RUTGERS
New Jersey Agricultural Experiment Station

NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report for 28 June to 4 July 2009, CDC Weeks 26

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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.

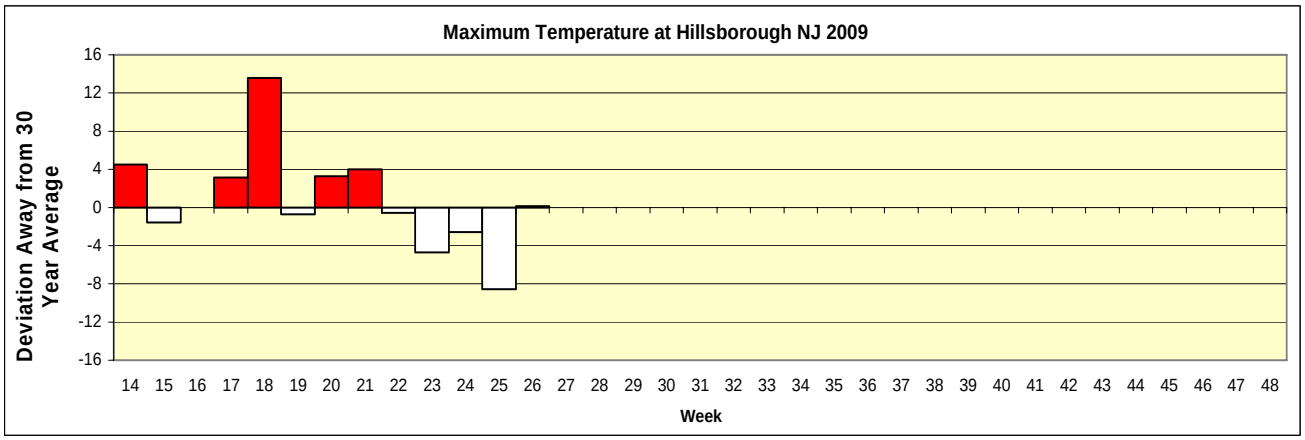
Summary table – Week 26

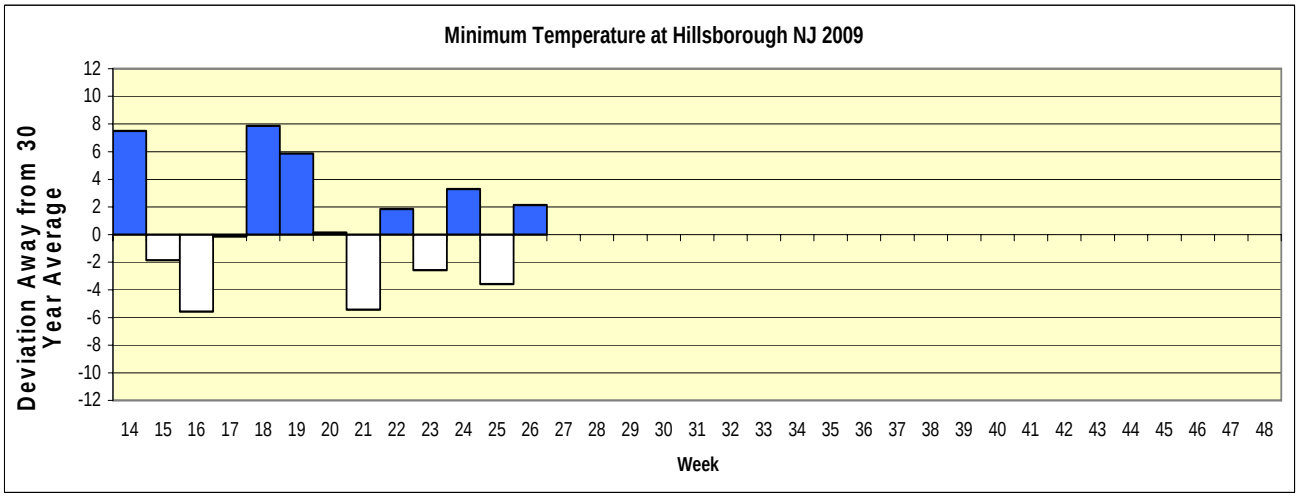
	Aedes vexans			*Culex* Mix			*Coquillettidia perturbans*			*Aedes sollicitans*		
Region	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase
Agricultural	**5.31**	**1.53**	**4**	**1.57**	**2.88**	**0**	**0.06**	**0.81**	**0**	**0.00**	**0.11**	**0**
Coastal	**7.29**	**4.72**	**2**	**8.30**	**4.88**	**2**	**0.16**	**2.13**	**0**	**4.83**	**7.56**	**0**
Delaware Bayshore	**1.62**	**2.81**	**0**	**4.62**	**15.82**	**0**	**1.10**	**5.61**	**0**	**0.76**	**21.64**	**0**
Delaware River Basin	**0.00**	**8.84**	**0**	**0.00**	**9.17**	**0**	**0.00**	**0.46**	**0**	**0.00**	**0.01**	**0**
New York Metro	**3.36**	**1.62**	**3**	**6.83**	**5.04**	**1**	**0.10**	**0.32**	**0**	**0.06**	**0.18**	**0**
North Central Rural	**0.08**	**0.67**	**0**	**0.10**	**0.47**	**0**	**0.00**	**0.07**	**0**	**0.00**	**0.00**	**0**
Northwest Rural	**11.40**	**3.60**	**3**	**11.91**	**5.22**	**2**	**5.86**	**1.46**	**4**	**0.00**	**0.00**	**0**
Philadelphia Metro	**14.07**	**7.98**	**2**	**3.74**	**7.69**	**0**	**0.17**	**2.18**	**0**	**0.00**	**0.00**	**0**
Pinelands	**3.69**	**1.46**	**4**	**2.78**	**2.59**	**1**	**0.16**	**1.52**	**0**	**0.03**	**0.10**	**0**
Suburban Corridor	**2.65**	**2.50**	**1**	**1.34**	**2.06**	**0**	**0.01**	**1.17**	**0**	**0.04**	**<0.01**	**4**

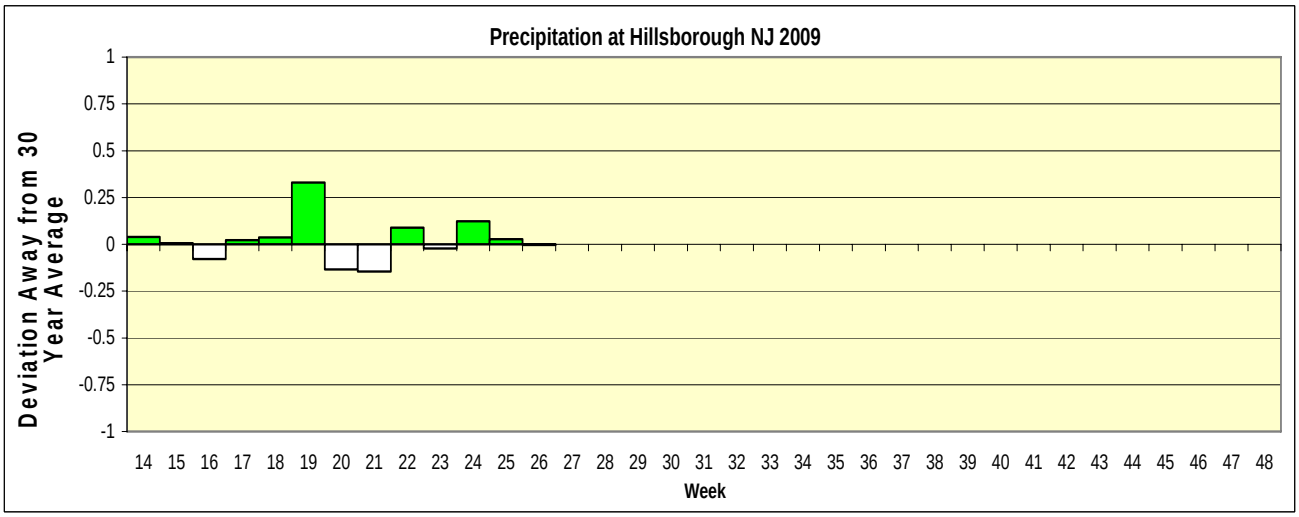
*Averages represent data from, at most, the previous 5 years. Increase is a scale of current values from historical values where no difference or a decrease is represented by 0 (blue), up to 50% greater difference by 1 (green), up to 100% greater difference by 2 (yellow), up to 150% greater difference 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: While daily rainfall has stopped for the moment, the amount of rainfall the state has received overall has provided considerable habitat for both fresh and salt floodwater species. Freshwater species such as *Aedes vexans* has responded with seven of the ten regions showing populations at or above historical trends. Local *Coquillettidia perturbans* populations have increased in the Northwest Rural region. The increase of *Aedes sollicitans* in the Suburban Corridor should be noted that while the change is seen as a "4," the change involve very low numbers.

