NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report start to 1 June 2018, CDC Week 22

Prepared by Lisa M. Reed, Diana Carle and Dina Fonseca
Center for Vector Biology

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funding from the NJ State Mosquito Control Commission and with the participation of the 21 county mosquito control agencies of New Jersey.

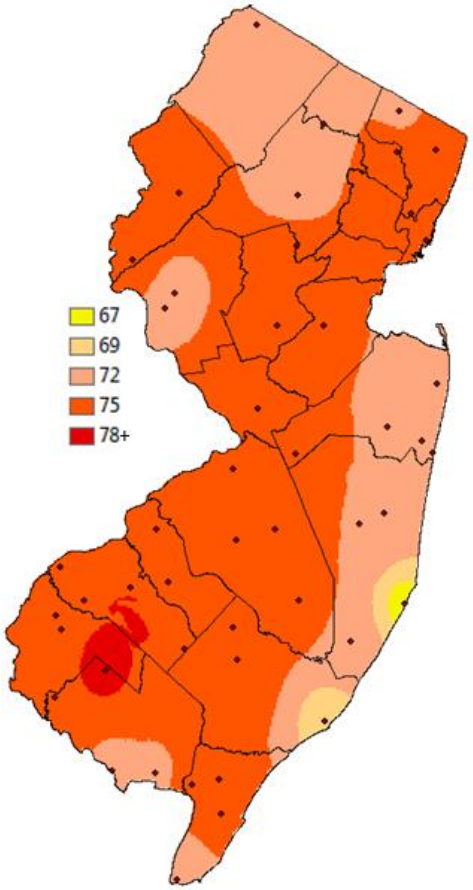
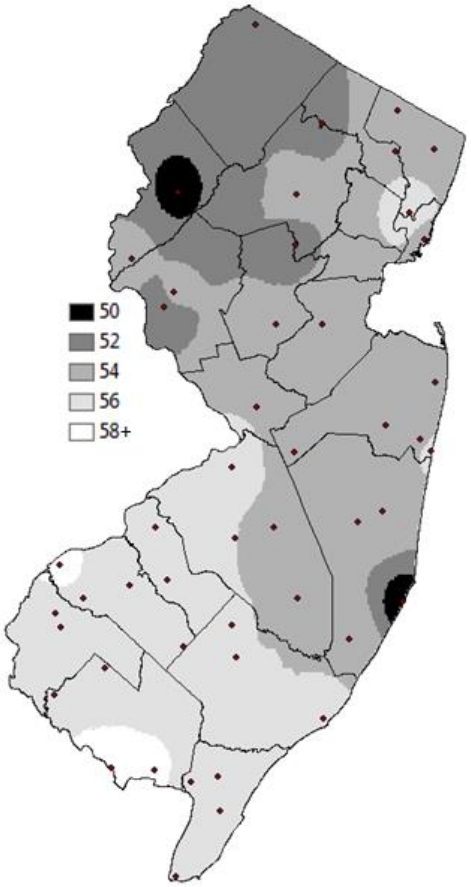
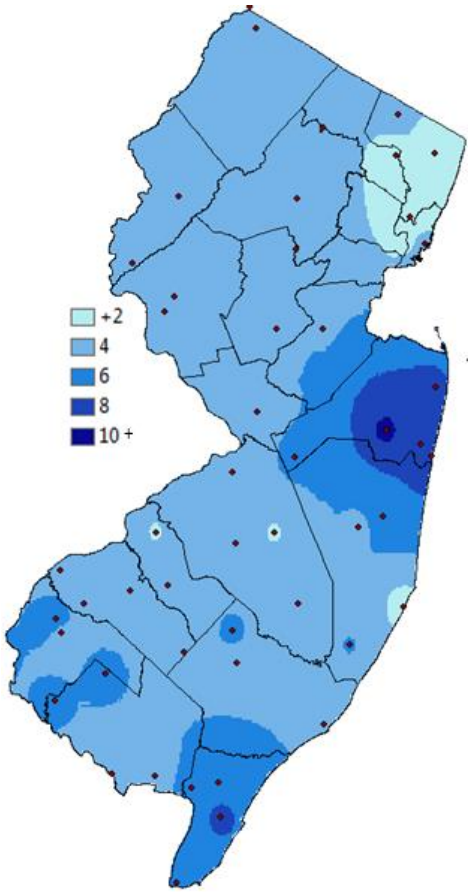
Summary Table – Week 22

	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	**13.52**	**1.43**	**4**	**4.86**	**0.97**	**4**	**0.00**	**0.04**	**0**	**0.00**	**0.06**	**0**
Coastal	**7.81**	**0.94**	**4**	**0.60**	**1.08**	**0**	**0.00**	**0.03**	**0**	**0.71**	**0.96**	**0**
Delaware Bayshore	**0.00**	**1.89**	**0**	**0.00**	**4.31**	**0**	**0.00**	**0.25**	**0**	**0.00**	**0.94**	**0**
Delaware River Basin	**27.86**	**2.20**	**4**	**5.36**	**0.50**	**4**	**0.00**	**0.10**	**0**	**0.14**	**0.03**	**4**
New York Metro	**0.00**	**1.69**	**0**	**0.00**	**1.91**	**0**	**0.00**	**0.00**	**0**	**0.00**	**0.13**	**0**
North Central Rural	**0.04**	**0.40**	**0**	**0.23**	**0.38**	**0**	**0.07**	**0.00**		**0.00**	**0.00**	**0**
Northwest Rural	**0.23**	**1.59**	**0**	**0.37**	**0.73**	**0**	**0.00**	**<0.01**	**0**	**0.00**	**0.00**	**0**
Philadelphia Metro	**0.00**	**3.30**	**0**	**0.00**	**2.13**	**0**	**0.00**	**0.04**	**0**	**0.00**	**0.00**	**0**
Pinelands	**6.40**	**0.48**	**4**	**0.14**	**0.75**	**0**	**0.00**	**0.13**	**0**	**0.00**	**0.00**	**0**
Suburban Corridor	**0.00**	**2.37**	**0**	**0.06**	**0.94**	**0**	**0.03**	**0.17**	**0**	**0.00**	**<0.01**	**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: Our mosquito season in New Jersey had started many weeks ago with cold-tolerant species on the wing during really variable weather (read short-sleeves hot and then snowy cold) as spring developed. Now that the snow is behind us, the mosquito season is in full force. Recent significant rainfall has produced *Aedes vexans* populations in amounts significantly above historical levels in the Agricultural, Coastal, Delaware River Basin and Pinelands regions. Also elevated are *Culex* Mix in the Agricultural and Delaware River Basin regions and *Aedes sollicitans* in the Delaware River Basin. Noteworthy is the presence of *Coquillettidia perturbans* in the North Central Rural regions, when it has not been recorded in the traps there this early in the season.

