NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report for 11 September to 17 September 2011, CDC Week 37

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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.

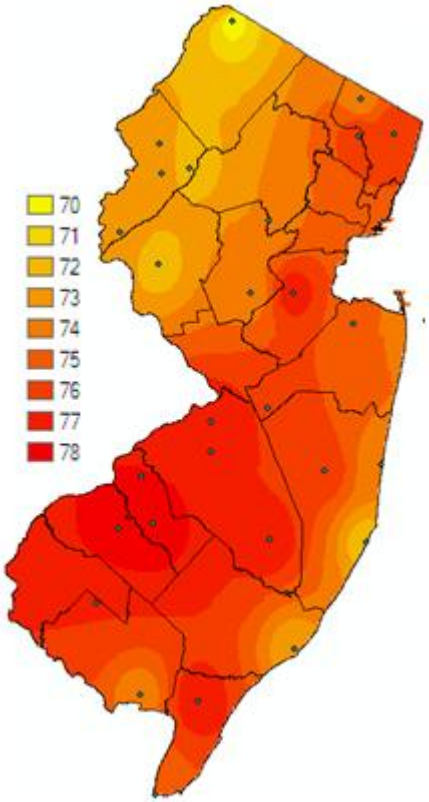
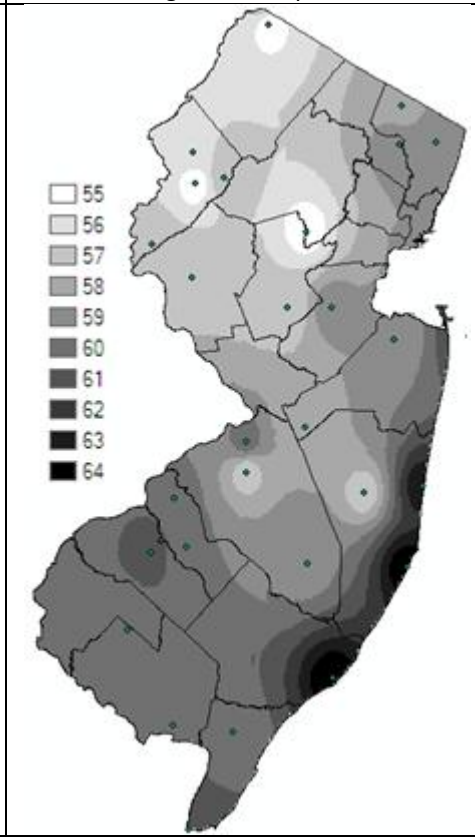
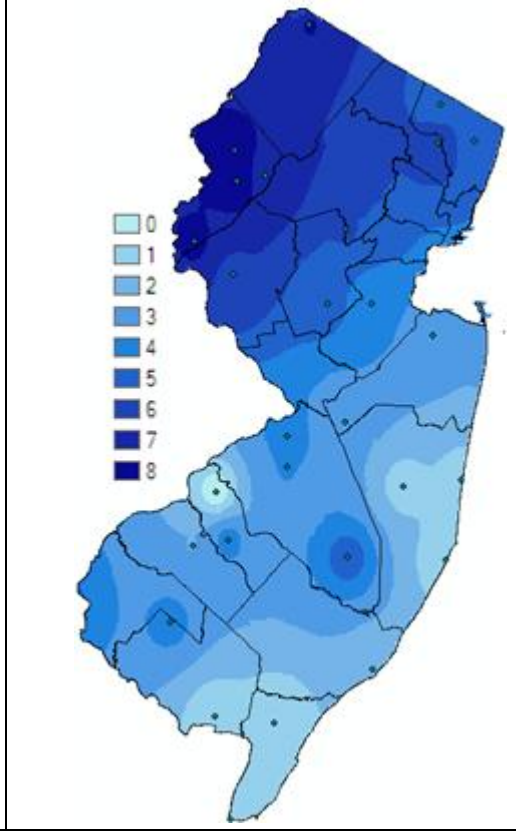
Summary Table – Week 37

Region	*Aedes vexans*			*Culex* Mix			*Coquillettidia perturbans*			*Aedes sollicitans*		
	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase
Agricultural	6.26	1.82	4	4.00	2.73	1	0.07	<0.01	4	0.00	0.92	0
Coastal	13.16	2.41	4	5.32	3.74	1	0.00	0.00	0	2.48	3.59	0
Delaware Bayshore	6.57	1.19	4	5.31	5.28	0	0.03	0.03	0	3.34	3.70	0
Delaware River Basin	0.00	3.82	0	0.00	2.39	0	0.00	0.11	0	0.00	0.05	0
New York Metro	2.79	1.62	2	6.14	6.26	0	0.00	0.06	0	0.40	0.16	4
North Central Rural	0.98	0.50	2	0.86	0.41	3	0.00	<0.01	0	0.00	0.00	0
Northwest Rural	72.20	12.50	4	5.40	2.03	4	0.07	0.07	0	0.00	0.00	0
Philadelphia Metro	33.86	9.60	4	12.79	2.86	4	0.00	0.02	0	0.00	0.00	0
Pinelands	4.43	1.40	4	2.38	1.80	1	0.08	0.06	1	0.08	0.53	0
Suburban Corridor	13.83	4.30	4	4.16	1.94	3	0.03	0.09	0	0.02	0.01	3

*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* continued to respond to the influx of water with significantly higher populations in regions reporting data. *Culex* populations also continued to increase, but at lower rates. *Coquillettidia perturbans* showed higher populations in the Agricultural and Pinelands, and *Aedes sollicitans* had higher populations in the New York Metropolitan region and the Suburban Corridor.

