RUTGERS
New Jersey Agricultural Experiment Station

NEW JERSEY ADULT MOSQUITO SURVEILLANCE
Report for 06 July to 12 July 2008, CDC Week 28

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Center for Vector Biology

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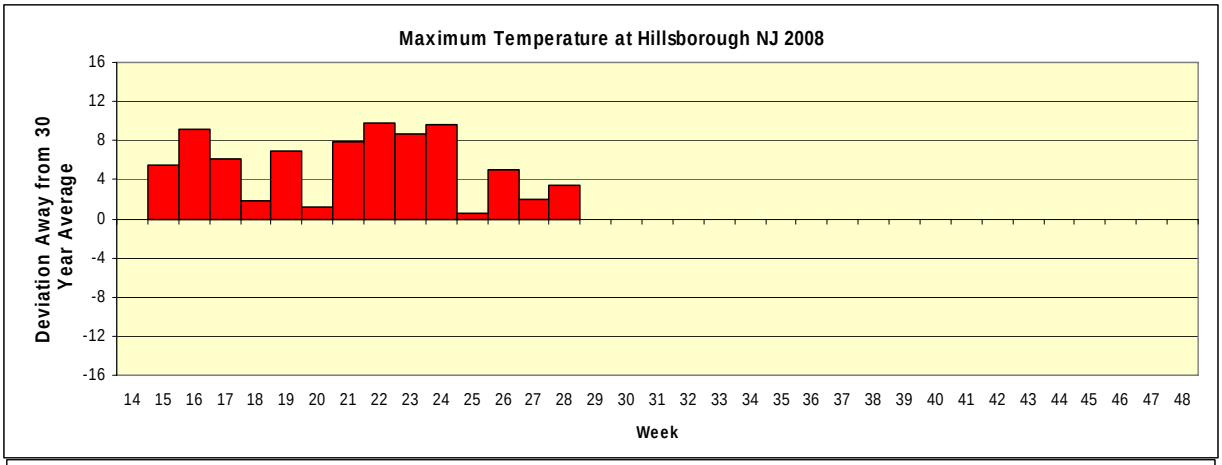
Summary table – Week 28

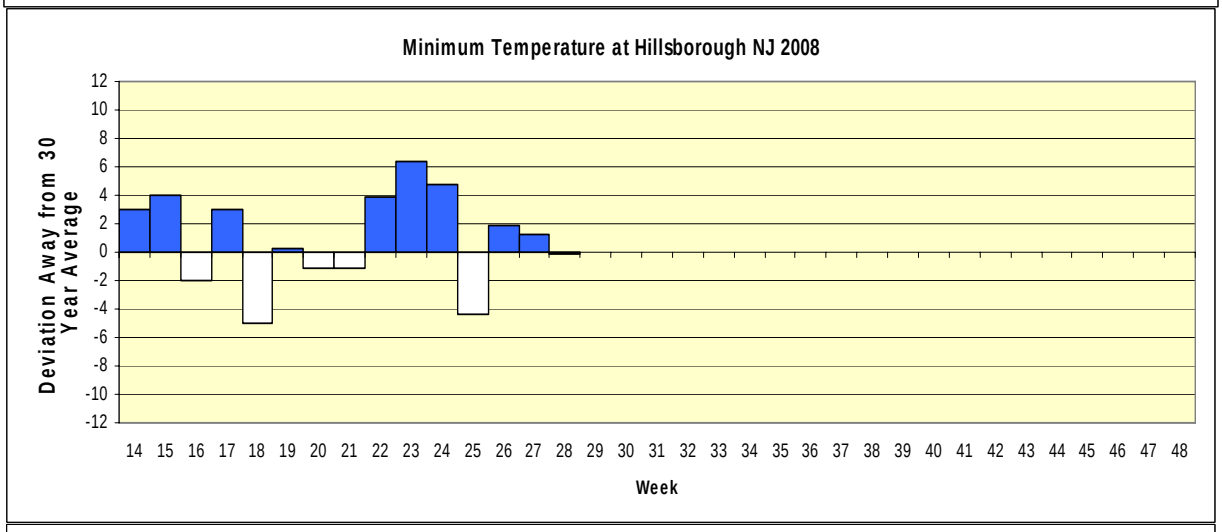
	Aedes vexans			*Culex* Mix			*Coquillettidia perturbans*			*Aedes sollicitans*		
Region	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase
Agricultural	0.05	6.16	0	0.33	5.79	0	0.45	0.73	0	0.00	0.73	0
Coastal	0.46	6.77	0	6.22	8.99	0	0.62	2.25	0	4.13	12.95	0
Delaware Bayshore	0.10	2.45	0	3.71	46.89	0	0.57	4.47	0	5.40	34.10	0
Delaware River Basin	0.00	32.54	0	0.00	13.04	0	0.00	0.47	0	0.00	0.14	0
New York Metro	0.30	5.09	0	1.94	9.67	0	0.01	0.26	0	0.00	0.78	0
North Central Rural	0.08	0.85	0	0.18	1.08	0	0.02	0.09	0	0.00	0.00	0
Northwest Rural	6.94	30.97	0	8.17	9.03	0	2.66	0.18	4	0.00	0.00	0
Philadelphia Metro	0.64	22.84	0	3.29	8.80	0	0.03	1.06	0	0.00	0.00	0
Pinelands	0.19	2.48	0	0.88	4.78	0	0.35	2.21	0	0.03	0.14	0
Suburban Corridor	2.94	10.70	0	2.97	3.23	0	0.08	12.24	0	0.01	0.00	

