NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report for 12 August to 18 August 2012, CDC Weeks 33

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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.

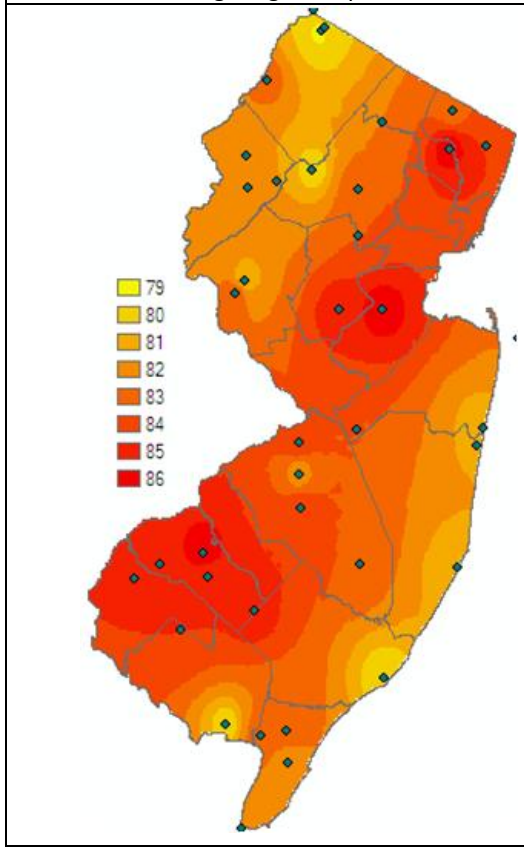
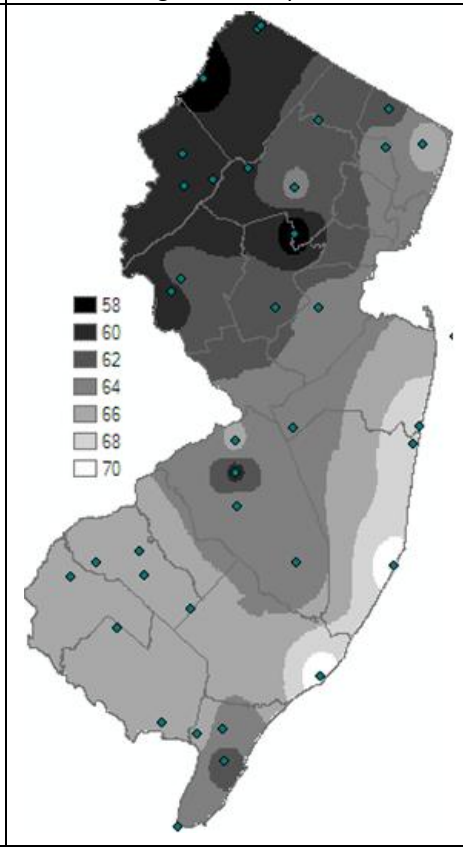
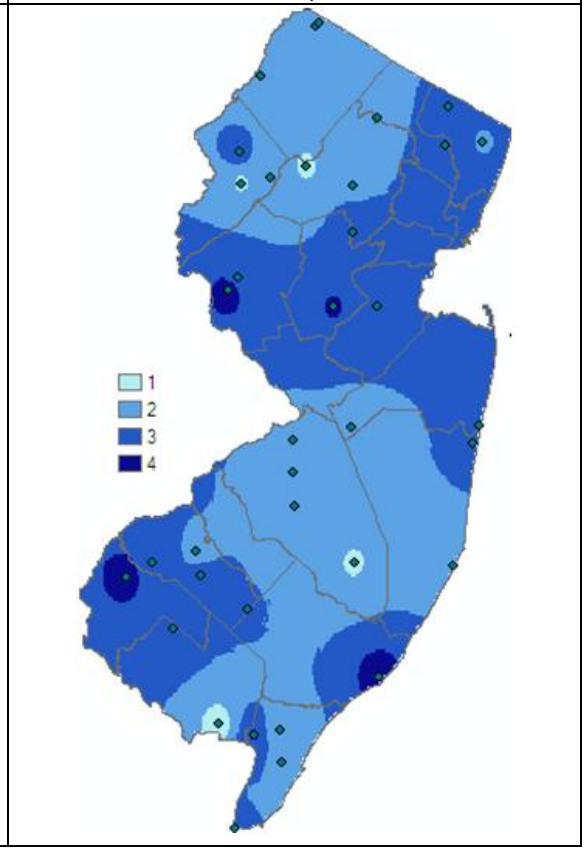
Summary Table – Week 33

	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	**0.12**	**1.84**	**0**	**0.19**	**2.34**	**0**	**0.00**	**0.02**	**0**	**0.00**	**0.15**	**0**
Coastal	**0.46**	**2.38**	**0**	**3.14**	**6.02**	**0**	**0.02**	**0.16**	**0**	**4.64**	**8.37**	**0**
Delaware Bayshore	**1.57**	**1.31**	**1**	**16.77**	**9.99**	**2**	**0.00**	**0.40**	**0**	**0.34**	**6.67**	**0**
Delaware River Basin	**1.64**	**4.42**	**0**	**0.79**	**2.34**	**0**	**0.00**	**0.69**	**0**	**0.00**	**0.00**	**0**
New York Metro	**0.57**	**5.03**	**0**	**3.47**	**8.24**	**0**	**0.07**	**0.12**	**0**	**0.27**	**0.11**	**3**
North Central Rural	**0.22**	**1.04**	**0**	**0.57**	**1.14**	**0**	**0.00**	**0.01**	**0**	**0.00**	**0.00**	**0**
Northwest Rural	**1.31**	**9.66**	**0**	**1.66**	**5.65**	**0**	**0.02**	**0.70**	**0**	**0.00**	**0.00**	**0**
Philadelphia Metro	**1.07**	**8.48**	**0**	**0.46**	**2.77**	**0**	**0.04**	**0.05**	**0**	**0.00**	**0.00**	**0**
Pinelands	**0.12**	**1.10**	**0**	**2.12**	**3.30**	**0**	**0.00**	**0.35**	**0**	**0.08**	**0.12**	**0**
Suburban Corridor	**1.84**	**8.40**	**0**	**1.26**	**1.43**	**0**	**0.99**	**0.57**	**2**	**0.02**	**0.02**	**0**

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

State Summary: Delaware Bayshore region shows higher activity with increased numbers of *Aedes vexans* and *Culex* Mix species. The Suburban Corridor also shows increased activity with *Coquillettidia perturbans* while the New York Metropolitan region shows increased *Aedes sollicitans* activity.

Climate Factors

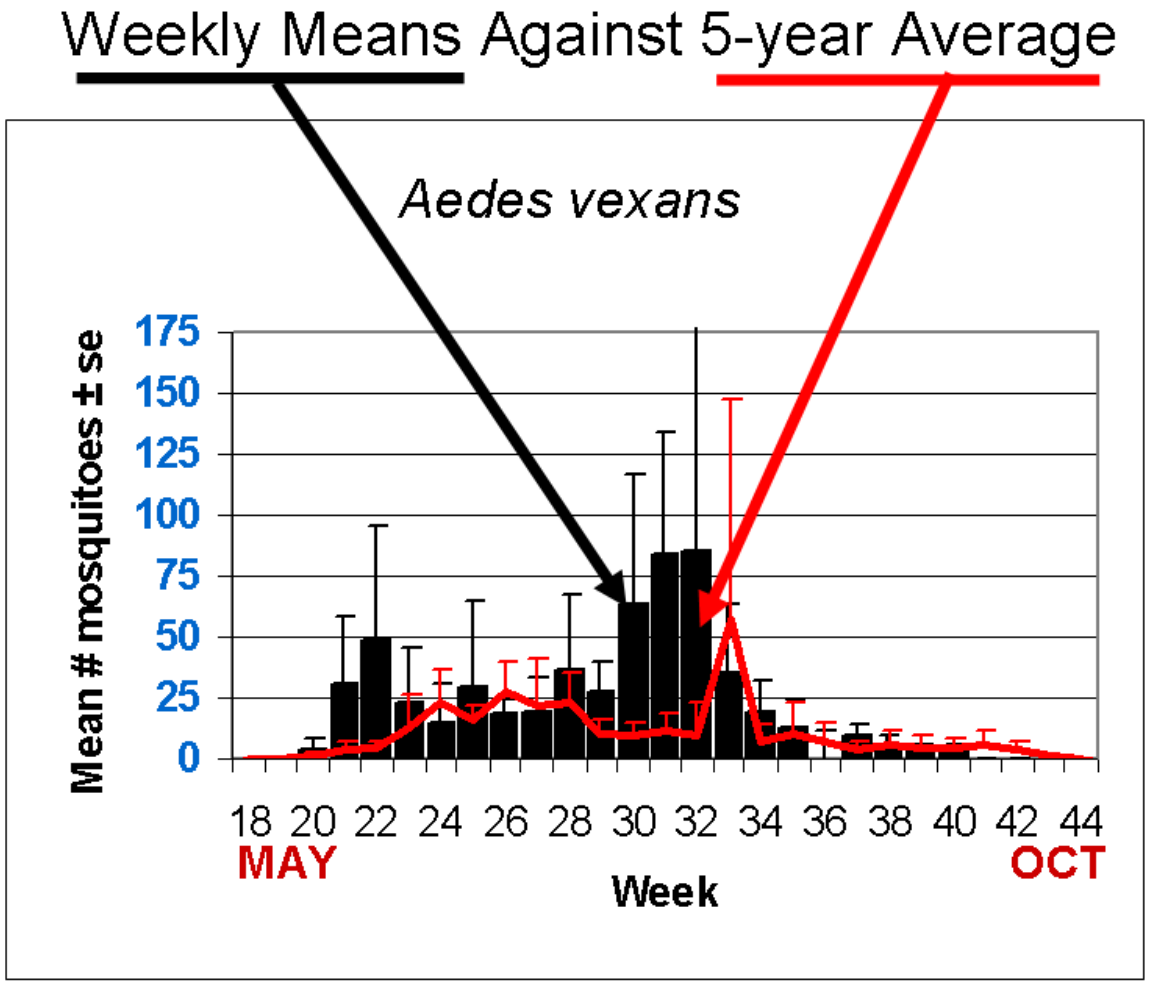
Average High Temperature	Average Low Temperature	Total Precipitation
		

The three figures show the interpolation of average maximum and minimum temperature and total precipitation for 1- 23 August, 2012 in New Jersey. Data points are from about 39 weather stations maintained through the New Jersey Weather & Climate Network and the State Climatologist. Interpolation between points was performed using ArcMap 10.1.