Climate Factors

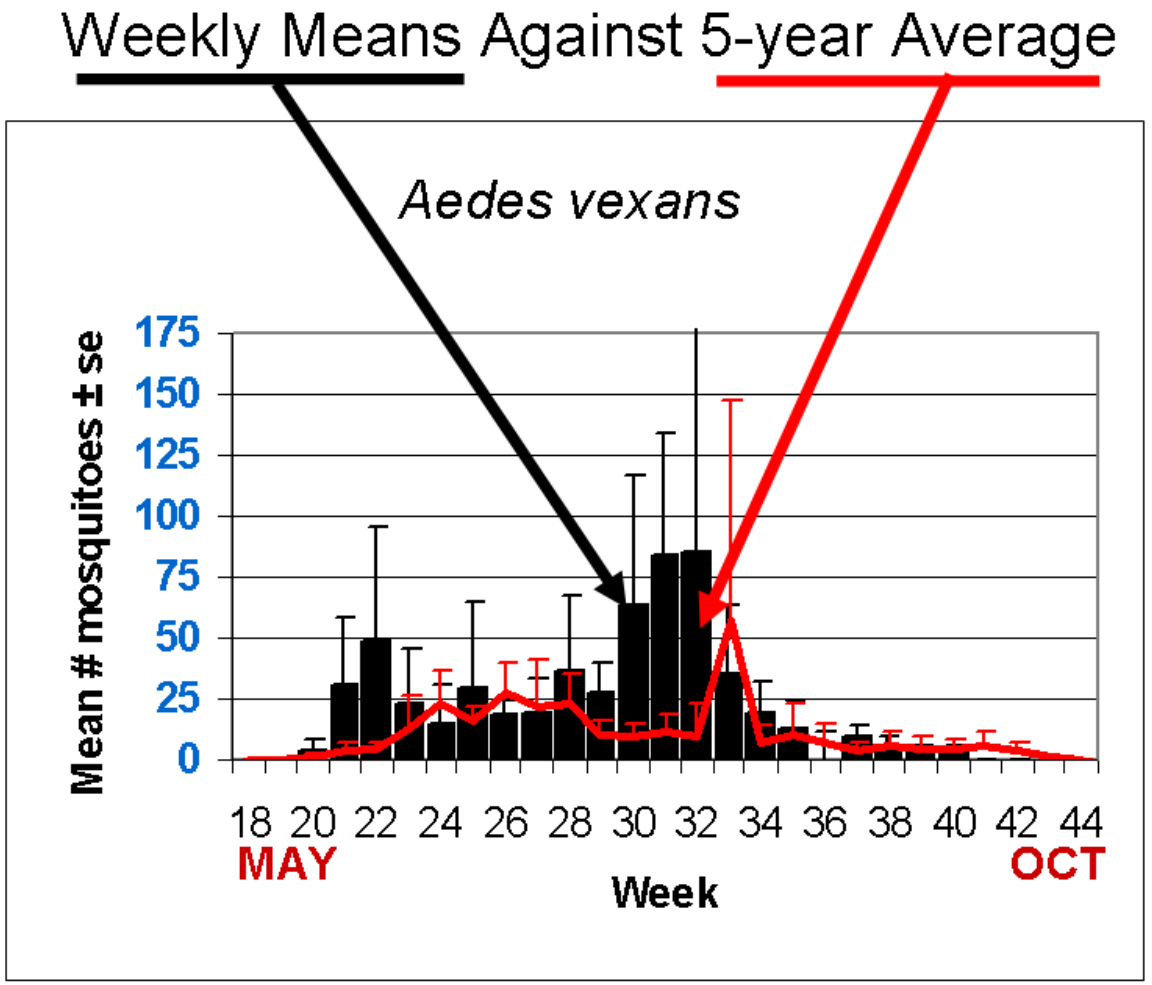
Average High Temperature	Average Low Temperature	Total Precipitation
		

The three figures show the interpolation of average maximum and minimum temperature and total precipitation 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.

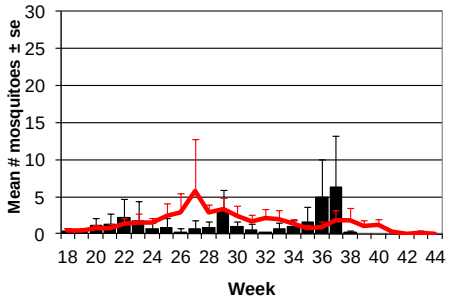
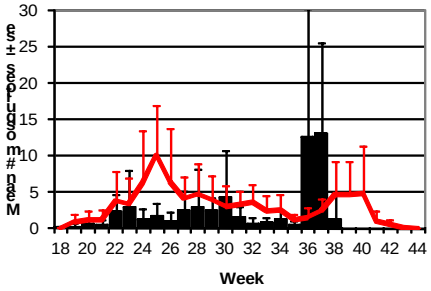
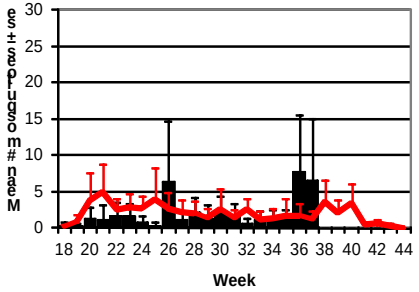
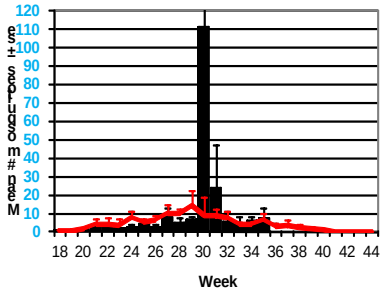
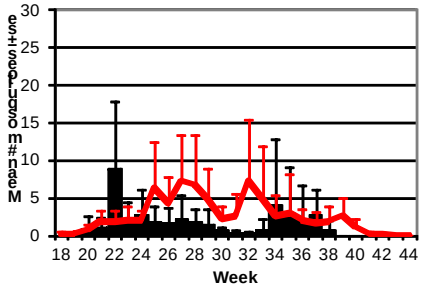
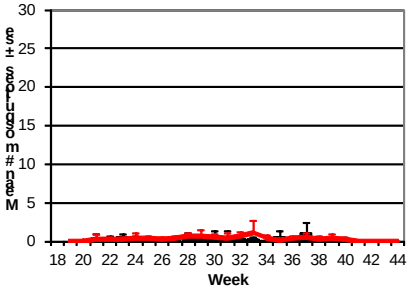
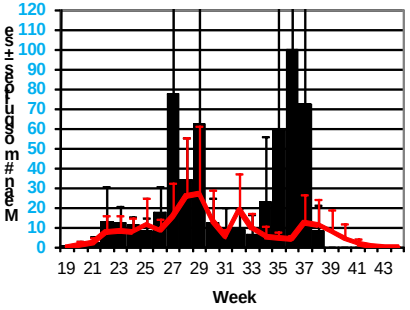
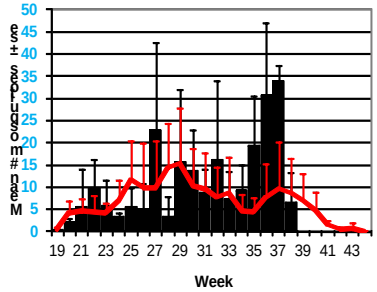
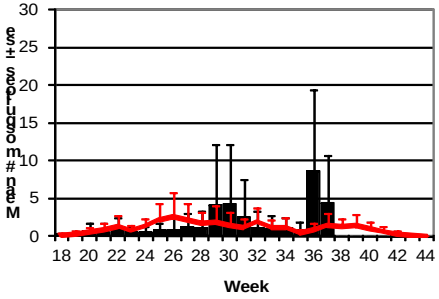
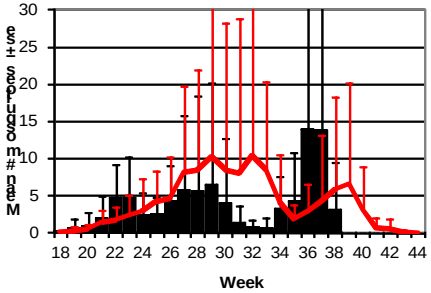
Average high and low temperatures decreased from the previous week after a cold front moved through the state resulting in several days of cooler weather. Precipitation increased slightly from the previous week.

