NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report for 23 October to 29 October 2016, CDC Week 43

Prepared by Lisa M. Reed and Mark Robson
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.

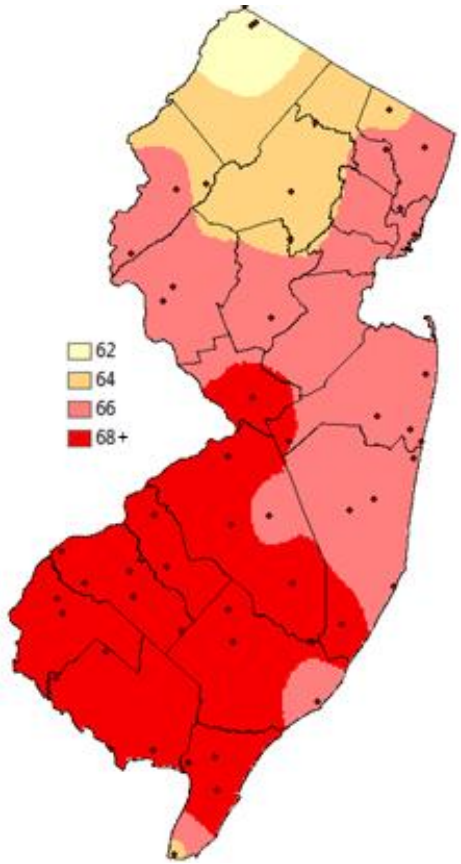
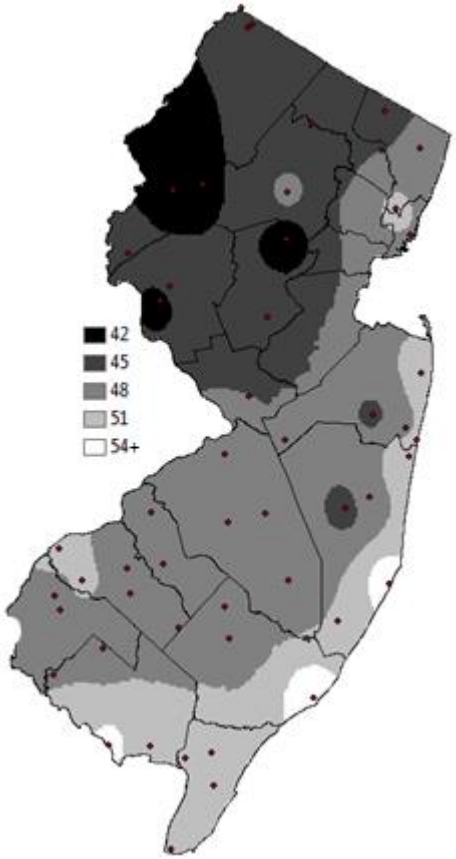
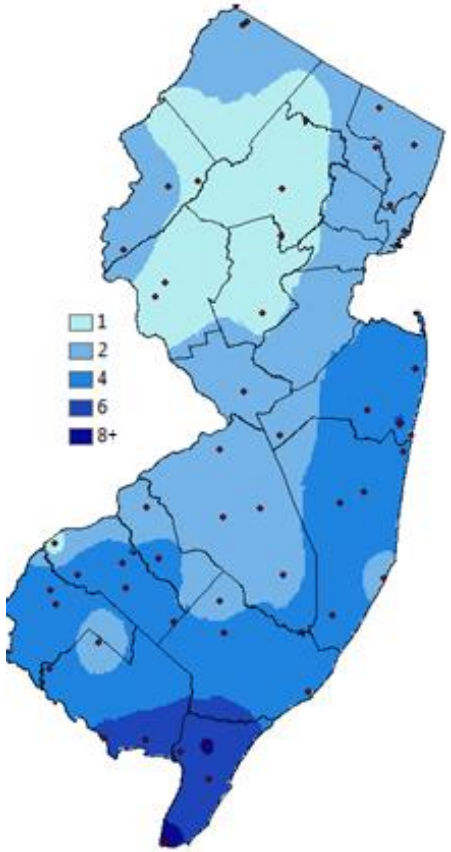
Summary Table – Week 43

	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	**0.00**	**0.05**	**0**	**0.00**	**0.12**	**0**	**0.00**	**0.00**	**0**	**0.00**	**0.00**	**0**
Coastal	**1.68**	**0.04**	**4**	**2.29**	**0.37**	**4**	**0.00**	**0.00**	**0**	**0.05**	**<0.01**	**4**
Delaware Bayshore	**nd**	**0.10**	**0**	**nd**	**0.58**	**0**	**nd**	**0.00**	**0**	**nd**	**0.00**	**0**
Delaware River Basin	**nd**	**0.21**	**0**	**nd**	**0.23**	**0**	**nd**	**0.00**	**0**	**nd**	**0.00**	**0**
New York Metro	**0.00**	**<0.01**	**0**	**0.04**	**0.18**	**0**	**0.00**	**0.00**	**0**	**0.00**	**0.00**	**0**
North Central Rural	**0.00**	**0.00**	**0**	**0.02**	**0.02**	**0**	**0.00**	**0.00**	**0**	**0.00**	**0.00**	**0**
Northwest Rural	**nd**	**0.88**	**0**	**nd**	**1.36**	**0**	**nd**	**0.00**	**0**	**nd**	**0.00**	**0**
Philadelphia Metro	**nd**	**0.06**	**0**	**nd**	**0.10**	**0**	**nd**	**0.00**	**0**	**nd**	**0.00**	**0**
Pinelands	**0.10**	**0.04**	**4**	**0.00**	**0.17**	**0**	**0.00**	**0.00**	**0**	**0.00**	**0.00**	**0**
Suburban Corridor	**nd**	**<0.01**	**0**	**nd**	**0.23**	**0**	**nd**	**0.00**	**0**	**nd**	**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. nd=no data reported.

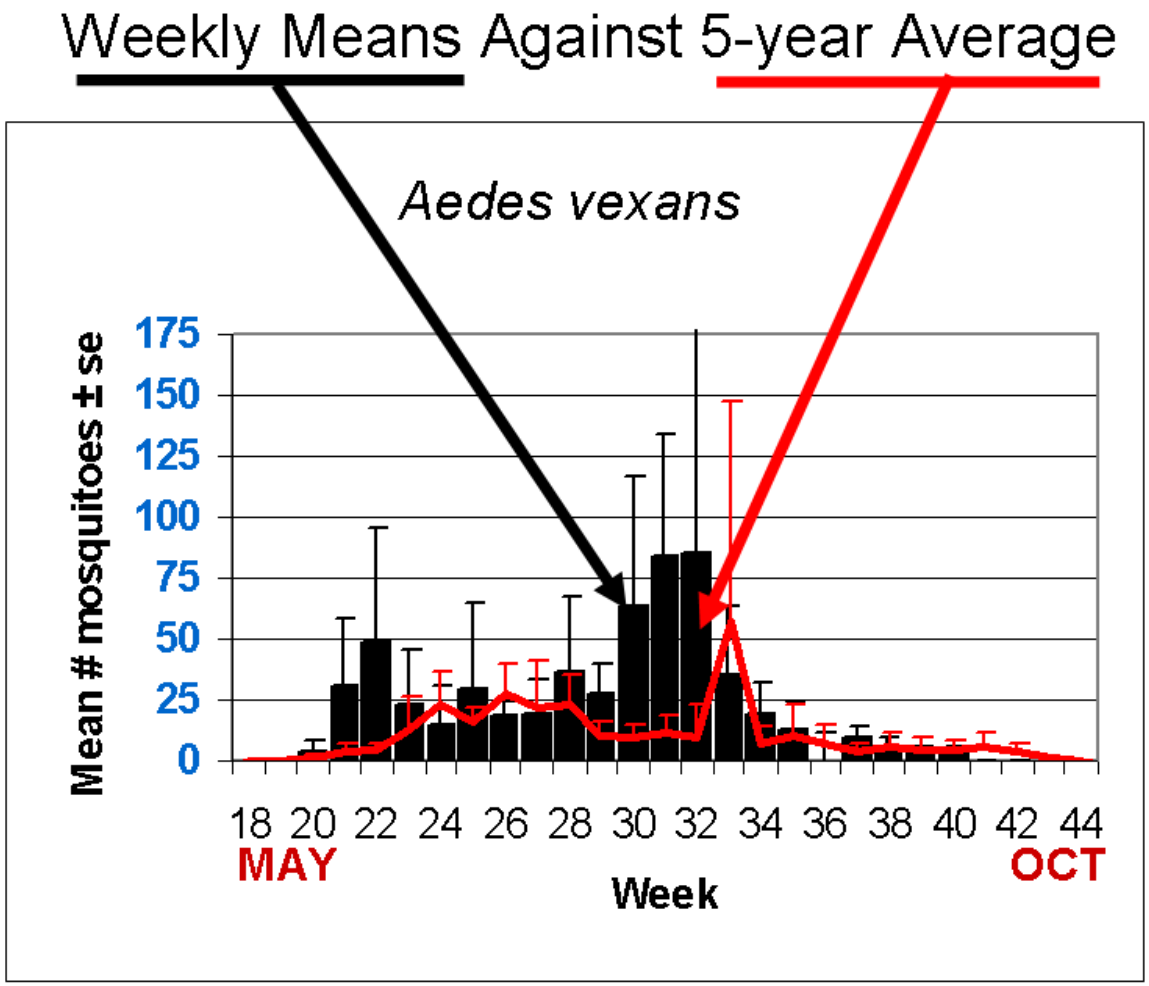
State Summary: Last bit of activity in southern populations of *Aedes vexans*, *Culex* Mix and *Aedes sollicitans* result in small numbers with significantly higher than historical average effects in the Coastal and Pinelands regions. Counties are ending their trap season and this is the last report for 2016.