Climate Deviations



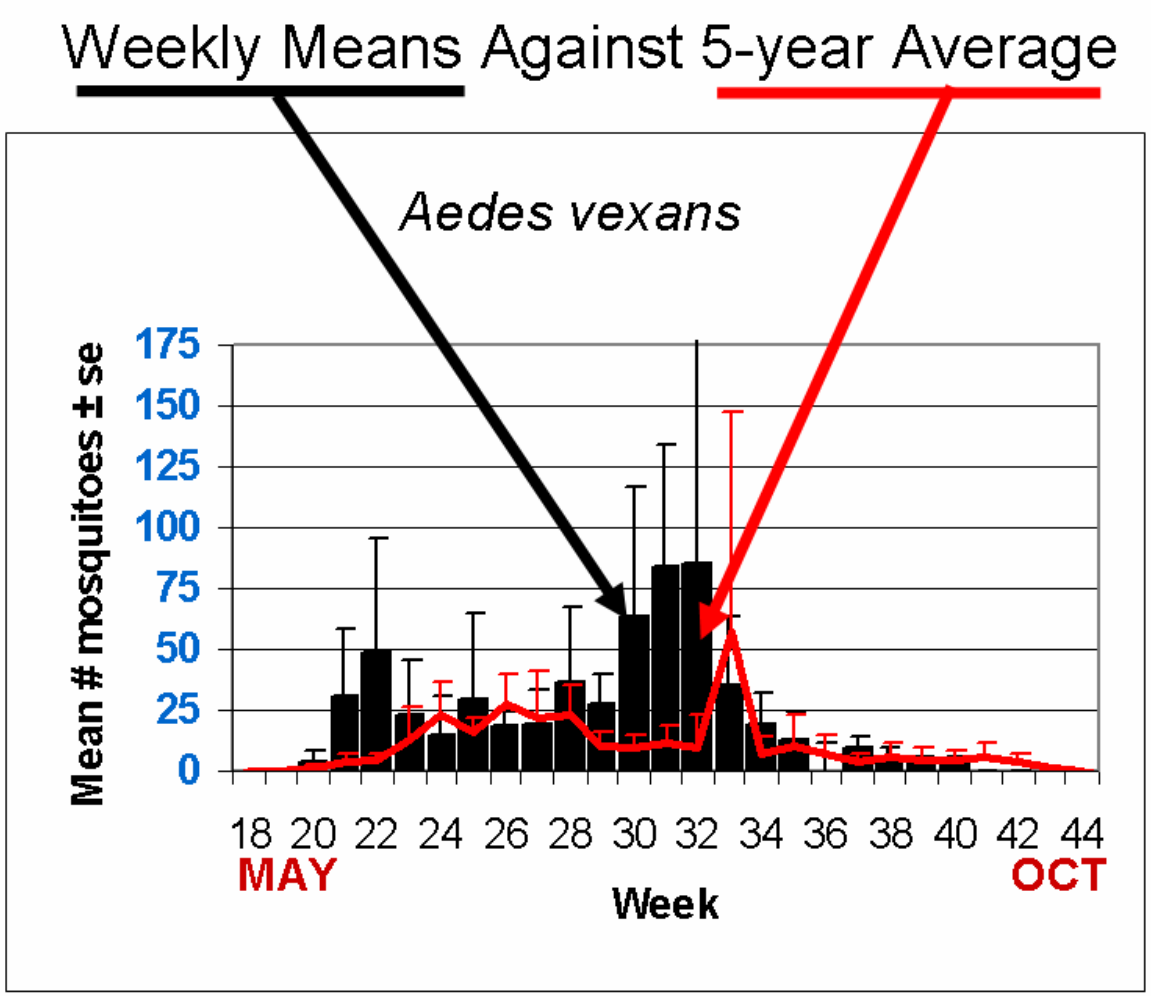




The figures show the average maximum temperature, minimum temperature and precipitation deviations from 30 year averages. Current data are from the Hillsborough NJ weather station (a station close to central NJ which recorded all three parameters and was available online at the NJ state climatologist) while historical data was from the New Brunswick weather station. Color bars above the zero line indicate warmer maximum or minimum temperatures and wetter conditions while white bars indicate cooler temperatures and dryer conditions.

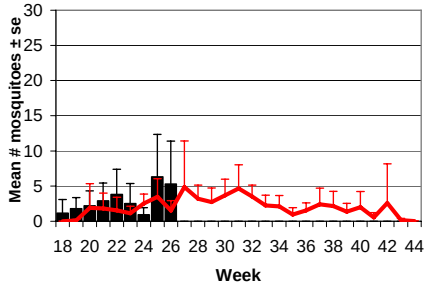
Data from: http://climate.rutgers.edu/njwxnet/index.php

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 this week are from Atlantic, Bergen, Camden, Cape May, Monmouth, Morris, Ocean, Somerset, Sussex, Union and Warren counties. Note: County data is sent in at a variety of times during the week.

