NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report 10 June to 16 June 2018, CDC Week 24

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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.

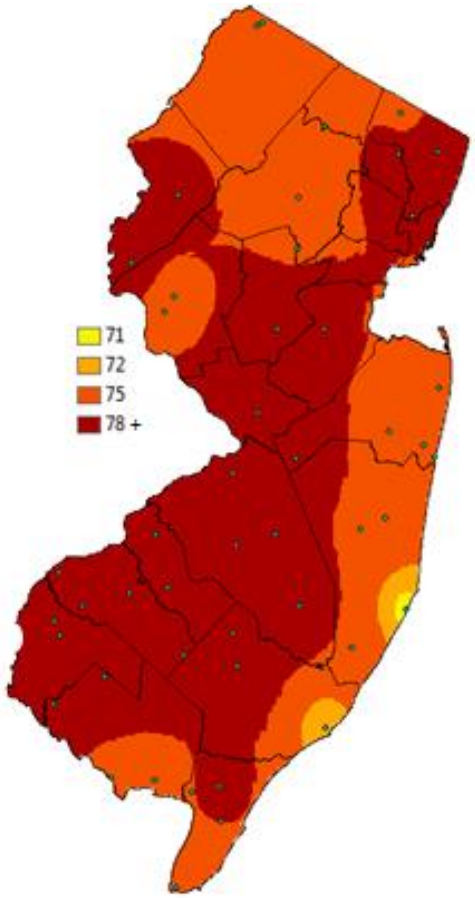
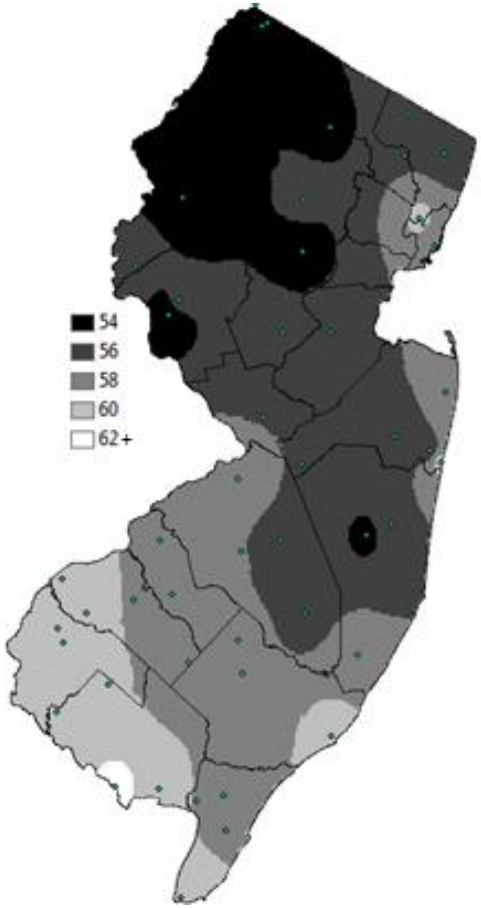
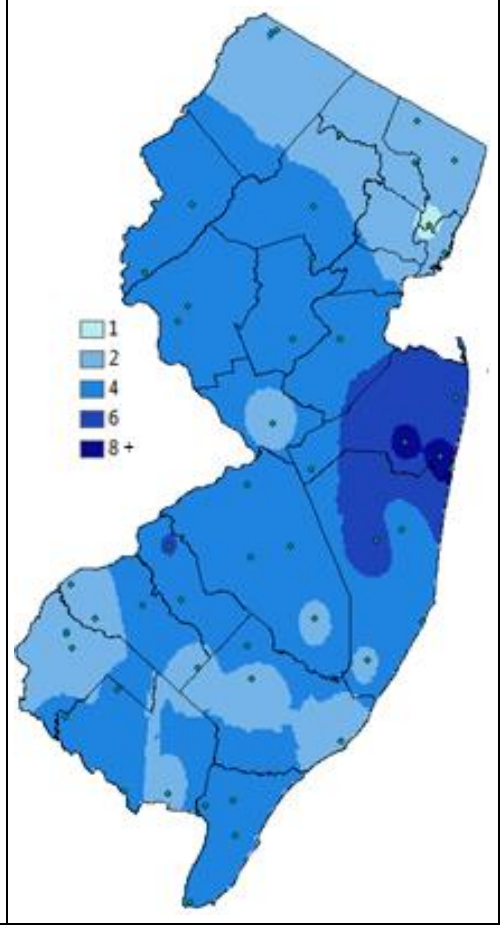
Summary Table – Week 24

	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	**6.54**	**1.36**	**4**	**5.46**	**1.60**	**4**	**0.23**	**0.11**	**3**	**0.34**	**0.01**	**4**
Coastal	**2.03**	**0.78**	**4**	**6.81**	**3.12**	**3**	**0.57**	**0.13**	**4**	**0.89**	**0.59**	**2**
Delaware Bayshore	**3.14**	**0.91**	**4**	**10.51**	**9.55**	**1**	**3.71**	**2.41**	**2**	**0.91**	**0.74**	**1**
Delaware River Basin	**23.29**	**1.26**	**4**	**3.79**	**1.24**	**4**	**0.36**	**0.07**	**4**	**0.29**	**0.00**	
New York Metro	**3.49**	**2.55**	**1**	**4.91**	**4.43**	**1**	**0.00**	**0.06**	**0**	**0.14**	**0.07**	**3**
North Central Rural	**0.04**	**0.24**	**0**	**0.21**	**0.52**	**0**	**0.02**	**0.01**	**4**	**0.00**	**0.00**	**0**
Northwest Rural	**2.49**	**2.37**	**1**	**0.31**	**1.41**	**0**	**0.00**	**0.02**	**0**	**0.00**	**0.00**	**0**
Philadelphia Metro	**0.00**	**1.82**	**0**	**0.00**	**2.35**	**0**	**0.00**	**0.03**	**0**	**0.00**	**0.00**	**0**
Pinelands	**1.21**	**0.32**	**4**	**2.06**	**1.00**	**3**	**1.13**	**0.26**	**4**	**0.05**	**0.00**	**4**
Suburban Corridor	**0.90**	**1.95**	**0**	**2.50**	**1.54**	**2**	**0.03**	**0.36**	**0**	**0.03**	**0.00**	**4**

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

State Summary: A little bit of water and mosquito populations are thriving. *Aedes vexans* were in significant numbers in the Agricultural, Coastal, Delaware Bayshore, and Pinelands regions. *Culex* Mix populations were also in significant numbers in the Agricultural, Coastal, Delaware River Basin, and the Pinelands regions. *Coquillettidia* abundances were up in the Agricultural, Coastal, Delaware River Basin, North Central Rural, and the Pinelands regions. *Aedes sollicitans* were significantly higher than historical values in the Agricultural, New York Metropolitan, Pinelands, and the Suburban Corridor regions as well as higher that zero value of recent history in the Delaware River Basin. All four pestiferous groups also had minor increases in populations in other regions.