NJ Weather & Climate NETWORK

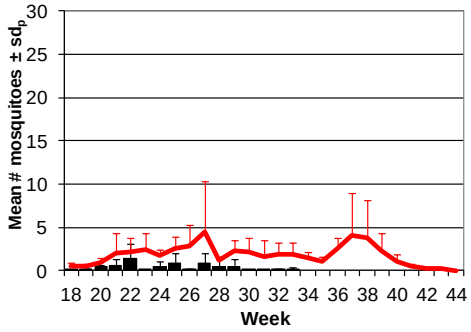
ONJSC at Rutgers University

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 report are from Bergen, Camden, Cape May, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Salem, Sussex, Union and Warren counties. Data for the previous week is from Atlantic, Bergen, Camden, Cape May, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Salem, Somerset, Sussex, Union and Warren counties. Note: County data is sent in at a variety of times during the week.

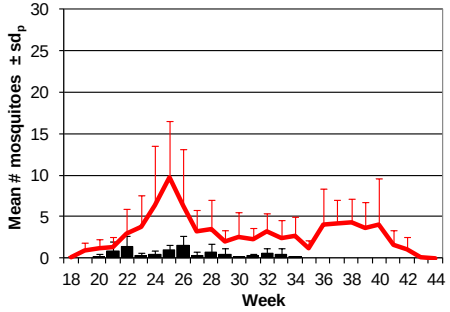


Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

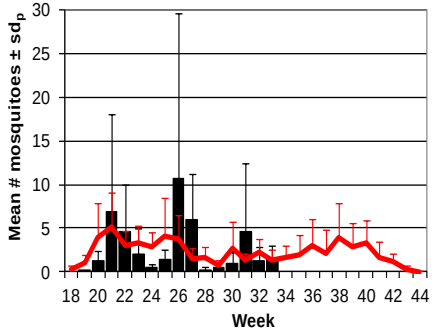
Agricultural



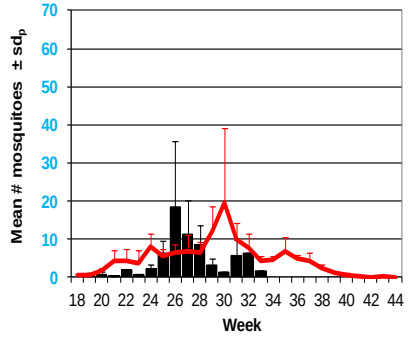
Coastal



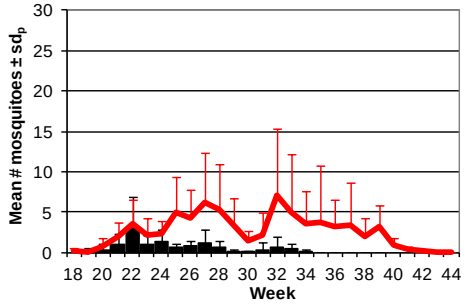
Delaware Bayshore



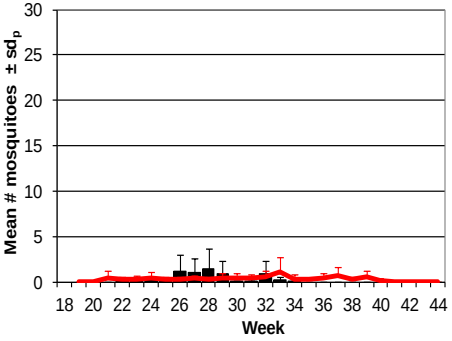
Delaware River Basin



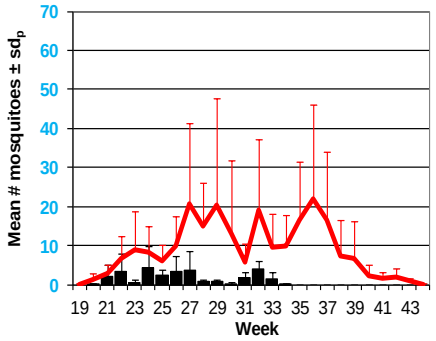
New York Metro



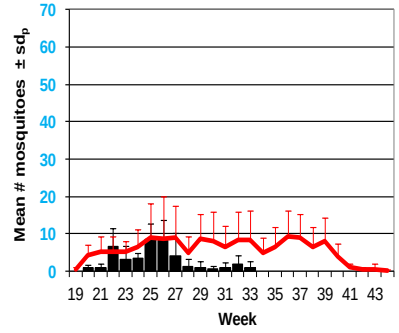
North Central Rural



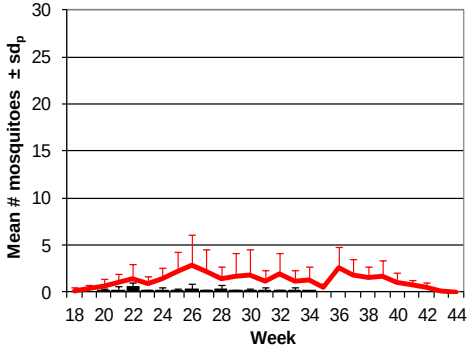
Northwestern Rural



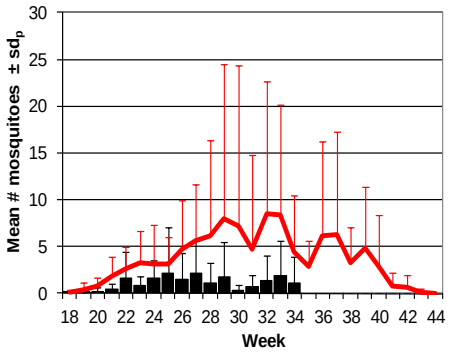
Philadelphia Metro



Pinelands



Suburban Corridor



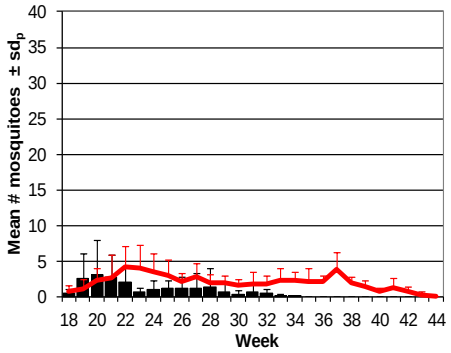
Comments

Apart from the Delaware Bayshore region, *Aedes vexans* populations continue to be well below historical trends for most of the state. Drought monitor shows continued dry areas around the Gloucester/Camden counties. One pool of *Ae. vexans* was recently detected to be positive for West Nile virus. This species is moderately competent for transmission of WNV.

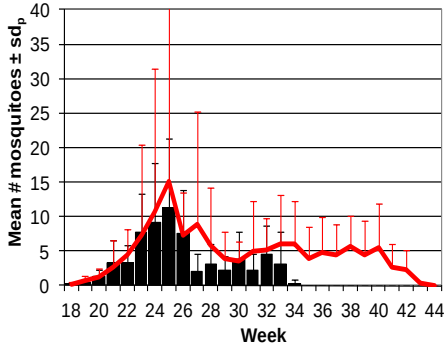
http://droughtmonitor.unl.edu/DM_northeast.htm

