NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report for 20 October to 26 October 2013, CDC Week 43

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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.

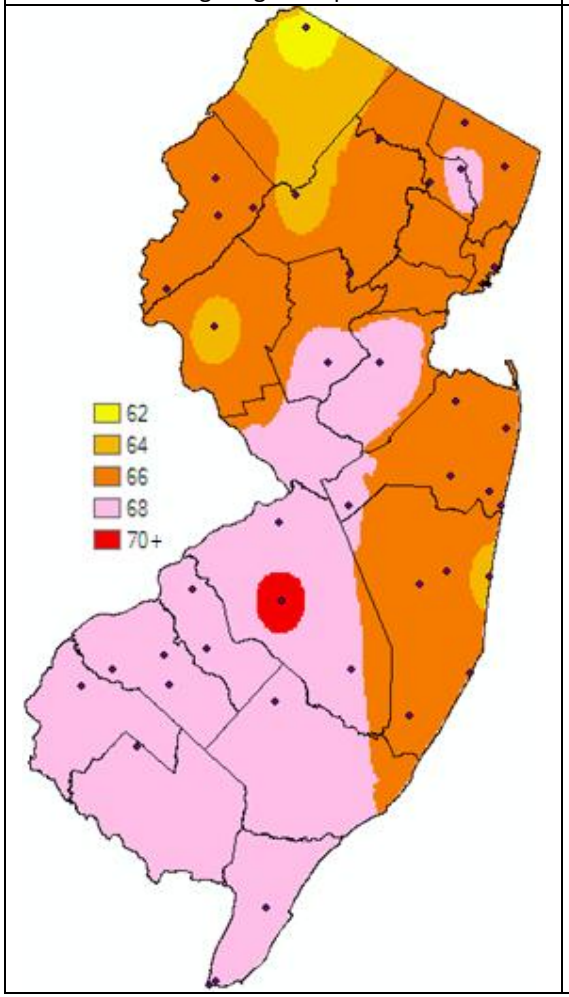
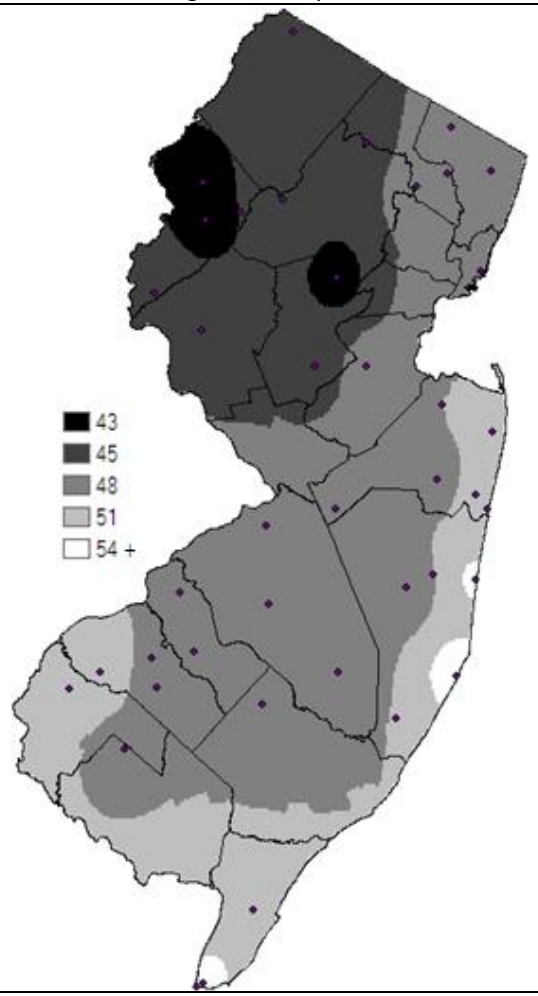
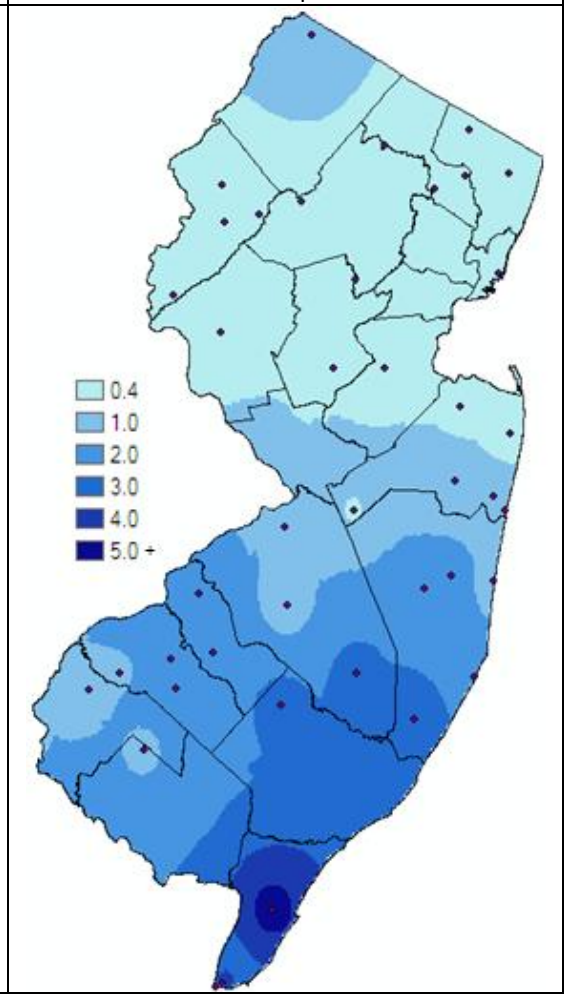
Summary Table – Week 43

	Aedes vexans			***Culex* Mix**			***Coquillettidia perturbans***			***Aedes sollicitans***		
Region	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase
Agricultural	**nd**	**0.17**	**0**	**nd**	**0.27**	**0**	**nd**	**0.00**	**0**	**nd**	**0.06**	**0**
Coastal	**nd**	**0.10**	**0**	**nd**	**0.27**	**0**	**nd**	**0.00**	**0**	**nd**	**0.10**	**0**
Delaware Bayshore	**nd**	**0.33**	**0**	**nd**	**0.49**	**0**	**nd**	**0.02**	**0**	**nd**	**0.23**	**0**
Delaware River Basin	**nd**	**0.16**	**0**	**nd**	**0.04**	**0**	**nd**	**0.00**	**0**	**nd**	**0.00**	**0**
New York Metro	**nd**	**0.04**	**0**	**nd**	**0.24**	**0**	**nd**	**0.00**	**0**	**nd**	**0.00**	**0**
North Central Rural	**nd**	**0.00**	**0**	**nd**	**0.00**	**0**	**nd**	**0.00**	**0**	**nd**	**0.00**	**0**
Northwest Rural	**nd**	**0.93**	**0**	**nd**	**1.32**	**0**	**nd**	**0.00**	**0**	**nd**	**0.00**	**0**
Philadelphia Metro	**nd**	**0.67**	**0**	**nd**	**0.14**	**0**	**nd**	**0.00**	**0**	**nd**	**0.00**	**0**
Pinelands	**nd**	**0.10**	**0**	**nd**	**0.11**	**0**	**nd**	**0.00**	**0**	**nd**	**0.16**	**0**
Suburban Corridor	**nd**	**0.15**	**0**	**nd**	**0.26**	**0**	**nd**	**0.00**	**0**	**nd**	**0.00**	**0**

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

State Summary: No data to report. This is the last report for the season.