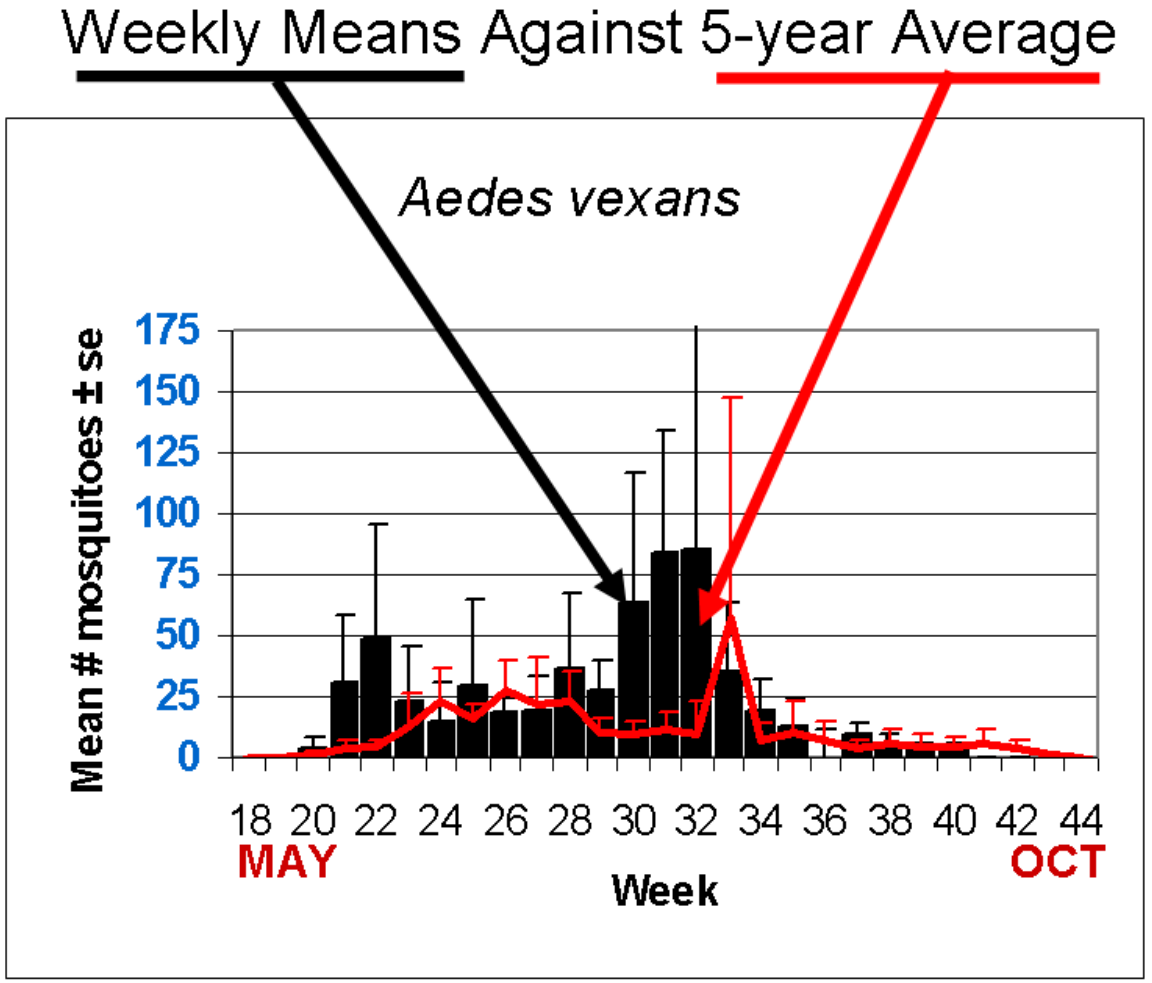
Climate Factors

Average High Temperature	Average Low Temperature	Total Precipitation
		

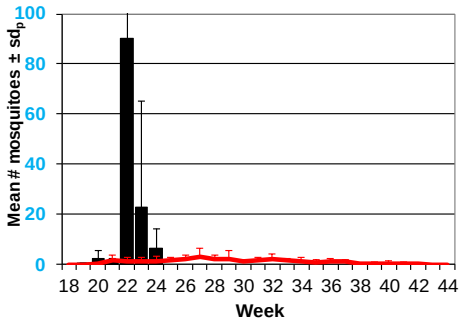
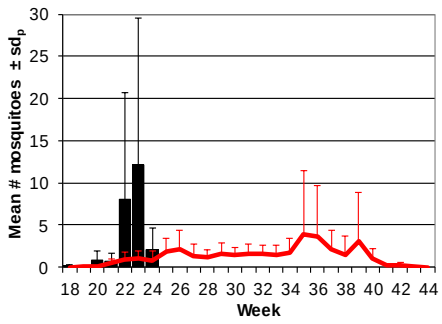
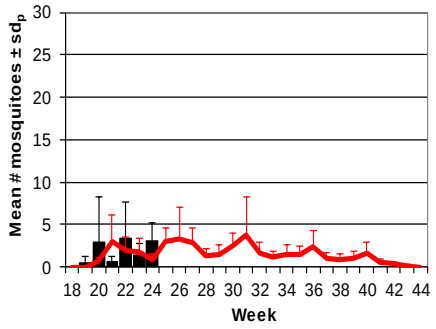
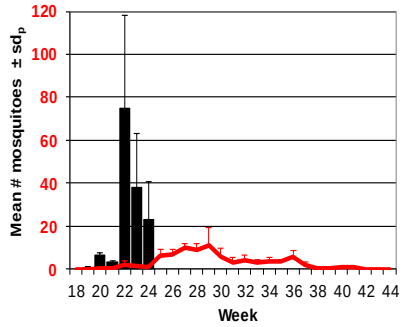
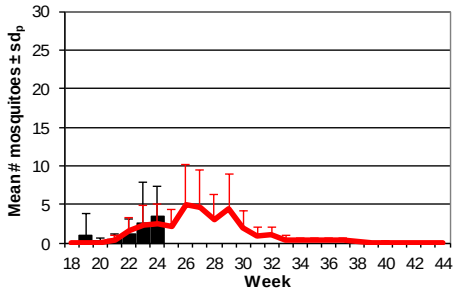
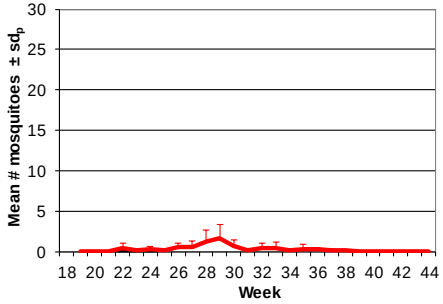
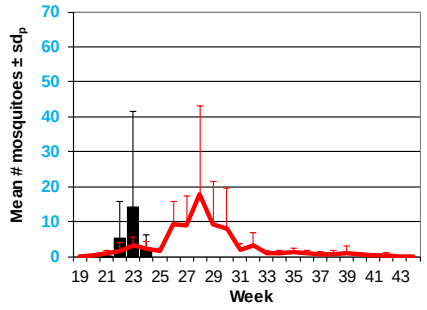
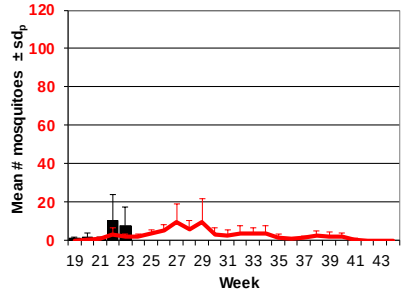
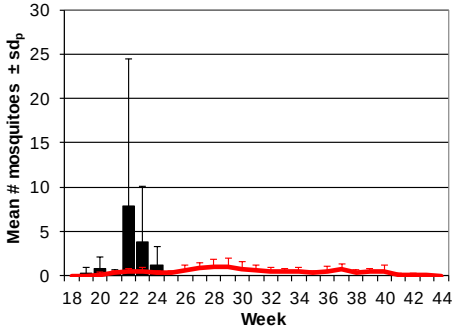
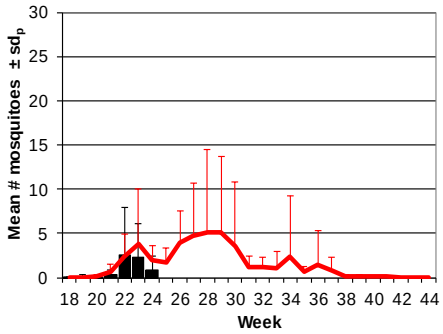
The three figures show the interpolation of average maximum (°F) and minimum temperature (°F) and total precipitation (inches) for 30 days prior to 1 June 2018 in New Jersey. Data points are from about 54 weather stations maintained through the New Jersey Weather & Climate Network and the State Climatologist. Interpolation between points was performed using ArcMap 10.1.

ONJSC at Rutgers University NJ Weather & Climate NETWORK

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, Cape May, Cumberland, Hudson, Hunterdon, Middlesex, Monmouth, Morris, Passaic, Salem, Somerset, Union, and Warren counties. Data for the previous week are from Atlantic, Bergen, Burlington, Cape May, Cumberland, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Salem, Somerset, Union and Warren counties.

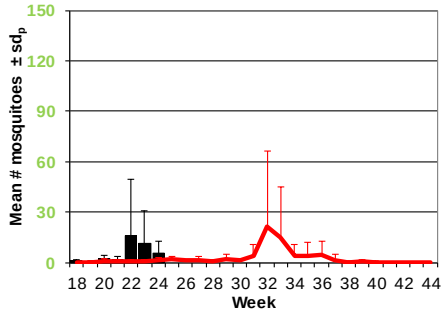


Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

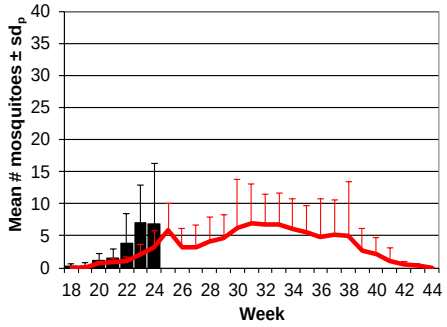
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes vexans* is the model for fresh floodwater species. With abundant precipitation, this species can emerge in very significant numbers. This floodwater species has responded in numbers to the continued precipitation with significant populations in half of the regions (Agricultural, Coastal, Delaware Bayshore, Delaware River Basin, and the Pinelands). Some areas have features that are excellently suited for this species, such as the Northwestern Rural (confluence of three waterways) or the Delaware River Basin (dredge spoils).	