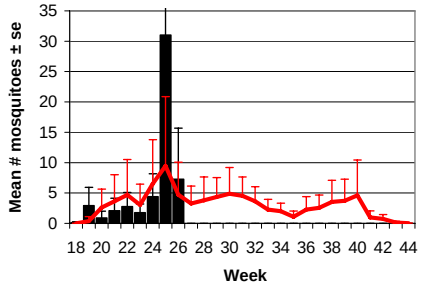


Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

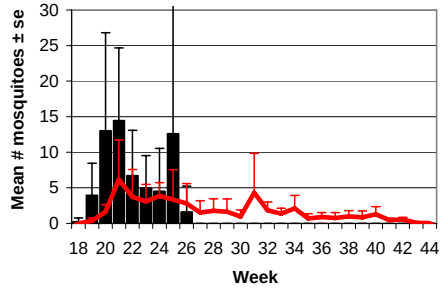
Agricultural



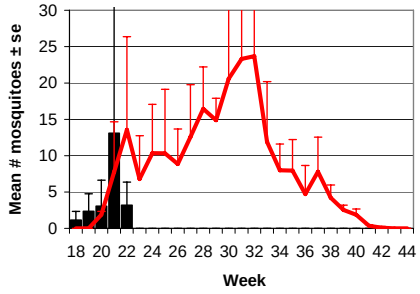
Coastal



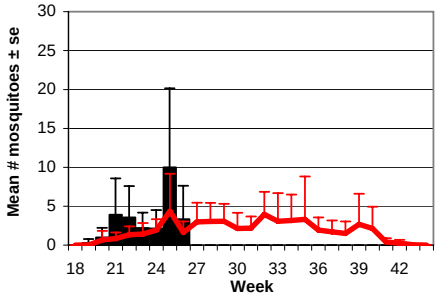
Delaware Bayshore



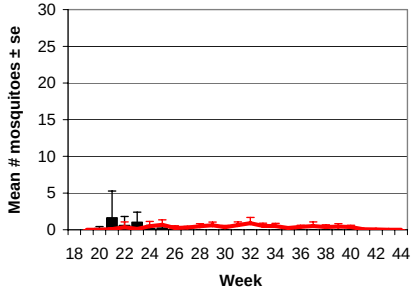
Delaware River Basin



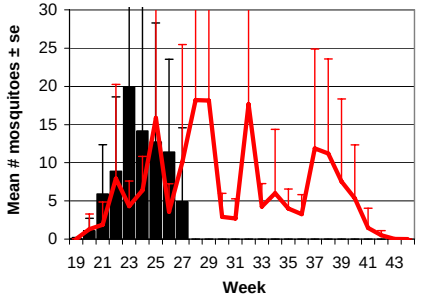
New York Metro



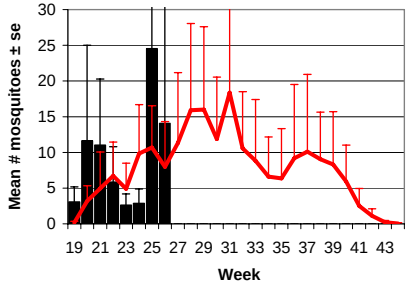
North Central Rural



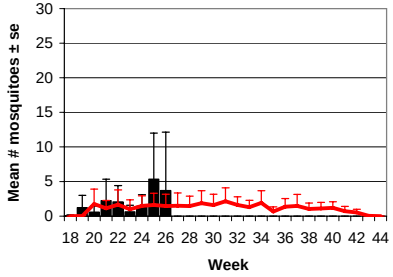
Northwestern Rural



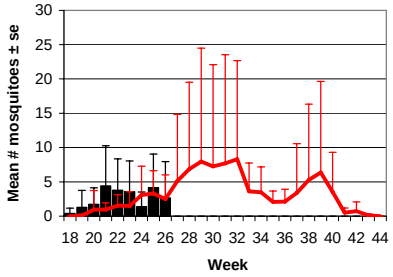
Philadelphia Metro



Pinelands



Suburban Corridor

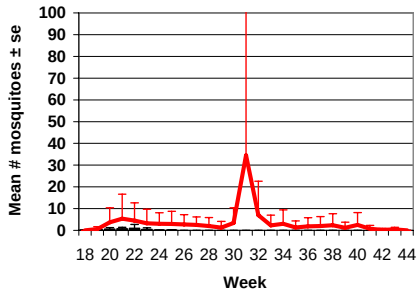


Comments

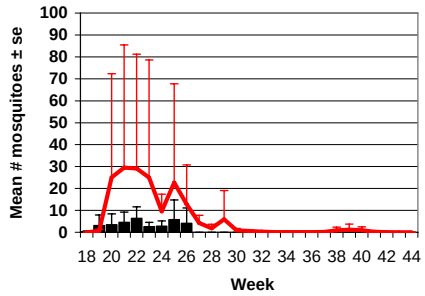
Aedes vexans populations have been appearing throughout the state in response to abundant floodwater habitats forming after substantial rainfall has occurred. This past June has been the 6th wettest June since 1895, according to the state climatologist. At the same time, June was also cooler that average. This cooler June may have delayed some floodwater species emergences, but for only so long. Large emergences particularly toward the end of the month has occurred in the Coastal, Delaware Bayshore, New York Metro, Northwestern, Philadelphia Metro and the Pinelands. It should be noted that for the current week, not all data may be represented in the plotted value as any particular county may have sent in data that only shows the first day or two of the current week. Values generally increase for the next report, and thus the week *before* the current week is usually the more accurate.