Climate Factors

Average High Temperature	Average Low Temperature	Total Precipitation
		

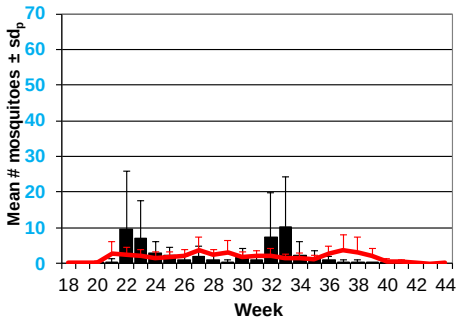
The three figures show the interpolation of average maximum (°F) and minimum temperature (°F) and total precipitation (inches) for 30 days prior to 27 October 2016 in New Jersey. Data points are from about 56 weather stations maintained through the New Jersey Weather & Climate Network and the State Climatologist. Interpolation between points was performed using ArcMap 10.1.

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, Monmouth, and Passaic counties. Data for the previous week are from Atlantic, Bergen, Cape May, Cumberland, Hunterdon, Monmouth, Passaic, Sussex, and Warren counties. Counties are pulling their traps for the season.

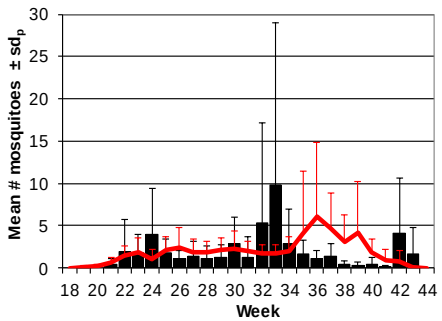


Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

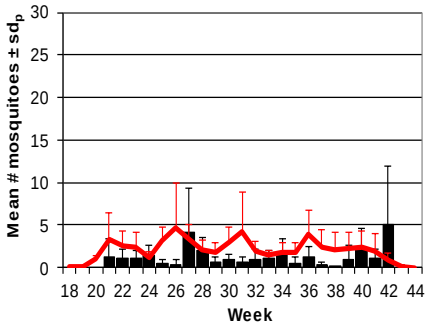
Agricultural



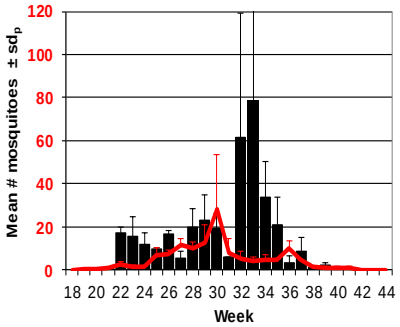
Coastal



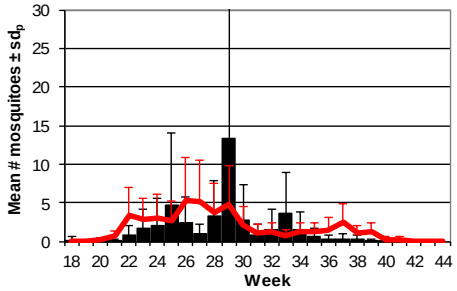
Delaware Bayshore



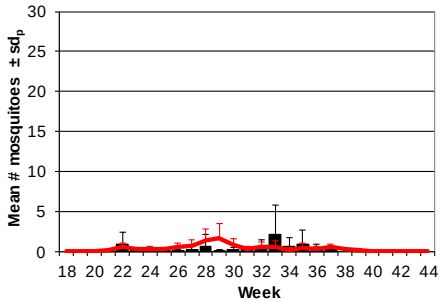
Delaware River Basin



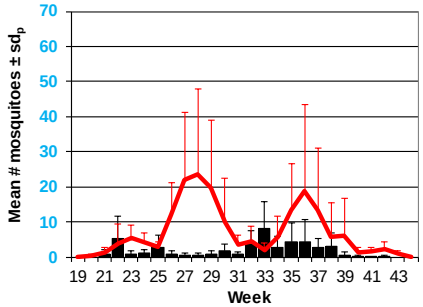
New York Metro



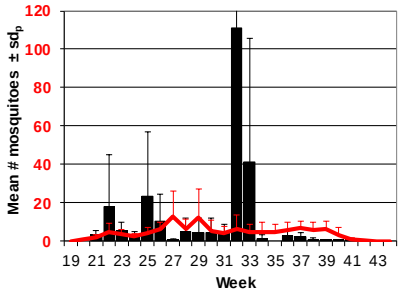
North Central Rural



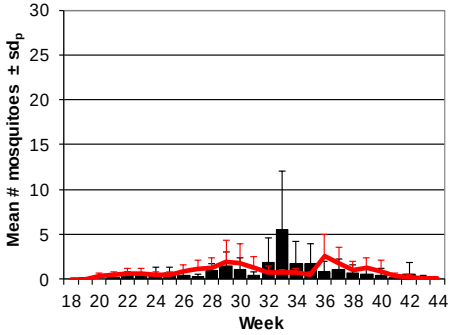
Northwestern Rural



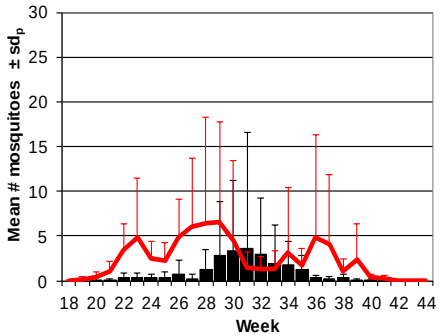
Philadelphia Metro



Pinelands

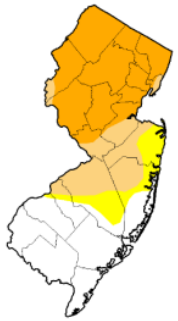


Suburban Corridor



Comments

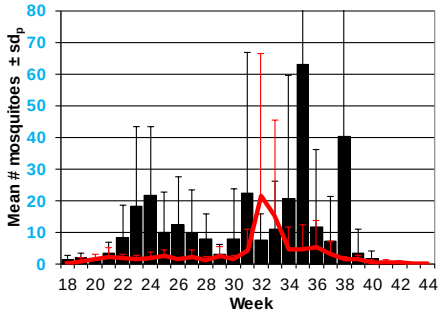
Drought conditions worsen through much of New Jersey. But precipitation in the southern part of New Jersey resulted in higher than historical average for the Coastal and Pineland populations.



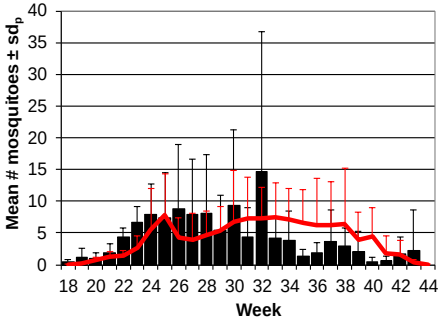
http://droughtmonitor.unl.edu/Home/RegionalDroughtMonitor.aspx?northeast

