NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report for 1 May to 6 June 2014, CDC Week 18 - 23

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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.

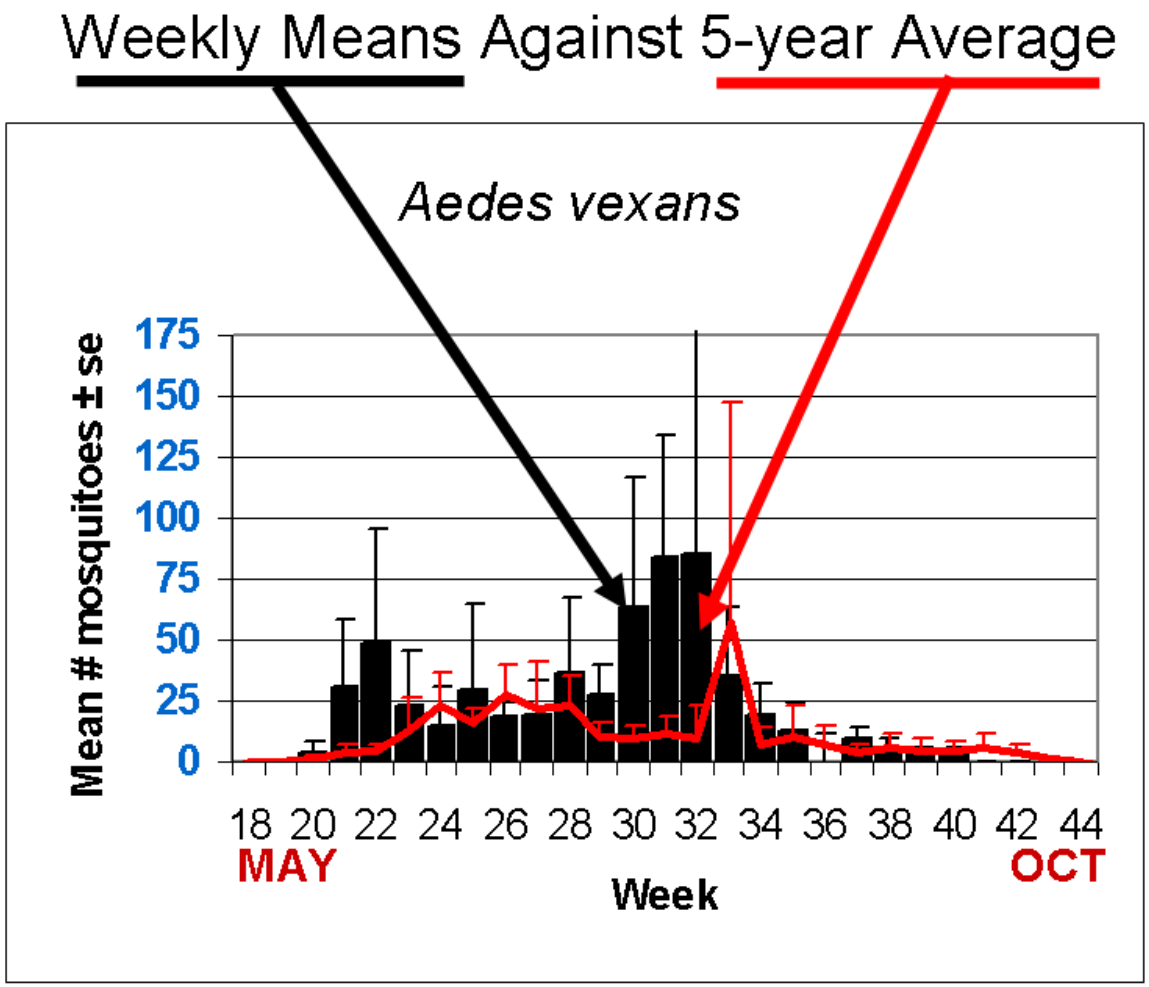
Summary Table – Week 23

	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**	**2.41**	**0**	**0.12**	**2.99**	**0**	**0.00**	**0.49**	**0**	**0.00**	**0.10**	**0**
Coastal	**0.30**	**2.14**	**0**	**0.07**	**5.26**	**0**	**0.00**	**0.23**	**0**	**0.05**	**3.90**	**0**
Delaware Bayshore	**0.00**	**2.94**	**0**	**0.00**	**15.29**	**0**	**0.00**	**5.11**	**0**	**0.00**	**6.10**	**0**
Delaware River Basin	**0.00**	**5.71**	**0**	**0.00**	**1.83**	**0**	**0.00**	**0.20**	**0**	**0.00**	**0.00**	**0**
New York Metro	**0.29**	**0.83**	**0**	**0.00**	**1.80**	**0**	**0.00**	**0.00**	**0**	**0.00**	**0.20**	**0**
North Central Rural	**0.16**	**0.41**	**0**	**0.73**	**0.68**	**1**	**0.00**	**0.03**	**0**	**0.00**	**0.00**	**0**
Northwest Rural	**0.00**	**8.36**	**0**	**0.00**	**2.59**	**0**	**0.00**	**0.51**	**0**	**0.00**	**0.00**	**0**
Philadelphia Metro	**0.00**	**3.58**	**0**	**0.00**	**6.09**	**0**	**0.00**	**0.82**	**0**	**0.00**	**0.00**	**0**
Pinelands	**0.03**	**0.63**	**0**	**0.06**	**1.74**	**0**	**0.00**	**0.53**	**0**	**0.00**	**0.11**	**0**
Suburban Corridor	**0.70**	**4.52**	**0**	**0.08**	**1.66**	**0**	**0.00**	**0.42**	**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.

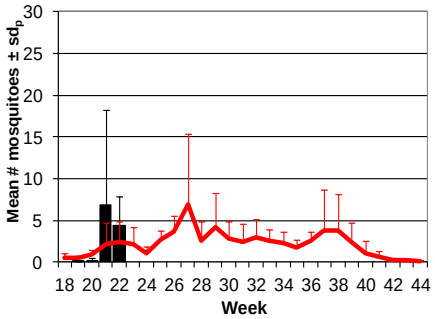
State Summary: This is the first report for the 2014, representing traps that have been placed out at various times since early May. Data should be considered provisional as counties come online with their datasets. At this time, mixed *Culex* populations (*Cx. pipiens, Cx. restuans*) are marginally higher than historical data. See also *Aedes cantator* on page 8, with elevated populations in the Coastal, Delaware Bayshore, New York Metropolitan and Pineland regions. **NOTE: Climate maps will be forthcoming.**

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 Essex, Morris and Ocean counties. Data for the previous week(s) are from Atlantic, Burlington, Cape May, Cumberland, Essex, Mercer, Middlesex, Monmouth, Morris, Ocean and Salem counties.

