NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report for 2 July to 8 July 2017, CDC Week 27

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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.

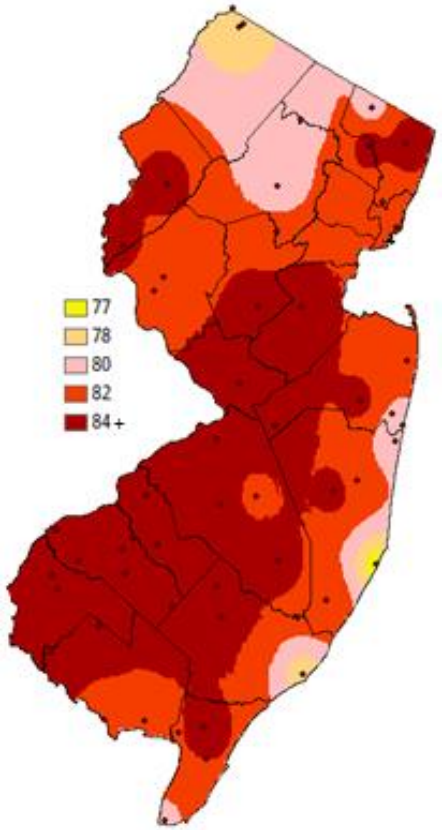
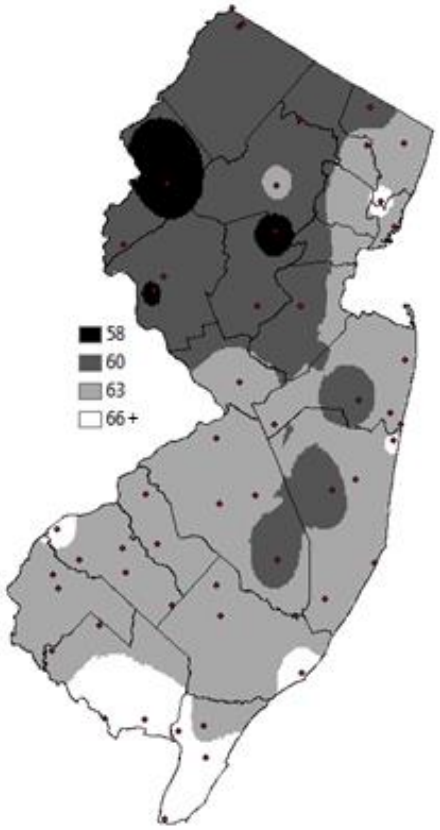
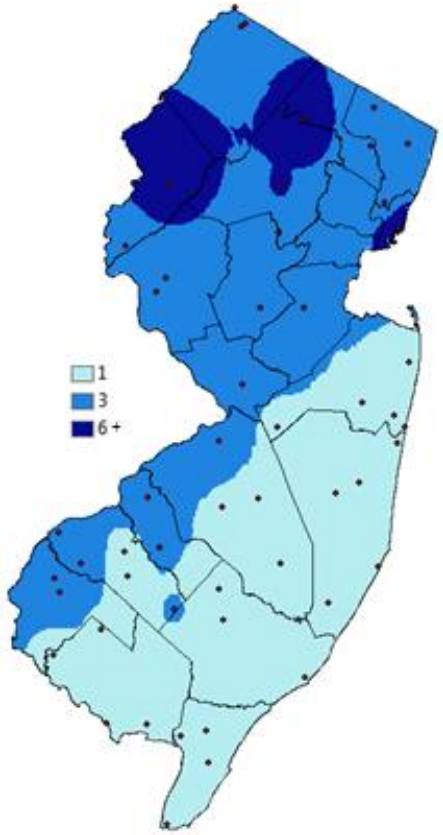
Summary Table – Week 27

	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	**0.77**	**3.24**	**0**	**0.45**	**1.81**	**0**	**0.11**	**0.48**	**0**	**0.00**	**0.00**	**0**
Coastal	**1.79**	**1.38**	**1**	**0.63**	**3.20**	**0**	**0.24**	**0.16**	**2**	**3.43**	**2.11**	**2**
Delaware Bayshore	**0.31**	**2.92**	**0**	**10.80**	**13.34**	**0**	**0.00**	**1.89**	**0**	**5.86**	**0.86**	**4**
Delaware River Basin	**nd**	**10.33**	**0**	**nd**	**0.90**	**0**	**nd**	**0.16**	**0**	**nd**	**0.00**	**0**
New York Metro	**1.81**	**4.70**	**0**	**2.29**	**3.30**	**0**	**0.04**	**0.04**	**0**	**0.06**	**0.41**	**0**
North Central Rural	**0.34**	**0.61**	**0**	**0.04**	**0.46**	**0**	**0.25**	**0.22**	**1**	**0.00**	**0.00**	**0**
Northwest Rural	**nd**	**8.98**	**0**	**nd**	**4.36**	**0**	**nd**	**1.09**	**0**	**nd**	**0.00**	**0**
Philadelphia Metro	**nd**	**9.45**	**0**	**nd**	**2.74**	**0**	**nd**	**0.41**	**0**	**nd**	**0.00**	**0**
Pinelands	**1.19**	**0.86**	**1**	**1.41**	**0.94**	**2**	**0.53**	**0.87**	**0**	**0.00**	**0.02**	**0**
Suburban Corridor	**1.97**	**4.75**	**0**	**0.61**	**0.54**	**1**	**0.06**	**1.22**	**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. nd=no data reported.

State Summary: Most abundances that are above historical values for pestiferous species are either mildly or moderately (eg Coastal *Ae. vexans* or Pinelands *Culex* Mix). Only Delaware Bayshore *Aedes sollicitans* were currently found significantly above historical levels. A few populations levels will change as data becomes more current.