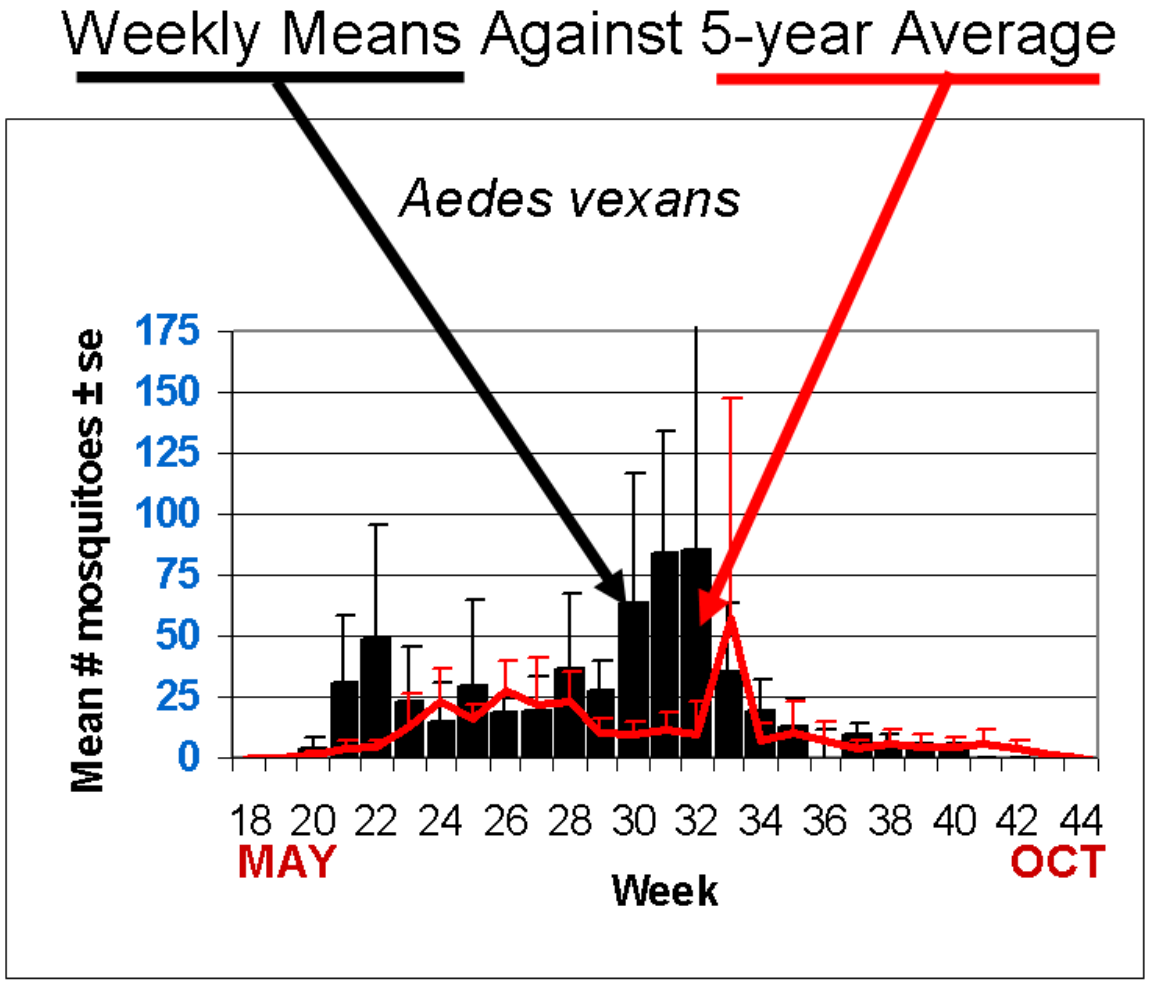
Climate Factors

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.

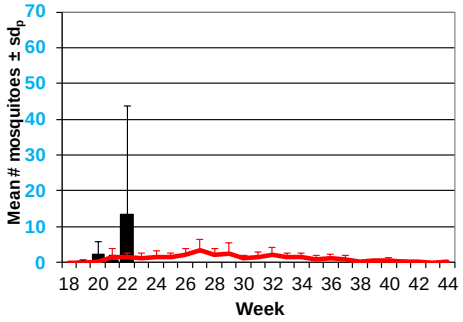
ONJSC at Rutgers University NJ Weather & Climate NETWORK

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

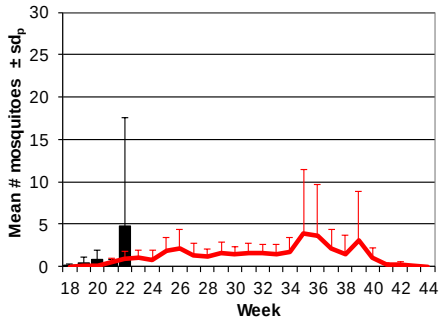


Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

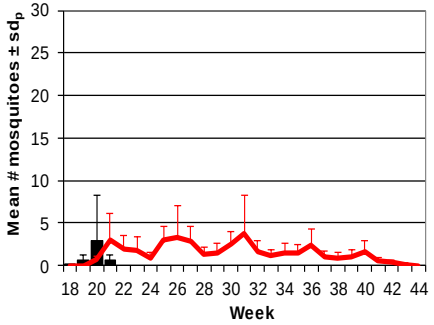
Agricultural



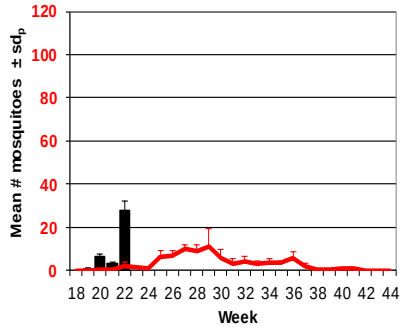
Coastal



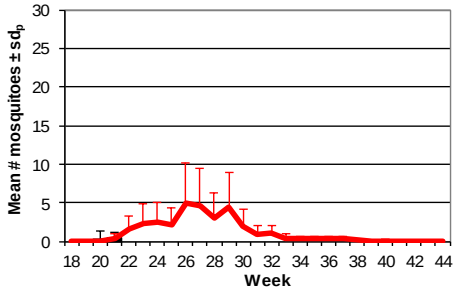
Delaware Bayshore



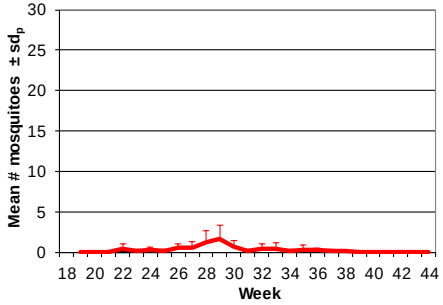
Delaware River Basin



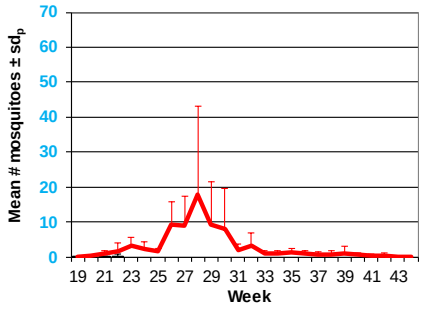
New York Metro



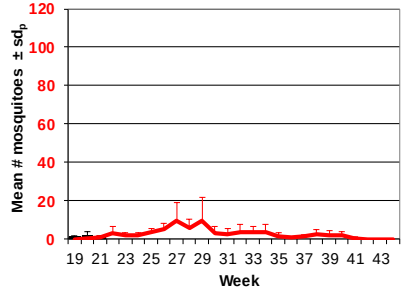
North Central Rural



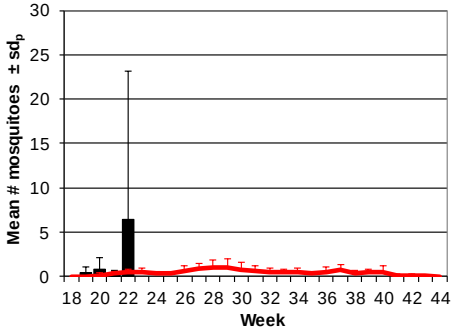
Northwestern Rural



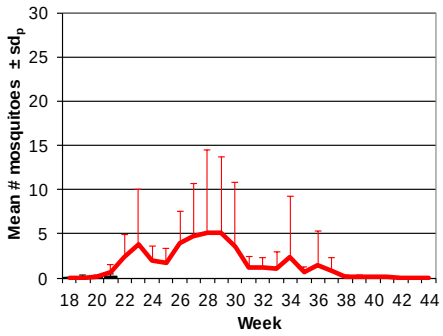
Philadelphia Metro



Pinelands



Suburban Corridor

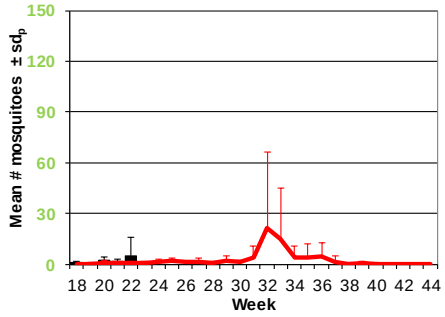


Comments

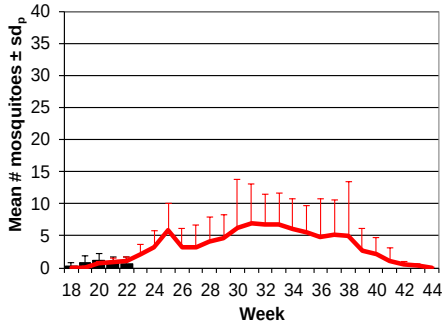
Aedes vexans is the model for fresh floodwater species. With abundant precipitation, this species can emerge in very significant numbers. Recent precipitation in the previous 30 days has provided the flooded areas for this species to hatch and emerge. Noteworthy significantly populations include those in the Agricultural, Coastal, Delaware River Basin and the Pinelands. Not all counties have yet submitted data, so this is likely to change as more counties come online and catch up to the current week.