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

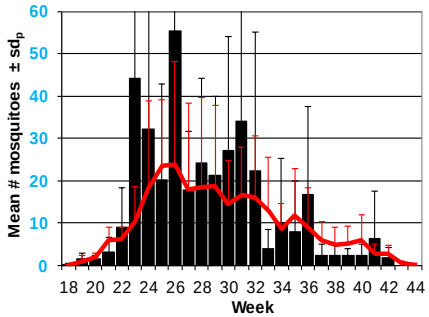
Agricultural



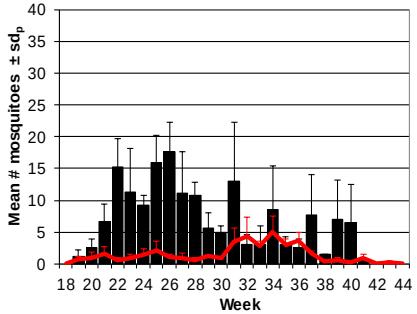
Coastal



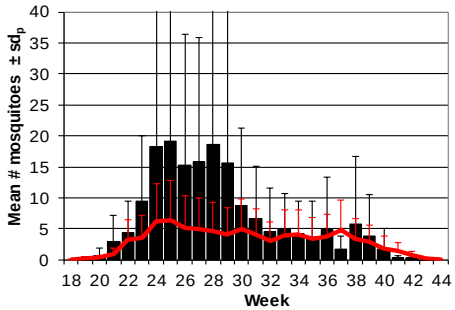
Delaware Bayshore



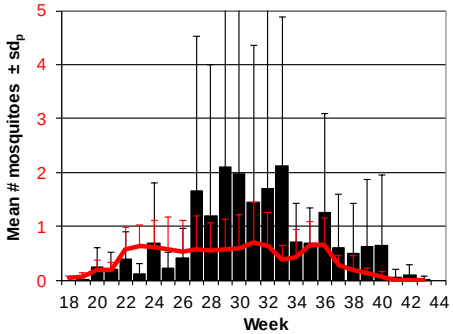
Delaware River Basin



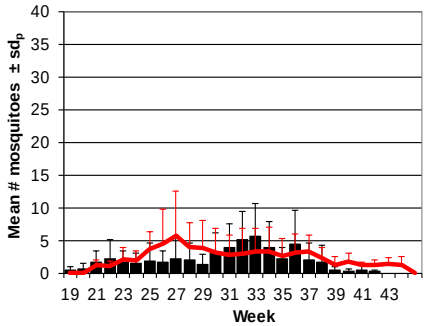
New York Metro



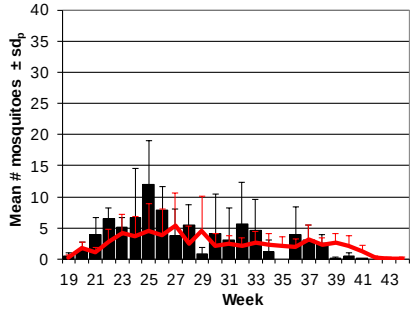
North Central Rural



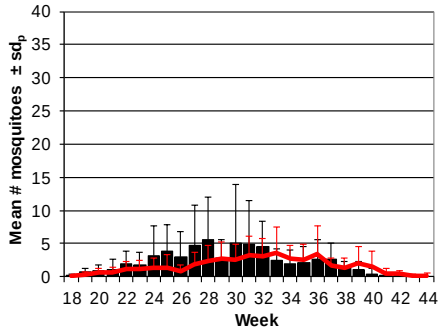
Northwestern Rural



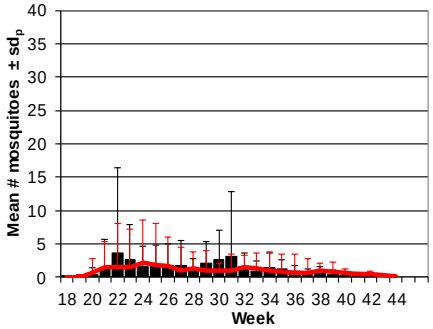
Philadelphia Metro



Pinelands



Suburban Corridor

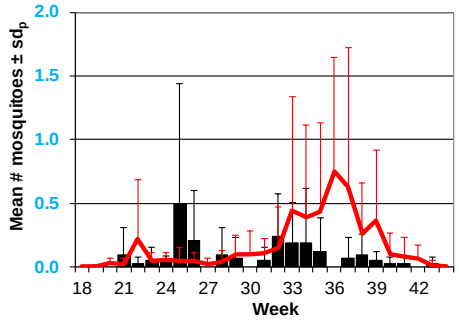


Comments

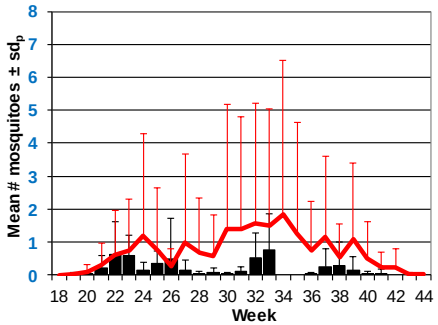
Culex Mix is composed of *Culex pipiens, Cx. restuans* and *Cx. salinarius*. These three species (especially *pipiens* and *restuans*) are often difficult to tell apart after encountering the damaging blades of the New Jersey light trap. Populations of *Culex* throughout the state were reported below the historical averages except for the Coastal region.

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

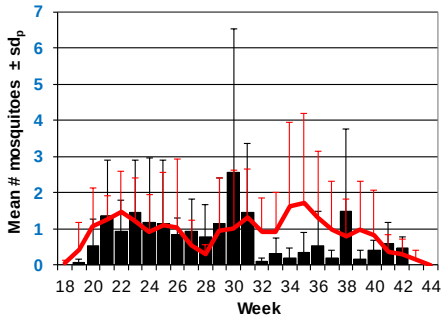
Agricultural



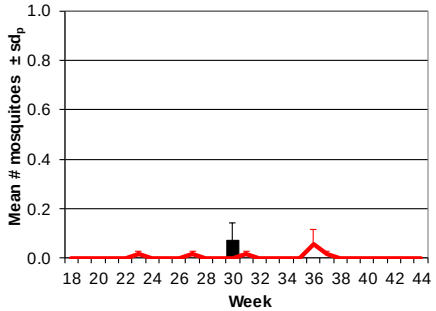
Coastal



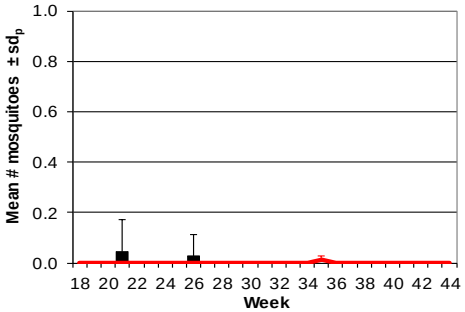
Delaware Bayshore



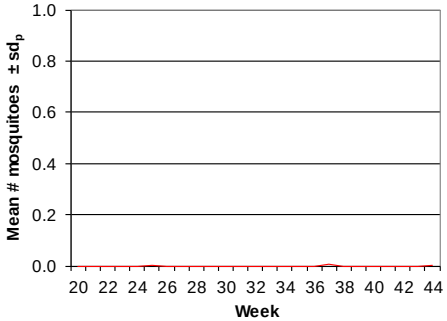
Delaware River Basin



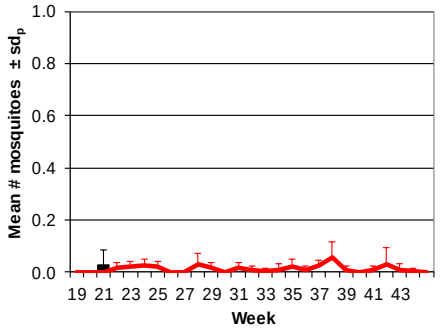
New York Metro



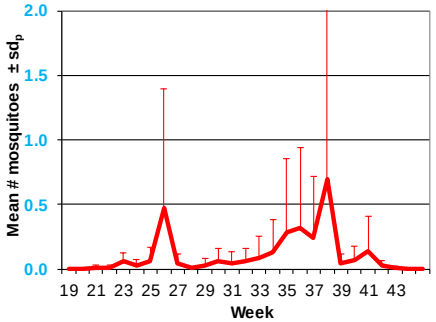
North Central Rural



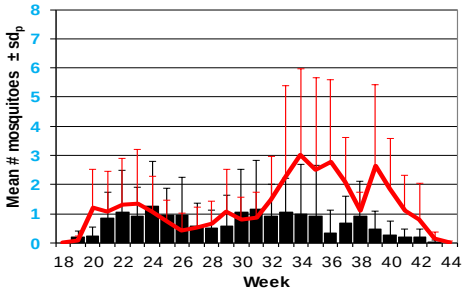
Northwestern Rural



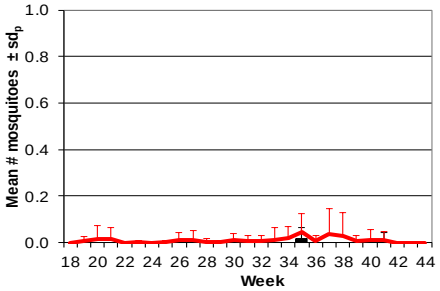
Philadelphia Metro



Pinelands



Suburban Corridor



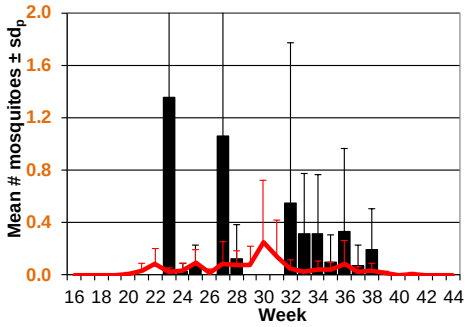
Comments

Culiseta melanura is the enzootic ornithophilic vector of eastern equine encephalitis. Population abundances are declining for this cold-tolerant species.

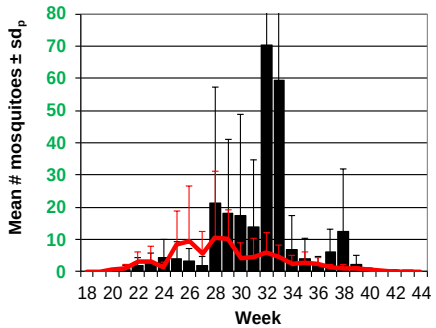
All horse owners should make sure their horses are up to date on the vaccination schedules: http://www.aaep.org/custdocs/adultvaccinationchart.pdf