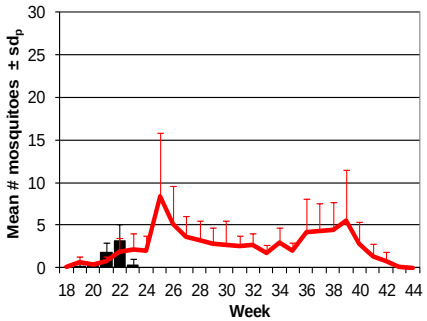


Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

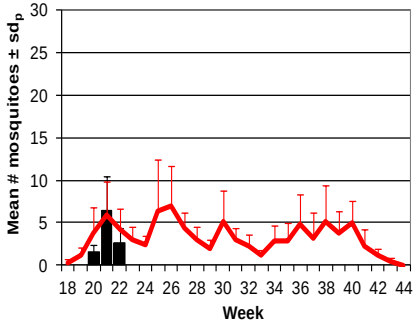
Agricultural



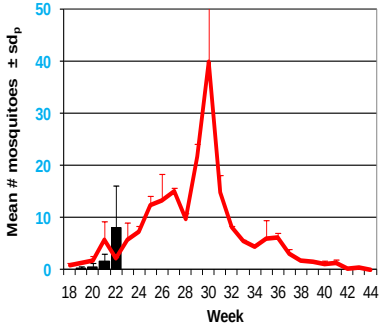
Coastal



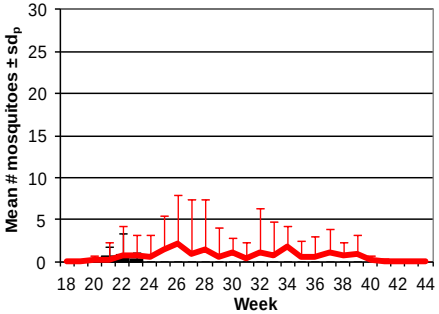
Delaware Bayshore



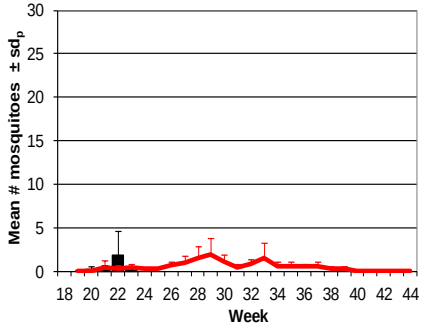
Delaware River Basin



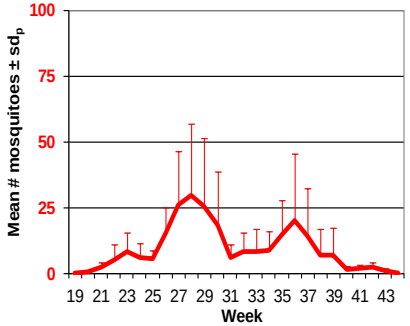
New York Metro



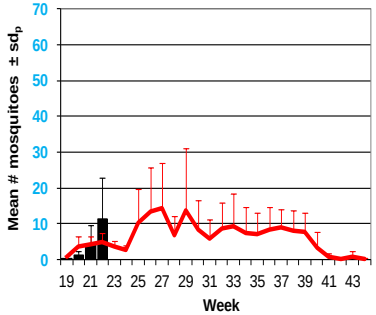
North Central Rural



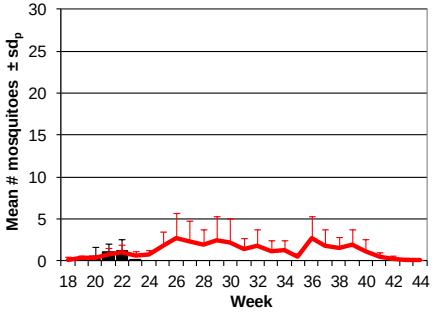
Northwestern Rural



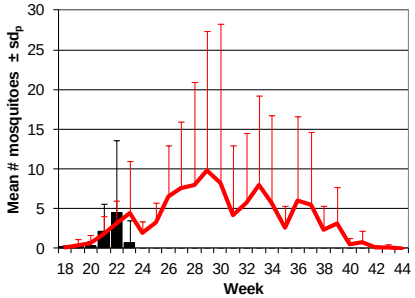
Philadelphia Metro



Pinelands



Suburban Corridor

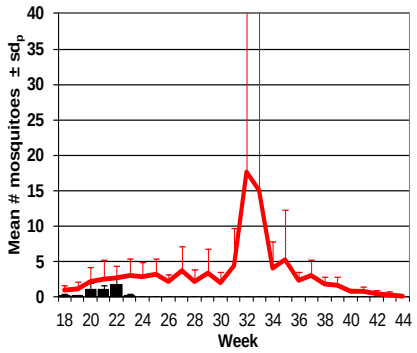


Comments

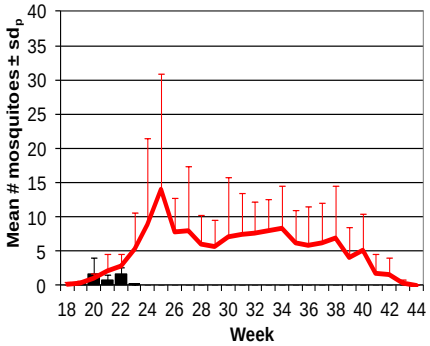
Aedes vexans populations have responded to warming weather and recent precipitation with notable emergences in Week21/22 for the Agricultural, Delaware Bayshore, Delaware River Basin, North Central Rural, Philadelphia Metropolitan and Suburban Corridor. This floodwater species can be a significant source of nuisance calls in a wide variety of ephemeral larval habitats, from agricultural to urban ecosystems.

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

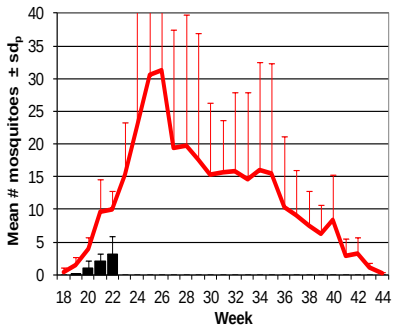
Agricultural



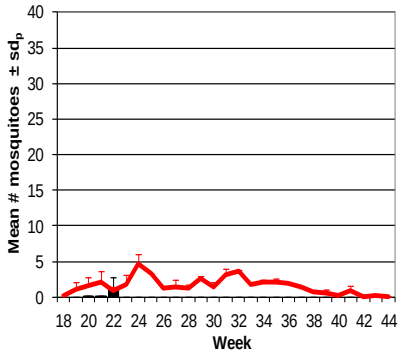
Coastal



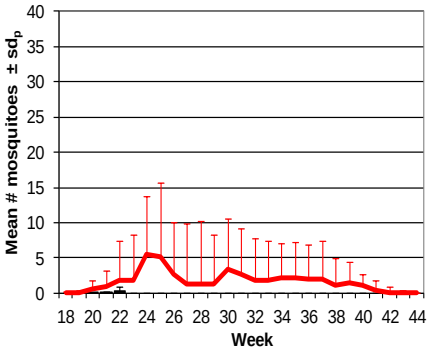
Delaware Bayshore



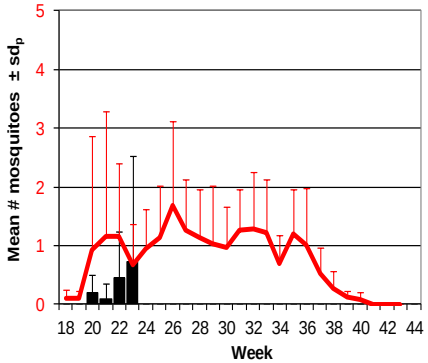
Delaware River Basin



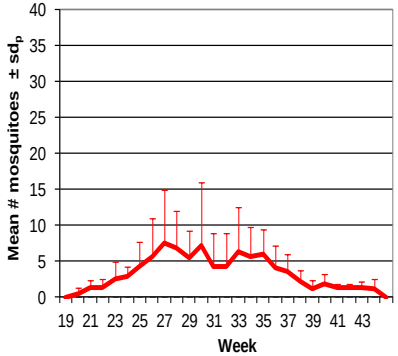
New York Metro



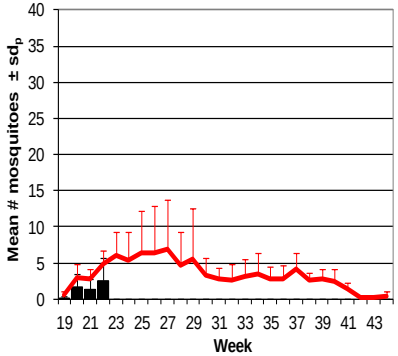
North Central Rural



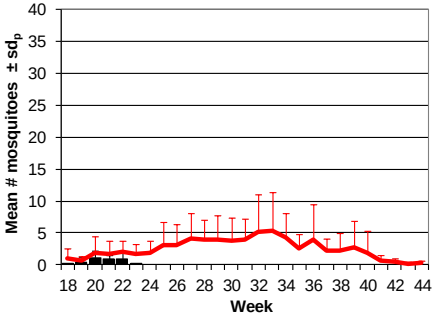
Northwestern Rural



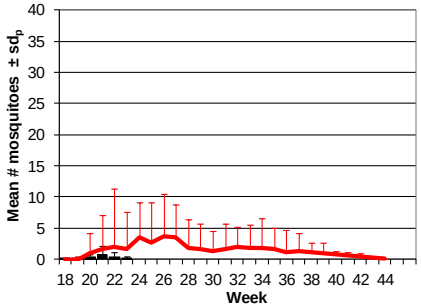
Philadelphia Metro



Pinelands



Suburban Corridor

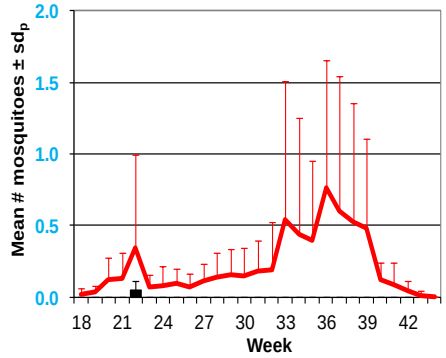


Comments

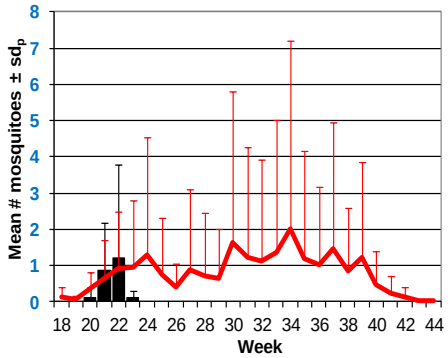
Culex Mix is composed of *Culex pipiens, Cx. restuans* and *Cx. salinarius*. These three species (especially *pipiens* and *restuans*) are often difficult to tell apart after encountering the damaging blades of the New Jersey light trap. *Culex* populations are generally more consistent with historical data, although under significant drought conditions, numbers can decrease. Currently, numbers appear slightly elevated in the North Central Rural region, although this value is not significantly different from historical values. Delaware Bayshore, however, appears to have lower than expected abundances.