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

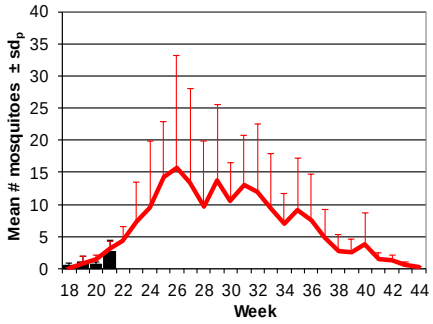
Agricultural



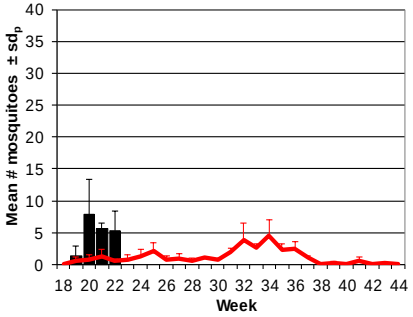
Coastal



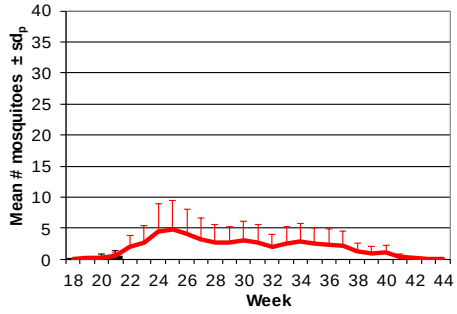
Delaware Bayshore



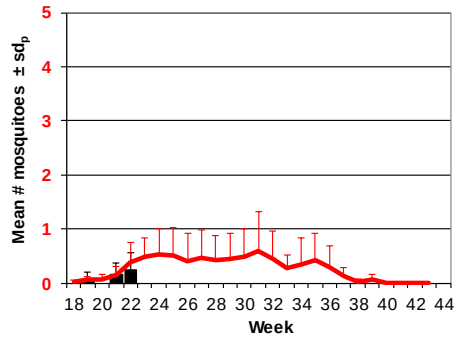
Delaware River Basin



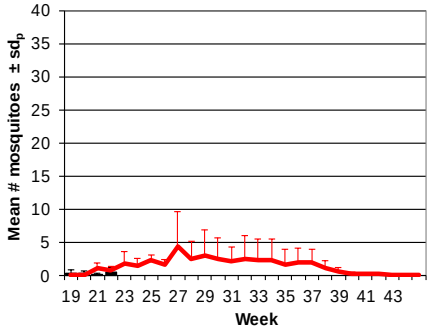
New York Metro



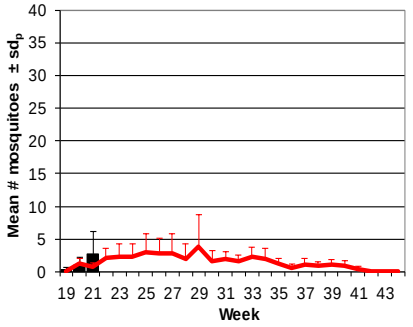
North Central Rural



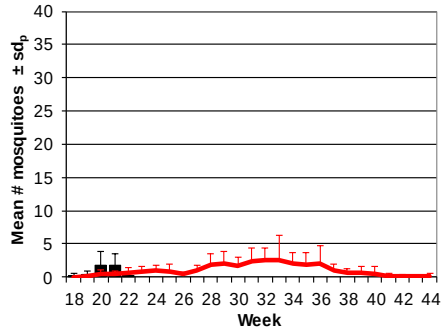
Northwestern Rural



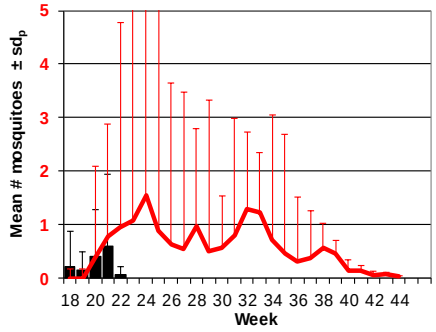
Philadelphia Metro



Pinelands



Suburban Corridor

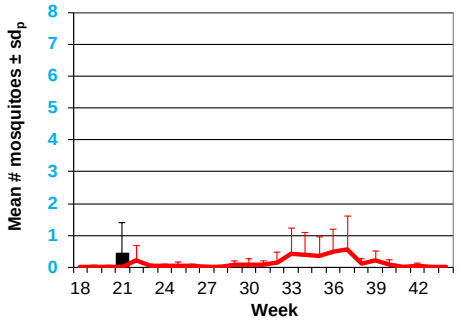


Comments

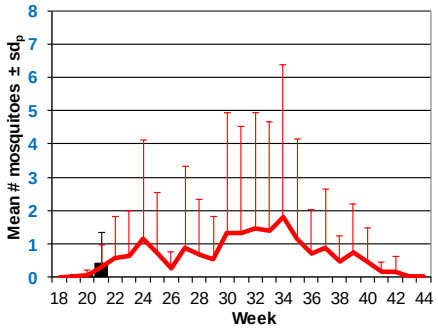
Culex Mix is composed of *Culex pipiens, Cx. restuans* and *Cx. salinarius*. These three species (especially *pipiens* and *restuans*) are often difficult to tell apart after encountering the damaging blades of the New Jersey light trap. Last year proved to be one of abundance for *Culex* Mix throughout the state, with most regions reporting above average trends for much of the year. This year has started out significant numbers showing up in the Agricultural and Delaware River Basin. Early populations are likely *Culex restuans* with *Cx. pipiens* coming in to make up the bulk of the populations as the season advances. *Cx. salinarius*, despite its name, has a wide tolerance of salt percentage in its habitat, and can be found in fresh waters as well as those with anthropogenic salt sources, such as fertilizers and road run-off.

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

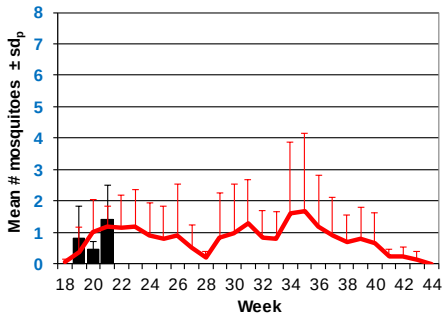
Agricultural



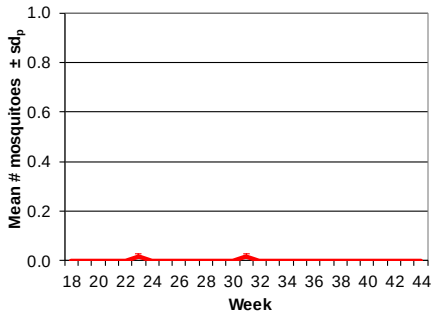
Coastal



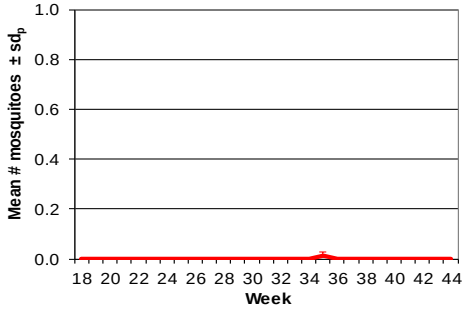
Delaware Bayshore



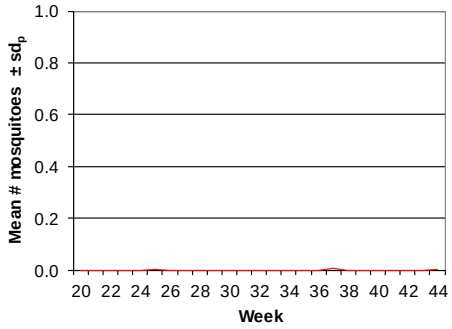
Delaware River Basin



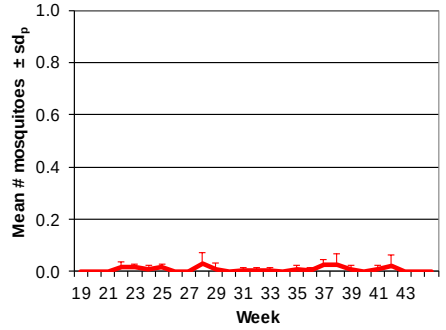
New York Metro



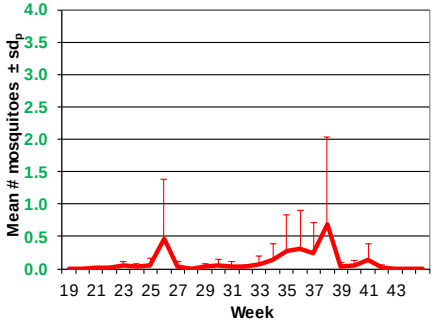
North Central Rural



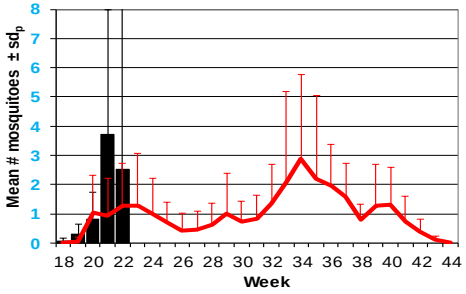
Northwestern Rural



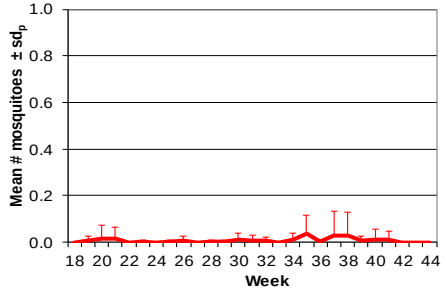
Philadelphia Metro



Pinelands



Suburban Corridor



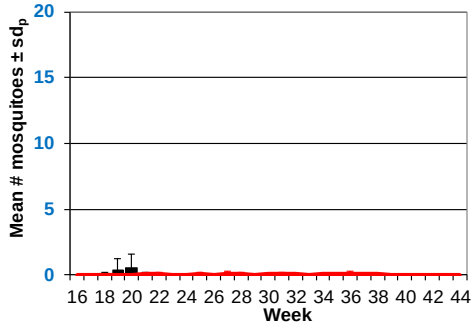
Comments

Culiseta melanura is the enzootic ornithophilic vector of eastern equine encephalitis. No activity has been seen in New Jersey, but horse cases have been reported since late January in Florida – somewhat early for even Florida. The activity of this species and *Coquillettidia perturbans* (inland bridge vector) and *Aedes sollicitans* (coastal bridge vector) should be monitored closely, particularly after EEE activity has been detected in the state. Counties are encouraged to submit *Cs. melanura* for arboviral testing throughout the state.

