RUTGERS
New Jersey Agricultural Experiment Station

NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report for 12 October to 18 October 2008, CDC Week 42

Prepared by Lisa M. Reed, Scott Crans, Dina Fonseca and Marc Slaff
Center for Vector Biology

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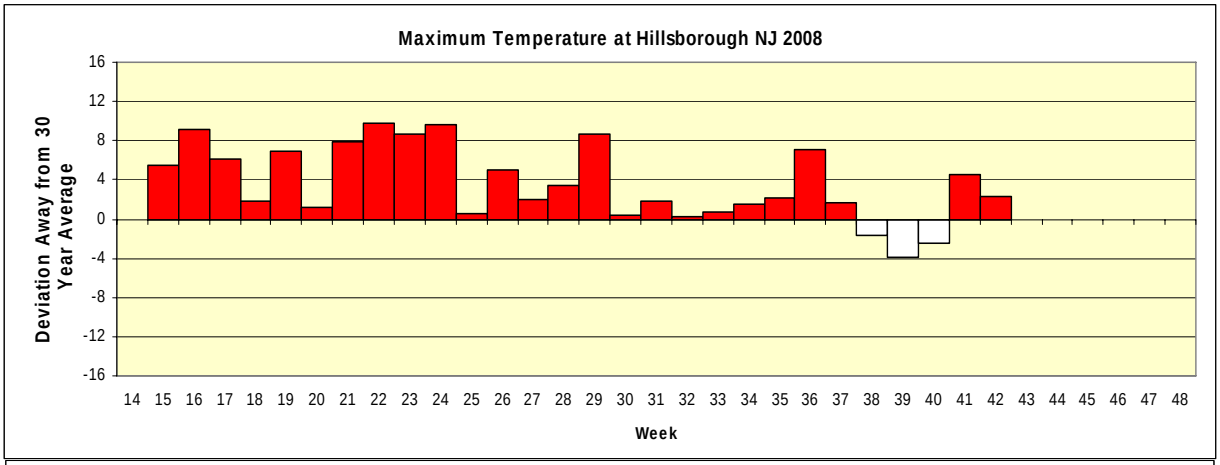
Summary table – Week 42

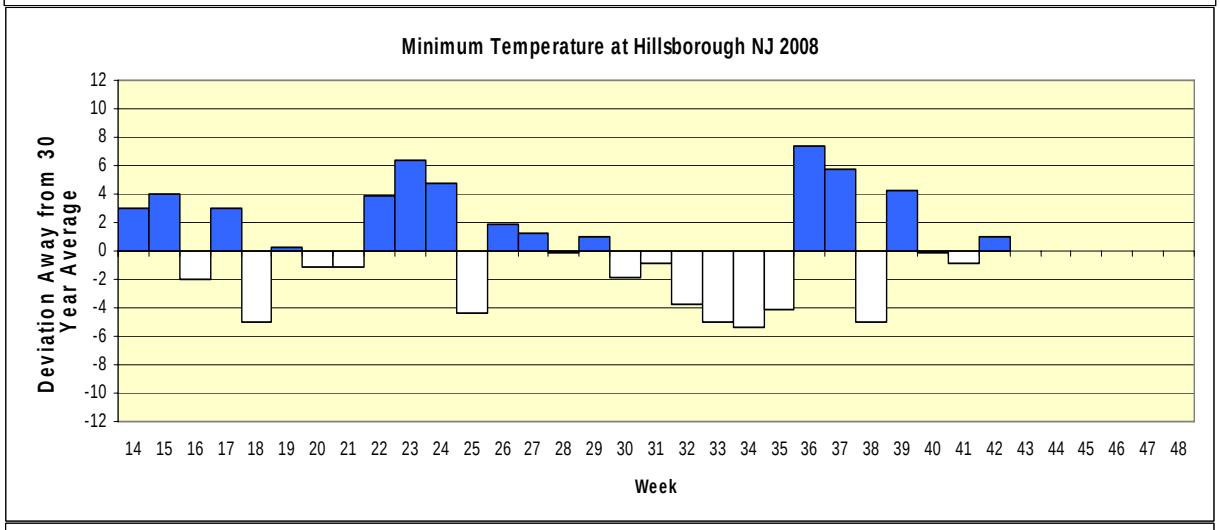
	Aedes vexans			*Culex* Mix			*Coquillettidia perturbans*			*Aedes sollicitans*		
Region	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase
Agricultural	**0.14**	**2.78**	**0**	**0.05**	**0.90**	**0**	**0.00**	**0.00**	**0**	**0.00**	**0.03**	**0**
Coastal	**2.02**	**0.69**	**4**	**3.25**	**0.42**	**4**	**0.00**	**0.00**	**0**	**1.25**	**0.13**	**4**
Delaware Bayshore	**1.38**	**0.17**	**4**	**1.88**	**2.63**	**0**	**0.00**	**0.00**	**0**	**0.14**	**1.18**	**0**
Delaware River Basin	**0.00**	**0.69**	**0**	**0.00**	**0.40**	**0**	**0.00**	**0.00**	**0**	**0.00**	**0.01**	**0**
New York Metro	**0.50**	**0.18**	**4**	**2.87**	**0.96**	**4**	**0.00**	**0.00**	**0**	**0.00**	**0.00**	**0**
North Central Rural	**0.00**	**0.04**	**0**	**0.00**	**0.01**	**0**	**0.00**	**0.00**	**0**	**0.00**	**0.00**	**0**
Northwest Rural	**0.40**	**0.42**	**0**	**0.02**	**0.12**	**0**	**0.00**	**0.00**	**0**	**0.00**	**0.00**	**0**
Philadelphia Metro	**2.29**	**1.32**	**2**	**0.48**	**0.77**	**0**	**0.00**	**0.00**	**0**	**0.00**	**0.00**	**0**
Pinelands	**0.68**	**0.76**	**0**	**0.21**	**0.79**	**0**	**0.00**	**0.00**	**0**	**0.00**	**0.00**	**0**
Suburban Corridor	**0.11**	**0.40**	**0**	**0.11**	**0.03**	**4**	**0.00**	**0.00**	**0**	**0.00**	**0.00**	**0**

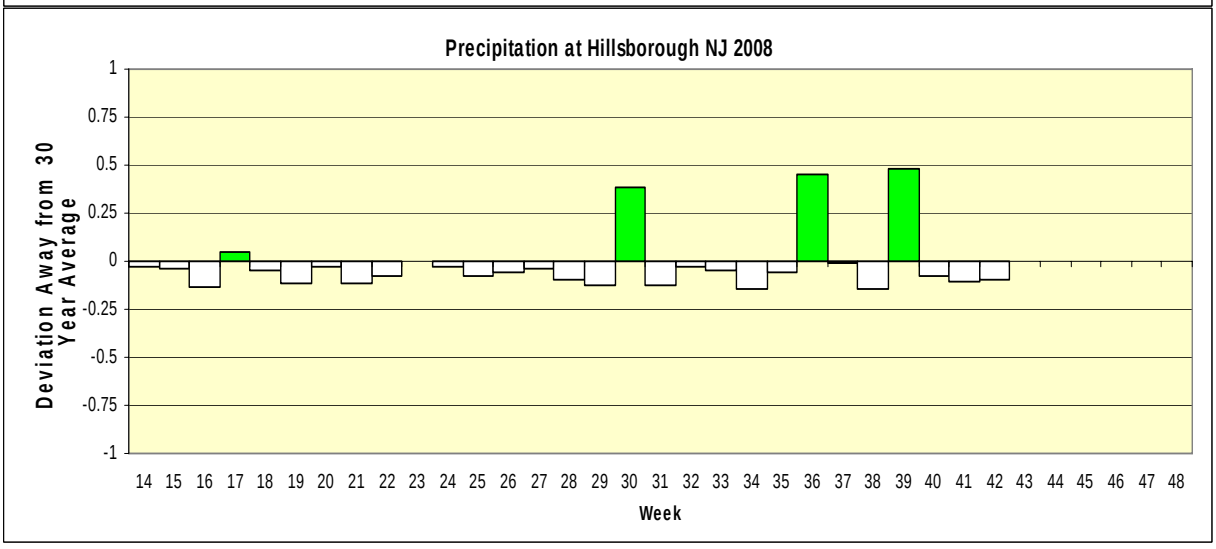
*Averages represent data from, at most, the previous 5 years. Increase is a scale of current values from historical values where no difference or a decrease is represented by 0 (blue), up to 50% greater difference by 1 (green), up to 100% greater difference by 2 (yellow), up to 150% greater difference by 3 (orange) and greater than 150% increase by 4 (red). White cells in the increase column denote increases from an historic zero and thus no value can be appropriately given.

