RUTGERS
New Jersey Agricultural Experiment Station

NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report for 23 August to 29 August 2009, CDC Weeks 34

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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.

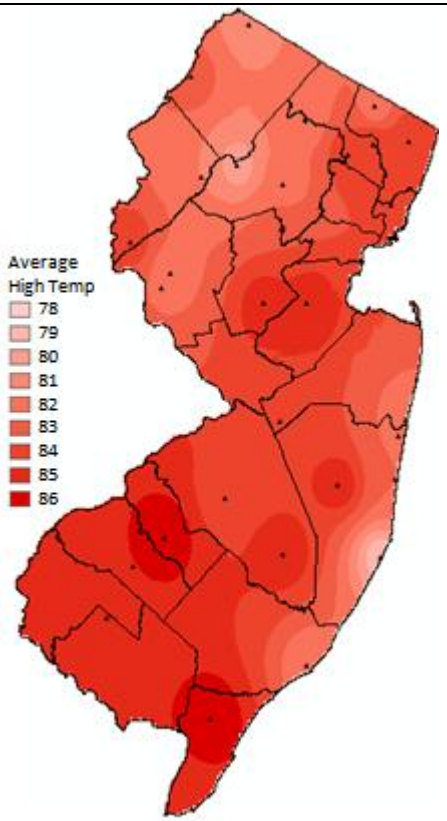
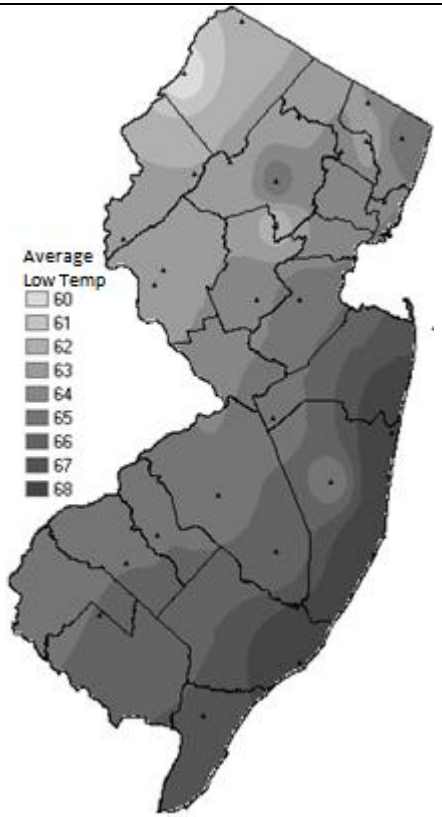
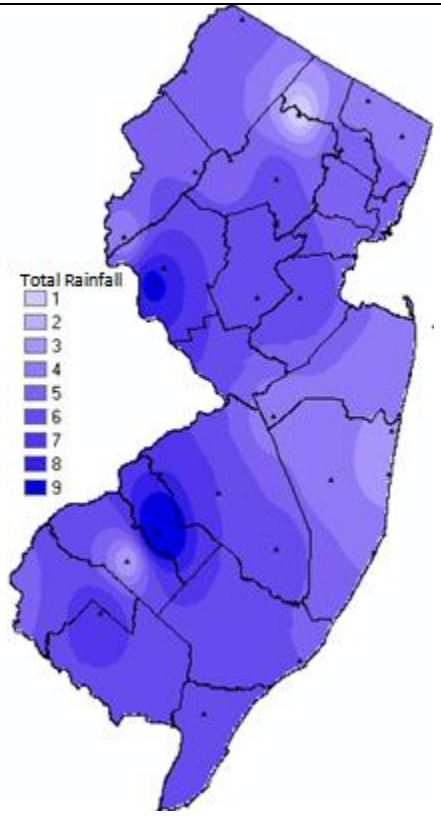
Summary table – Week 34

	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	1.17	2.11	0	0.98	8.16	0	0.00	0.14	0	0.00	0.66	0
Coastal	4.27	1.98	3	2.90	2.48	1	0.00	0.19	0	3.76	24.52	0
Delaware Bayshore	0.00	2.10	0	0.00	41.96	0	0.00	2.74	0	0.00	11.10	0
Delaware River Basin	0.00	7.99	0	0.00	10.50	0	0.00	0.34	0	0.00	0.01	0
New York Metro	2.77	3.31	0	3.77	6.12	0	0.00	0.14	0	0.03	0.65	0
North Central Rural	0.02	0.50	0	0.39	0.40	0	0.00	0.03	0	0.00	0.00	0
Northwest Rural	5.97	6.02	0	8.86	2.11	4	0.23	0.06	4	0.00	0.00	0
Philadelphia Metro	5.05	6.60	0	1.76	3.13	0	0.00	0.23	0	0.00	0.00	0
Pinelands	0.57	1.92	0	1.78	2.17	0	0.06	0.37	0	0.01	0.28	0
Suburban Corridor	3.29	3.47	0	2.01	2.40	0	0.01	0.32	0	0.02	0.02	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.

State Summary: *Aedes vexans* showed increased activity over historical trends in the Coastal area and *Culex* species also increased in the Coastal region as well as the Northwestern Rural. *Coquillettidia perturbans* showed significant activity in the Northwestern Rural: this species is likely at the end of its season, however.

Climate Factors

August Average High Temperature	August Average Low Temperature	August Total Precipitation
		

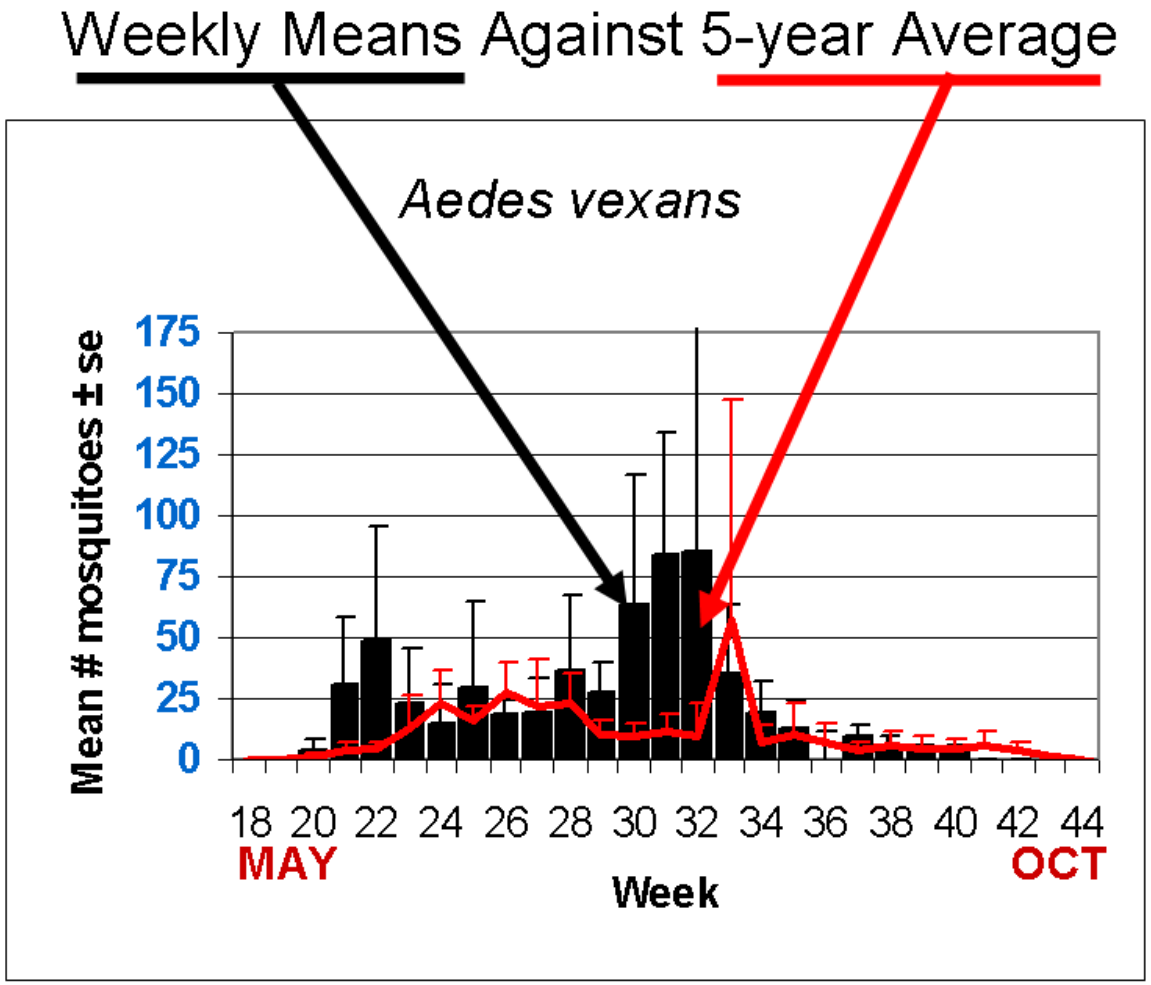
The three figures show the interpolation of average maximum and minimum temperature and total precipitation for the month of August in New Jersey. Data points are from 35 weather stations maintained through the New Jersey Weather & Climate Network and the State Climatologist. Interpolation between points were performed through ArcMap 9.2.