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

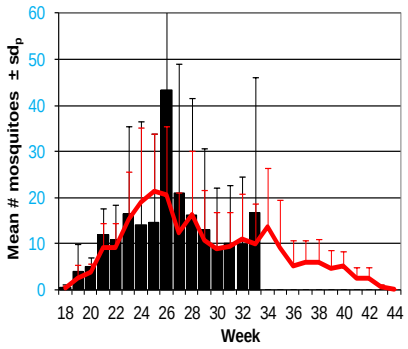
Agricultural



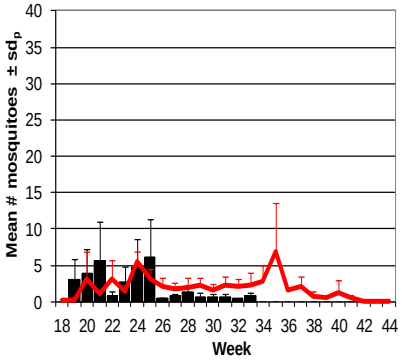
Coastal



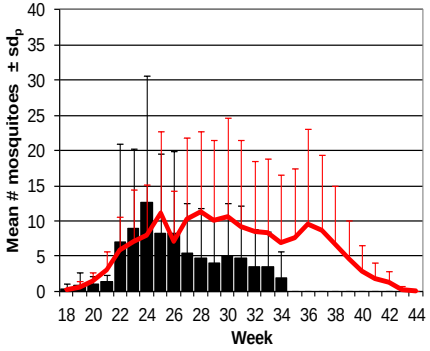
Delaware Bayshore



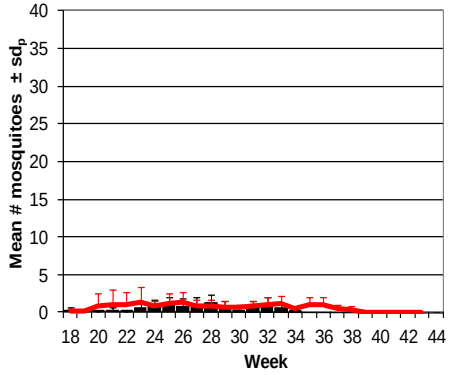
Delaware River Basin



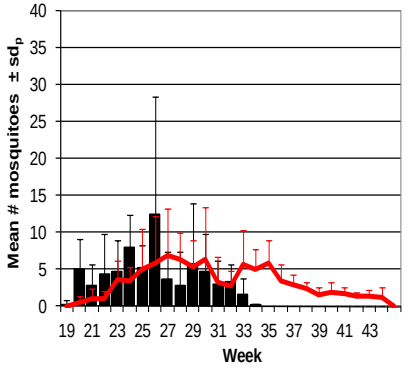
New York Metro



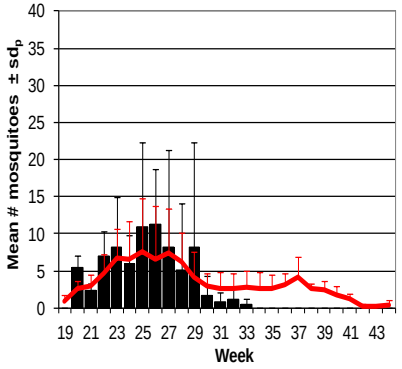
North Central Rural



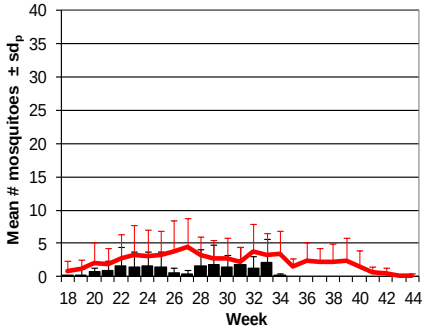
Northwestern Rural



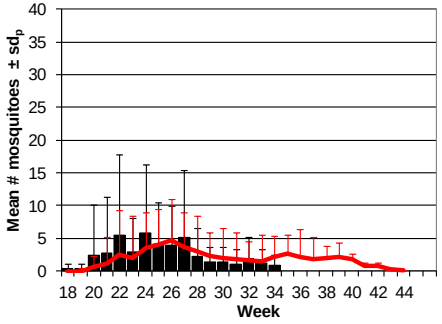
Philadelphia Metro



Pinelands



Suburban Corridor

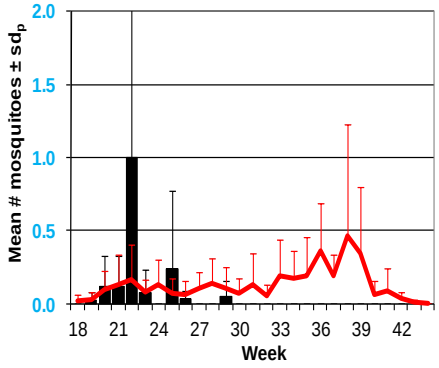


Comments

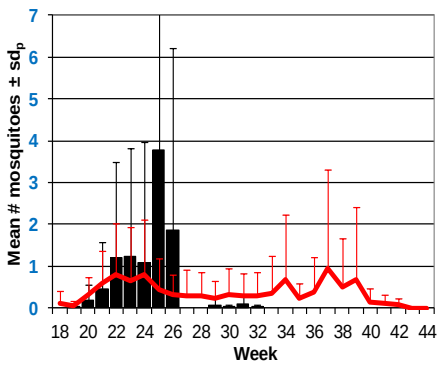
Culex Mix is composed of *Culex pipiens, Cx. restuans* and *Cx. salinarius*. These three species (especially *pipiens* and *restuans*) are often difficult to tell apart after encountering the damaging blades of the New Jersey light trap. *Culex* populations increased in the Delaware Bayshore region, with most of the increase due to *Culex salinarius*.

