RUTGERS
New Jersey Agricultural Experiment Station

NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report for 2 August to 8 August 2009, CDC Weeks 31

Prepared by Lisa M. Reed, Scott Crans, Dina Fonseca and Randy Gaugler
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.

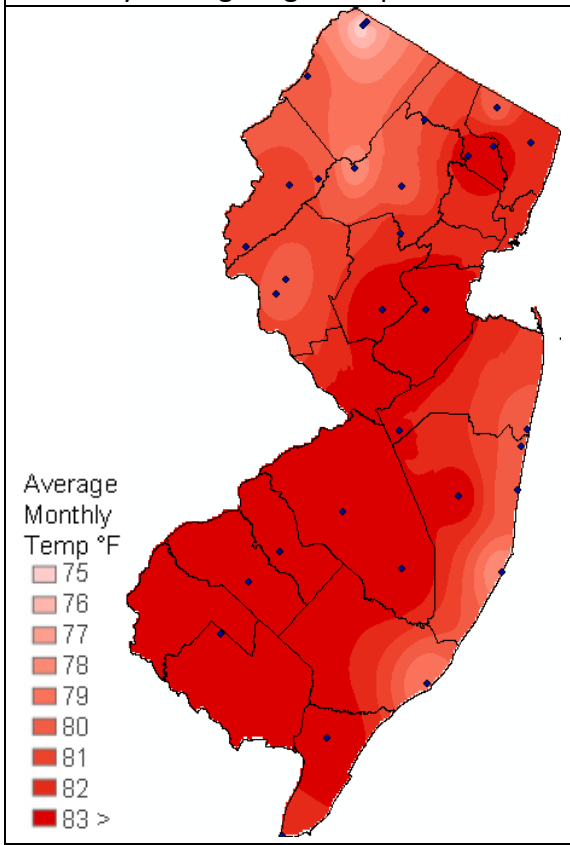
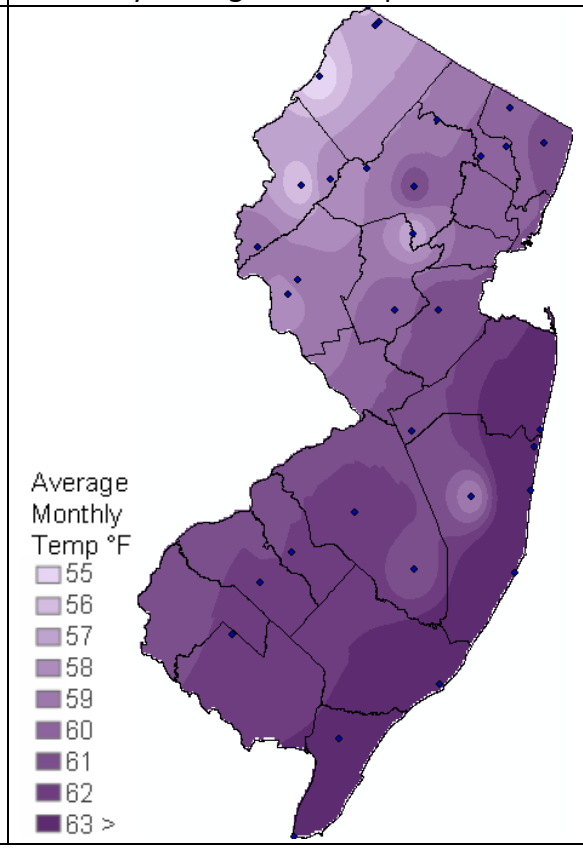
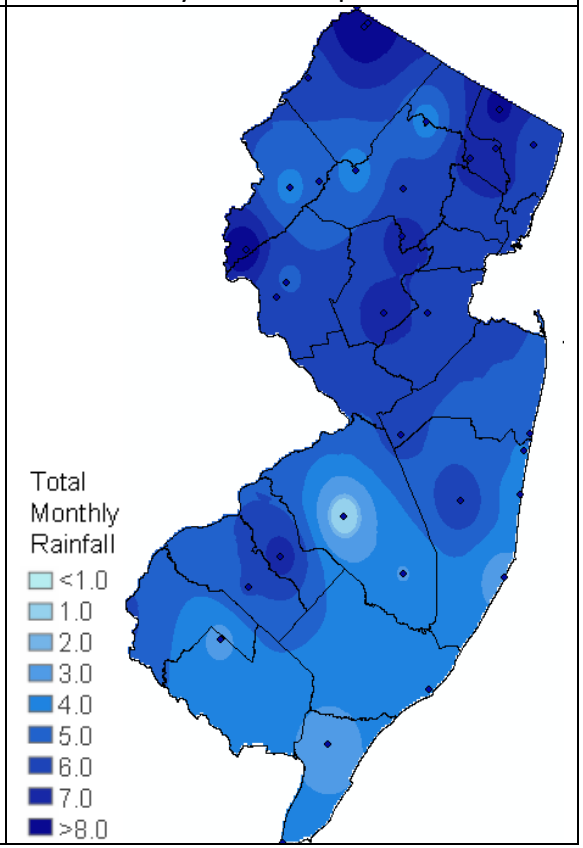
Summary table – Week 31

	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	**1.02**	**7.77**	**0**	**1.14**	**9.25**	**0**	**0.05**	**0.21**	**0**	**0.24**	**2.69**	**0**
Coastal	**1.68**	**6.64**	**0**	**1.40**	**4.92**	**0**	**0.20**	**0.64**	**0**	**5.84**	**44.69**	**0**
Delaware Bayshore	**0.51**	**5.46**	**0**	**2.66**	**48.52**	**0**	**0.00**	**4.09**	**0**	**0.23**	**12.93**	**0**
Delaware River Basin	**0.00**	**27.90**	**0**	**0.00**	**14.98**	**0**	**0.00**	**0.42**	**0**	**0.00**	**0.15**	**0**
New York Metro	**5.40**	**2.70**	**3**	**6.76**	**5.47**	**1**	**0.06**	**0.06**	**0**	**0.33**	**2.16**	**0**
North Central Rural	**0.00**	**1.04**	**0**	**0.02**	**1.42**	**0**	**0.00**	**0.01**	**0**	**0.00**	**0.00**	**0**
Northwest Rural	**7.11**	**4.92**	**1**	**3.60**	**9.82**	**0**	**1.57**	**0.13**	**4**	**0.00**	**0.00**	**0**
Philadelphia Metro	**6.76**	**24.76**	**0**	**1.52**	**5.33**	**0**	**0.00**	**0.21**	**0**	**0.00**	**0.00**	**0**
Pinelands	**0.17**	**2.83**	**0**	**0.69**	**4.97**	**0**	**0.13**	**0.75**	**0**	**0.00**	**0.30**	**0**
Suburban Corridor	**1.21**	**9.25**	**0**	**1.79**	**3.21**	**0**	**0.12**	**0.36**	**0**	**0.01**	**<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: *Coquillettidia perturbans* and *Aedes sollicitans* activities increased (from minimal levels for *Ae. sollicitans* in the Suburban Corridor) this last week. *Aedes vexans* activity was also high in the New York Metropolitan area, as were *Culex* species.