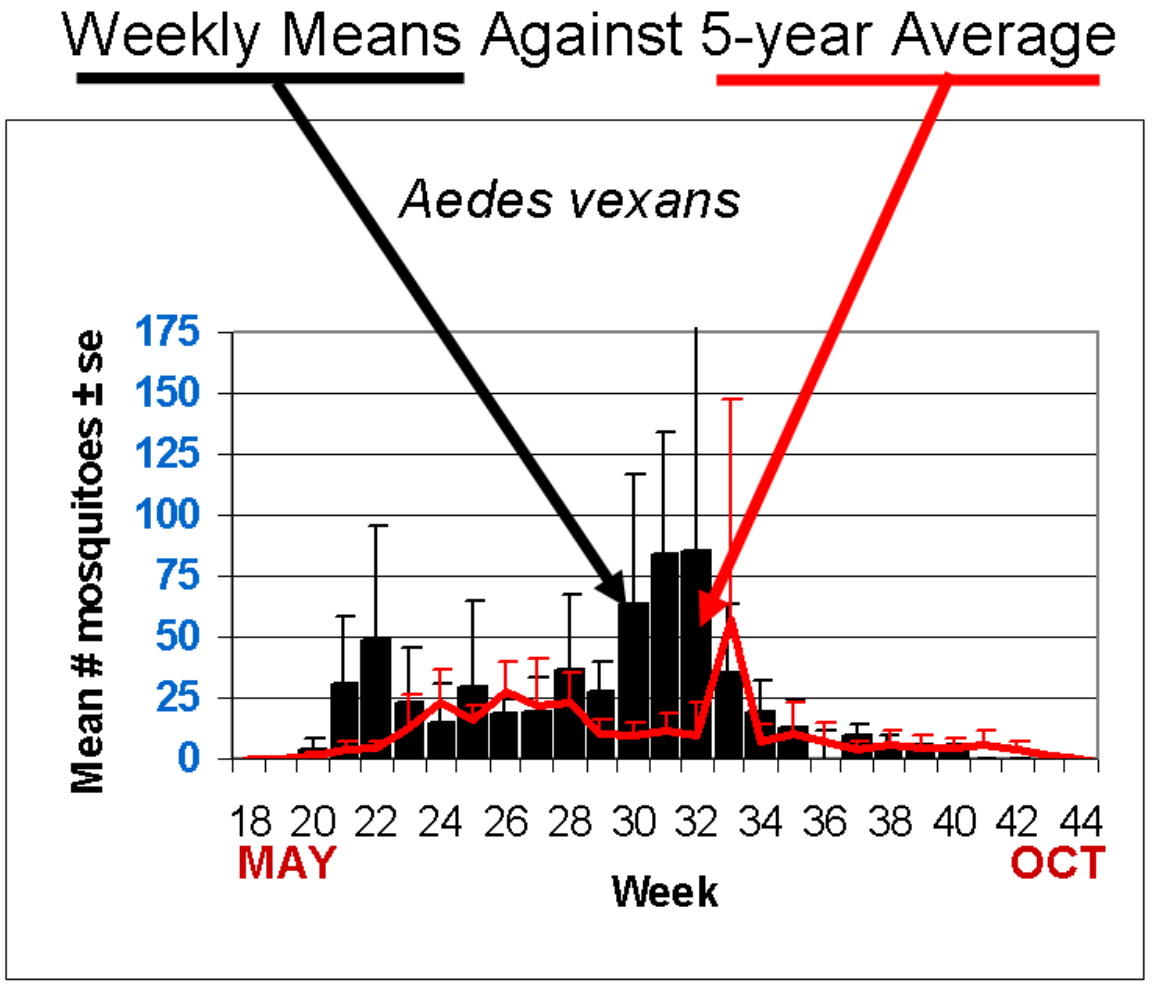
Climate Factors

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) from 1 October to 25 October, 2013 in New Jersey. Data points are from about 41 weather stations maintained through the New Jersey Weather & Climate Network and the State Climatologist. Interpolation between points was performed using ArcMap 10.1.

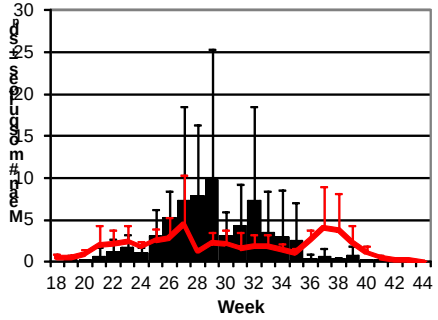
NJ Weather & Climate NETWORK ONJSC at Rutgers University

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 0 counties. Data for the previous week(s) are from Atlantic, Bergen, Burlington, Camden, Cape May, Essex, Monmouth and Warren counties.

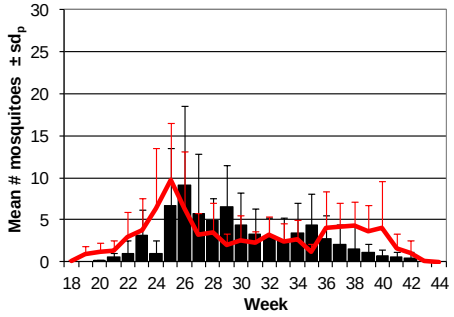


Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

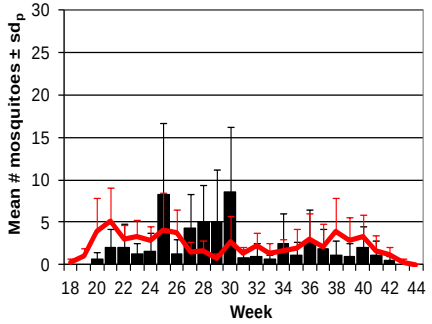
Agricultural



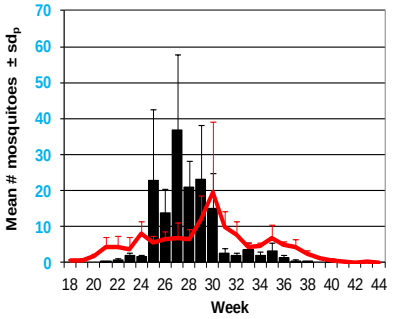
Coastal



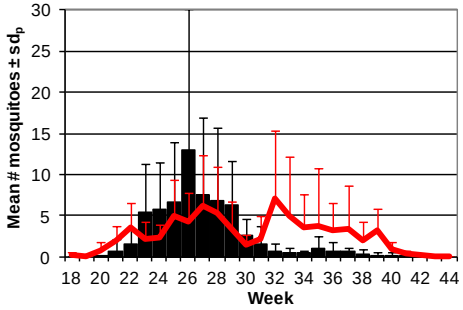
Delaware Bayshore



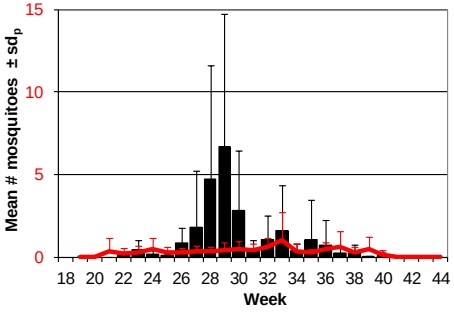
Delaware River Basin



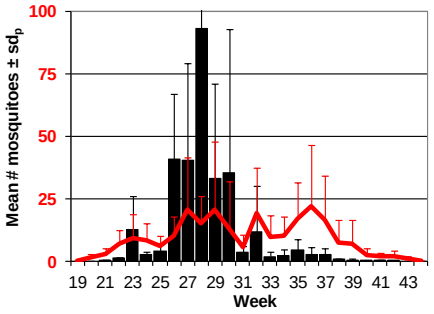
New York Metro



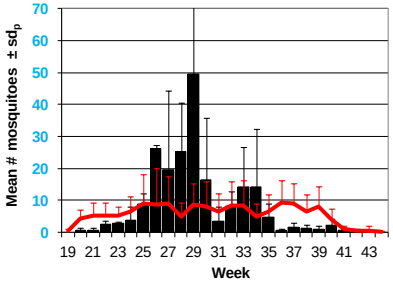
North Central Rural



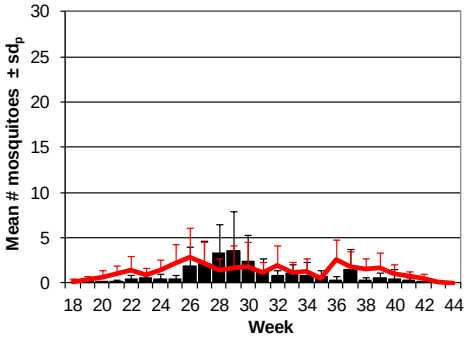
Northwestern Rural



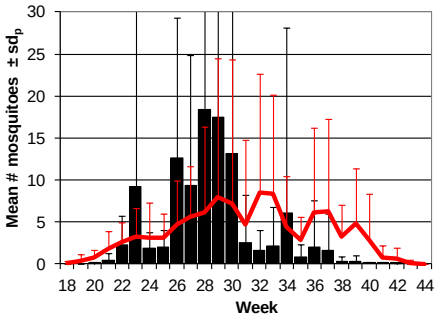
Philadelphia Metro



Pinelands



Suburban Corridor



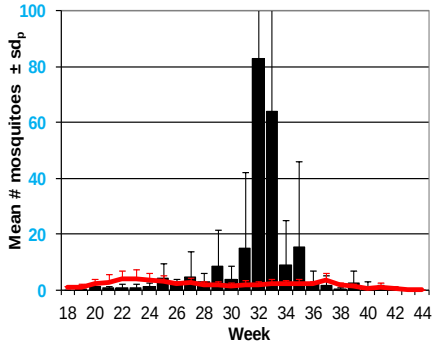
Comments

Average nighttime temperatures in the current week have fallen below 50°F throughout much of the state. Those species not cold-tolerant are effectively done for the season. This year, *Aedes vexans* showed early to mid-season abundances above historical values as populations responded to the second wettest summer on record. Later season patterns indicated local decreases in populations below historical values as precipitation stopped.

