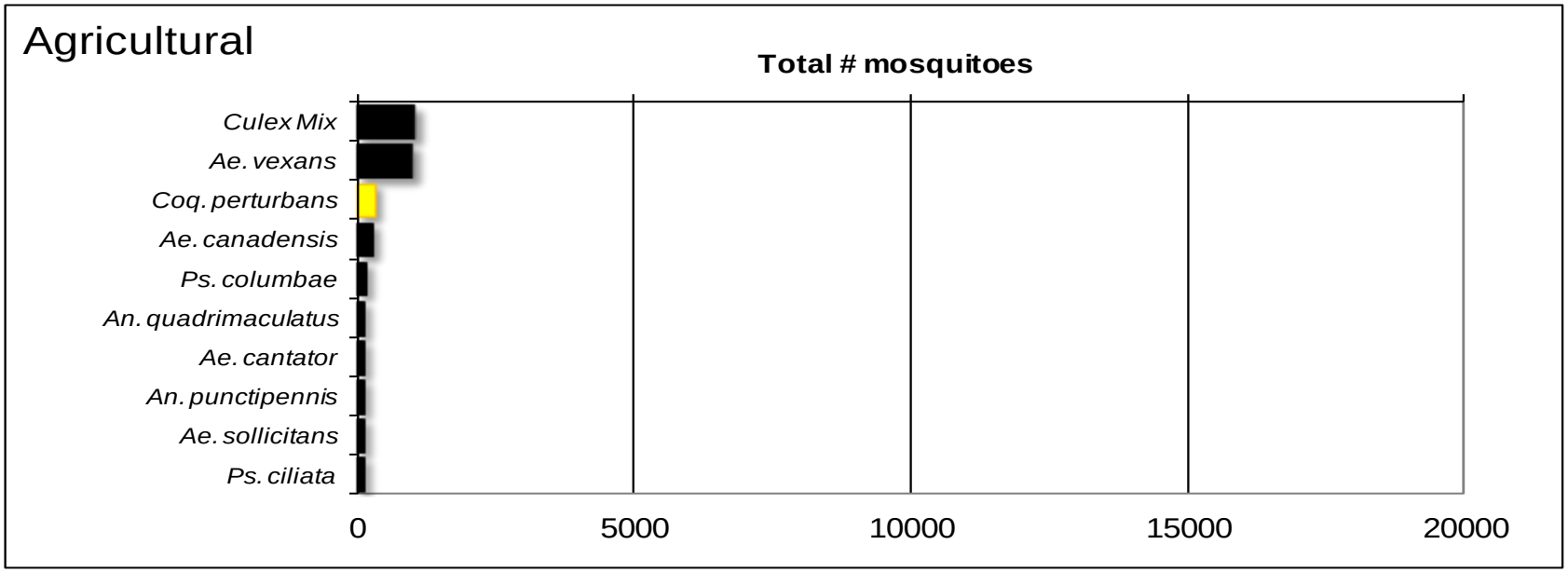
Aedes sollicitans - Salt Floodwater Species
Multivoltine Aedine (*Ae. sollicitans* Type)