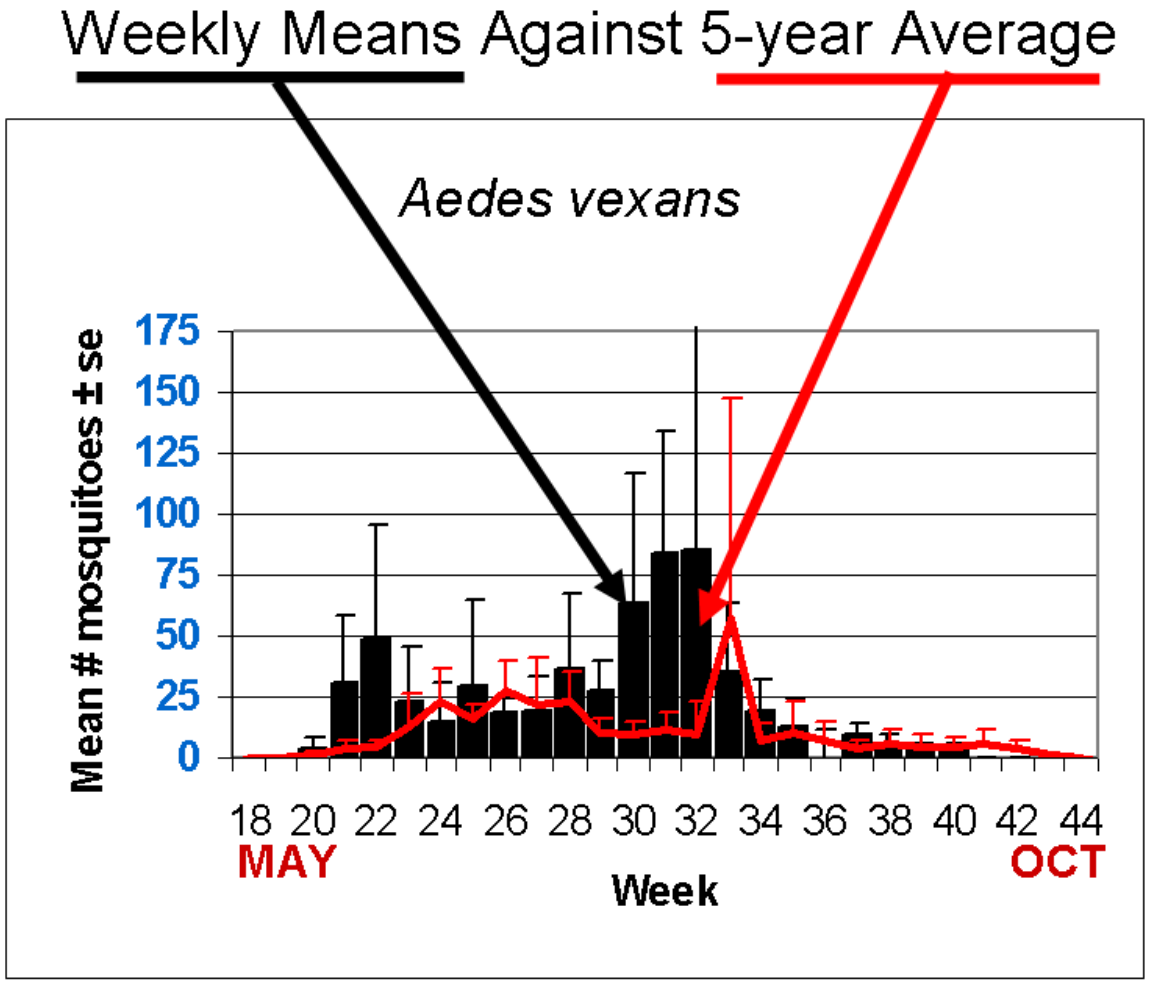
Climate Factors

Average High Temperature	Average Low Temperature	Total Precipitation
		

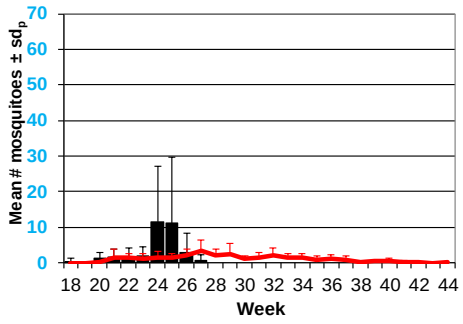
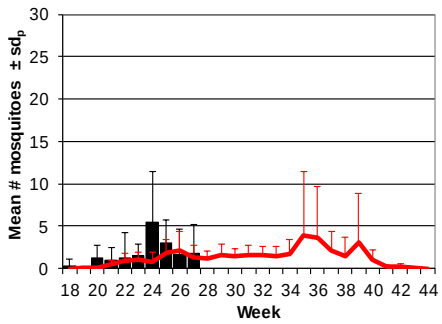
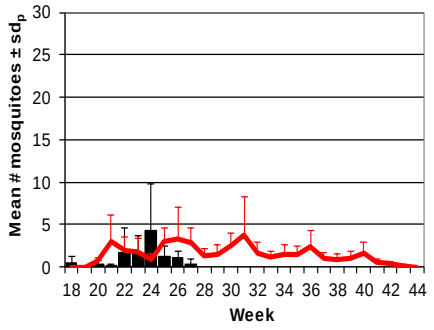
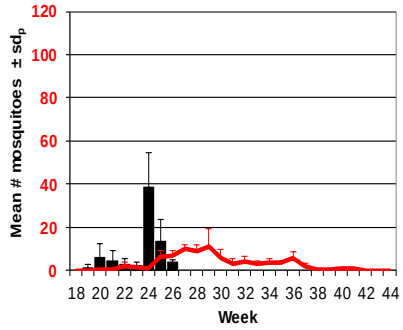
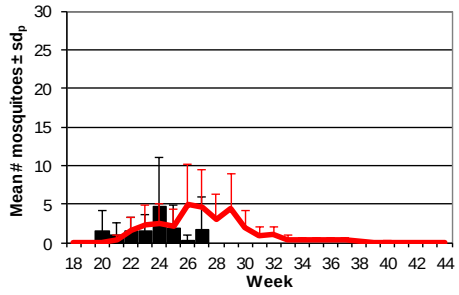
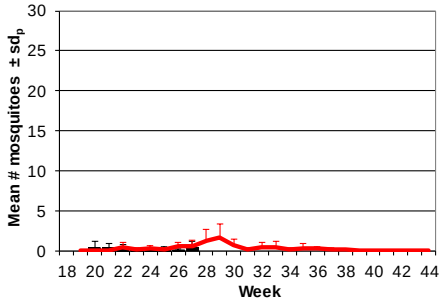
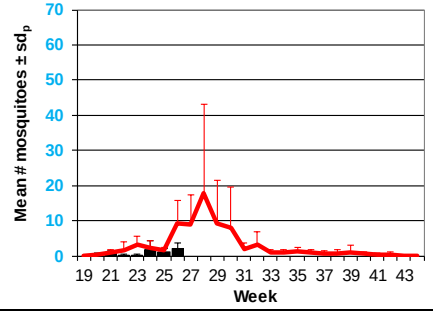
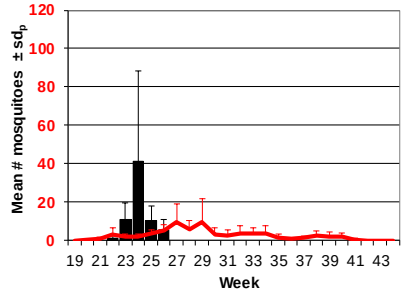
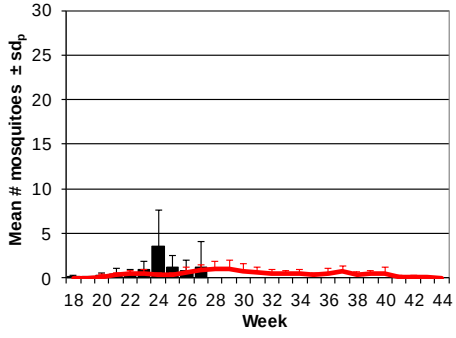
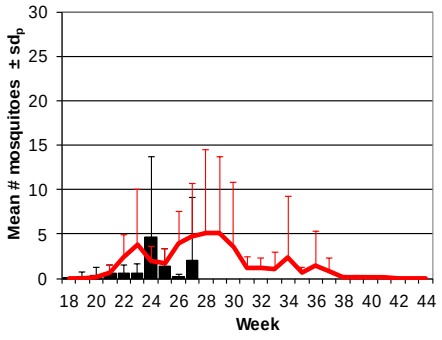
The three figures show the interpolation of average maximum (°F) and minimum temperature (°F) and total precipitation (inches) for 30 days prior to 8 July 2017 in New Jersey. Data points are from about 56 weather stations maintained through the New Jersey Weather & Climate Network and the State Climatologist. Interpolation between points was performed using ArcMap 10.1.

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 Atlantic, Cumberland, Essex, Hudson, Hunterdon, Monmouth, Morris and Union counties. Data for the previous week are from Atlantic, Bergen, Camden, Cape May, Cumberland, Essex, Hudson, Hunterdon, Mercer, Monmouth, Morris, Passaic, Salem, Sussex and Union counties.

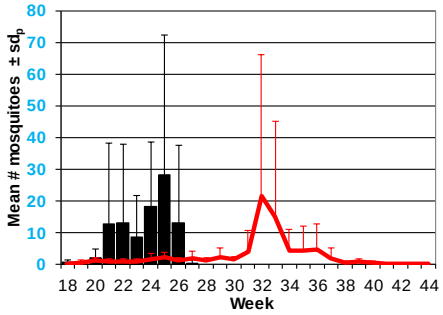


Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

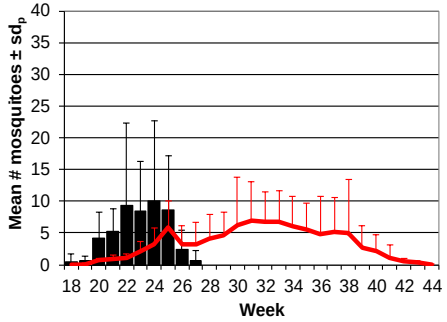
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes vexans* is the model for fresh floodwater species. With abundant precipitation, this species can emerge in very significant numbers. Coastal and Pineland populations were mildly above historical trends, but recent precipitation, especially in the northern half of the state, may result in increased abundances for fresh floodwater species in the coming week.	