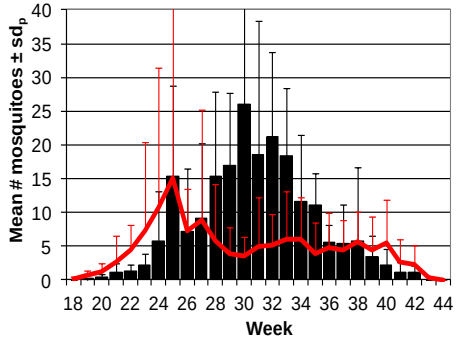
Note axis change for North Central Rural, to better illustrate the number of times populations have exceeded historical values.

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

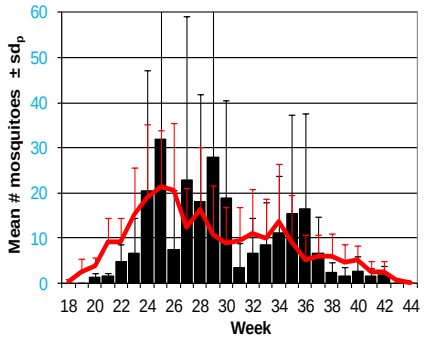
Agricultural



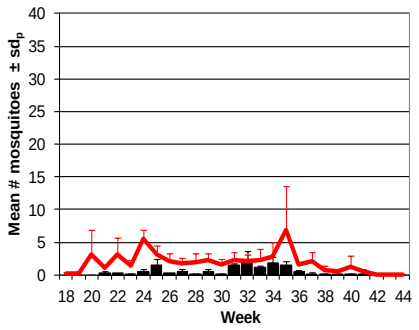
Coastal



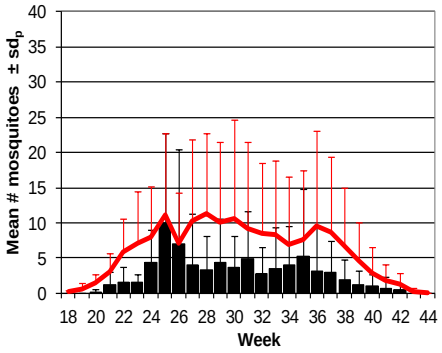
Delaware Bayshore



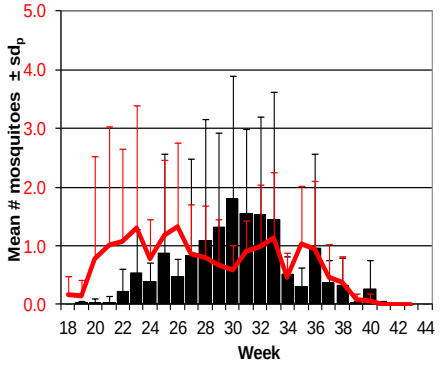
Delaware River Basin



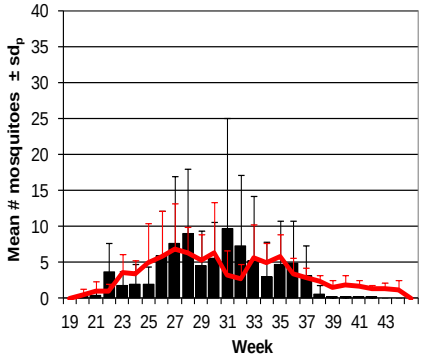
New York Metro



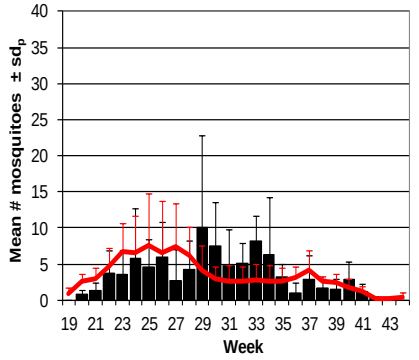
North Central Rural



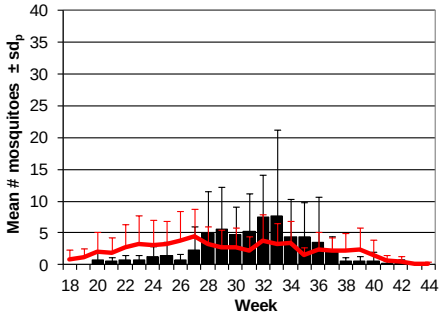
Northwestern Rural



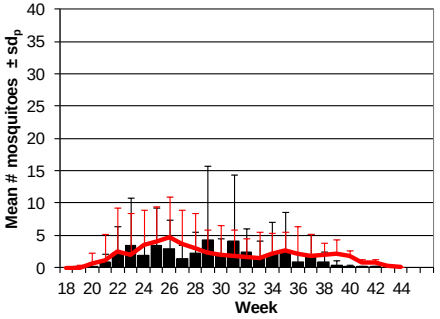
Philadelphia Metro



Pinelands



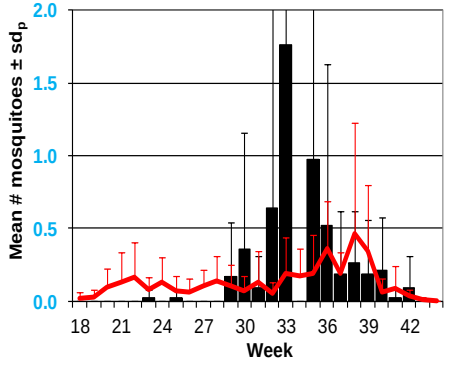
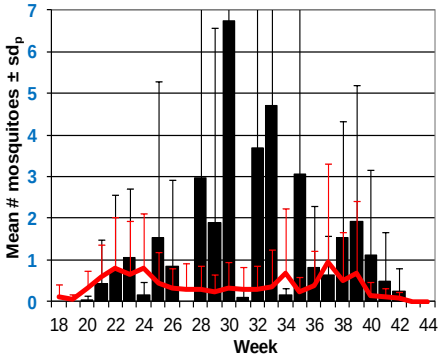
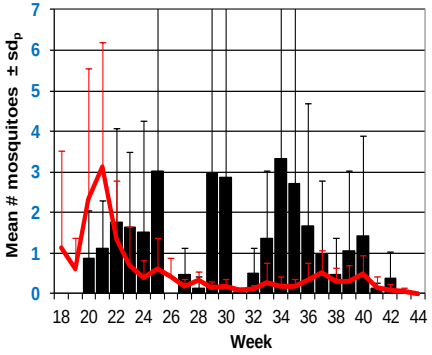
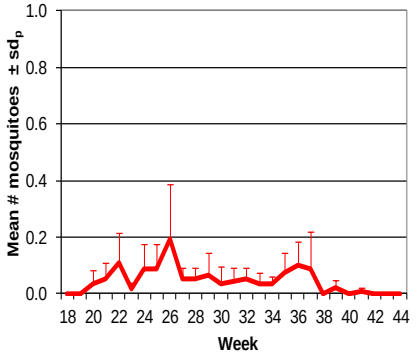
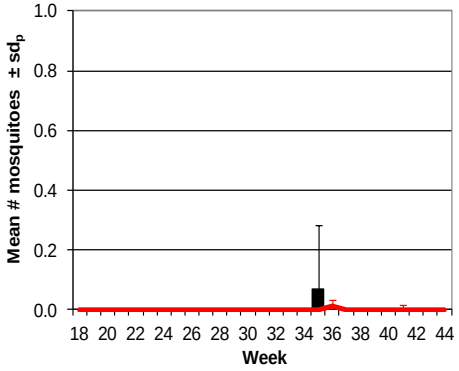
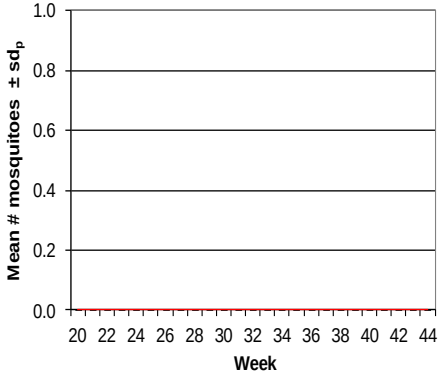
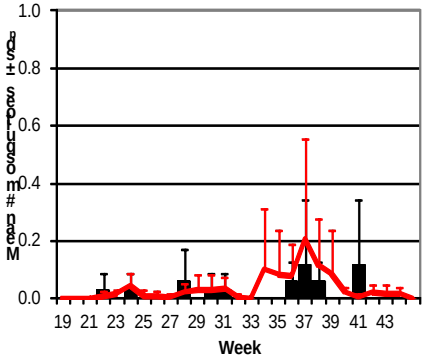
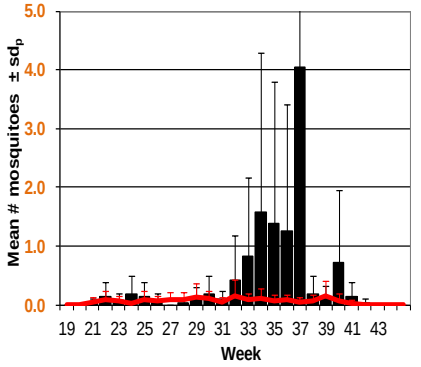
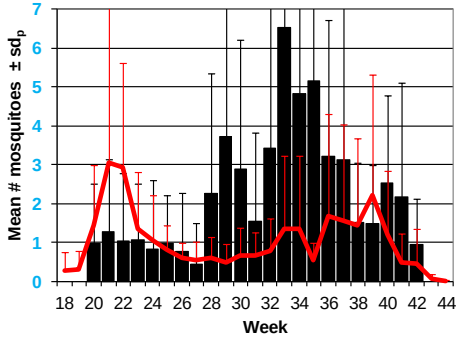
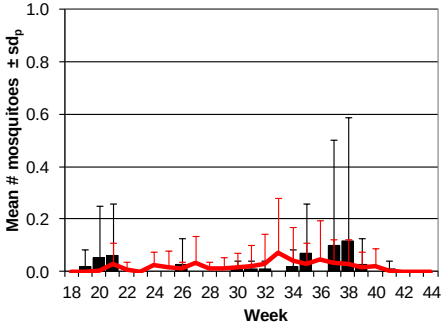
Suburban Corridor