For the month of August, average high temperatures were highest through the suburban corridor and parts of Camden, Gloucester and Cape May counties. Average low temperatures were again highest along the coastal region. The western portion of the state in Camden and Hunterdon counties experienced higher rainfall. In general, it was warmest in central New Jersey, Camden and Cape May counties during the day, warmer along the coast at night and wetter on the western portions of the state.

NJ Weather & Climate NETWORK

ONJSC at Rutgers University

The Species Graphs: The species graph pages include a graph with two plots for each of the ten regions defined on the first page (Agricultural, Coastal, Delaware Bayshore, Delaware River, New York Metro, North-Central, Northwestern, Philadelphia Metro, Pinelands, and Suburban Corridor). Below is an example of one graph from one species within one region. The bar plot show the average number of mosquitoes per trap within the region (weekly means) and line plots show the historical trend as the average number of mosquitoes from the previous 5 years (5-year average). In general, historical data are running means from the previous 5 years, but on occasion, will include data from fewer years. Adjustments are made to account for year discrepancies. Data for this week are from Atlantic, Bergen, Camden, Monmouth, Morris, Ocean, Somerset, Sussex and Warren counties. Note: County data is sent in at a variety of times during the week.



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

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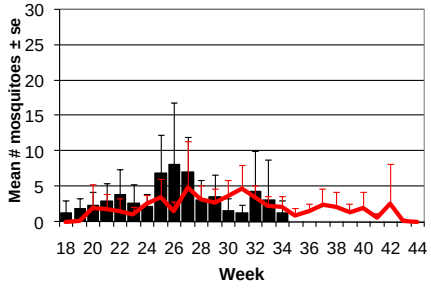
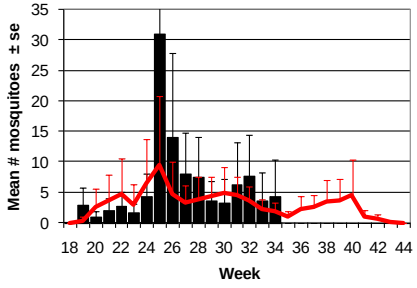
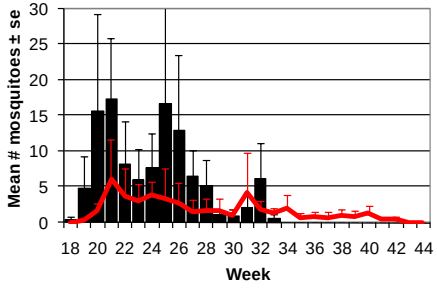
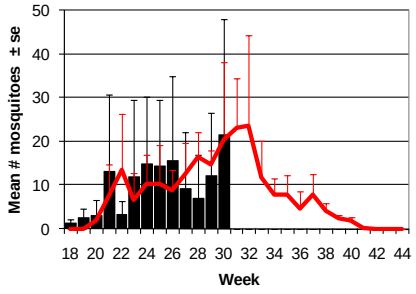
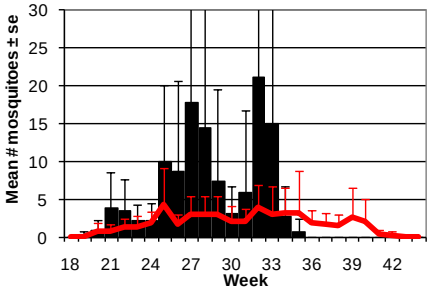
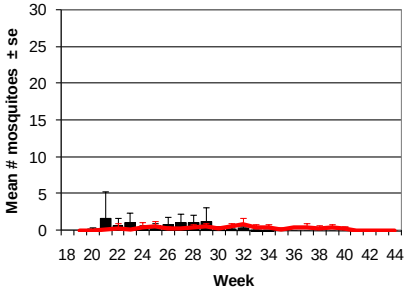
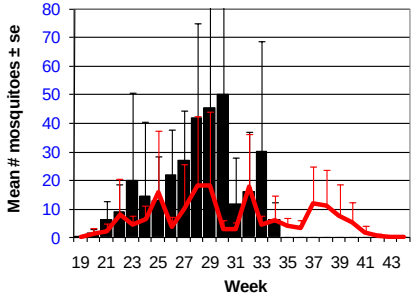
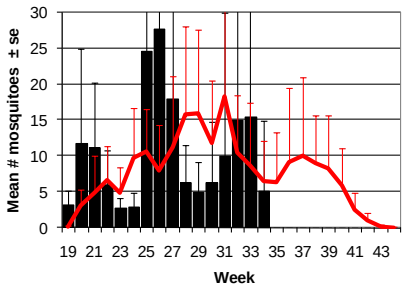
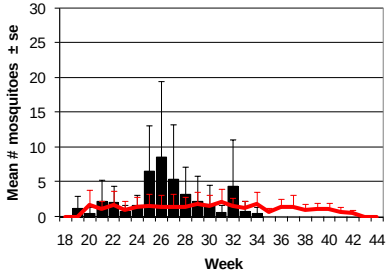
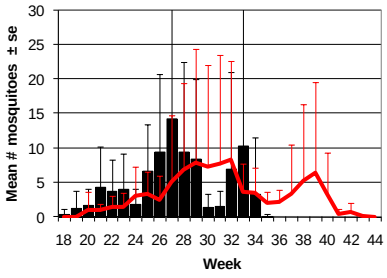
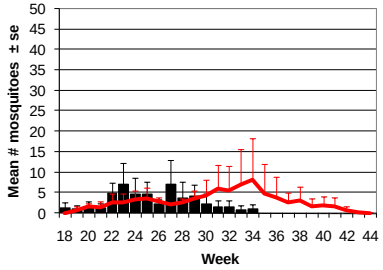
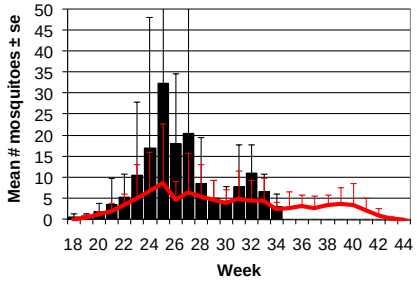
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes vexans* abundance has increased substantially only in the Coastal region. Recent rainfall events may provide habitat, but August weather has been exceptionally cool this year (see soil temps: http://climate.rutgers.edu/njwxnet/mapviewer.php?m=soiltemperature1&t=cur), taking longer for development to occur. Water temperature at 25C, about 77F, has been shown to be optimal for larval development (Trpis and Shemanchuk 1970 Effects of constant temperature on larval development of *Aedes vexans*. Canadian Entomologist, Aug: 1048-1051.)	