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

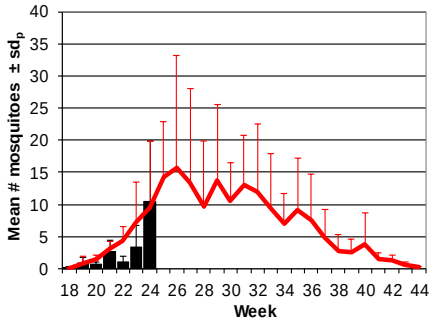
Agricultural



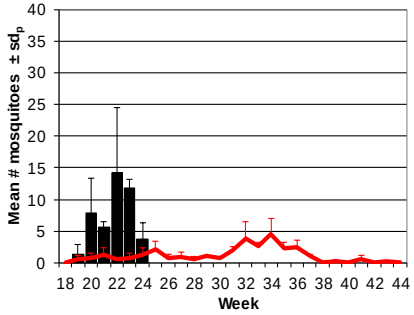
Coastal



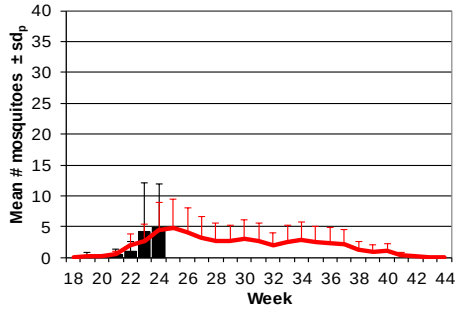
Delaware Bayshore



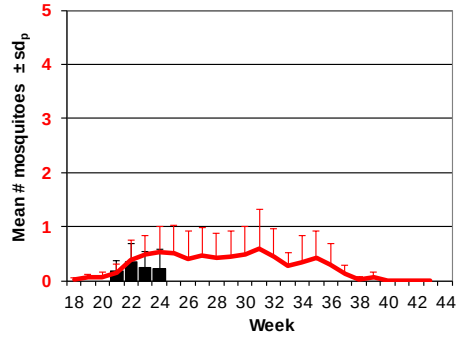
Delaware River Basin



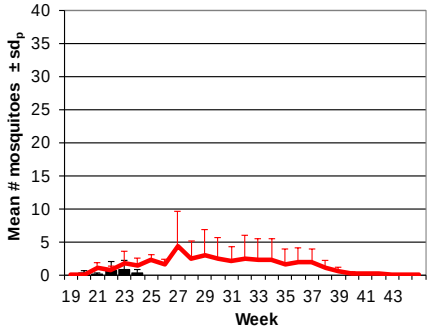
New York Metro



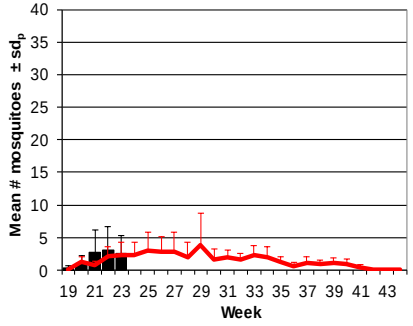
North Central Rural



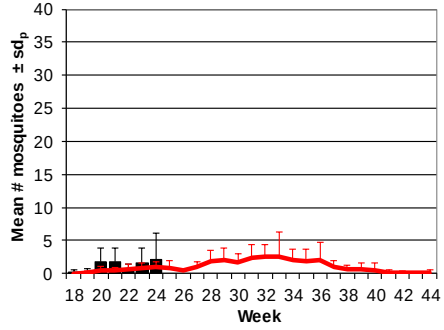
Northwestern Rural



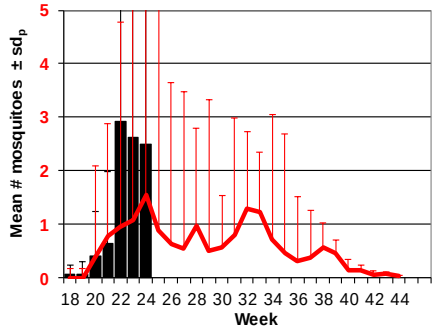
Philadelphia Metro



Pinelands



Suburban Corridor

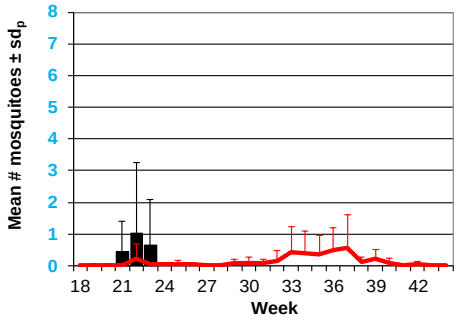


Comments

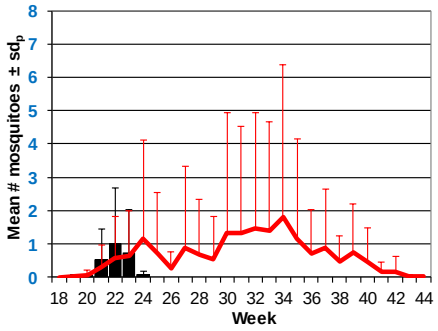
Culex Mix is composed of *Culex pipiens, Cx. restuans* and *Cx. salinarius*. These three species (especially *pipiens* and *restuans*) are often difficult to tell apart after encountering the damaging blades of the New Jersey light trap. Populations in the Agricultural and Delaware River Basin regions are significantly above historical values, as are the Coastal and Pinelands regions. Minor increases were also observed in the Delaware Bayshore, New York Metropolitan and Suburban Corridor. As of last week, no reported West Nile virus positive pools have been detected in this enzootic vector.

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

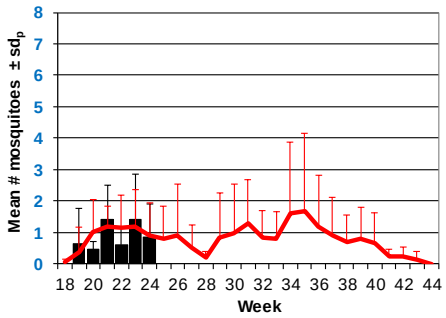
Agricultural



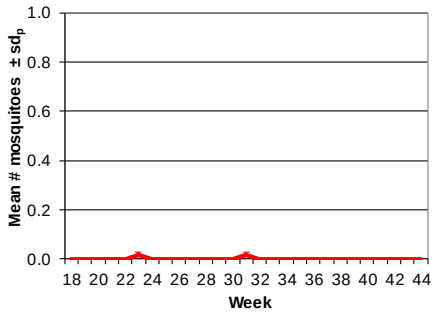
Coastal



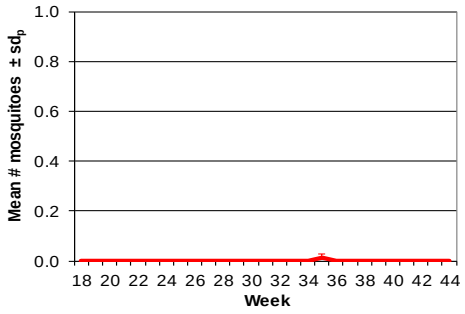
Delaware Bayshore



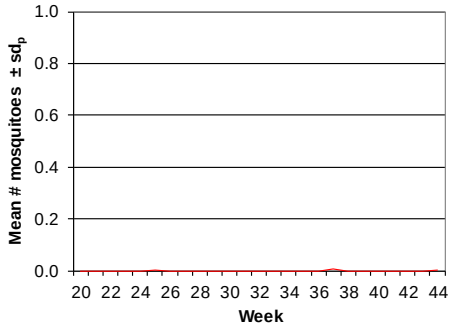
Delaware River Basin



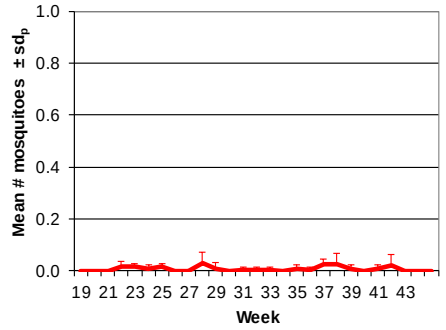
New York Metro



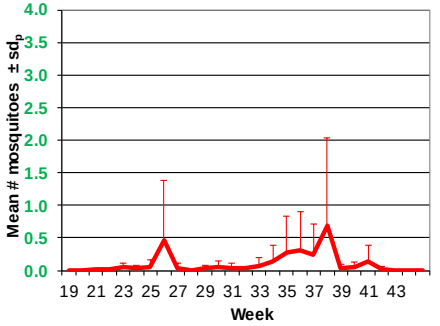
North Central Rural



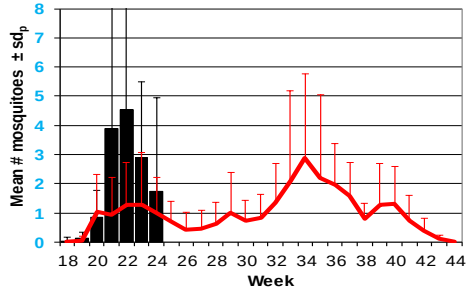
Northwestern Rural



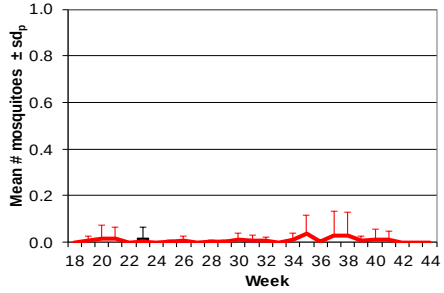
Philadelphia Metro



Pinelands



Suburban Corridor



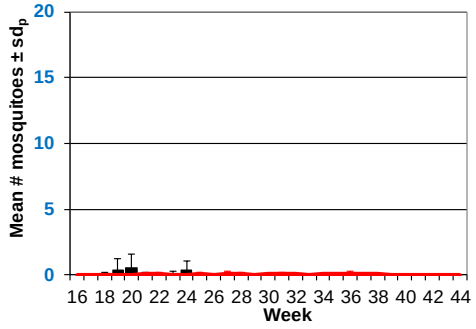
Comments

Culiseta melanura is the enzootic ornithophilic vector of eastern equine encephalitis. With New Jersey getting out of drought conditions, an abundance of water likely increases the survival of overwintering larvae in red maple or Atlantic cedar swamps. Abundance numbers continue to track historical values for the Agricultural, Coastal and Delaware Bayshore regions while the Pinelands populations are above recent historical averages.