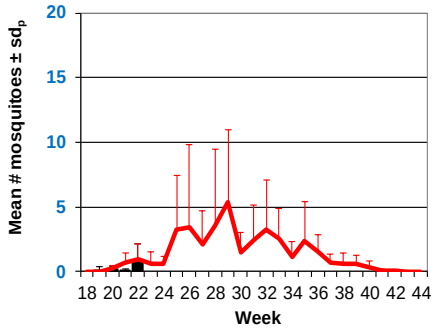
All horse owners should make sure their horses are up to date on the vaccination schedules: http://www.aaep.org/custdocs/adultvaccinationchart.pdf

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

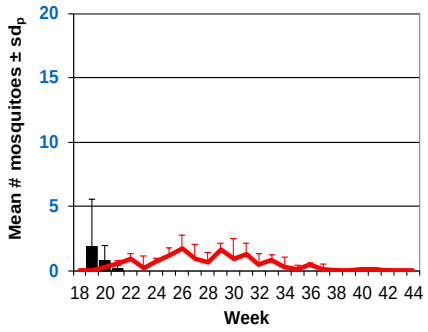
Agricultural



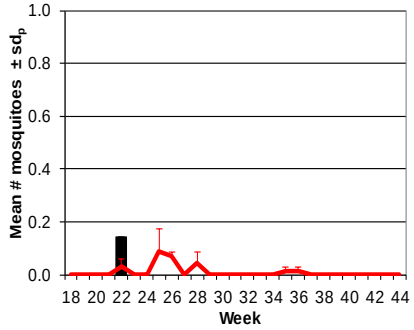
Coastal



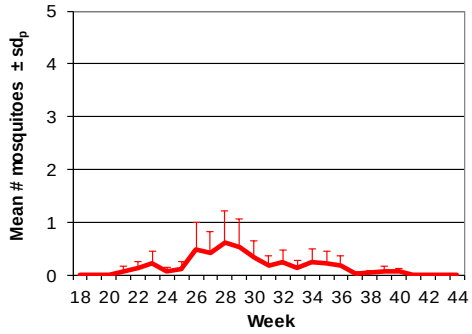
Delaware Bayshore



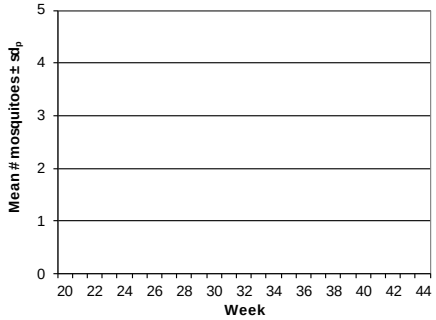
Delaware River Basin



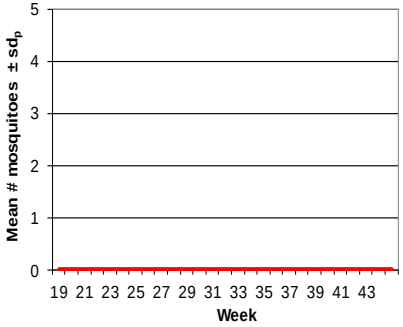
New York Metro



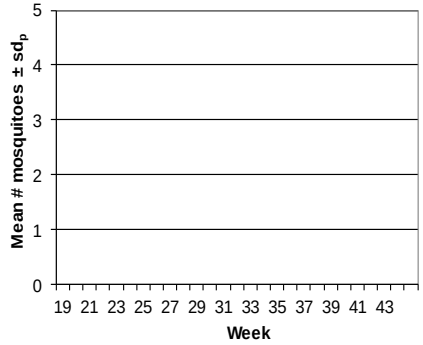
North Central Rural



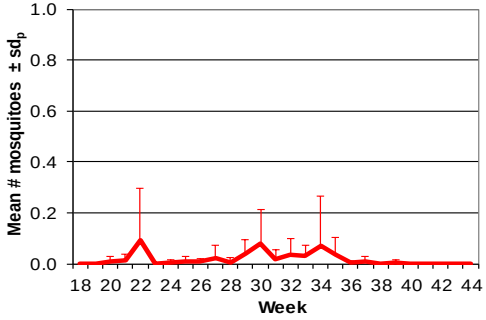
Northwestern Rural



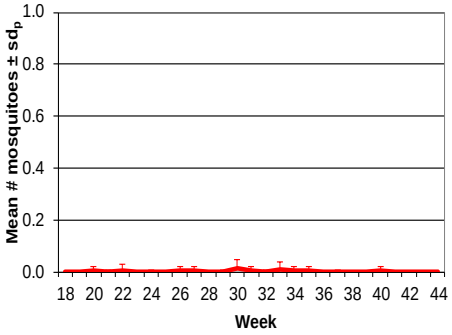
Philadelphia Metro



Pinelands



Suburban Corridor

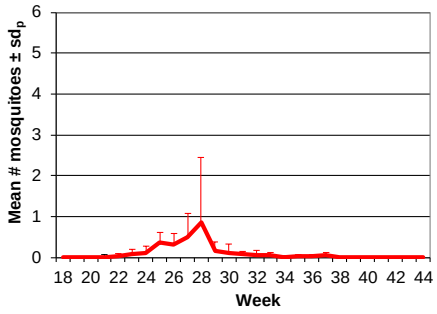
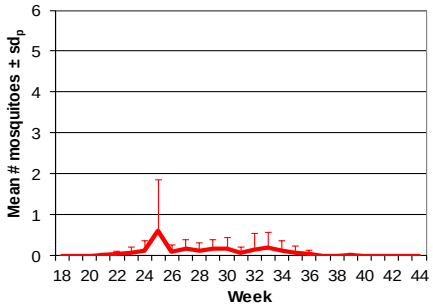
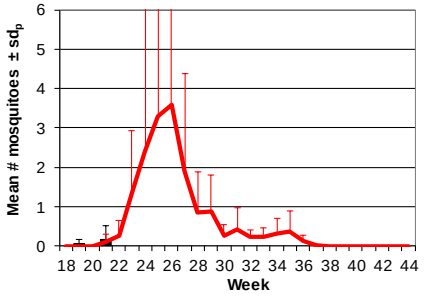
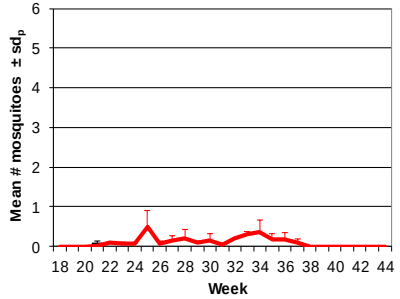
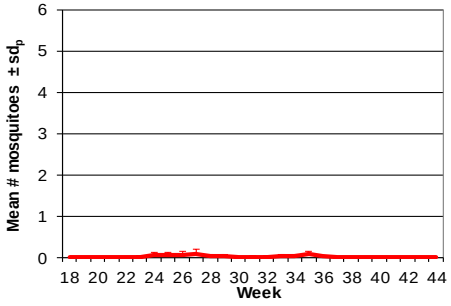
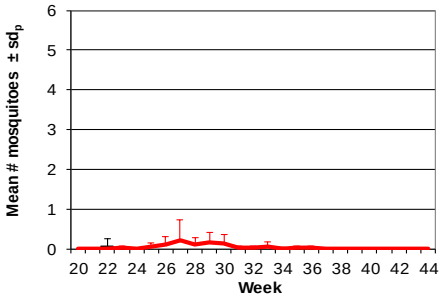
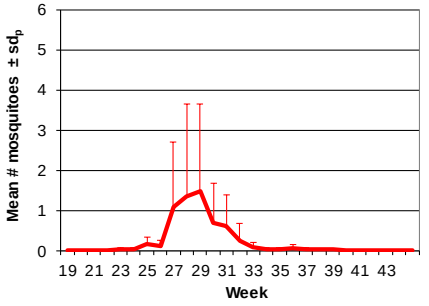
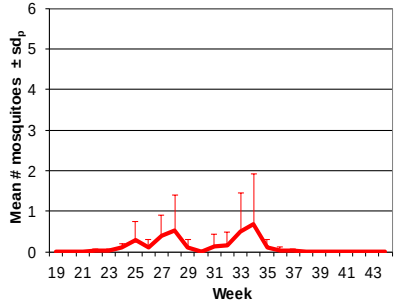
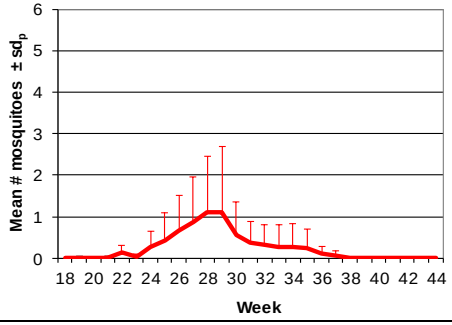
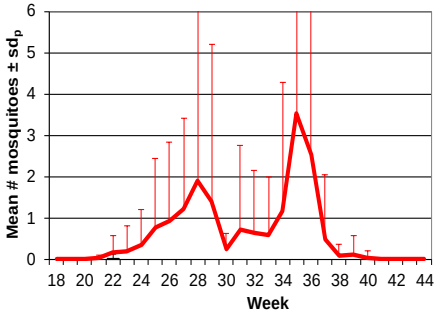


Comments

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. Currently, populations in the Delaware River Basin are significantly above historical records. This species, although coastal, has a significant inland flight path and was the species that motivated mosquito control in New Jersey.