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

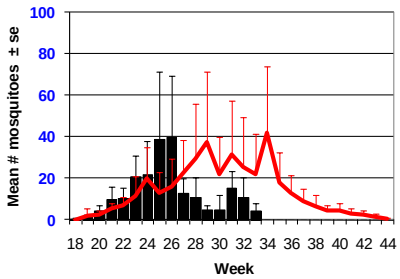
Agricultural



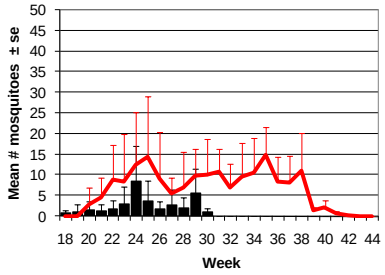
Coastal



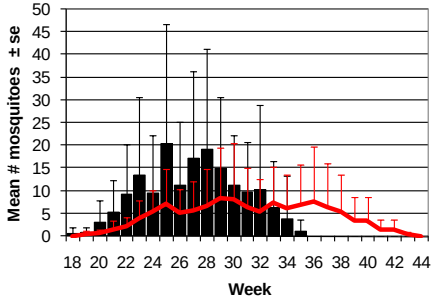
Delaware Bayshore



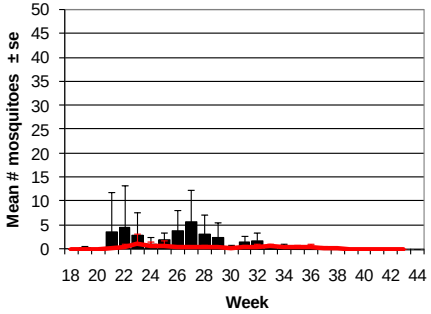
Delaware River Basin



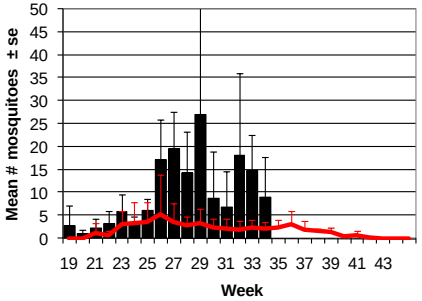
New York Metro



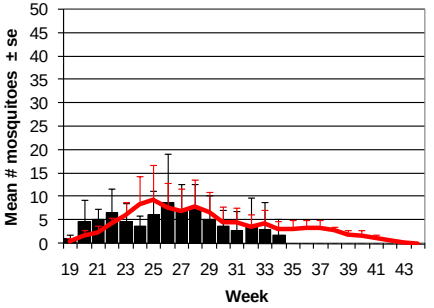
North Central Rural



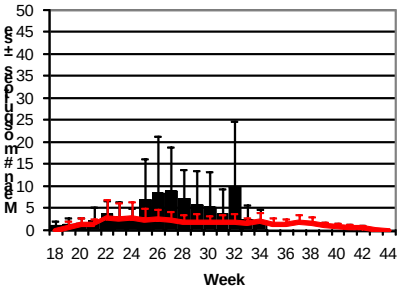
Northwestern Rural



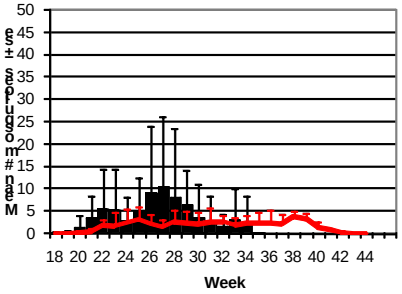
Philadelphia Metro



Pinelands



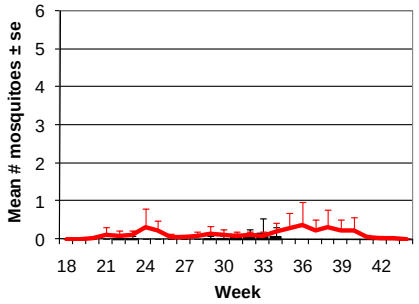
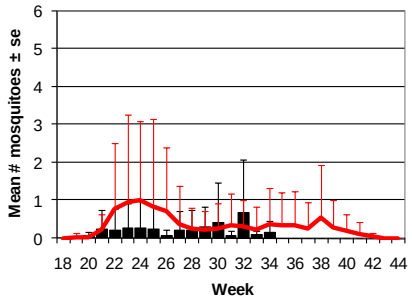
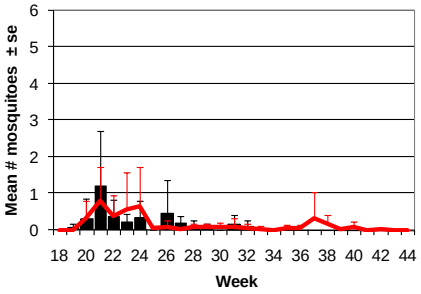
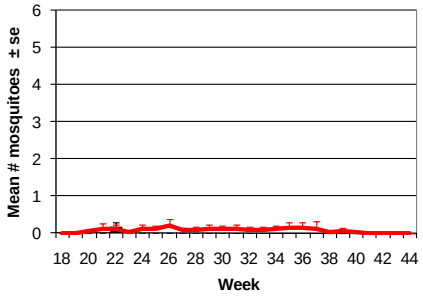
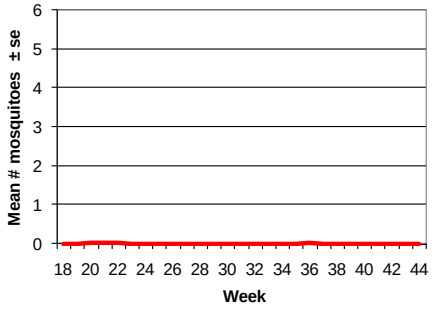
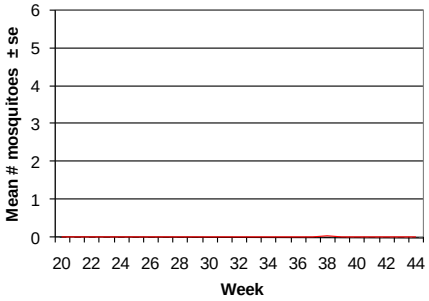
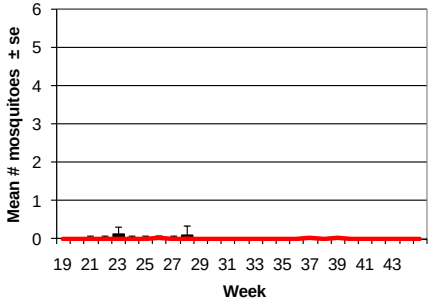
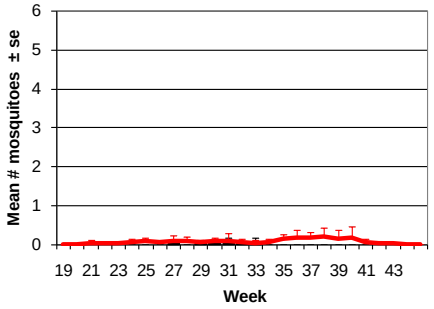
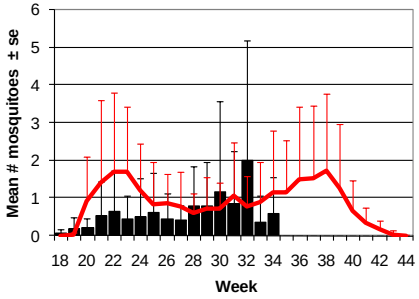
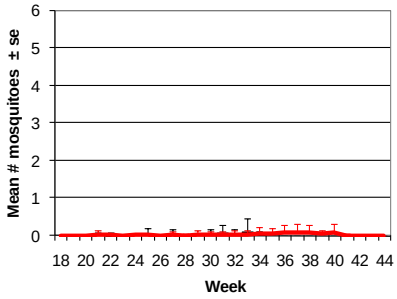
Suburban Corridor