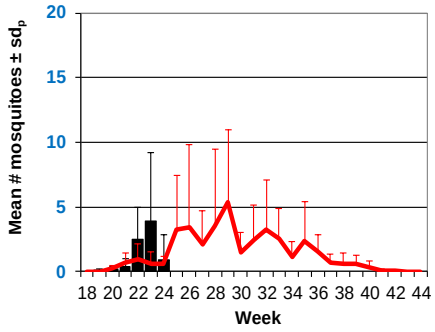
All horse owners should make sure their horses are up to date on the vaccination schedules: http://www.aaep.org/custdocs/adultvaccinationchart.pdf

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

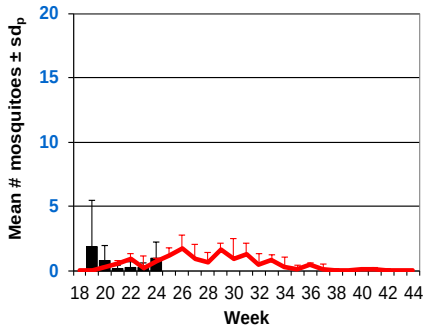
Agricultural



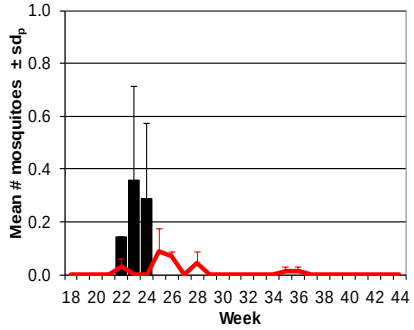
Coastal



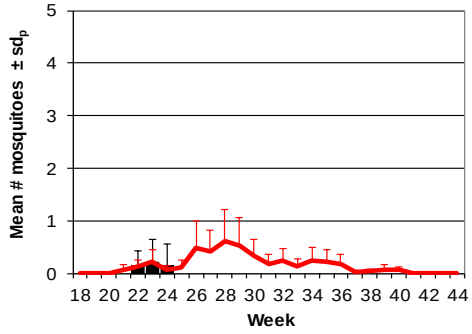
Delaware Bayshore



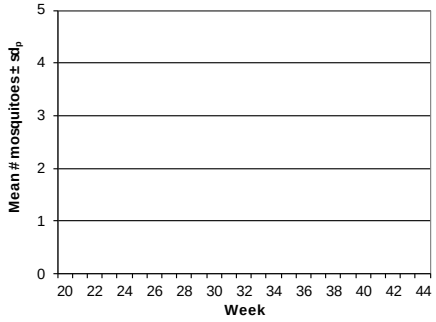
Delaware River Basin



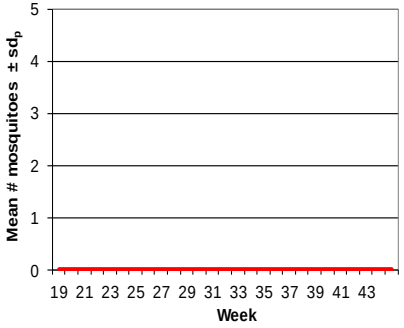
New York Metro



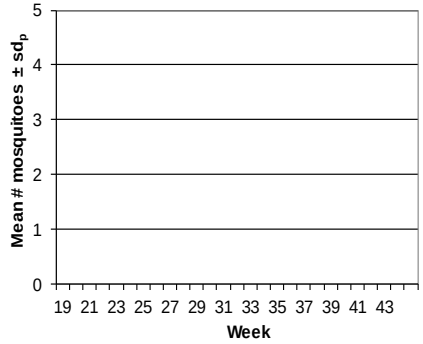
North Central Rural



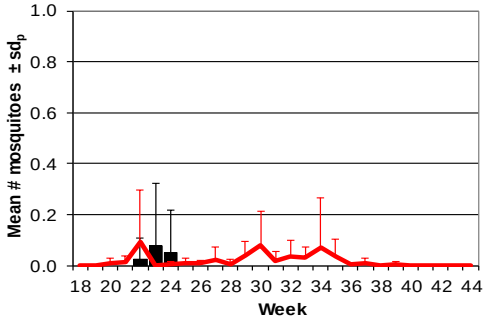
Northwestern Rural



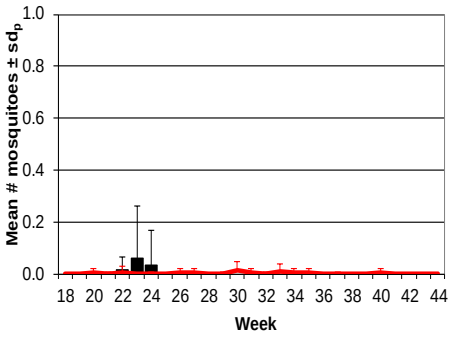
Philadelphia Metro



Pinelands



Suburban Corridor

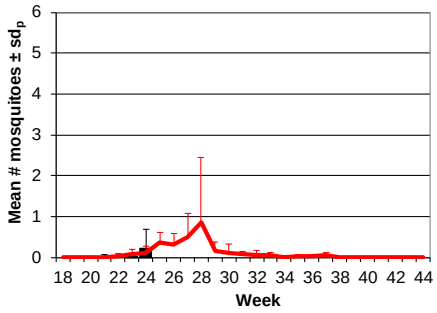
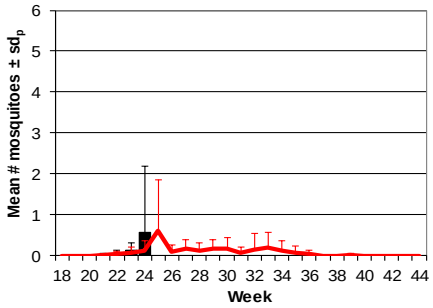
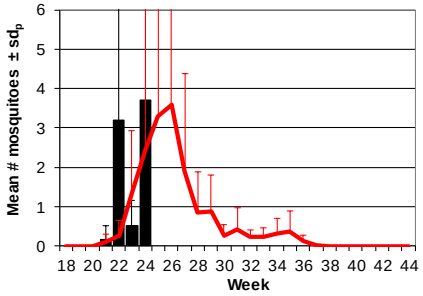
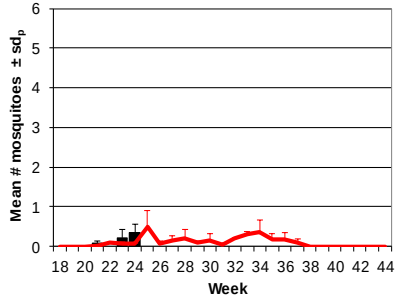
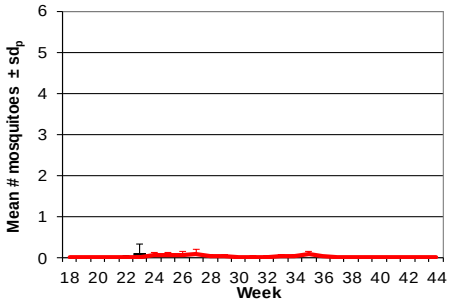
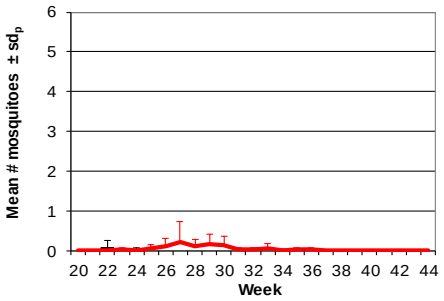
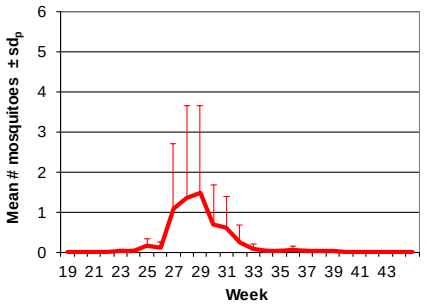
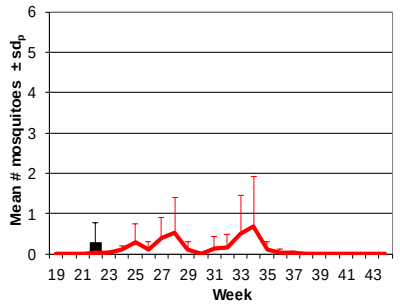
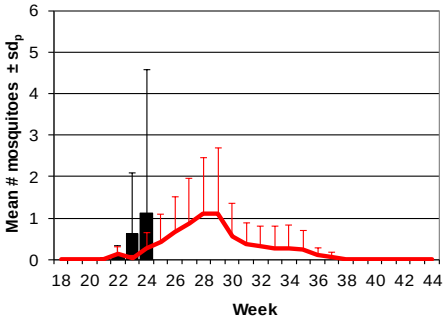
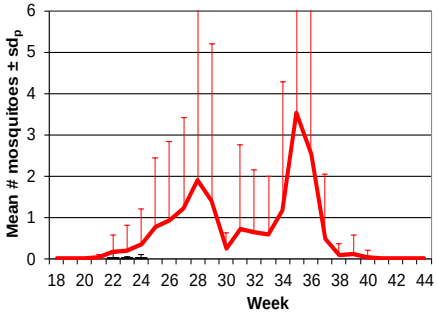


Comments

Aedes sollicitans is a salt floodwater species and responds to both lunar tidal patterns as well as rainfall. Numbers for this species has been in decline for the past several years, although there have been small increases lately. This past week, populations in the Agricultural, New York Metropolitan, Pinelands and the Suburban Corridor were significantly higher than historical averages. Of note, in the Delaware River Basin continued with numbers elevated compared to a recent historical running mean (5 years) of zero.