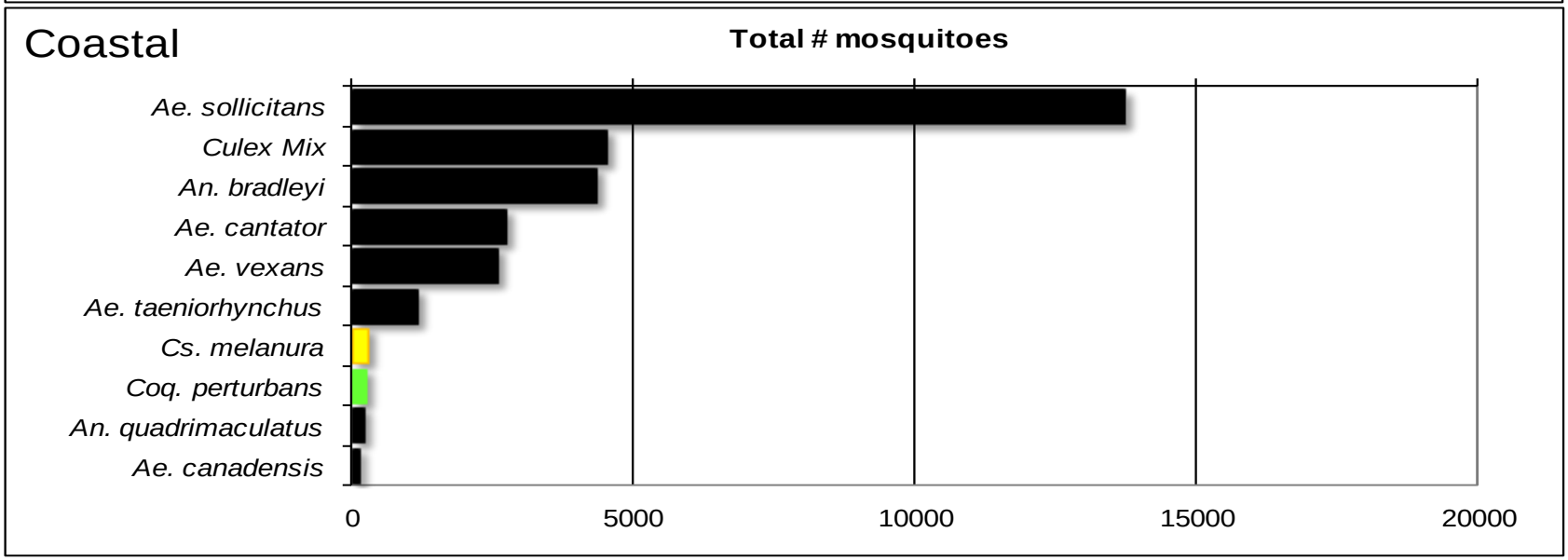
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes sollicitans* populations were not higher than historical values in any region of New Jersey at this time. A full moon occurred a few days ago, but it may be too late in the season for any significant emergence now. However, adult females can still generate complaints.	

WNV *EEE*

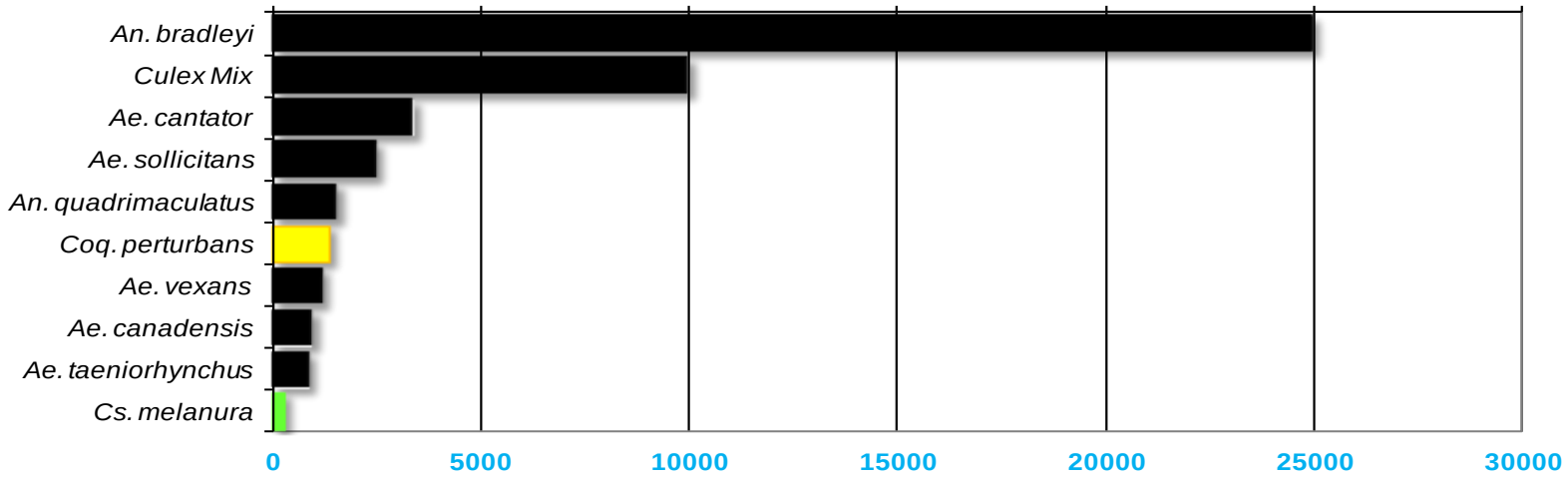
Top Ten Mosquito Species/Region - *Ae. albopictus,* *Ae. japonicus (invasives);* *Cs. melanura or Cx. erraticus* *Coq. perturbans*