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

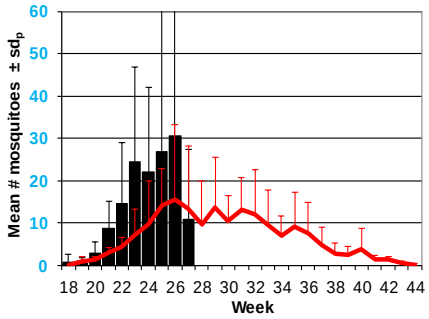
Agricultural



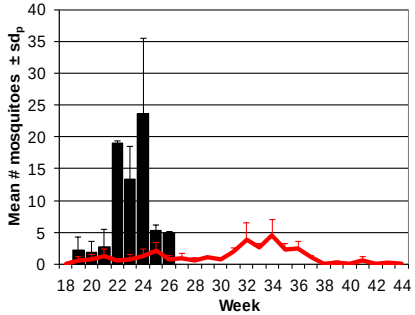
Coastal



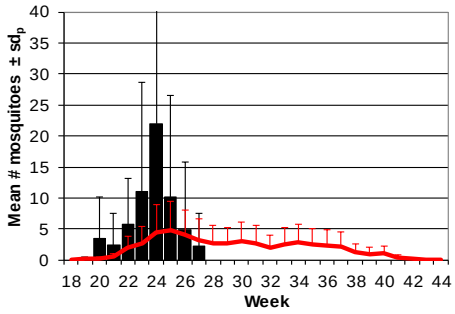
Delaware Bayshore



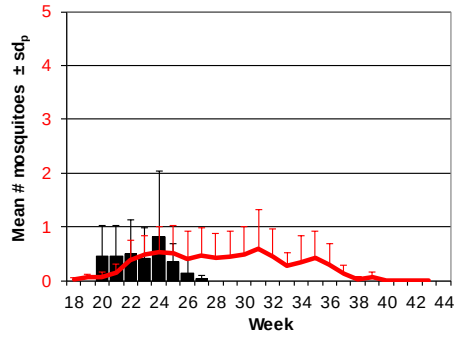
Delaware River Basin



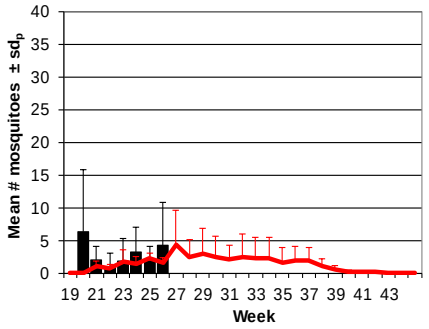
New York Metro



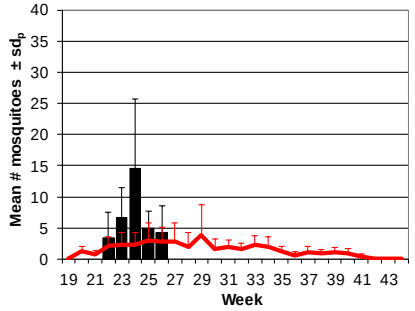
North Central Rural



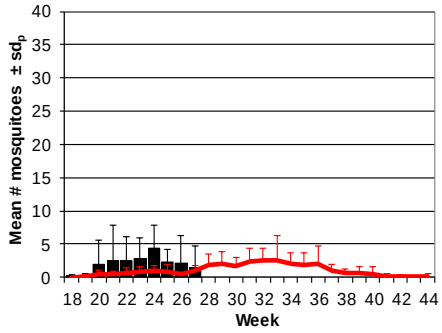
Northwestern Rural



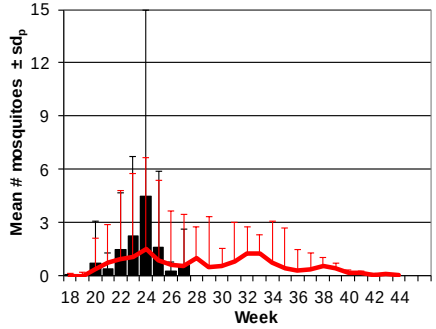
Philadelphia Metro



Pinelands



Suburban Corridor

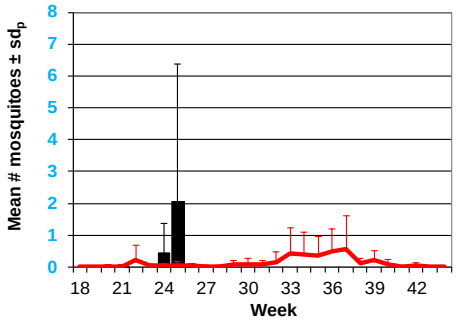


Comments

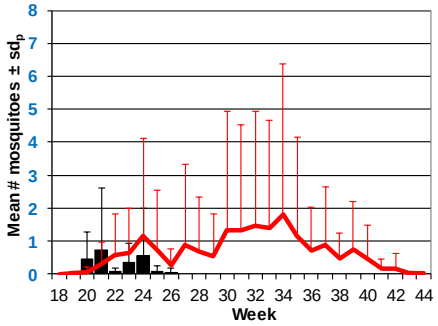
Culex Mix is composed of *Culex pipiens, Cx. restuans* and *Cx. salinarius*. These three species (especially *pipiens* and *restuans*) are often difficult to tell apart after encountering the damaging blades of the New Jersey light trap. The Pinelands and Suburban Corridor showed moderate to mild increases respectively. But several regions have been trending higher than average abundances (Agricultural, Coastal, Delaware Bayshore, Delaware River Basin, New York Metropolitan, for example) and are likely to continue showing higher numbers, at least for the short term, as data continues to come in.

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

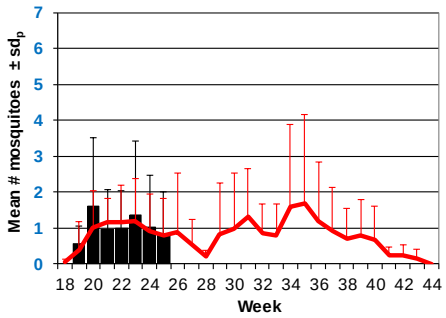
Agricultural



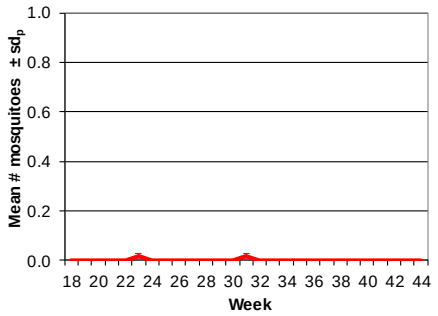
Coastal



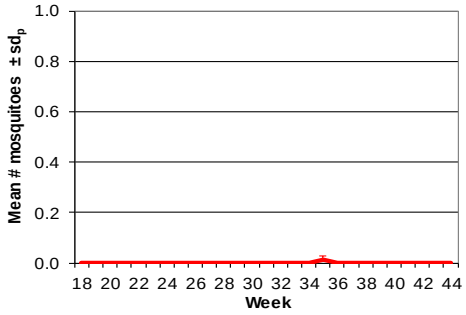
Delaware Bayshore



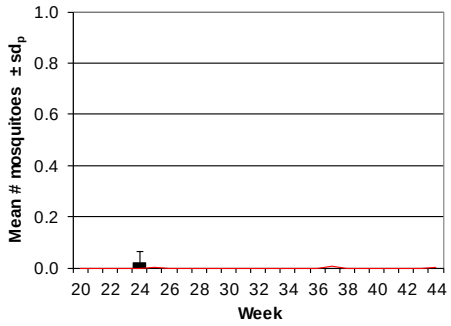
Delaware River Basin



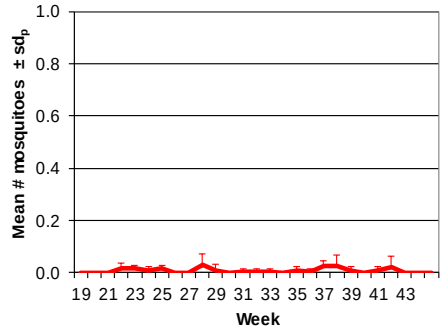
New York Metro



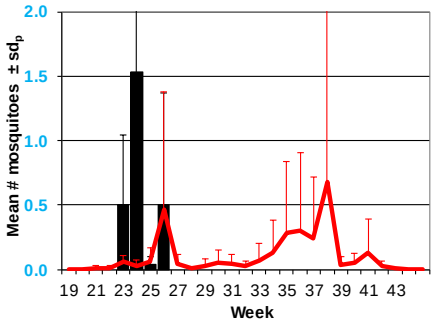
North Central Rural



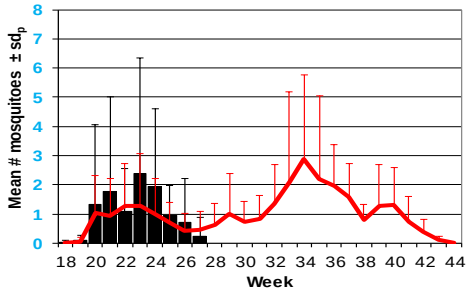
Northwestern Rural



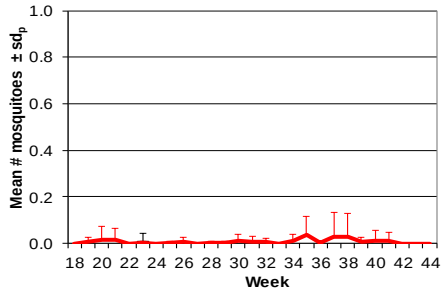
Philadelphia Metro



Pinelands



Suburban Corridor



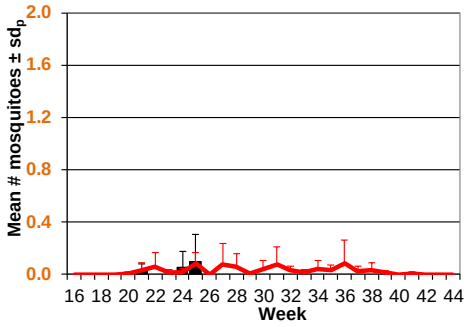
Comments

Culiseta melanura is the enzootic ornithophilic vector of eastern equine encephalitis. Last year, EEE activity was recorded not only in southern NJ where it is typically found, but also in the northern half of the state. One human case occurred in the latter area. Currently, populations continue to be trending around historical averages. This is in apparent contrast to the resting box numbers reported in the arboviral surveillance reports, which indicate a significantly reduced population levels in most regions.

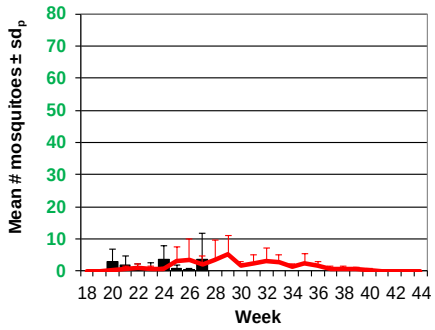
All horse owners should make sure their horses are up to date on the vaccination schedules: http://www.aaep.org/custdocs/adultvaccinationchart.pdf