The next full moon occurs on the 28th of June.

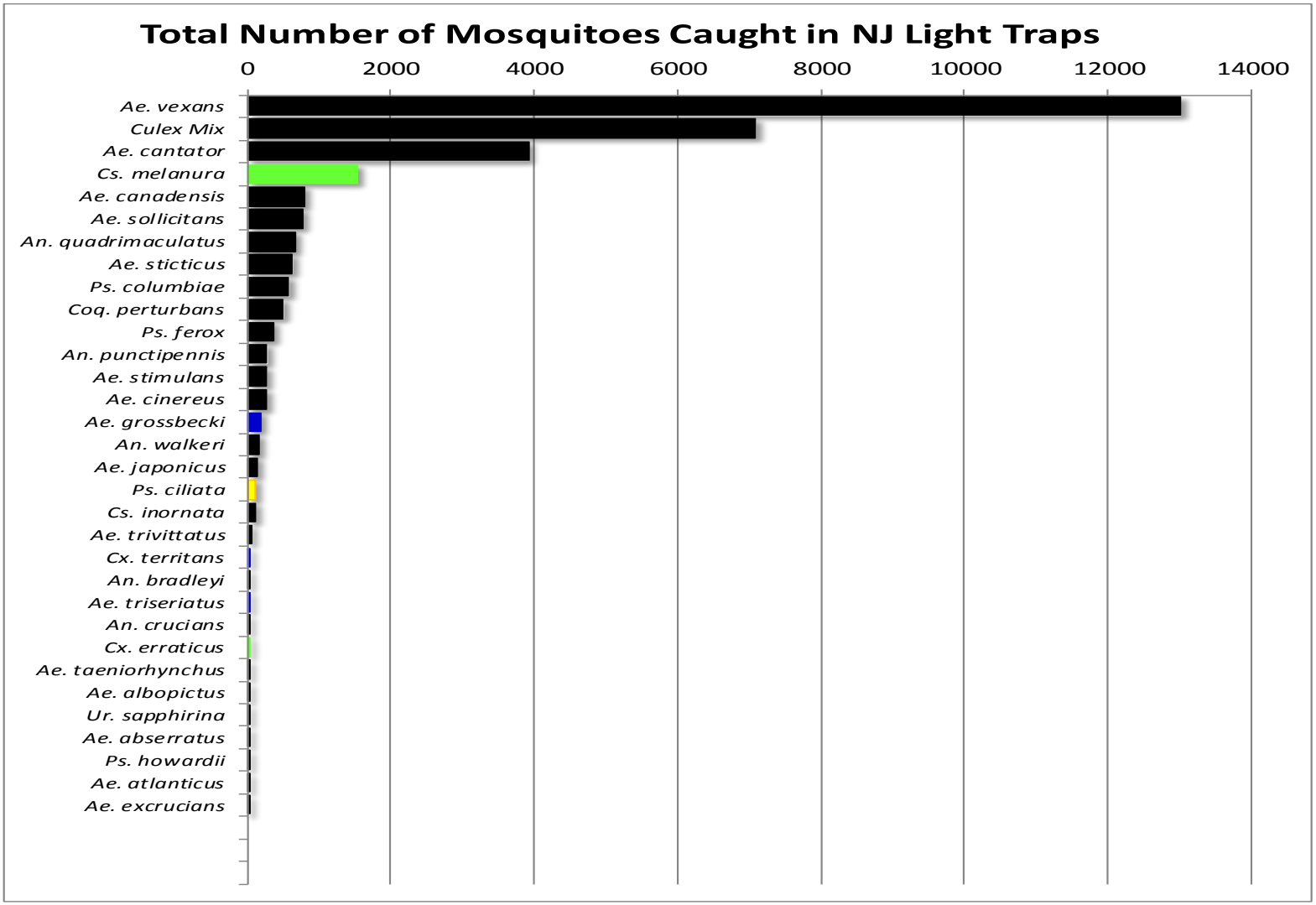
Coquillettidia perturbans
Monotypic (*Coquillettidia perturbans* Type)

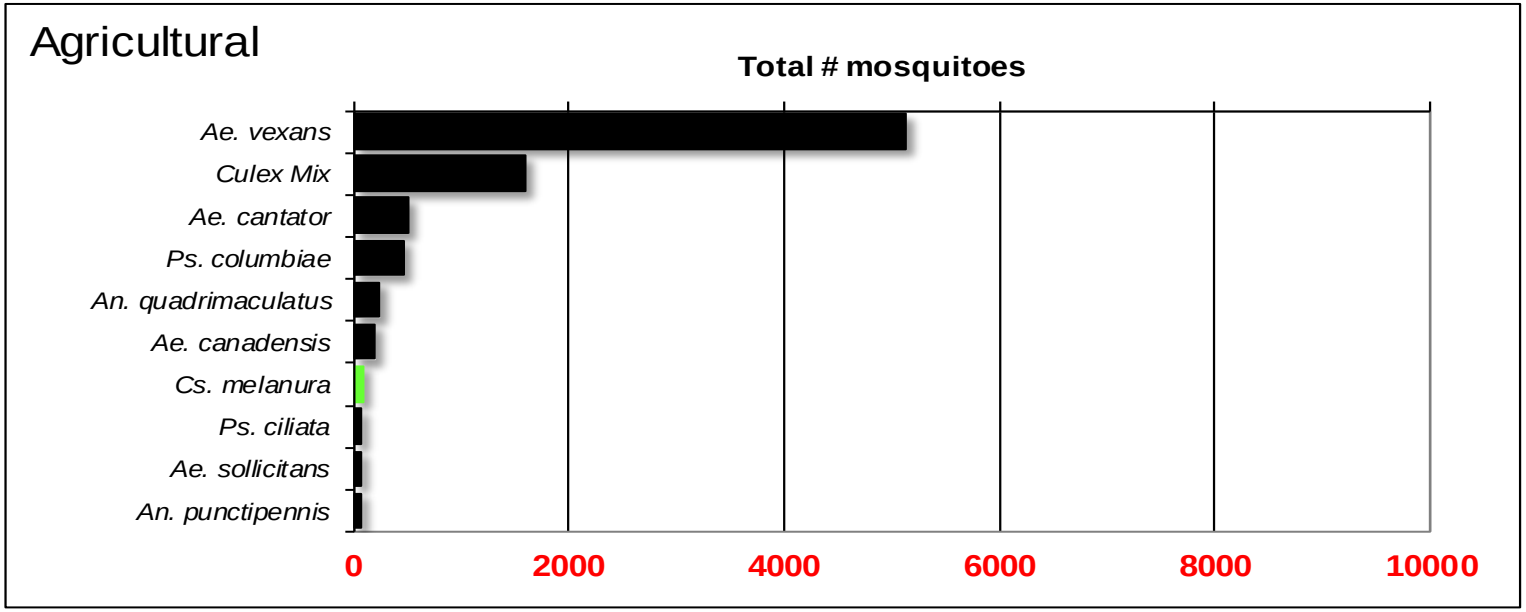
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Coquillettidia perturbans* populations are located in cattail swamps and other wetlands with emergent 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. *Coq. perturbans* are now emerging in significant numbers in several regions, including the Agricultural, Coastal, Delaware River Basin, North central Rural and the Pinelands. Currently EEE detection has not yet occurred in New Jersey, but when it does, this species should be monitored.	