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

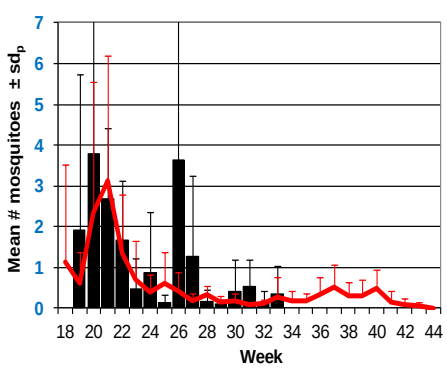
Agricultural



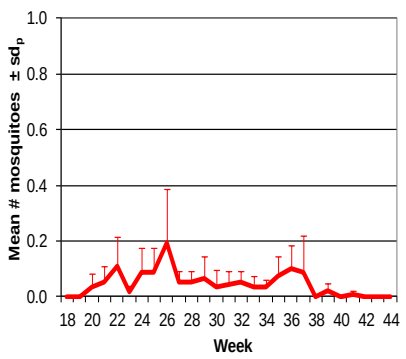
Coastal



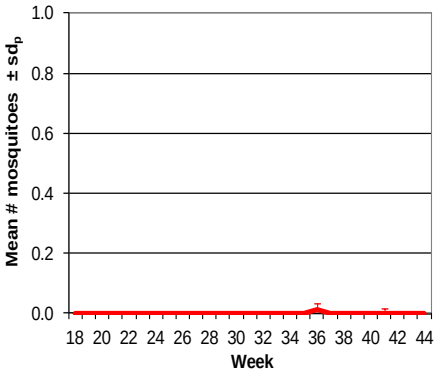
Delaware Bayshore



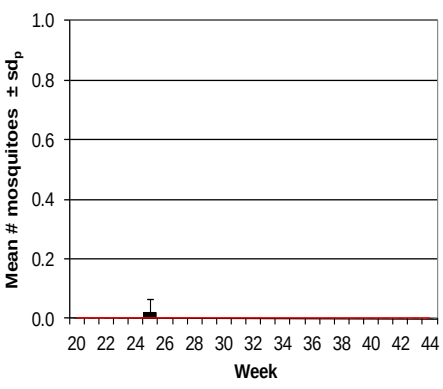
Delaware River Basin



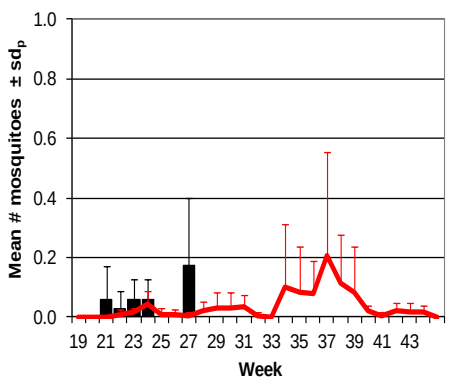
New York Metro



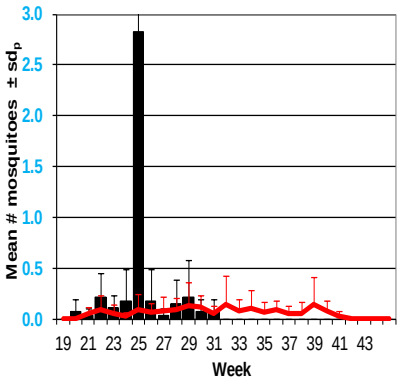
North Central Rural



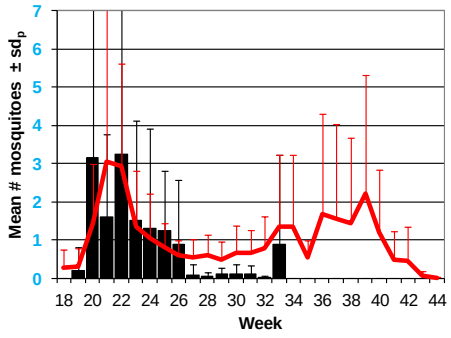
Northwestern Rural



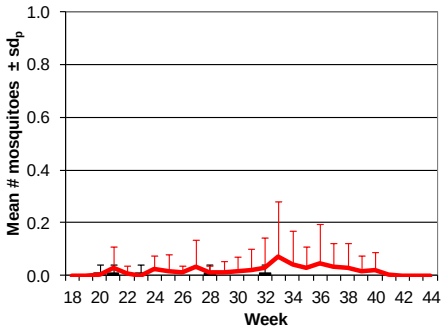
Philadelphia Metro



Pinelands



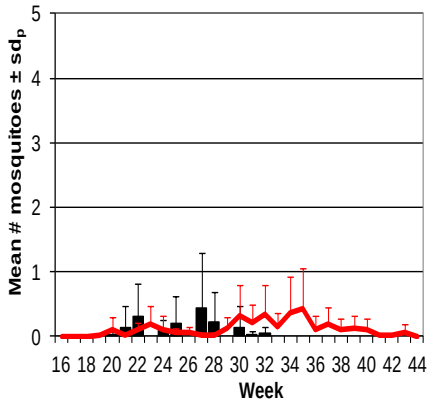
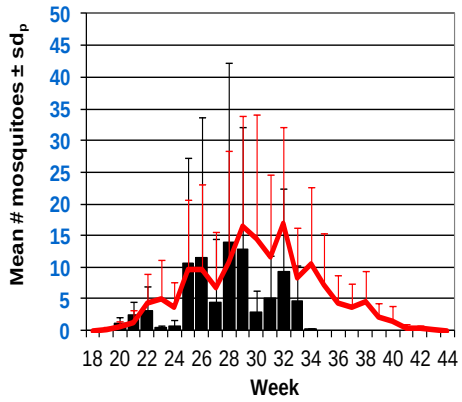
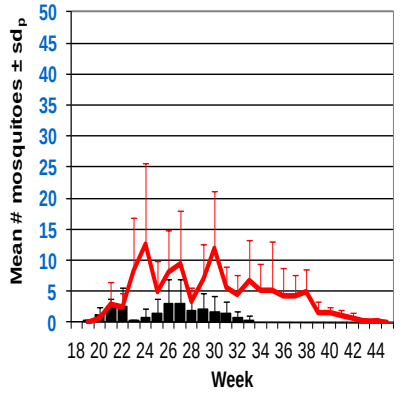
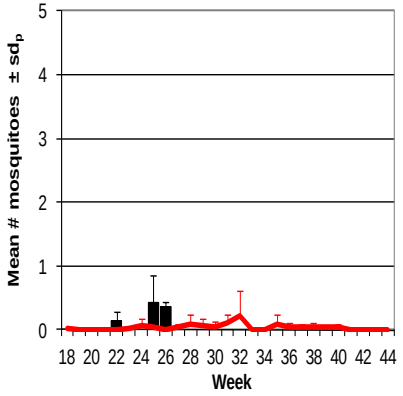
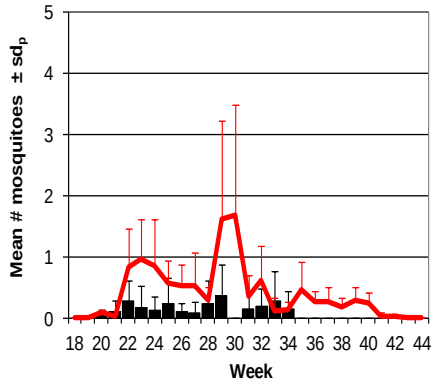
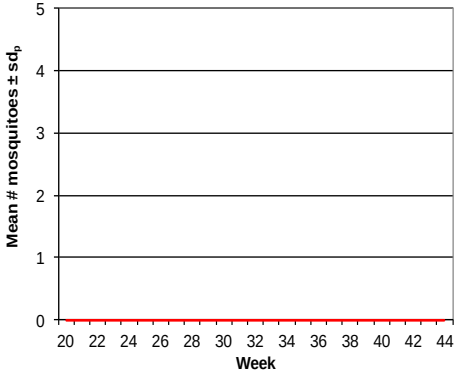
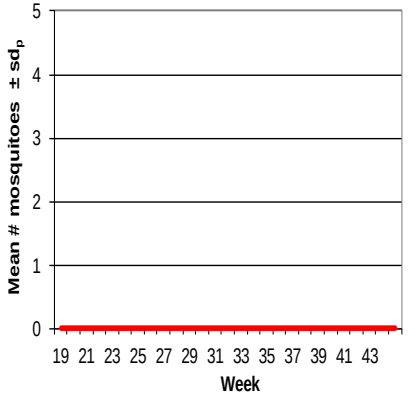
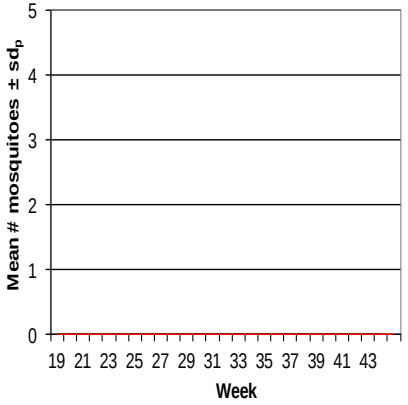
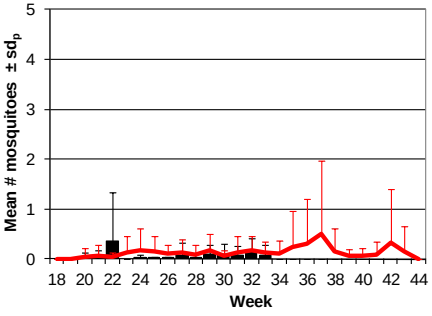
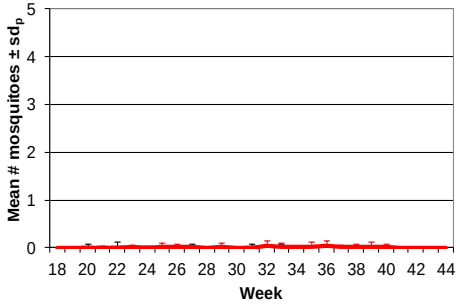
Suburban Corridor



Comments

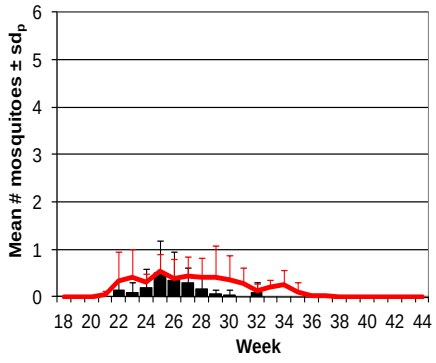
Culiseta melanura is the enzootic ornithophilic vector of eastern equine encephalitis. Populations of *Cs. melanura* increased in the Pinelands toward historical values after several weeks of low numbers. In the Delaware Bayshore, numbers are also slightly elevated. EEE is circulating in *Cs. melanura* in the southern half of New Jersey with several horse cases having occurred to date. Virus has not yet been detected in other mosquito species.

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

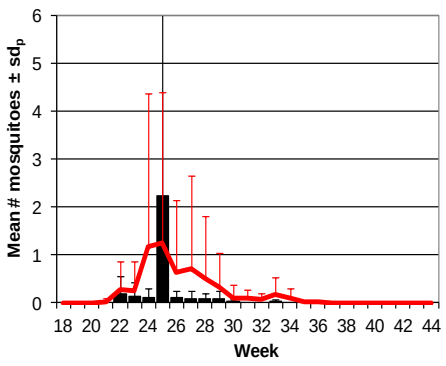
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		Numbers of *Aedes sollicitans* in the New York Metropolitan region are above historical trends as the latest emergence has likely peaked there. The next full moon is expected on August 31st .	

Coquillettidia perturbans
Monotypic (*Coquillettidia perturbans* Type)