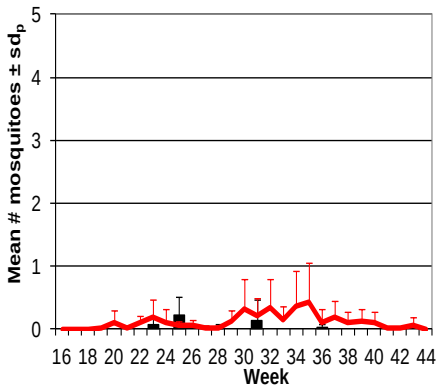
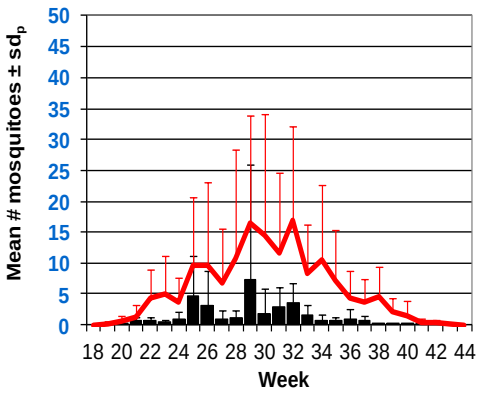
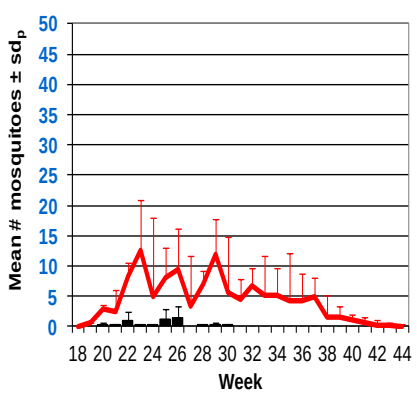
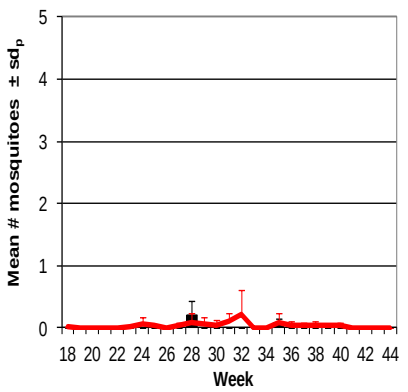
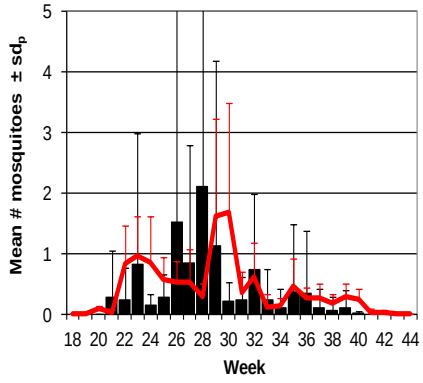
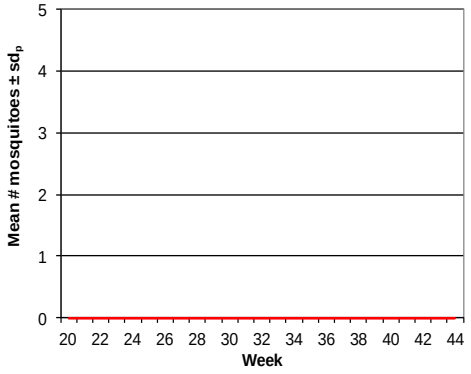
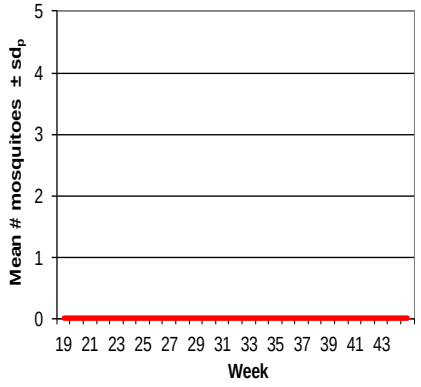
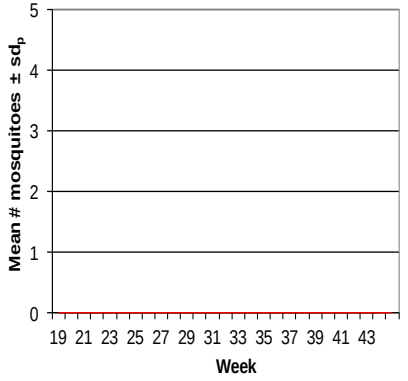
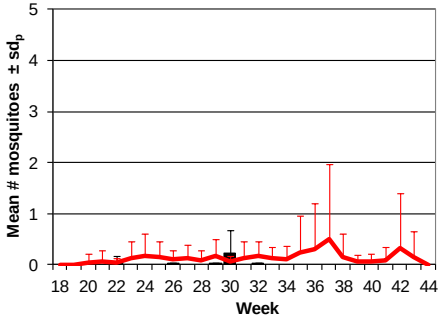
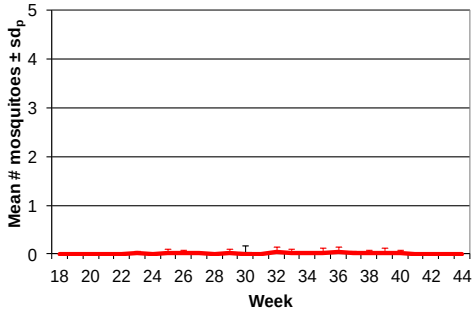
Comments

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 varied throughout the state this past season, with several regions experiencing lowered numbers early in the season and peaking with above average numbers mid-season (eg, Agricultural and Coastal). Most reduced populations appear to be in the New York Metropolitan region, but this also varied by location, with some places (eg Union County) having significant numbers. West Nile virus was moderately active in the state.