Climate Factors

July Average High Temperature	July Average Low Temperature	July Total Precipitation
		

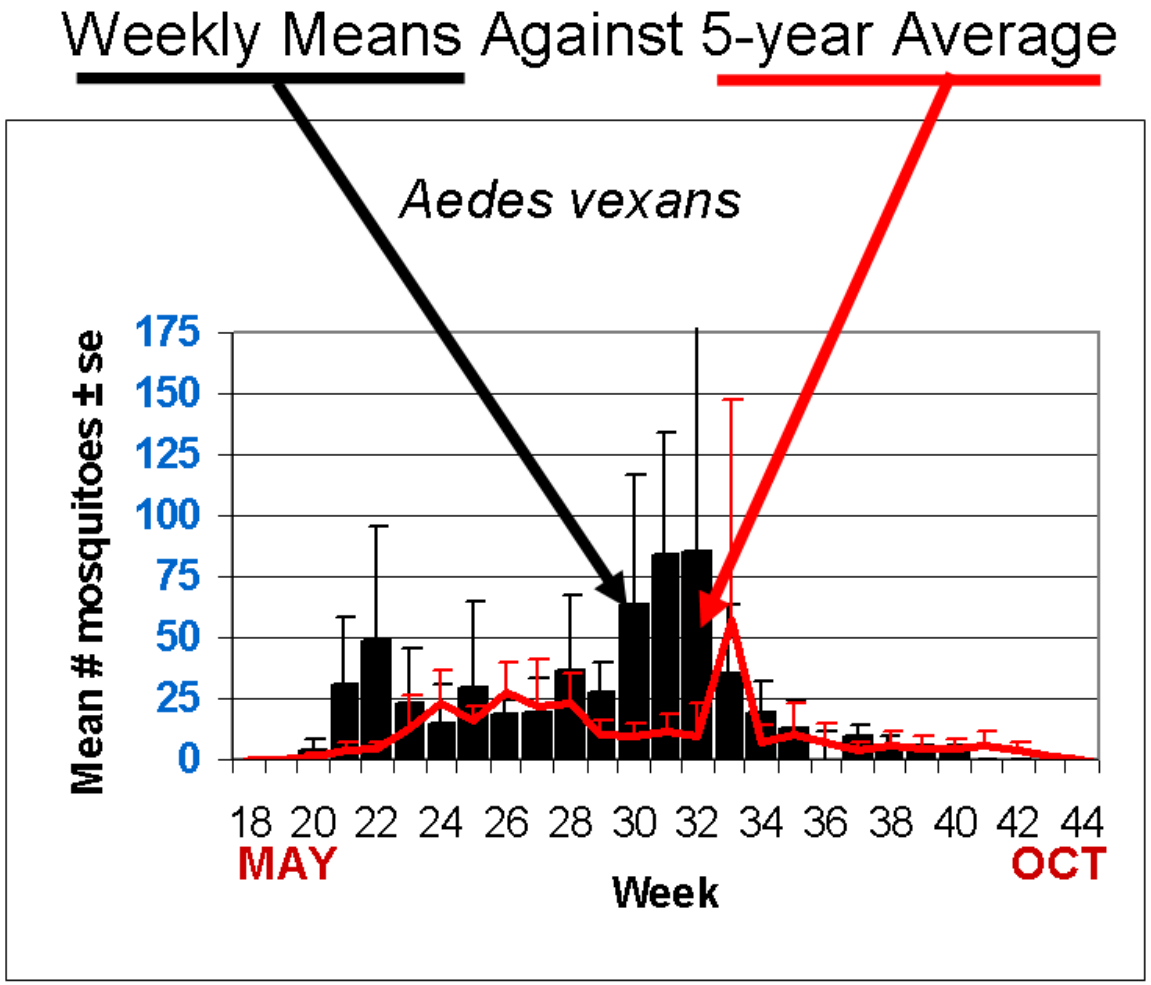
The three figures show the interpolation of average maximum and minimum temperature and total precipitation for the month of July in New Jersey. Data points are from 35 weather stations maintained through the New Jersey Weather & Climate Network and the State Climatologist. Interpolation between points were performed through ArcMap 9.2.

In July, average high temperatures were higher in southern New Jersey and along the suburban corridor and into the Delaware River Basin region. Average low temperatures were highest along the coastal region and it was wetter in northern New Jersey as compared to the south. In general, it was wetter and cooler in the northern half of New Jersey as compared to the southern half.

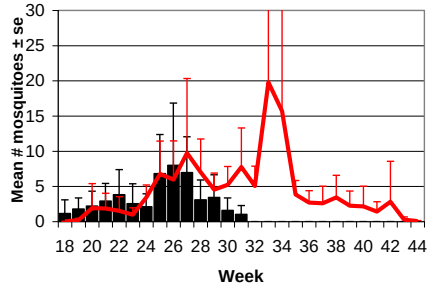
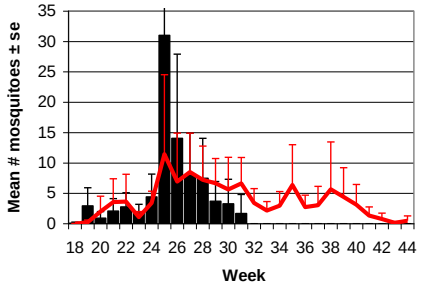
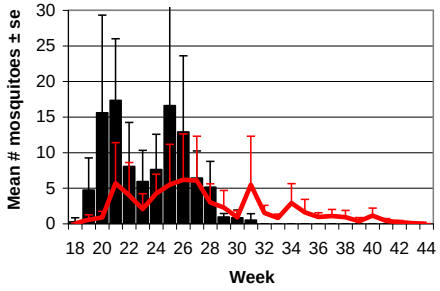
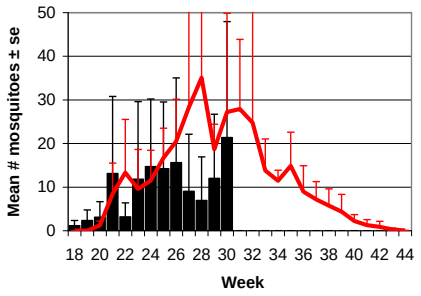
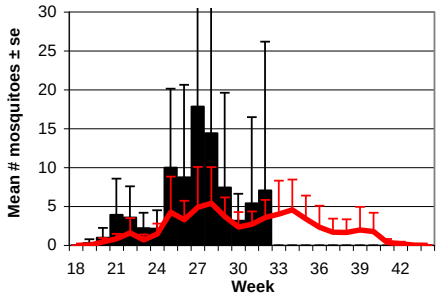
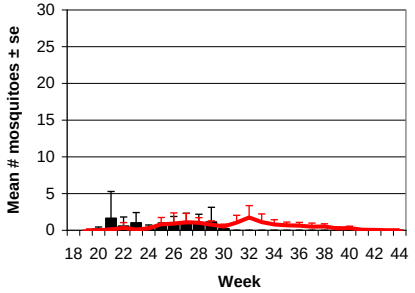
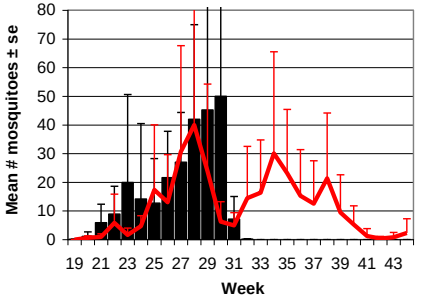
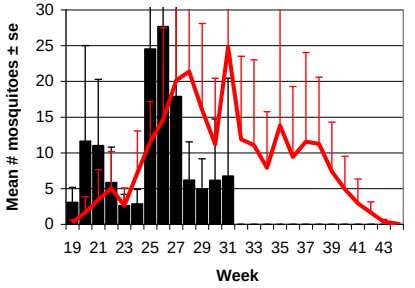
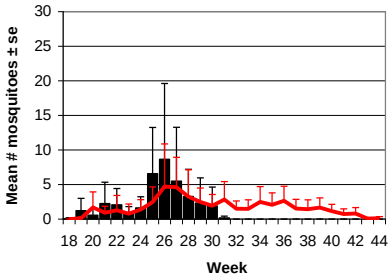
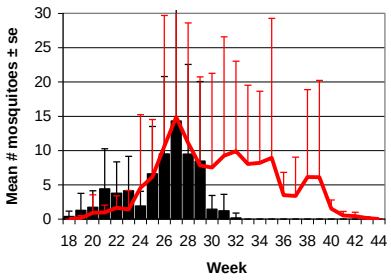
NJ Weather & Climate NETWORK

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 this week are from Bergen, Camden, Cumberland, Hudson, Middlesex, Monmouth, Ocean, Somerset, Sussex and Warren counties. Note: County data is sent in at a variety of times during the week.