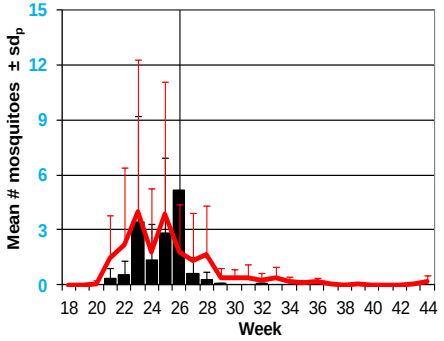
Agricultural



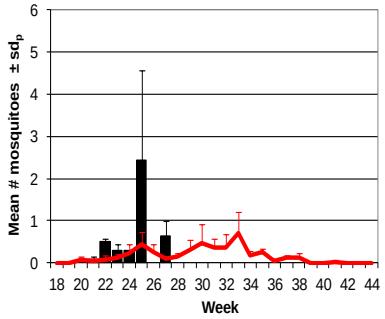
Coastal



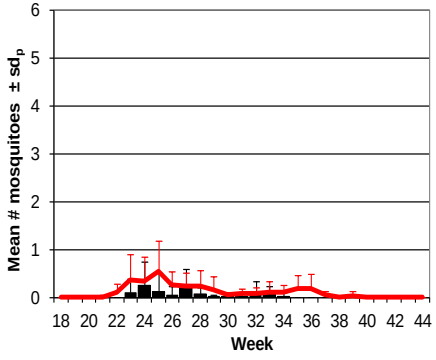
Delaware Bayshore



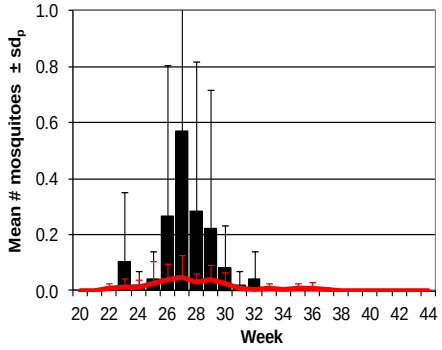
Delaware River Basin



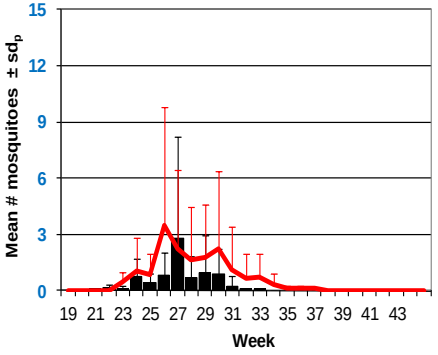
New York Metro



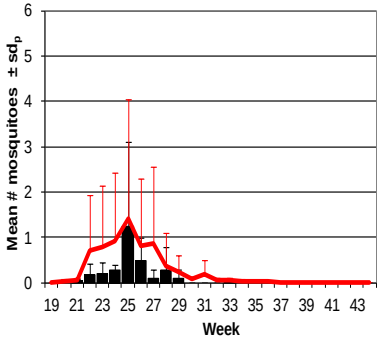
North Central Rural



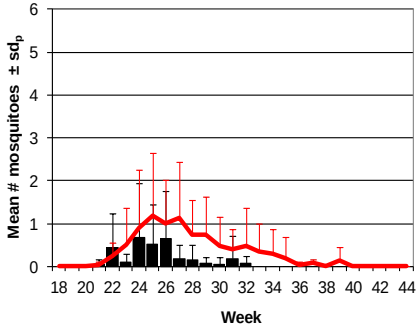
Northwestern Rural



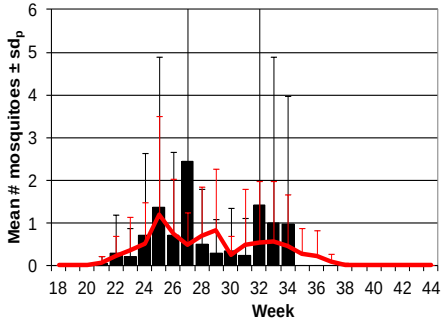
Philadelphia Metro



Pinelands



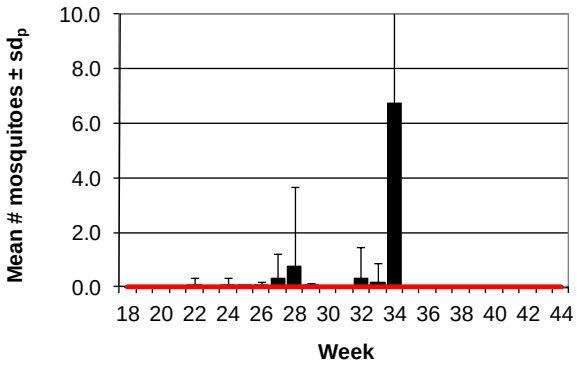
Suburban Corridor



Comments

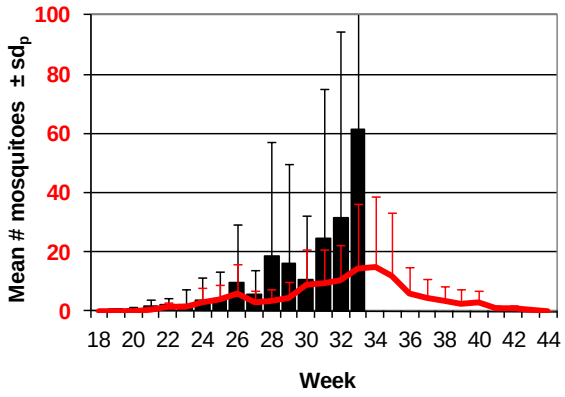
Coquillettidia perturbans populations in the North Central Rural region have finally appeared to decline after significantly high numbers this season. Numbers in the Suburban Corridor, on the other hand, have been elevated for the past few weeks. This species is suspected of contributing toward inland cases of EEE. While no species other than *Cs. melanura* have been found infected with EEE virus to date, significant numbers of the potential bridge vector should warrant increased scrutiny.

Not all species of mosquitoes are experiencing lower populations in New Jersey:



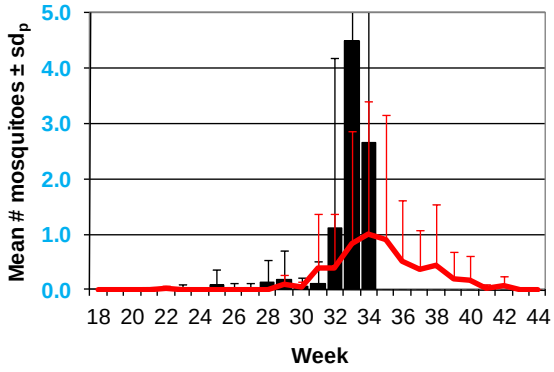
Anopheles crucians in the Philadelphia Metropolitan Region.

An. crucians is similar to *Cs. melanura* with overwintering larvae that likely spend time burrowed in bottom sediment. In recent years it has been seen in numbers in the Philadelphia Metro region, and this year it has made a significant appearance. Like *Culex* Mix, this species is in a complex with the similar *An. bradleyi*, but is generally found further away from saline habitat despite its tolerance. This species is a potential vector of malaria.



Anopheles bradleyi in the Delaware Bayshore

Anopheles bradleyi is a salt tolerant floodwater species that exploits more brackish water areas near salt marshes. Its largest populations are found in the Coastal and Delaware Bayshore. Recent years have shown significant populations in the Delaware Bayshore, and currently, numbers are again high.



Culex erraticus in the Suburban Corridor.

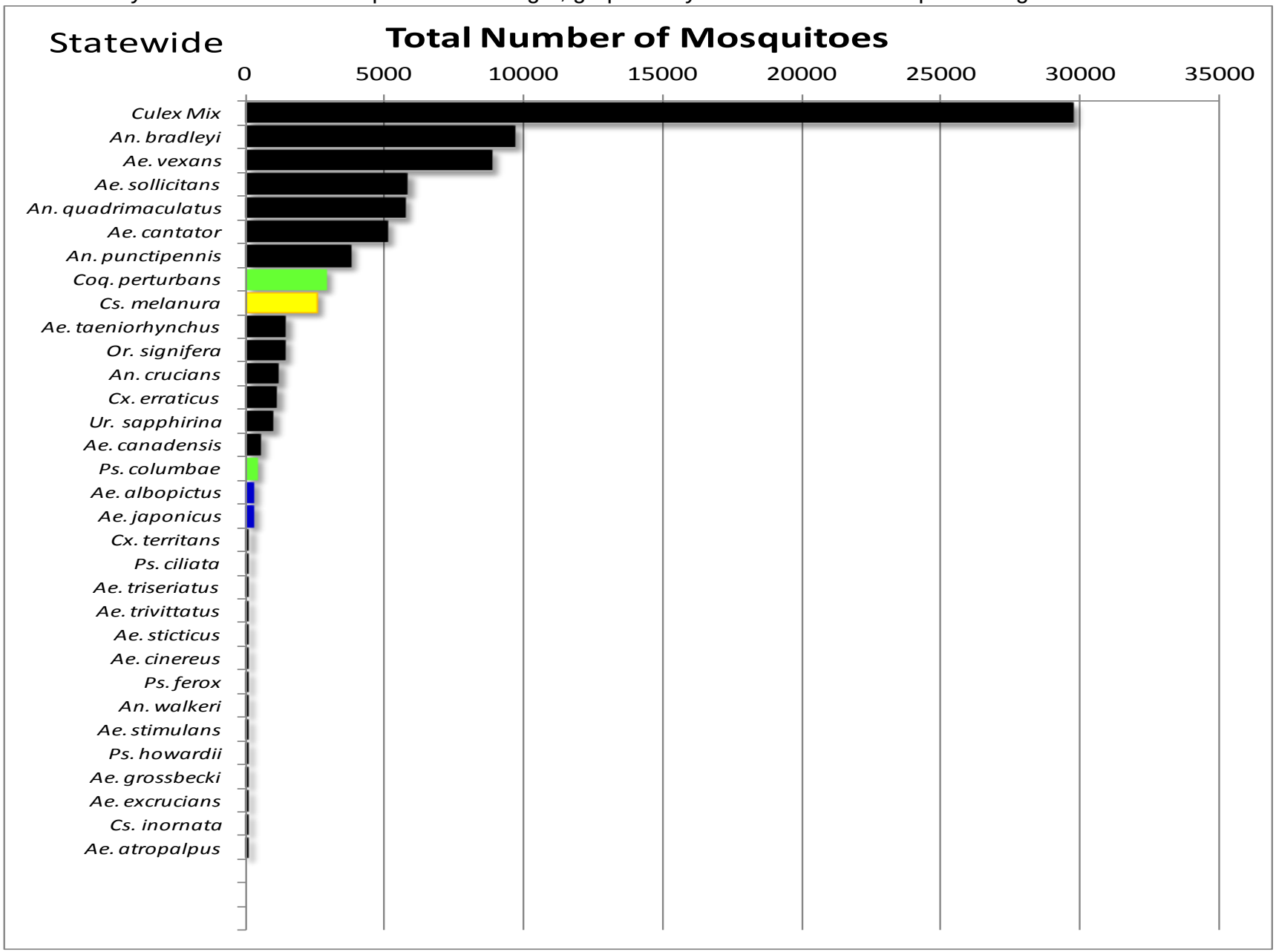
Culex erraticus has increased in visibility in New Jersey after being described as a rare species. This species appears to be involved in the amplification cycle of EEE and, with its cosmopolitan blood-feeding habits, may be a potential bridge vector.