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

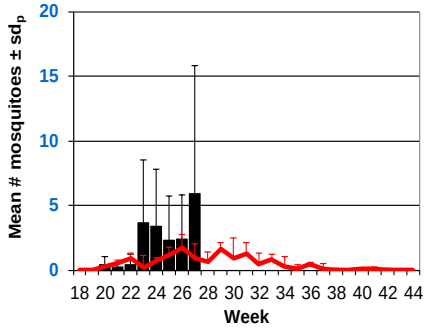
Agricultural



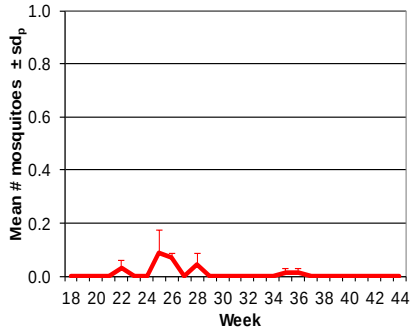
Coastal



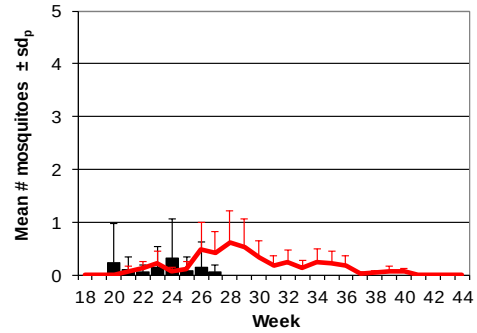
Delaware Bayshore



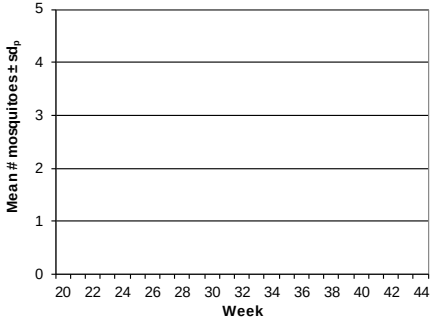
Delaware River Basin



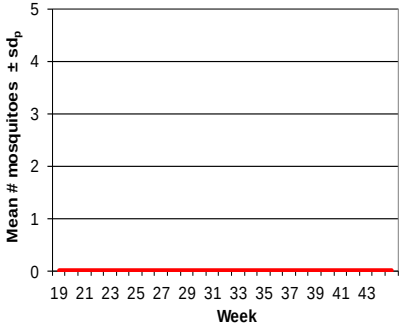
New York Metro



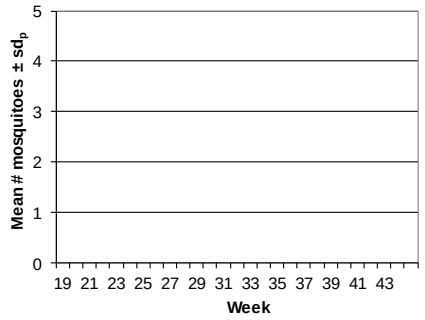
North Central Rural



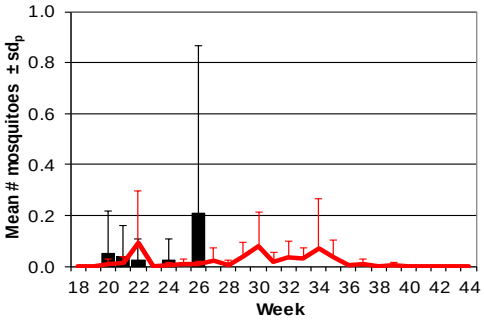
Northwestern Rural



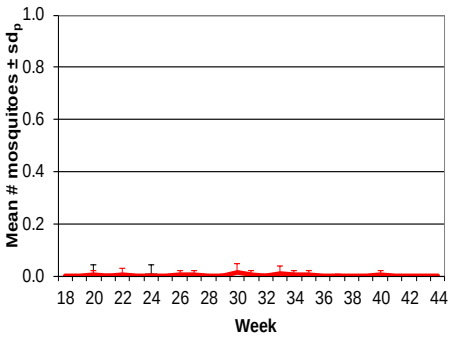
Philadelphia Metro



Pinelands



Suburban Corridor



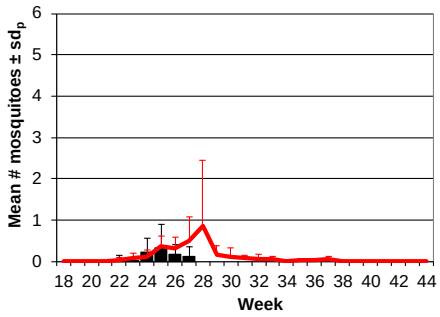
Comments

Aedes sollicitans is a salt floodwater species and responds to both lunar tidal patterns as well as rainfall. Currently, *Ae. sollicitans* populations are significantly elevated in the Delaware Bayshore region where, along with the Coastal region, this species can usually be found in high numbers. Sunday, the 9th was a full moon.

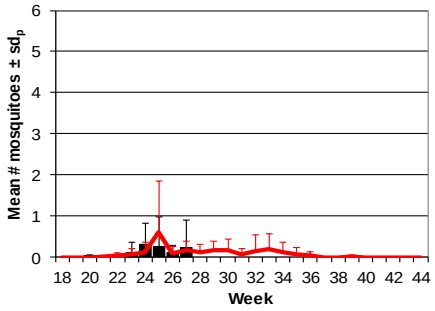
Next full moon is on the 7th August.

Coquillettidia perturbans
Monotypic (*Coquillettidia perturbans* Type)

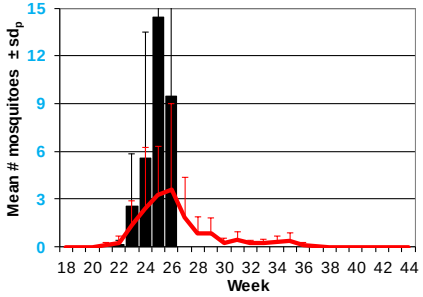
Agricultural



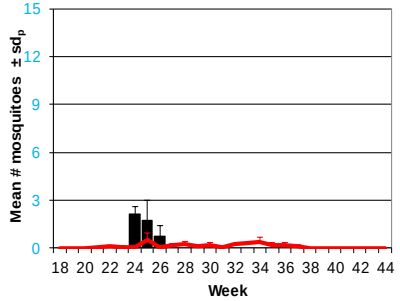
Coastal



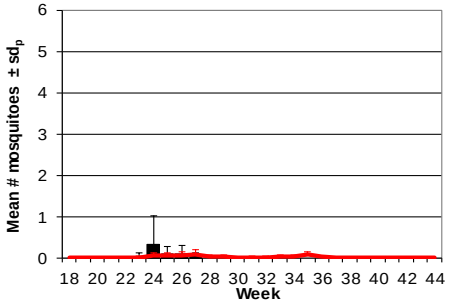
Delaware Bayshore



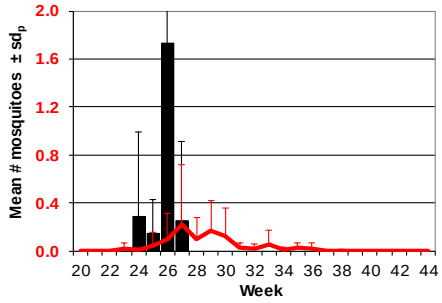
Delaware River Basin



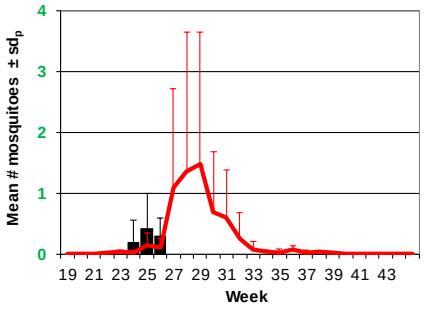
New York Metro



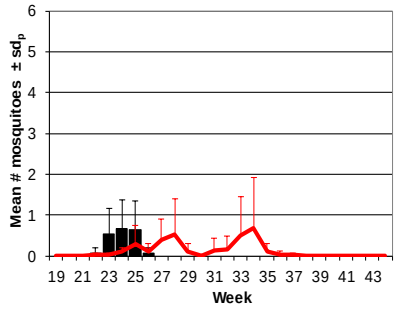
North Central Rural



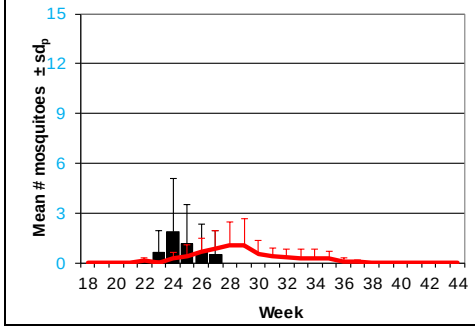
Northwestern Rural



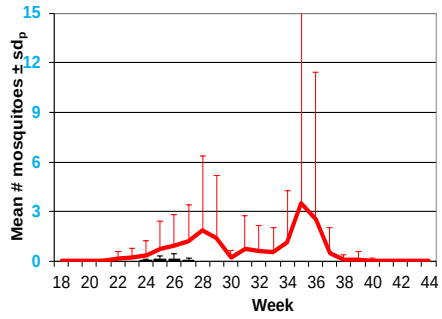
Philadelphia Metro



Pinelands



Suburban Corridor

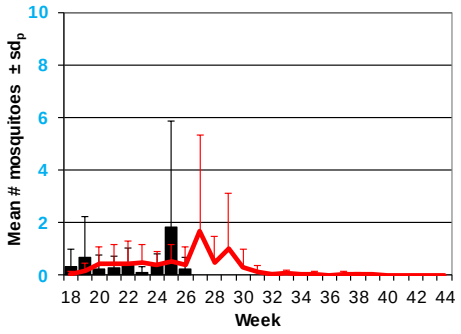


Comments

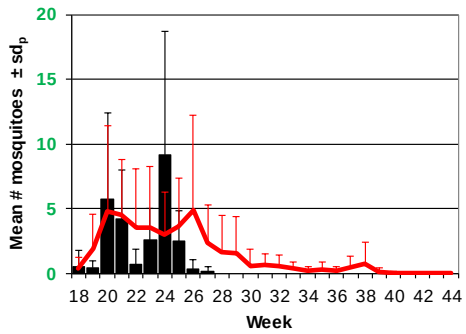
Coquillettidia perturbans populations are located in cattail swamps and other wetlands with emergent vegetation, often making control of their numbers dependent on controlling water depth. This mid-season species is a potential inland vector of EEE and should be monitored closely when the arbovirus is present. Above historical abundances of this species were reported in the Coastal and North Central Rural, although these differences were mildly or moderately above average trends.