NJ Weather & Climate NETWORK ONJSC at Rutgers University

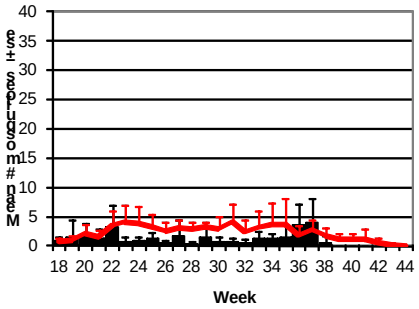
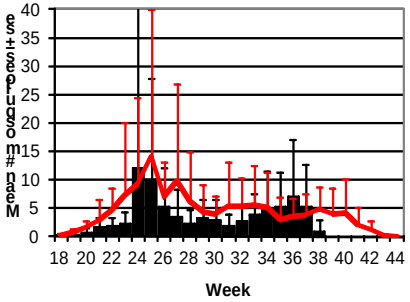
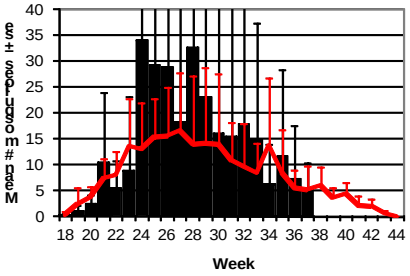
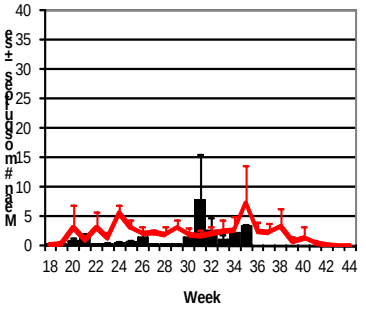
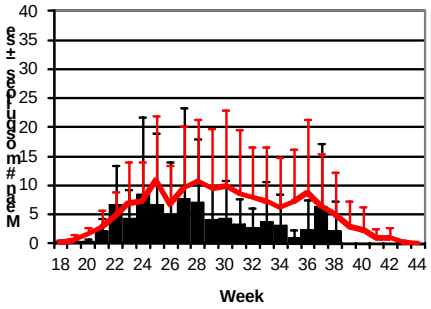
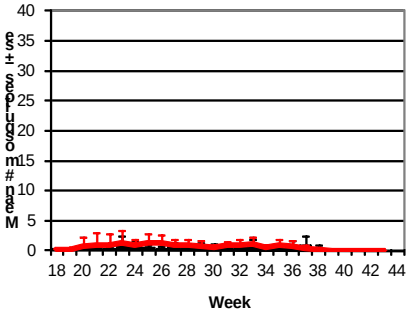
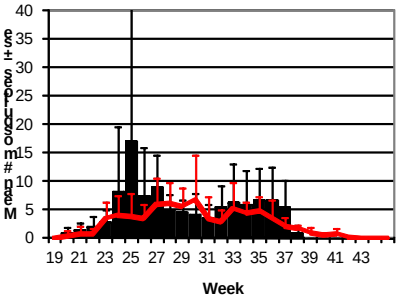
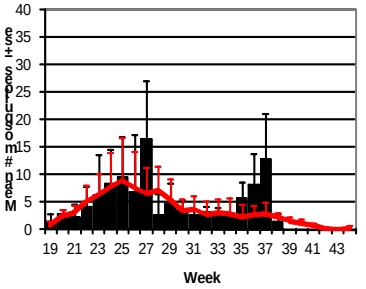
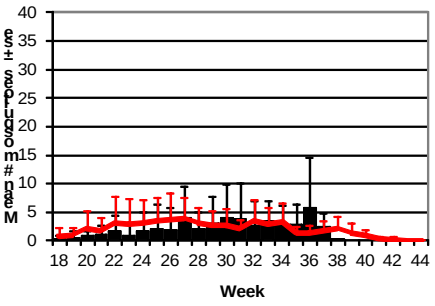
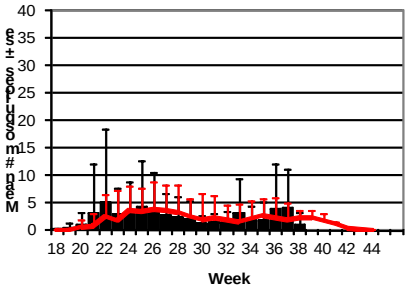
The Species Graphs: The species graph pages include a graph with two plots for each of the ten regions defined on the first page (Agricultural, Coastal, Delaware Bayshore, Delaware River, New York Metro, North-Central, Northwestern, Philadelphia Metro, Pinelands, and Suburban Corridor). Below is an example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



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

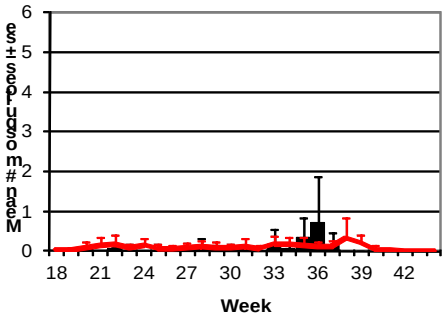
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		This floodwater species continue to exploit the abundant habitat created in August (the wettest month in New Jersey history) and into September with all reporting regions showing significantly high abundances. But last week also brought in a cold front, bringing down both day and nighttime temperatures. Some local activity may have been affected by this. Currently, temperatures have increased and there are still a few weeks left for this species to likely be active, as historical records indicate.	

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

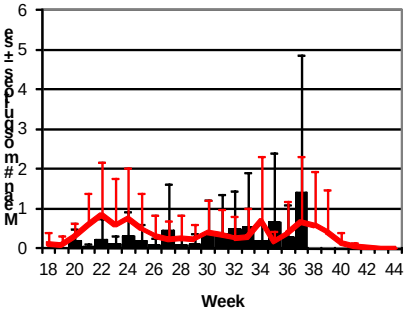
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Culex* Mix is composed of *Culex pipiens, Cx. restuans* and *Cx. salinarius*. These three species (especially *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 7 of the 10 regions (Agricultural, Coastal, North Central Rural, Northwest Rural, Philadelphia Metropolitan, Pinelands and the Suburban Corridor). But populations should continue to decrease overall as the season progresses.	