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

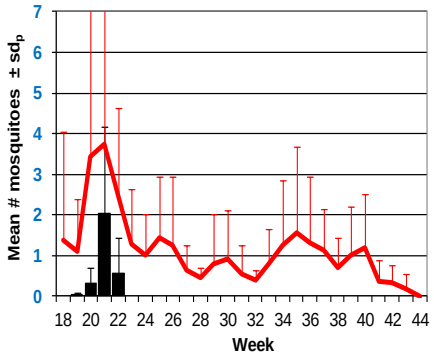
Agricultural



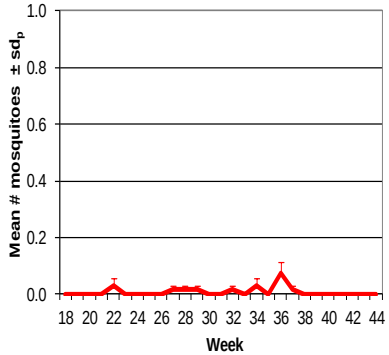
Coastal



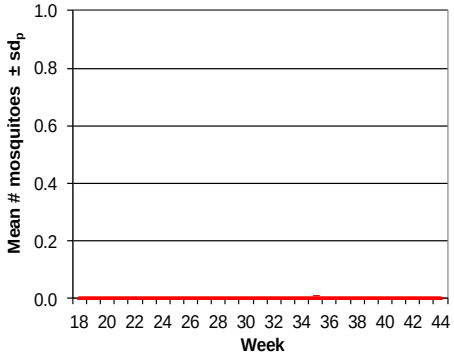
Delaware Bayshore



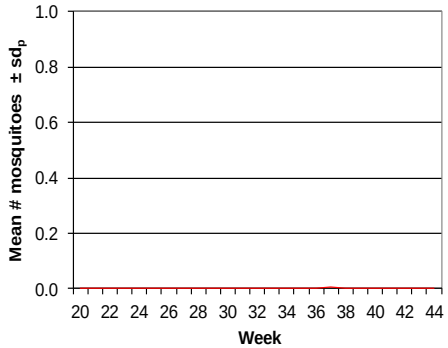
Delaware River Basin



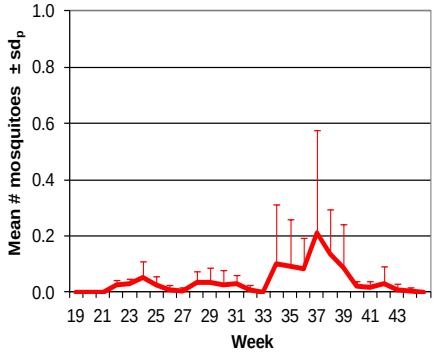
New York Metro



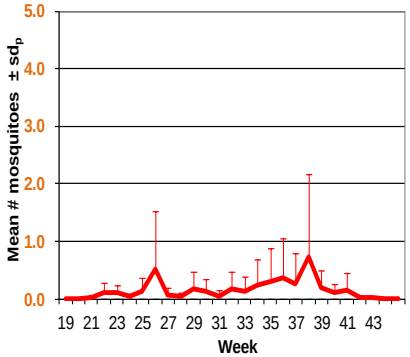
North Central Rural



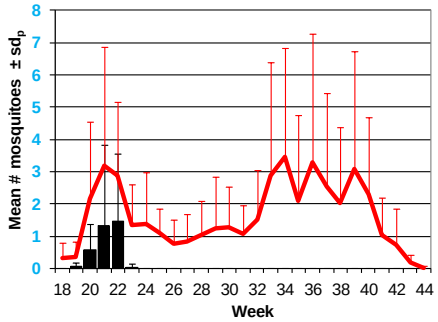
Northwestern Rural



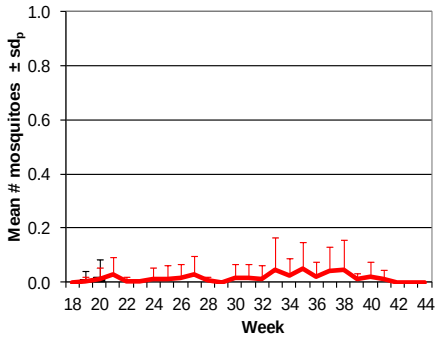
Philadelphia Metro



Pinelands



Suburban Corridor

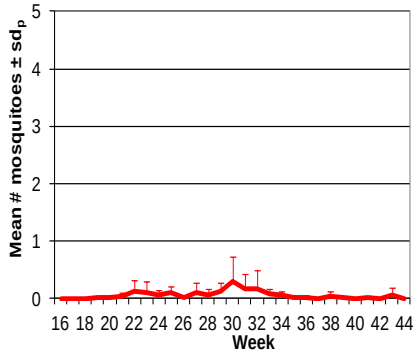


Comments

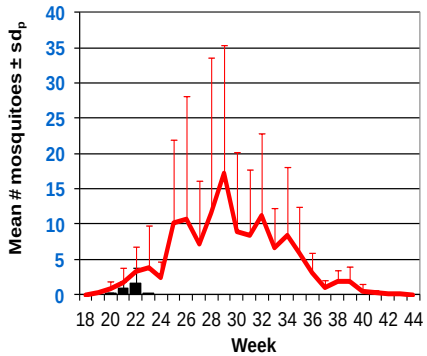
Culiseta melanura is the enzootic ornithophilic vector of eastern equine encephalitis. Currently *Cs. melanura* populations appear at or close to historical values for regions in which larval habitat is commonly found (Coastal, Delaware Bayshore and the Pinelands). This habitat includes the swamps of White Cedar where *Cx. melanura* maintains a subterranean life, making control more difficult.

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

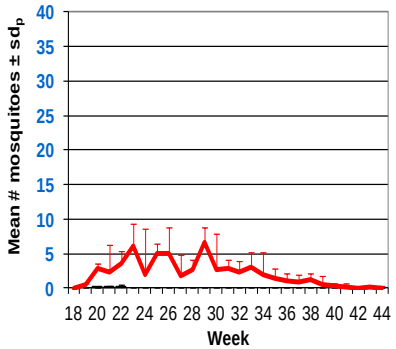
Agricultural



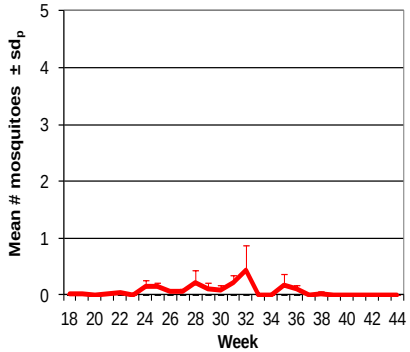
Coastal



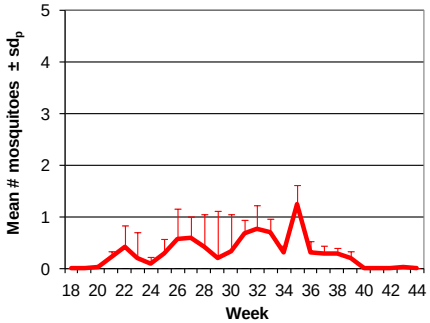
Delaware Bayshore



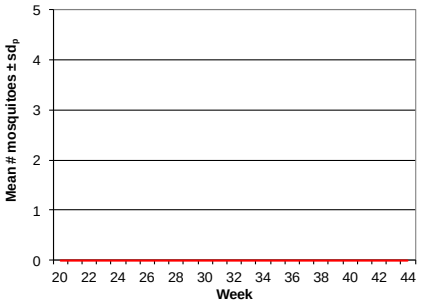
Delaware River Basin



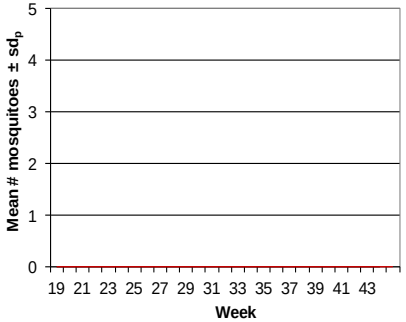
New York Metro



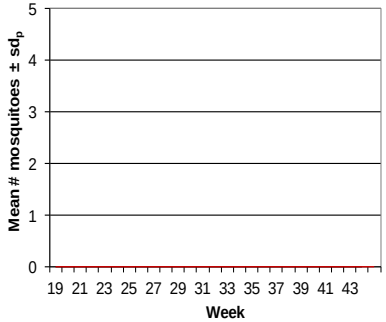
North Central Rural



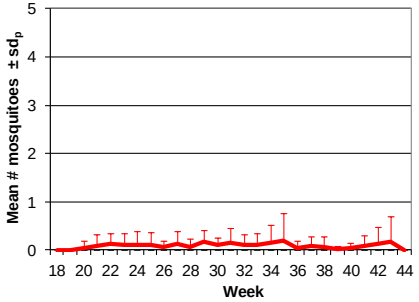
Northwestern Rural



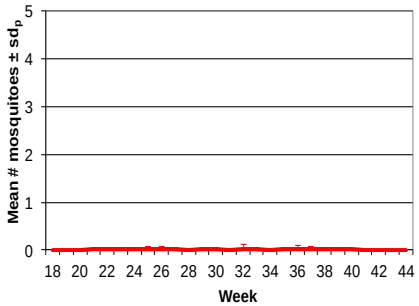
Philadelphia Metro



Pinelands



Suburban Corridor

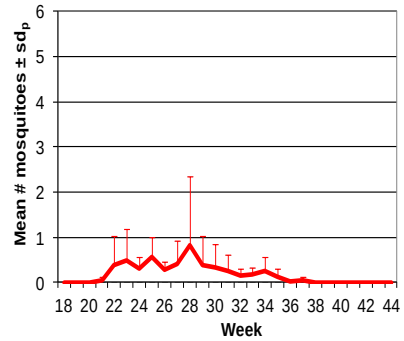


Comments

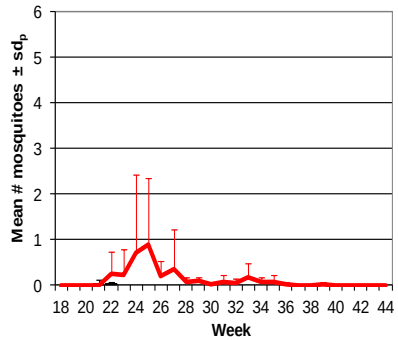
Aedes sollicitans is a salt floodwater species and responds to both lunar tidal patterns as well as rainfall. For the last two years, *Ae. sollicitans* populations in the Coastal and Delaware Bayshore were exceptionally low in comparison to historical levels. To date this year, Coastal populations appear to track historical levels of the previous five years (which have been reduced as the historical levels now reflect the two last years of depressed abundances). Numbers in the Delaware Bayshore are considerably lower than historical values.