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

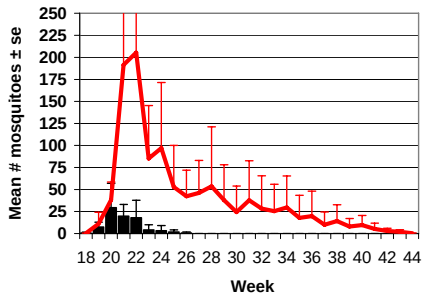
Agricultural



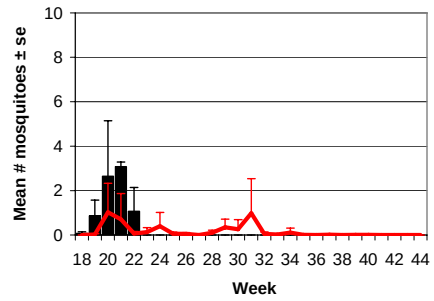
Coastal



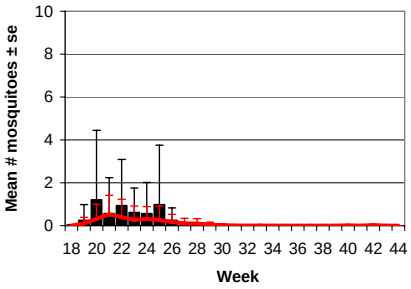
Delaware Bayshore



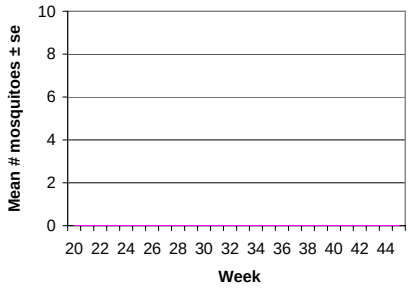
Delaware River Basin



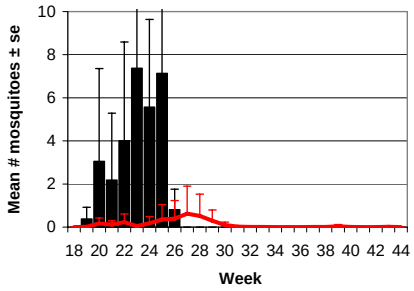
New York Metro



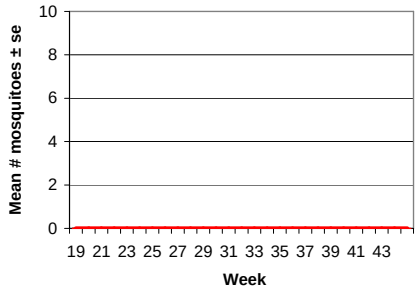
North Central Rural



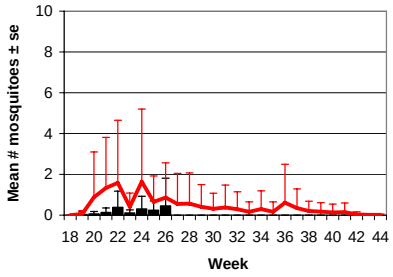
Northwestern Rural



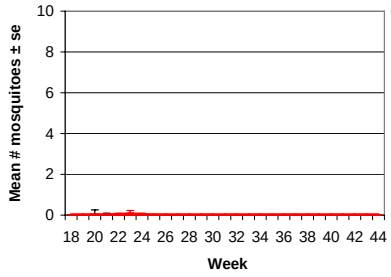
Philadelphia Metro



Pinelands



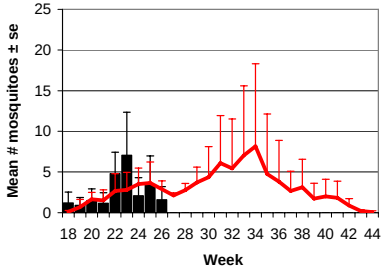
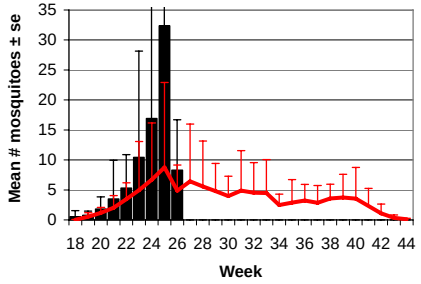
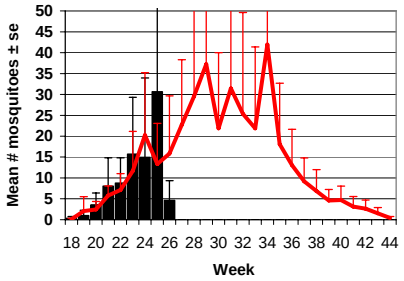
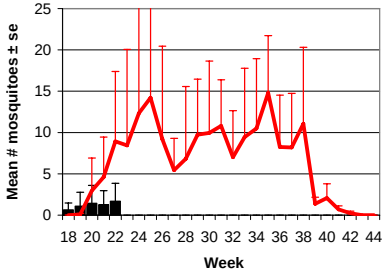
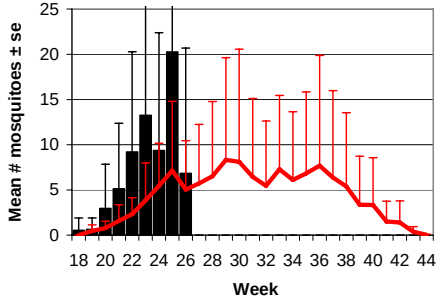
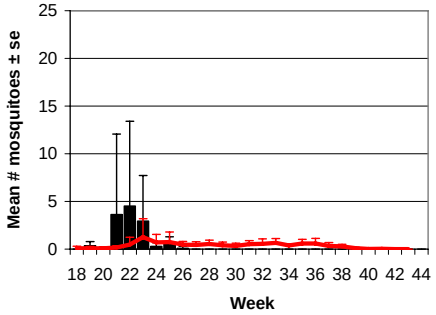
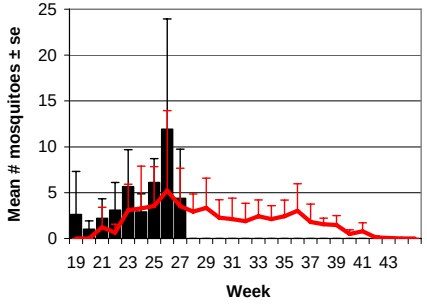
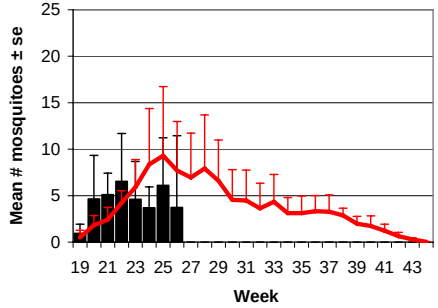
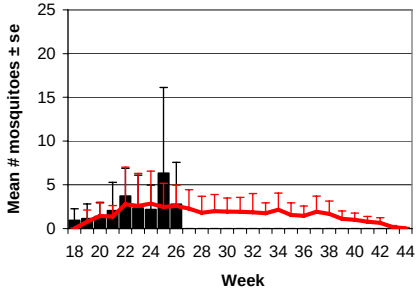
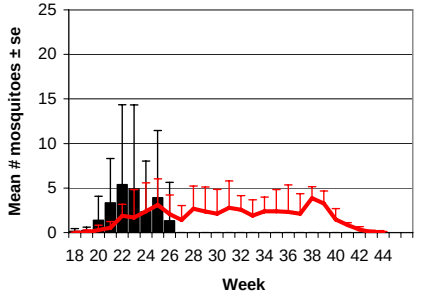
Suburban Corridor



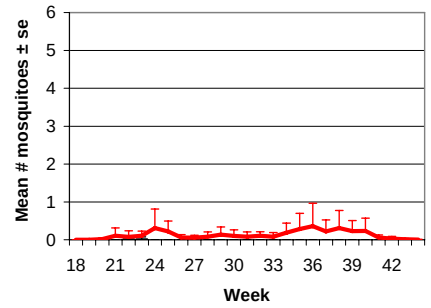
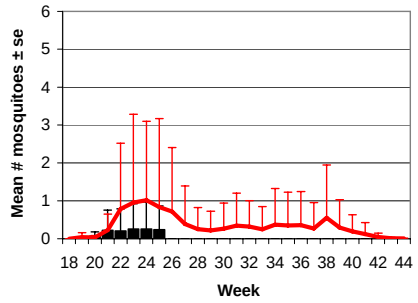
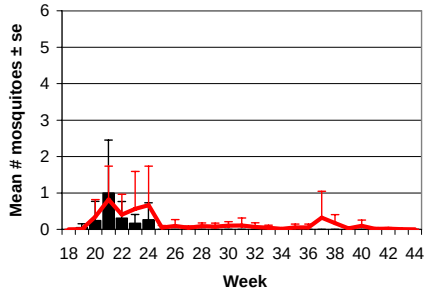
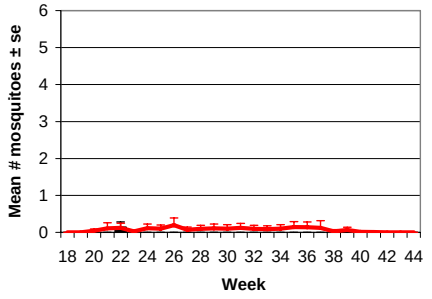
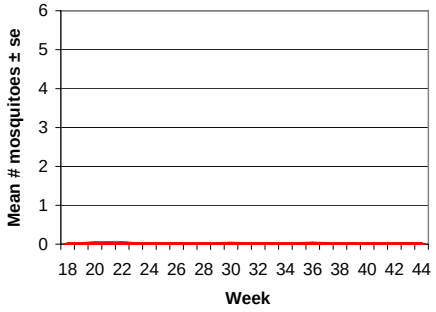
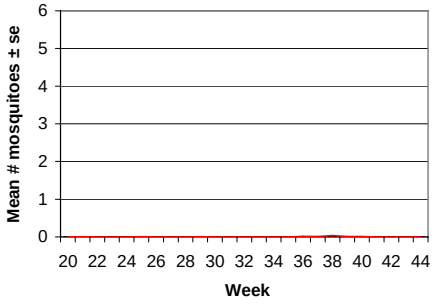
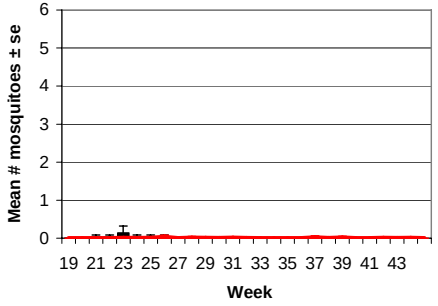
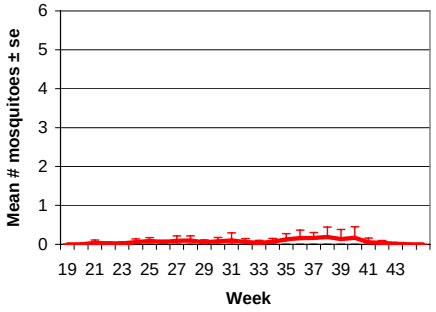
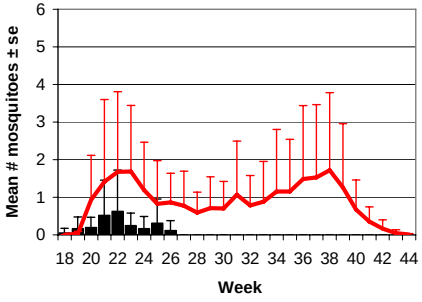
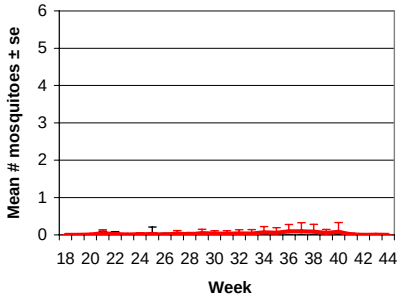
Comments

Aedes cantator populations in the Northwest Rural region continue to flourish. Historical data suggests that *Ae. cantator* populations would be on the decline around this time of year. They may reappear at the end of summer briefly, as indicated by the Coastal historical trends.