-

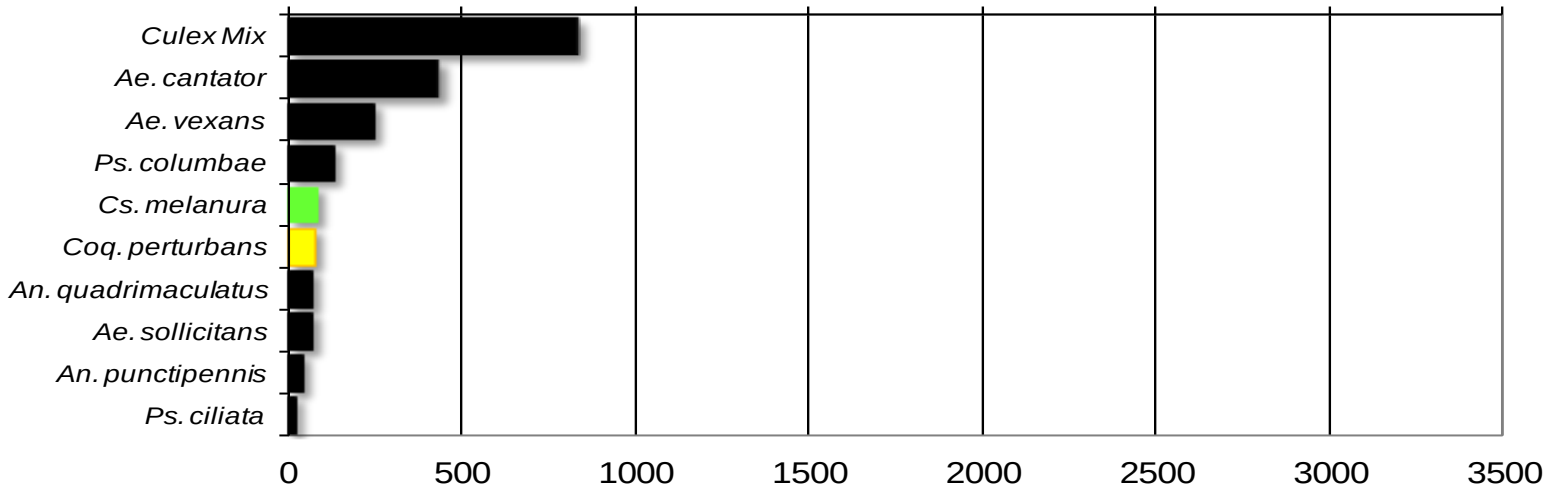
WNV *EEE*

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

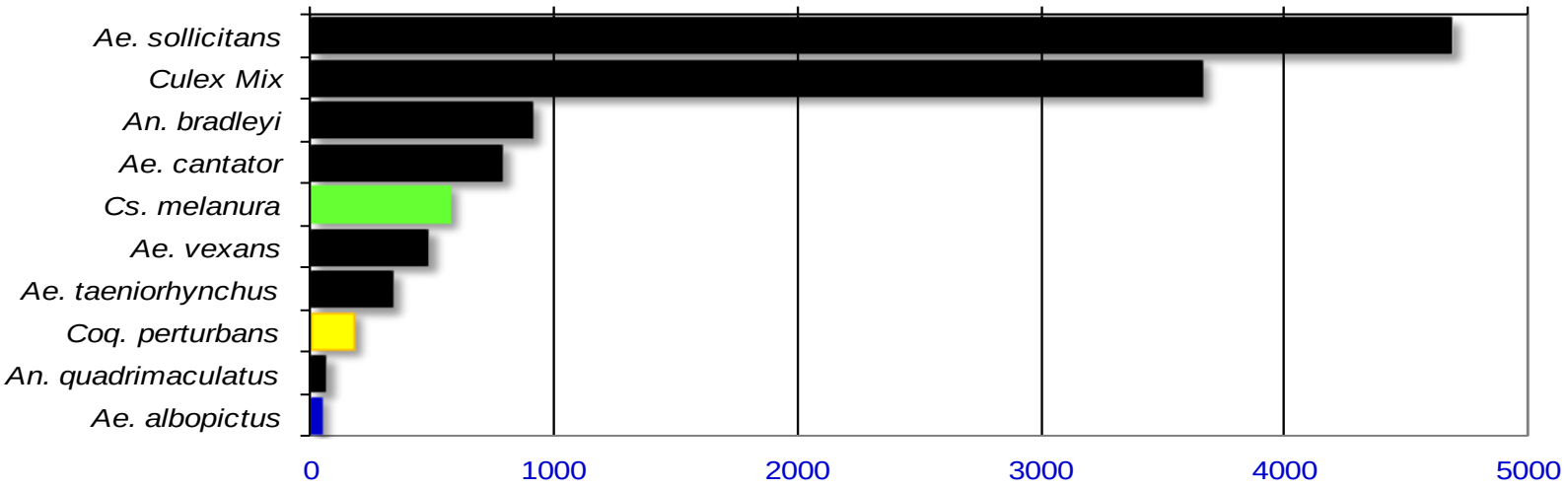
Note: In early season when fewer species are caught, graphs may show less than ten species/region or 25 statewide.