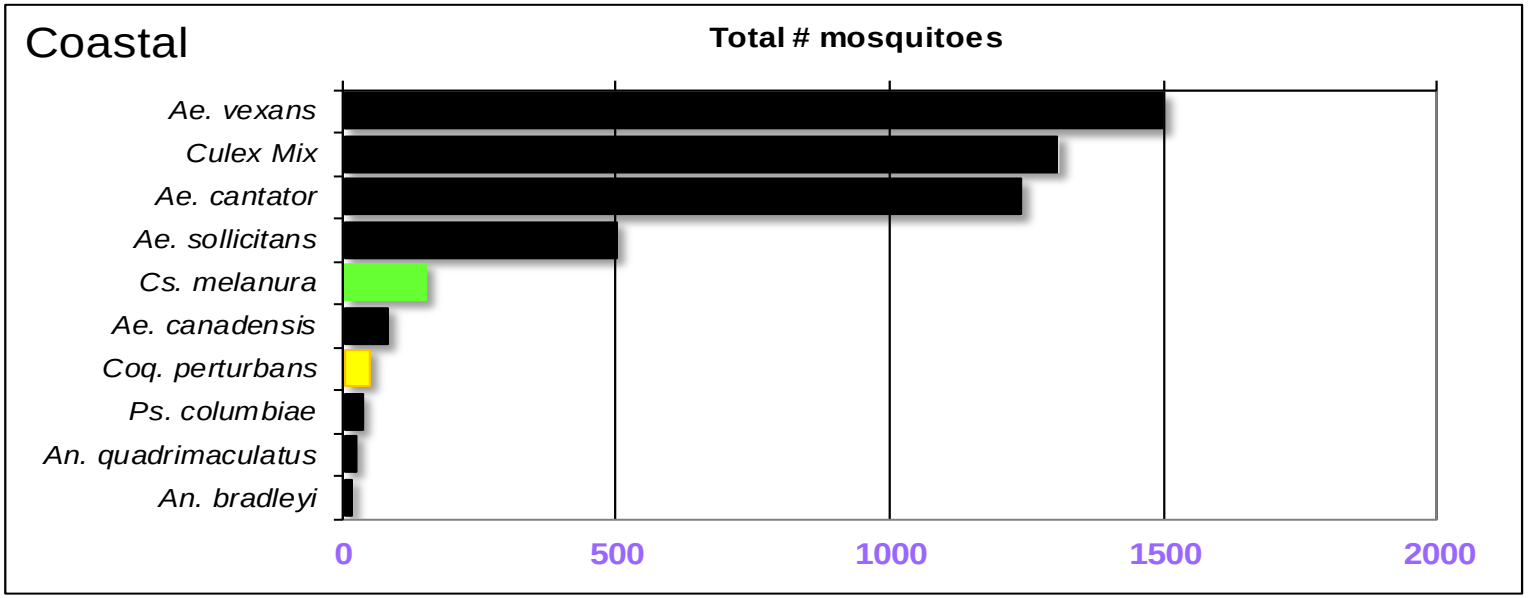
WNV *EEE*

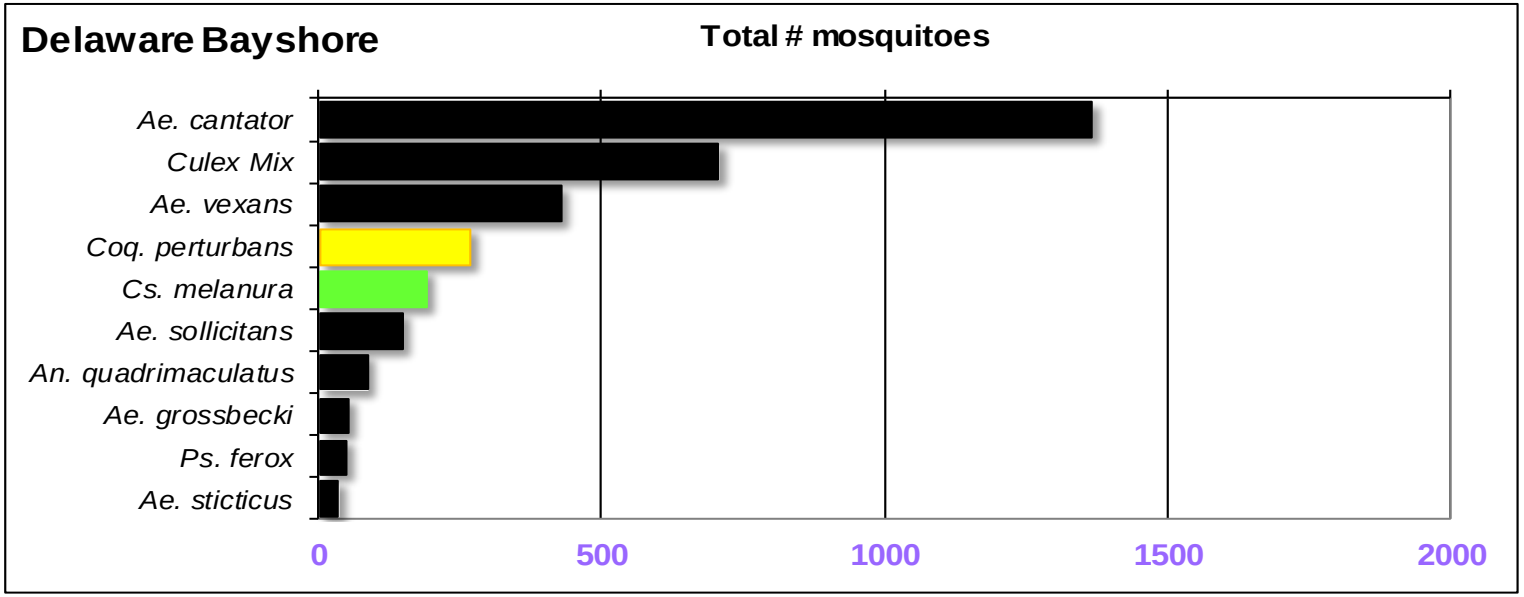
Top Ten Mosquito Species/Region - *Ae. albopictus,* *Ae. japonicus (invasives);* *Cs. melanura or Cx. erraticus* *Coq. perturbans*

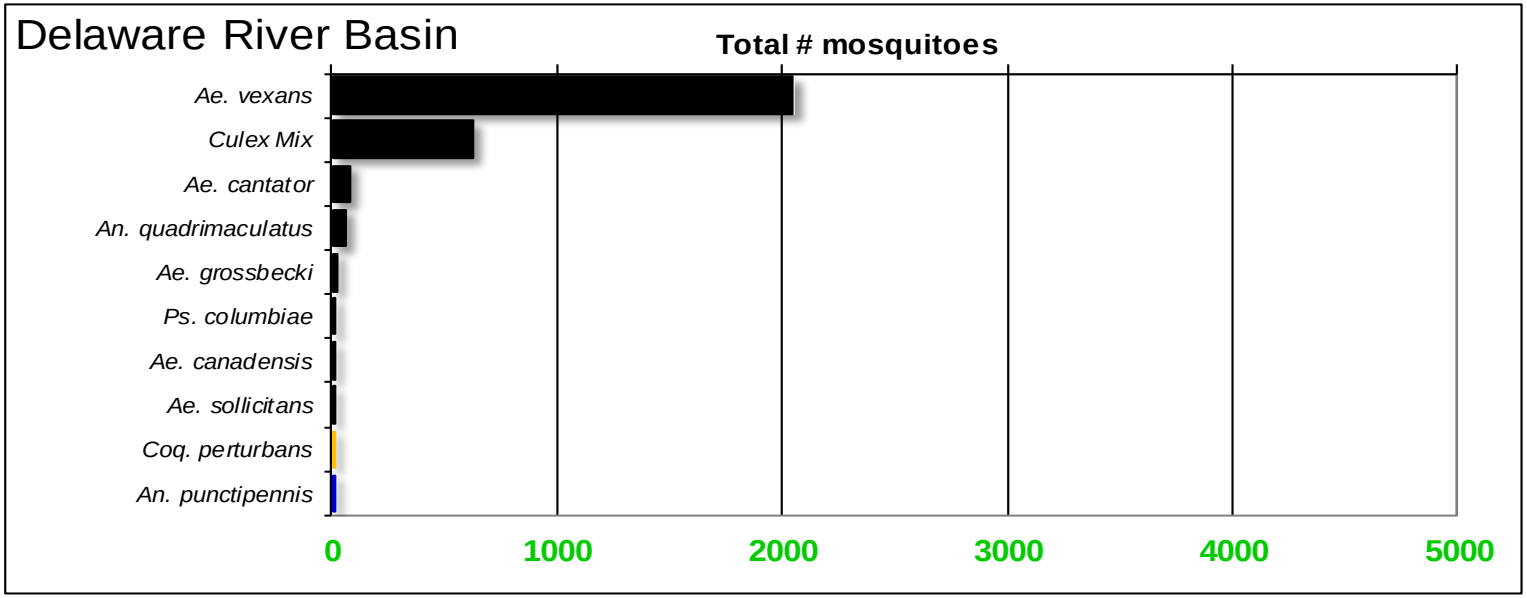
Note: In early season when fewer species are caught, graphs may show less than ten species/region or 25 statewide.