Aedes cantator
Monotypic (*Coquillettidia perturbans* Type)

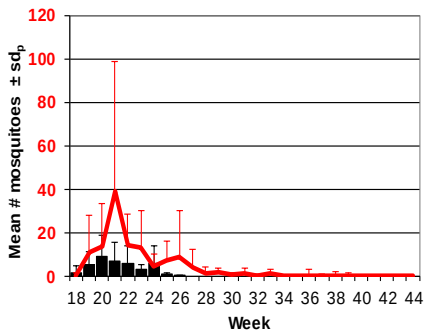
Agricultural



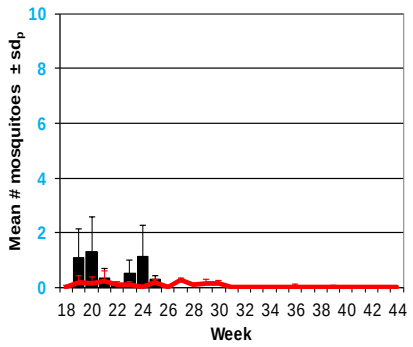
Coastal



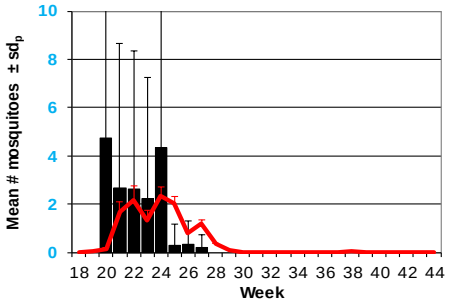
Delaware Bayshore



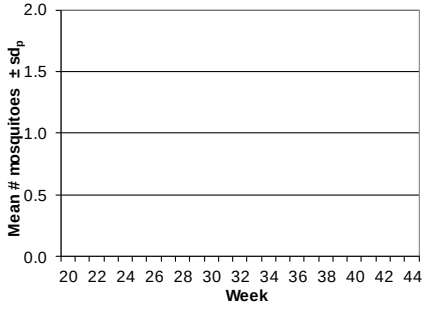
Delaware River Basin



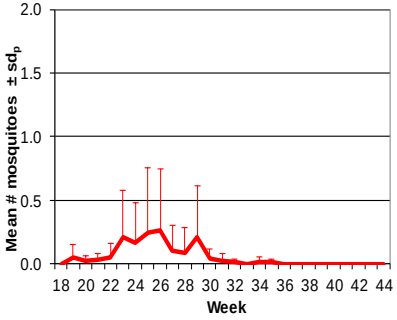
New York Metro



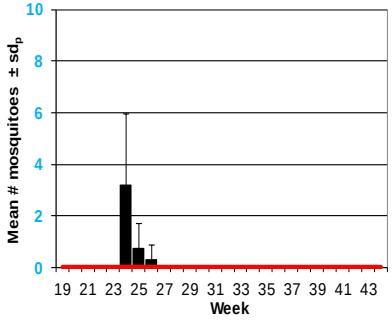
North Central Rural



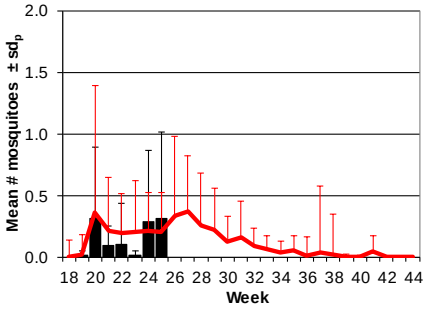
Northwestern Rural



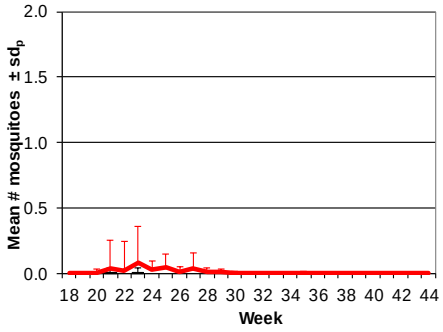
Philadelphia Metro



Pinelands



Suburban Corridor



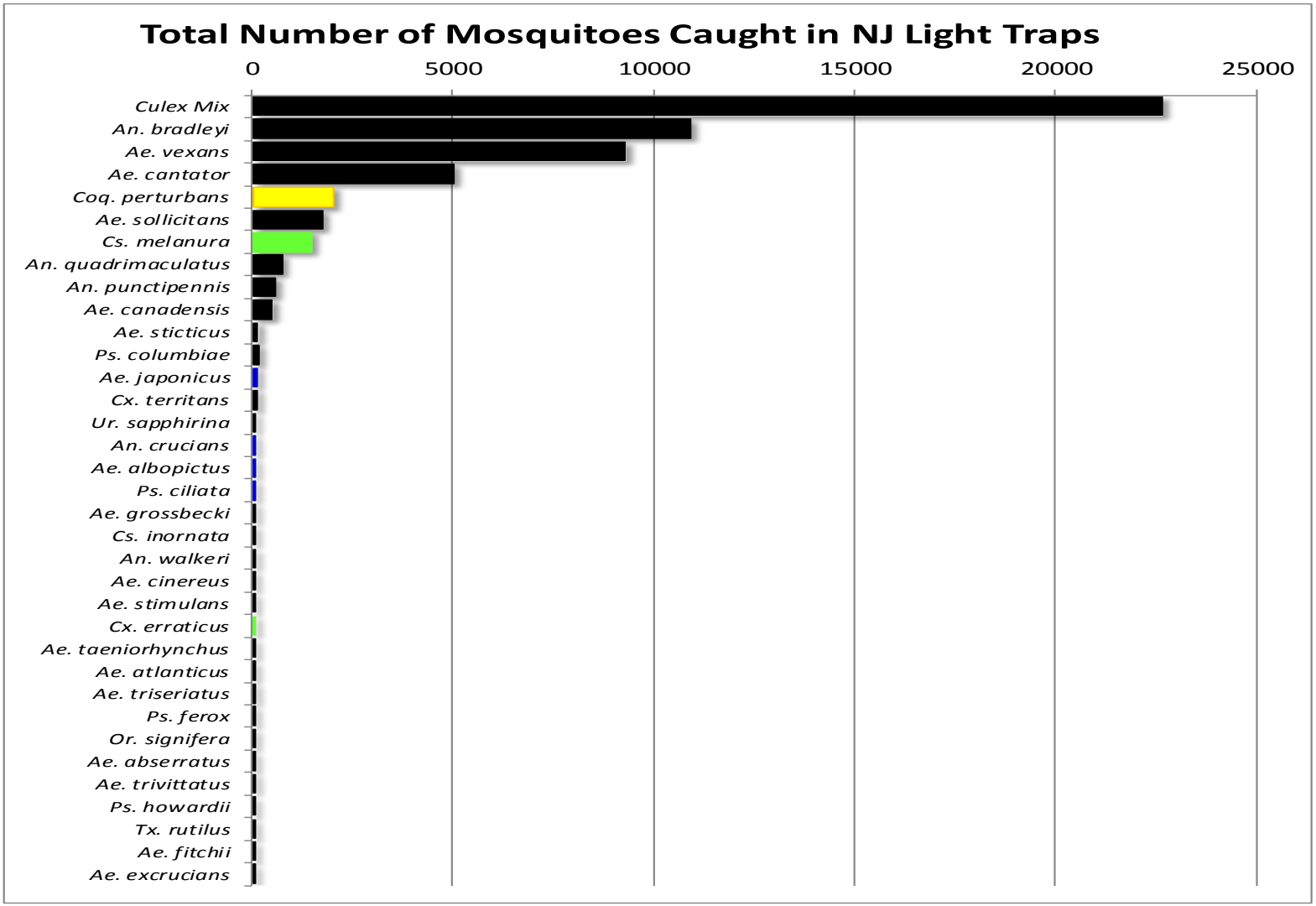
Comments

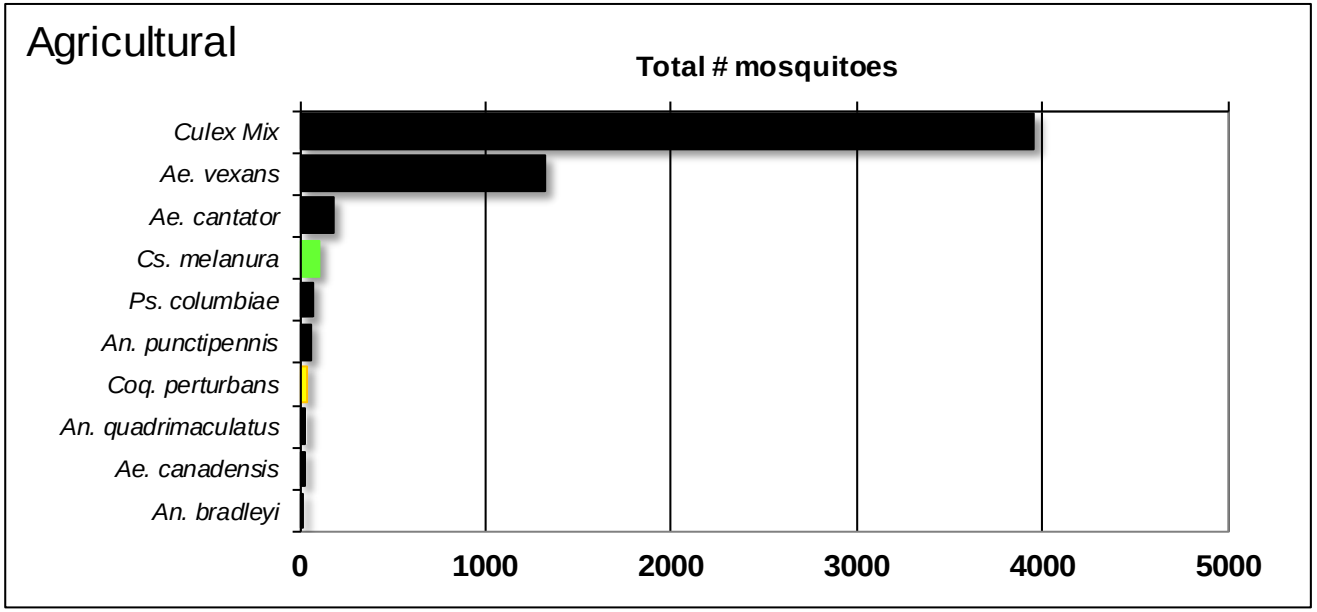