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. This year *Cs. melanura* populations were often above historical values in the New Jersey light traps in contrast to some traditional resting box sites. Elsewhere, resting box numbers were in congruence with light trap patterns. This was in conjunction with a relatively active EEE season, where positive pools were found not only in *Cs. melanura*, but other species as well. Mid-season rainfall likely contributed toward the survival of the second generation which in turn contributed toward the amplification of virus.	

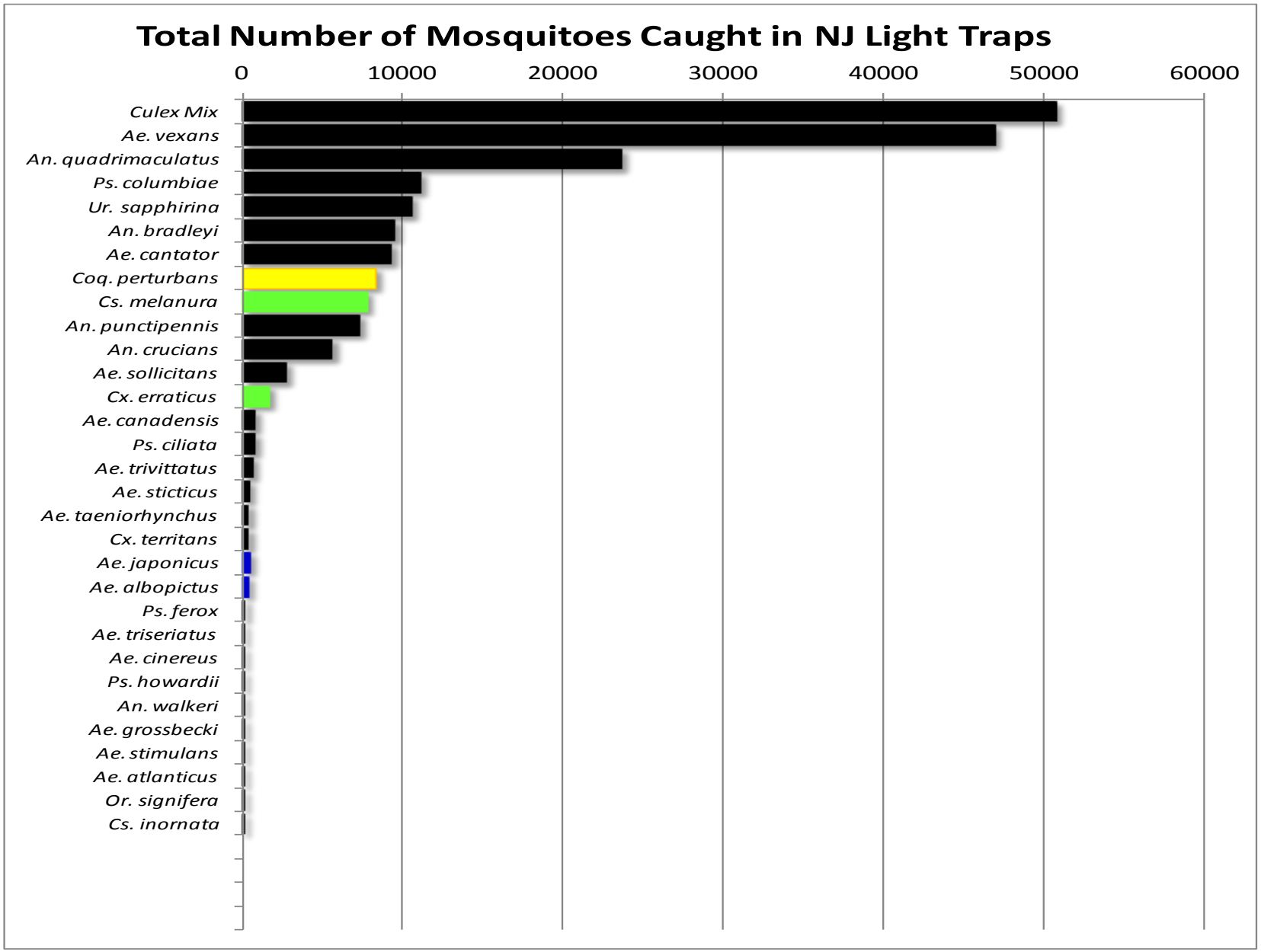
Aedes sollicitans - Salt Floodwater Species
Multivoltine Aedine (*Ae. sollicitans* Type)

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. This year, *Ae. sollicitans* populations in the Coastal and Delaware Bayshore were exceptionally low in comparison to historical levels. The New York Metropolitan region showed near normal populations.	

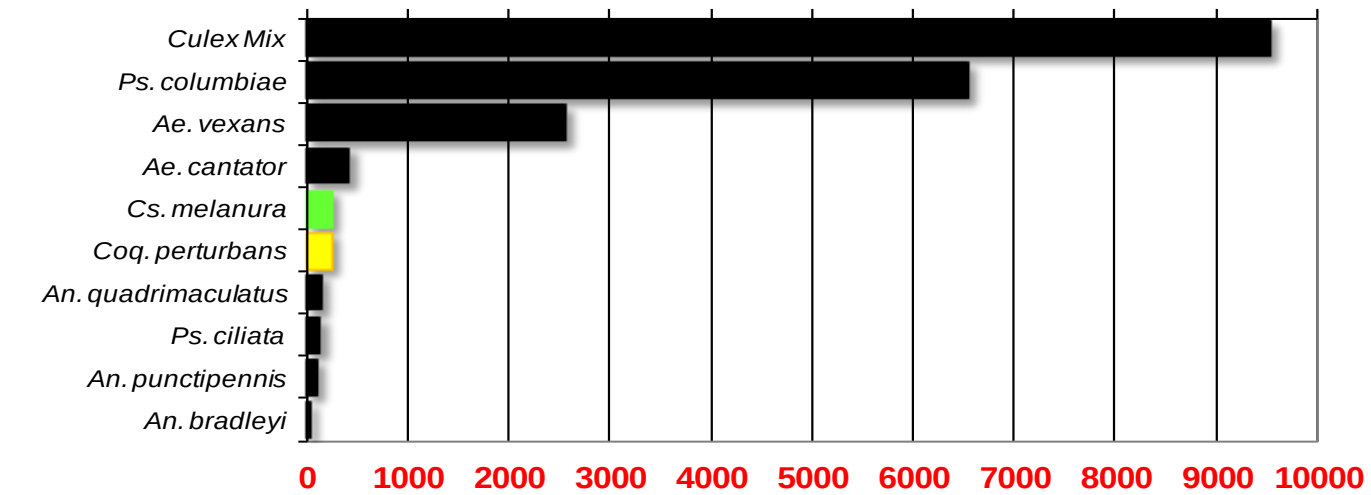
WNV *EEE*

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

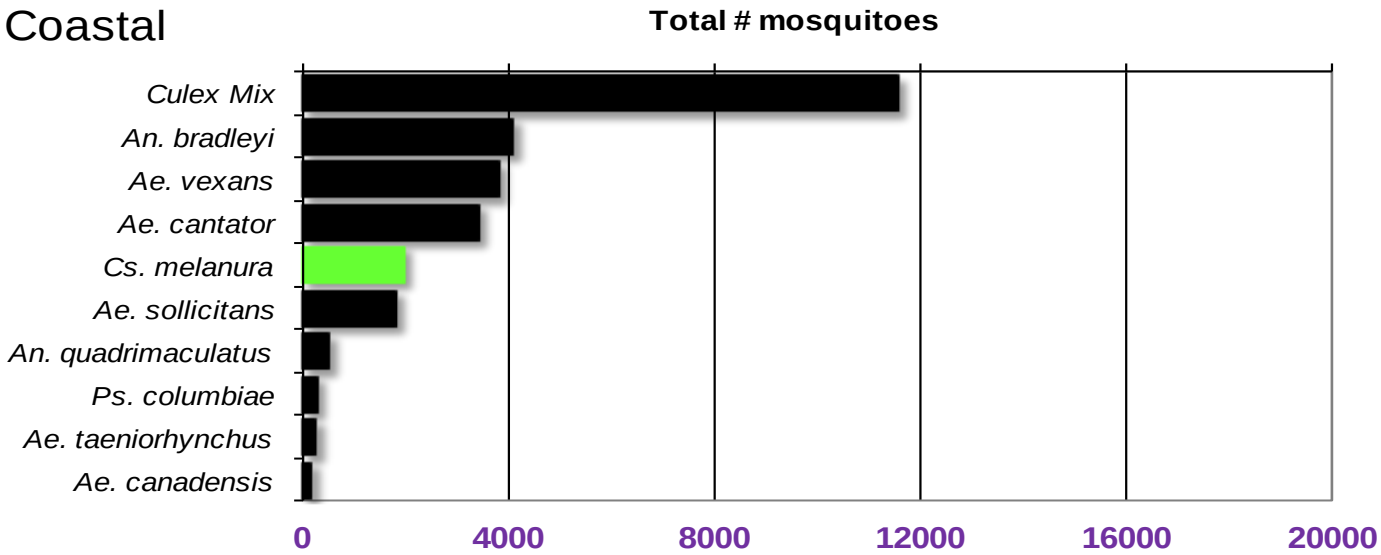
Note: In early season when fewer species are caught, graphs may show less than ten species/region or 25 statewide.