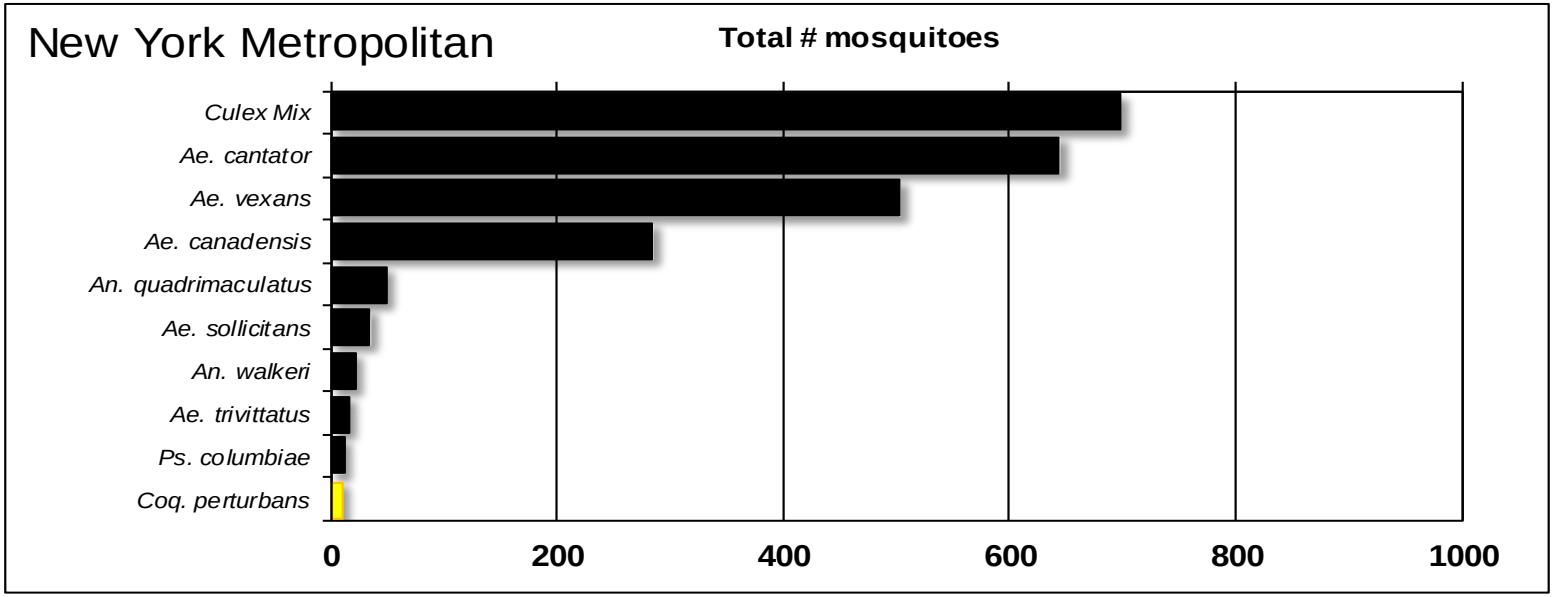


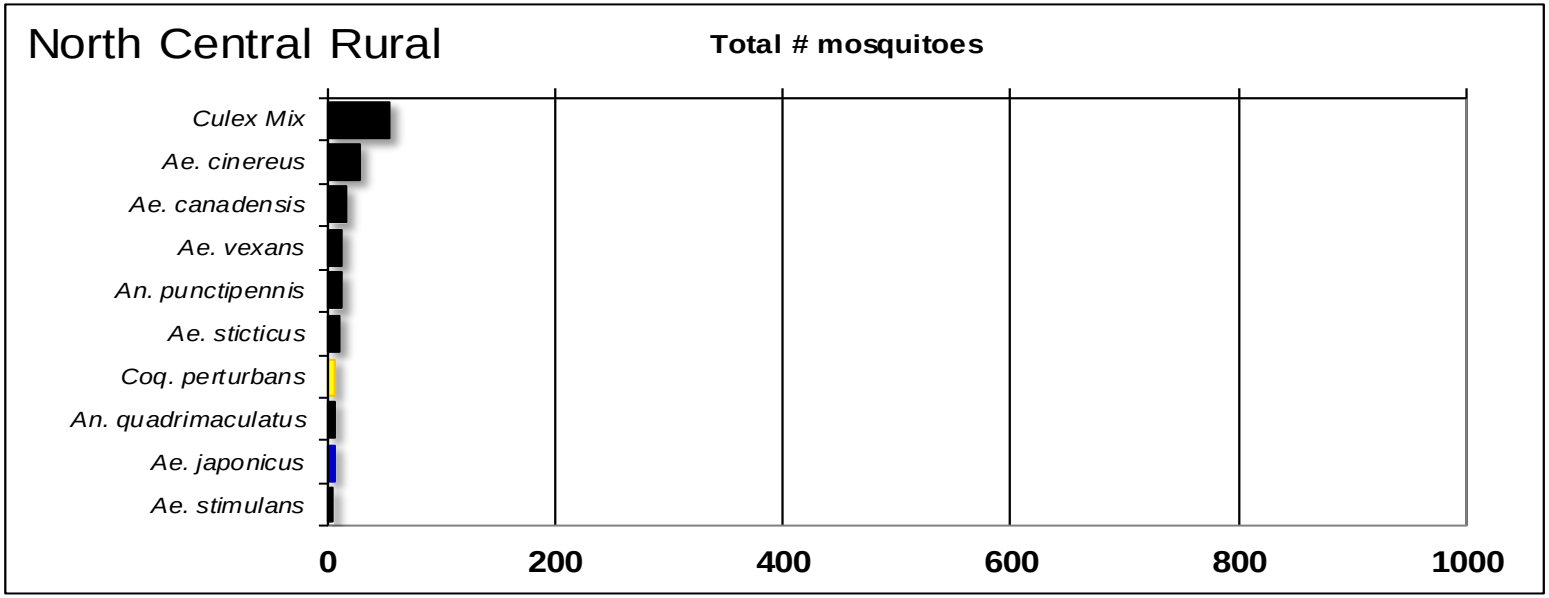

Agricultural
Total # mosquitoes
Ae. vexans
Culex Mix
Ae. cantator
Ps. columbiae
An. quadrimaculatus
Ae. canadensis
Cs. melanura
Ps. ciliata
Ae. sollicitans
An. punctipennis
0
2000
4000
6000
8000
10000

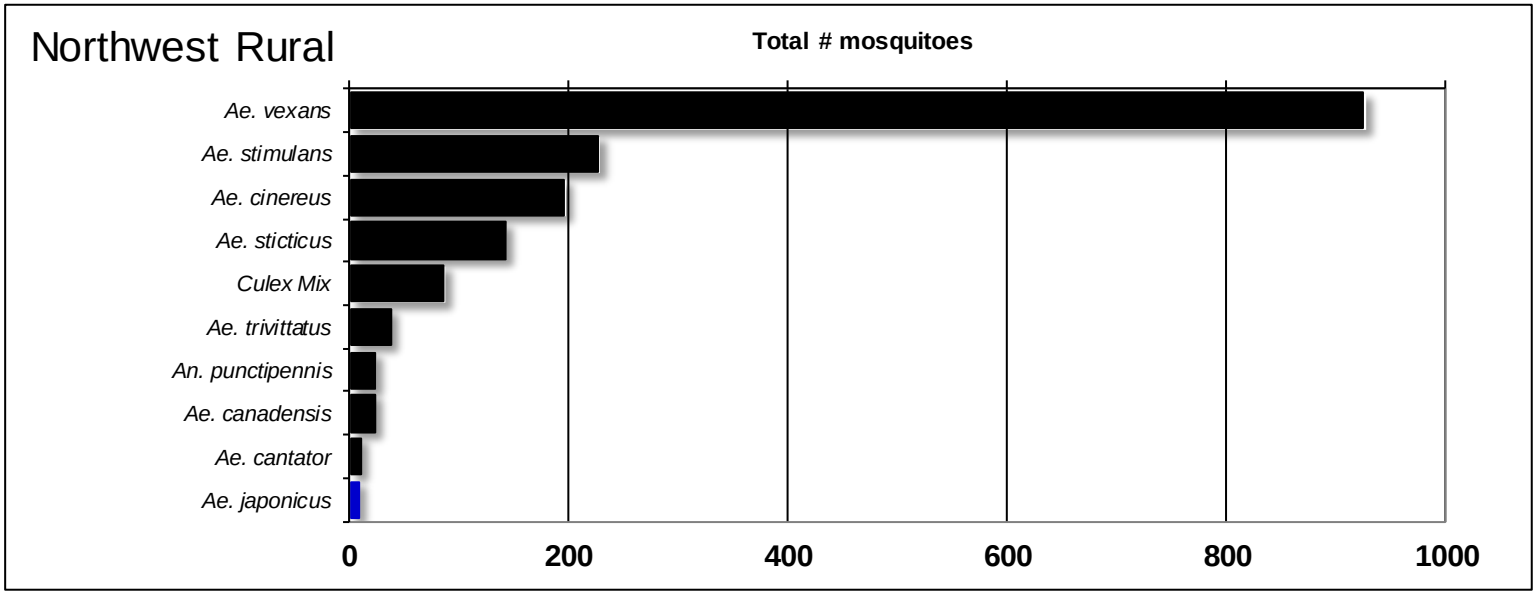

Coastal
Total # mosquitoes
Ae. vexans
Culex Mix
Ae. cantator
Ae. sollicitans
Cs. melanura
Ae. canadensis
Coq. perturbans
Ps. columbiae
An. quadrimaculatus
An. bradleyi
0
500
1000
1500
2000

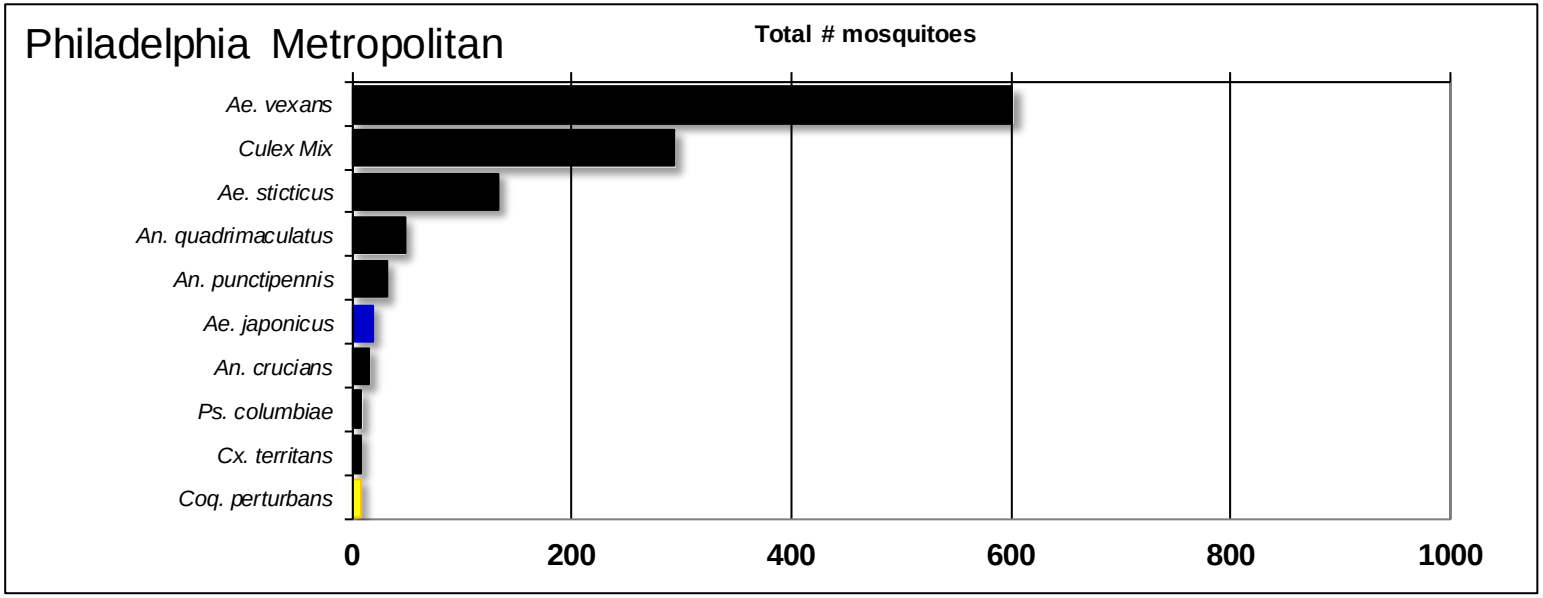

Delaware Bayshore
Total # mosquitoes
Ae. cantator
Culex Mix
Ae. vexans
Coq. perturbans
Cs. melanura
Ae. sollicitans
An. quadrimaculatus
Ae. grossbecki
Ps. ferox
Ae. sticticus
0
500
1000
1500
2000