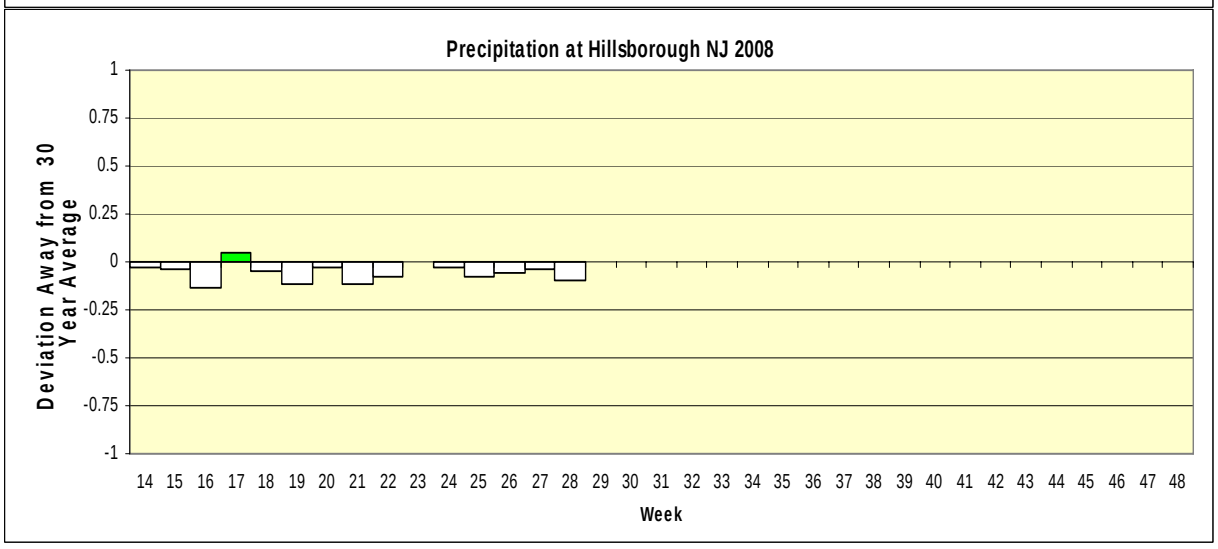
Averages represent data from, at most, the previous 5 years. Increase is a scale of current values from historical values where no difference or a decrease is represented by 0 (blue), up to 50% greater difference by 1 (green), up to 100% greater difference by 2 (yellow), up to 150% greater difference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

State Summary: *Coquillettidia perturbans* populations are larger in the Northwest Rural region, but have declined from last weeks high numbers in the Philadelphia, Pinelands and Suburban Corridor.