Aedes cantator is a salt-tolerant species with a wide range of habitats, but their typical ecology includes the upland salt marshes. If manmade sources of salt are available, such as ditches next to well-salted roadways, they can also then be found well inland from coastal habitat. These manmade habitats also include manufacturers' sites such as the textile company in the Northwestern Rural region that uses salts to make dyes hold fast to materials. *Ae. cantator* is beginning to decrease in most regions.

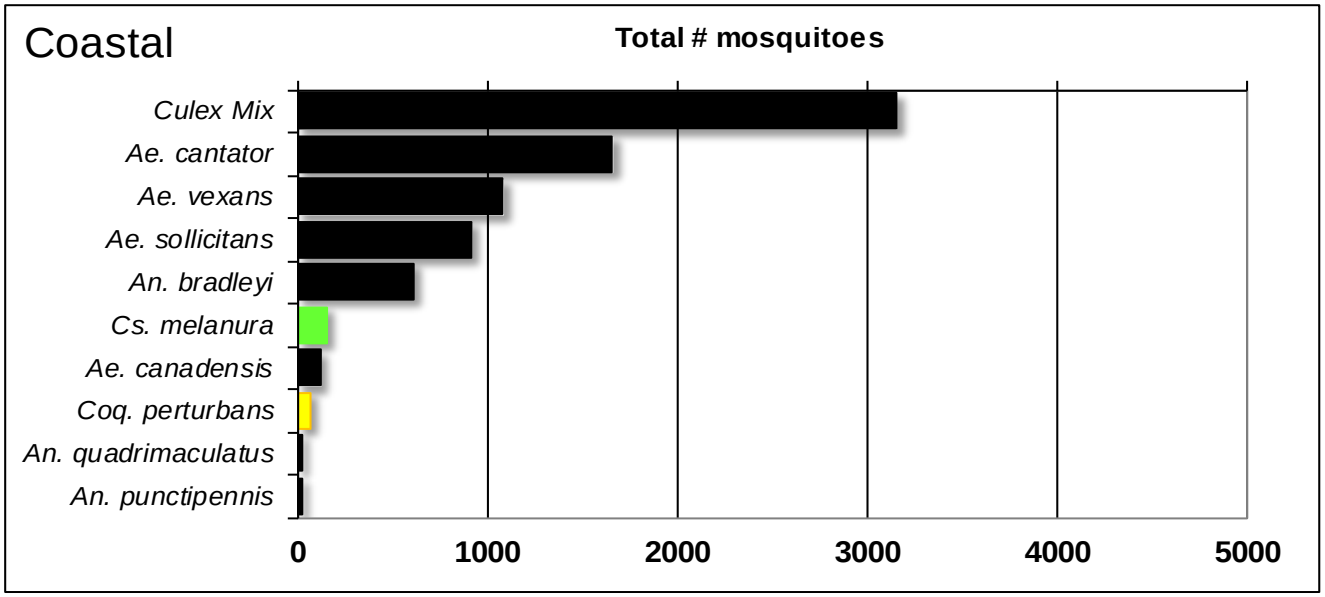
WNV *EEE*

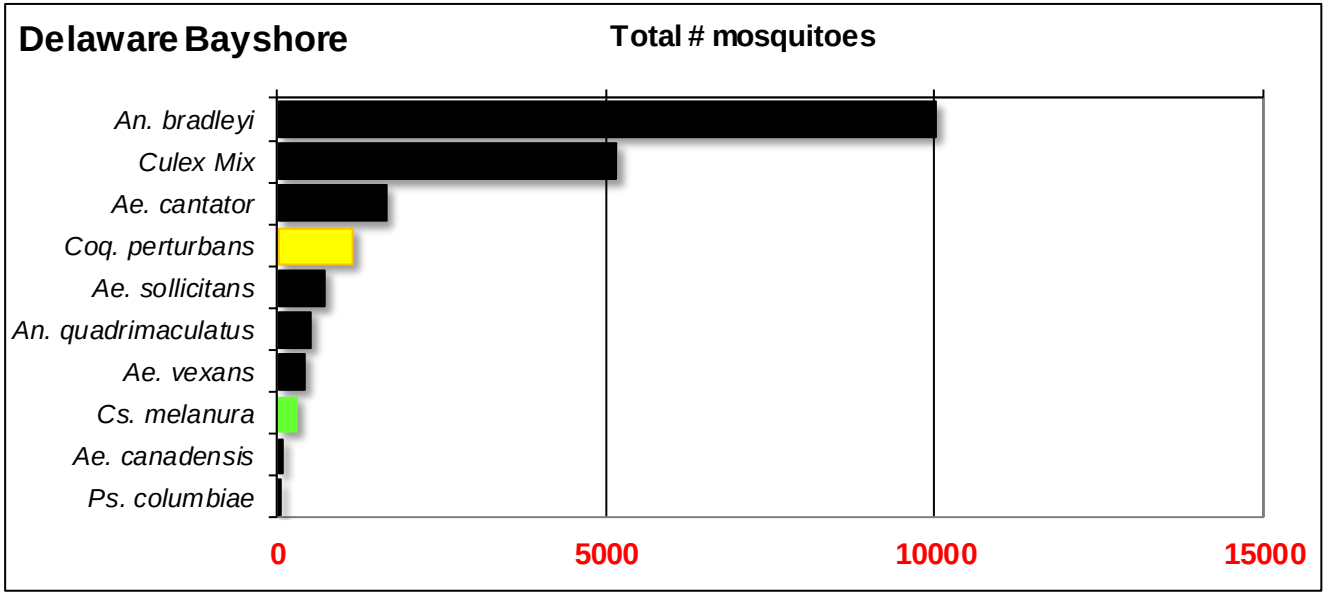
Top Ten Mosquito Species/Region - *Ae. albopictus,* *Ae. japonicus (invasives);* *Cs. melanura or Cx. erraticus* *Coq. perturbans*

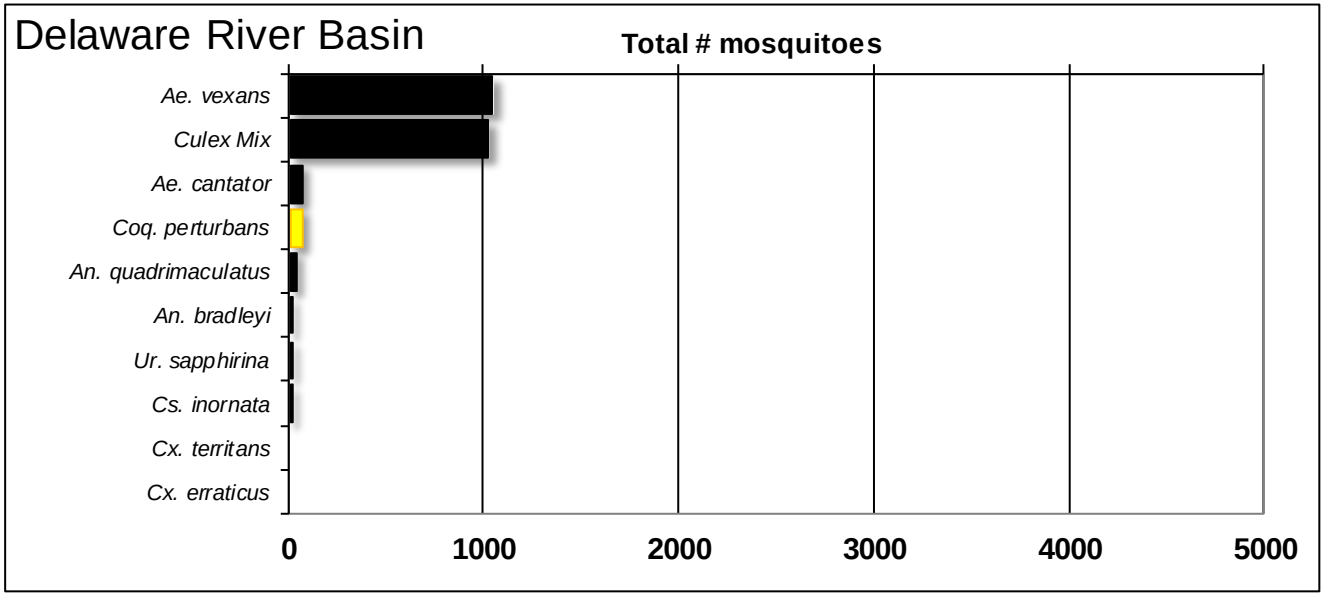
Note: In early season when fewer species are caught, graphs may show less than ten species/region or 25 statewide.