State Summary: Minor fluctuations of pestiferous species seem to indicate large increases over historical trends and agrees with the climatic data (next page) that indicate a generally milder Fall to date than the historical average. However, these are coming at a time when populations are decreasing to seasonal low levels.

Climate Deviations

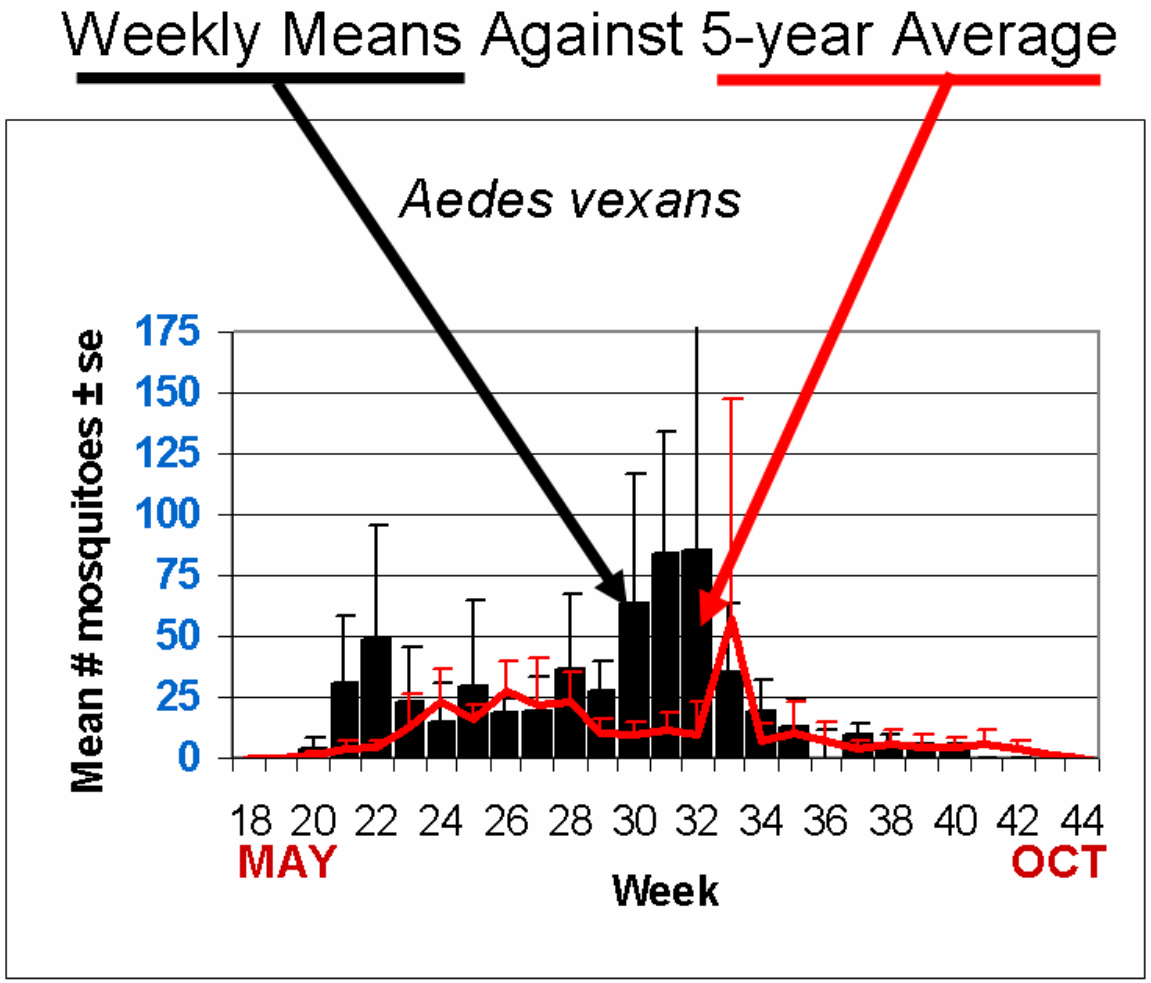






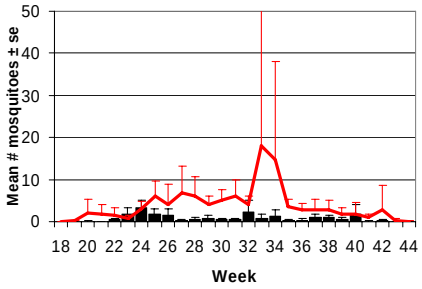
The figures show the average maximum temperature, minimum temperature and precipitation deviations from 30 year averages. Current data are from the Hillsborough NJ weather station (a station close to central NJ which recorded all three parameters and was available online at the NJ state climatologist) 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.

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, Burlington, Camden, Cape May, Hudson, Middlesex and Sussex counties. Note: County data is sent in at a variety of times during the week, and some counties suspend light trap operation in October.