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

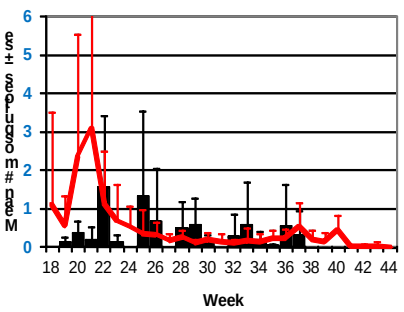
Agricultural



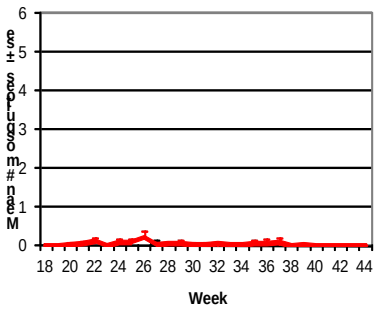
Coastal



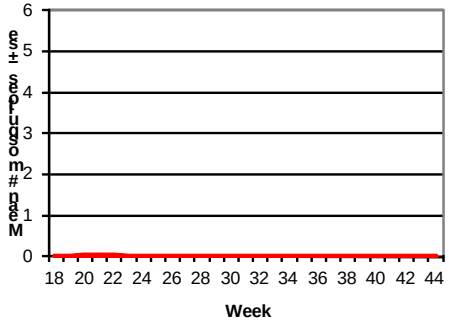
Delaware Bayshore



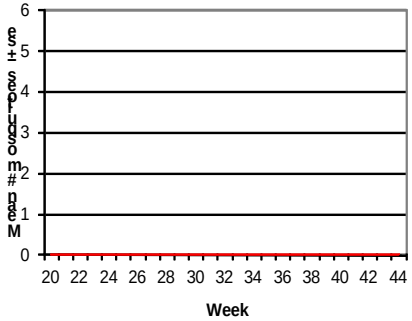
Delaware River Basin



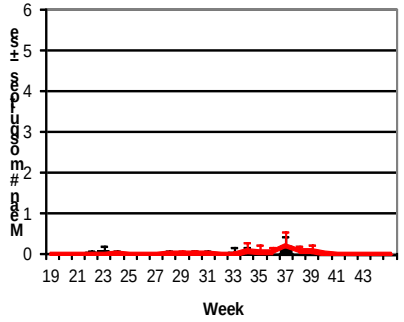
New York Metro



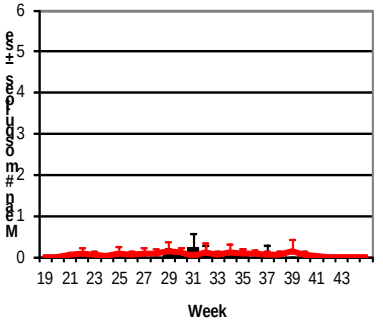
North Central Rural



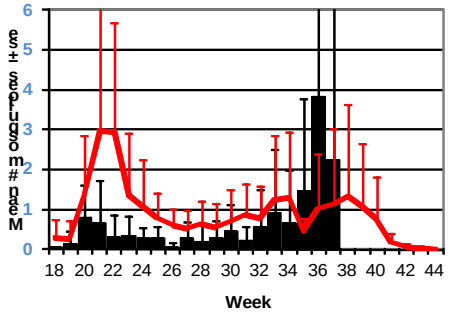
Northwestern Rural



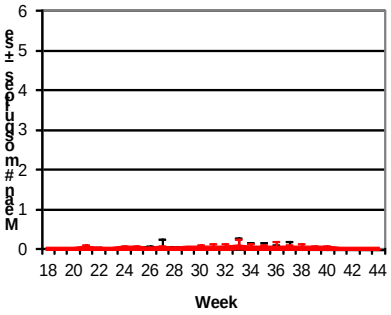
Philadelphia Metro



Pinelands



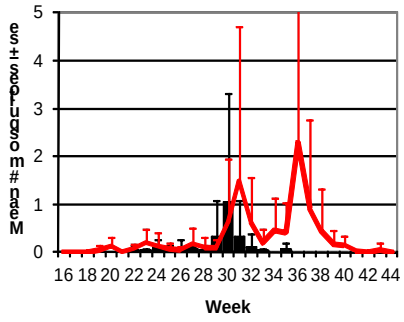
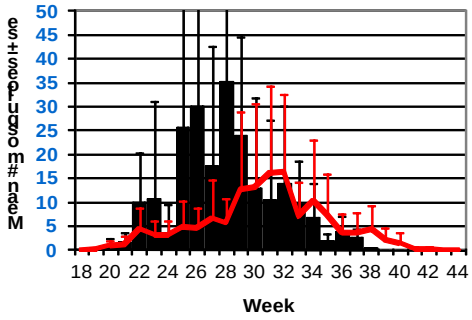
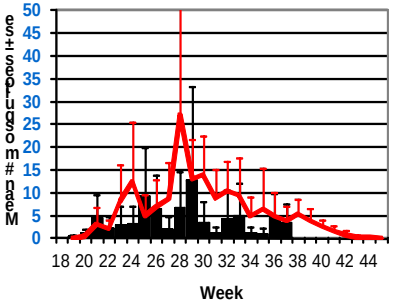
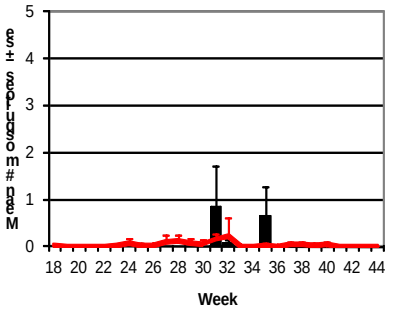
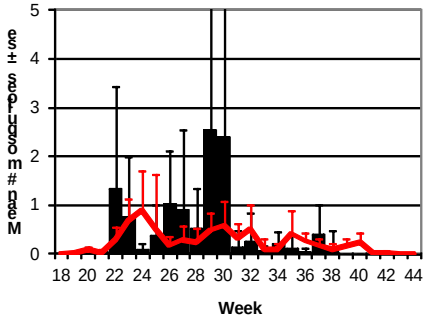
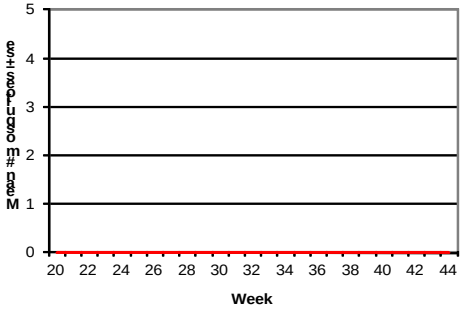
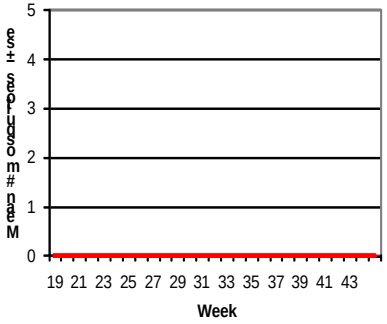
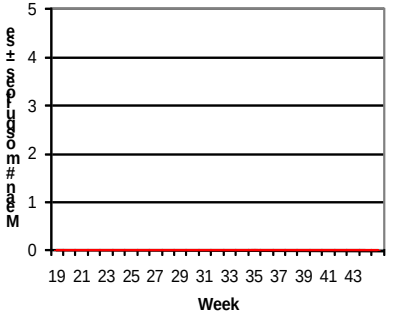
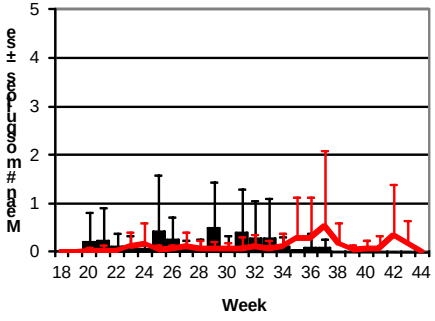
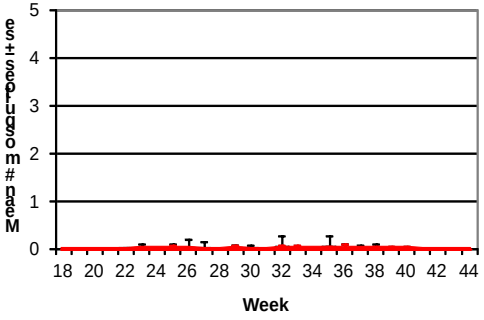
Suburban Corridor



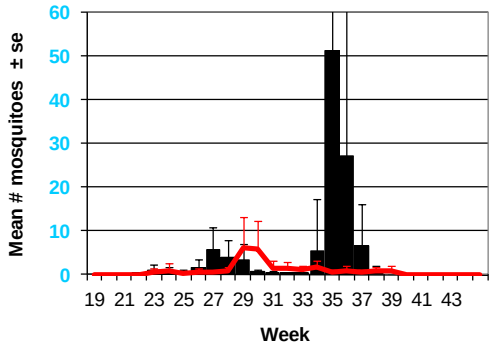
Comments

Culiseta melanura is the enzootic ornithophilic vector of eastern equine encephalitis. *Cs. melanura* abundances continue to show numbers significantly above historical values in the Pinelands. Numbers were also higher in the Coastal region, suggesting that the population that provides the overwintering larvae may be robust. Resting box populations have been around or lower than their historical values.