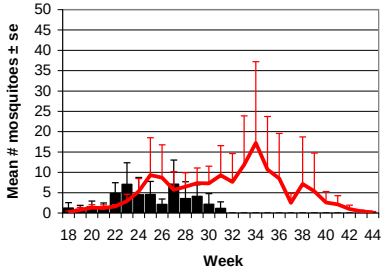


Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

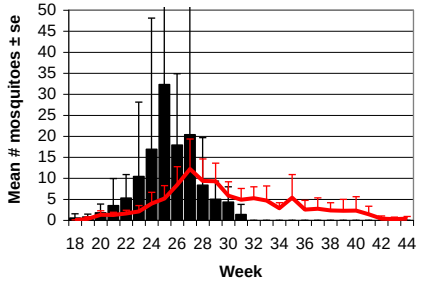
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes vexans* continued to show recent elevated numbers in the Northwest Rural region and the New York Metropolitan region, where July rainfall has been higher than in the rest of the state. Other regions are displaying reduced abundance.	

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

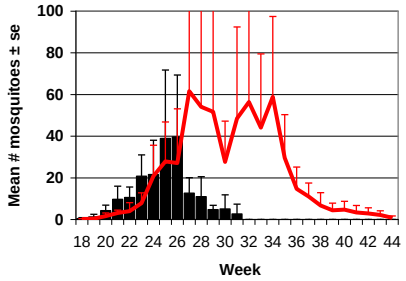
Agricultural



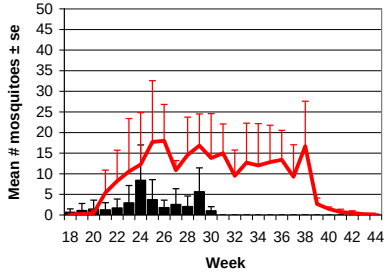
Coastal



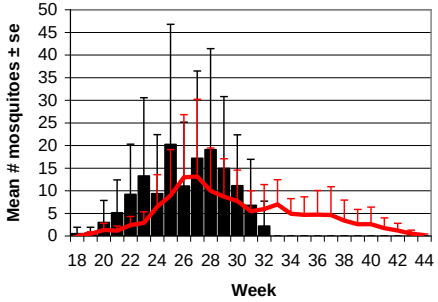
Delaware Bayshore



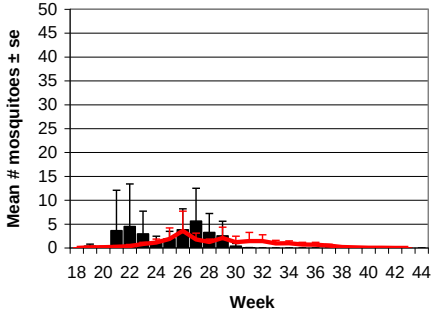
Delaware River Basin



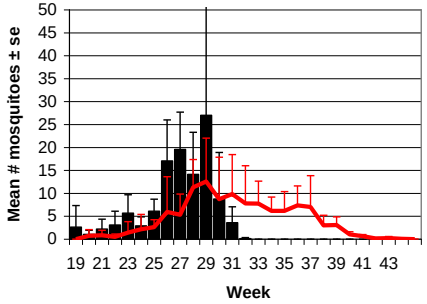
New York Metro



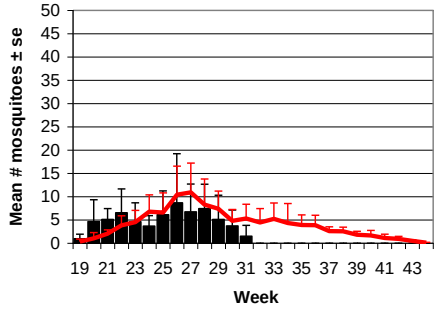
North Central Rural



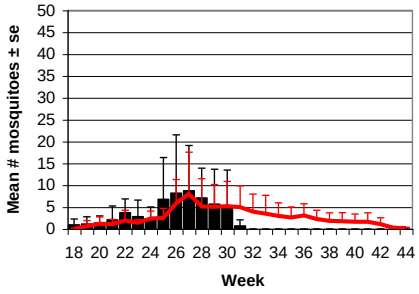
Northwestern Rural



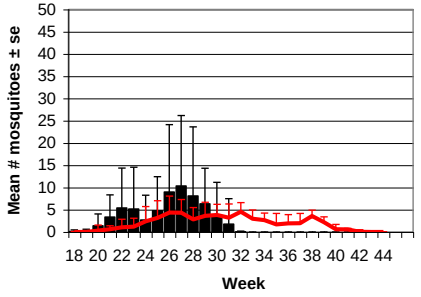
Philadelphia Metro



Pinelands



Suburban Corridor

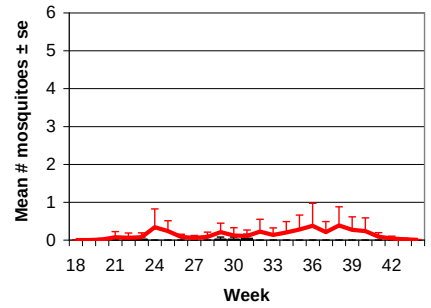


Comments

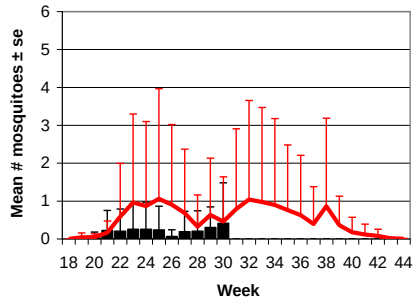
Most regions in New Jersey should be in the timeframe that *Culex* species populations slowly begin to decline. *Cx. restuans* in particular should be decreasing in numbers. *Cx. salinarius* on the other hand, can be increasing in regions, particularly like the Delaware River Basin. Brackish water with varying amounts of salt that develops in manmade or more wild habitat are attractive to this species (Rochlin et al 2008 Salt marsh as *Culex salinarius* habitat in New York. Journal of the AMCA 24(3):359-367).