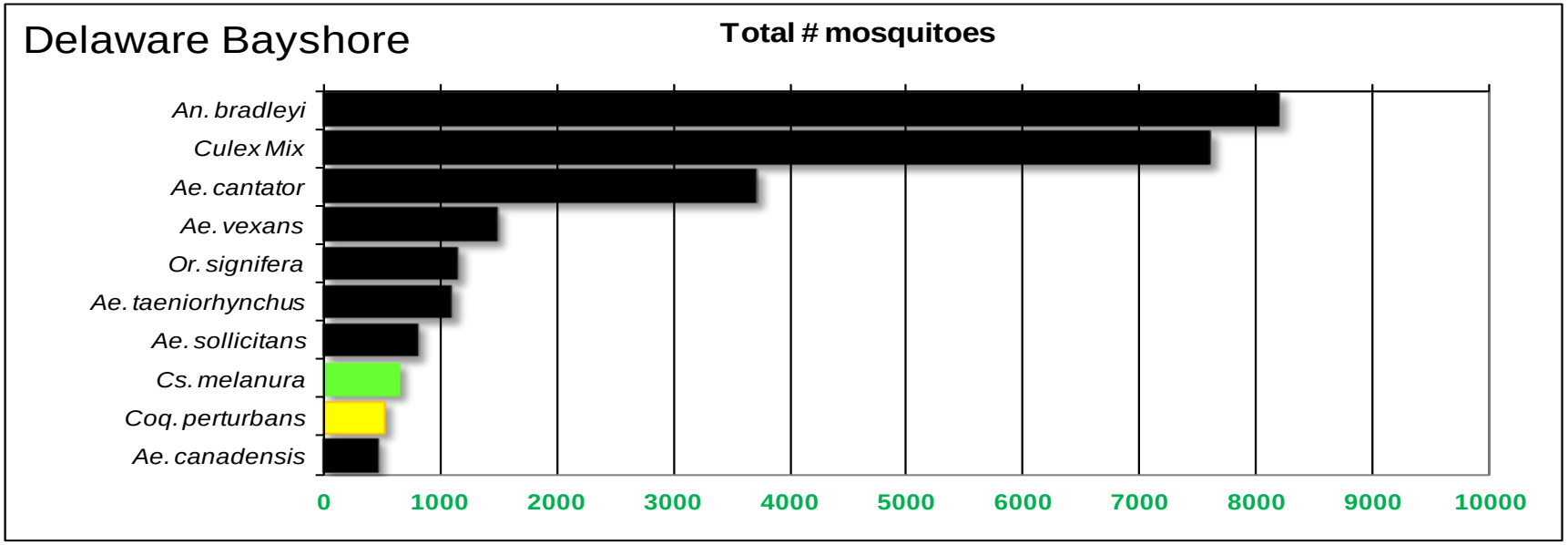


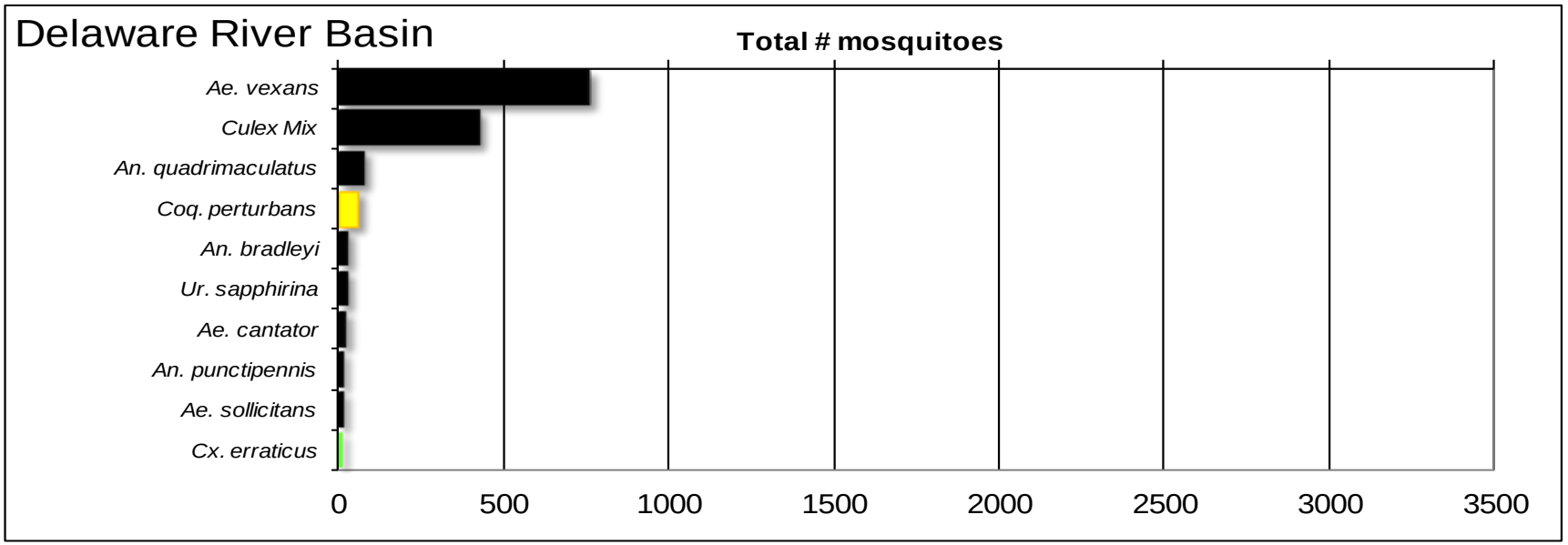
Agricultural

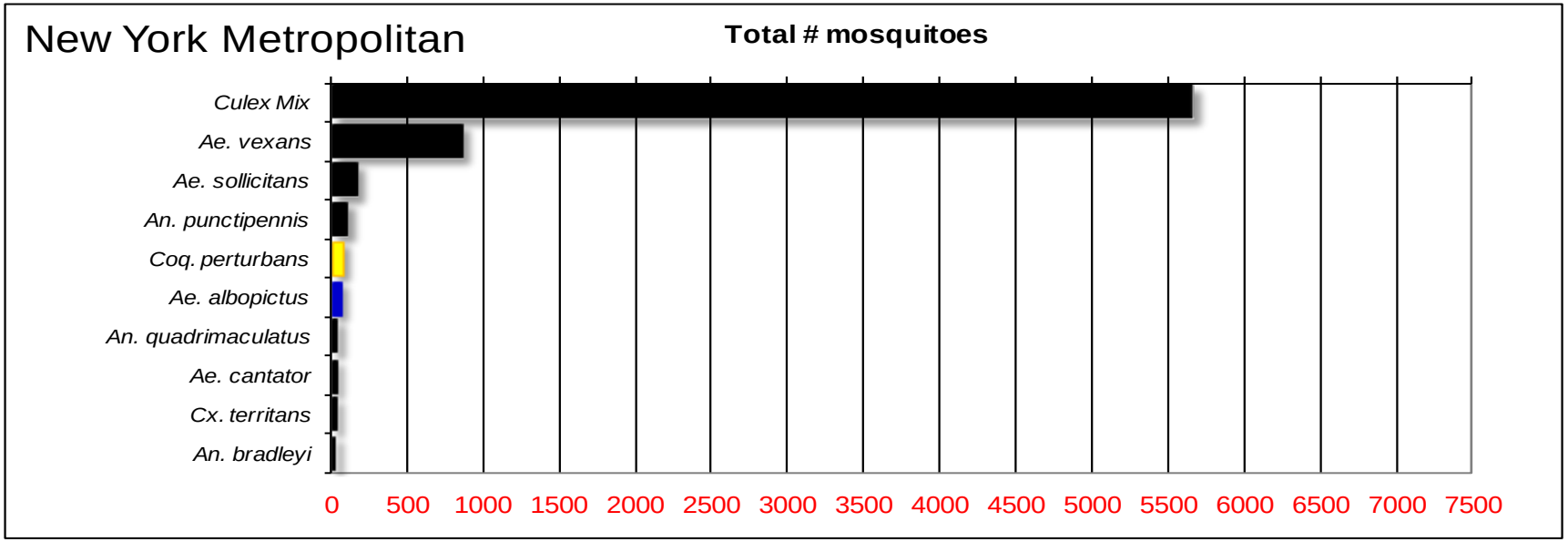


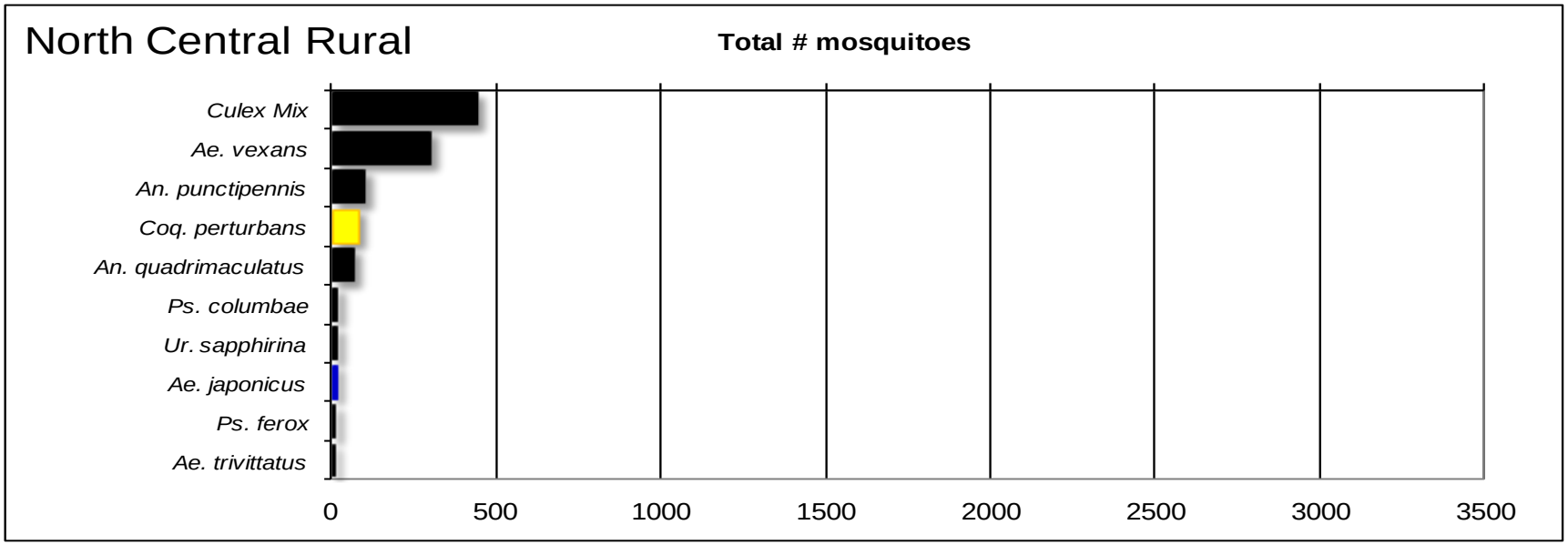
Coastal

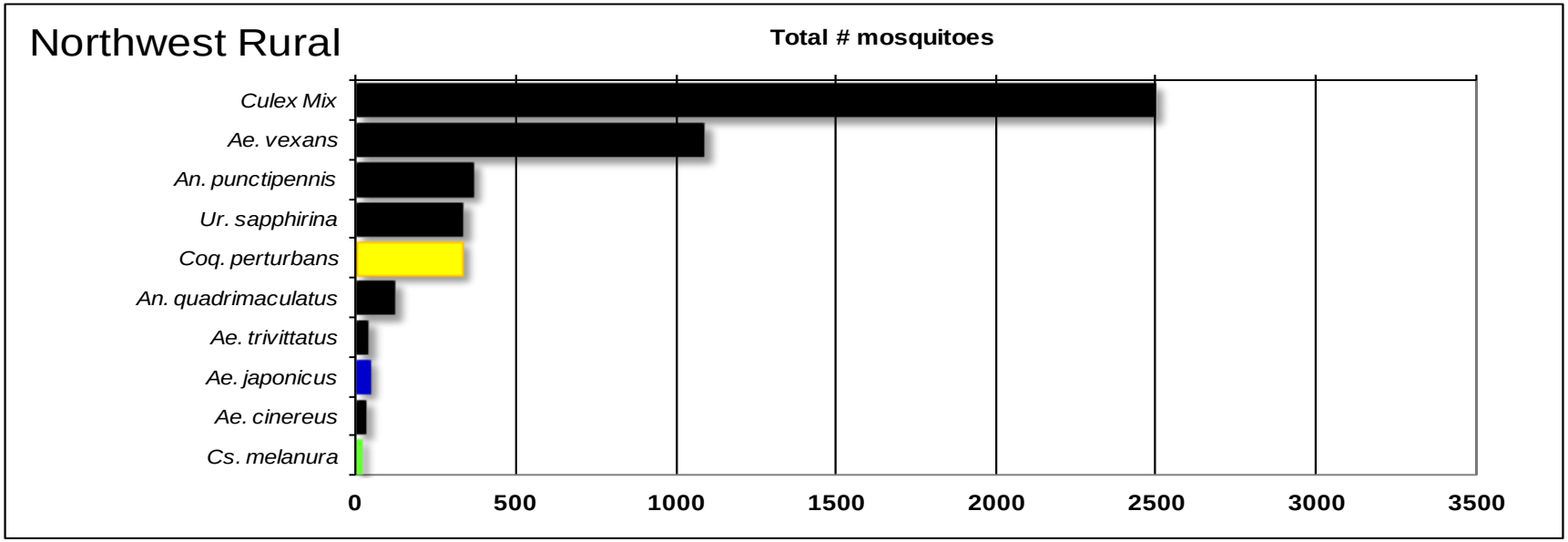


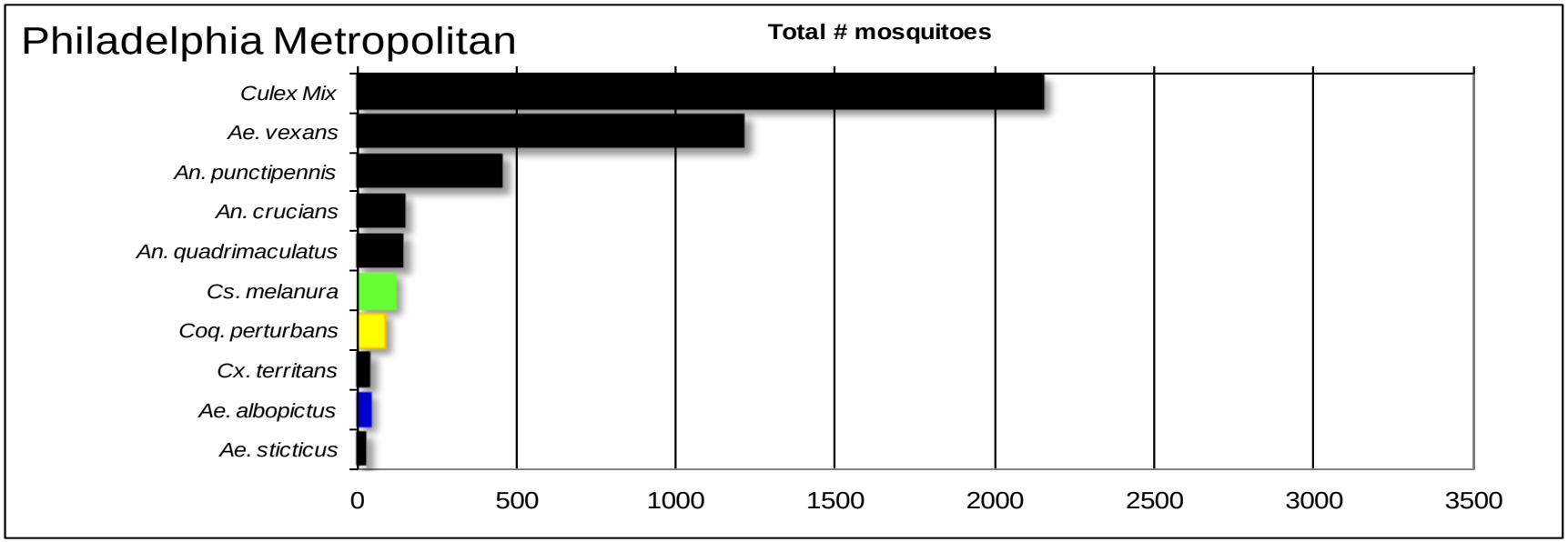

Delaware Bayshore
Total # mosquitoes
An. bradleyi
Culex Mix
Ae. cantator
Ae. vexans
Or. signifera
Ae. taeniorhynchus
Ae. sollicitans
Cs. melanura
Coq. perturbans
Ae. canadensis
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

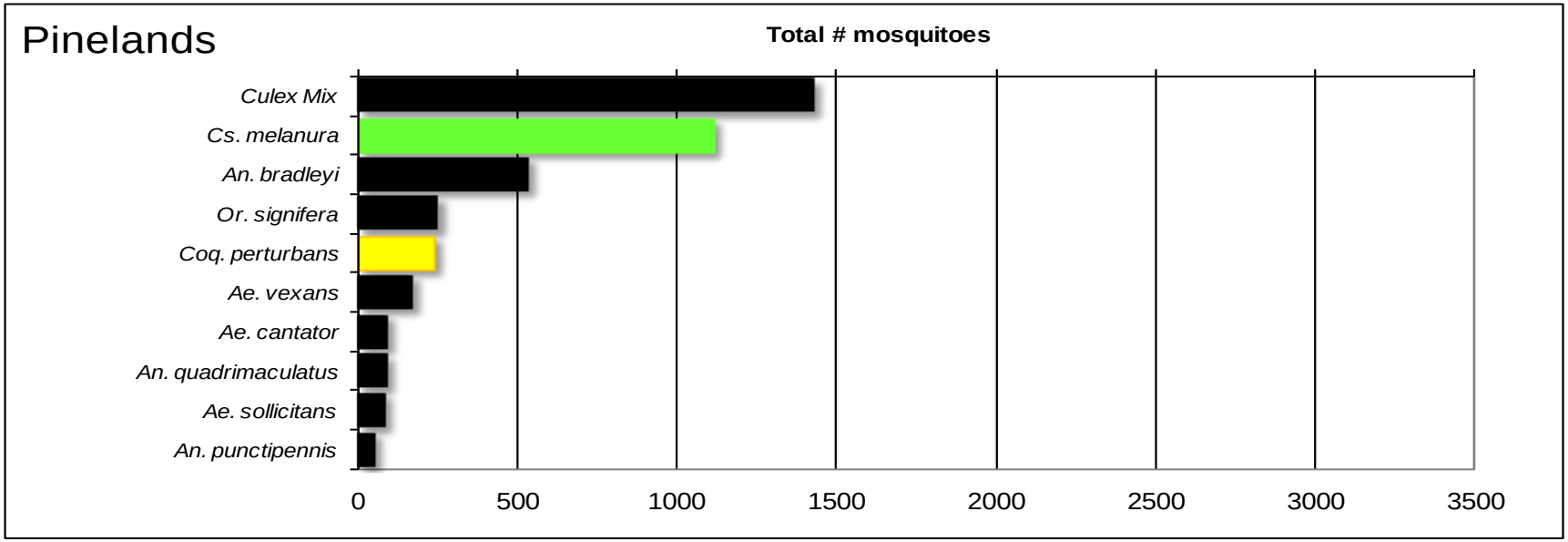

Delaware River Basin
Total # mosquitoes
Ae. vexans
Culex Mix
An. quadrimaculatus
Coq. perturbans
An. bradleyi
Ur. sapphirina
Ae. cantator
An. punctipennis
Ae. sollicitans
Cx. erraticus
0
500
1000
1500
2000
2500
3000
3500

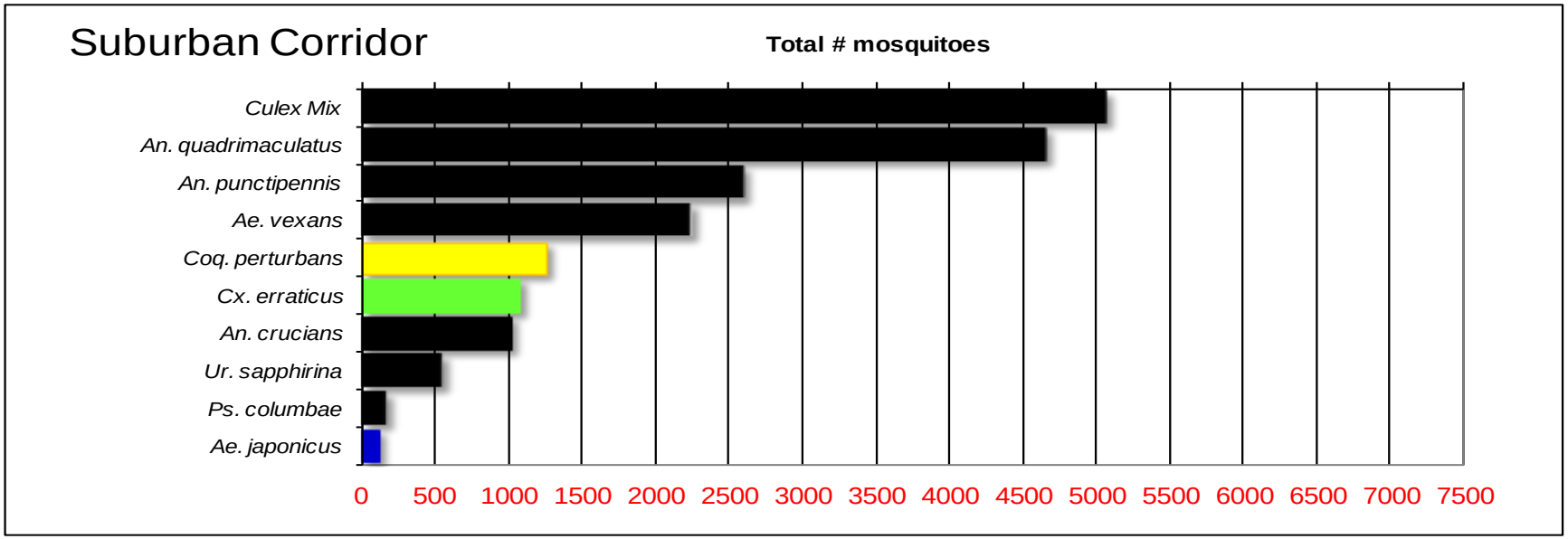

New York Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. sollicitans
An. punctipennis
Coq. perturbans
Ae. albopictus
An. quadrimaculatus
Ae. cantator
Cx. territans
An. bradleyi
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
6500
7000
7500


North Central Rural