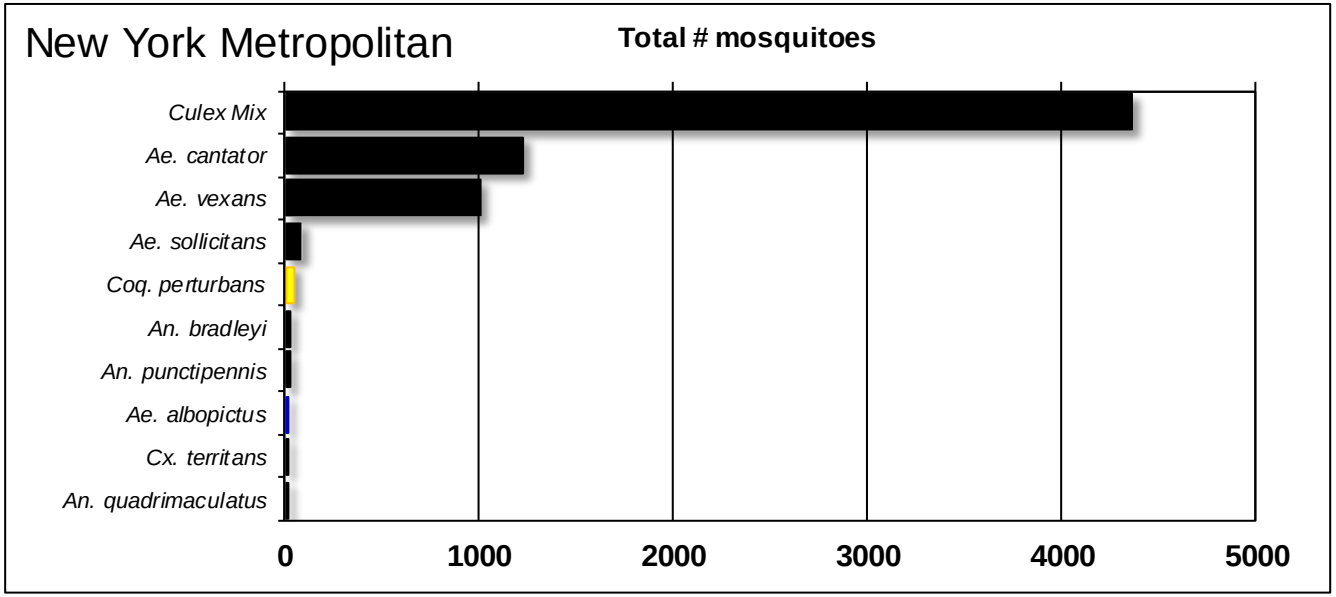


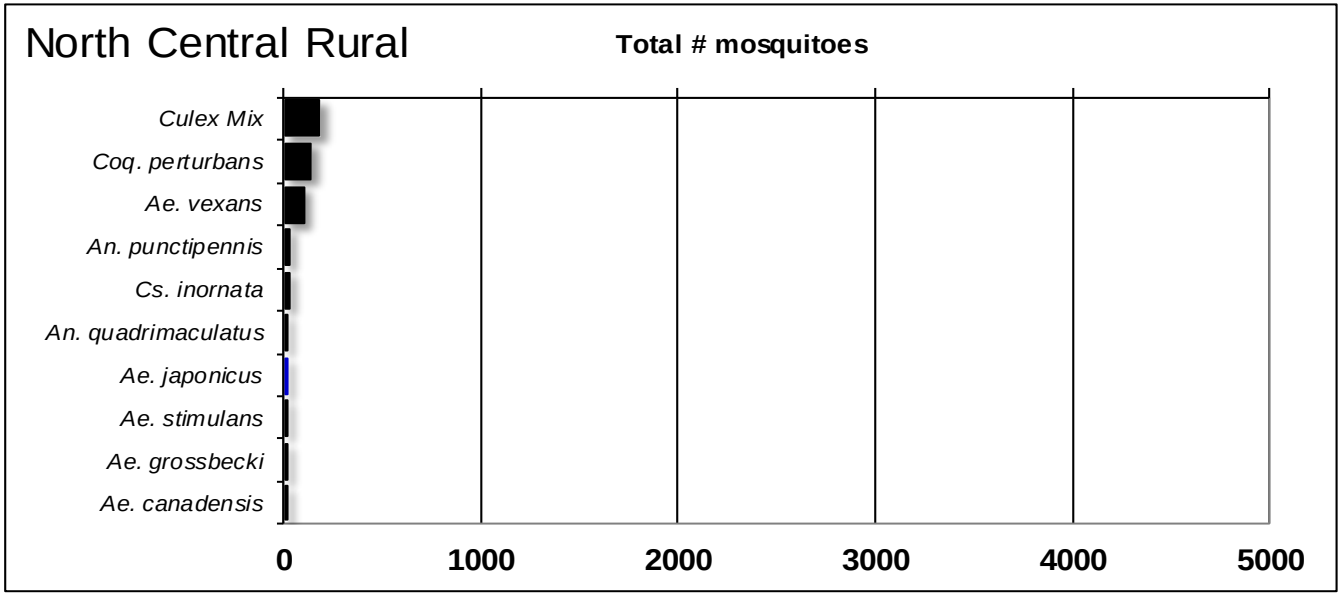

Agricultural
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. cantator
Cs. melanura
Ps. columbiae
An. punctipennis
Coq. perturbans
An. quadrimaculatus
Ae. canadensis
An. bradleyi
0
1000
2000
3000
4000
5000

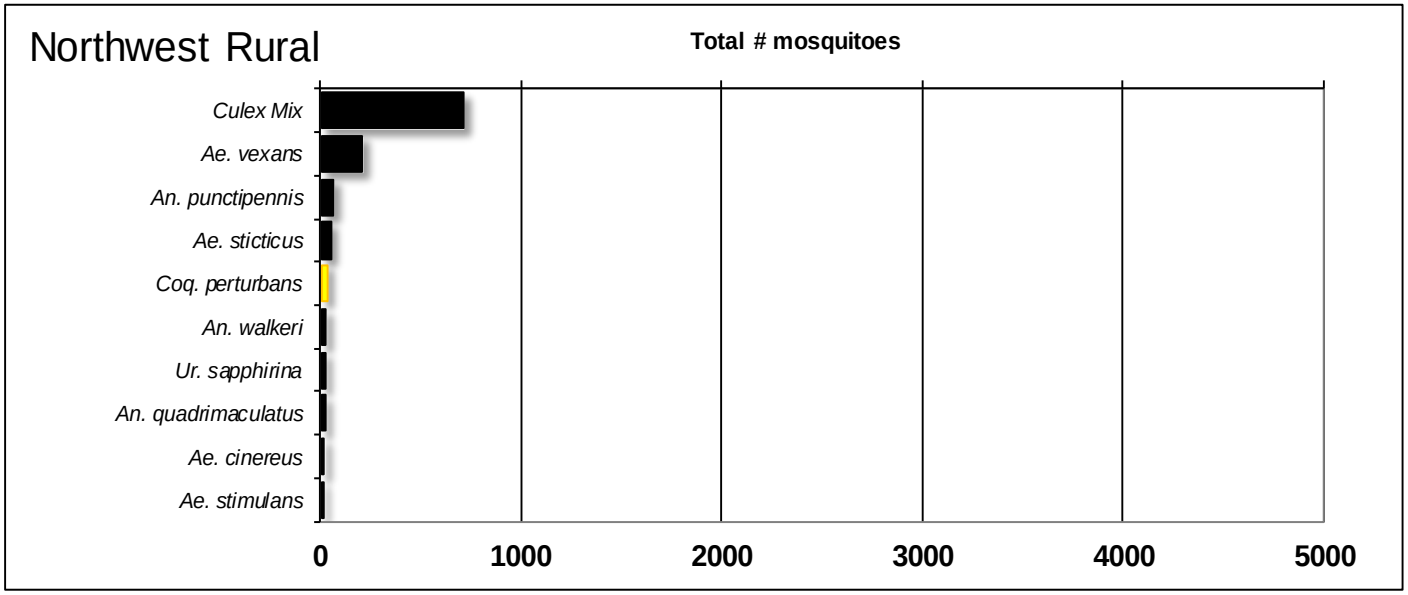

Coastal
Total # mosquitoes
Culex Mix
Ae. cantator
Ae. vexans
Ae. sollicitans
An. bradleyi
Cs. melanura
Ae. canadensis
Coq. perturbans
An. quadrimaculatus
An. punctipennis
0
1000
2000
3000
4000
5000