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

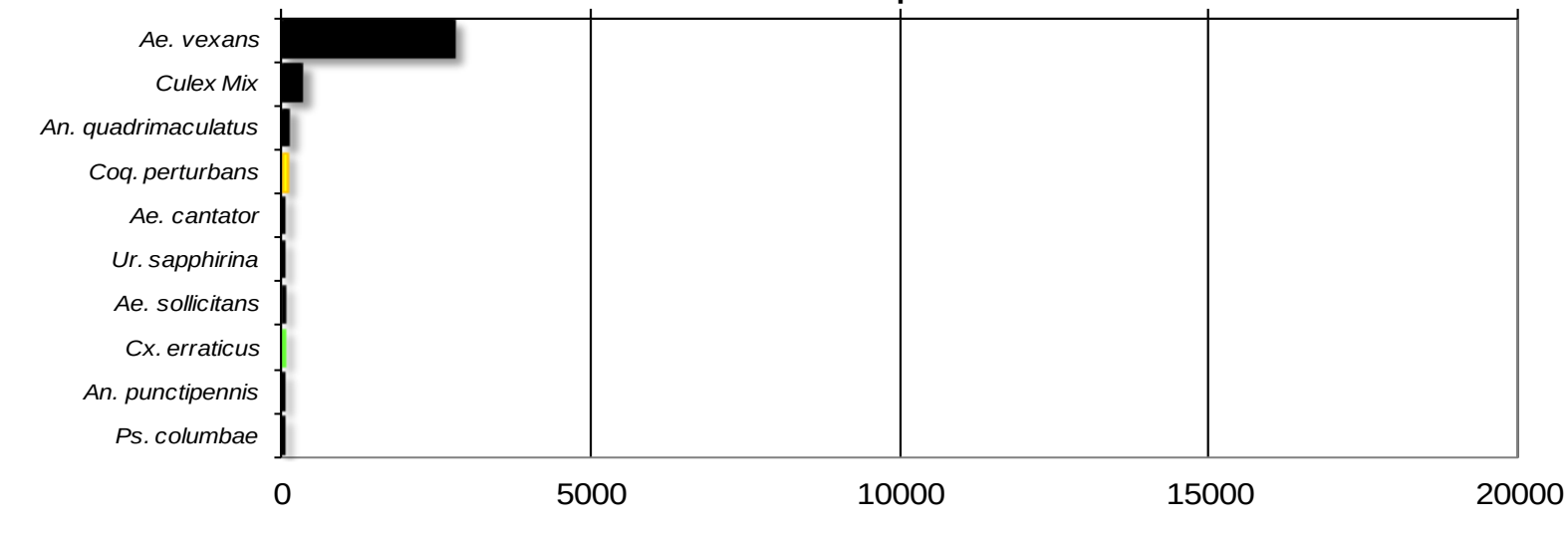