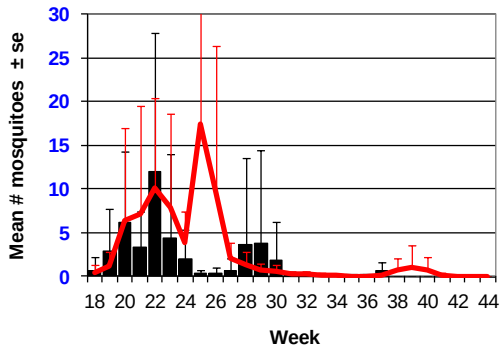
Aedes sollicitans - Salt Floodwater Species
Multivoltine Aedine (*Ae. sollicitans* Type)

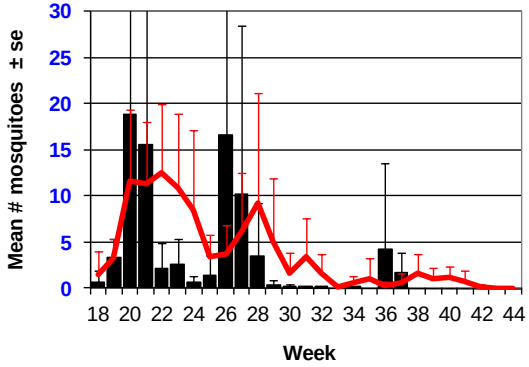
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes sollicitans* populations were higher in the New York Metropolitan and Suburban Corridor, but these values were far lower overall than in their most abundant regions.	

Other species activity:

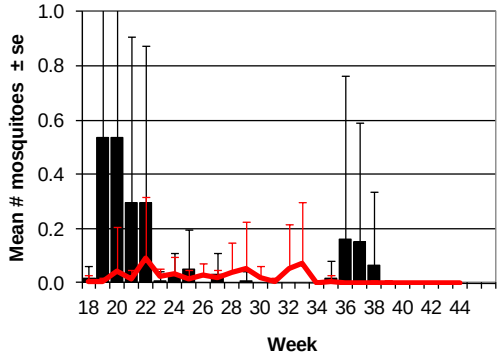


Northwestern Rural
Aedes trivittatus, a floodwater species that can cause significant complaints, has shown up in numbers in the Northwestern Rural region after the preponderance of precipitation this area continues to receive. The numbers in the light trap likely fail to indicate the true population as light traps generally do not greatly attract this species





The Coastal (left) and Delaware Bayshore (right) regions.
Aedes cantator, a slat floodwater species, shows similar patterns in both regions, with three distinct emergences. The more northerly coastal region shows the emergences at a slight lag from those in the Delaware Bayshore.

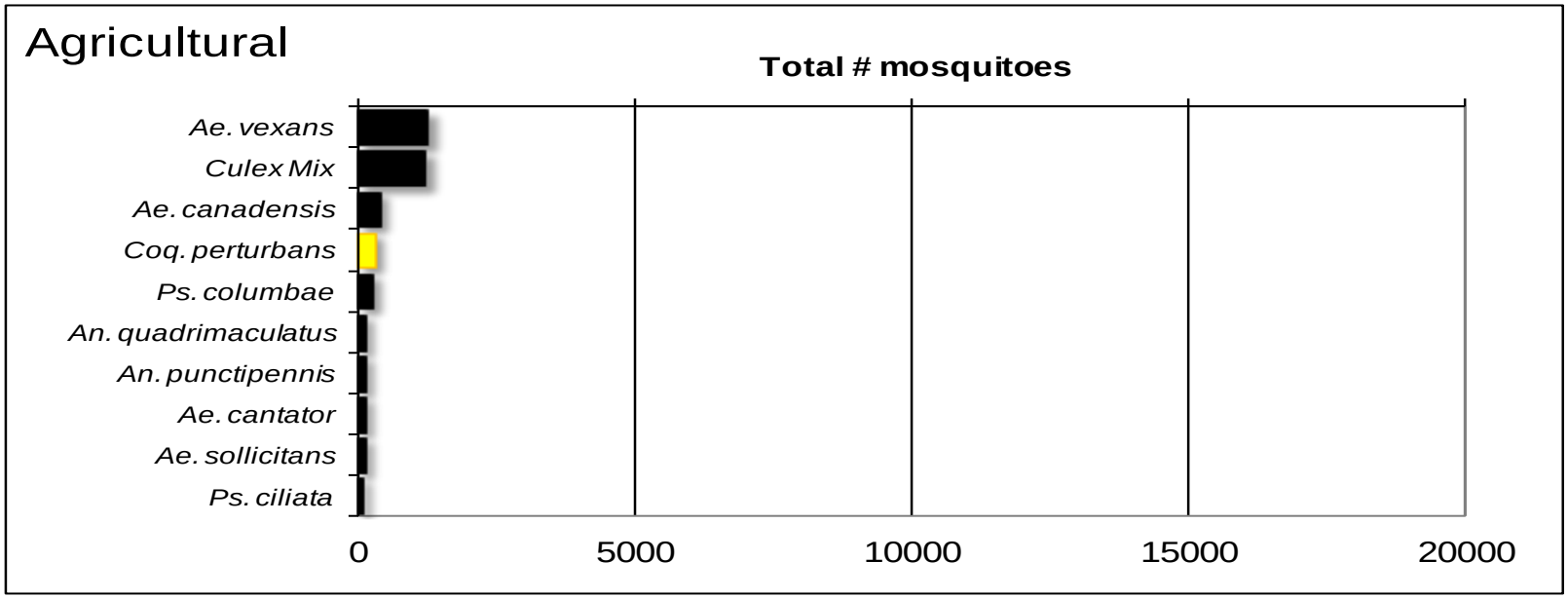


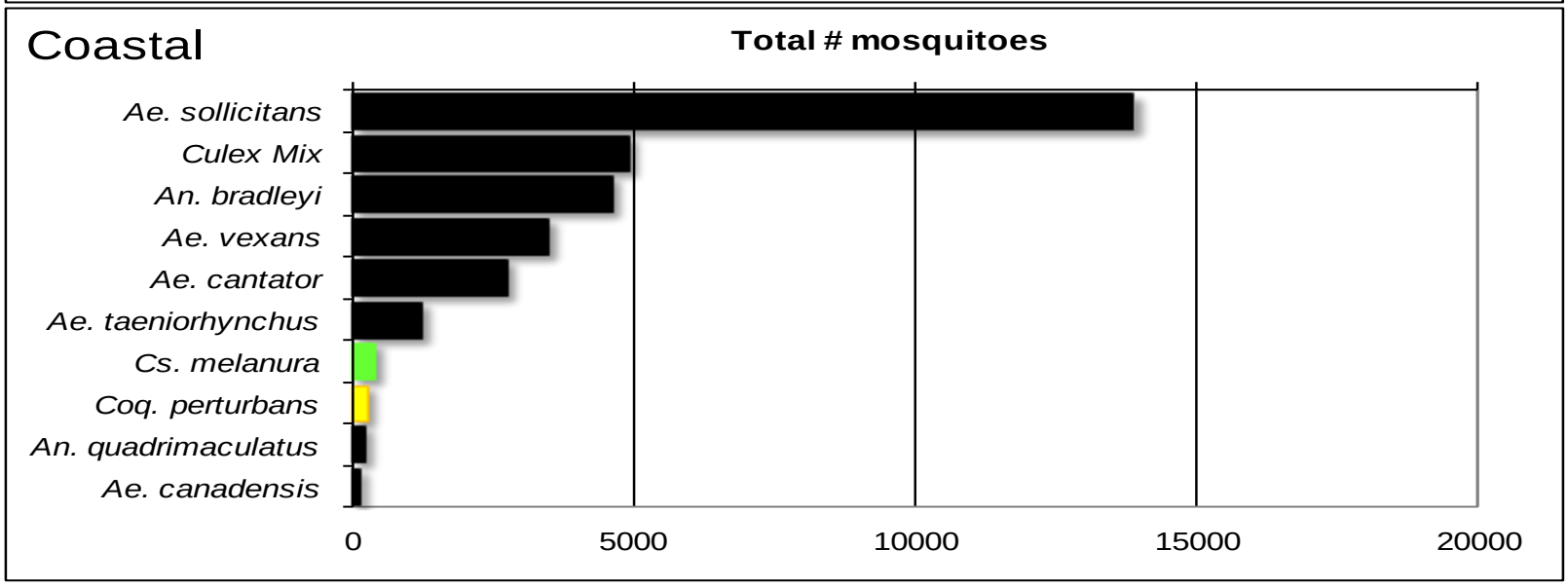
The Suburban Corridor
Aedes sticticus, a floodwater species that can re-appear later in the season like *Aedes canadensis*, has done so in this region. It is particularly noteworthy along the Passaic River floodplain, found in shaded woodland pools early in the season to more centralized areas in the floodplain later in the season.