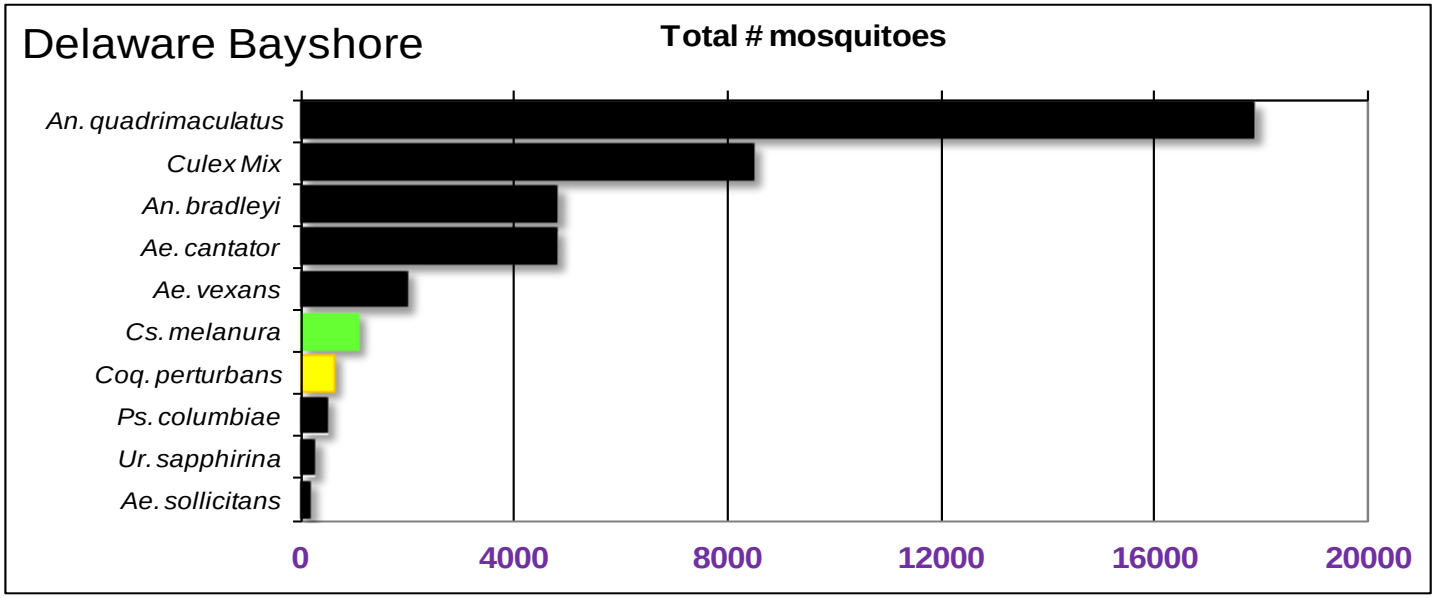


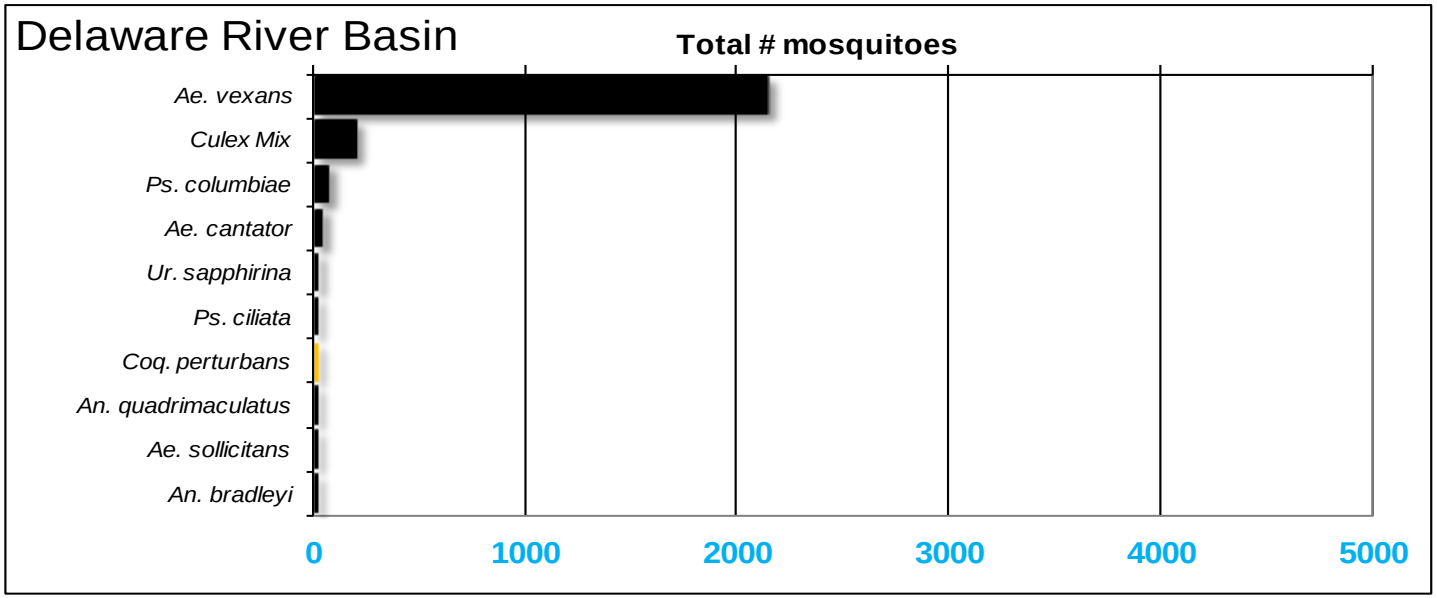
Agricultural

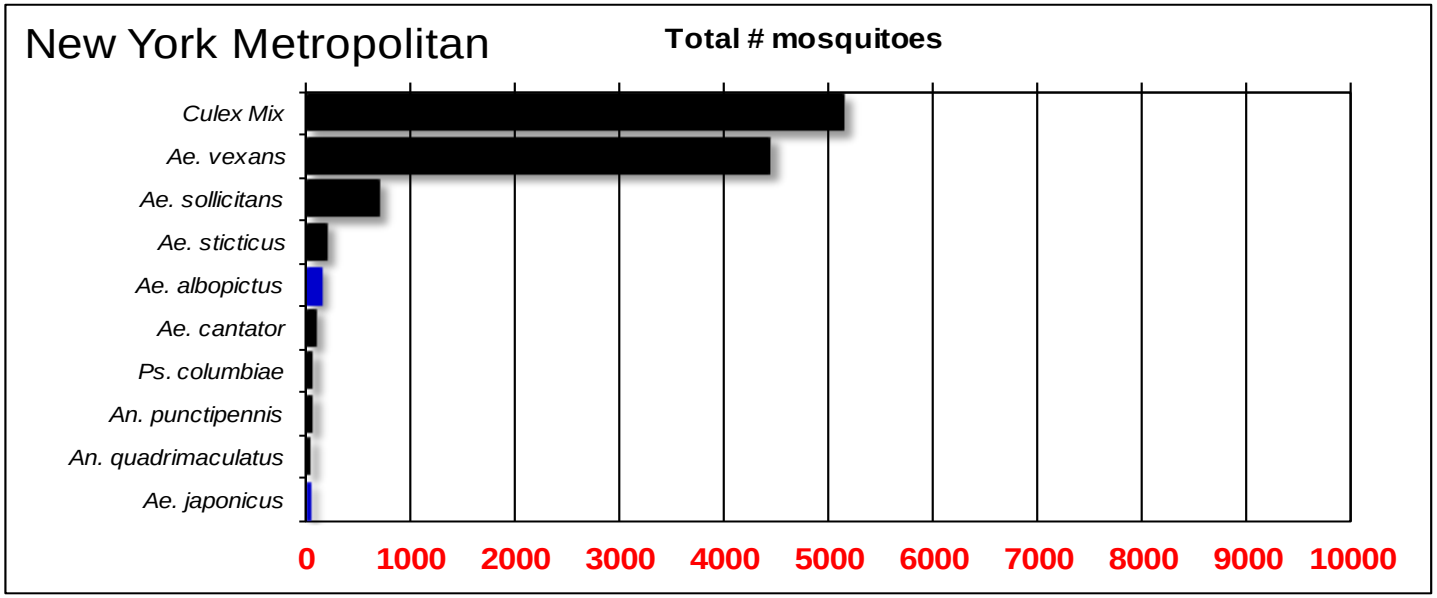


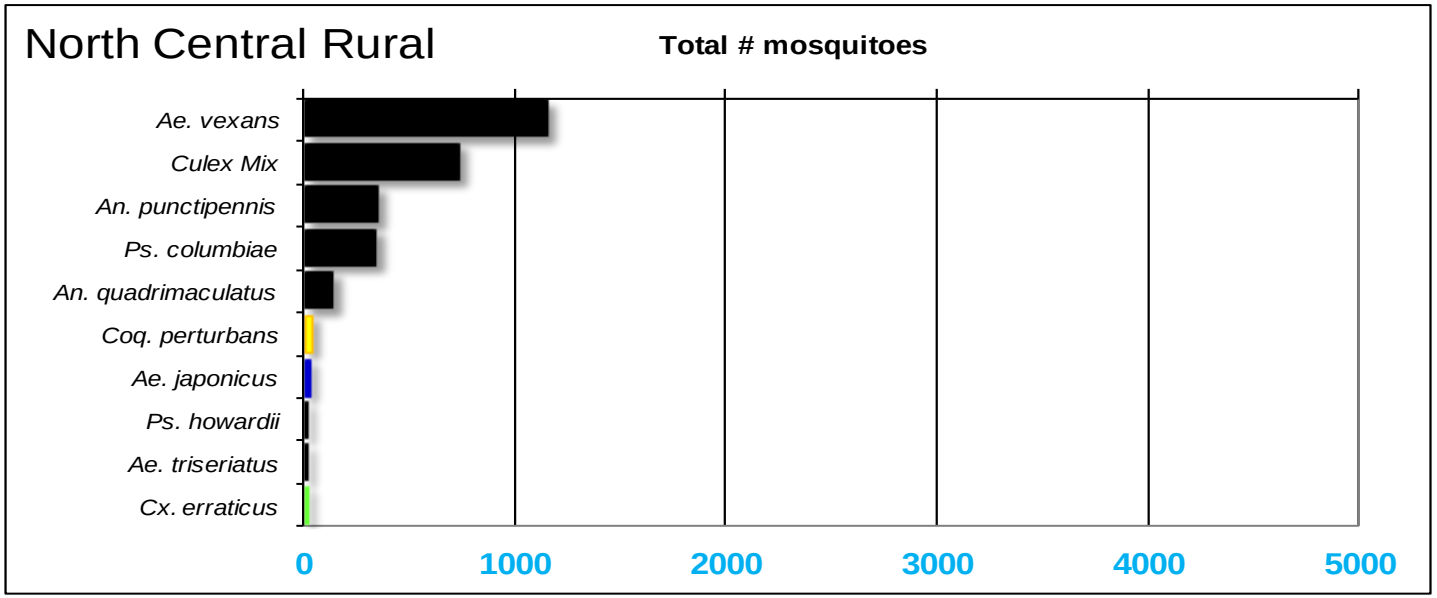
Coastal

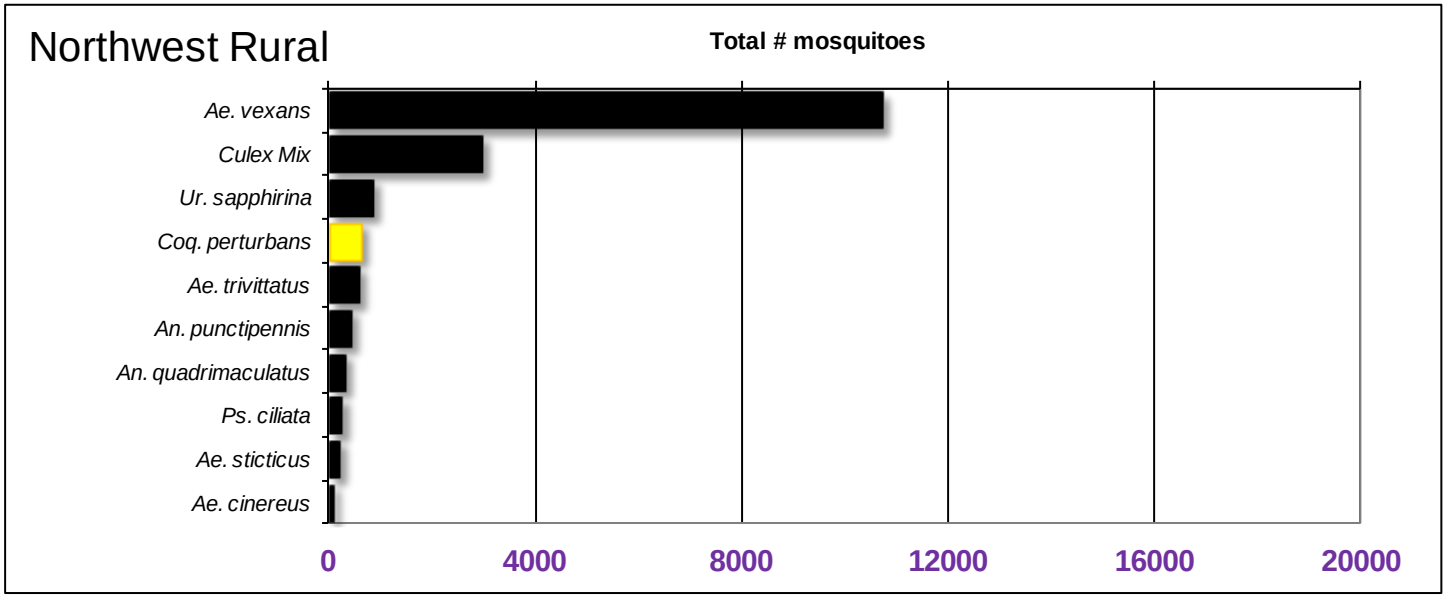