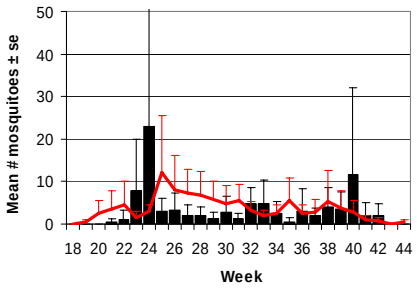


Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

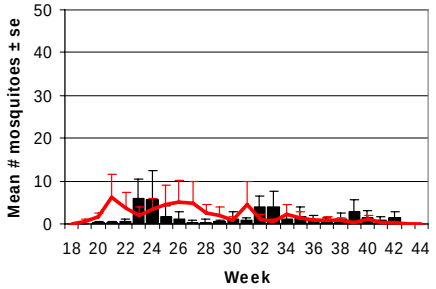
Agricultural



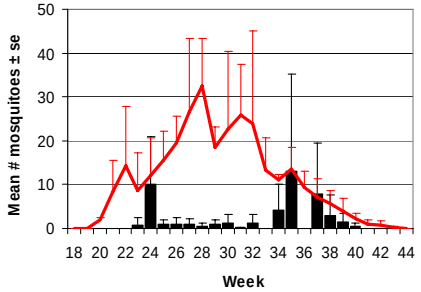
Coastal



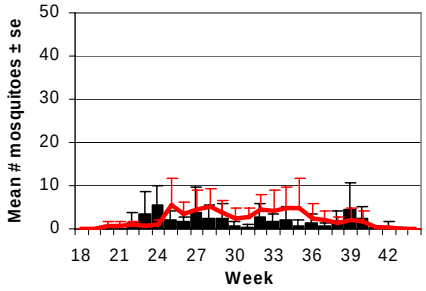
Delaware Bayshore



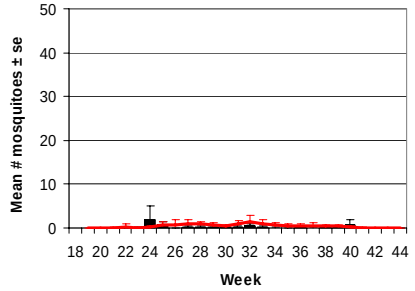
Delaware River Basin



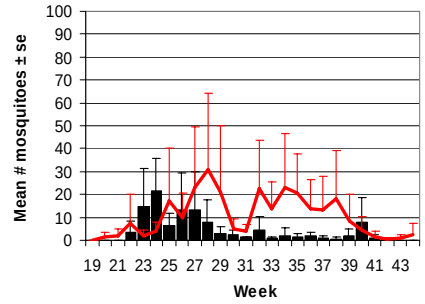
New York Metro



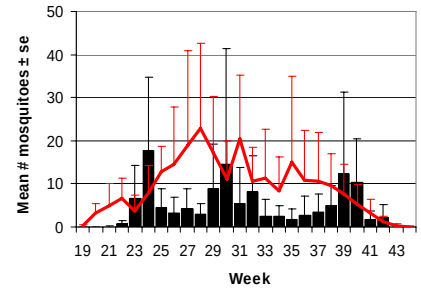
North Central Rural



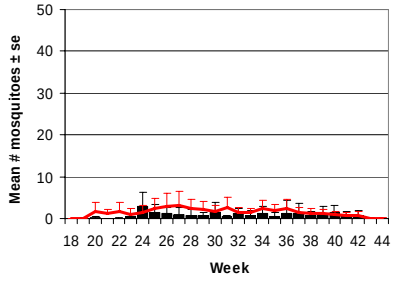
Northwestern Rural



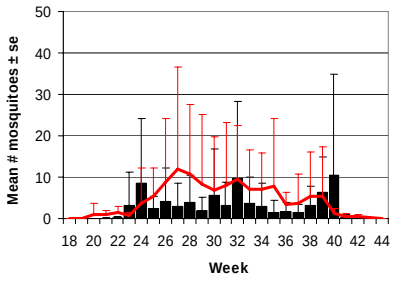
Philadelphia Metro



Pinelands



Suburban Corridor

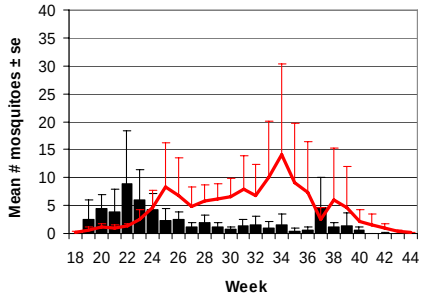
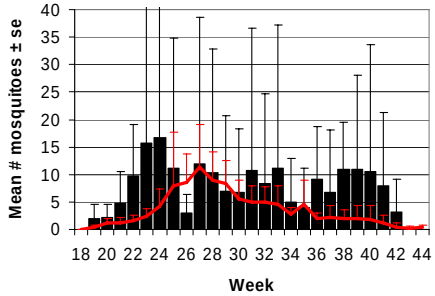
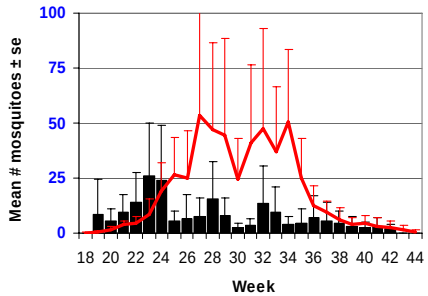
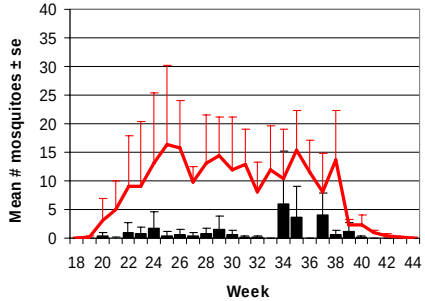
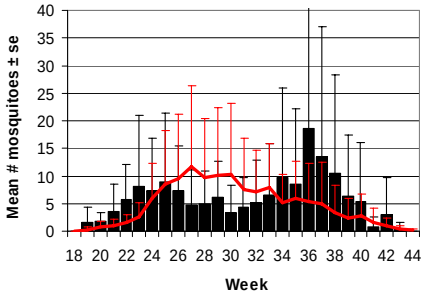
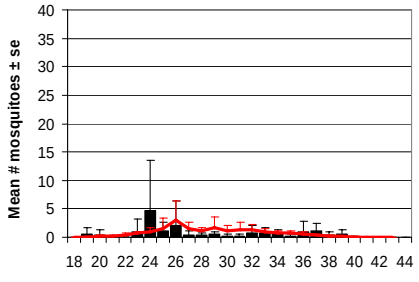
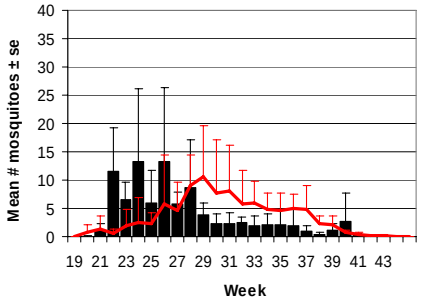
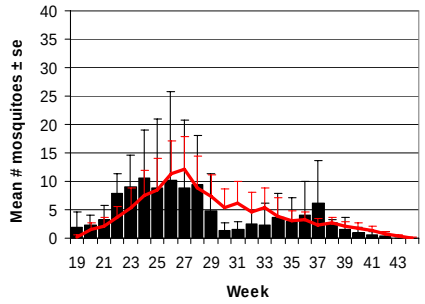
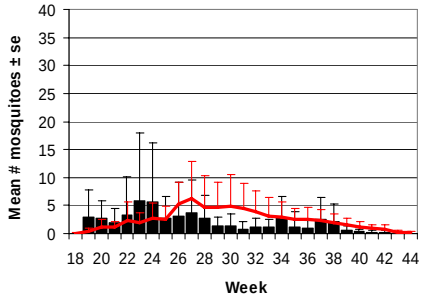
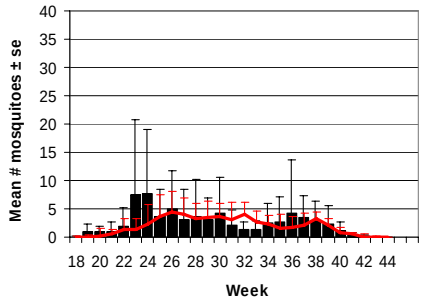