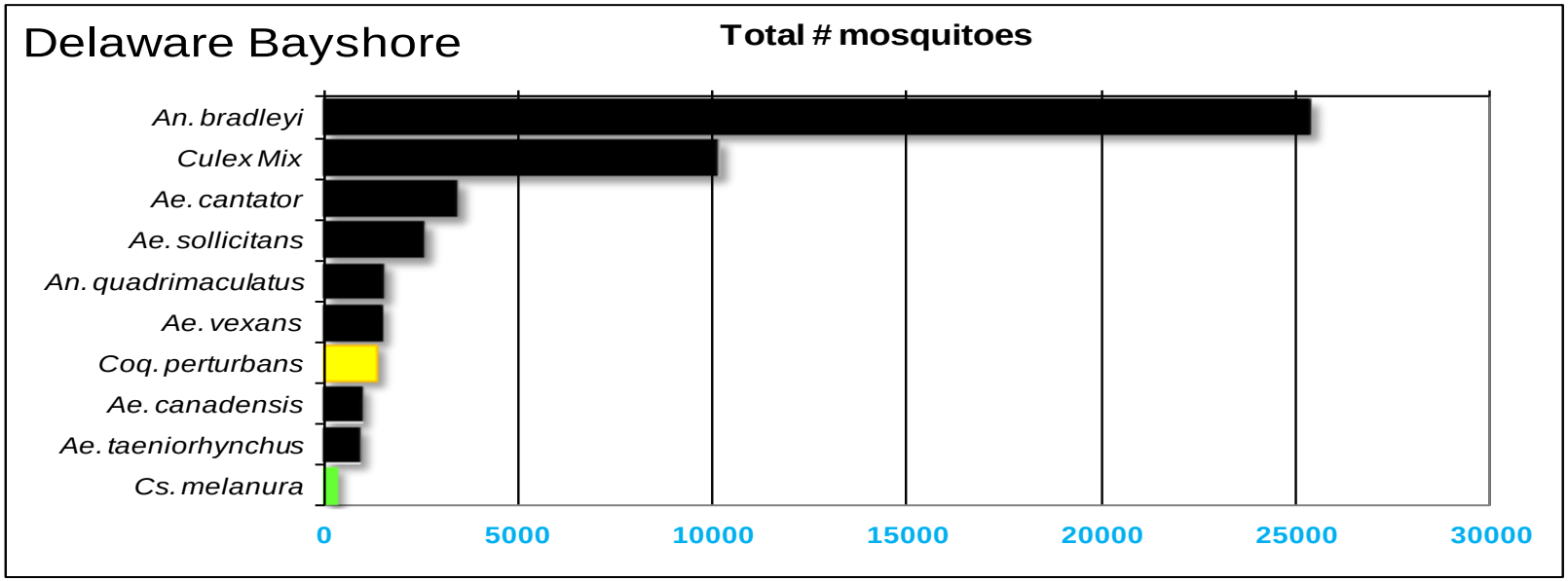
WNV *EEE*

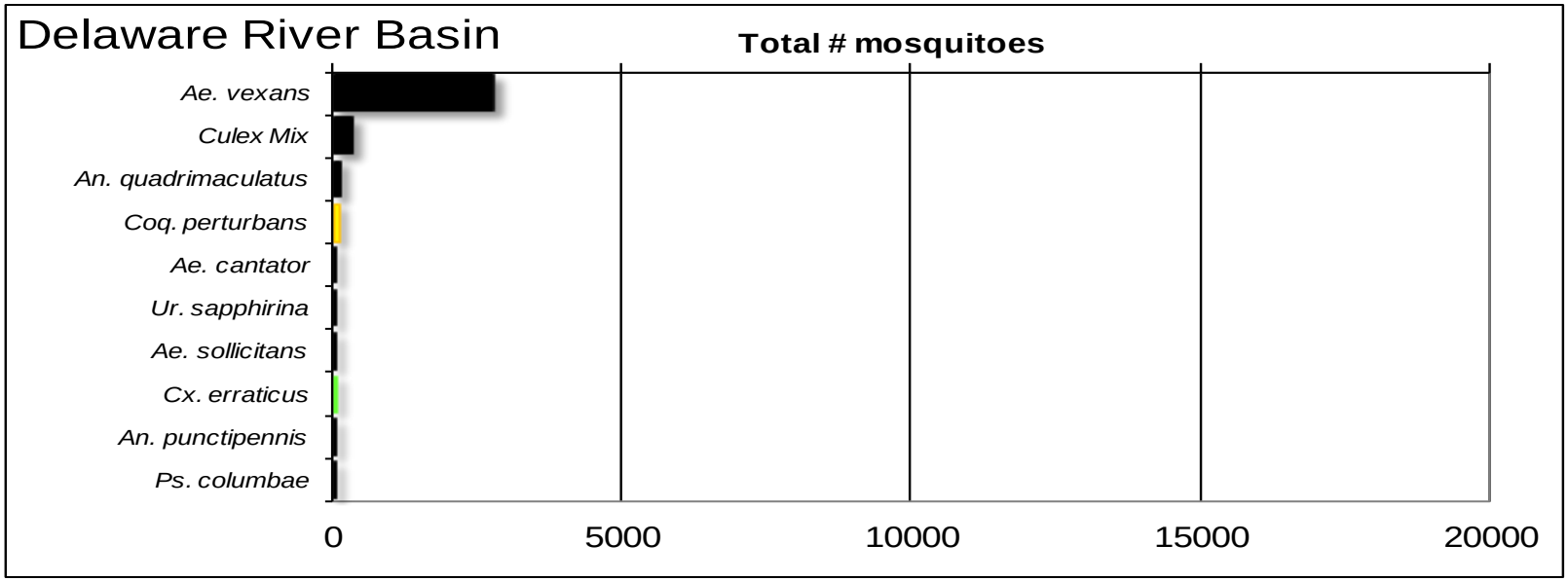
Top Ten Mosquito Species/Region - *Ae. albopictus,* *Ae. japonicus (invasives);* *Cs. melanura or Cx. erraticus* *Coq. perturbans*