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

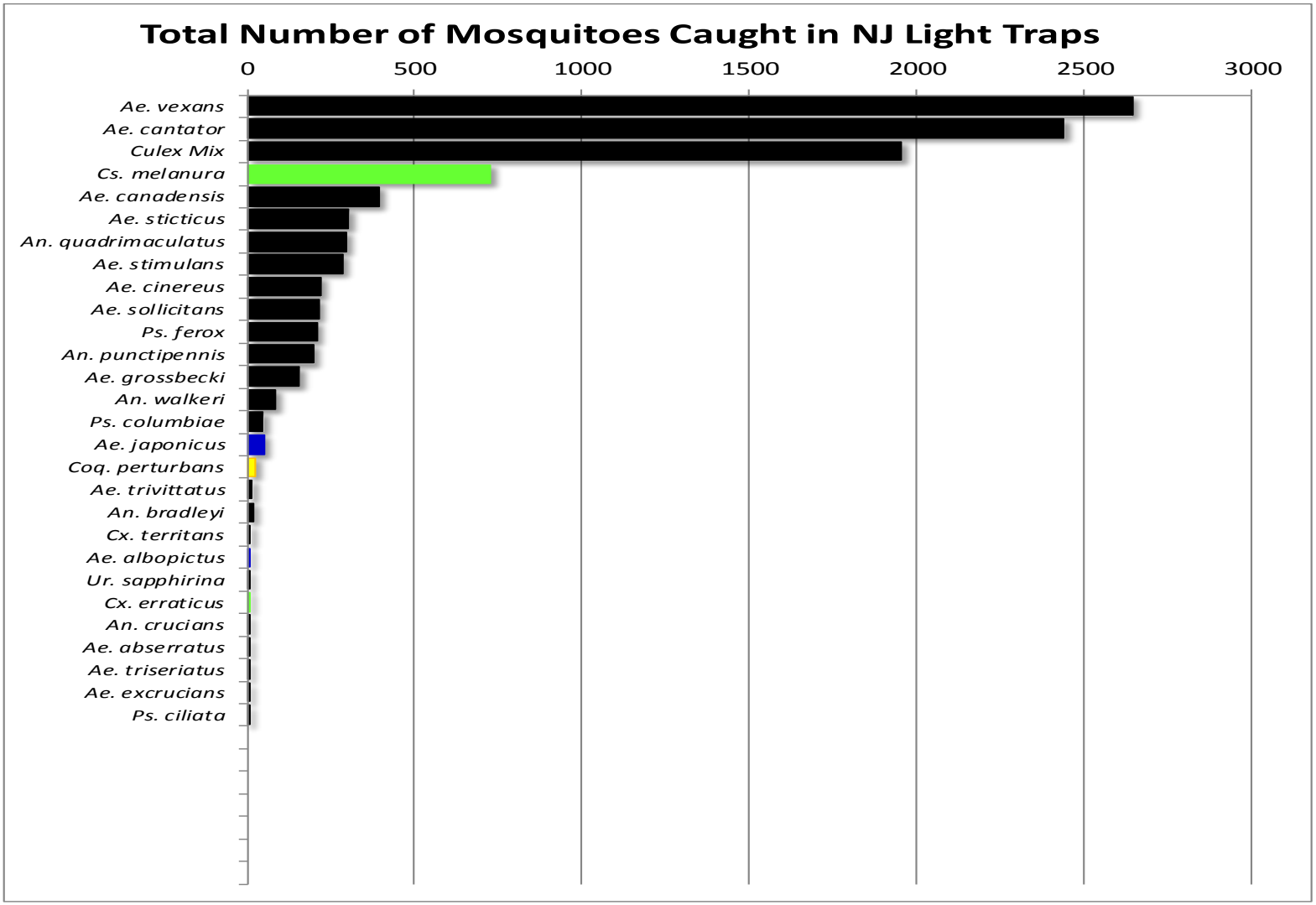
Coquillettidia perturbans
Monotypic (*Coquillettidia perturbans* Type)

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. Noteworthy (although difficult to see on this graph) is the presence of this species when the previous 5-year records do not report it this early in the North Central Rural region.	