Comments

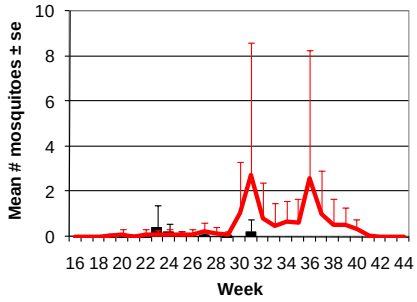
Culex populations are starting to decrease from seasonal highs as females begin to search out hibernacula to overwinter in. These shelters include caves, tunnels, bunkers and basements: structures that provide a relatively constant temperature and humidity. Females will have mated prior to entering hibernacula.

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

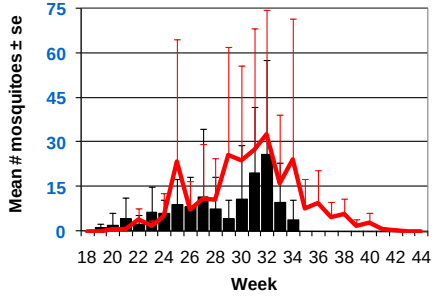
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		Populations of *Culiseta melanura*, the enzootic ornithophilic vector of eastern equine encephalitis, appeared to have been on the rise in Pineland habitat. County agencies have likely had an impact to reduce populations due to significant eastern equine encephalitis virus activity detected since last month. This virus activity is also reflective of activity seen elsewhere on the east coast, from Florida to Maine.	