Climate Deviations

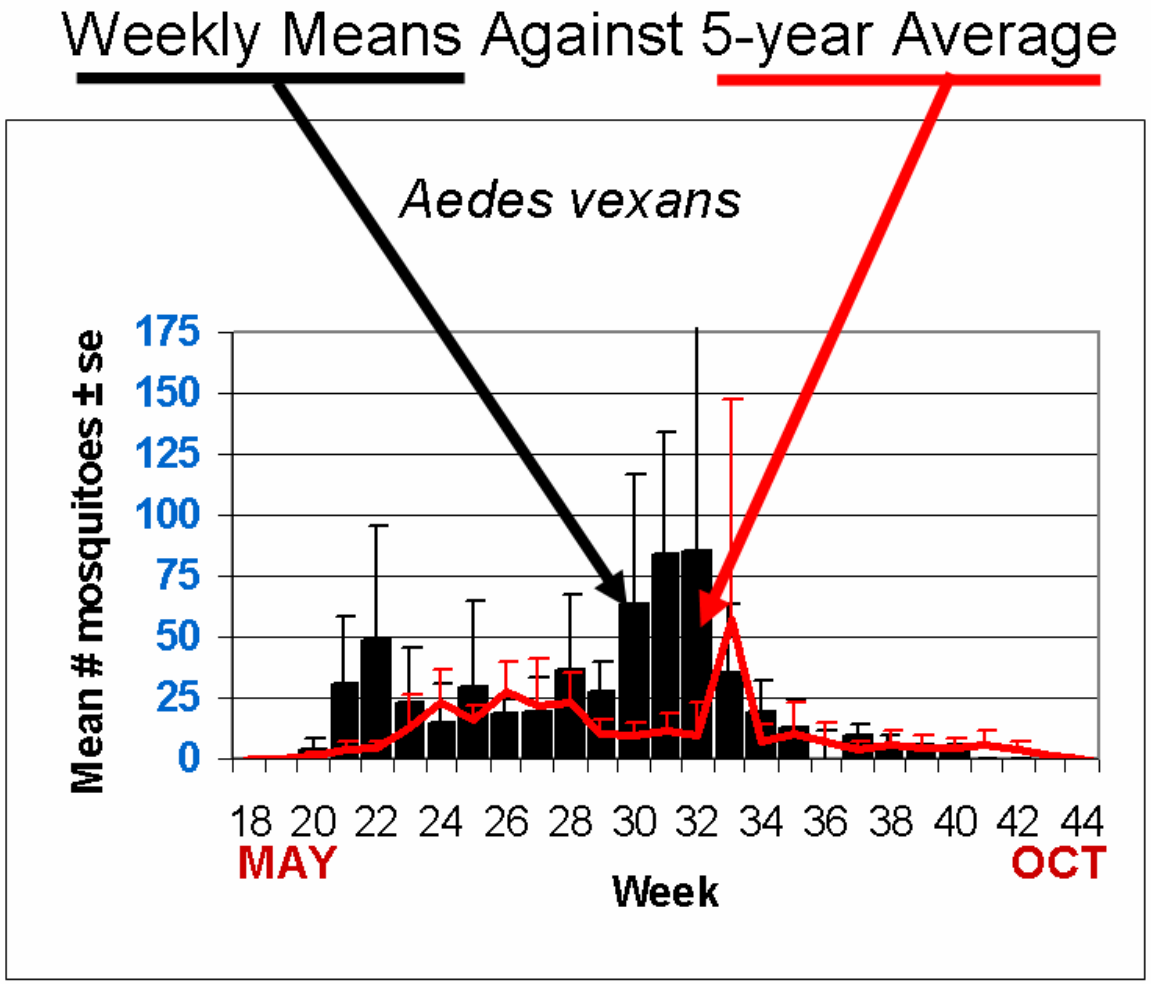




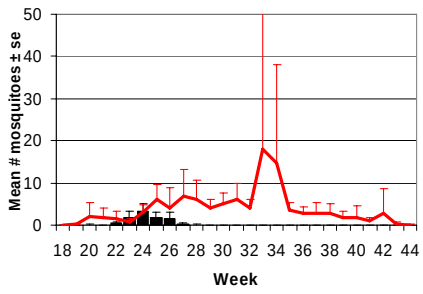
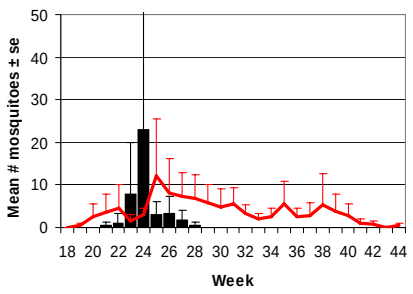
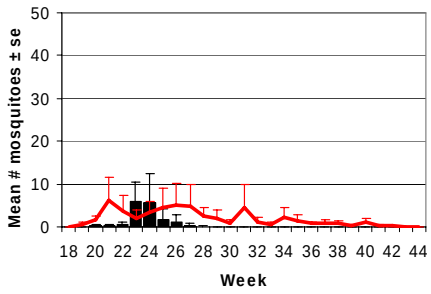
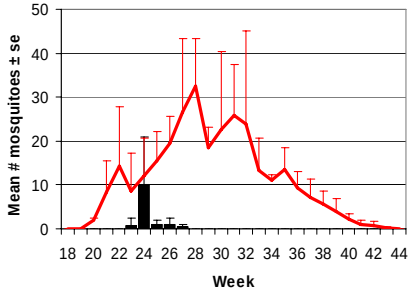
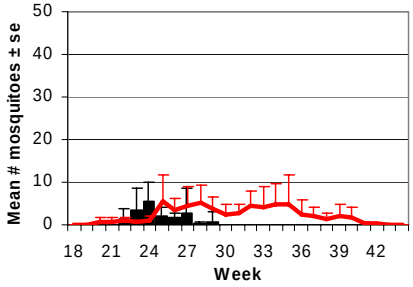
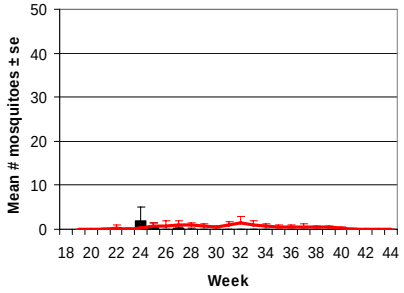
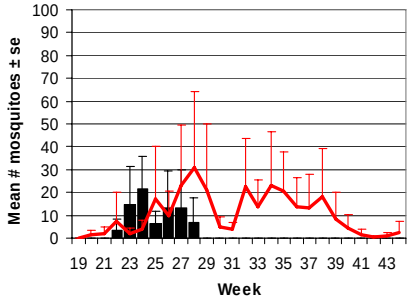
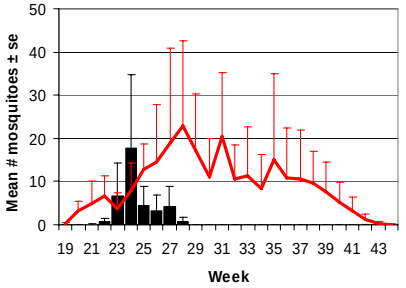
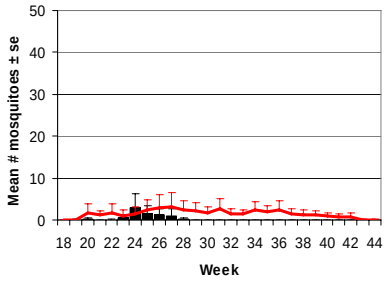
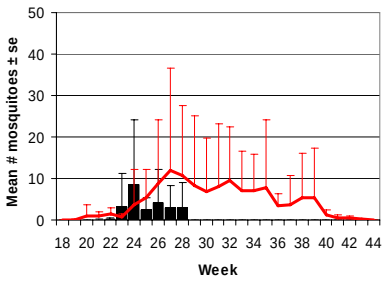


The figures show the average maximum temperature, minimum temperature and precipitation deviations from 30 year averages. Current data is from the Hillsborough NJ weather station (a station close to central NJ which recorded all three parameters and was available online at the NJ state climatologist) while historical data was from the New Brunswick weather station. Color bars above the zero line indicate warmer maximum or minimum temperatures and wetter conditions while white bars indicate cooler temperatures and dryer conditions.