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

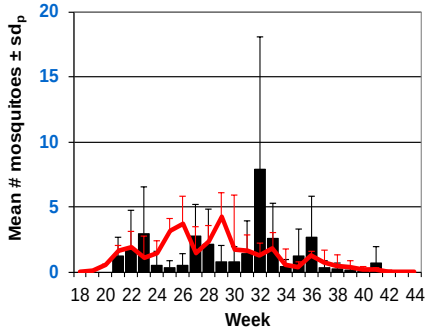
Agricultural



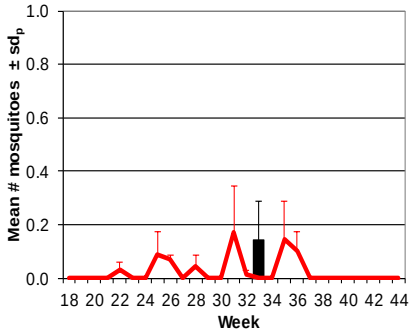
Coastal



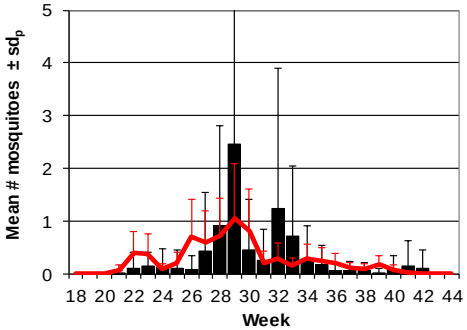
Delaware Bayshore



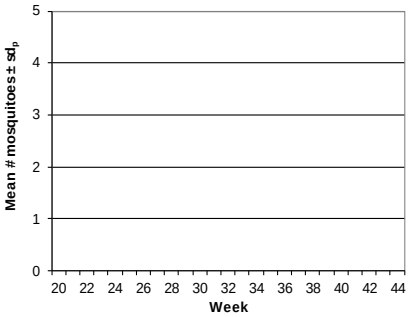
Delaware River Basin



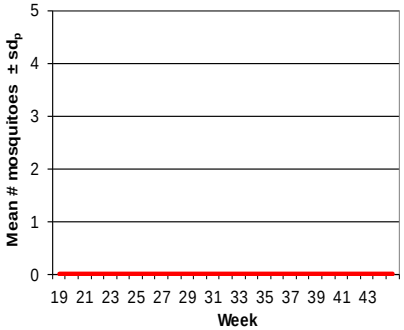
New York Metro



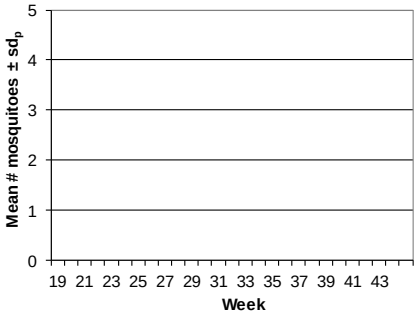
North Central Rural



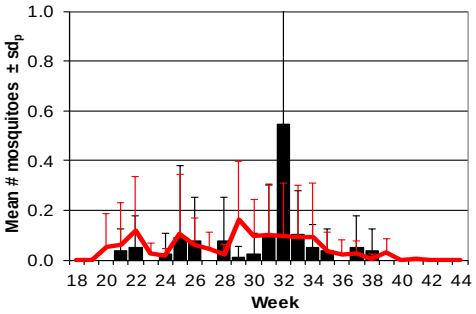
Northwestern Rural



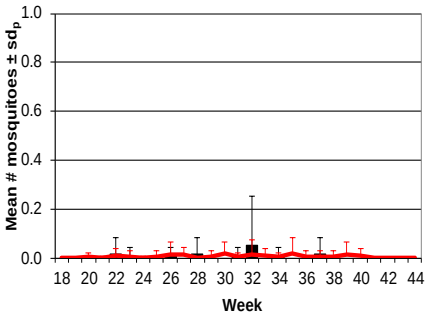
Philadelphia Metro



Pinelands



Suburban Corridor

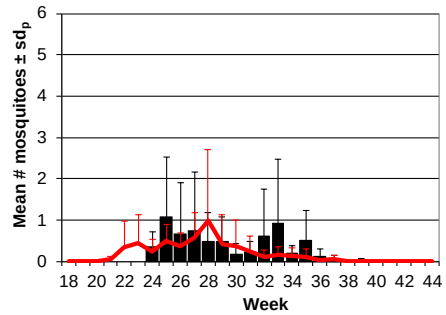


Comments

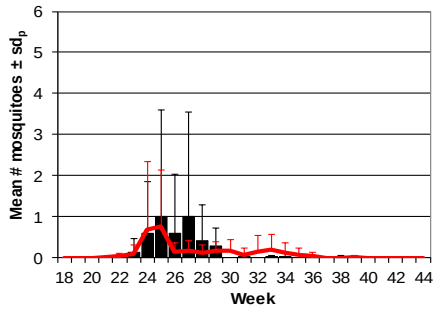
Aedes sollicitans is a salt floodwater species and responds to both lunar tidal patterns as well as rainfall. All populations continue to decline, except for the Coastal region, where abundances were significantly above historical values, albeit at small absolute values.

Coquillettidia perturbans
Monotypic (*Coquillettidia perturbans* Type)

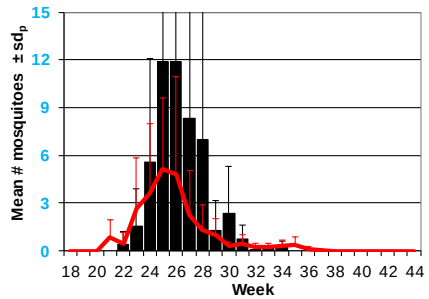
Agricultural



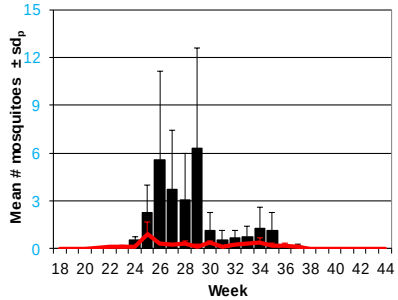
Coastal



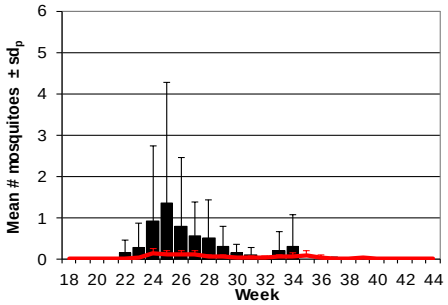
Delaware Bayshore



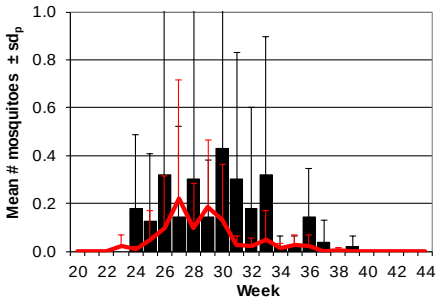
Delaware River Basin



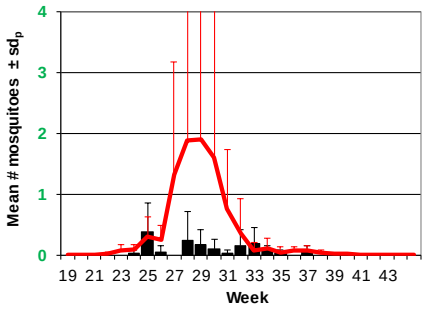
New York Metro



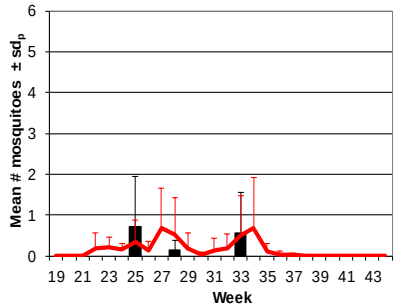
North Central Rural



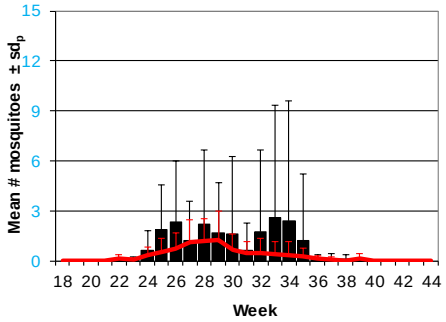
Northwestern Rural



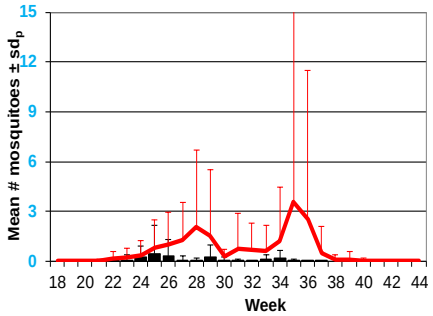
Philadelphia Metro



Pinelands



Suburban Corridor

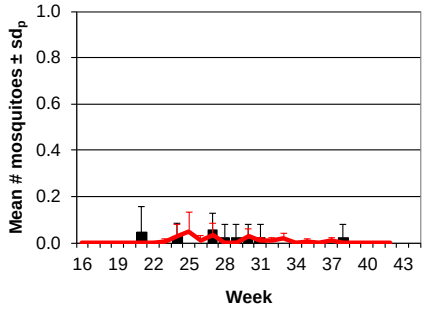


Comments

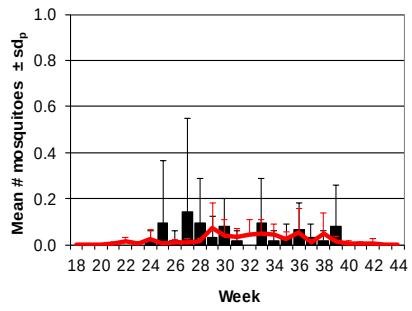
Coquillettidia perturbans populations are located in cattail swamps and other wetlands with emergent vegetation, often making control of their numbers dependent on controlling water depth. This mid-season species was not recorded during the past three weeks.