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

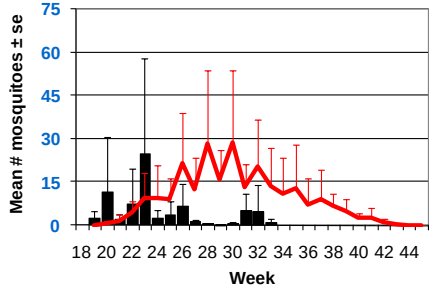
Agricultural



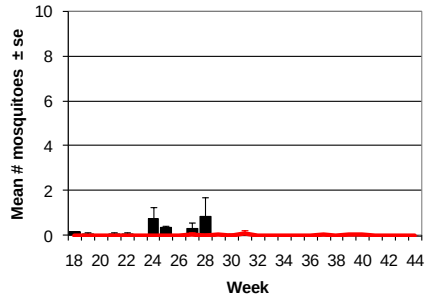
Coastal



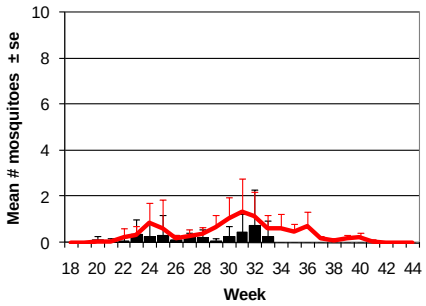
Delaware Bayshore



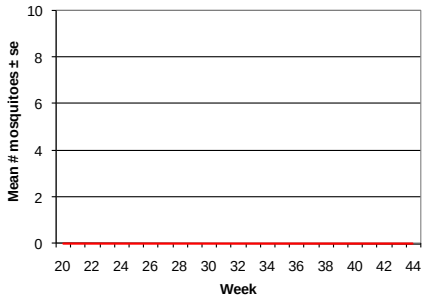
Delaware River Basin



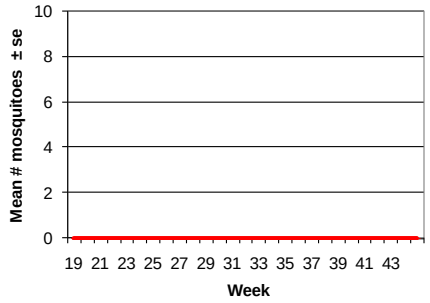
New York Metro



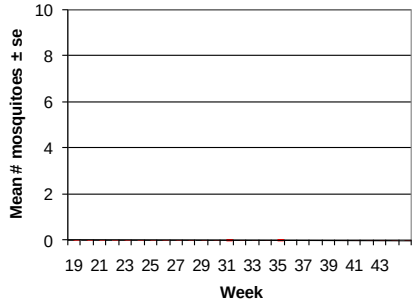
North Central Rural



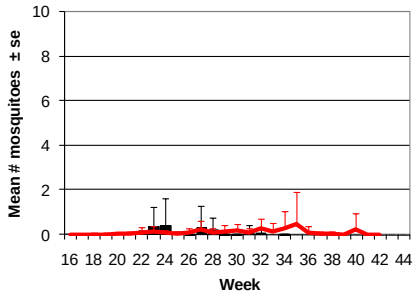
Northwestern Rural



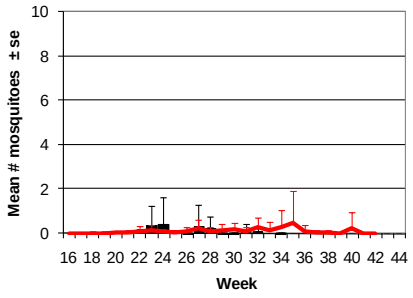
Philadelphia Metro



Pinelands



Suburban Corridor



Comments

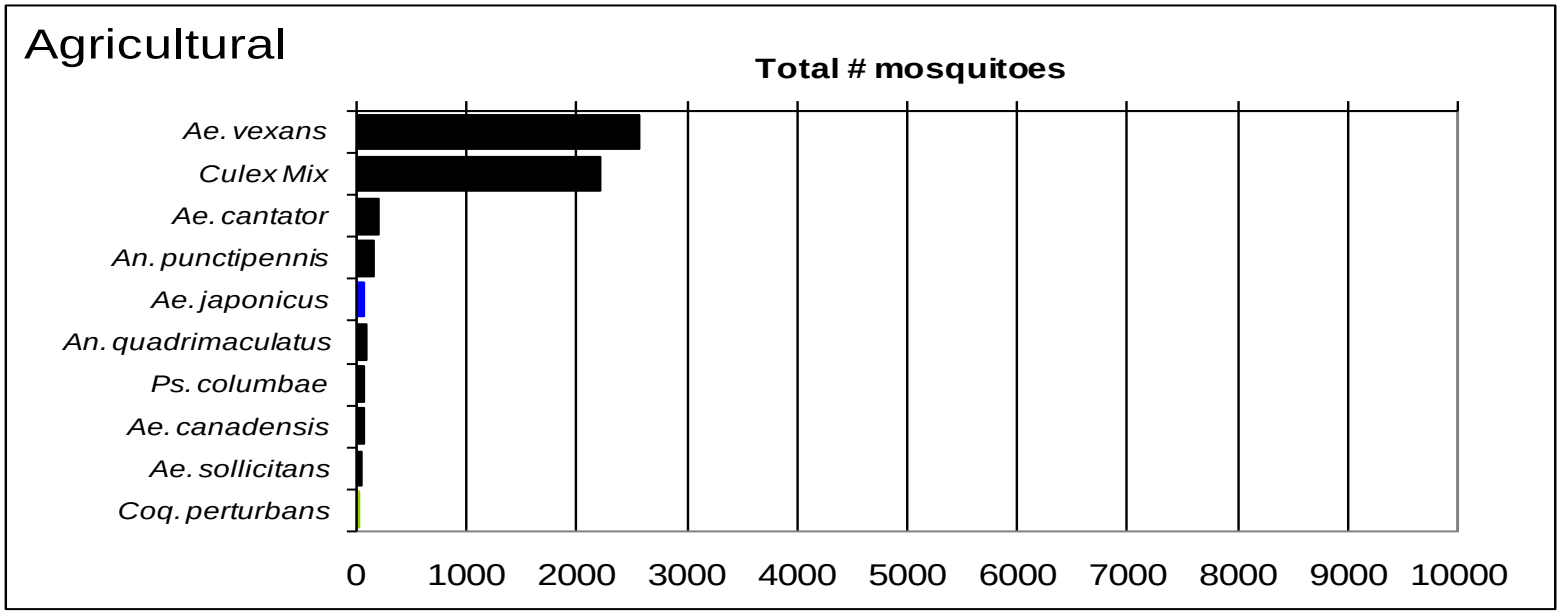
Aedes sollicitans populations appear to be decreasing from the last emergence. A final emergence should occur and should be smaller than the previous emergences. Citizen complaints, however, are likely to increase as *Aedes sollicitans* changes feeding times that coincides with human activity.

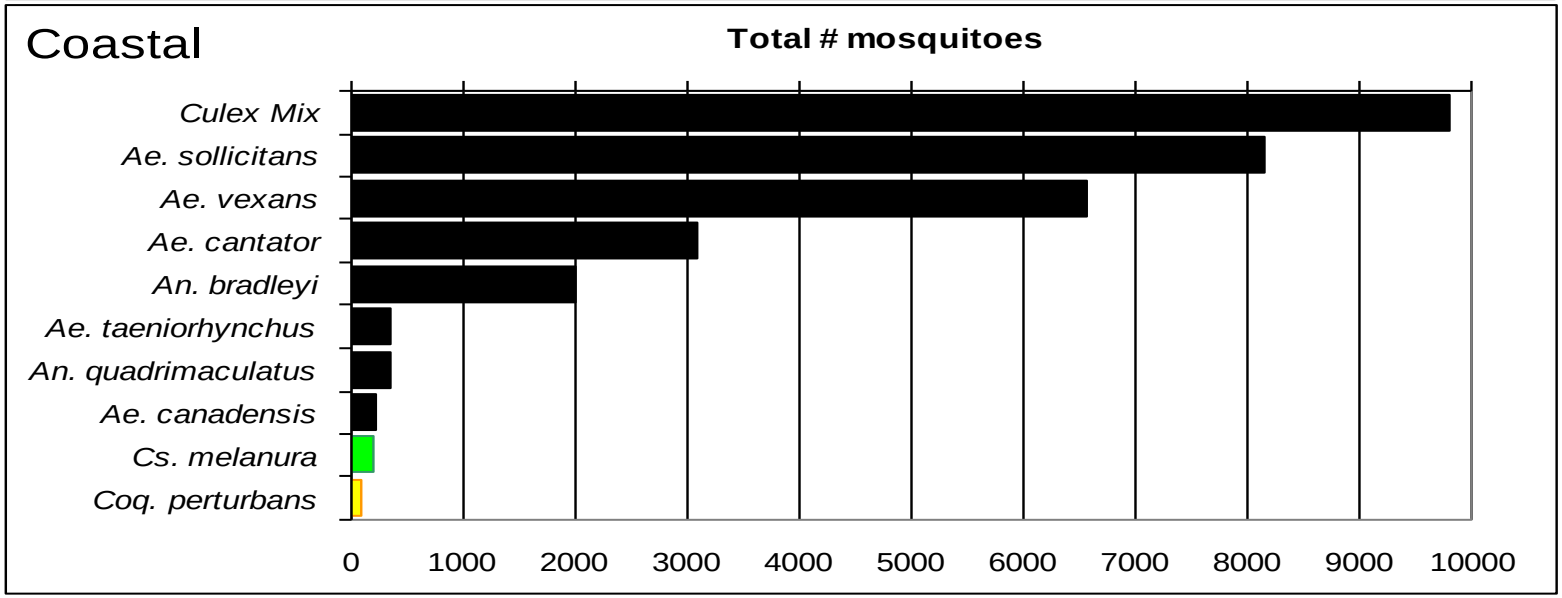
Next Full Moon: 4 September

WNV *EEE*

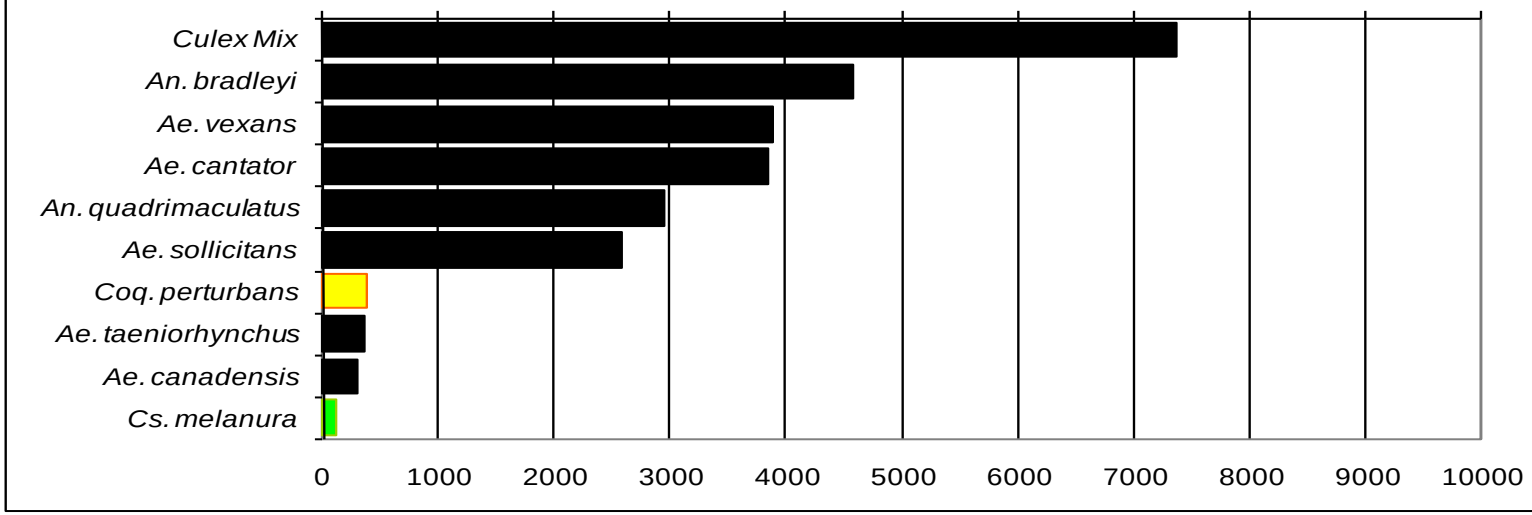
Top Ten Mosquito Species/Region - *Ae. albopictus,* *Ae. japonicus (invasives);* *Cs. melanura or Cx. erraticus* *Coq. perturbans*

Note: In early season when fewer species are caught, graphs may show less than ten species listed.