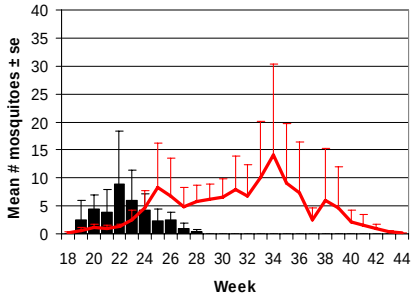
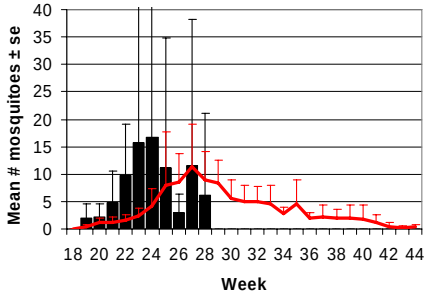
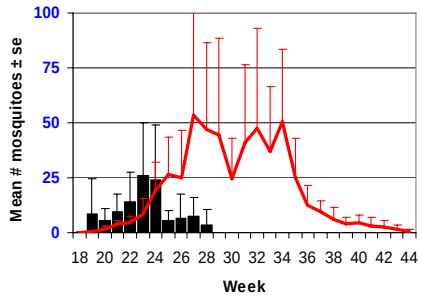
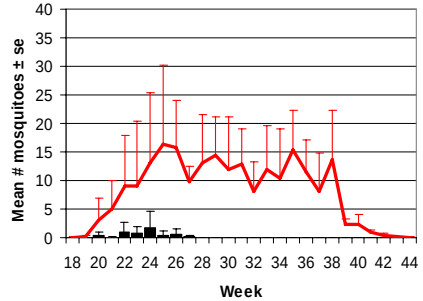
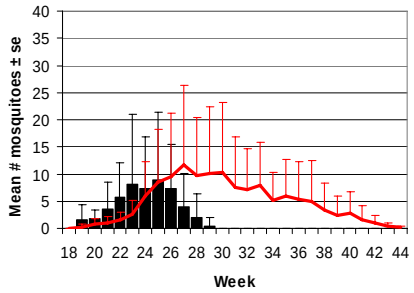
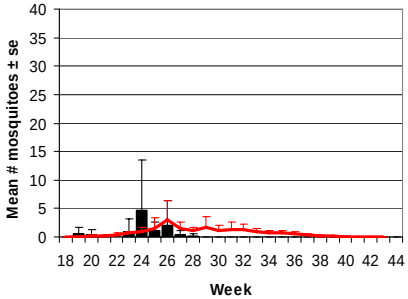
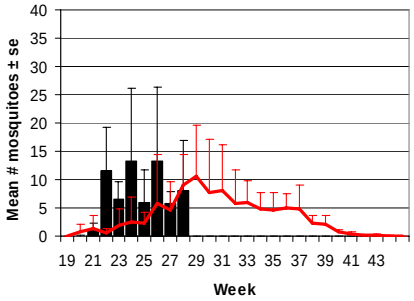
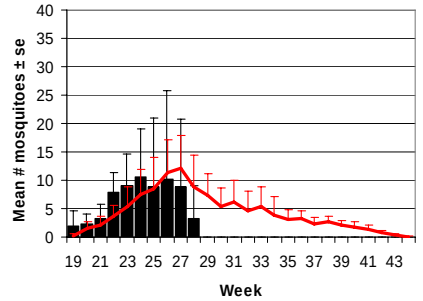
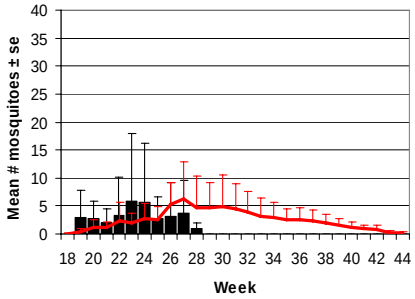
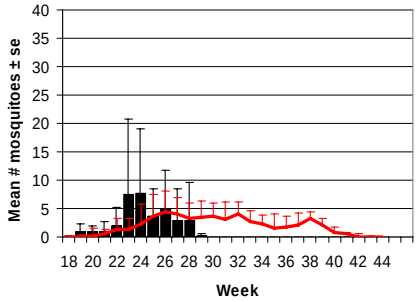
The Species Graphs: The species graph pages include a graph with two plots for each of the ten regions defined on the first page (Agricultural, Coastal, Delaware Bayshore, Delaware River, New York Metro, North-Central, Northwestern, Philadelphia Metro, Pinelands, and Suburban Corridor). Below is an example 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, Camden, Cape May, Essex, Hudson, Mercer, Middlesex, Morris, Ocean, Somerset, Sussex, Union 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)