Coquillettidia perturbans
Monotypic (*Coquillettidia perturbans* Type)

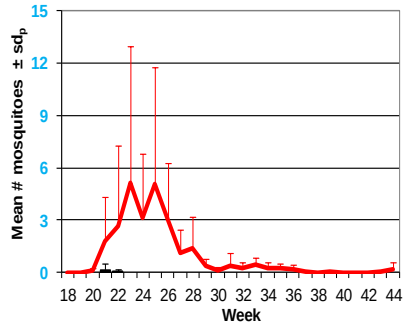
Agricultural



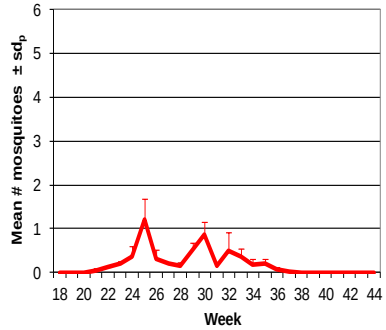
Coastal



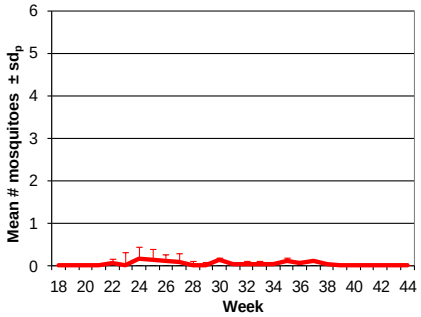
Delaware Bayshore



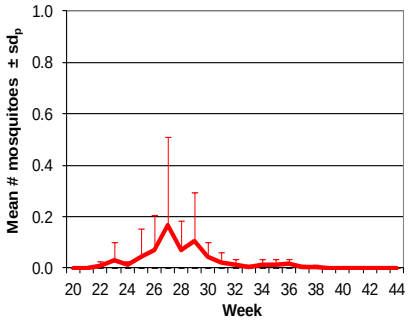
Delaware River Basin



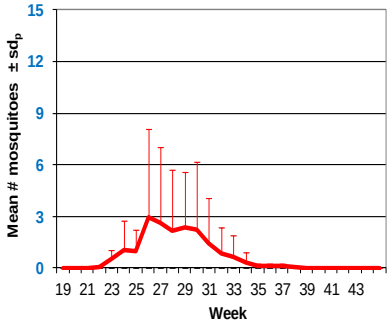
New York Metro



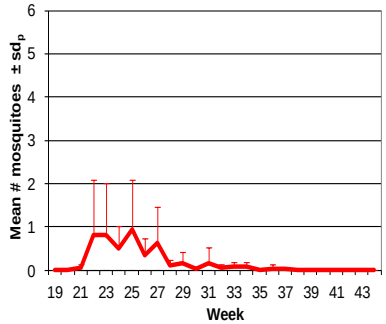
North Central Rural



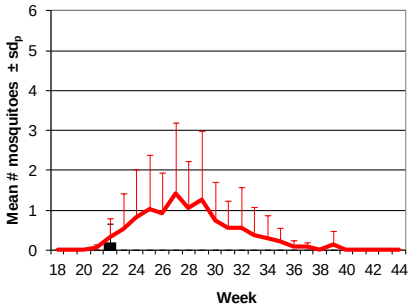
Northwestern Rural



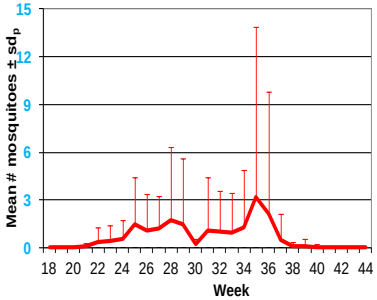
Philadelphia Metro



Pinelands



Suburban Corridor

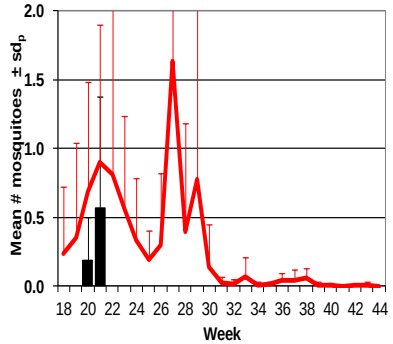


Comments

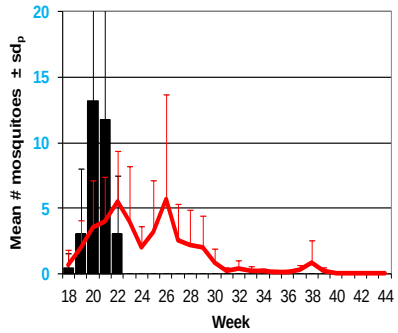
Coquillettidia perturbans populations are located in cattail swamps and other wetlands with emergent vegetation, often making control of their numbers dependent on controlling water depth. Adults have begun to show up in Coastal, Delaware Bayshore and the Pinelands, although significant numbers will become established later in the season. This species is a potential inland vector for EEE and should always be considered when determining arboviral control.

Aedes cantator
Multivoltine Aedine (*Ae. sollicitans* Type)