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

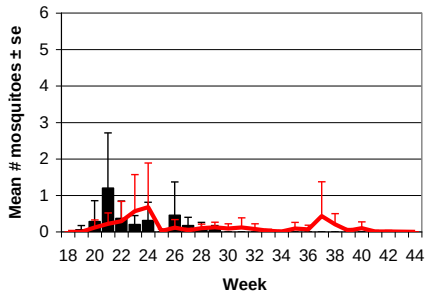
Agricultural



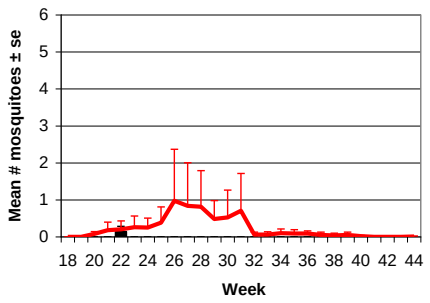
Coastal



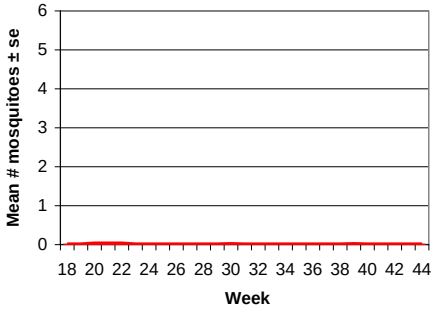
Delaware Bayshore



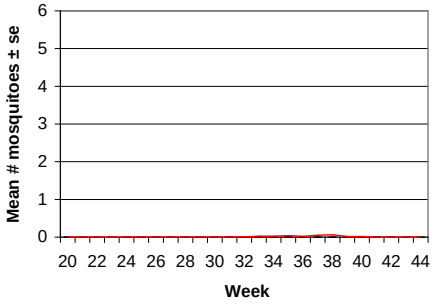
Delaware River Basin



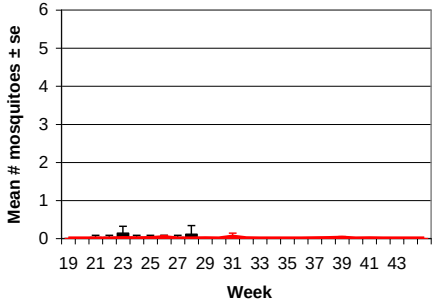
New York Metro



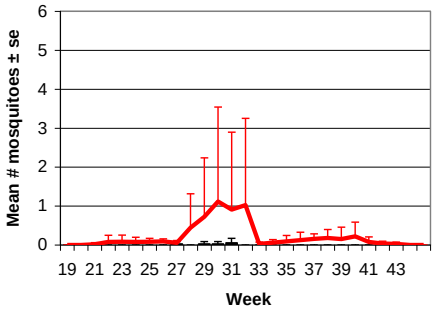
North Central Rural



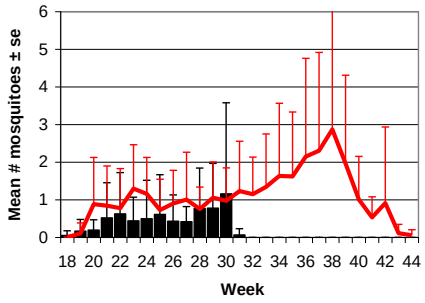
Northwestern Rural



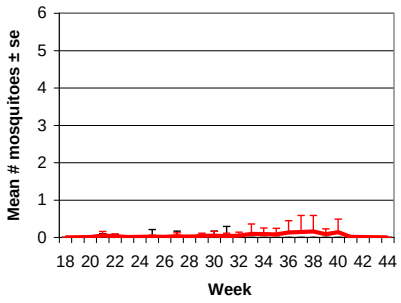
Philadelphia Metro



Pinelands



Suburban Corridor

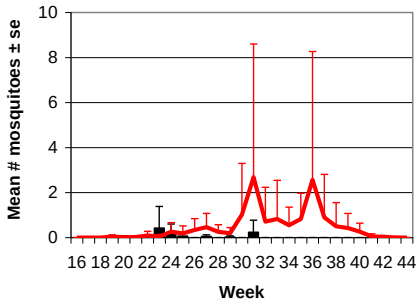


Comments

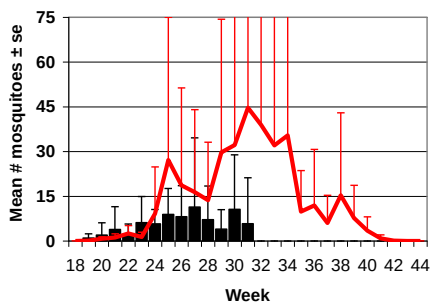
Pineland populations of *Culiseta melanura*, the enzootic ornithophilic vector of eastern equine encephalitis, have come up to historical levels in the past several weeks. During this time, the number of positive pools of *Cs. melanura* has increased considerably. Most positives have been found in one location, but some positive EEE pools, including those of non-*Cs. melanura* pools have been found elsewhere, a possible indication of virus dissemination in southern New Jersey.