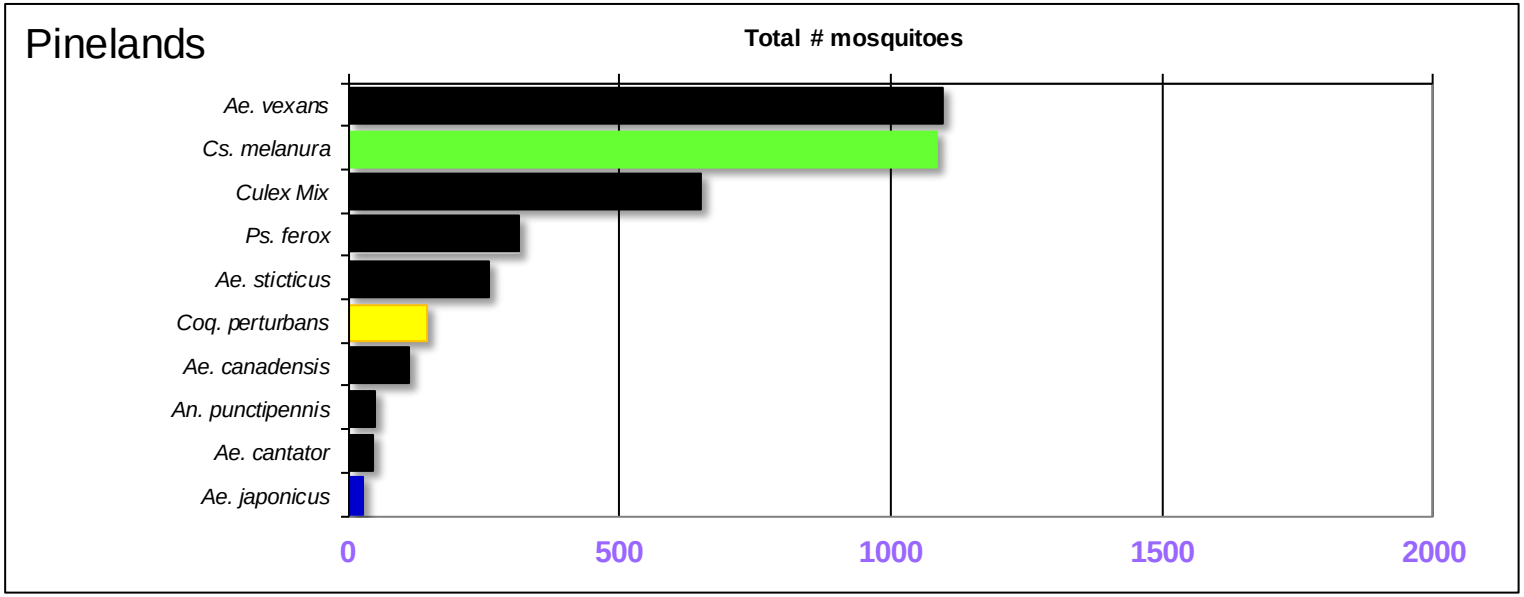

Delaware River Basin
Total # mosquitoes
Ae. vexans
Culex Mix
Ae. cantator
An. quadrimaculatus
Ae. grossbecki
Ps. columbiae
Ae. canadensis
Ae. sollicitans
Coq. perturbans
An. punctipennis
0
1000
2000
3000
4000
5000

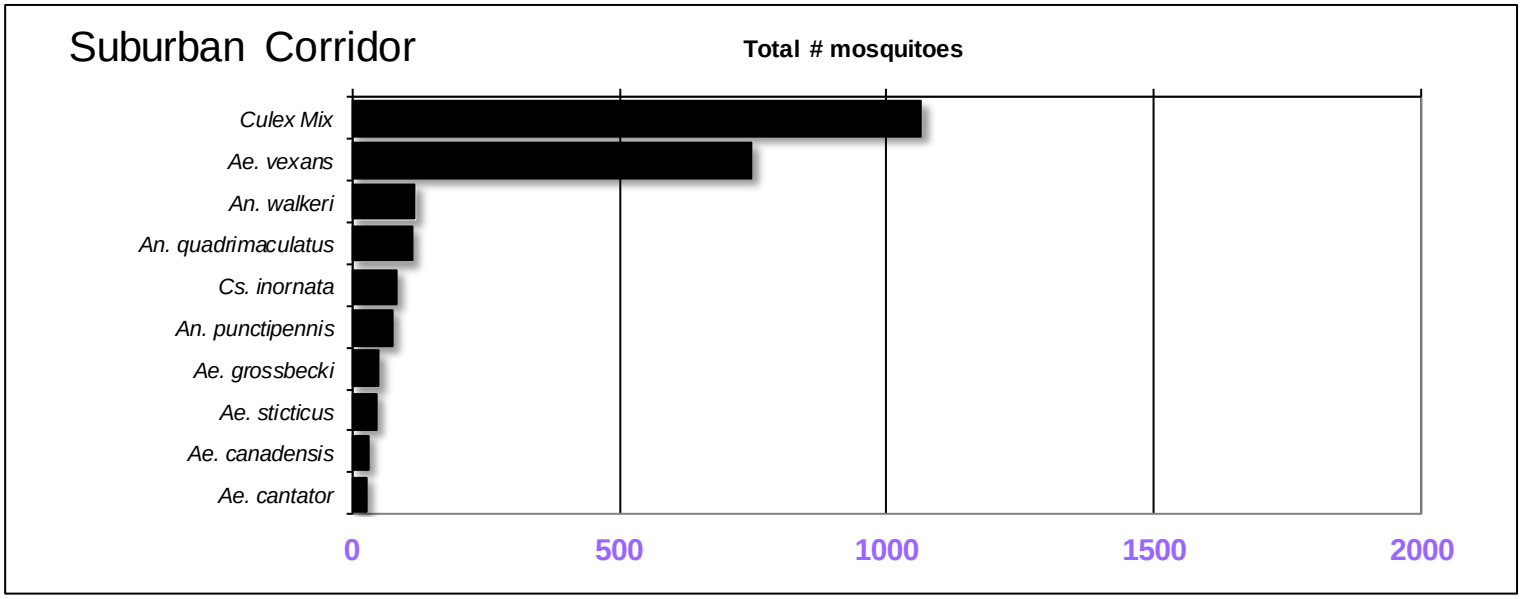

New York Metropolitan
Total # mosquitoes
Culex Mix
Ae. cantator
Ae. vexans
Ae. canadensis
An. quadrimaculatus
Ae. sollicitans
An. walkeri
Ae. trivittatus
Ps. columbiae
Coq. perturbans
0
200
400
600
800
1000


North Central Rural
Total # mosquitoes
Culex Mix
Ae. cinereus
Ae. canadensis
Ae. vexans
An. punctipennis
Ae. sticticus
Coq. perturbans
An. quadrimaculatus
Ae. japonicus
Ae. stimulans
0
200
400
600
800
1000


Northwest Rural
Total # mosquitoes
Ae. vexans
Ae. stimulans
Ae. cinereus
Ae. sticticus
Culex Mix
Ae. trivittatus
An. punctipennis
Ae. canadensis
Ae. cantator
Ae. japonicus
0
200
400
600
800
1000


Philadelphia Metropolitan
Total # mosquitoes
Ae. vexans
Culex Mix
Ae. sticticus
An. quadrimaculatus
An. punctipennis
Ae. japonicus
An. crucians
Ps. columbiae
Cx. territans
Coq. perturbans
0
200
400
600
800
1000


Pinelands
Total # mosquitoes
Ae. vexans
Cs. melanura
Culex Mix
Ps. ferox
Ae. sticticus
Coq. perturbans
Ae. canadensis
An. punctipennis
Ae. cantator
Ae. japonicus
0
500
1000
1500
2000


Suburban Corridor
Total # mosquitoes
Culex Mix
Ae. vexans
An. walkeri
An. quadrimaculatus
Cs. inornata
An. punctipennis
Ae. grossbecki
Ae. sticticus
Ae. canadensis
Ae. cantator
0
500
1000
1500
2000