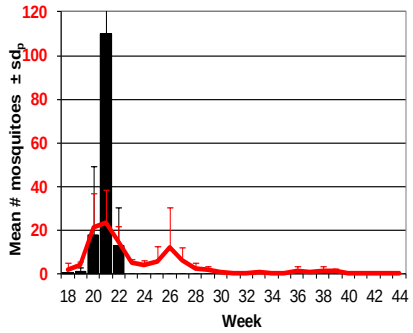
Agricultural



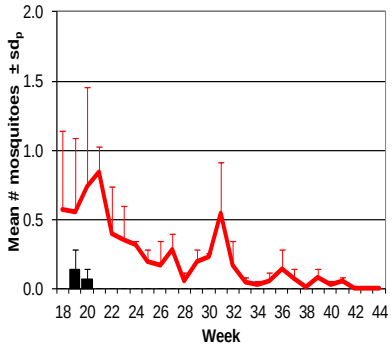
Coastal



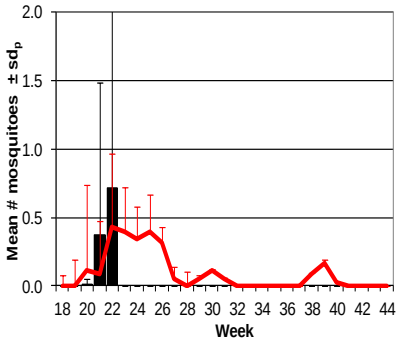
Delaware Bayshore



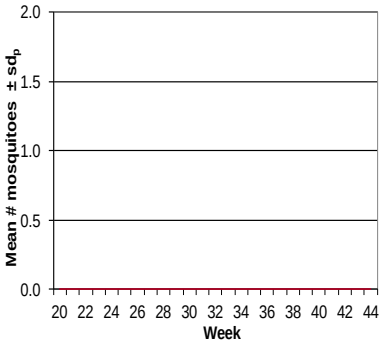
Delaware River Basin



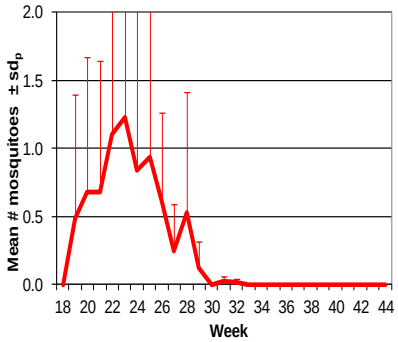
New York Metro



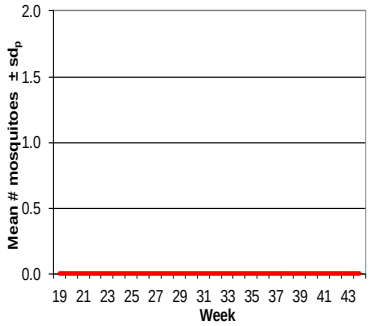
North Central Rural



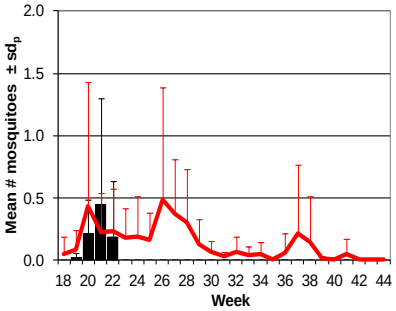
Northwestern Rural



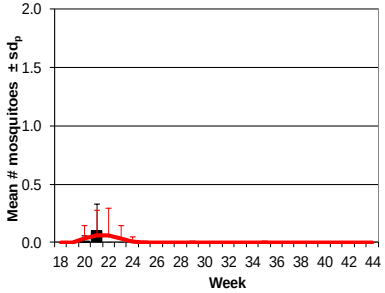
Philadelphia Metro



Pinelands



Suburban Corridor



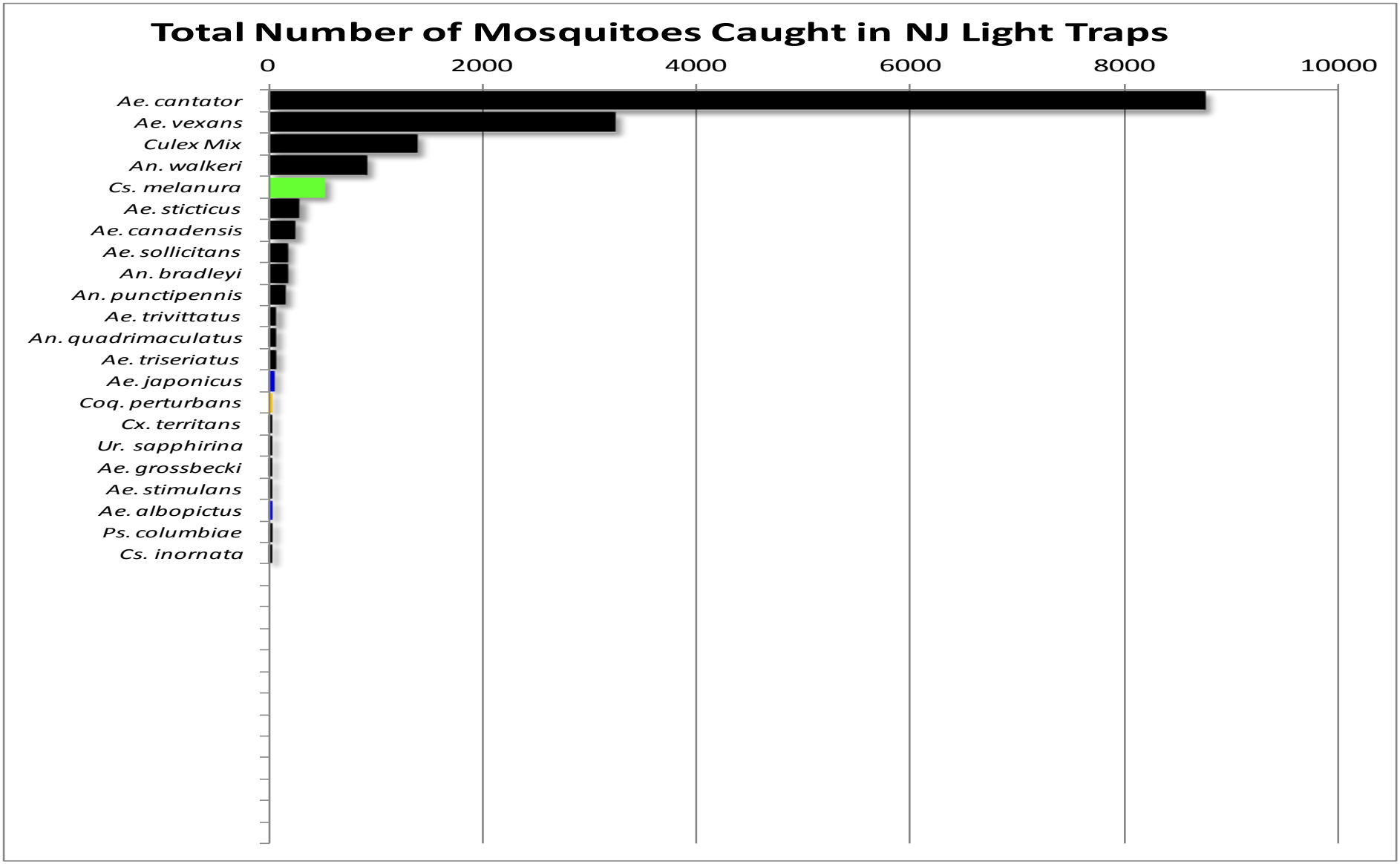
Comments

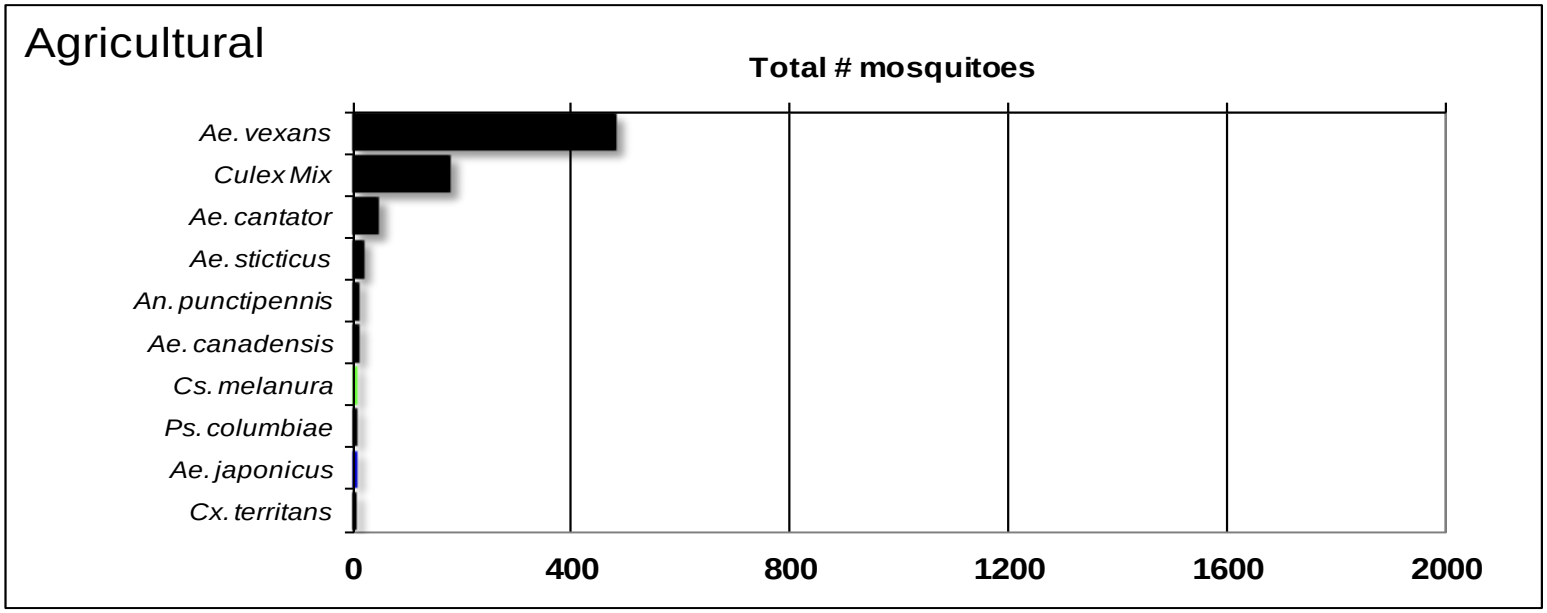
Aedes cantator is a salt floodwater species. Occupying similar habitat, *Ae. cantator* finds its niche by emerging earlier than *Ae. sollicitans.* This species are showing significant abundance in the Coastal and Delaware Bayshore regions while the Delaware River Basin region appears to have populations with less abundance than historical values.