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

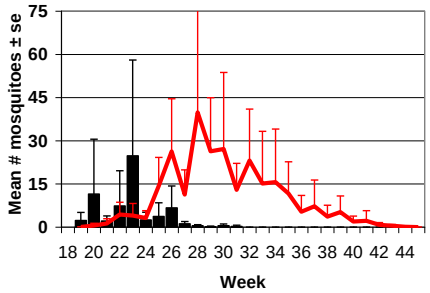
Agricultural



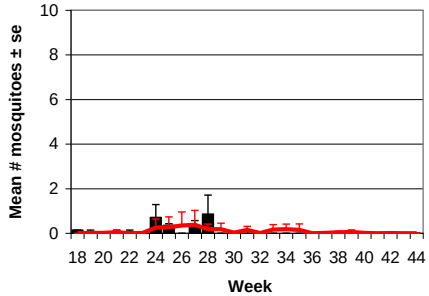
Coastal



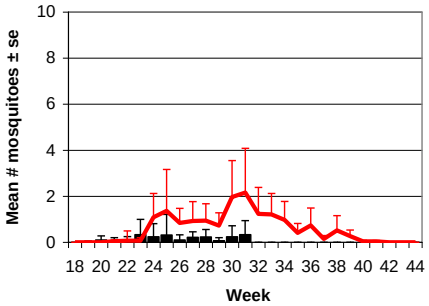
Delaware Bayshore



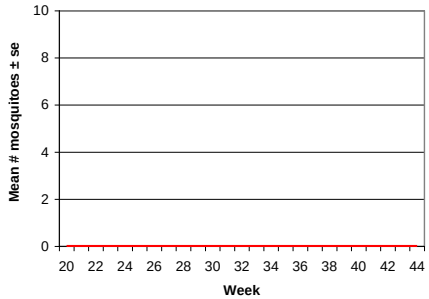
Delaware River Basin



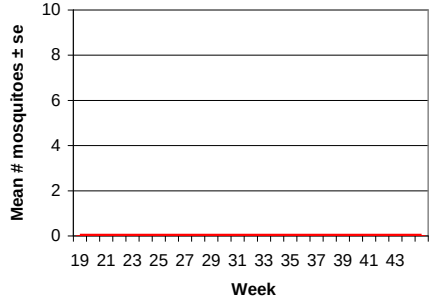
New York Metro



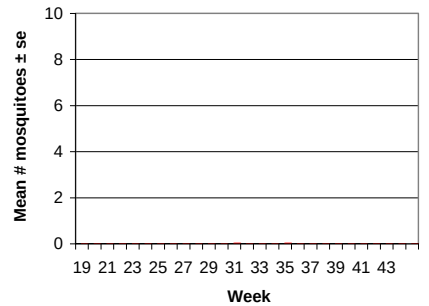
North Central Rural



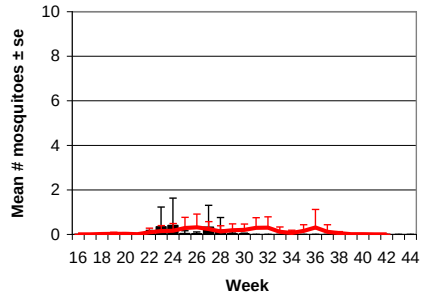
Northwestern Rural



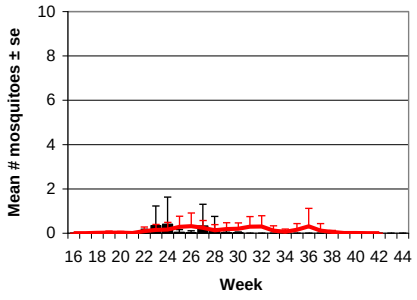
Philadelphia Metro



Pinelands



Suburban Corridor



Comments

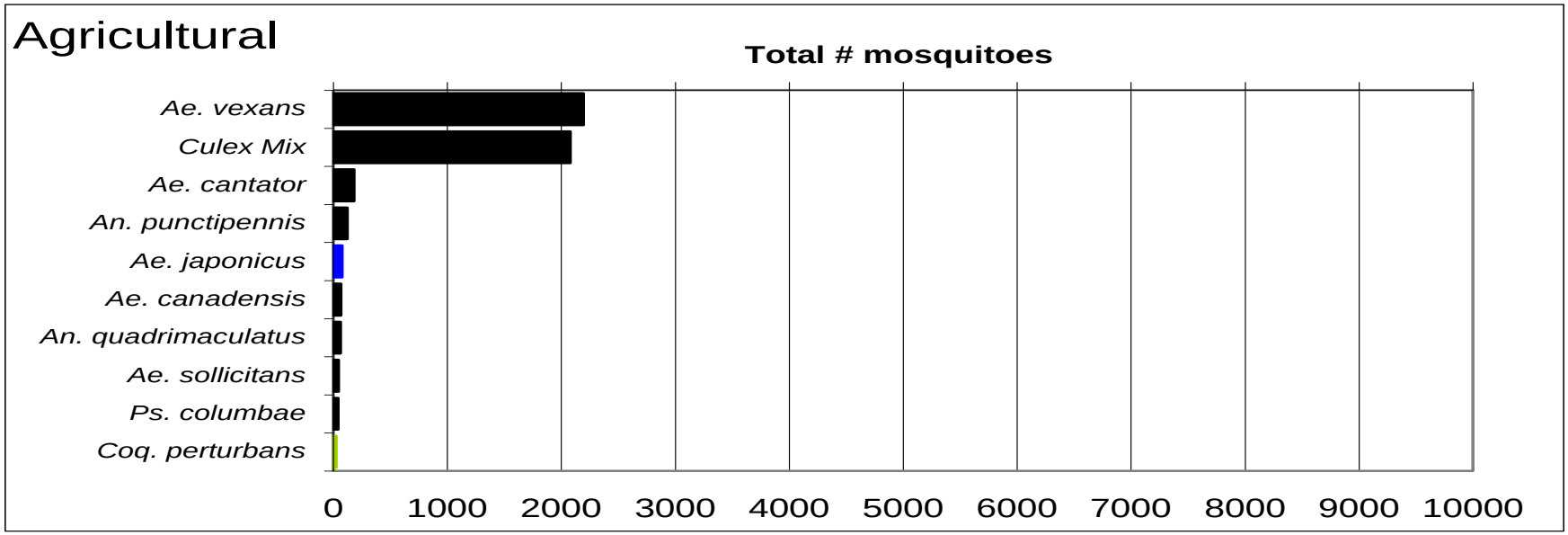
Aedes sollicitans populations may be displaying a seasonal peak in the Coastal region. Numbers may begin to decline in the next few weeks, however, ironically, phone calls regarding increased biting is likely to occur as this species shifts its blood-feeding period toward daytime feeding.