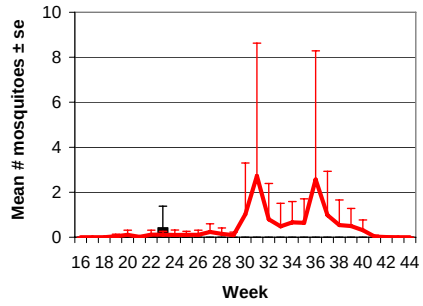
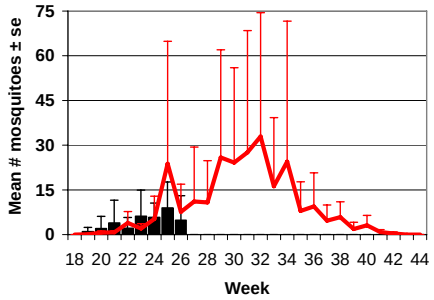
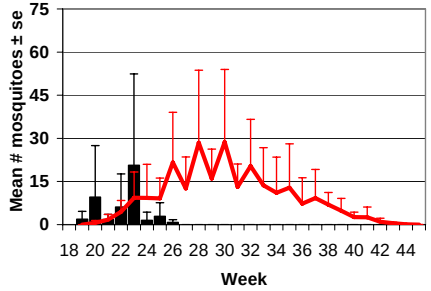
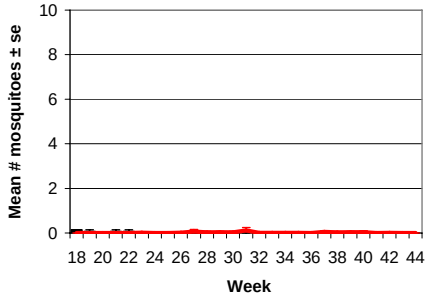
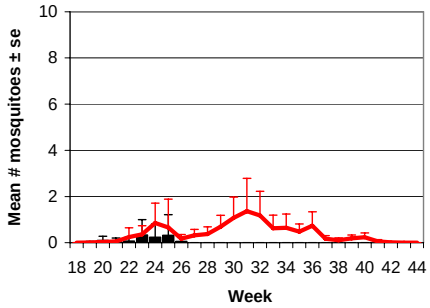
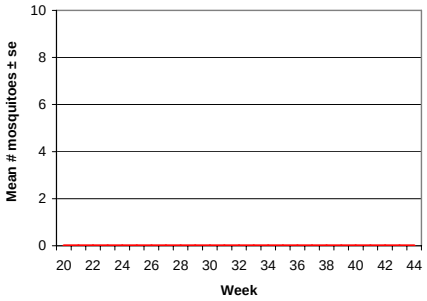
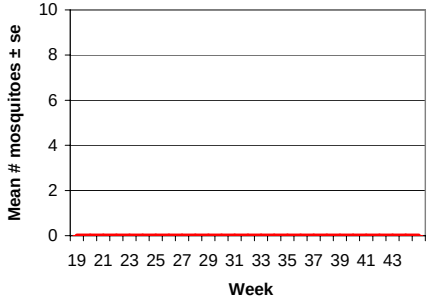
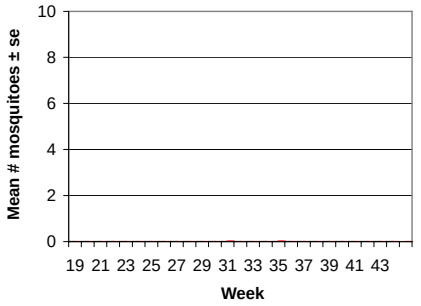
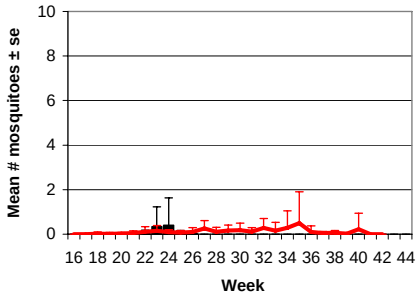
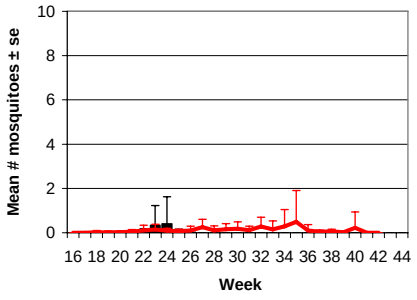
Culex Mix – Permanent Water Species
Multivoltine *Culex*/*Anopheles* (*Cx. pipiens* Type)

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Culex* populations from both the Coastal and New York Metropolitan regions are showing similar patterns with higher than historical trends for the past several weeks. The previous week also showed larger populations in the Delaware Bayshore and Northwest Rural regions. If the trend of the past weeks continue, then the Coastal and New York Metropolitan regions may develop significantly large populations of the enzootic vectors (*Culex pipiens* and *Cx. restuans*) of West Nile. *Culex salinarius*, also one of the species in the *Culex* Mix, is more opportunistic in its bloodmeal hosts, selecting both avian and mammalian targets.	

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*, the enzootic ornithophilic vector of eastern equine encephalitis, continue to show population levels that track below historic values for both the Coastal and Pineland regions.	

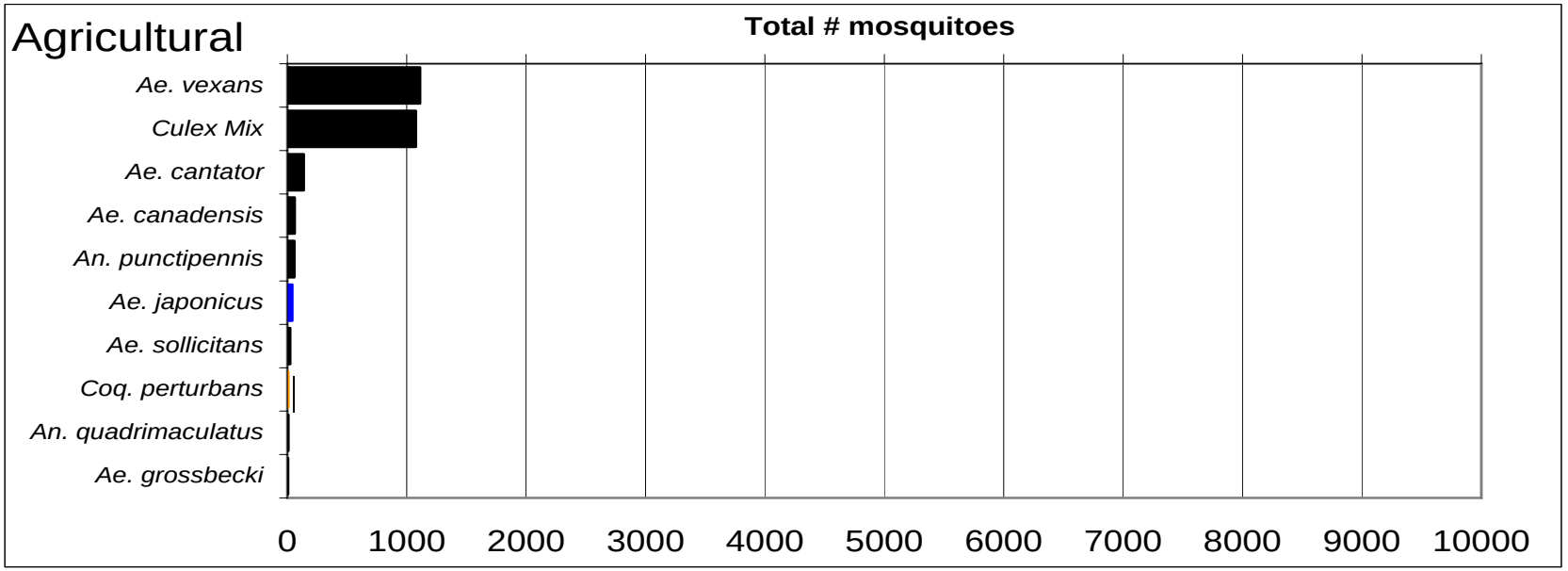
Aedes sollicitans - Salt Floodwater Species
Multivoltine Aedine (*Ae. sollicitans* Type)