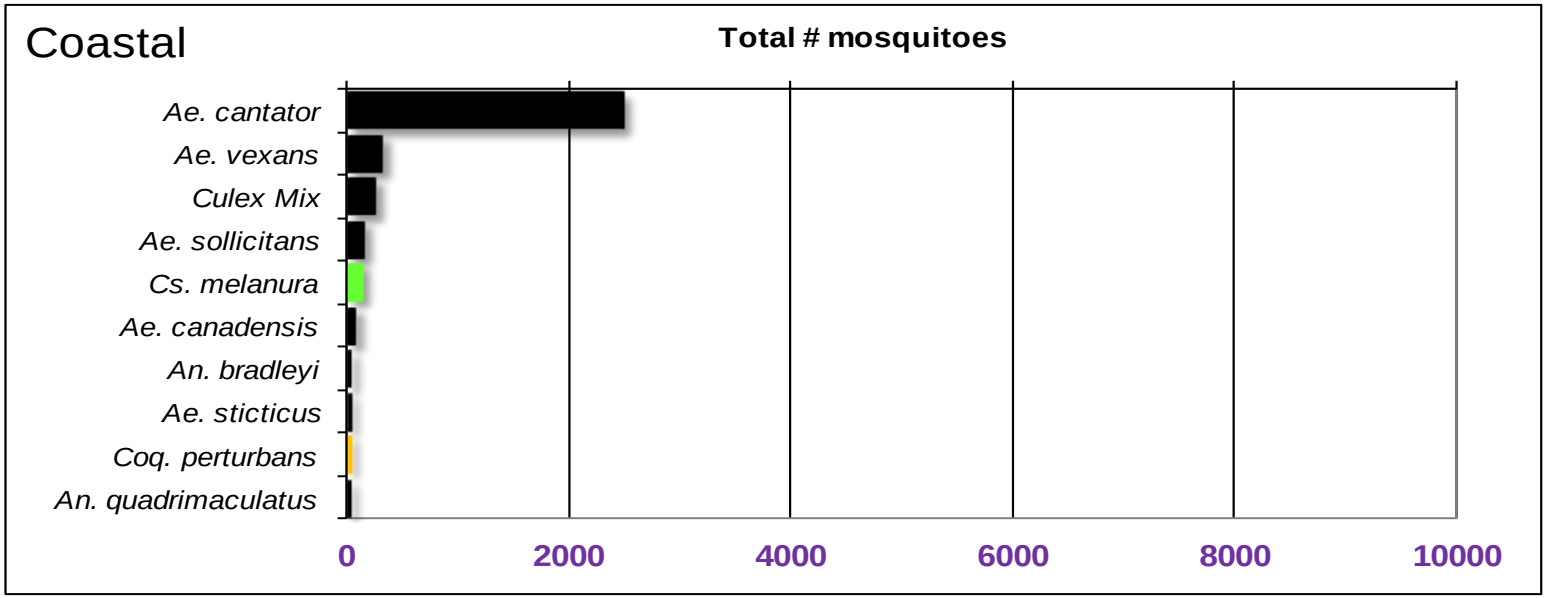
WNV EEE

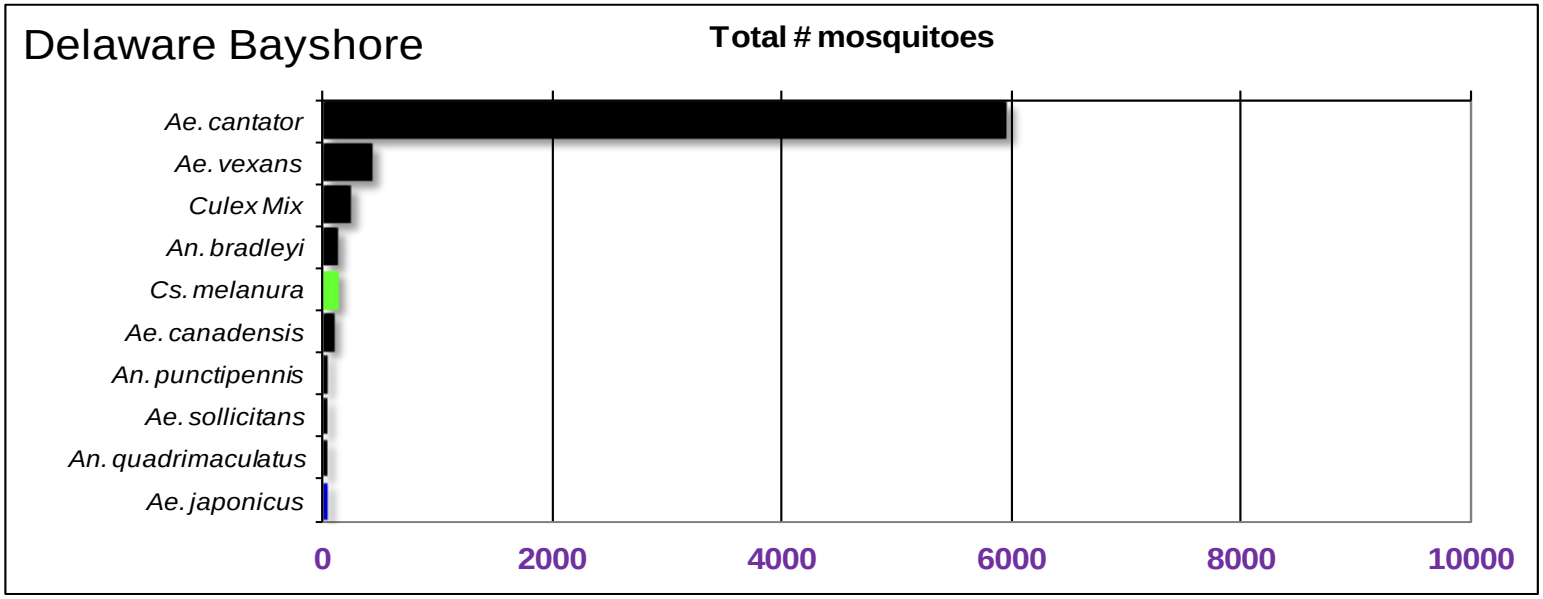
Top Ten Mosquito Species/Region - *Ae. albopictus,* *Ae. japonicus (invasives);* *Cs. melanura or Cx. erraticus* *Coq. perturbans*

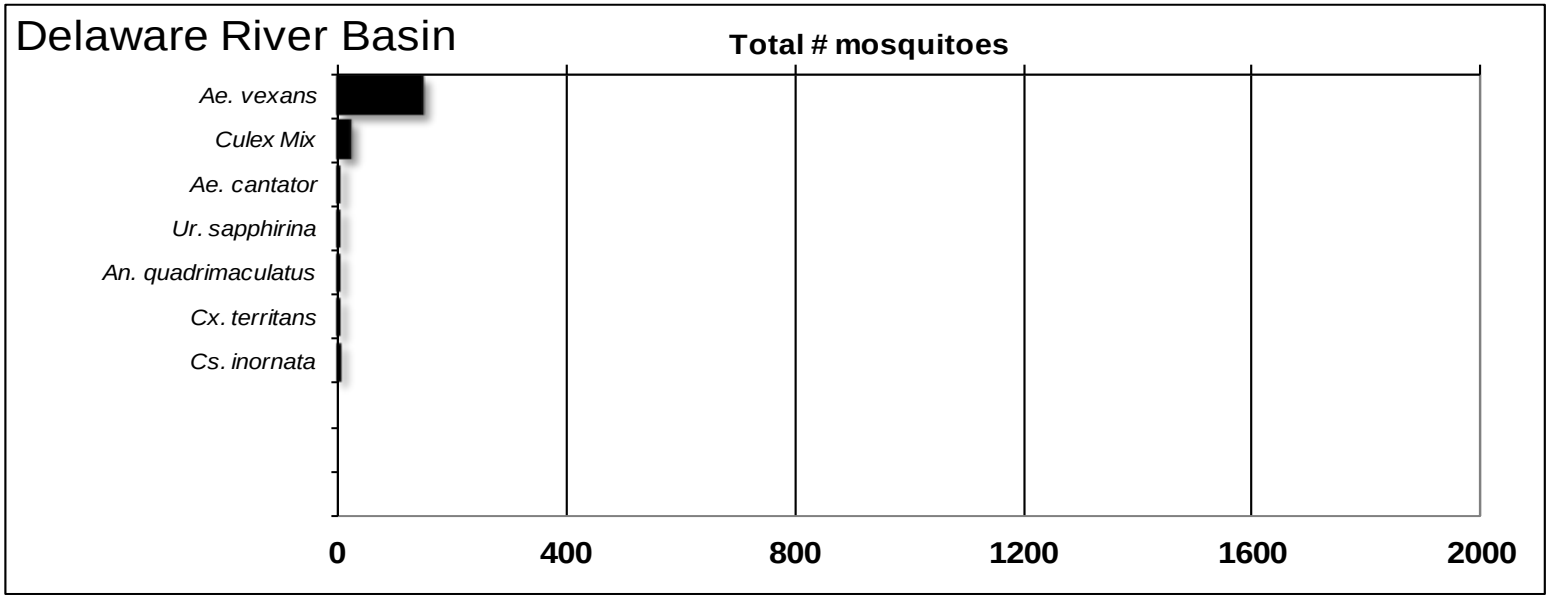
Note: In early season when fewer species are caught, graphs may show less than ten species/region or 25 statewide.