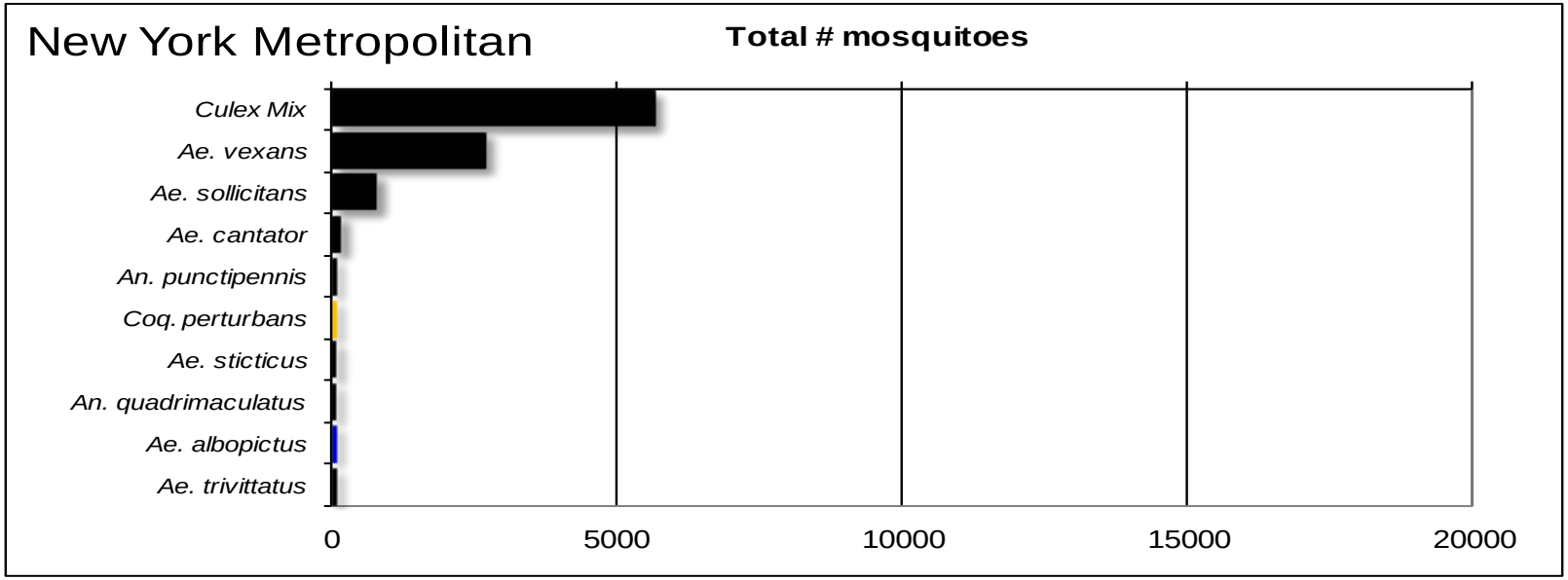
Note: In early season when fewer species are caught, graphs may show less than ten species listed.