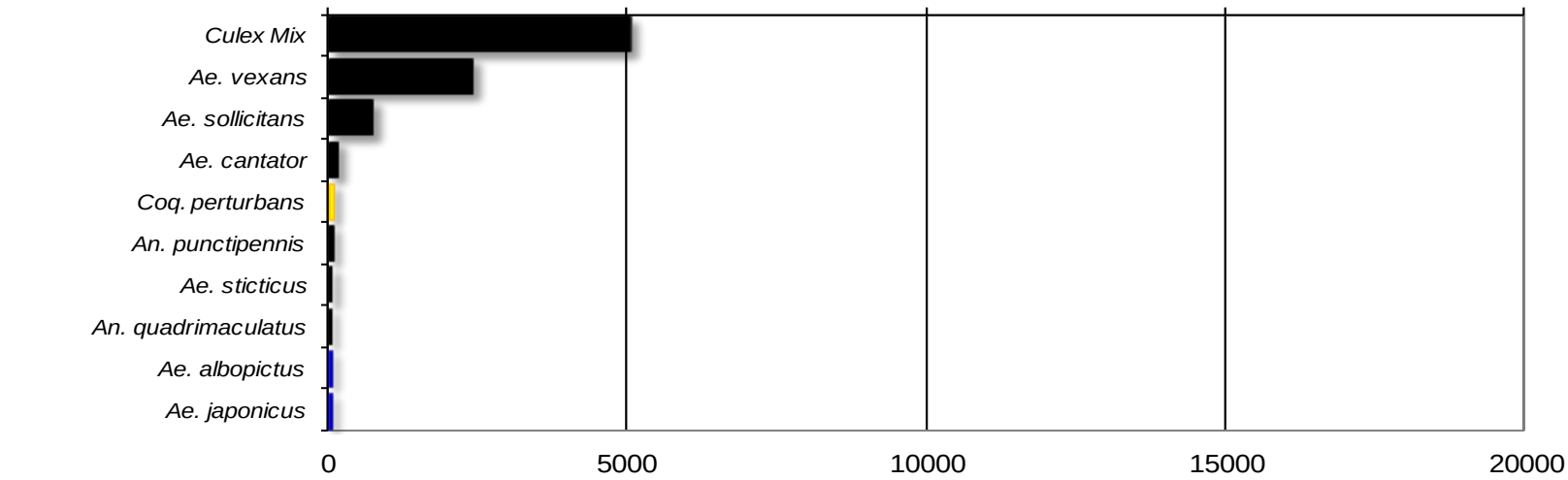
Delaware Bayshore



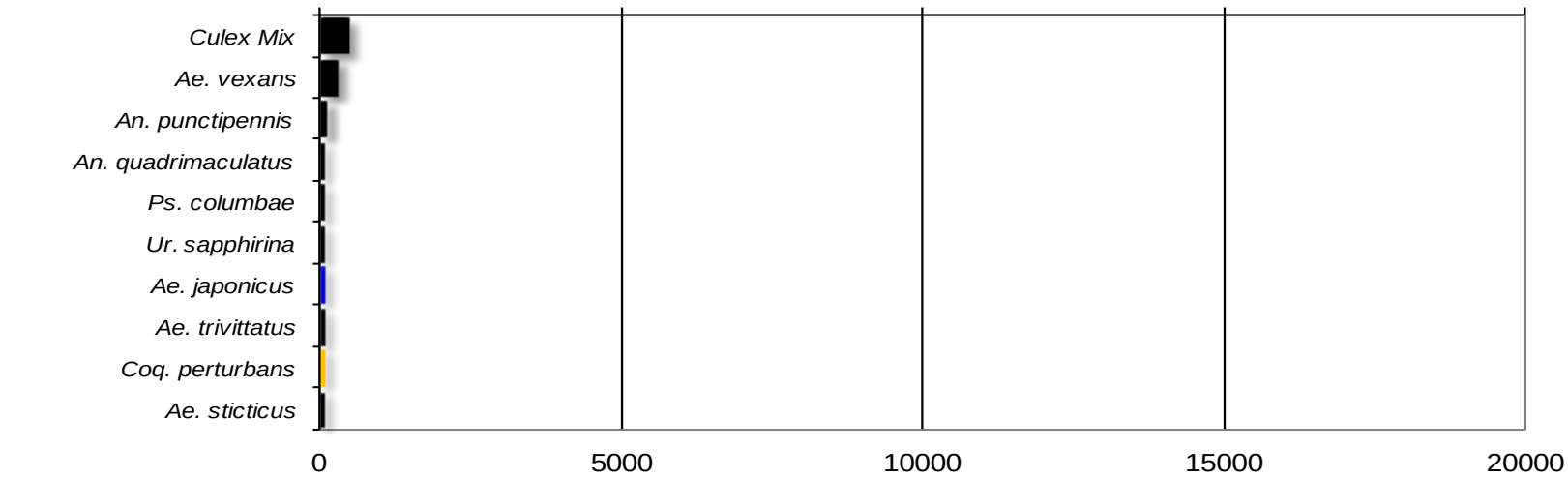
Delaware River Basin