Aedes albopictus
Multivoltine Aedine (*Aedes triseriatus* Type)

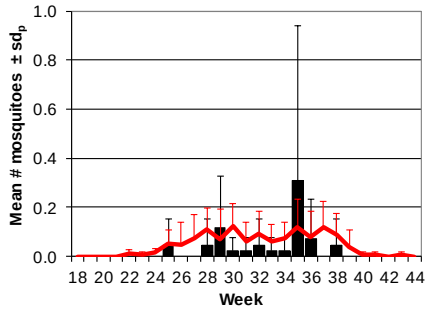
Agricultural



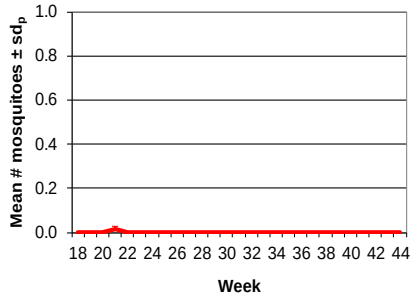
Coastal



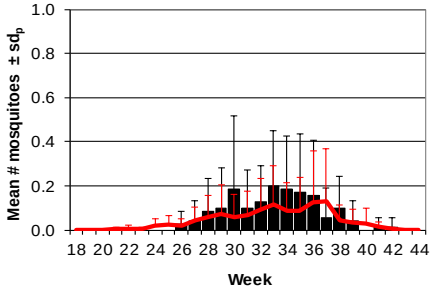
Delaware Bayshore



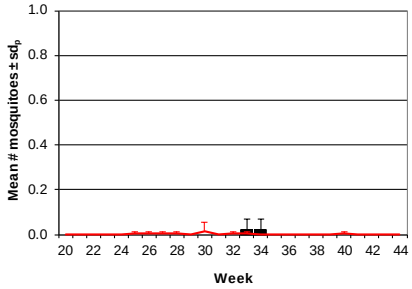
Delaware River Basin



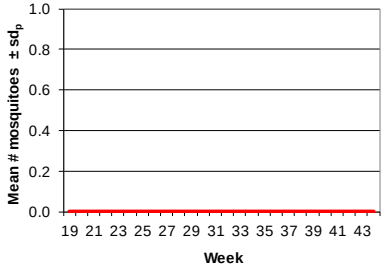
New York Metro



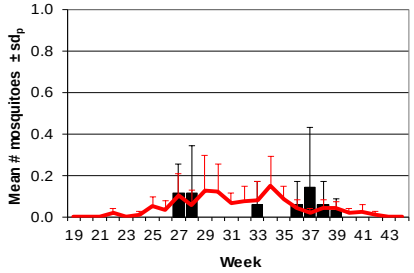
North Central Rural



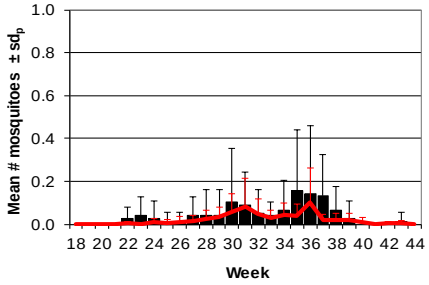
Northwestern Rural



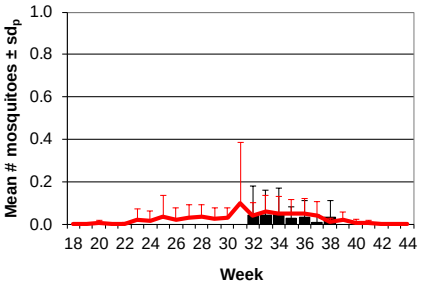
Philadelphia Metro



Pinelands



Suburban Corridor



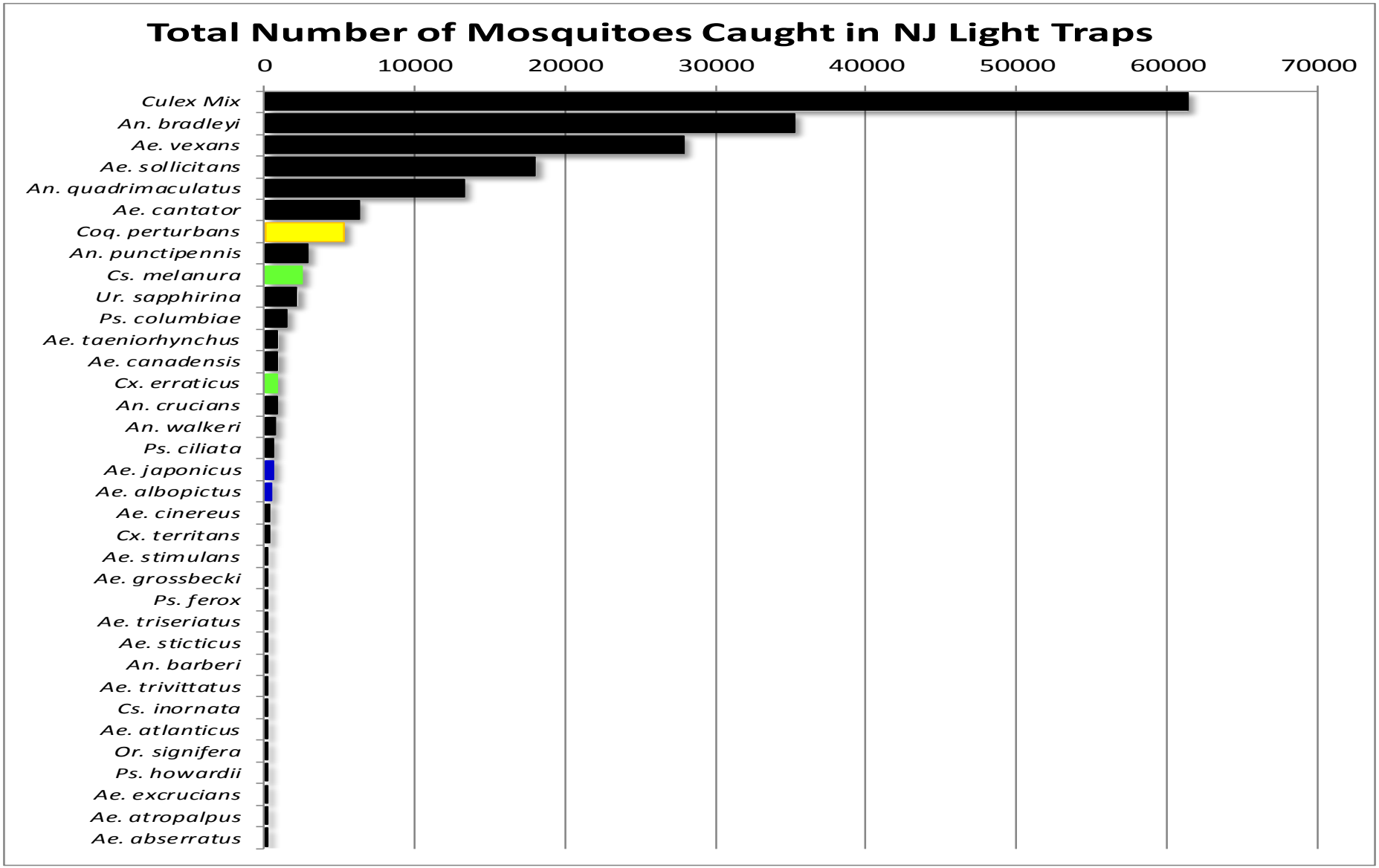
Comments

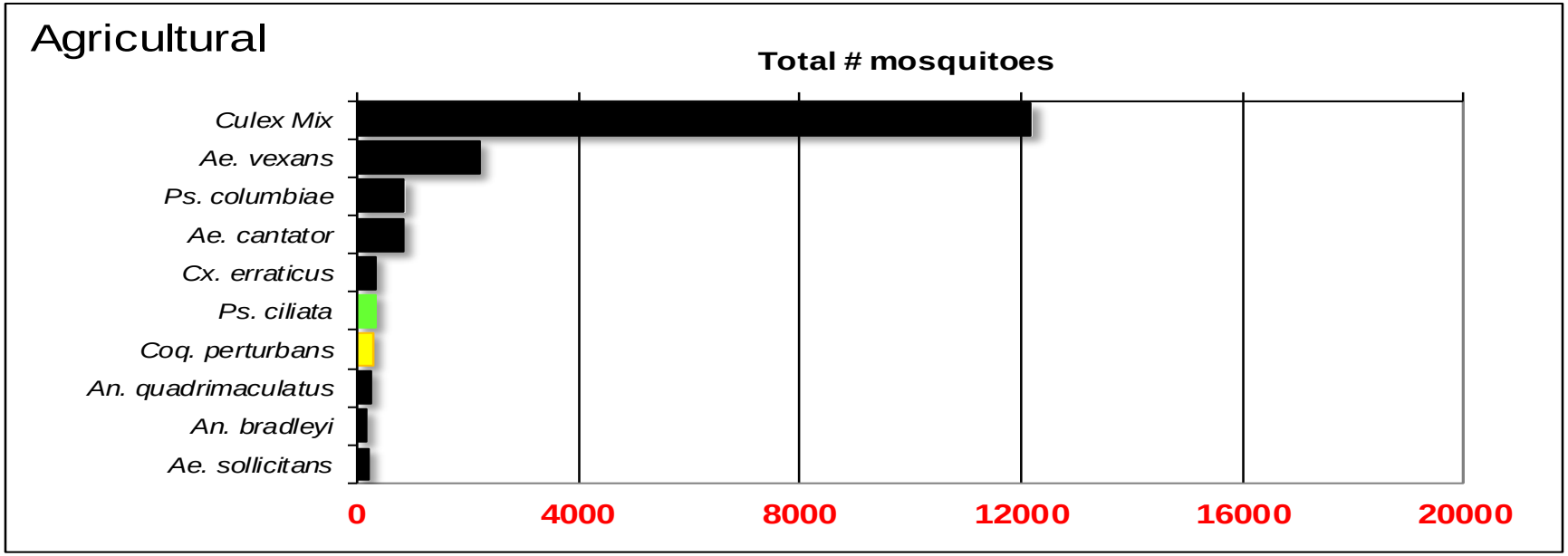
Aedes albopictus made its first appearance in New Jersey in 1995, ten years after the initial US invasion in Texas. All regions in New Jersey have reported *Ae. albopictus,* but numbers are sparse in the Northwestern Rural region and have not shown up in the light traps of this program. The Pinelands reported small amounts of activity in this final week.