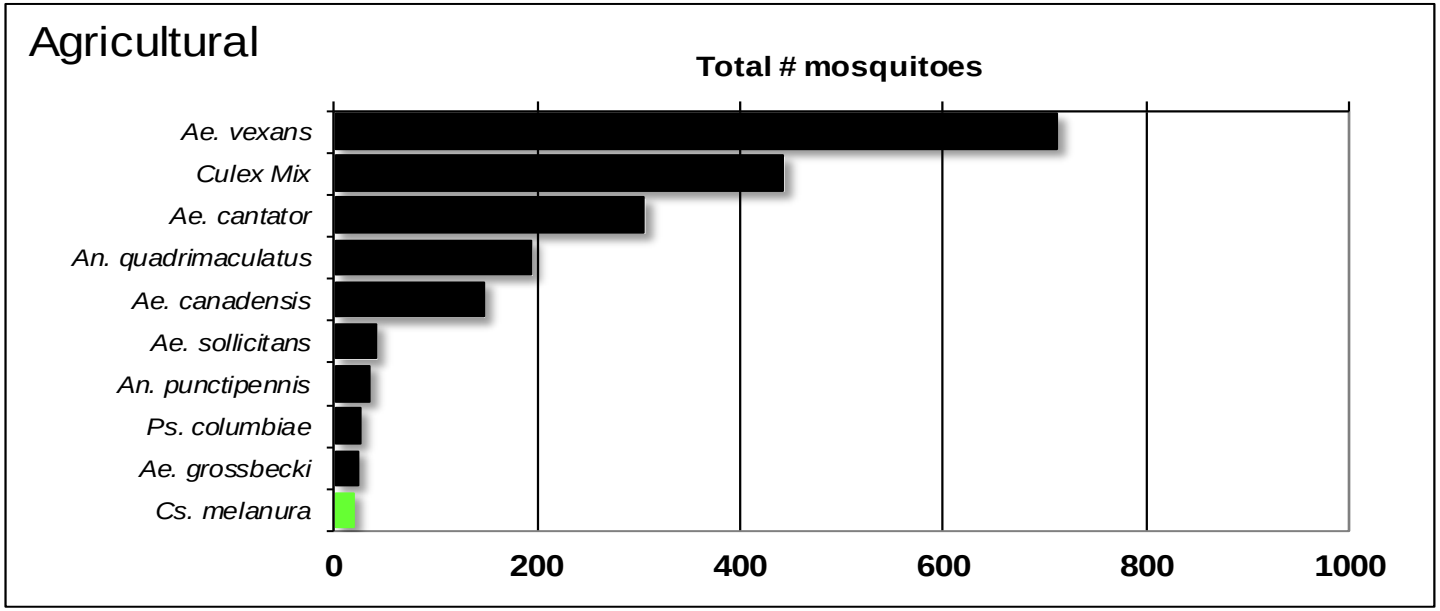
WNV *EEE*

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

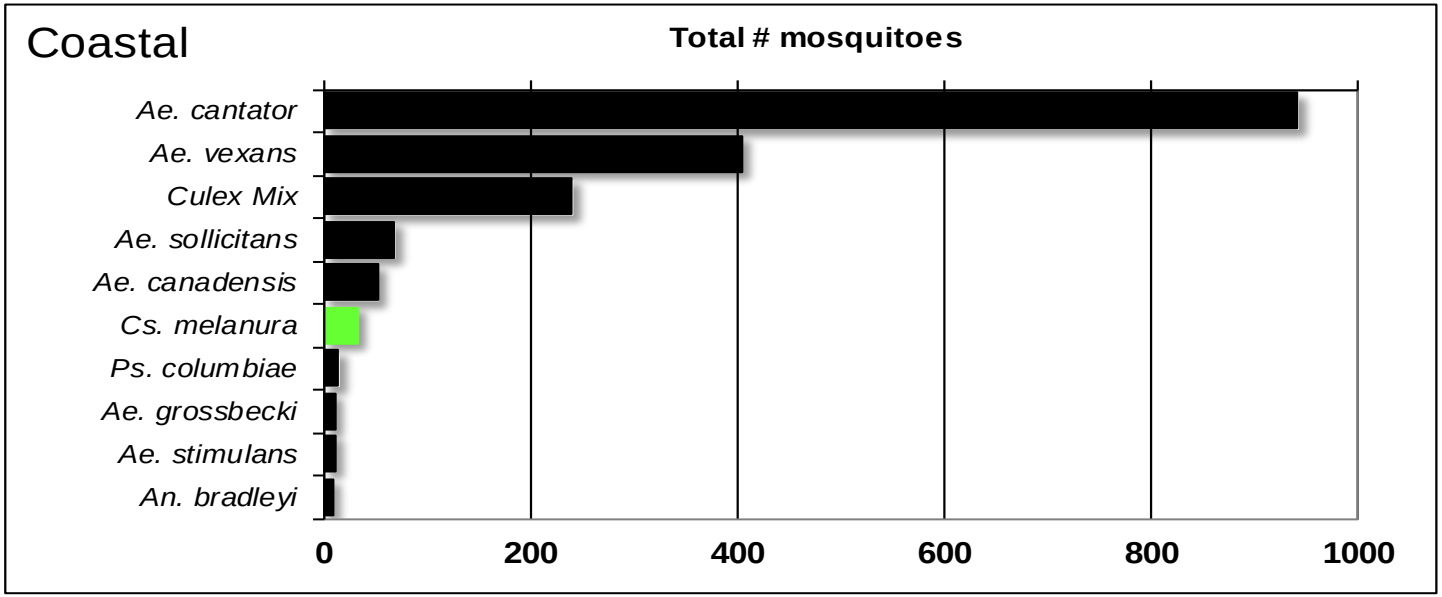
Note: In early season when fewer species are caught, graphs may show less than ten species/region or 25 statewide.