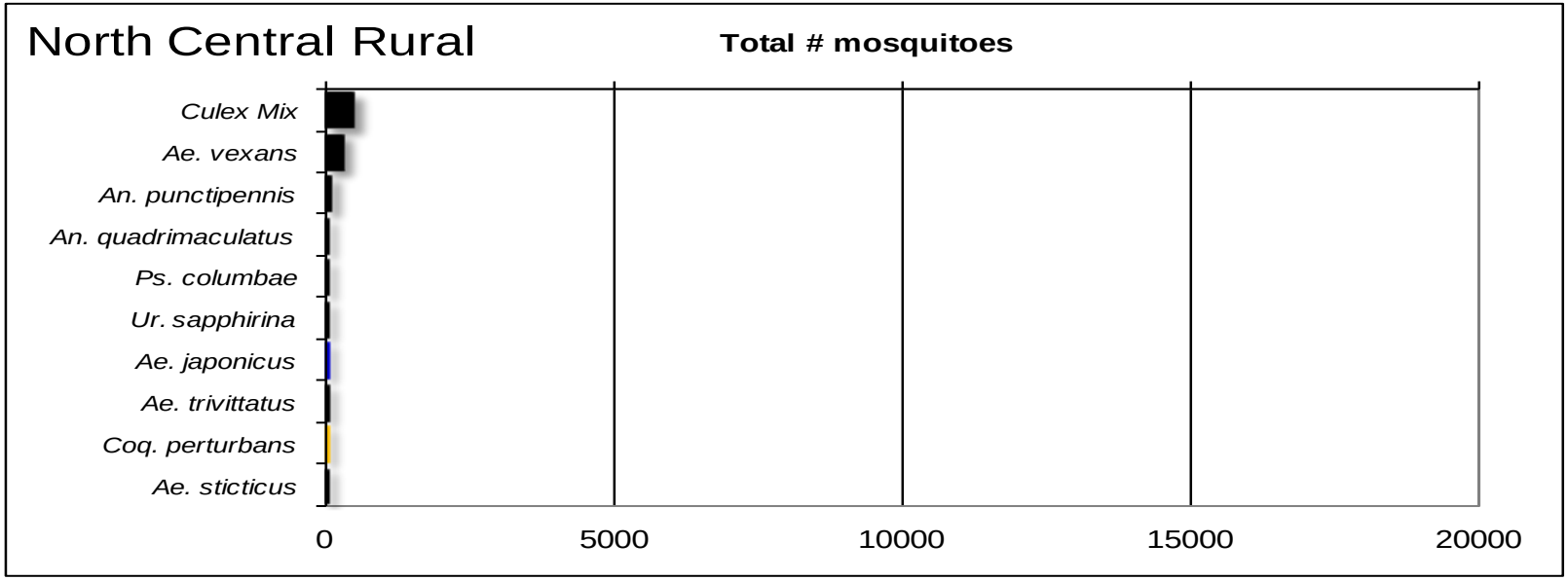


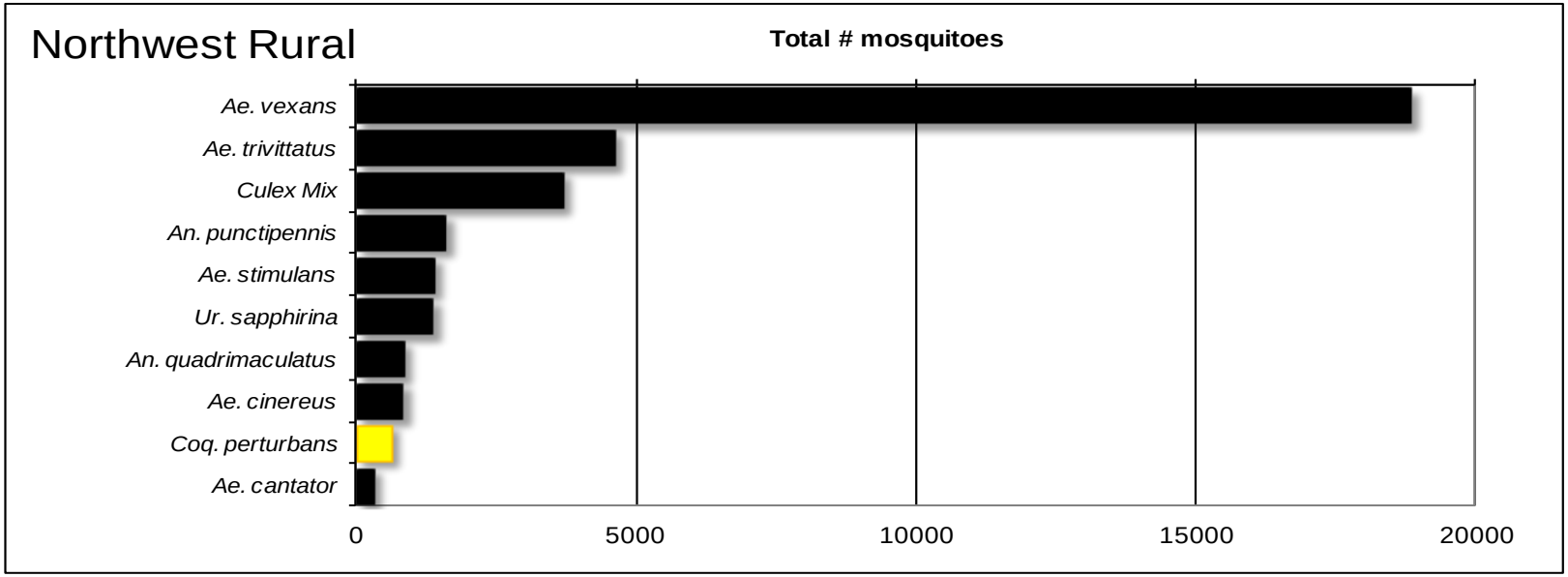


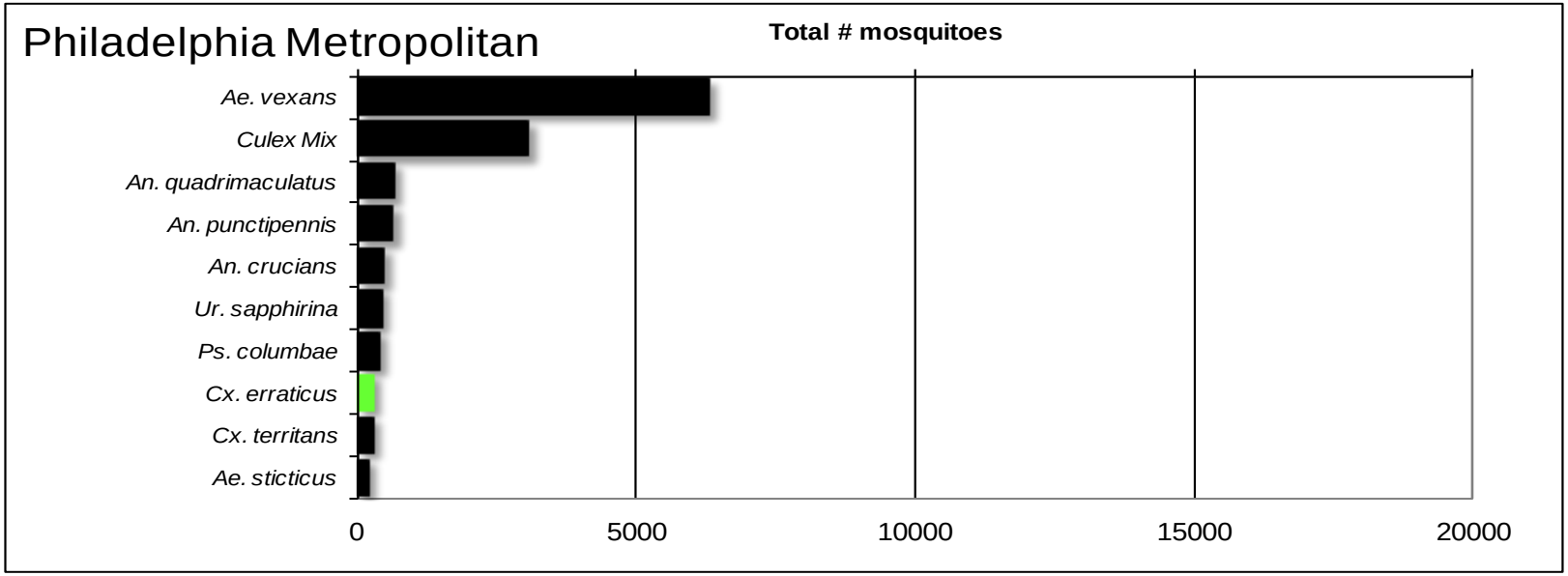

Delaware Bayshore
Total # mosquitoes
An. bradleyi
Culex Mix
Ae. cantator
Ae. sollicitans
An. quadrimaculatus
Ae. vexans
Coq. perturbans
Ae. canadensis
Ae. taeniorhynchus
Cs. melanura
0
5000
10000
15000
20000
25000
30000


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

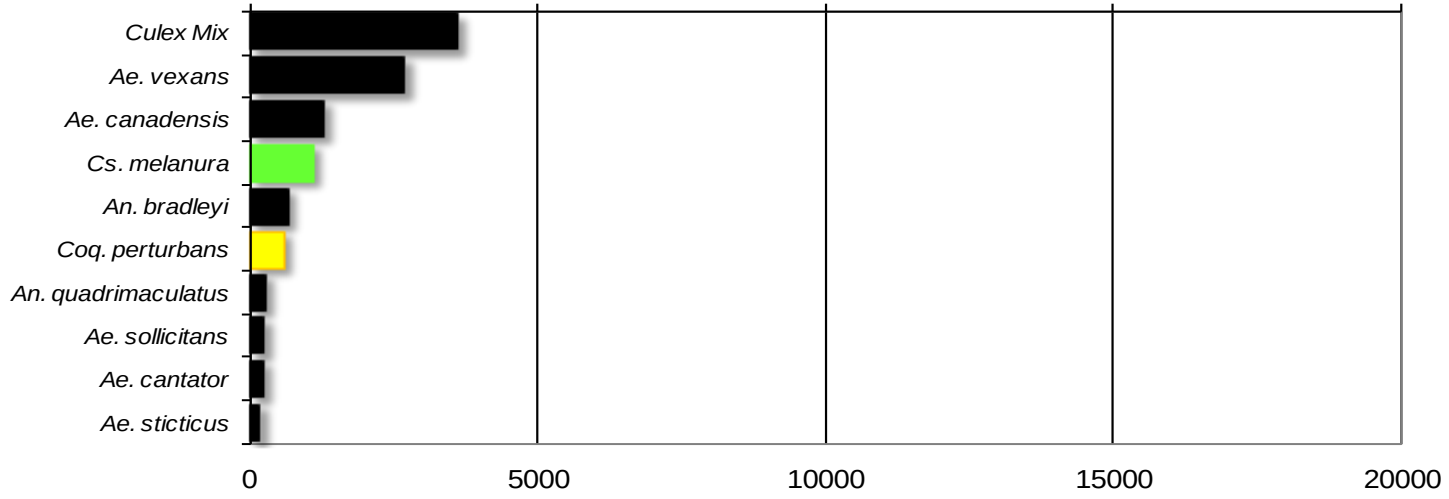

New York Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. sollicitans
Ae. cantator
An. punctipennis
Coq. perturbans
Ae. sticticus
An. quadrimaculatus
Ae. albopictus
Ae. trivittatus
0
5000
10000
15000
20000


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


Northwest Rural
Total # mosquitoes
Ae. vexans
Ae. trivittatus
Culex Mix
An. punctipennis
Ae. stimulans
Ur. sapphirina
An. quadrimaculatus
Ae. cinereus
Coq. perturbans
Ae. cantator
0
5000
10000
15000
20000


Philadelphia Metropolitan
Total # mosquitoes
Ae. vexans
Culex Mix
An. quadrimaculatus
An. punctipennis
An. crucians
Ur. sapphirina
Ps. columbae
Cx. erraticus
Cx. territans
Ae. sticticus
0
5000
10000
15000
20000

Pinelands



Suburban Corridor