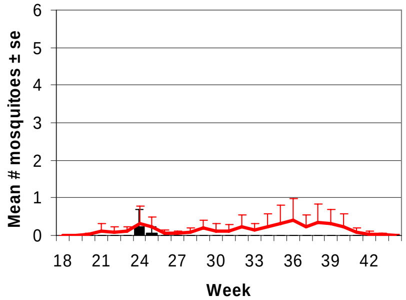
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		High temperatures and reduced larval habitat availability due to a reduction in precipitation means that eggs of *Aedes vexans* and other floodwater species have not had the opportunity to become submerged for development and hatching. Maintenance repairs on dredge spoils may contribute to the reduced populations seen in the Delaware River Basin region.	

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

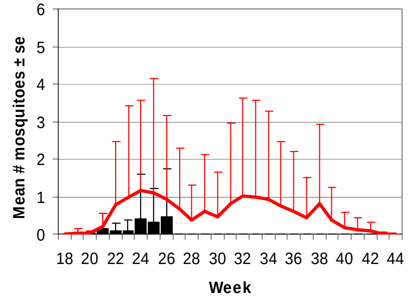
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		Apart from the Delaware Bayshore and the Delaware River Basin regions, the permanent water *Culex* complex appears to be tracking historical data trends. First positive pools for West Nile virus have appeared, suggesting that the amplification cycle is underway.	