Comments

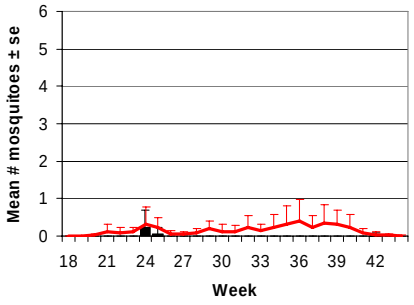
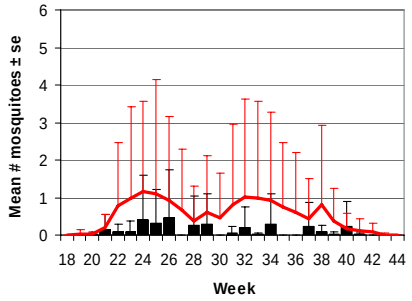
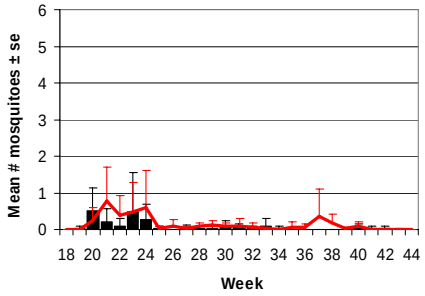
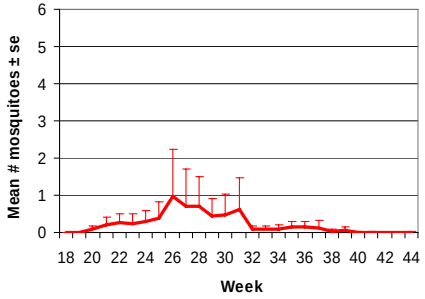
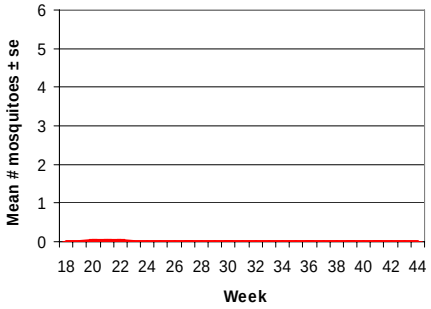
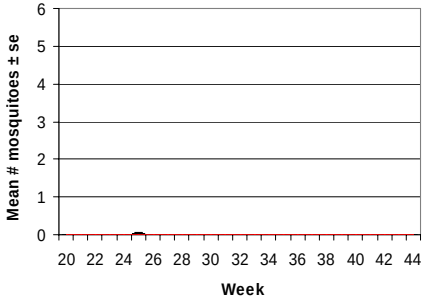
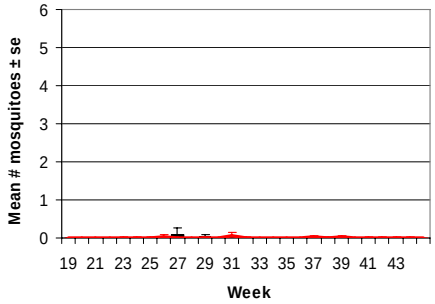
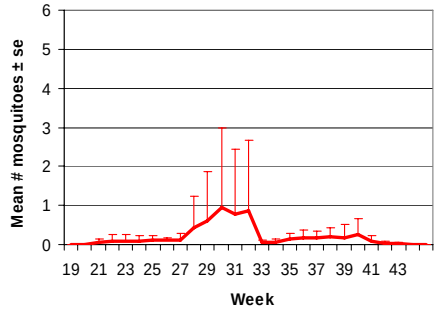
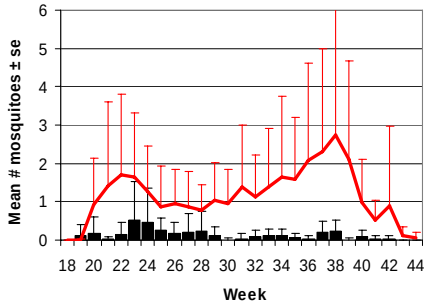
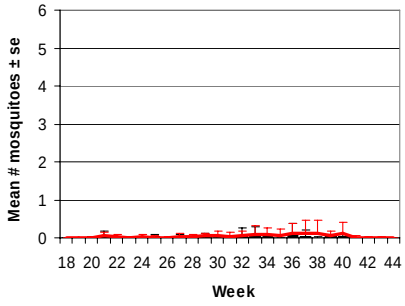
Aedes vexans continue to be on the wing, particularly in the Coastal, Delaware Bayshore and Philadelphia Metro regions where this week's abundances are higher than historical levels. However, all sites have dropped considerably after the emergence of week 40 and the killing frost event of this last Sunday night should continue to decrease populations quickly.

See last page for statewide trend in overnight temperatures on the 19th October.

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

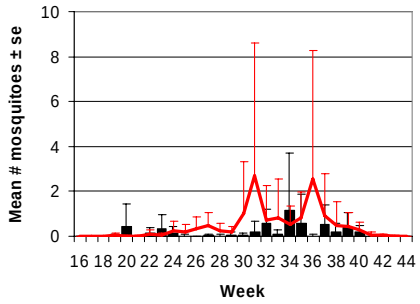
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Culex* populations continue their decline, although populations in the Coastal, New York Metro and Suburban Corridor regions are still above historical levels. All three areas plus the Philadelphia Metro region have experienced areas of high rates of West Nile infection in their *Culex* pools, primarily in pools of *Culex pipiens*. Despite these high rates, infective pools have been found in only four other species and at very low rates.	

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

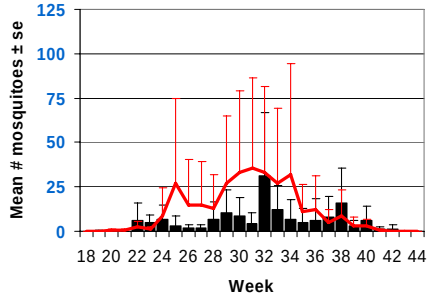
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Culiseta melanura* populations continue to be low in comparison to historical trends. Paradoxically, pools of *Cs. melanura* that are positive for eastern equine encephalitis virus continue to be found at several traditional monitoring sites, despite the low number of the primary enzootic vector. This species has also recently produced positive West Nile virus pools, although this should be expected as both disease cycles include avian hosts for amplification.	