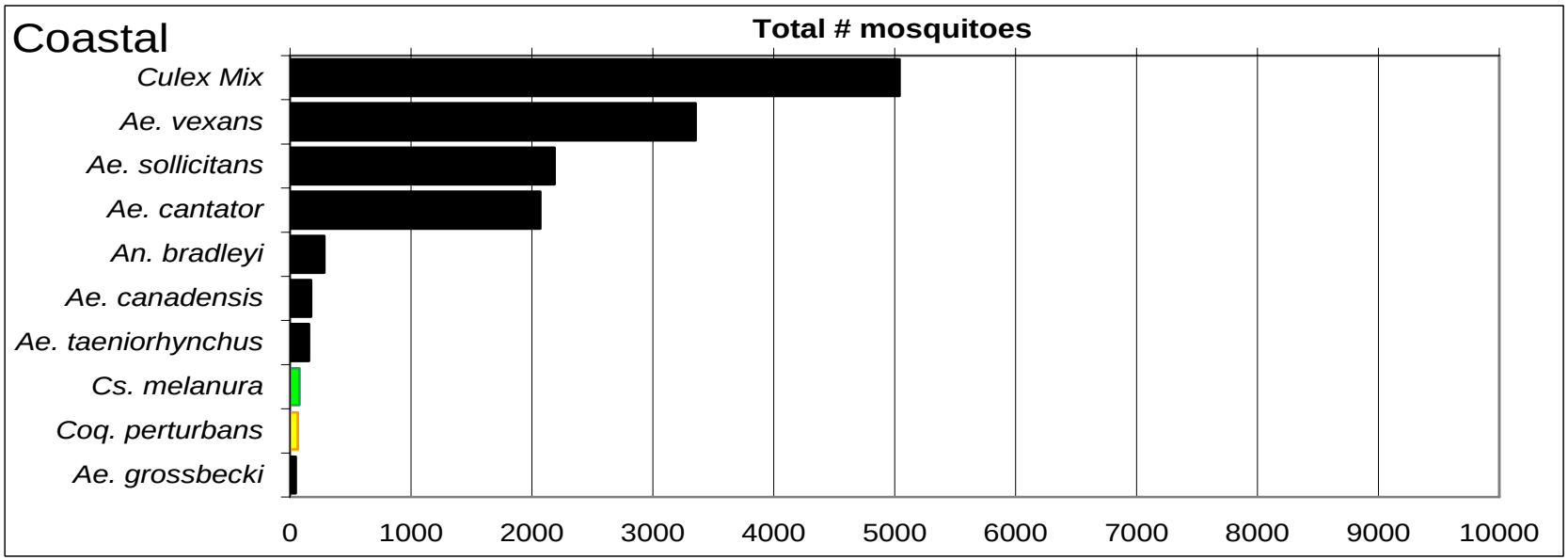
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes sollicitans* should be increasing as the second emergence begins, building population levels toward peak numbers in the Coastal and Delaware Bayshore regions. Variations in population levels seen likely include both increases due to the combined effects of tidal action and rainfall while decreases in numbers are from mosquito control activities. Next Full Moon: 6 August	

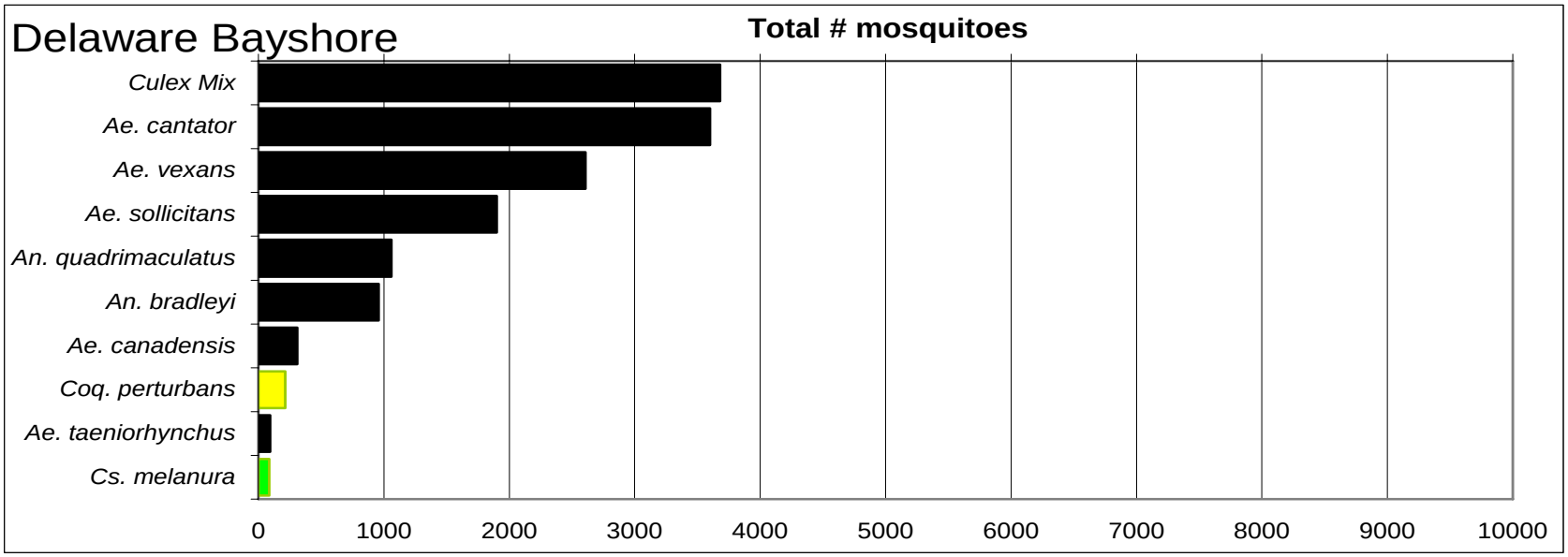
WNV *EEE*

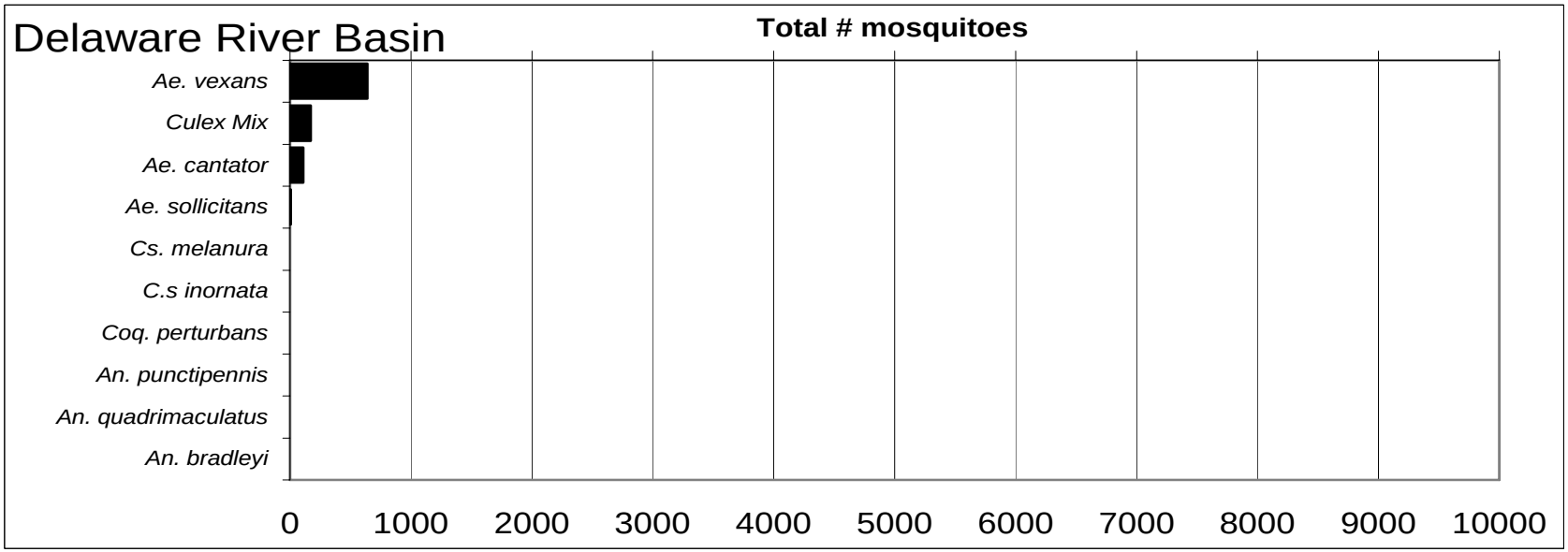
Top Ten Mosquito Species/Region - *Ae. albopictus,* *Ae. japonicus (invasives);* *Cs. melanura or Cx. erraticus* *Coq. perturbans*