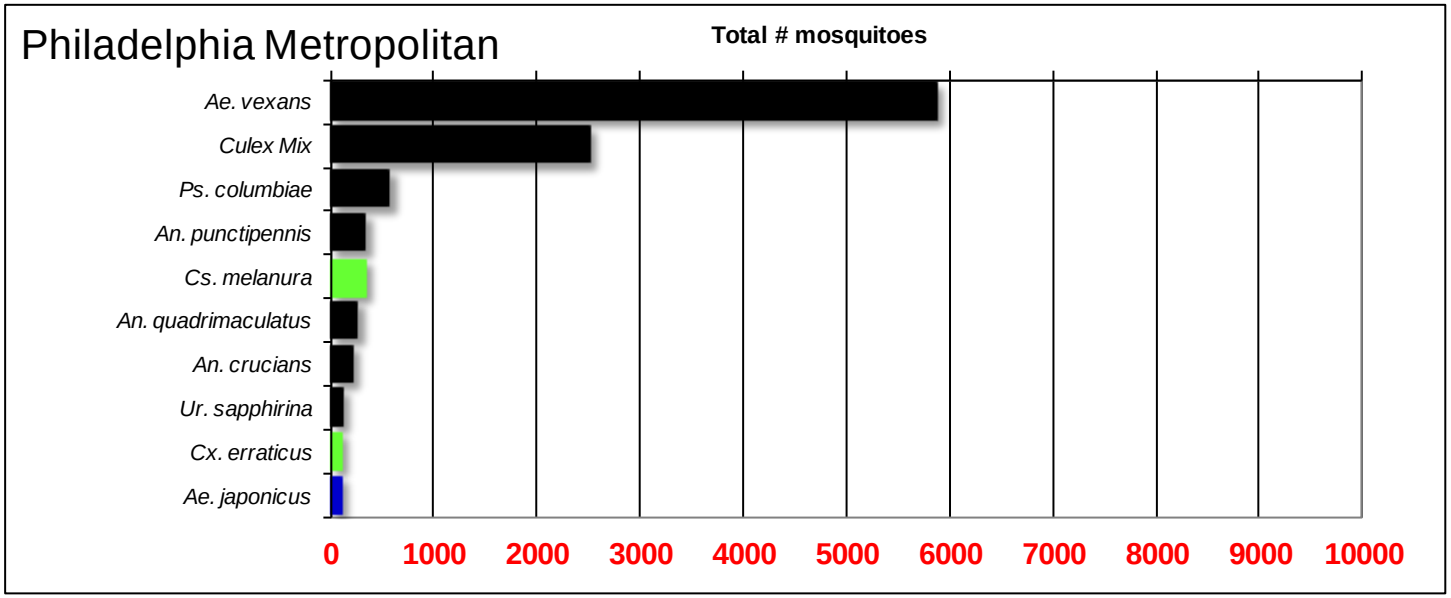

Delaware Bayshore
Total # mosquitoes
An. quadrimaculatus
Culex Mix
An. bradleyi
Ae. cantator
Ae. vexans
Cs. melanura
Coq. perturbans
Ps. columbiae
Ur. sapphirina
Ae. sollicitans
0
4000
8000
12000
16000
20000