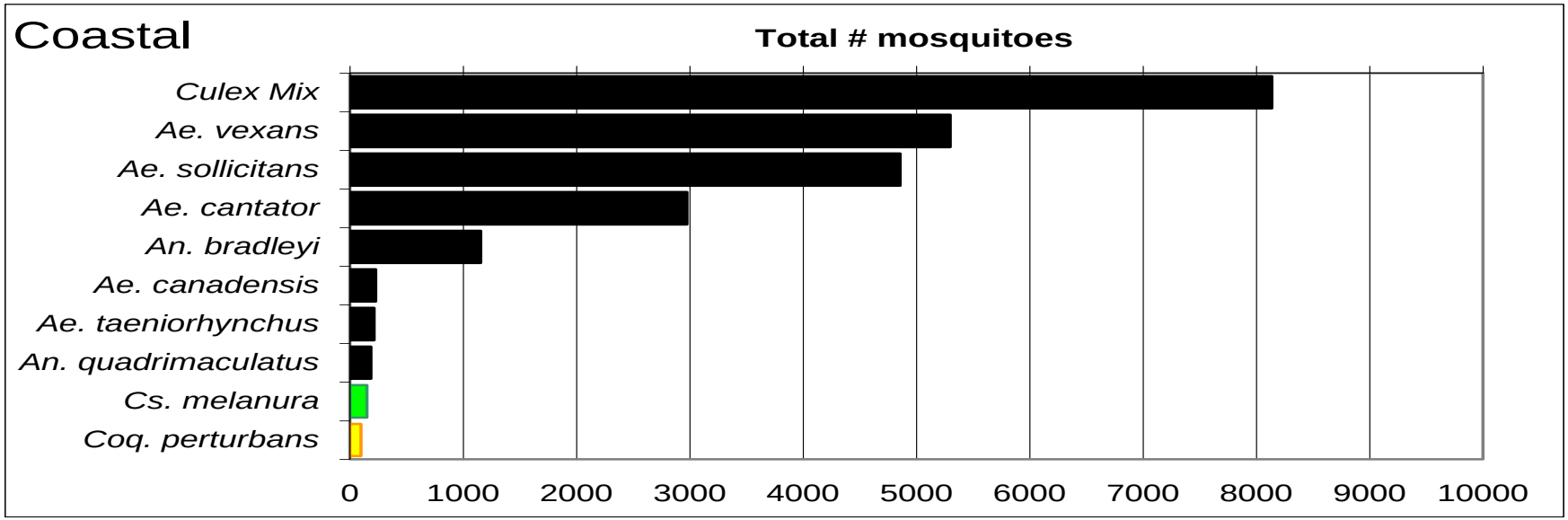
Next Full Moon: 4 September

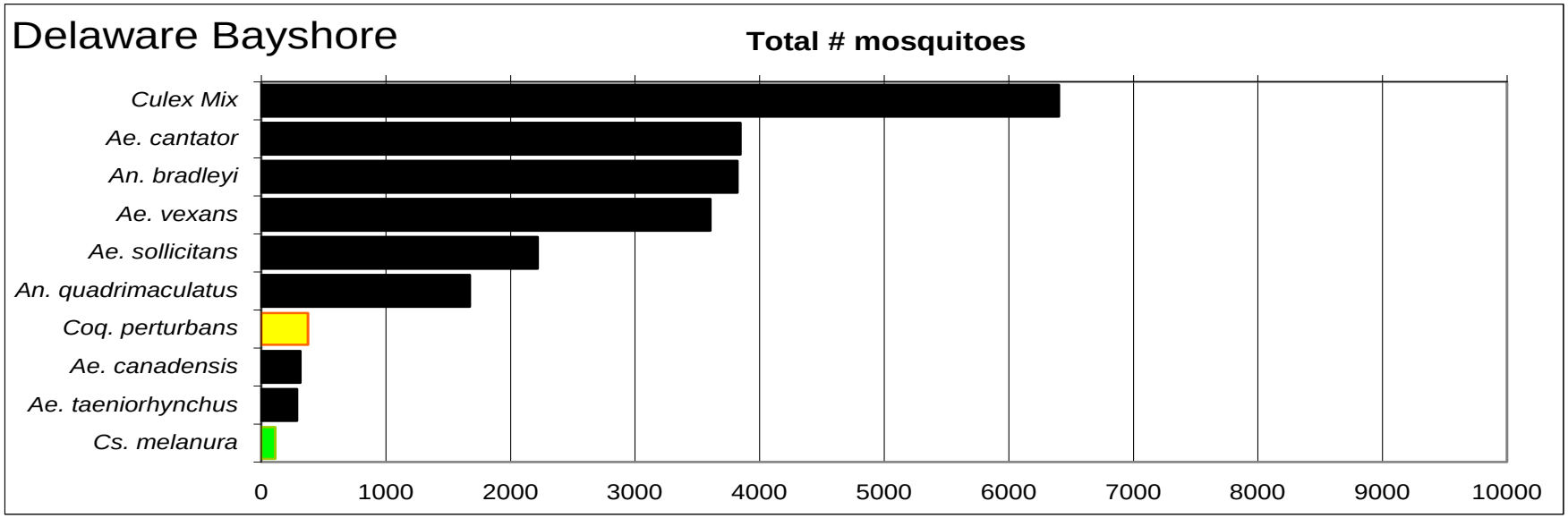
WNV *EEE*

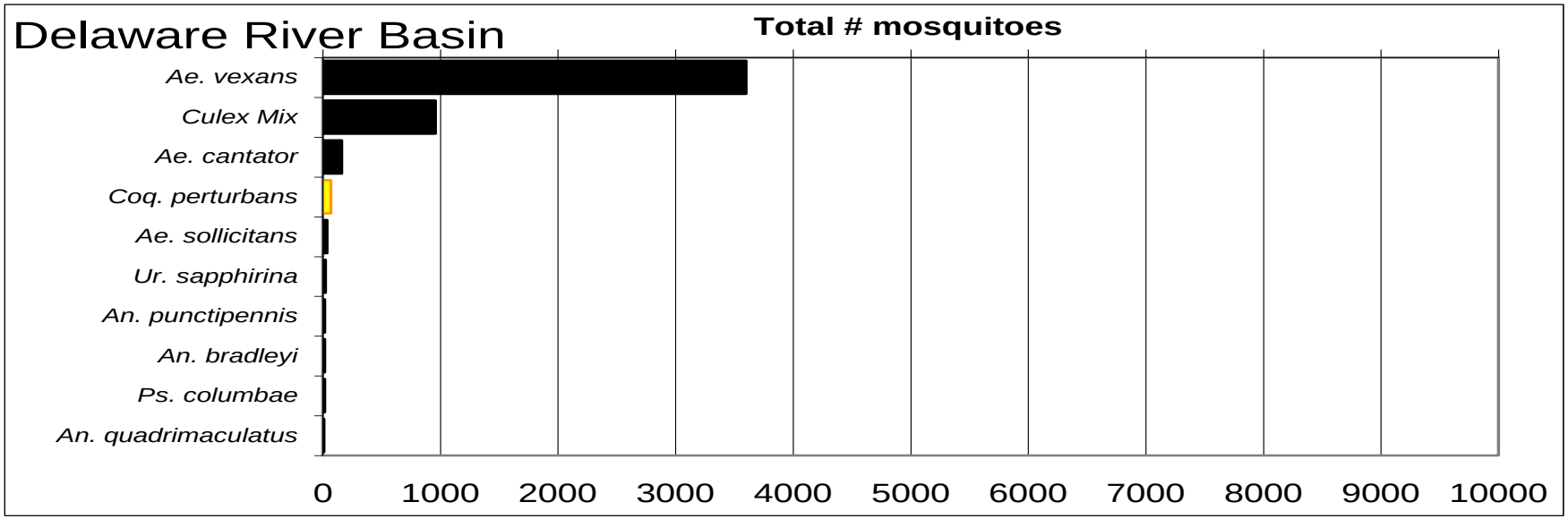
Top Ten Mosquito Species/Region - *Ae. albopictus,* *Ae. japonicus (invasives);* *Cs. melanura or Cx. erraticus* *Coq. perturbans*

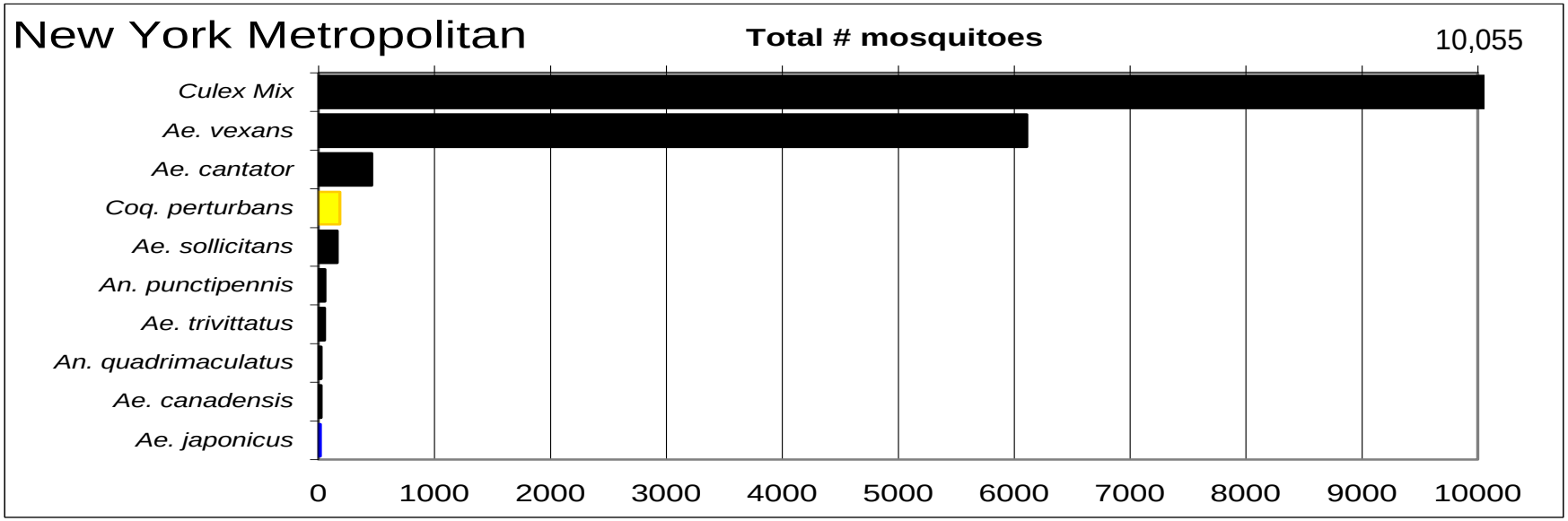
Note: In early season when fewer species are caught, graphs may show less than ten species listed.