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

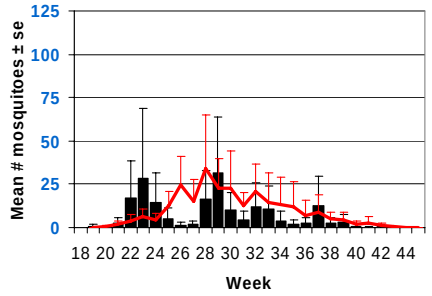
Agricultural



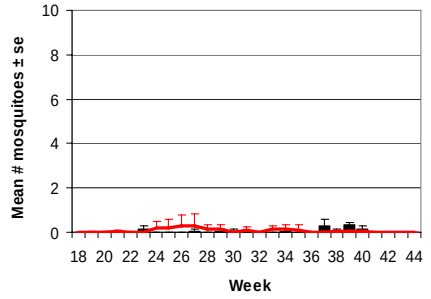
Coastal



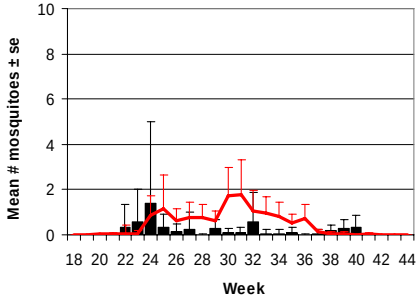
Delaware Bayshore



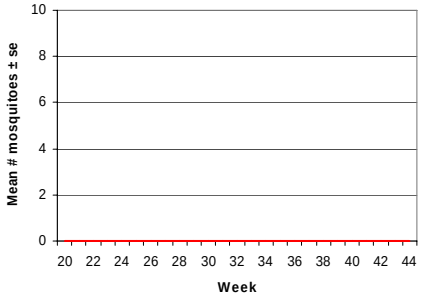
Delaware River Basin



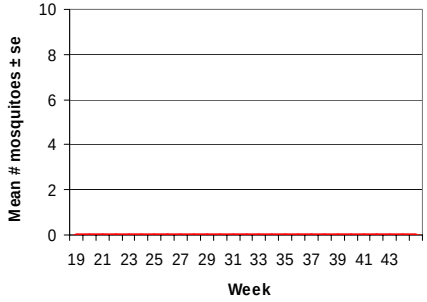
New York Metro



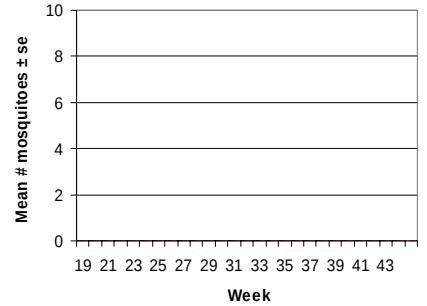
North Central Rural



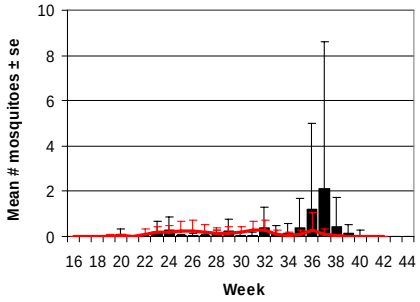
Northwestern Rural



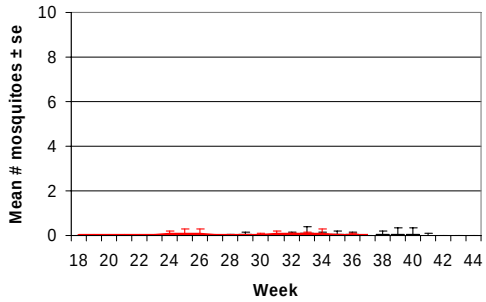
Philadelphia Metro



Pinelands



Suburban Corridor



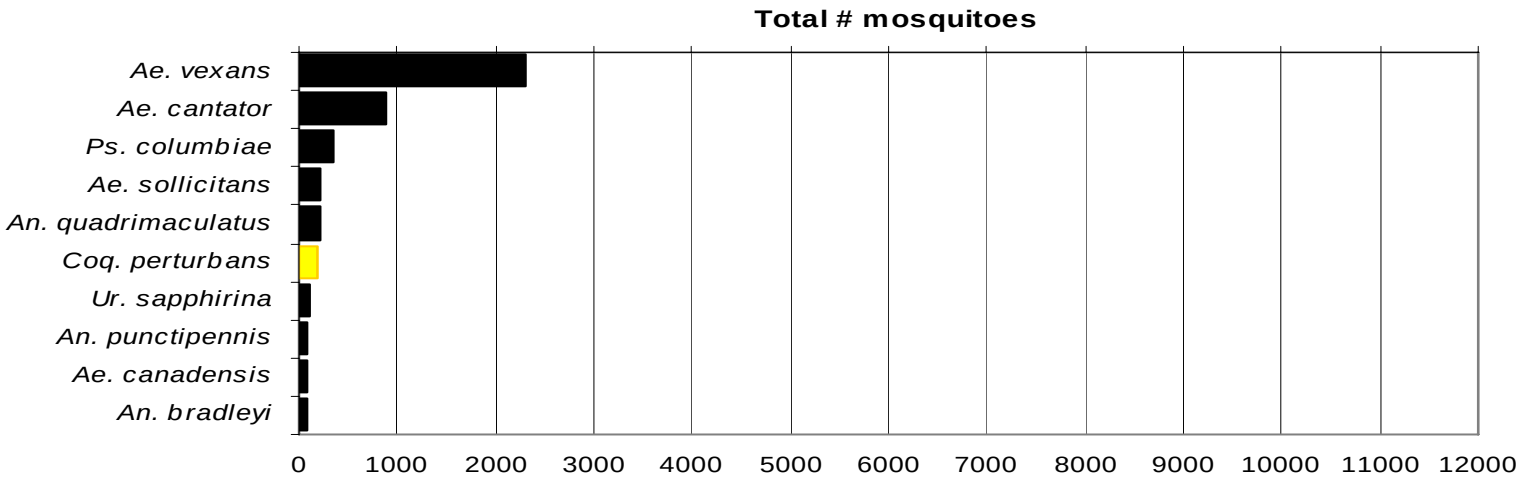
Comments

Aedes sollicitans populations have dropped significantly from their earlier peaks, with four major emergences seen from the Coastal and Delaware Bayshore regions. During week 37, a significant number of *Ae. sollicitans* occurred in the Pinelands region, from a single trap located upriver from Great Egg Harbor Bay, primarily on one day.