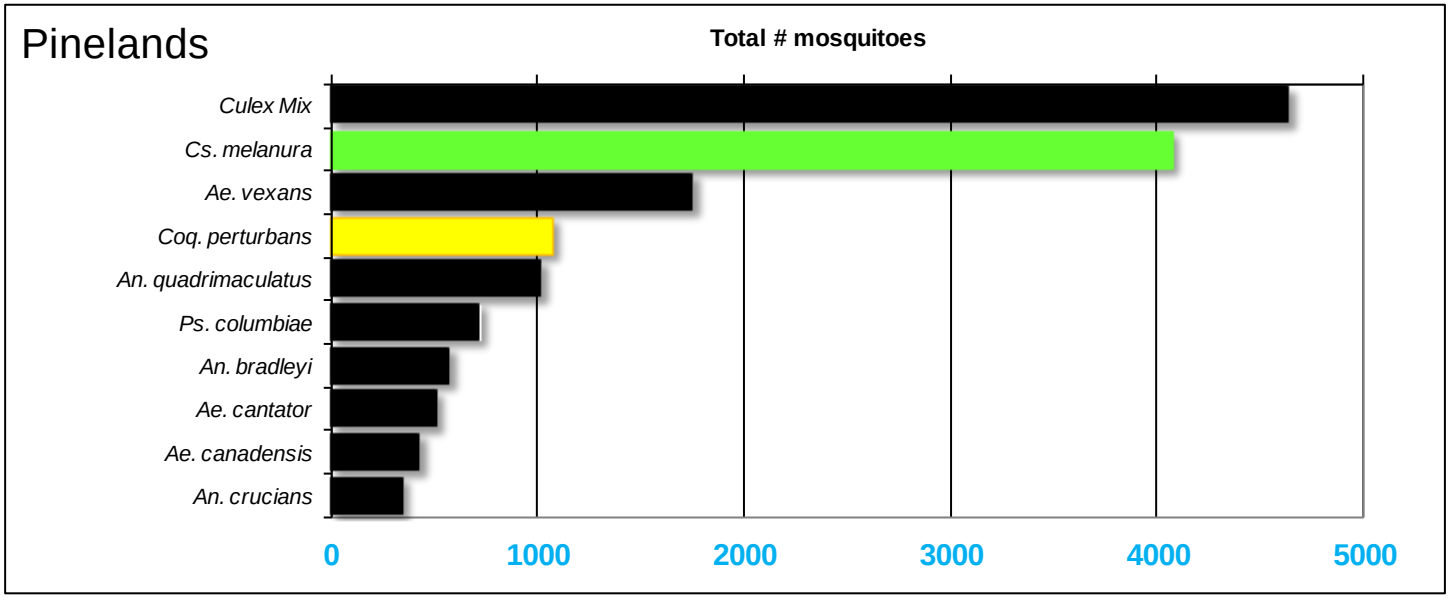

Delaware River Basin
Total # mosquitoes
Ae. vexans
Culex Mix
Ps. columbiae
Ae. cantator
Ur. sapphirina
Ps. ciliata
Coq. perturbans
An. quadrimaculatus
Ae. sollicitans
An. bradleyi
0
1000
2000
3000
4000
5000

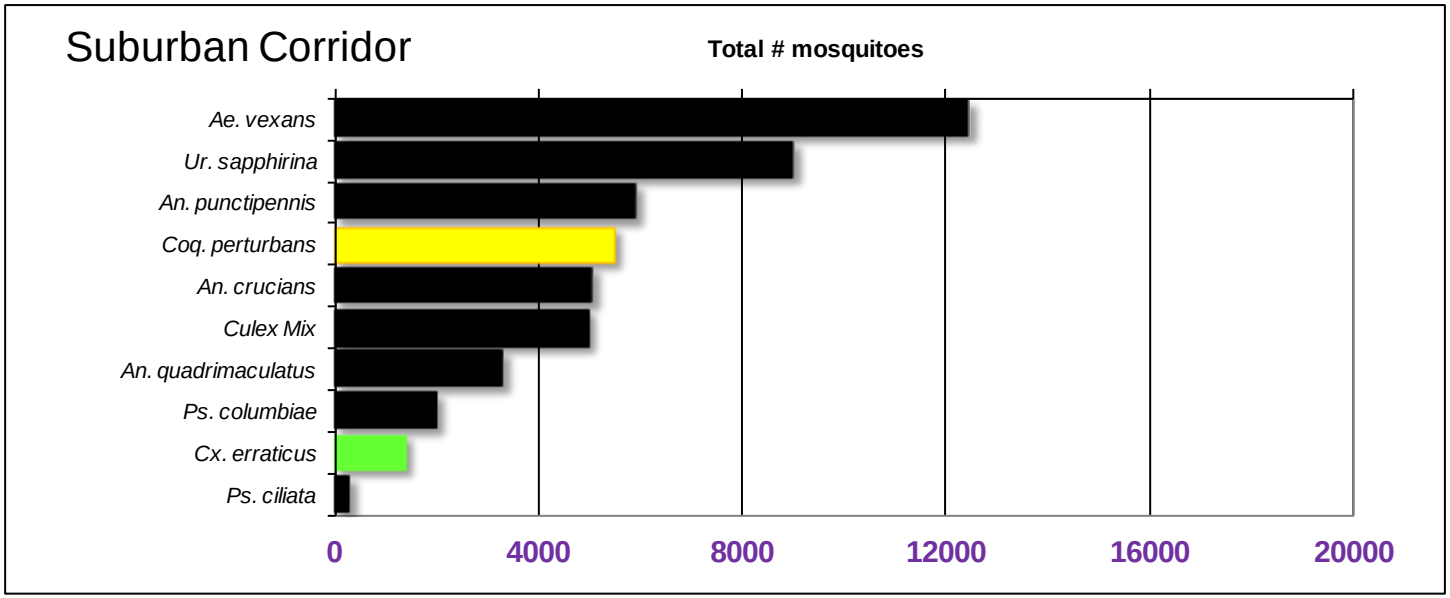

New York Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. sollicitans
Ae. sticticus
Ae. albopictus
Ae. cantator
Ps. columbiae
An. punctipennis
An. quadrimaculatus
Ae. japonicus
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


North Central Rural
Total # mosquitoes
Ae. vexans
Culex Mix
An. punctipennis
Ps. columbiae
An. quadrimaculatus
Coq. perturbans
Ae. japonicus
Ps. howardii
Ae. triseriatus
Cx. erraticus
0
1000
2000
3000
4000
5000


Northwest Rural
Total # mosquitoes
Ae. vexans
Culex Mix
Ur. sapphirina
Coq. perturbans
Ae. trivittatus
An. punctipennis
An. quadrimaculatus
Ps. ciliata
Ae. sticticus
Ae. cinereus
0
4000
8000
12000
16000
20000


Philadelphia Metropolitan
Total # mosquitoes
Ae. vexans
Culex Mix
Ps. columbiae
An. punctipennis
Cs. melanura
An. quadrimaculatus
An. crucians
Ur. sapphirina
Cx. erraticus
Ae. japonicus
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


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


Suburban Corridor
Total # mosquitoes
Ae. vexans
Ur. sapphirina
An. punctipennis
Coq. perturbans
An. crucians
Culex Mix
An. quadrimaculatus
Ps. columbiae
Cx. erraticus
Ps. ciliata
0
4000
8000
12000
16000
20000