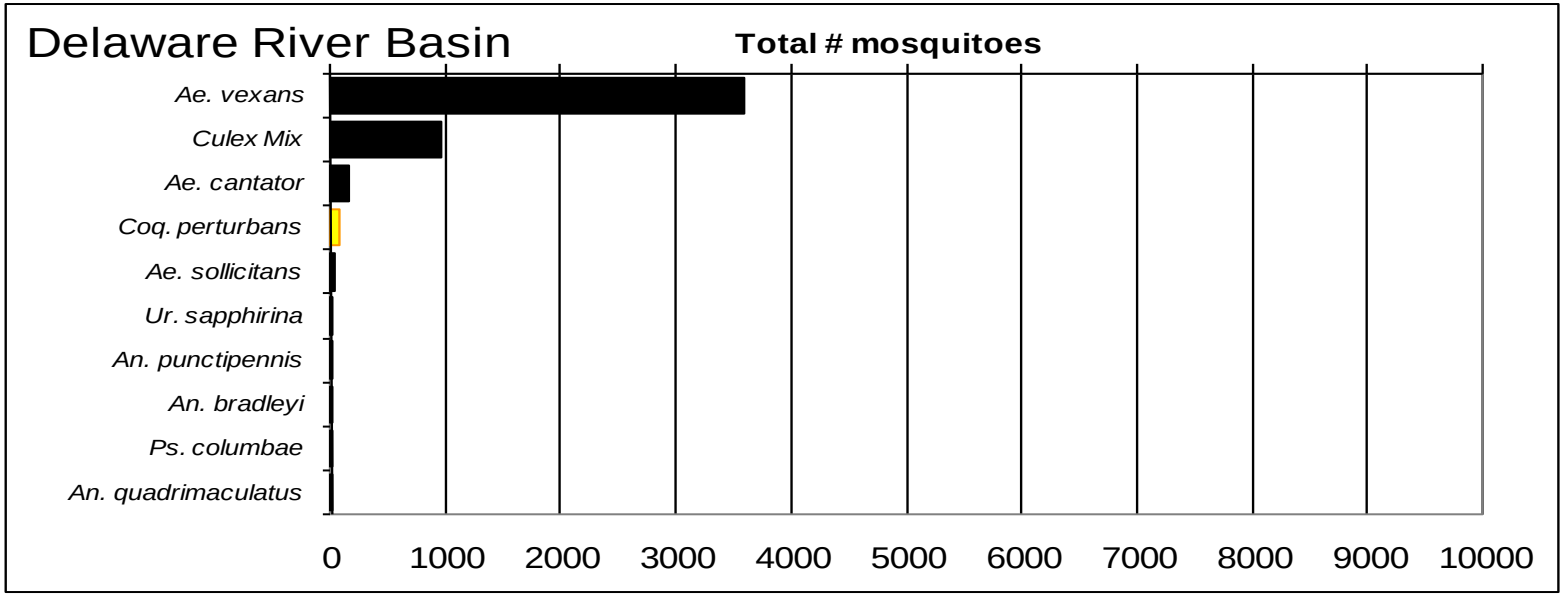


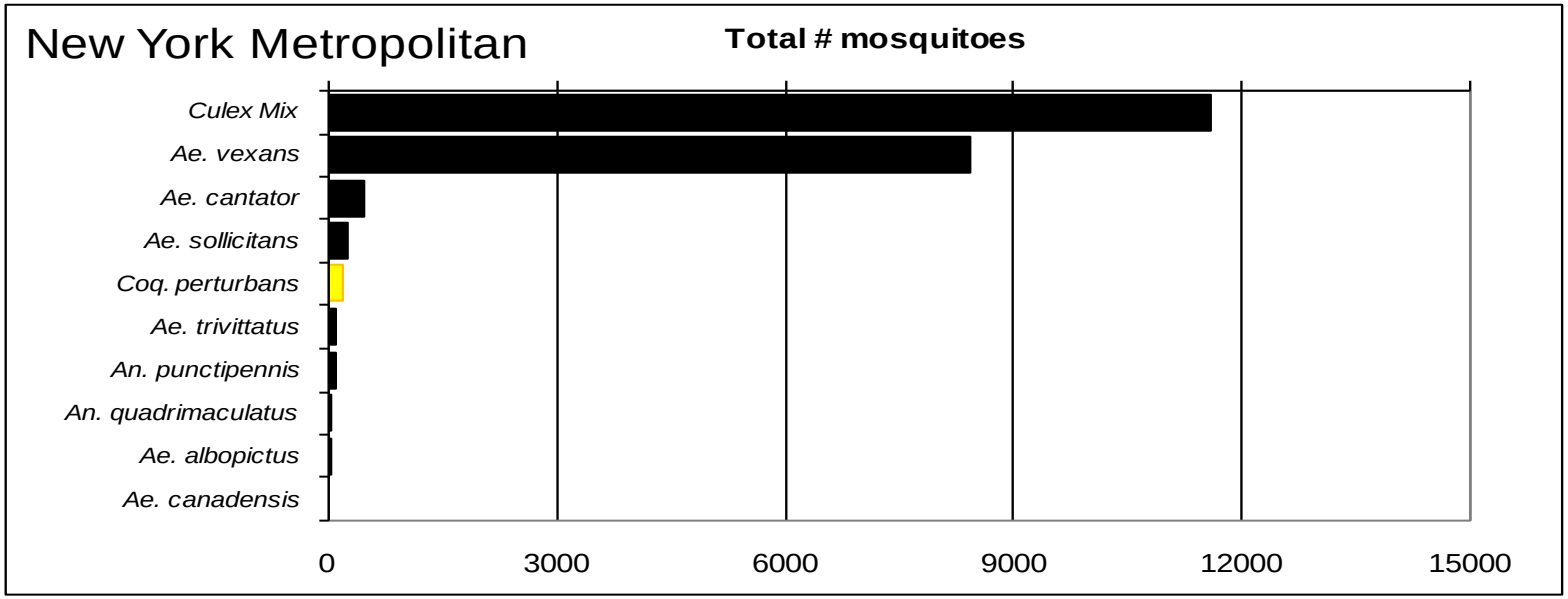


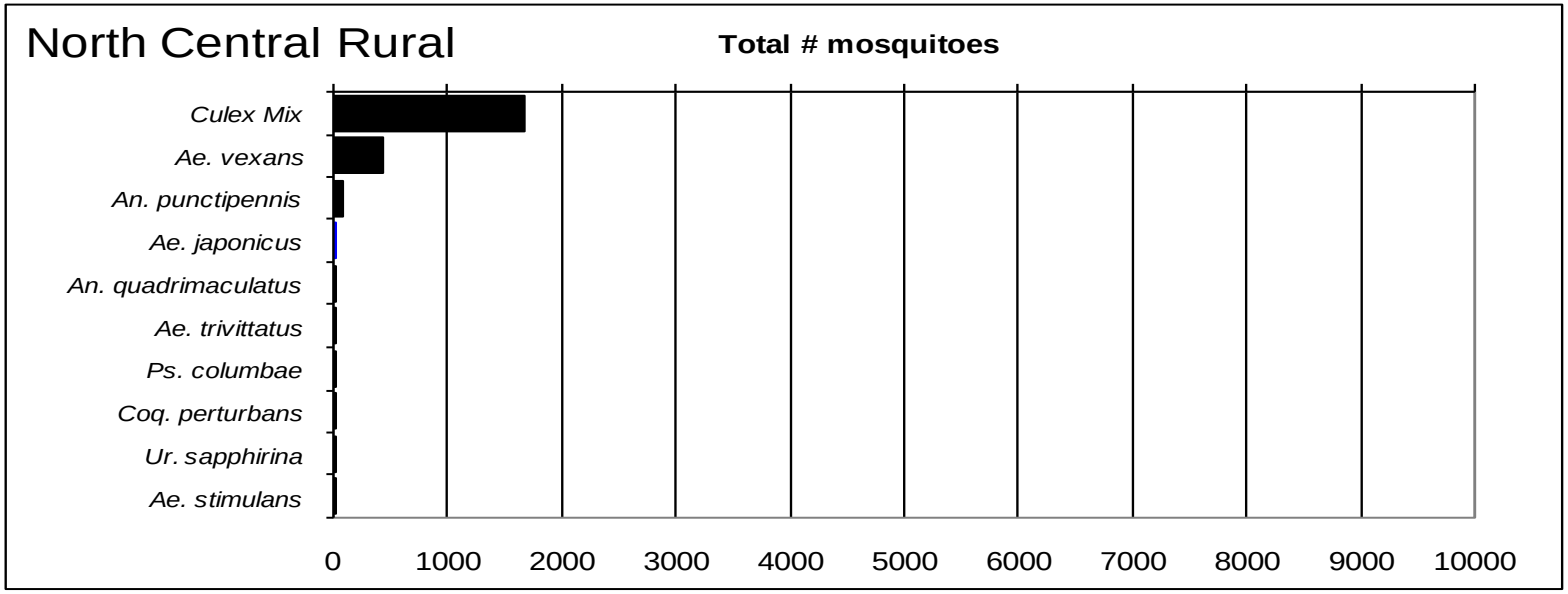
Delaware Bayshore

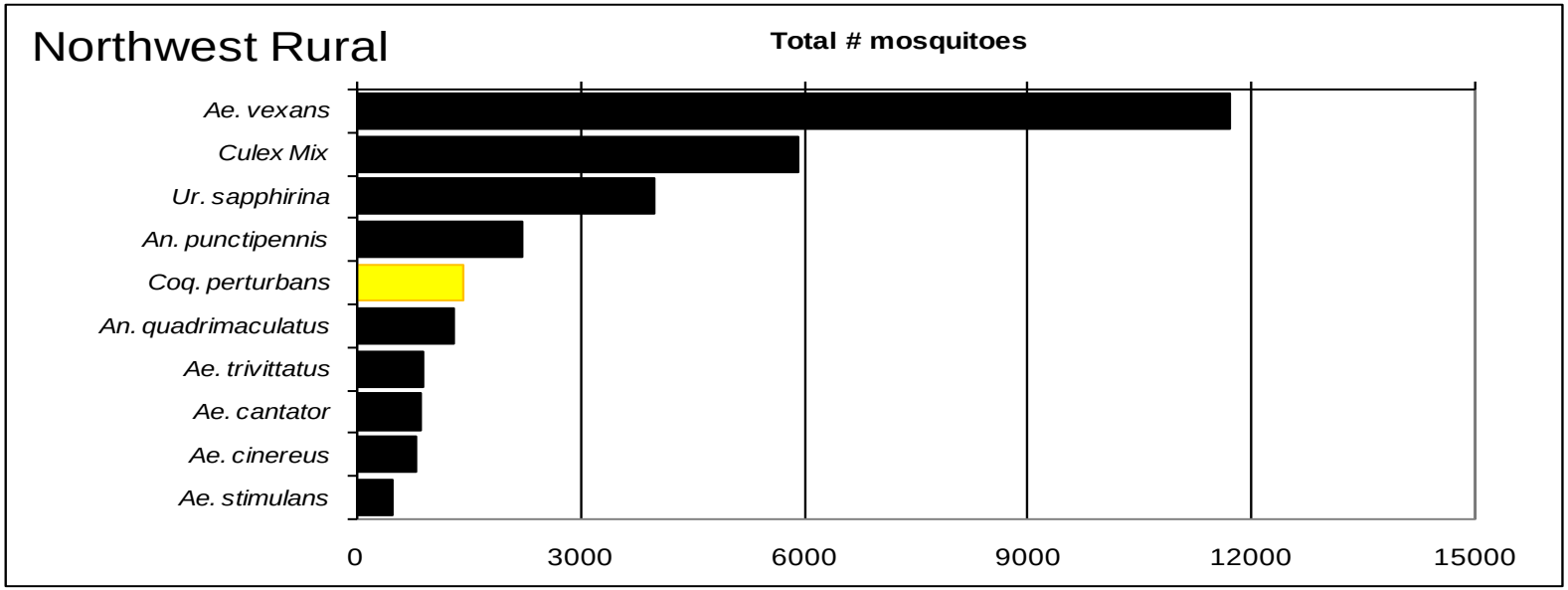


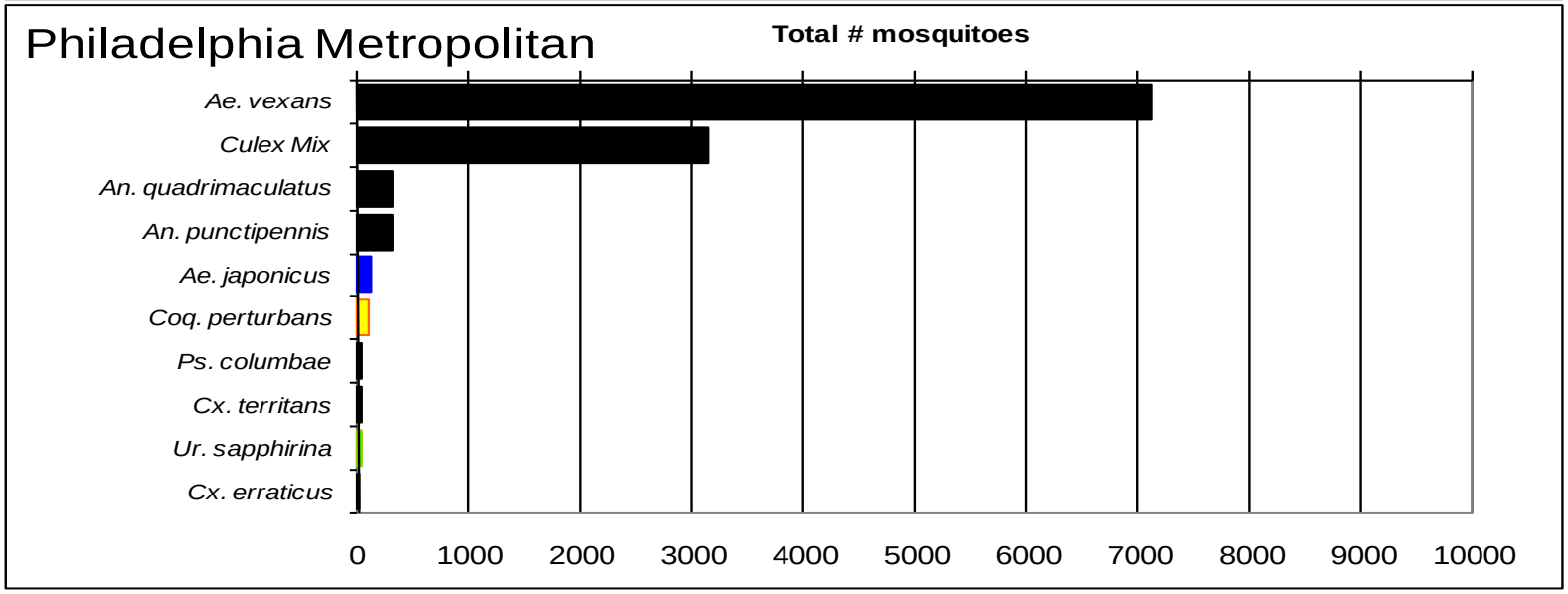
Delaware River Basin

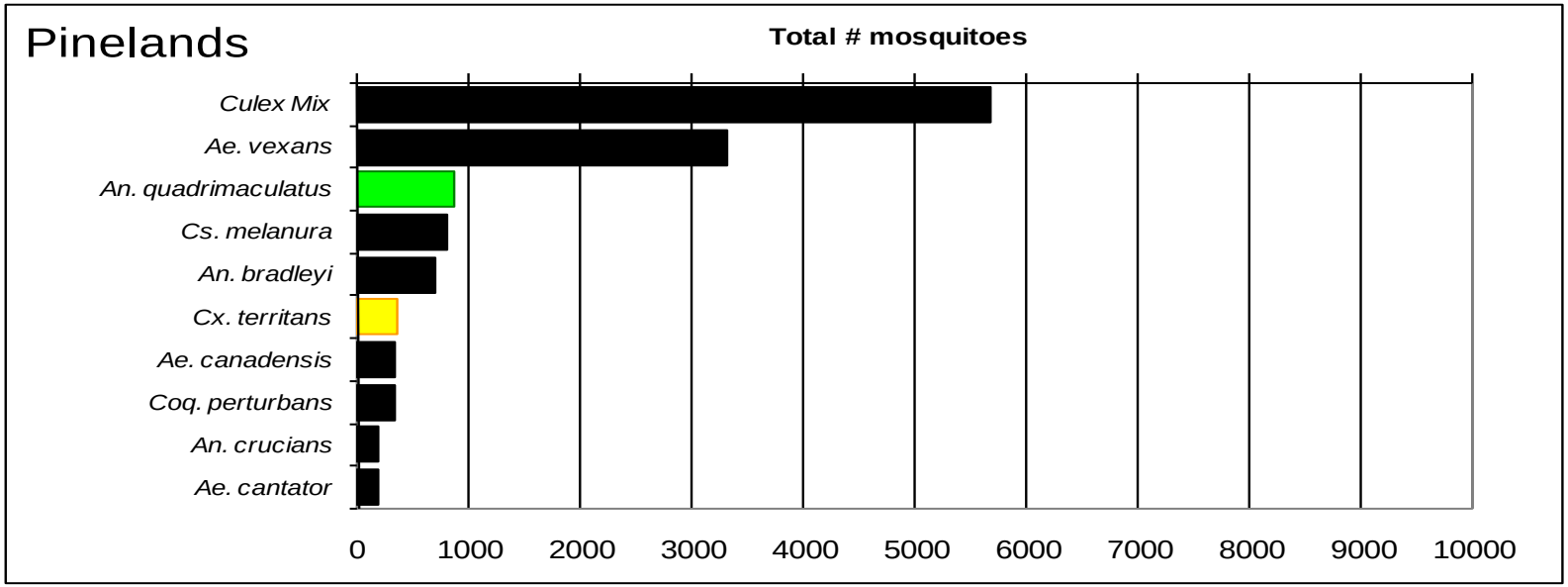


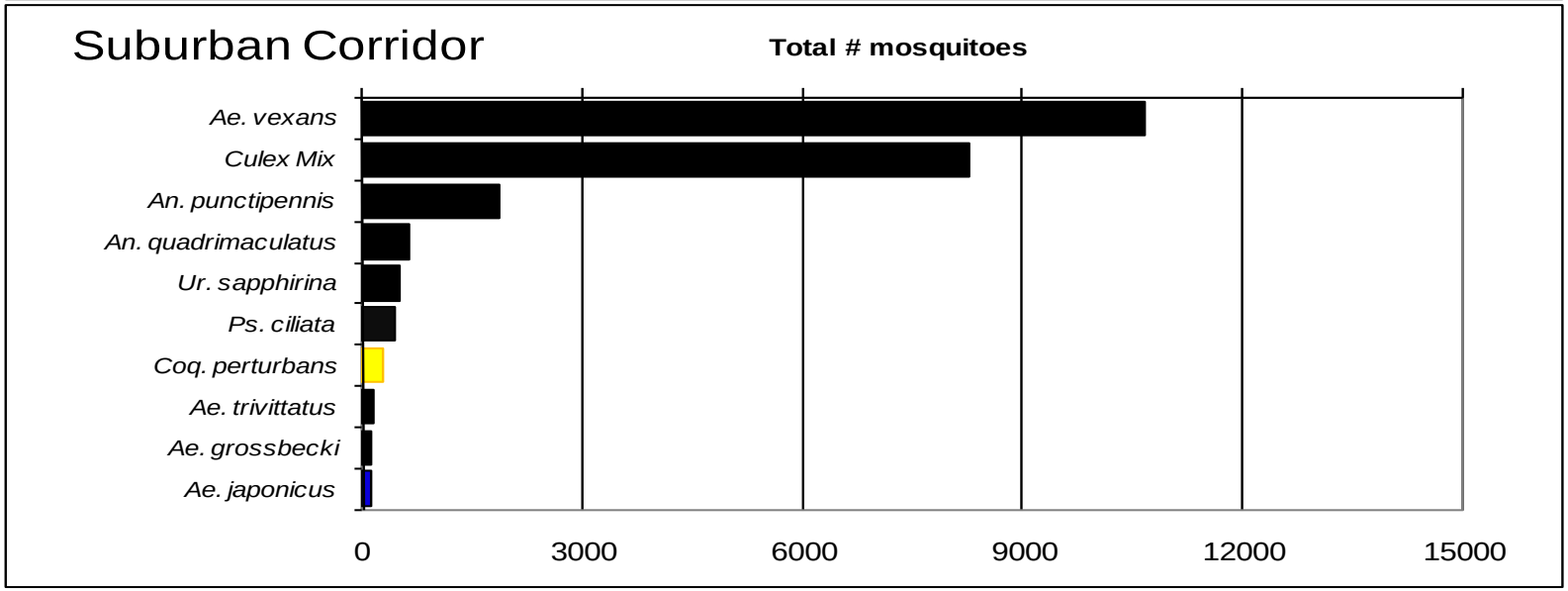

New York Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. cantator
Ae. sollicitans
Coq. perturbans
Ae. trivittatus
An. punctipennis
An. quadrimaculatus
Ae. albopictus
Ae. canadensis
0
3000
6000
9000
12000
15000