Total # mosquitoes
Culex Mix
Ae. vexans
An. punctipennis
Coq. perturbans
An. quadrimaculatus
Ps. columbae
Ur. sapphirina
Ae. japonicus
Ps. ferox
Ae. trivittatus
0
500
1000
1500
2000
2500
3000
3500


Northwest Rural
Total # mosquitoes
Culex Mix
Ae. vexans
An. punctipennis
Ur. sapphirina
Coq. perturbans
An. quadrimaculatus
Ae. trivittatus
Ae. japonicus
Ae. cinereus
Cs. melanura
0
500
1000
1500
2000
2500
3000
3500


Philadelphia Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
An. punctipennis
An. crucians
An. quadrimaculatus
Cs. melanura
Coq. perturbans
Cx. territans
Ae. albopictus
Ae. sticticus
0
500
1000
1500
2000
2500
3000
3500


Pinelands
Total # mosquitoes
Culex Mix
Cs. melanura
An. bradleyi
Or. signifera
Coq. perturbans
Ae. vexans
Ae. cantator
An. quadrimaculatus
Ae. sollicitans
An. punctipennis
0
500
1000
1500
2000
2500
3000
3500


Suburban Corridor
Total # mosquitoes
Culex Mix
An. quadrimaculatus
An. punctipennis
Ae. vexans
Coq. perturbans
Cx. erraticus
An. crucians
Ur. sapphirina
Ps. columbae
Ae. japonicus
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
6500
7000
7500