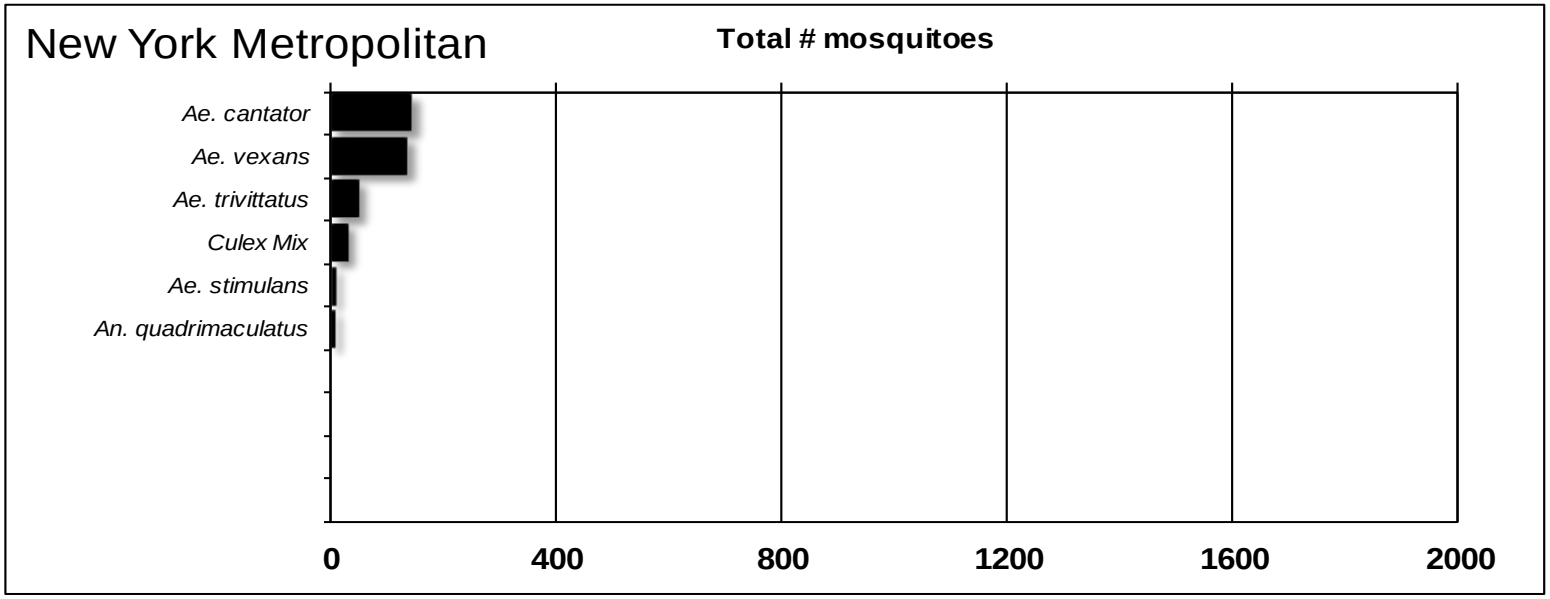


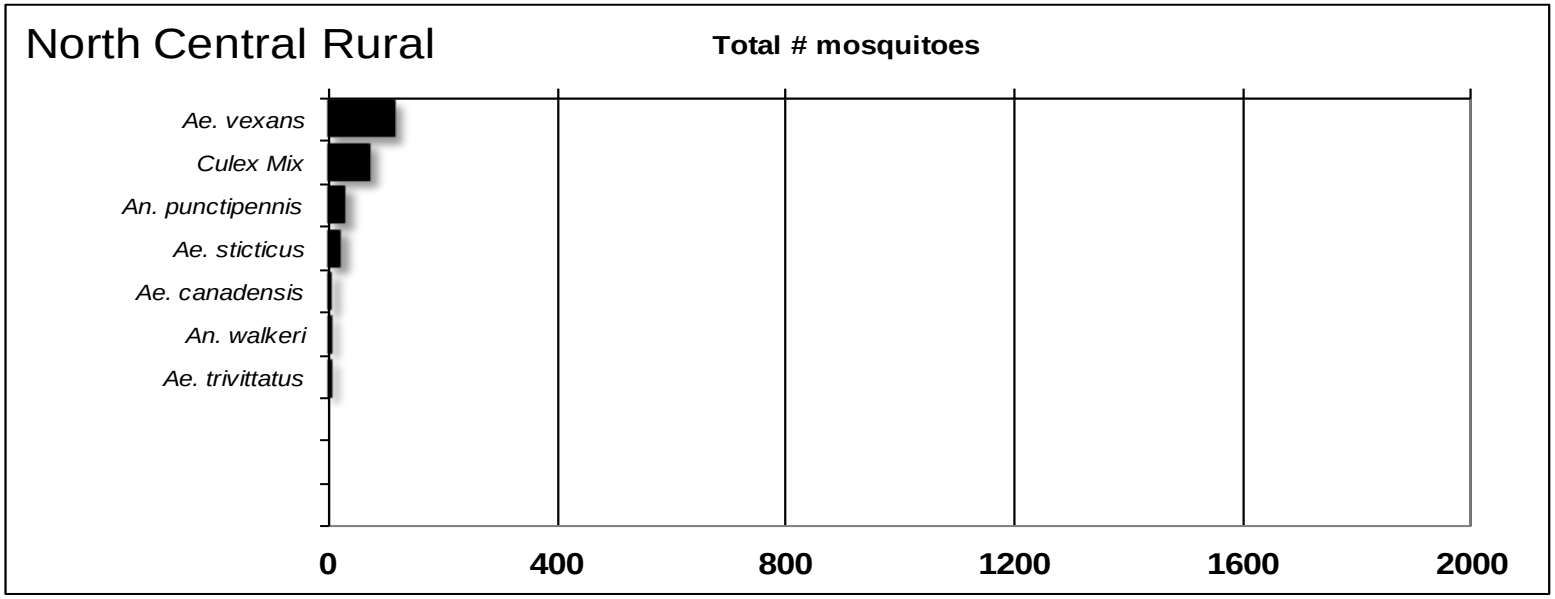

Agricultural
Total # mosquitoes
Ae. vexans
Culex Mix
Ae. cantator
Ae. sticticus
An. punctipennis
Ae. canadensis
Cs. melanura
Ps. columbiae
Ae. japonicus
Cx. territans
0
400
800
1200
1600
2000

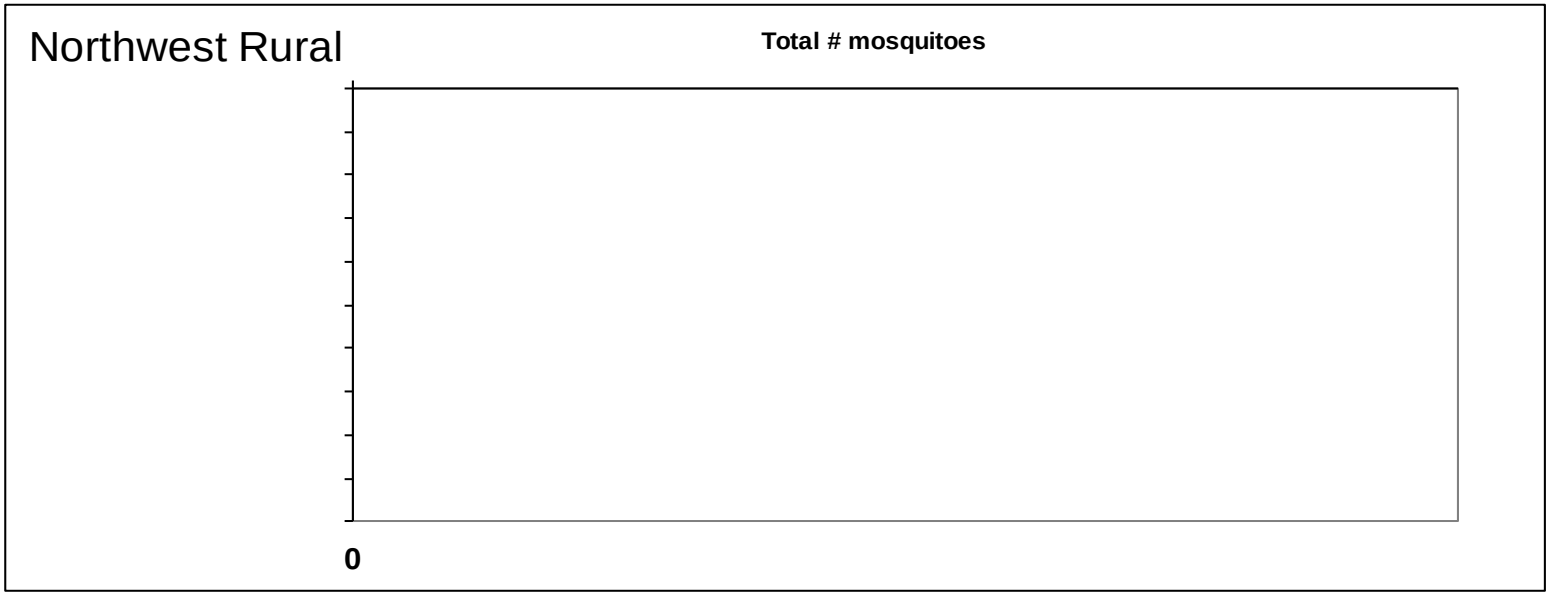

Coastal
Total # mosquitoes
Ae. cantator
Ae. vexans
Culex Mix
Ae. sollicitans
Cs. melanura
Ae. canadensis
An. bradleyi
Ae. sticticus
Coq. perturbans
An. quadrimaculatus
0
2000
4000
6000
8000
10000