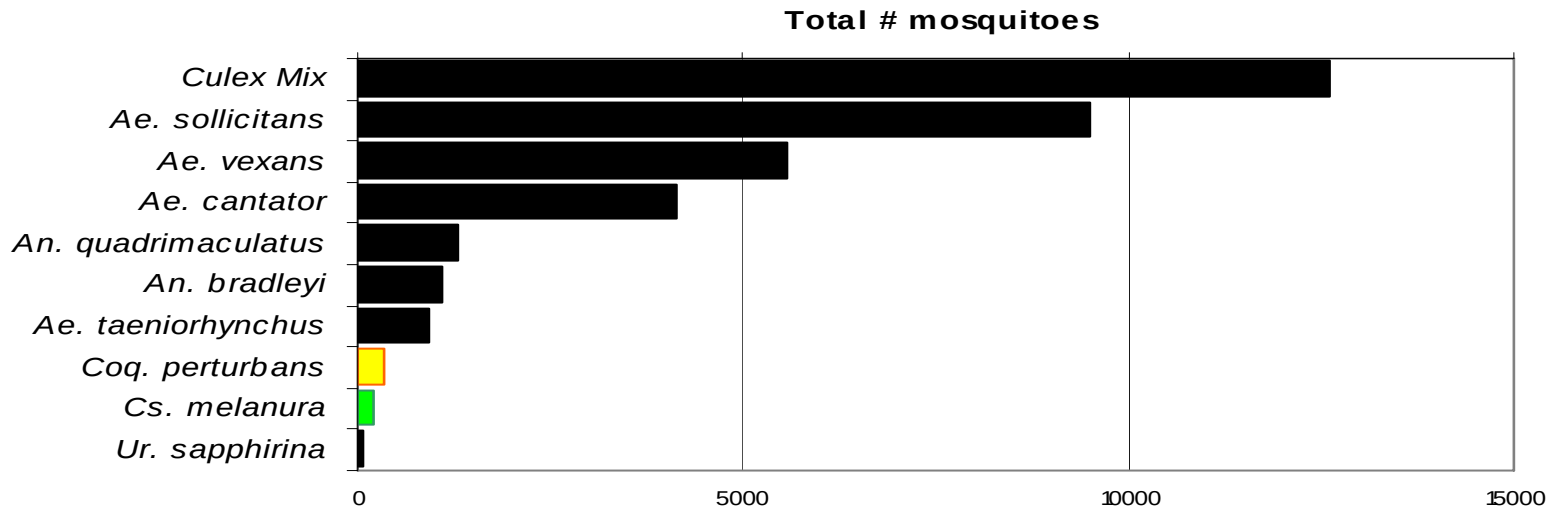
WNV *EEE*

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

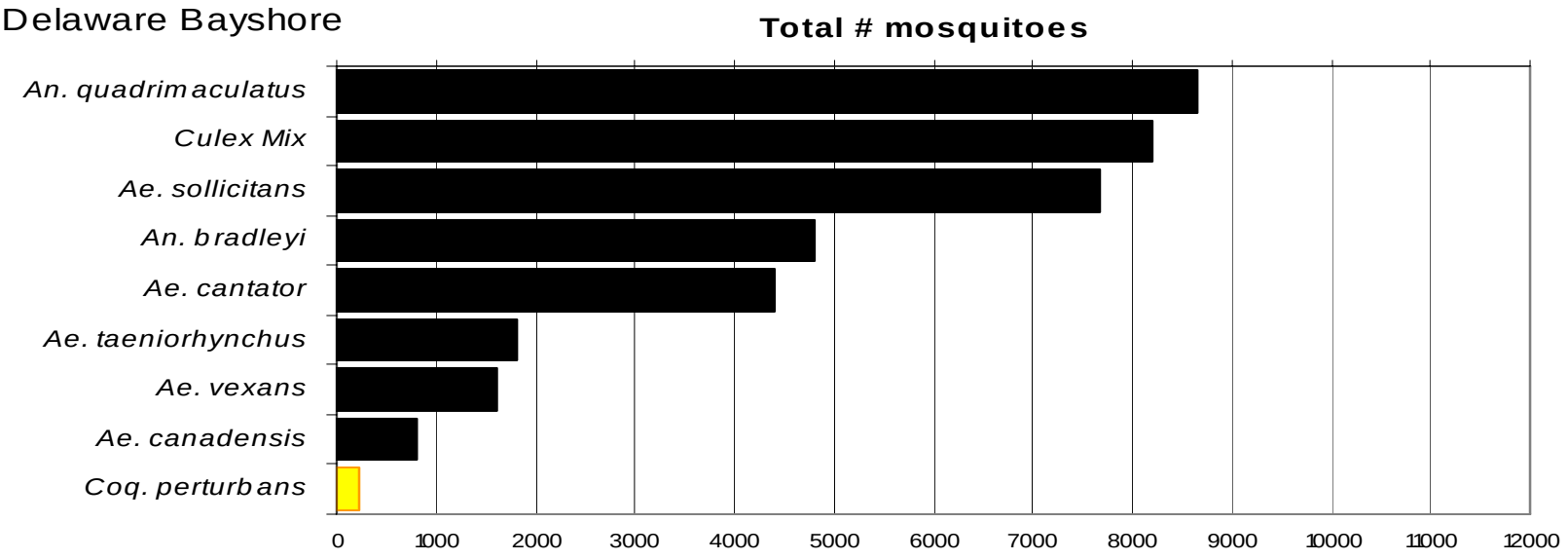
Agricultural



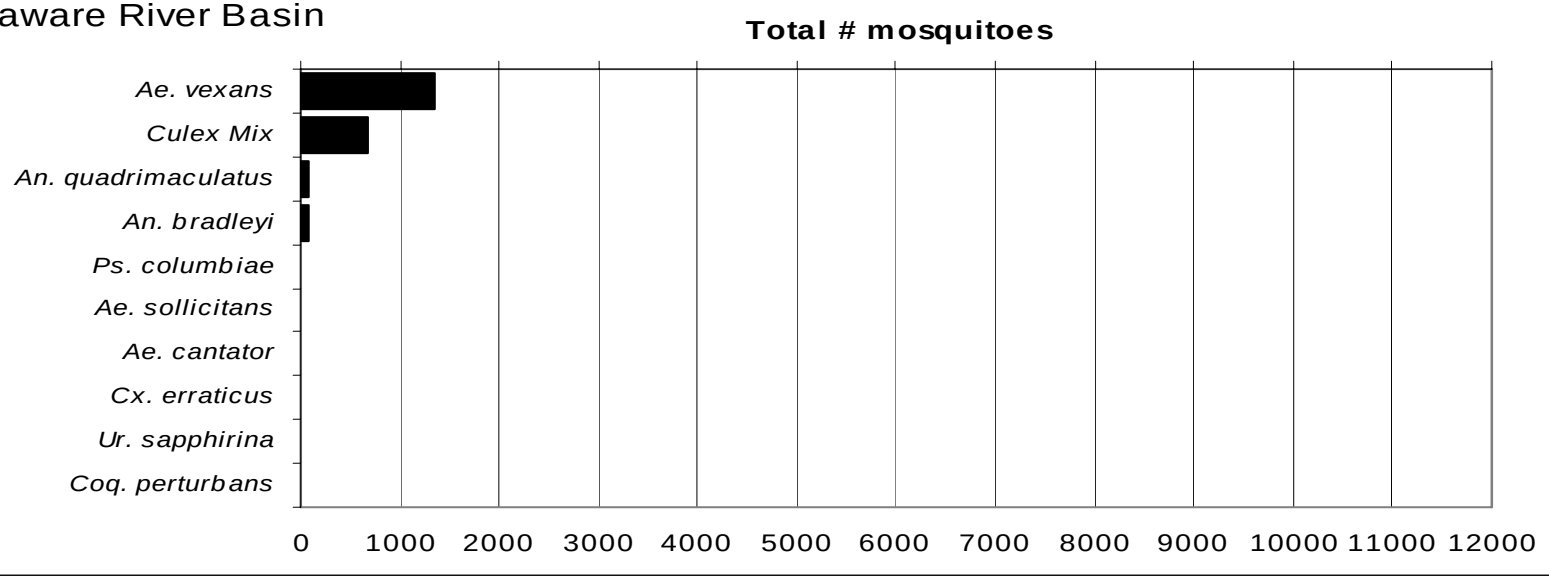
Coastal

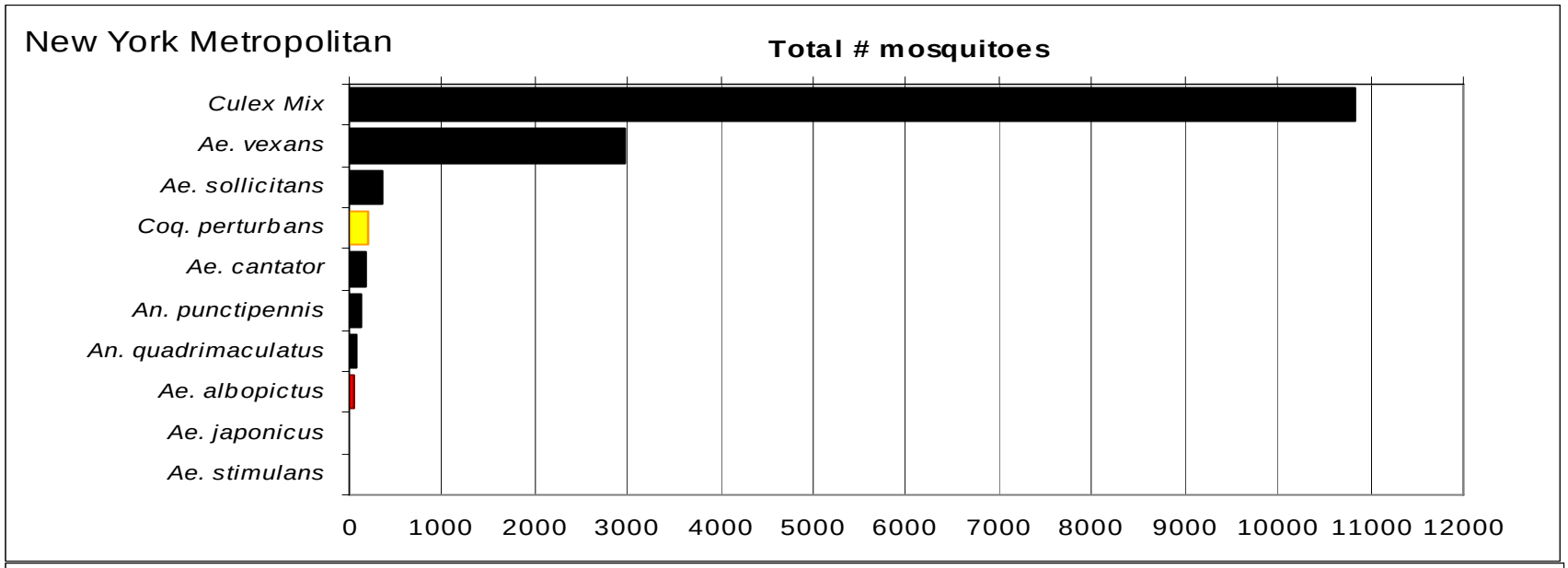


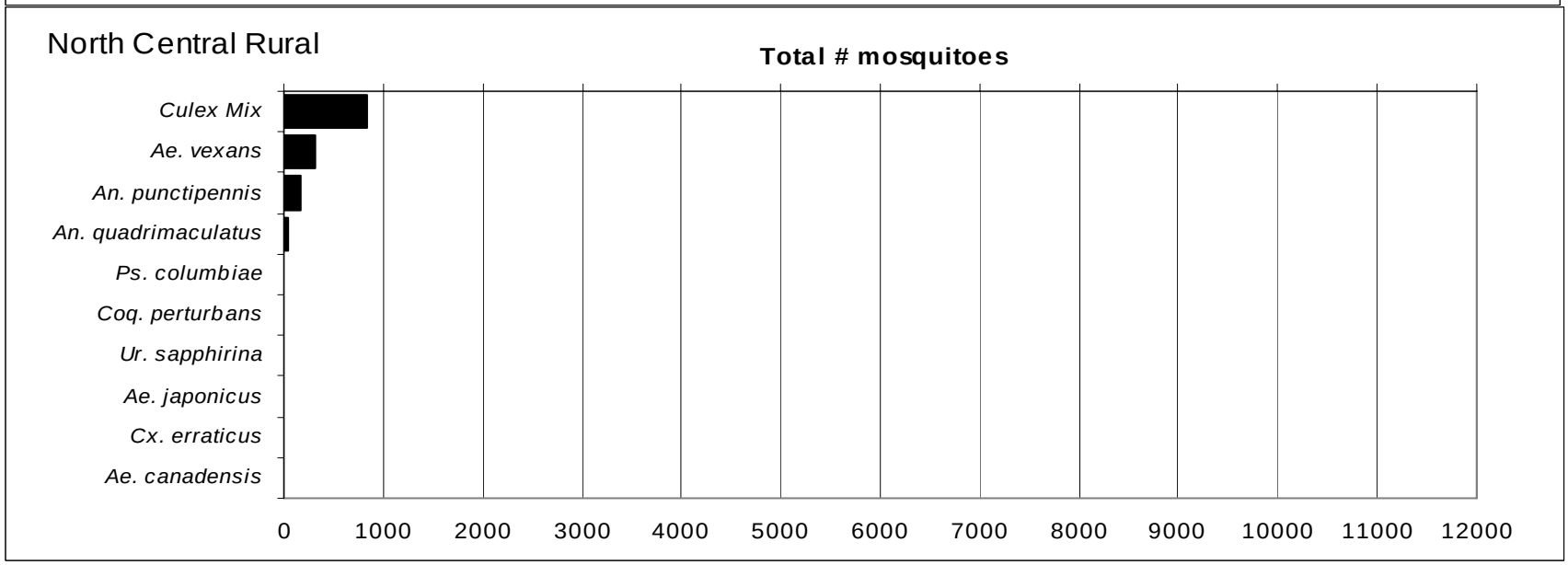
Delaware Bayshore