North Central Rural
Total # mosquitoes
Culex Mix
Ae. vexans
An. punctipennis
Ae. japonicus
An. quadrimaculatus
Ae. trivittatus
Ps. columbae
Coq. perturbans
Ur. sapphirina
Ae. stimulans
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


Northwest Rural
Total # mosquitoes
Ae. vexans
Culex Mix
Ur. sapphirina
An. punctipennis
Coq. perturbans
An. quadrimaculatus
Ae. trivittatus
Ae. cantator
Ae. cinereus
Ae. stimulans
0
3000
6000
9000
12000
15000


Philadelphia Metropolitan
Total # mosquitoes
Ae. vexans
Culex Mix
An. quadrimaculatus
An. punctipennis
Ae. japonicus
Coq. perturbans
Ps. columbae
Cx. territans
Ur. sapphirina
Cx. erraticus
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


Pinelands
Total # mosquitoes
Culex Mix
Ae. vexans
An. quadrimaculatus
Cs. melanura
An. bradleyi
Cx. territans
Ae. canadensis
Coq. perturbans
An. crucians
Ae. cantator
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


Suburban Corridor
Total # mosquitoes
Ae. vexans
Culex Mix
An. punctipennis
An. quadrimaculatus
Ur. sapphirina
Ps. ciliata
Coq. perturbans
Ae. trivittatus
Ae. grossbecki
Ae. japonicus
0
3000
6000
9000
12000
15000