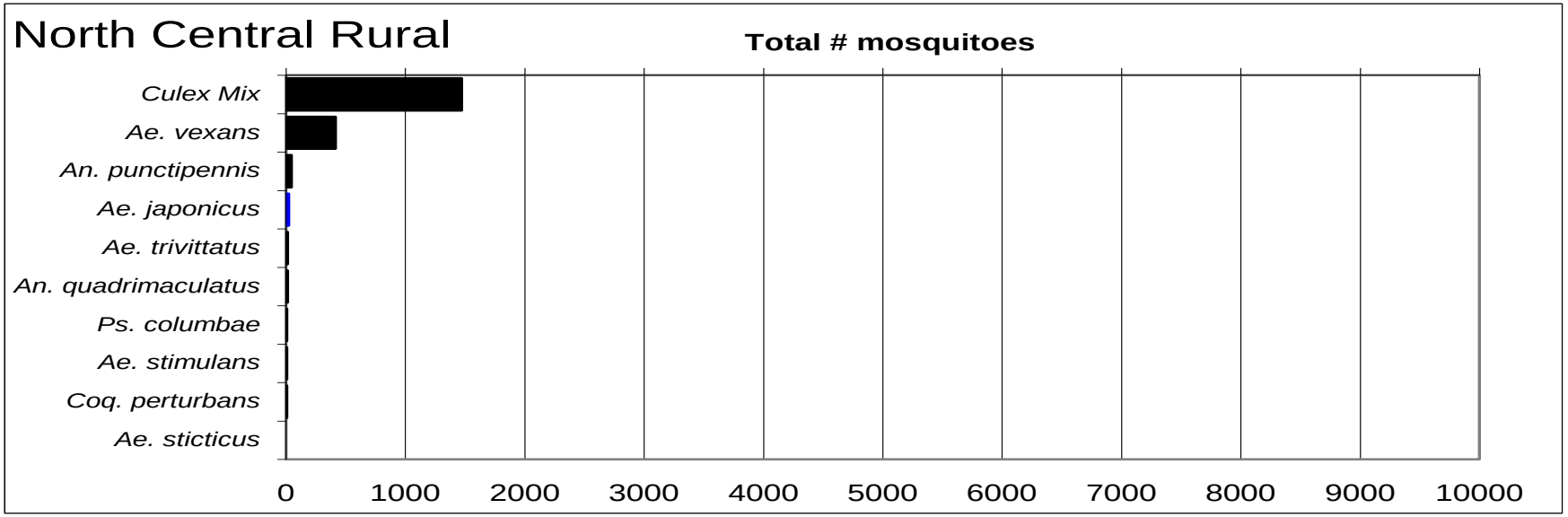


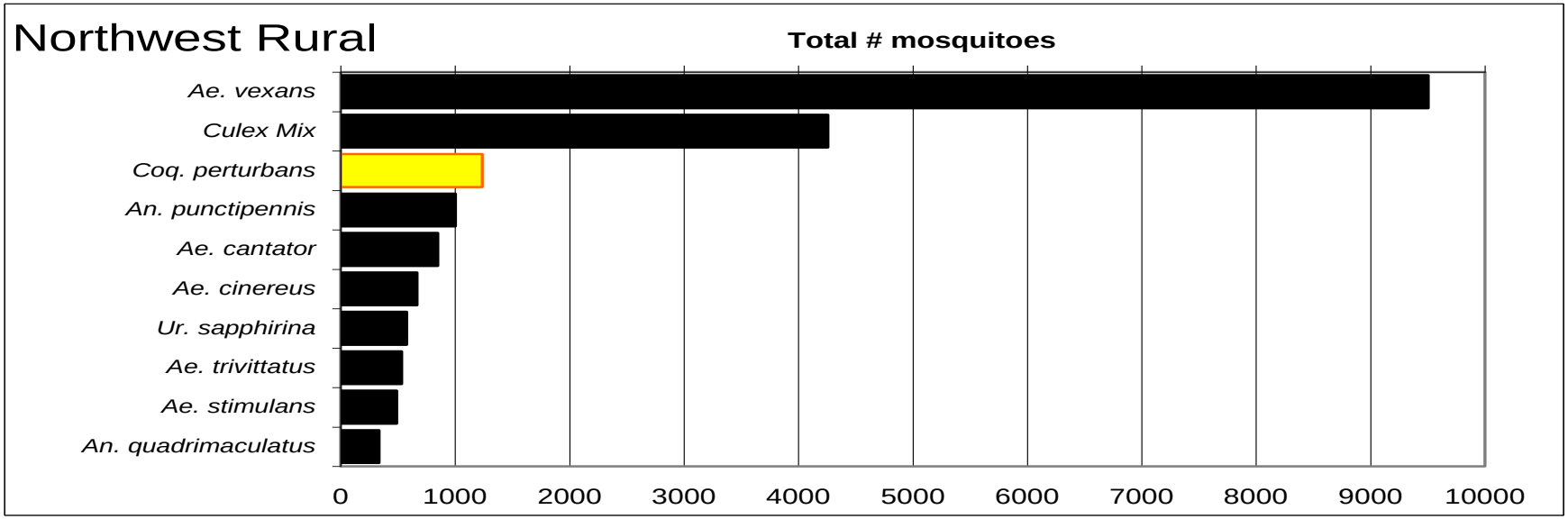


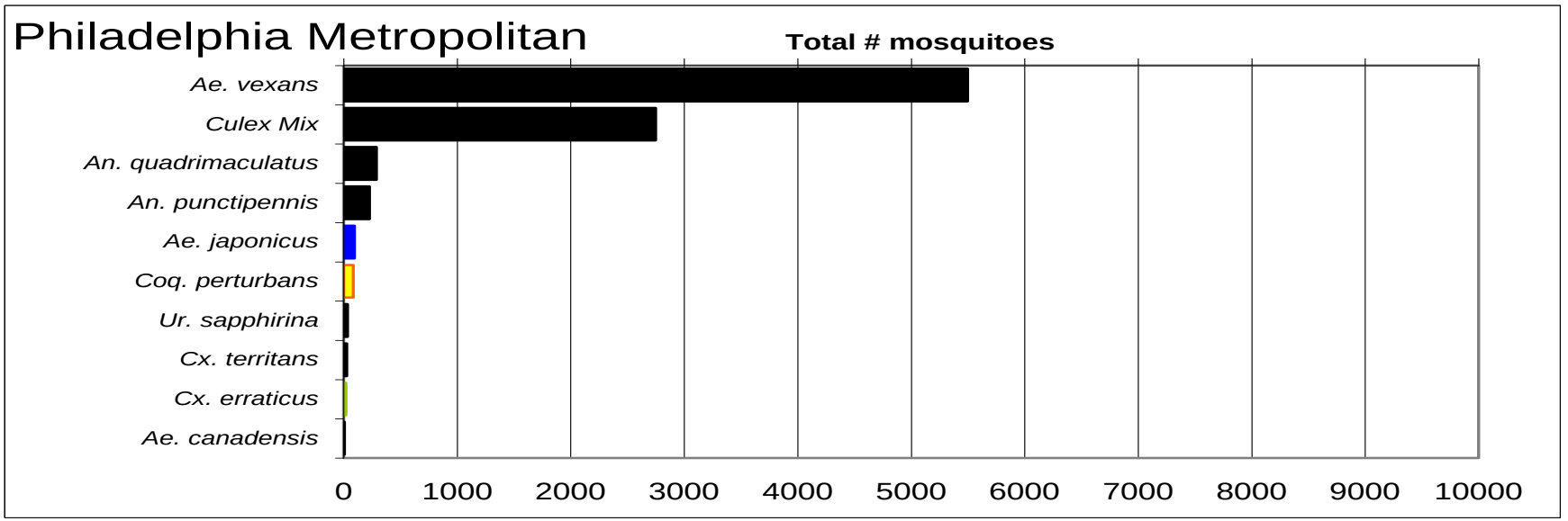

Delaware Bayshore
Total # mosquitoes
Culex Mix
Ae. cantator
An. bradleyi
Ae. vexans
Ae. sollicitans
An. quadrimaculatus
Coq. perturbans
Ae. canadensis
Ae. taeniorhynchus
Cs. melanura
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