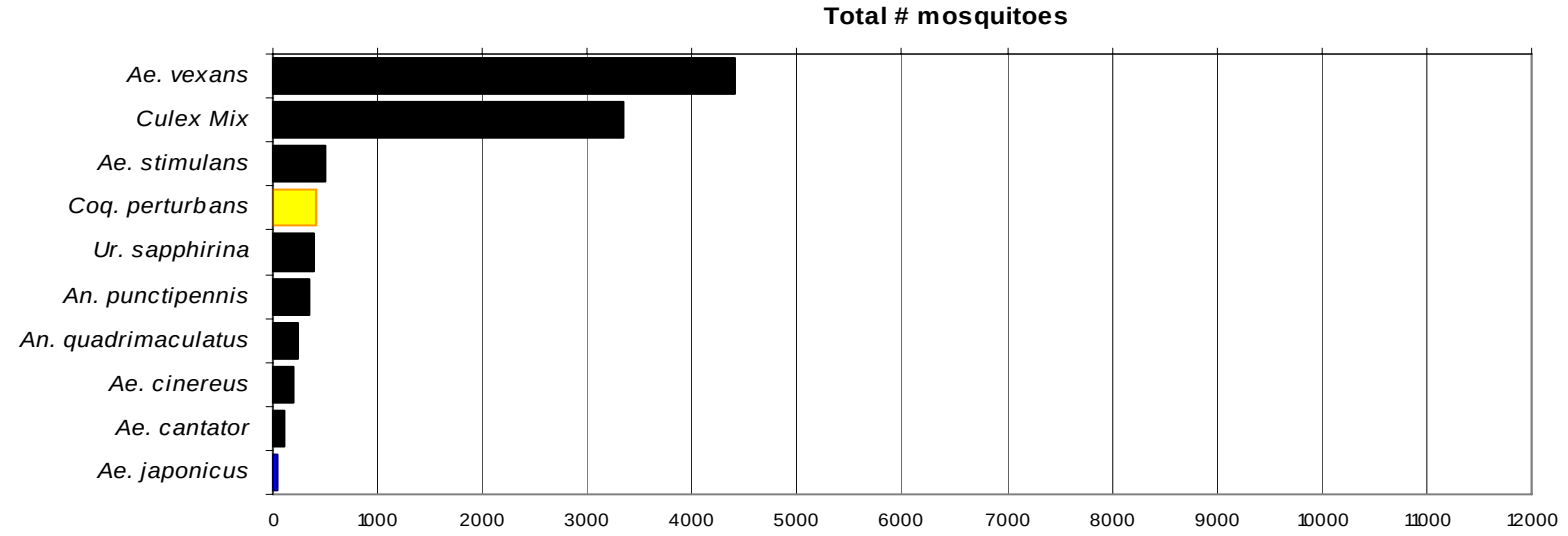
Delaware River Basin



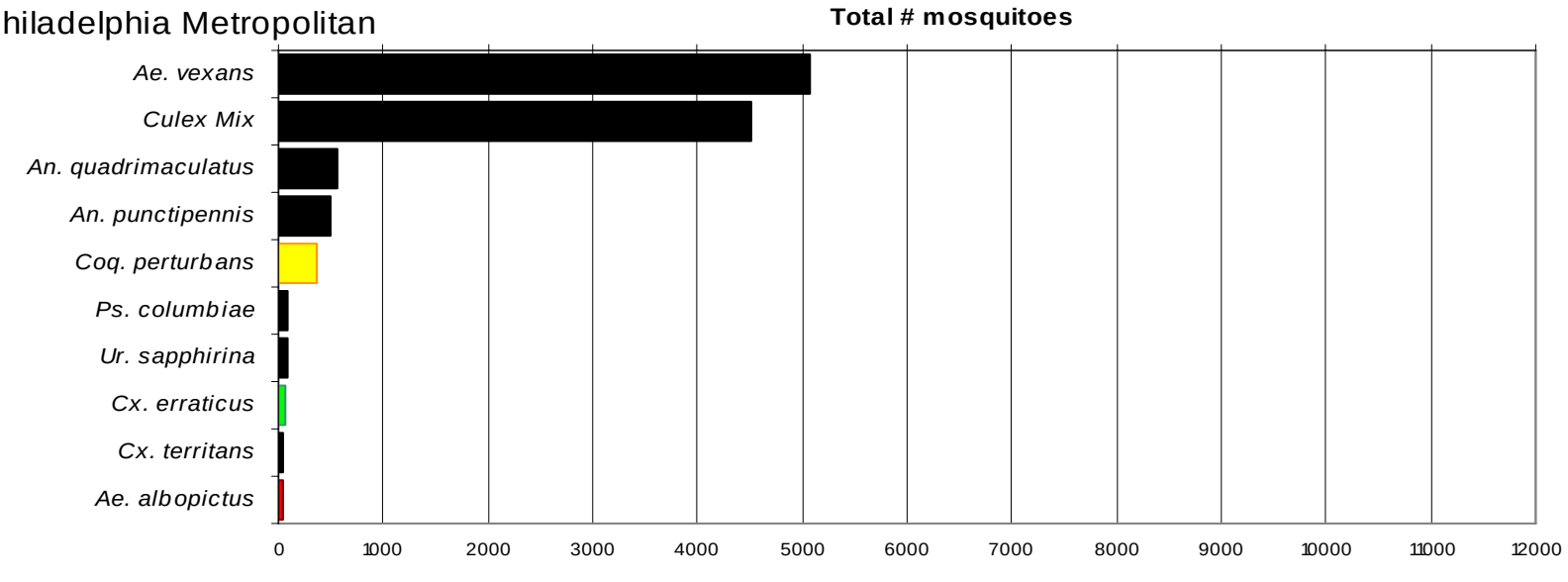

New York Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. sollicitans
Coq. perturbans
Ae. cantator
An. punctipennis
An. quadrimaculatus
Ae. albopictus
Ae. japonicus
Ae. stimulans
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
11000
12000