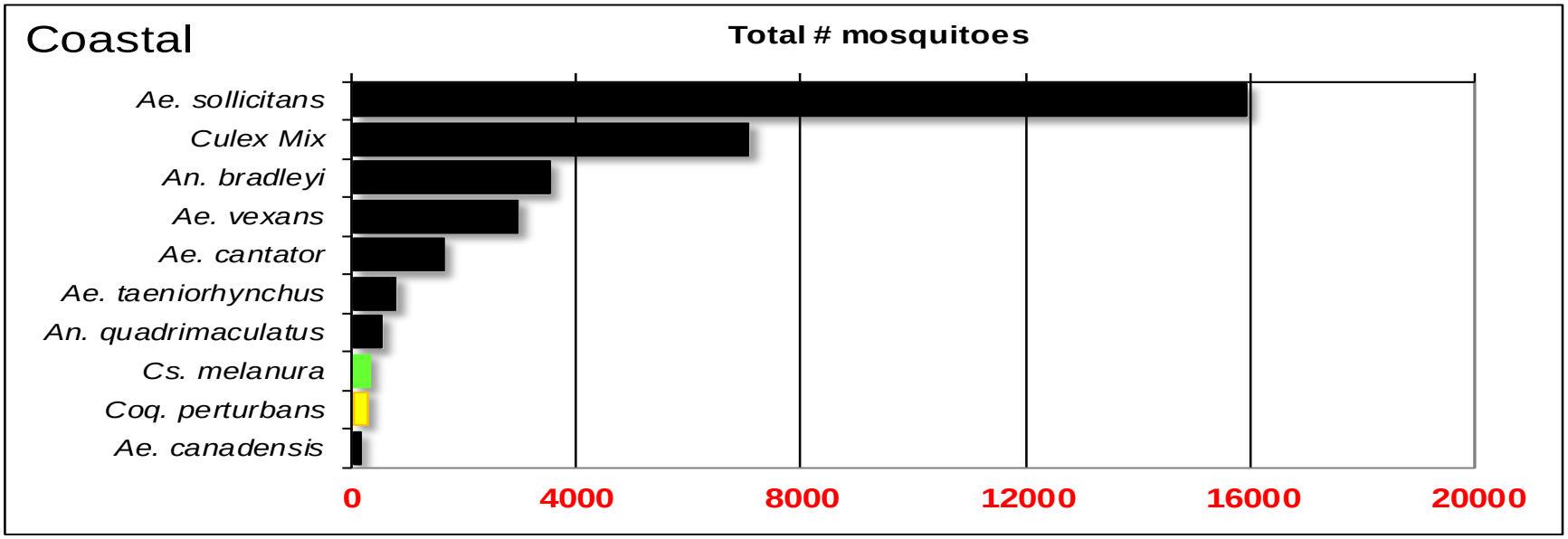
WNV EEE

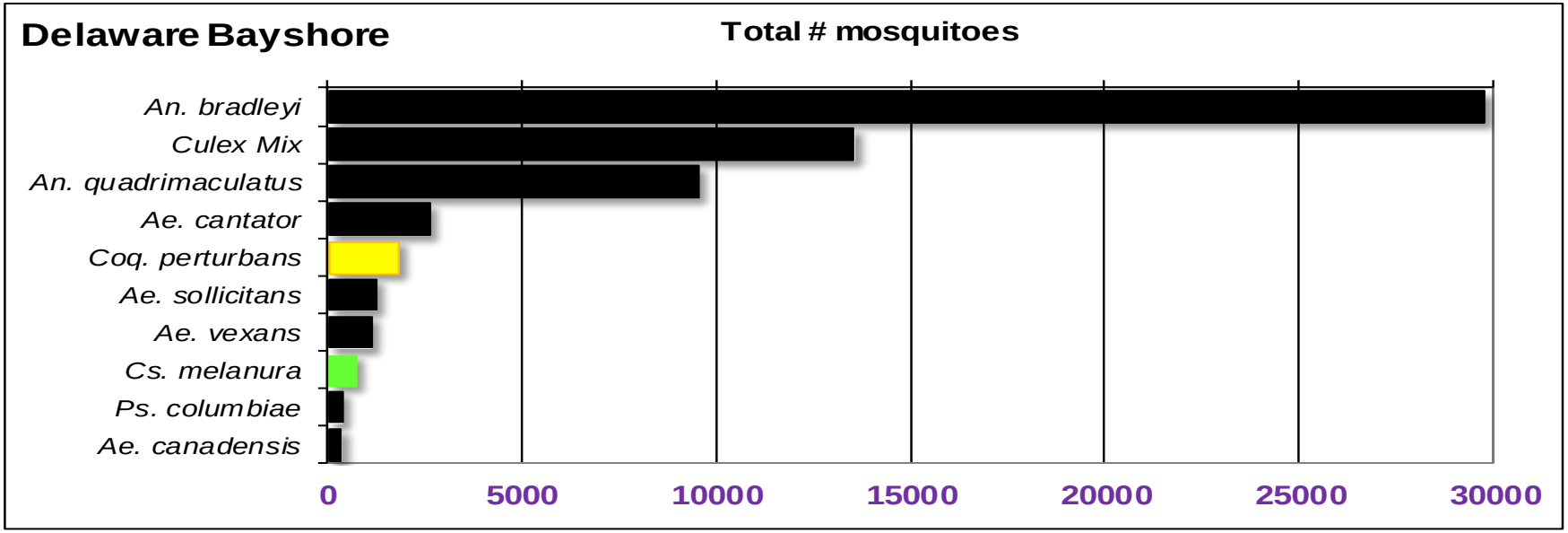
Top Ten Mosquito Species/Region - *Ae. albopictus, Ae. japonicus (invasives); Cs. melanura or Cx. erraticus Coq. perturbans*

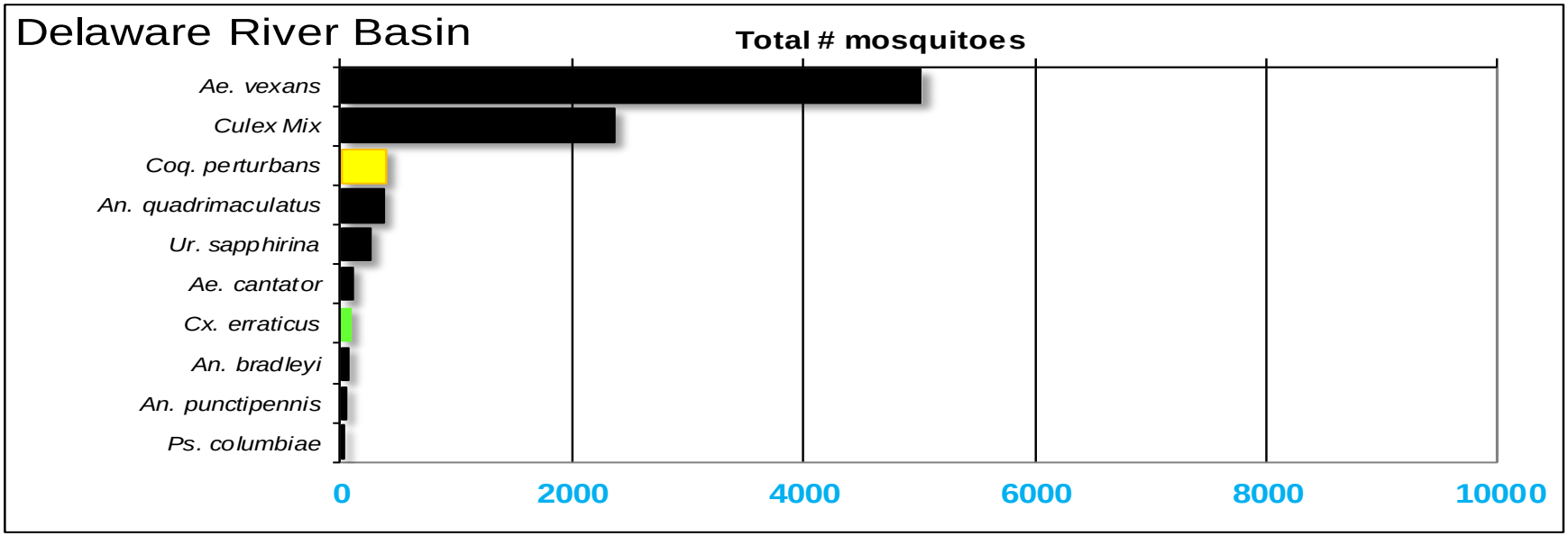
Note: In early season when fewer species are caught, graphs may show less than ten species/region or 25 statewide.