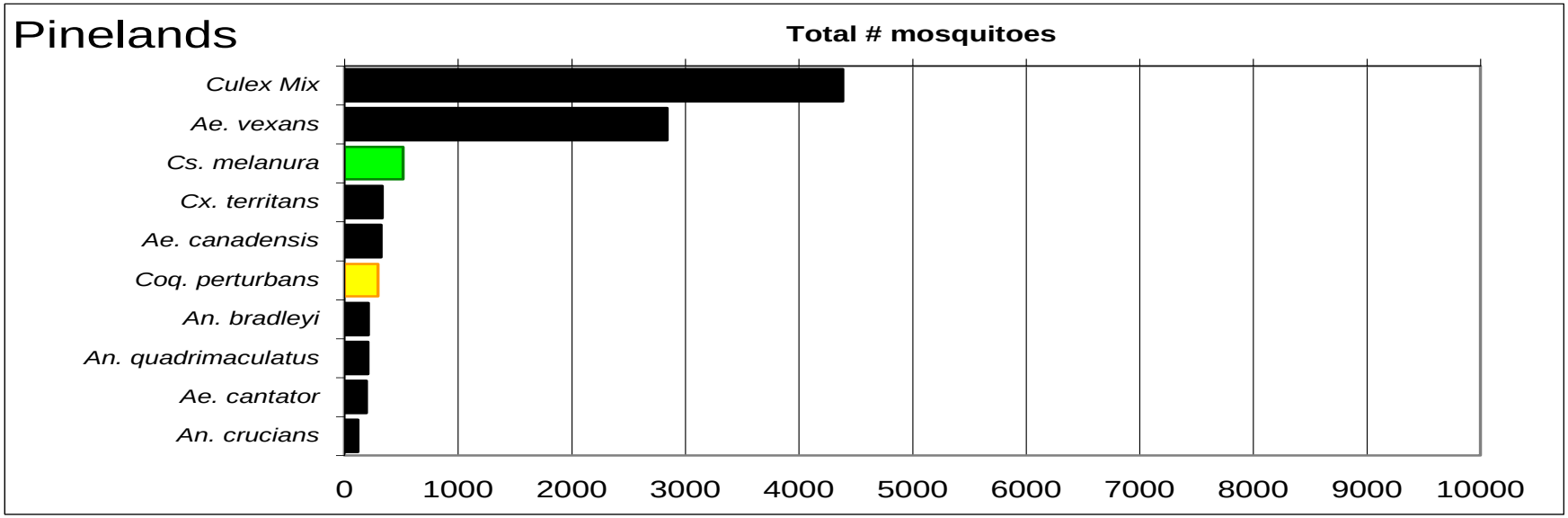

Delaware River Basin
Total # mosquitoes
Ae. vexans
Culex Mix
Ae. cantator
Coq. perturbans
Ae. sollicitans
Ur. sapphirina
An. punctipennis
An. bradleyi
Ps. columbae
An. quadrimaculatus
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

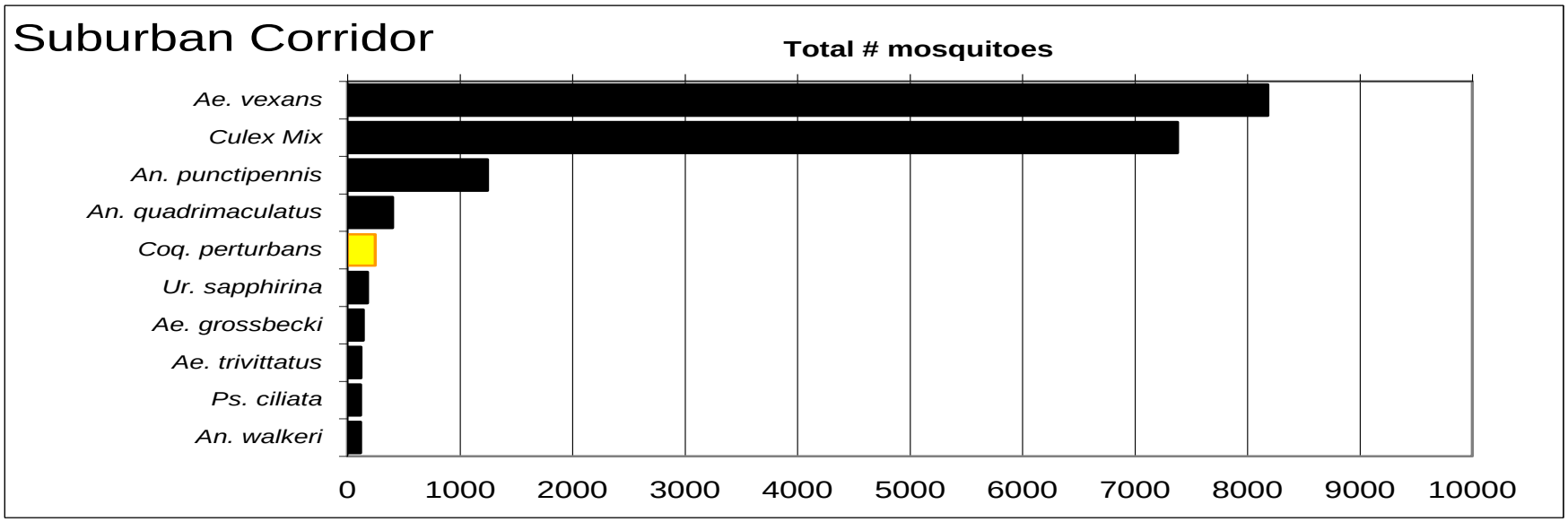

New York Metropolitan
Total # mosquitoes
10,055
Culex Mix
Ae. vexans
Ae. cantator
Coq. perturbans
Ae. sollicitans
An. punctipennis
Ae. trivittatus
An. quadrimaculatus
Ae. canadensis
Ae. japonicus
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


North Central Rural
Total # mosquitoes
Culex Mix
Ae. vexans
An. punctipennis
Ae. japonicus
Ae. trivittatus
An. quadrimaculatus
Ps. columbae
Ae. stimulans
Coq. perturbans
Ae. sticticus
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


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


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


Pinelands
Total # mosquitoes
Culex Mix
Ae. vexans
Cs. melanura
Cx. territans
Ae. canadensis
Coq. perturbans
An. bradleyi
An. quadrimaculatus
Ae. cantator
An. crucians
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


Suburban Corridor
Total # mosquitoes
Ae. vexans
Culex Mix
An. punctipennis
An. quadrimaculatus
Coq. perturbans
Ur. sapphirina
Ae. grossbecki
Ae. trivittatus
Ps. ciliata
An. walkeri
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000