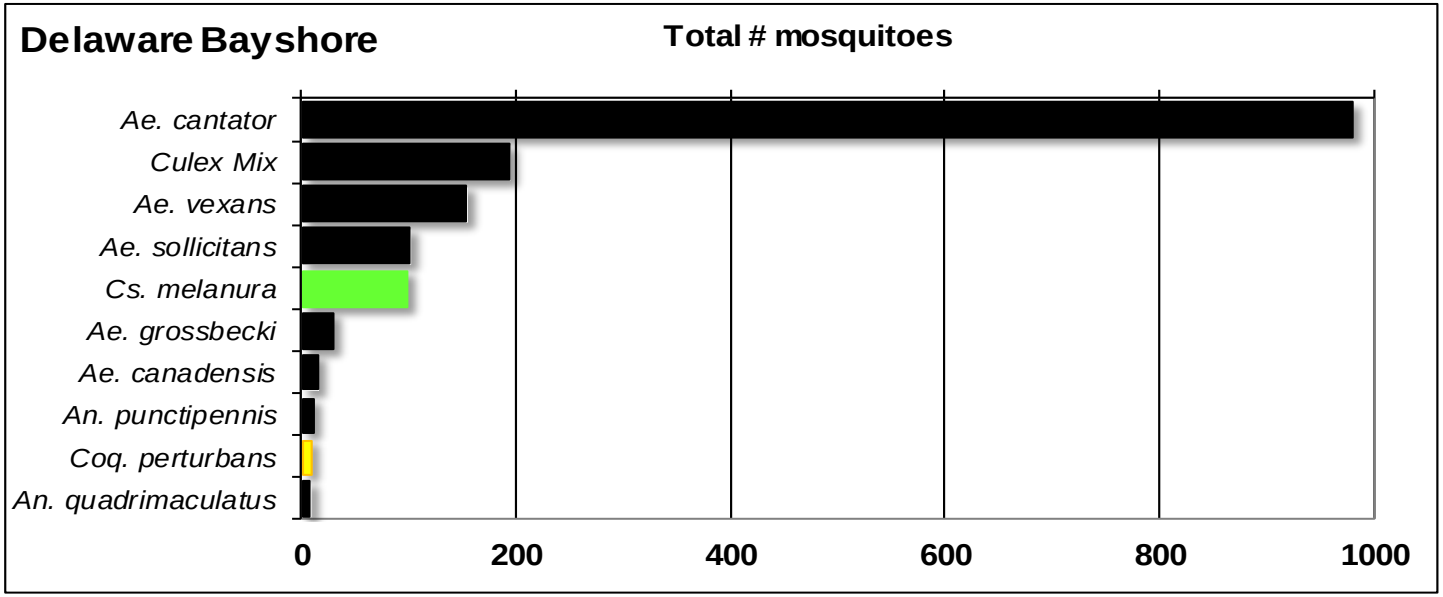


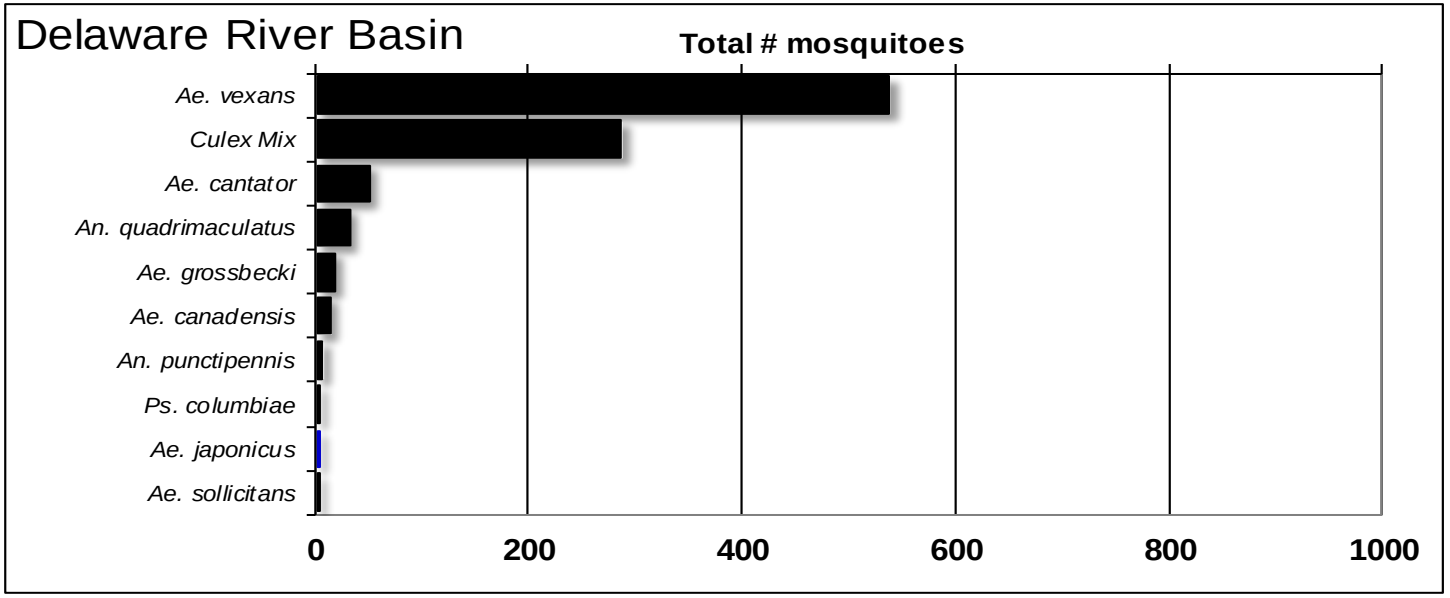
Agricultural

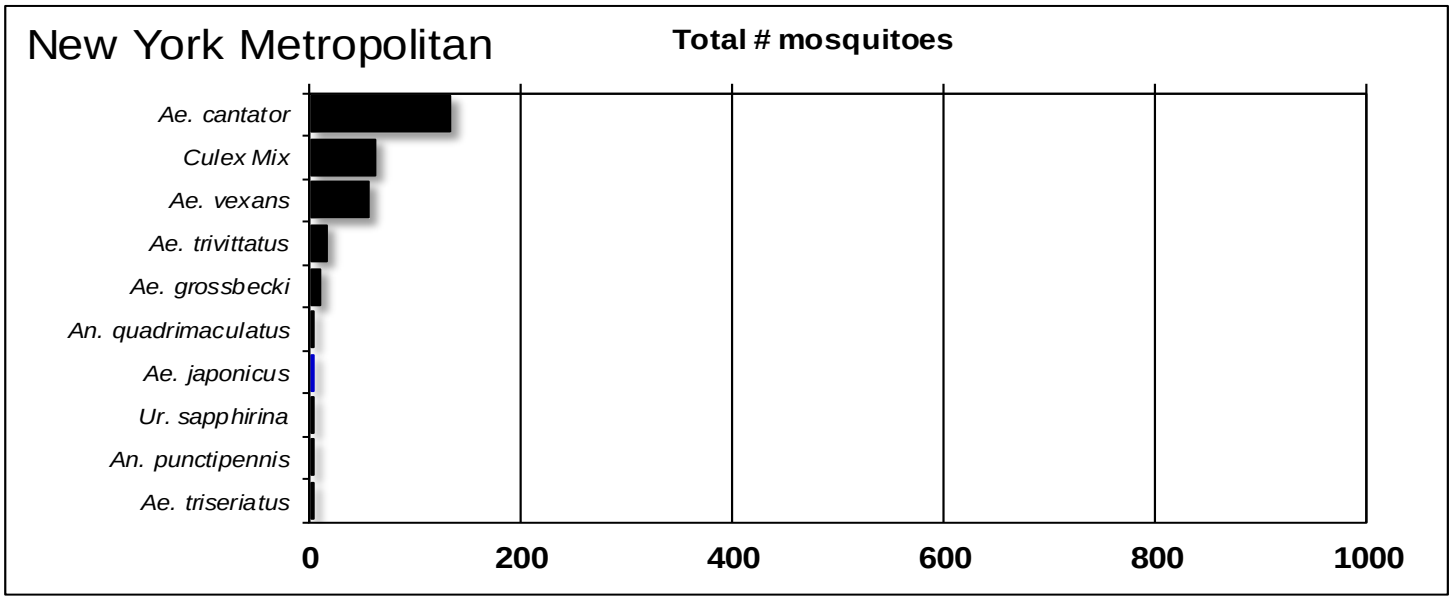


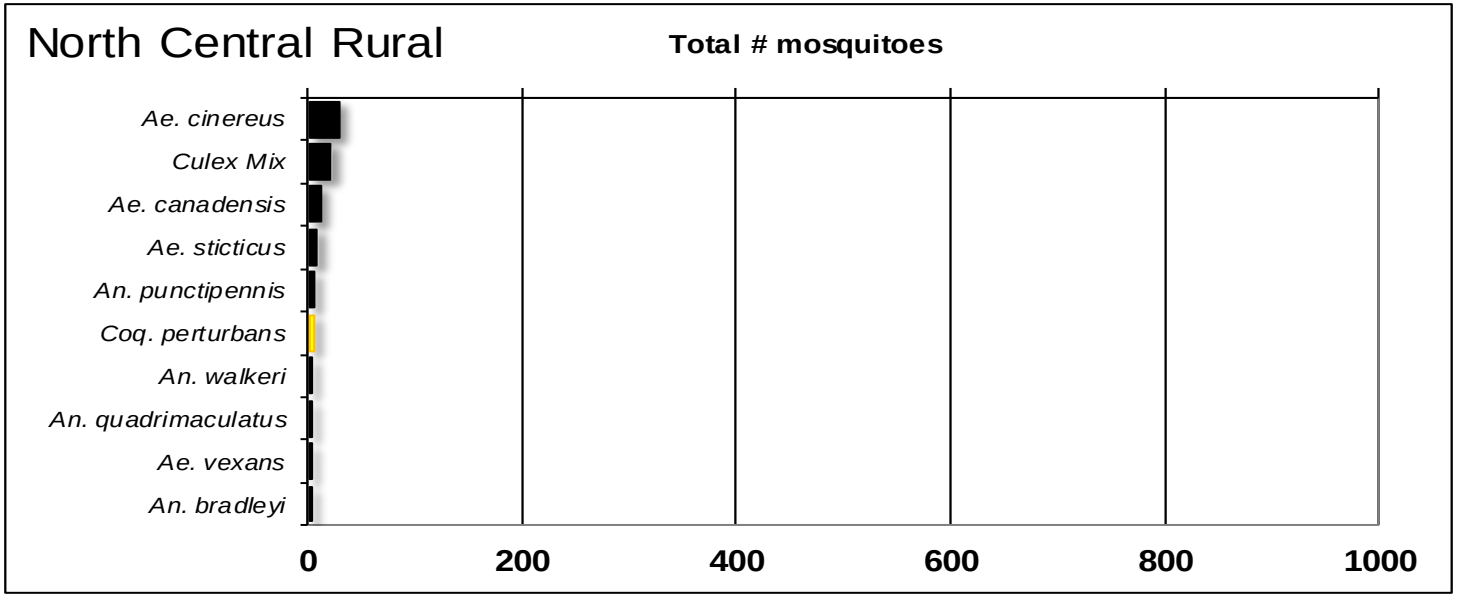
Coastal

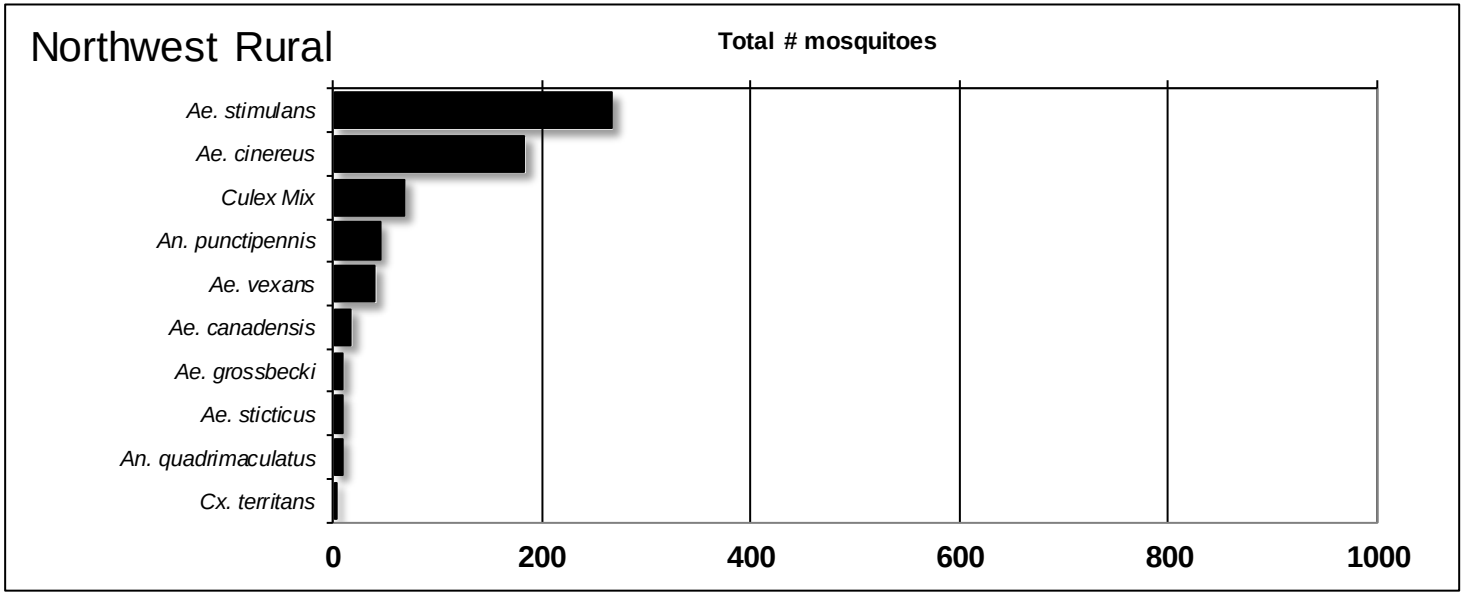


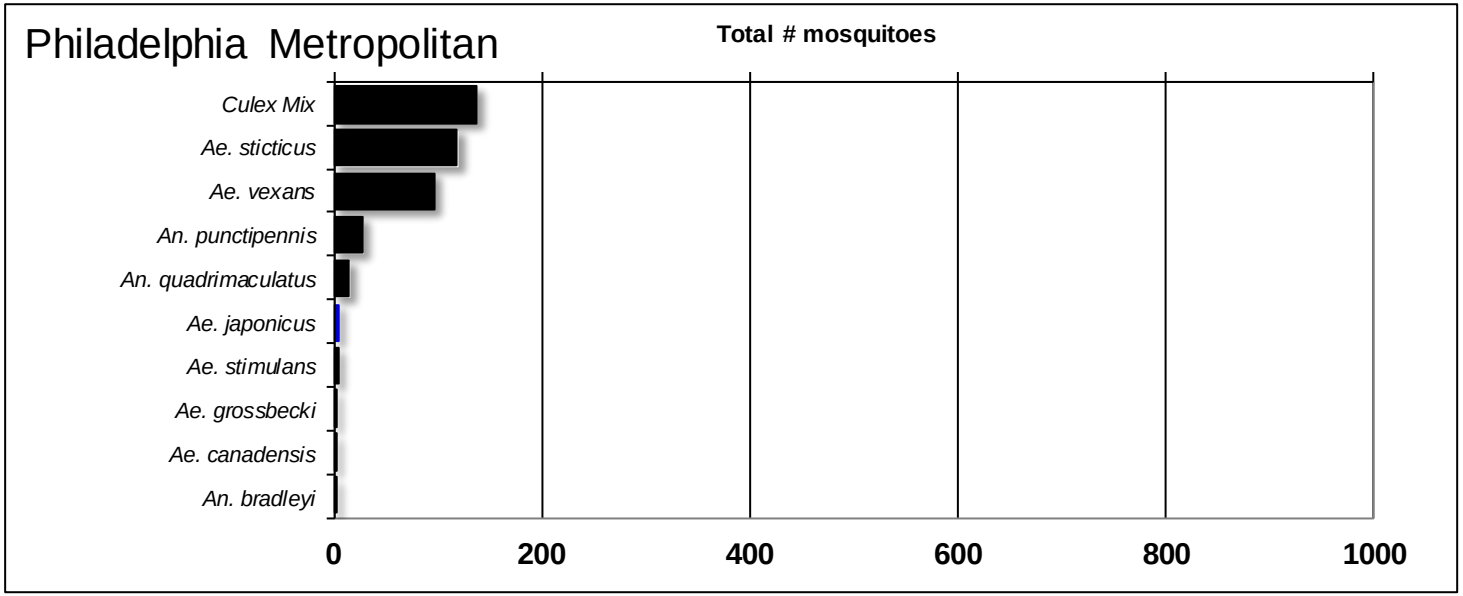

Delaware Bayshore
Total # mosquitoes
Ae. cantator
Culex Mix
Ae. vexans
Ae. sollicitans
Cs. melanura
Ae. grossbecki
Ae. canadensis
An. punctipennis
Coq. perturbans
An. quadrimaculatus
0
200
400
600
800
1000

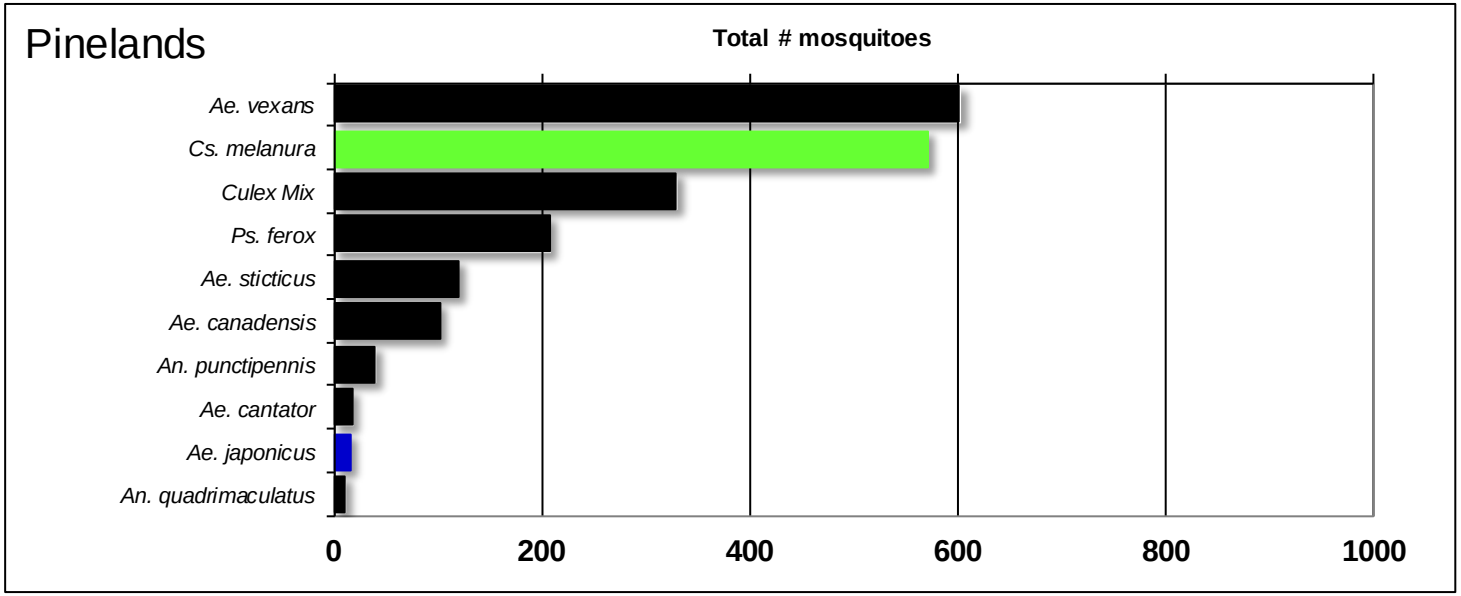

Delaware River Basin
Total # mosquitoes
Ae. vexans
Culex Mix
Ae. cantator
An. quadrimaculatus
Ae. grossbecki
Ae. canadensis
An. punctipennis
Ps. columbiae
Ae. japonicus
Ae. sollicitans
0
200
400
600
800
1000

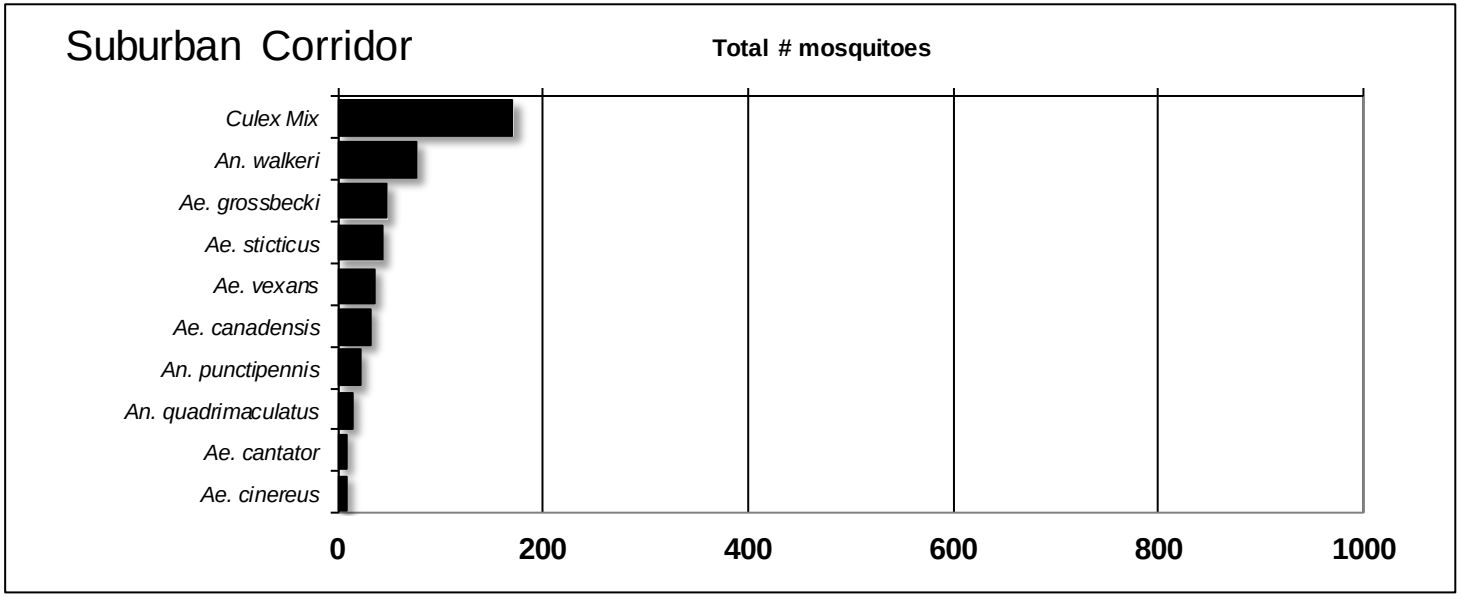

New York Metropolitan
Total # mosquitoes
Ae. cantator
Culex Mix
Ae. vexans
Ae. trivittatus
Ae. grossbecki
An. quadrimaculatus
Ae. japonicus
Ur. sapphirina
An. punctipennis
Ae. triseriatus
0
200
400
600
800
1000


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


Northwest Rural
Total # mosquitoes
Ae. stimulans
Ae. cinereus
Culex Mix
An. punctipennis
Ae. vexans
Ae. canadensis
Ae. grossbecki
Ae. sticticus
An. quadrimaculatus
Cx. territans
0
200
400
600
800
1000


Philadelphia Metropolitan
Total # mosquitoes
Culex Mix
Ae. sticticus
Ae. vexans
An. punctipennis
An. quadrimaculatus
Ae. japonicus
Ae. stimulans
Ae. grossbecki
Ae. canadensis
An. bradleyi
0
200
400
600
800
1000


Pinelands
Total # mosquitoes
Ae. vexans
Cs. melanura
Culex Mix
Ps. ferox
Ae. sticticus
Ae. canadensis
An. punctipennis
Ae. cantator
Ae. japonicus
An. quadrimaculatus
0
200
400
600
800
1000


Suburban Corridor
Total # mosquitoes
Culex Mix
An. walkeri
Ae. grossbecki
Ae. sticticus
Ae. vexans
Ae. canadensis
An. punctipennis
An. quadrimaculatus
Ae. cantator
Ae. cinereus
0
200
400
600
800
1000