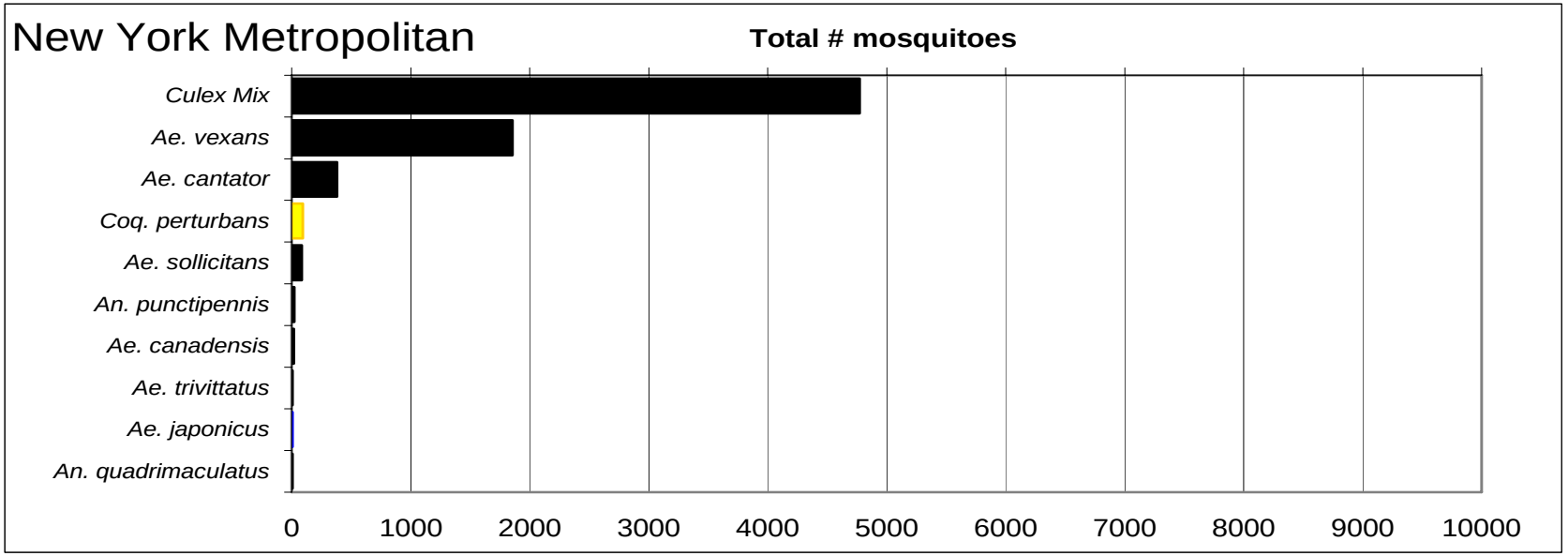
Note: In early season when fewer species are caught, graphs may show less than ten species listed.