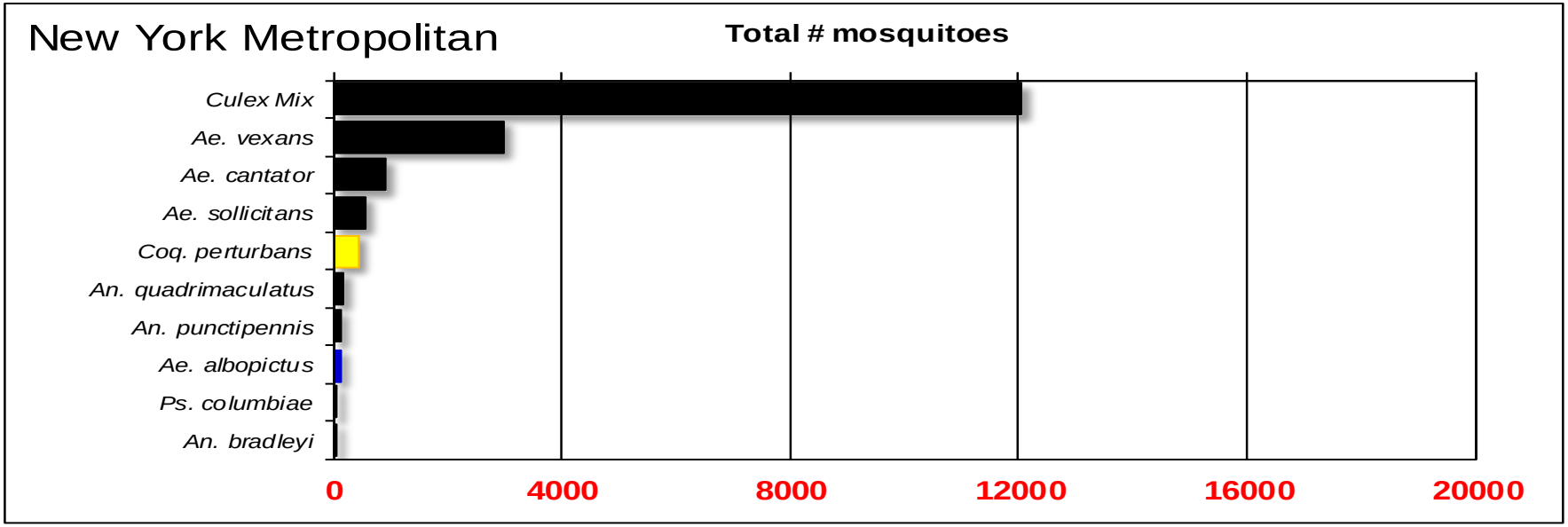


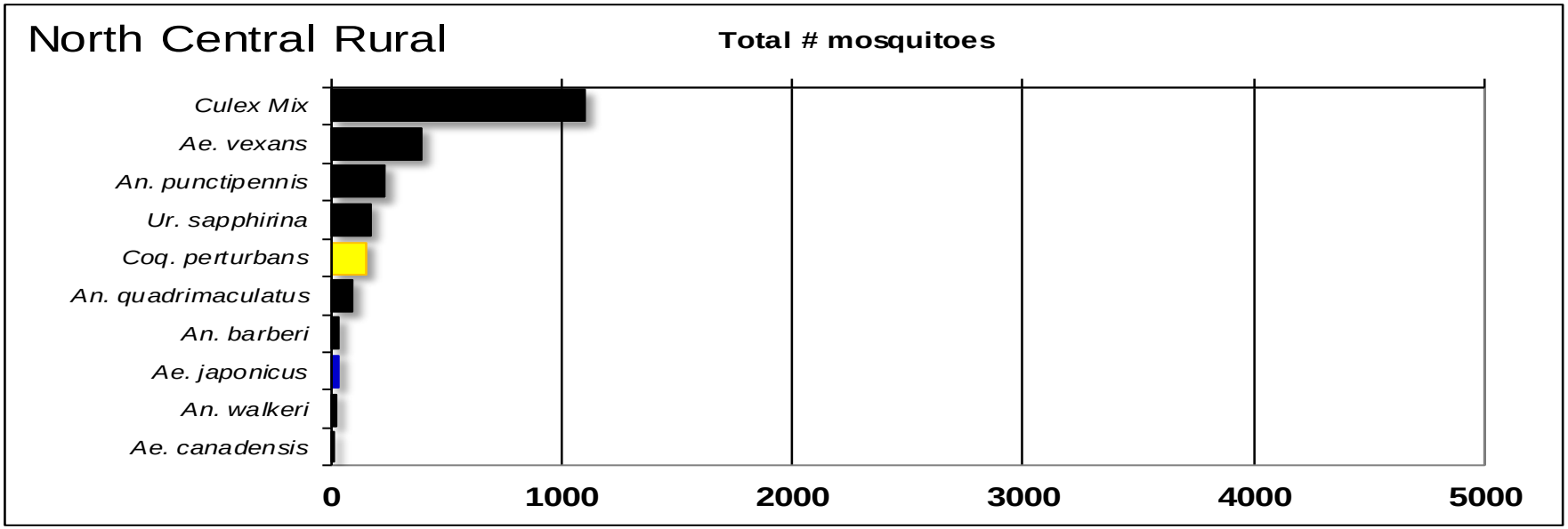

Agricultural
Total # mosquitoes
Culex Mix
Ae. vexans
Ps. columbiae
Ae. cantator
Cx. erraticus
Ps. ciliata
Coq. perturbans
An. quadrimaculatus
An. bradleyi
Ae. sollicitans
0
4000
8000
12000
16000
20000

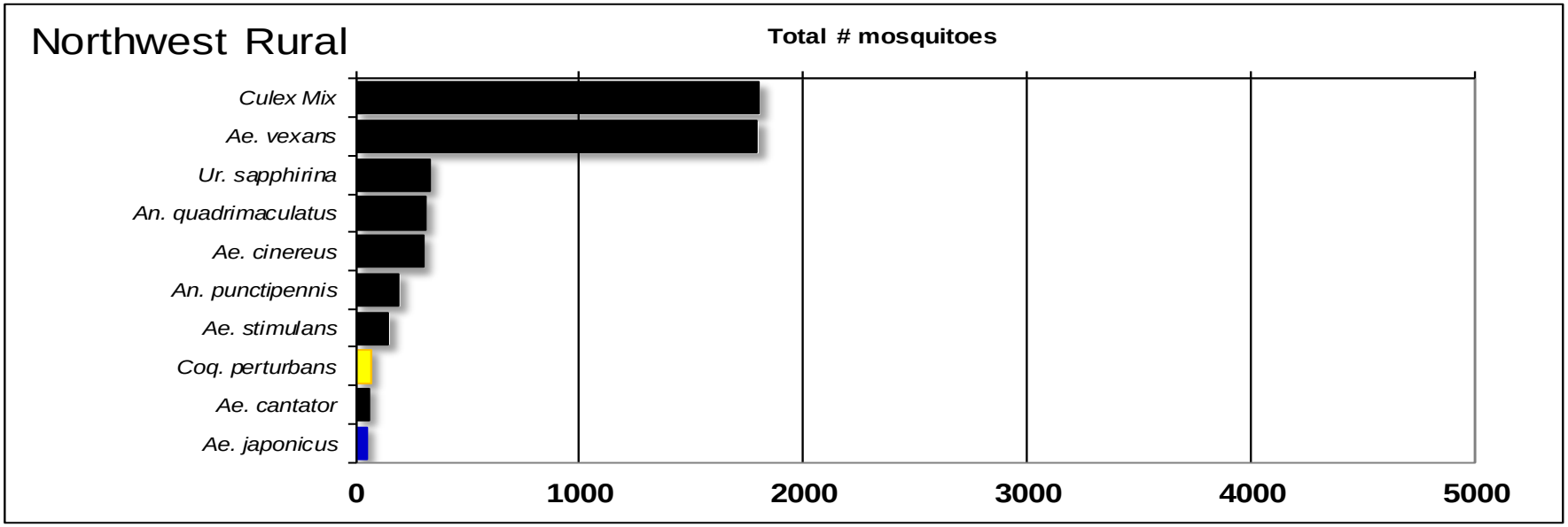

Coastal
Total # mosquitoes
Ae. sollicitans
Culex Mix
An. bradleyi
Ae. vexans
Ae. cantator
Ae. taeniorhynchus
An. quadrimaculatus
Cs. melanura
Coq. perturbans
Ae. canadensis
0
4000
8000
12000
16000
20000