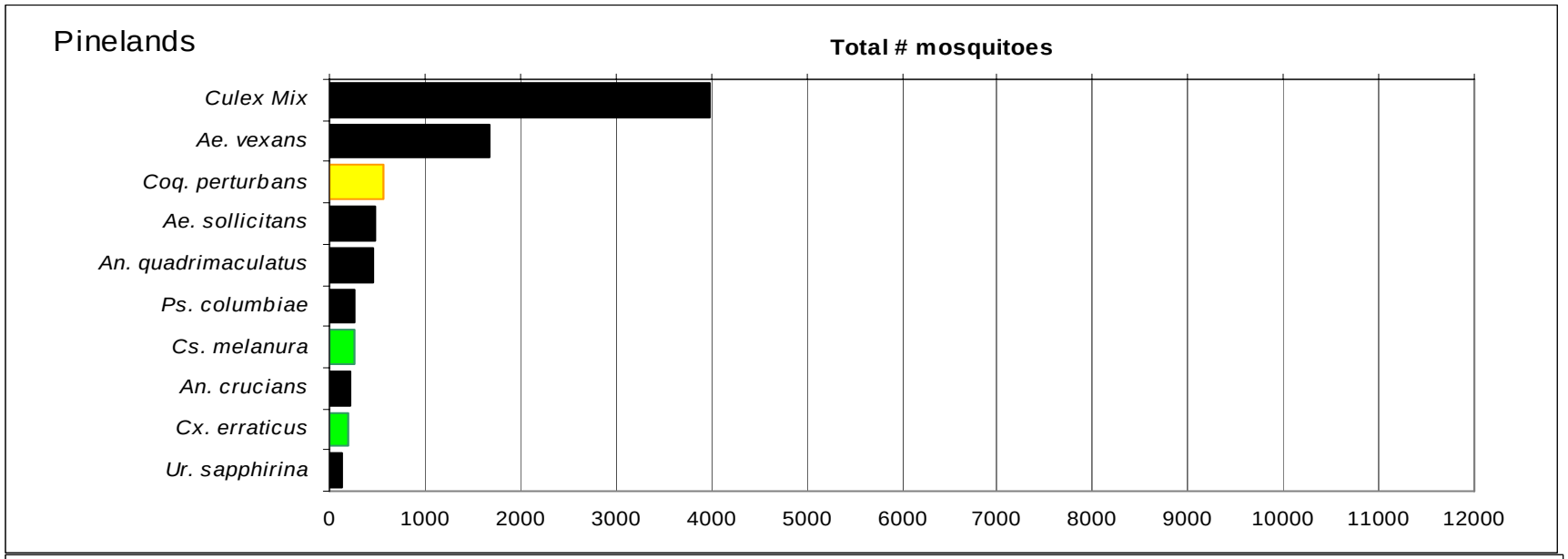

North Central Rural
Total # mosquitoes
Culex Mix
Ae. vexans
An. punctipennis
An. quadrimaculatus
Ps. columbiae
Coq. perturbans
Ur. sapphirina
Ae. japonicus
Cx. erraticus
Ae. canadensis
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
11000
12000

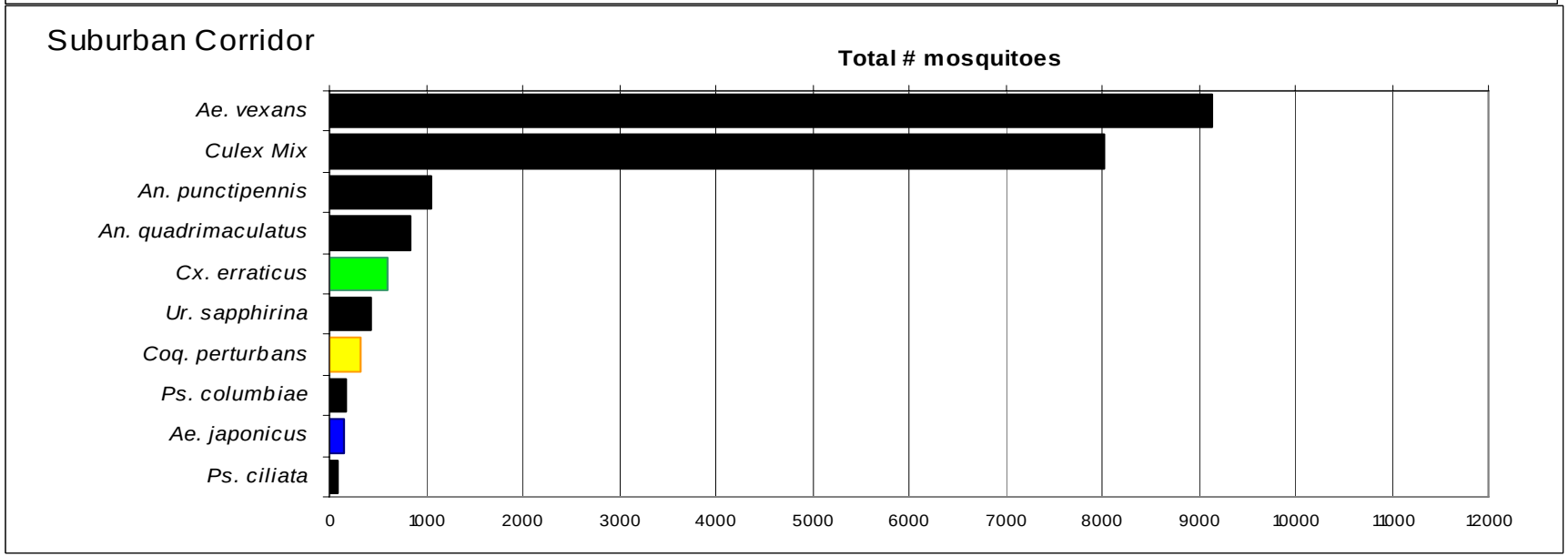
Northwest Rural



Philadelphia Metropolitan




Pinelands
Total # mosquitoes
Culex Mix
Ae. vexans
Coq. perturbans
Ae. sollicitans
An. quadrimaculatus
Ps. columbiae
Cs. melanura
An. crucians
Cx. erraticus
Ur. sapphirina
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
11000
12000


Suburban Corridor
Total # mosquitoes
Ae. vexans
Culex Mix
An. punctipennis
An. quadrimaculatus
Cx. erraticus
Ur. sapphirina
Coq. perturbans
Ps. columbiae
Ae. japonicus
Ps. ciliata
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
11000
12000

Minimum temperatures that occurred early morning of 20 October, 2008 reported by the New Jersey Weather and Climate Network, http://climate.rutgers.edu/njwxnet/ These are temperatures which will force overwintering of mosquitoes at these latitudes. Adult mosquitoes that do not find shelter will likely be killed. Cold-tolerant mosquitoes can survive for longer periods. A sustained warming event with water will result in emergent mosquitoes such as *Aedes vexans* only if eggs have not entered into diapause (a photoperiod-dependent process).