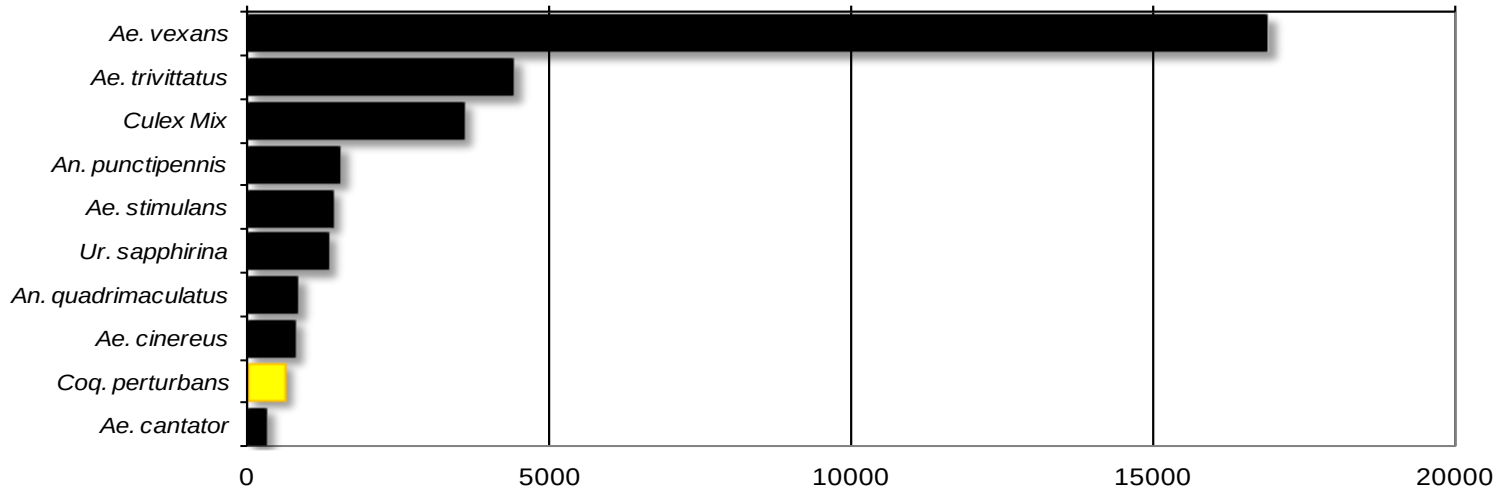
New York Metropolitan



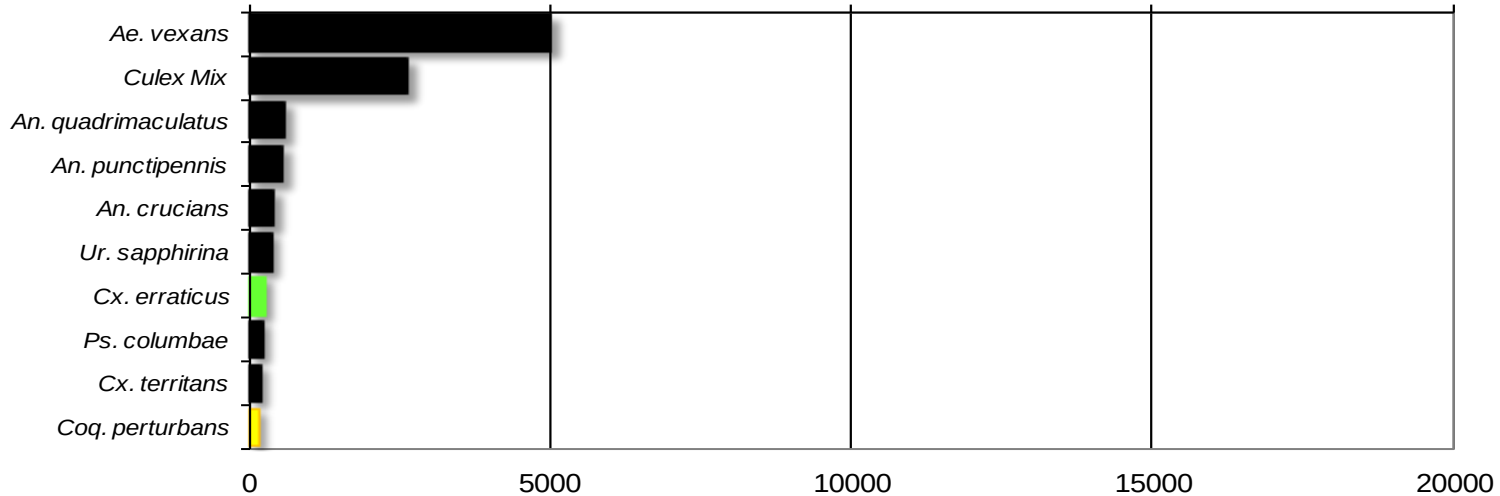
North Central Rural