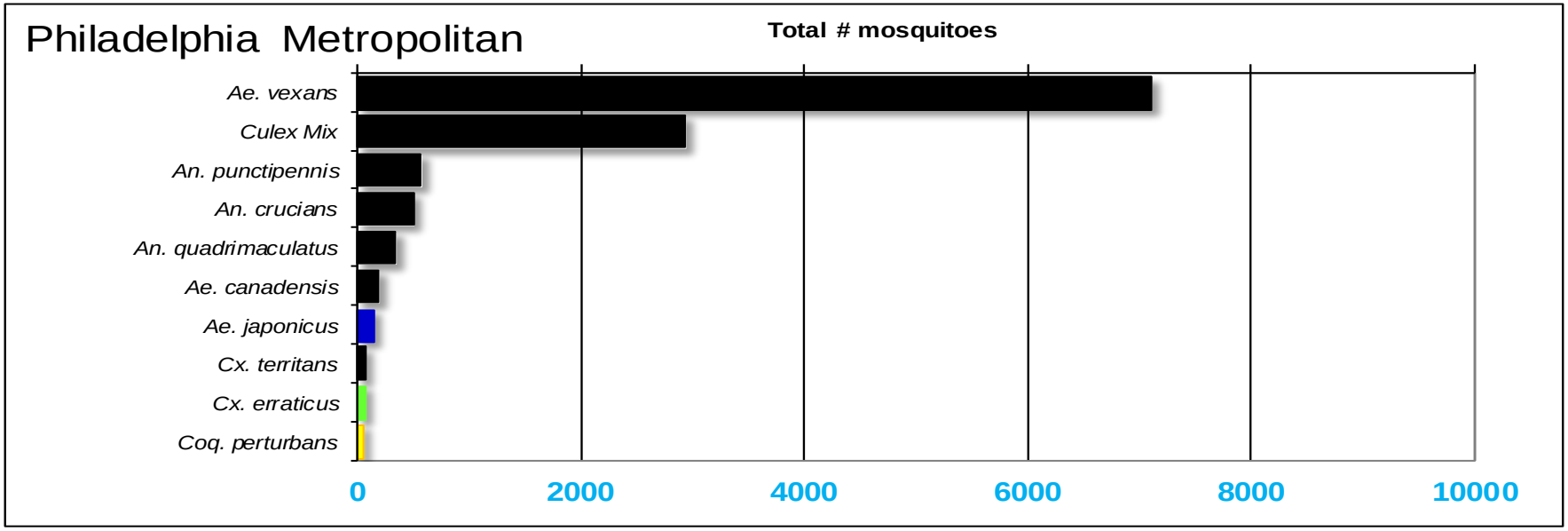

Delaware Bayshore
Total # mosquitoes
An. bradleyi
Culex Mix
An. quadrimaculatus
Ae. cantator
Coq. perturbans
Ae. sollicitans
Ae. vexans
Cs. melanura
Ps. columbiae
Ae. canadensis
0
5000
10000
15000
20000
25000
30000

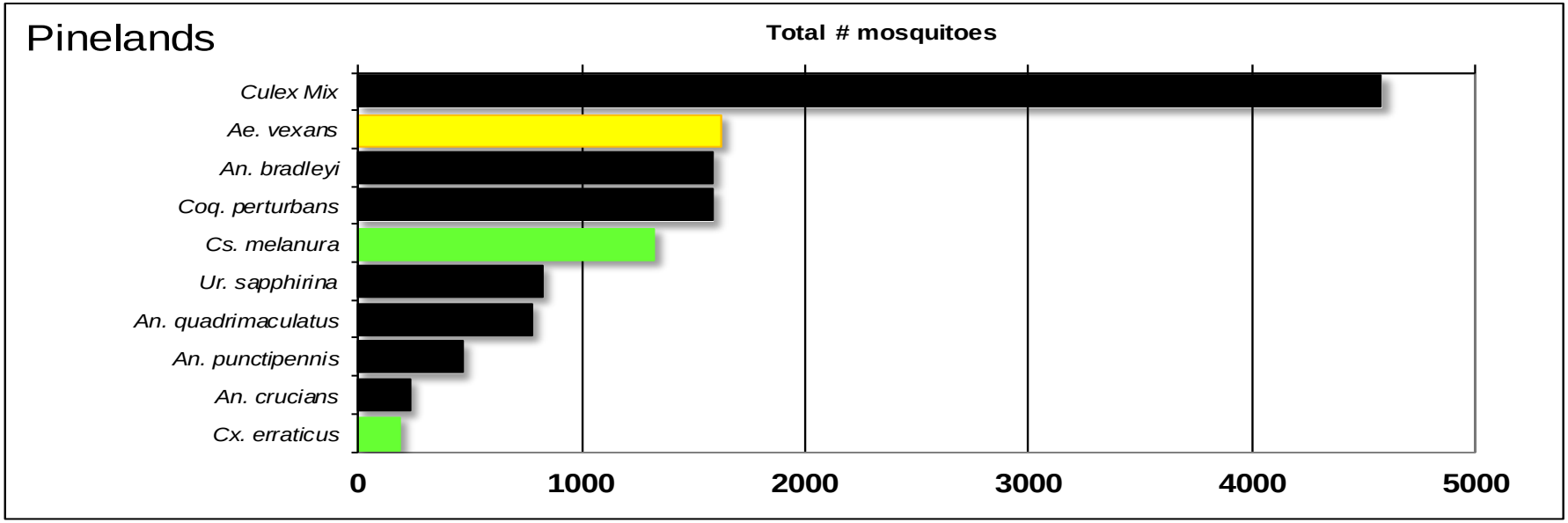

Delaware River Basin
Total # mosquitoes
Ae. vexans
Culex Mix
Coq. perturbans
An. quadrimaculatus
Ur. sapphirina
Ae. cantator
Cx. erraticus
An. bradleyi
An. punctipennis
Ps. columbiae
0
2000
4000
6000
8000
10000

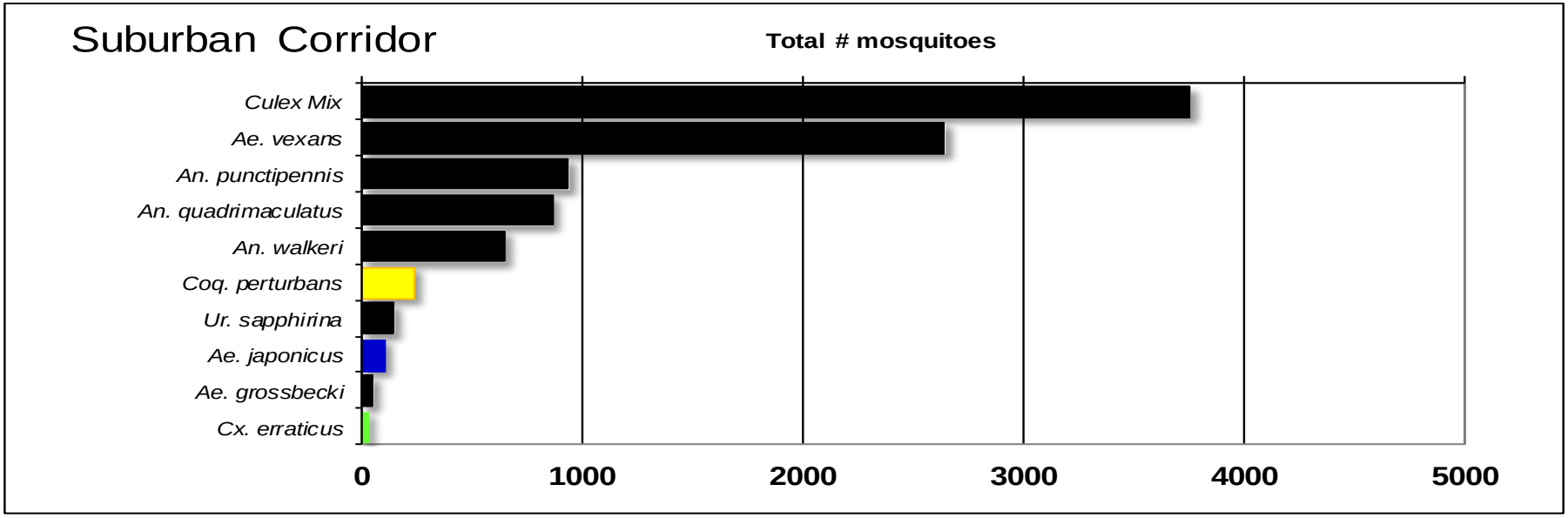

New York Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. cantator
Ae. sollicitans
Coq. perturbans
An. quadrimaculatus
An. punctipennis
Ae. albopictus
Ps. columbiae
An. bradleyi
0
4000
8000
12000
16000
20000


North Central Rural
Total # mosquitoes
Culex Mix
Ae. vexans
An. punctipennis
Ur. sapphirina
Coq. perturbans
An. quadrimaculatus
An. barberi
Ae. japonicus
An. walkeri
Ae. canadensis
0
1000
2000
3000
4000
5000


Northwest Rural
Total # mosquitoes
Culex Mix
Ae. vexans
Ur. sapphirina
An. quadrimaculatus
Ae. cinereus
An. punctipennis
Ae. stimulans
Coq. perturbans
Ae. cantator
Ae. japonicus
0
1000
2000
3000
4000
5000


Philadelphia Metropolitan
Total # mosquitoes
Ae. vexans
Culex Mix
An. punctipennis
An. crucians
An. quadrimaculatus
Ae. canadensis
Ae. japonicus
Cx. territans
Cx. erraticus
Coq. perturbans
0
2000
4000
6000
8000
10000


Pinelands
Total # mosquitoes
Culex Mix
Ae. vexans
An. bradleyi
Coq. perturbans
Cs. melanura
Ur. sapphirina
An. quadrimaculatus
An. punctipennis
An. crucians
Cx. erraticus
0
1000
2000
3000
4000
5000


Suburban Corridor
Total # mosquitoes
Culex Mix
Ae. vexans
An. punctipennis
An. quadrimaculatus
An. walkeri
Coq. perturbans
Ur. sapphirina
Ae. japonicus
Ae. grossbecki
Cx. erraticus
0
1000
2000
3000
4000
5000