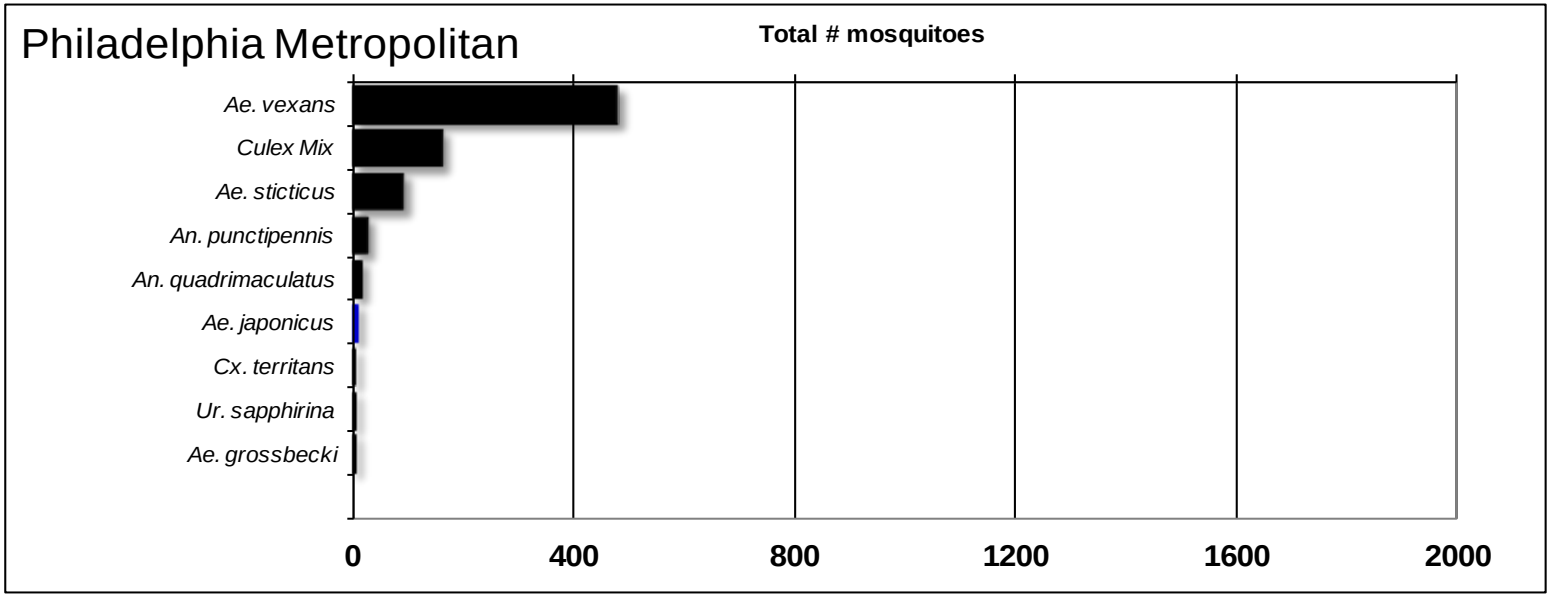

Delaware Bayshore
Total # mosquitoes
Ae. cantator
Ae. vexans
Culex Mix
An. bradleyi
Cs. melanura
Ae. canadensis
An. punctipennis
Ae. sollicitans
An. quadrimaculatus
Ae. japonicus
0
2000
4000
6000
8000
10000

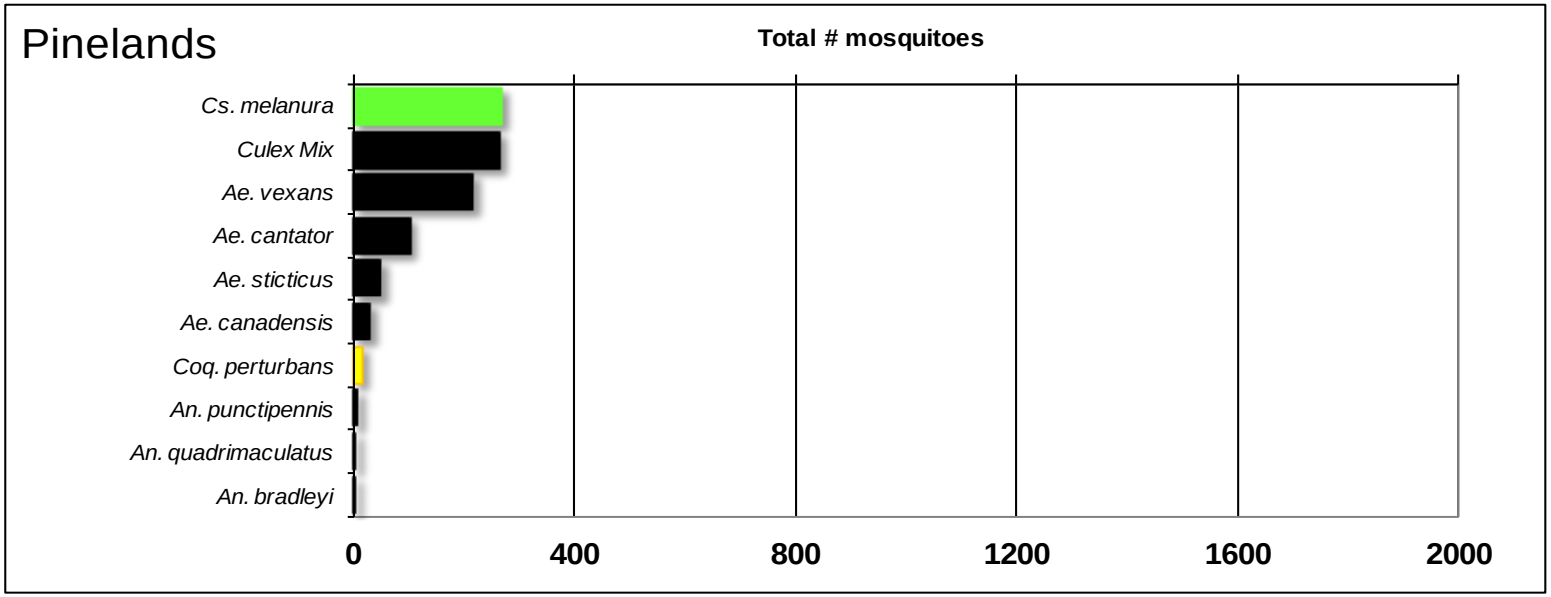

Delaware River Basin
Total # mosquitoes
Ae. vexans
Culex Mix
Ae. cantator
Ur. sapphirina
An. quadrimaculatus
Cx. territans
Cs. inornata
0
400
800
1200
1600
2000

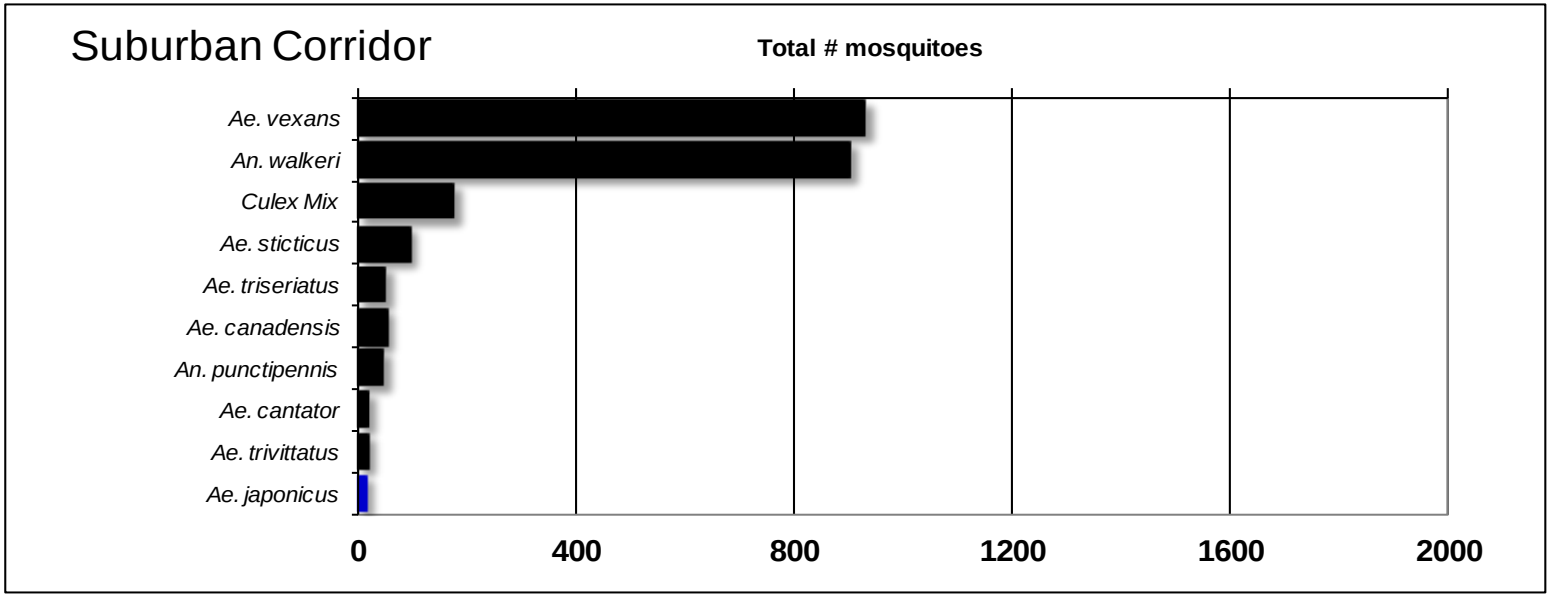

New York Metropolitan
Total # mosquitoes
Ae. cantator
Ae. vexans
Ae. trivittatus
Culex Mix
Ae. stimulans
An. quadrimaculatus
0
400
800
1200
1600
2000


North Central Rural
Total # mosquitoes
Ae. vexans
Culex Mix
An. punctipennis
Ae. sticticus
Ae. canadensis
An. walkeri
Ae. trivittatus
0
400
800
1200
1600
2000


Northwest Rural
Total # mosquitoes
0


Philadelphia Metropolitan
Total # mosquitoes
Ae. vexans
Culex Mix
Ae. sticticus
An. punctipennis
An. quadrimaculatus
Ae. japonicus
Cx. territans
Ur. sapphirina
Ae. grossbecki
0
400
800
1200
1600
2000


Pinelands
Total # mosquitoes
Cs. melanura
Culex Mix
Ae. vexans
Ae. cantator
Ae. sticticus
Ae. canadensis
Coq. perturbans
An. punctipennis
An. quadrimaculatus
An. bradleyi
0
400
800
1200
1600
2000


Suburban Corridor
Total # mosquitoes
Ae. vexans
An. walkeri
Culex Mix
Ae. sticticus
Ae. triseriatus
Ae. canadensis
An. punctipennis
Ae. cantator
Ae. trivittatus
Ae. japonicus
0
400
800
1200
1600
2000