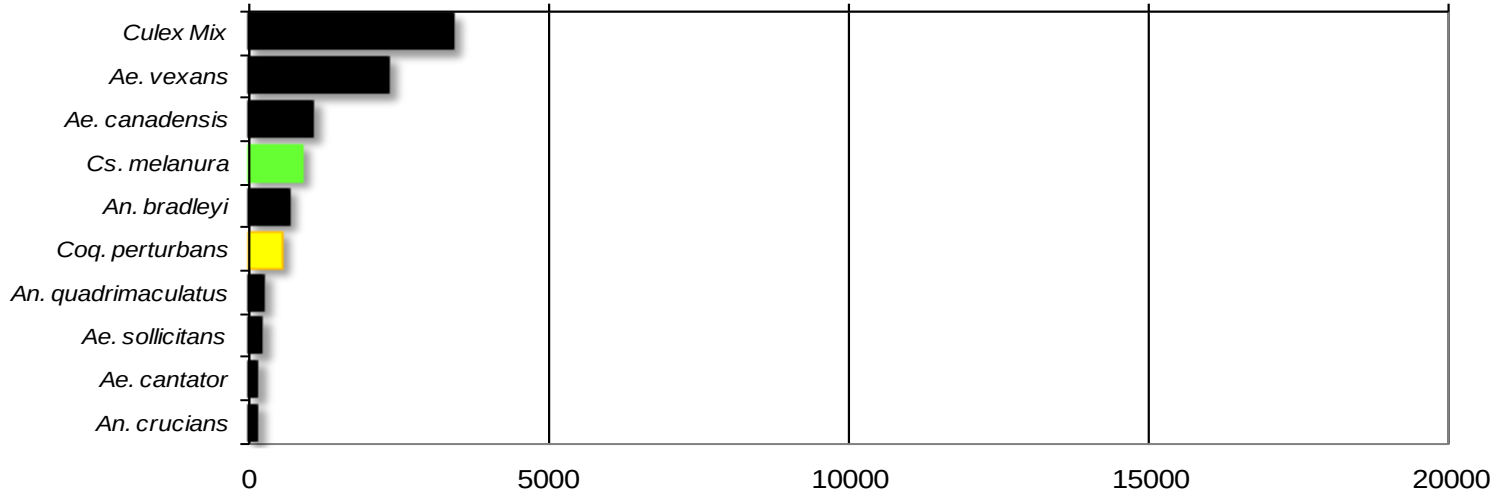
Northwest Rural



Philadelphia Metropolitan



Pinelands



Suburban Corridor