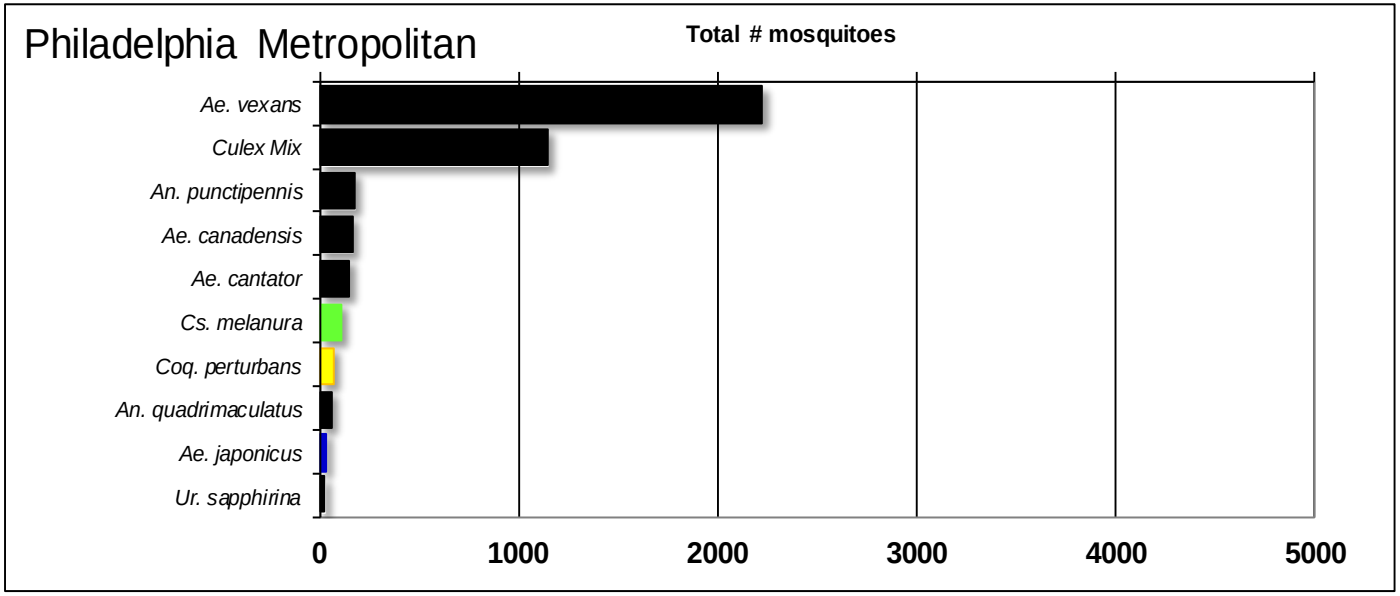

Delaware Bayshore
Total # mosquitoes
An. bradleyi
Culex Mix
Ae. cantator
Coq. perturbans
Ae. sollicitans
An. quadrimaculatus
Ae. vexans
Cs. melanura
Ae. canadensis
Ps. columbiae
0
5000
10000
15000

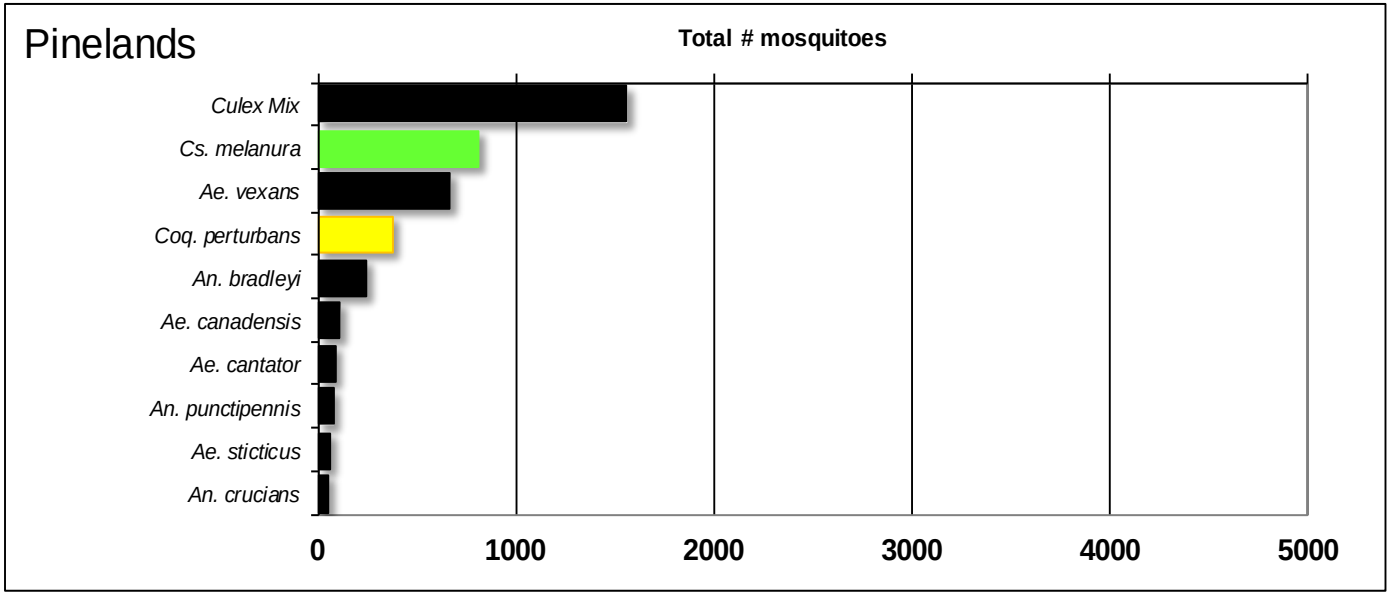

Delaware River Basin
Total # mosquitoes
Ae. vexans
Culex Mix
Ae. cantator
Coq. perturbans
An. quadrimaculatus
An. bradleyi
Ur. sapphirina
Cs. inornata
Cx. territans
Cx. erraticus
0
1000
2000
3000
4000
5000

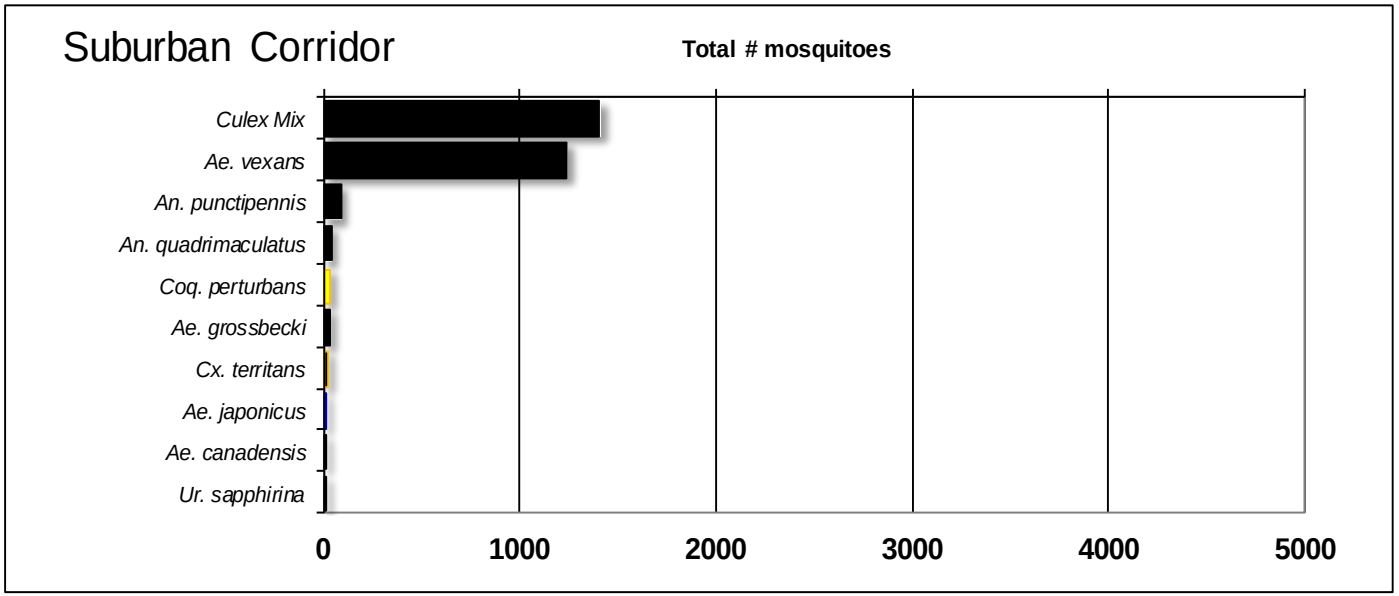

New York Metropolitan
Total # mosquitoes
Culex Mix
Ae. cantator
Ae. vexans
Ae. sollicitans
Coq. perturbans
An. bradleyi
An. punctipennis
Ae. albopictus
Cx. territans
An. quadrimaculatus
0
1000
2000
3000
4000
5000


North Central Rural
Total # mosquitoes
Culex Mix
Coq. perturbans
Ae. vexans
An. punctipennis
Cs. inornata
An. quadrimaculatus
Ae. japonicus
Ae. stimulans
Ae. grossbecki
Ae. canadensis
0
1000
2000
3000
4000
5000


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


Philadelphia Metropolitan
Total # mosquitoes
Ae. vexans
Culex Mix
An. punctipennis
Ae. canadensis
Ae. cantator
Cs. melanura
Coq. perturbans
An. quadrimaculatus
Ae. japonicus
Ur. sapphirina
0
1000
2000
3000
4000
5000


Pinelands
Total # mosquitoes
Culex Mix
Cs. melanura
Ae. vexans
Coq. perturbans
An. bradleyi
Ae. canadensis
Ae. cantator
An. punctipennis
Ae. sticticus
An. crucians
0
1000
2000
3000
4000
5000


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