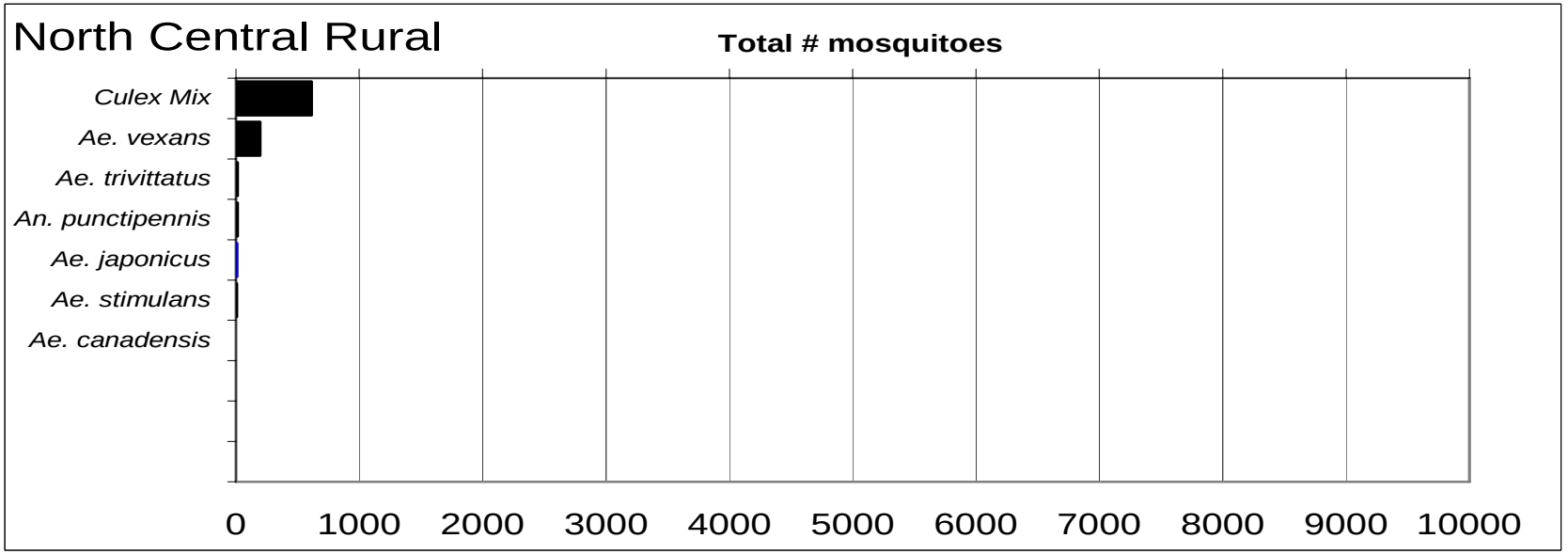


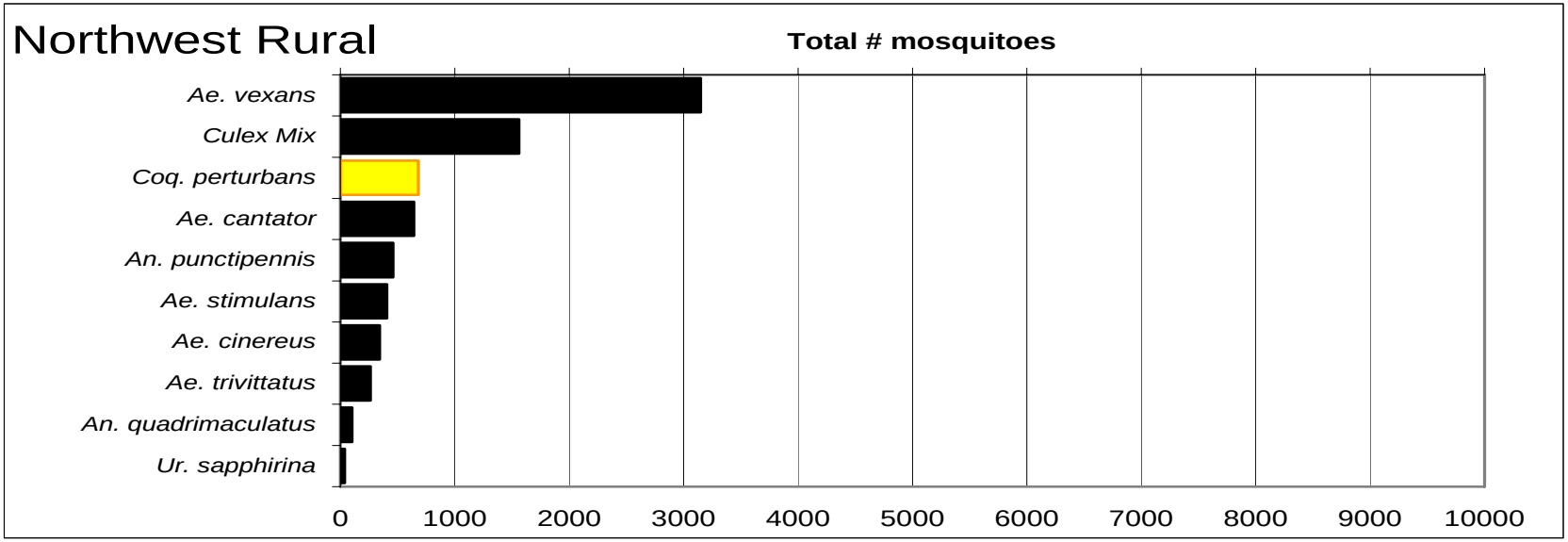


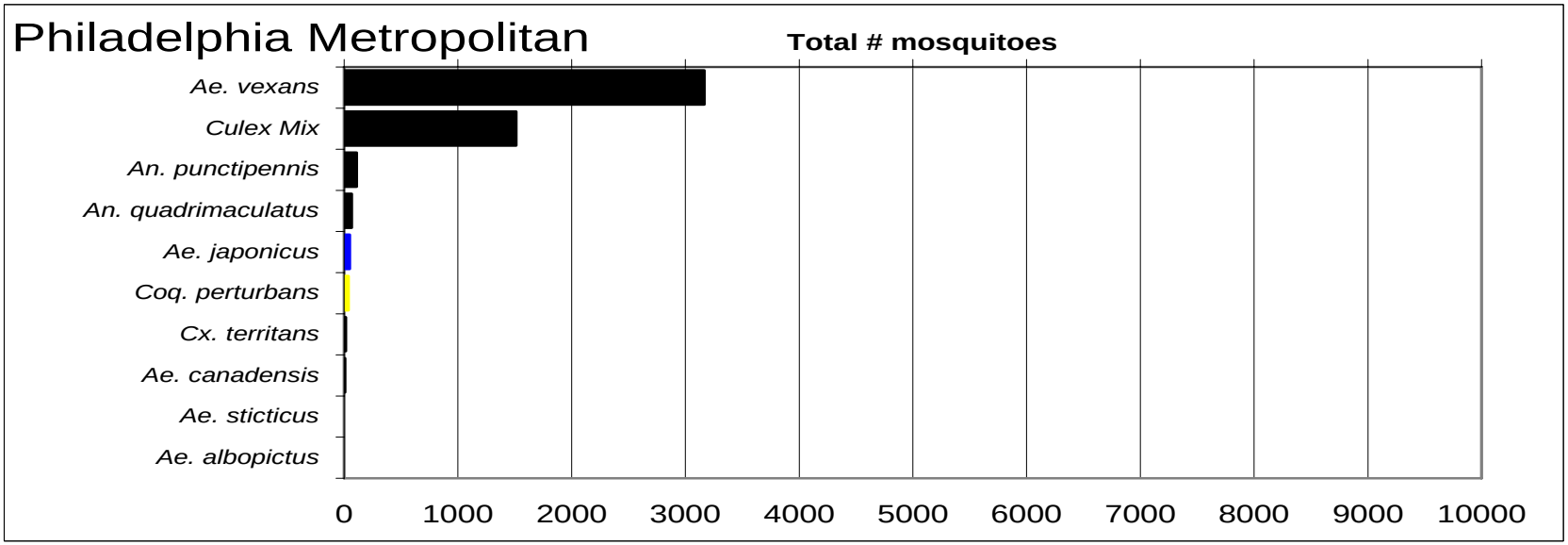

Delaware Bayshore
Total # mosquitoes
Culex Mix
Ae. cantator
Ae. vexans
Ae. sollicitans
An. quadrimaculatus
An. bradleyi
Ae. canadensis
Coq. perturbans
Ae. taeniorhynchus
Cs. melanura
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


Delaware River Basin
Total # mosquitoes
Ae. vexans
Culex Mix
Ae. cantator
Ae. sollicitans
Cs. melanura
C.s inornata
Coq. perturbans
An. punctipennis
An. quadrimaculatus
An. bradleyi
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

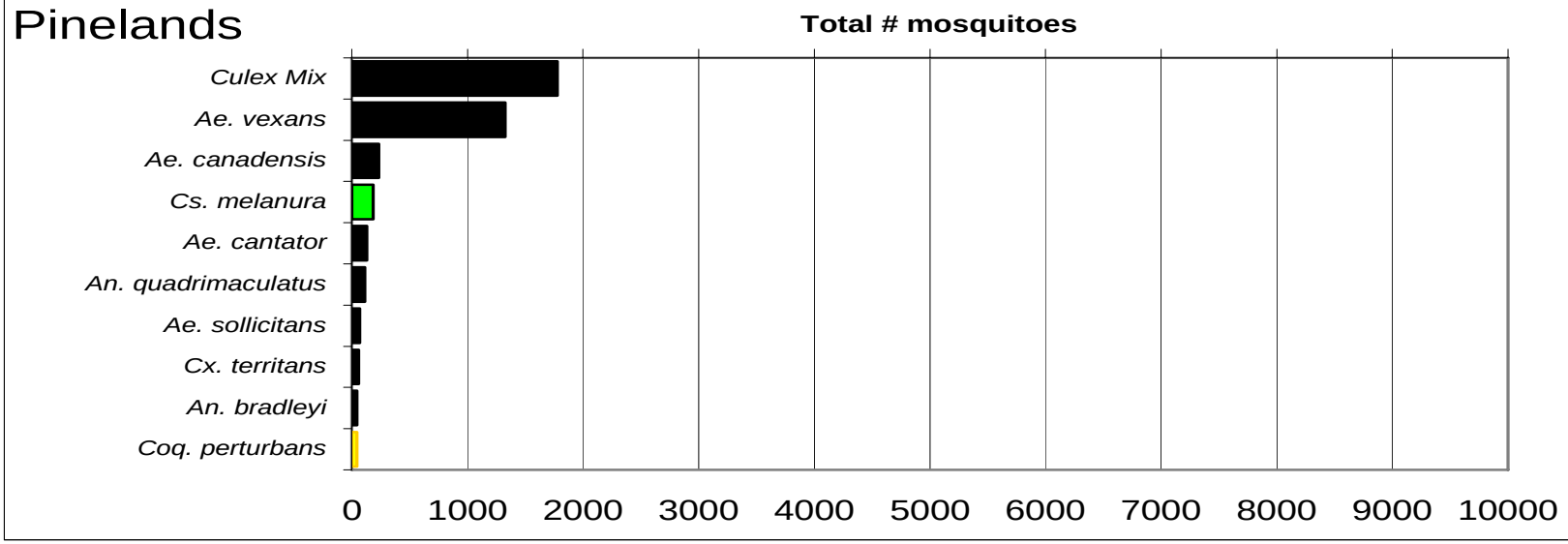

New York Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. cantator
Coq. perturbans
Ae. sollicitans
An. punctipennis
Ae. canadensis
Ae. trivittatus
Ae. japonicus
An. quadrimaculatus
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


North Central Rural
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. trivittatus
An. punctipennis
Ae. japonicus
Ae. stimulans
Ae. canadensis
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


Northwest Rural
Total # mosquitoes
Ae. vexans
Culex Mix
Coq. perturbans
Ae. cantator
An. punctipennis
Ae. stimulans
Ae. cinereus
Ae. trivittatus
An. quadrimaculatus
Ur. sapphirina
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


Philadelphia Metropolitan
Total # mosquitoes
Ae. vexans
Culex Mix
An. punctipennis
An. quadrimaculatus
Ae. japonicus
Coq. perturbans
Cx. territans
Ae. canadensis
Ae. sticticus
Ae. albopictus
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

Pinelands



Suburban Corridor