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

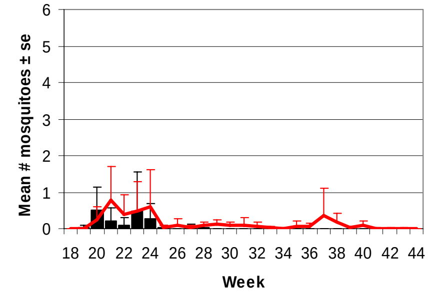
Agricultural



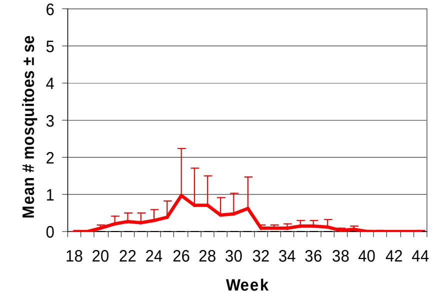
Coastal



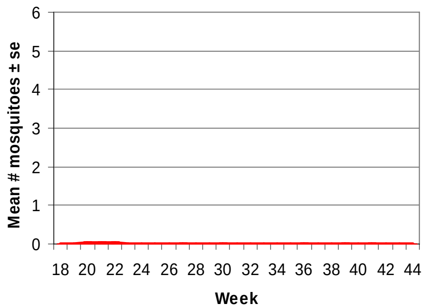
Delaware Bayshore



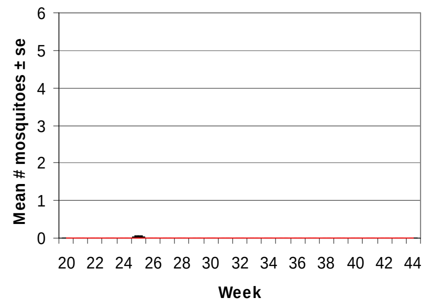
Delaware River Basin



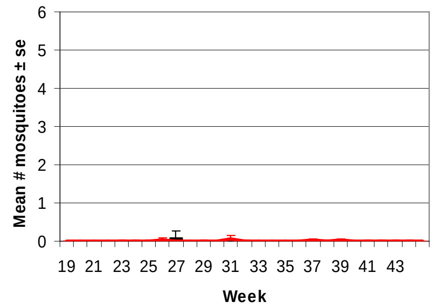
New York Metro



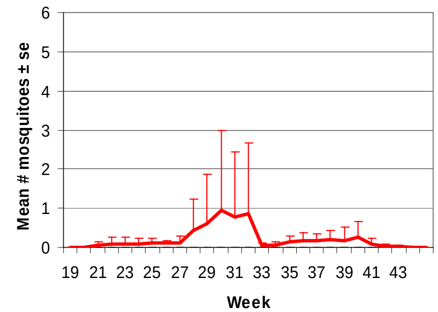
North Central Rural



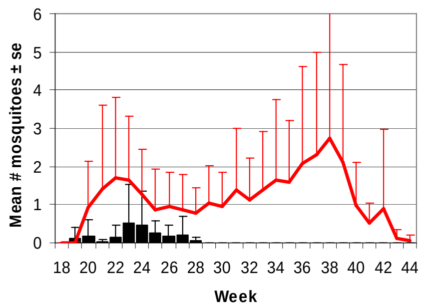
Northwestern Rural



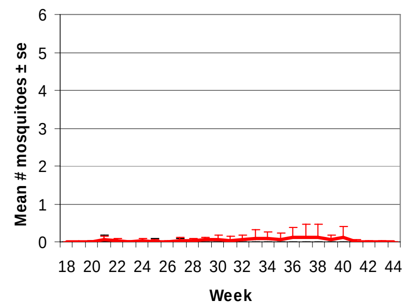
Philadelphia Metro



Pinelands



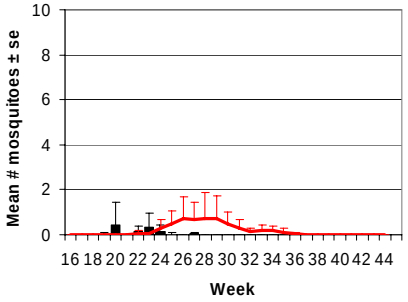
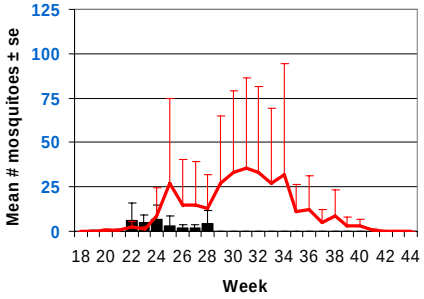
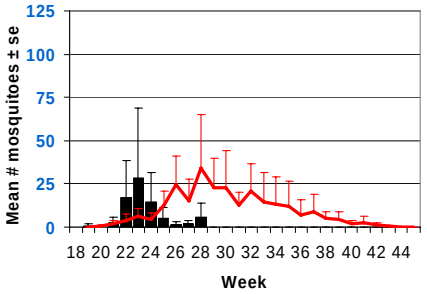
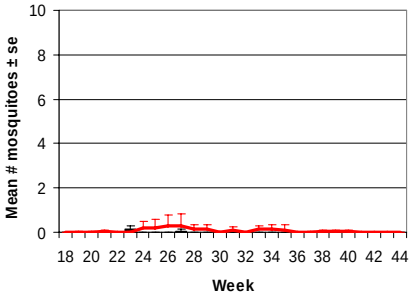
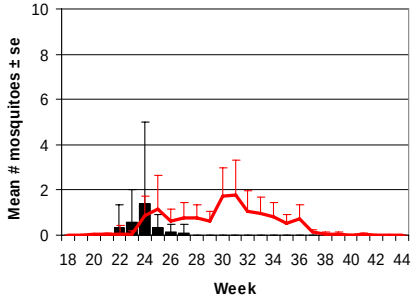
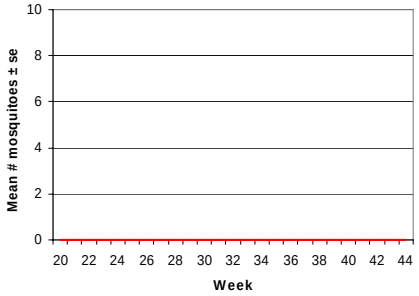
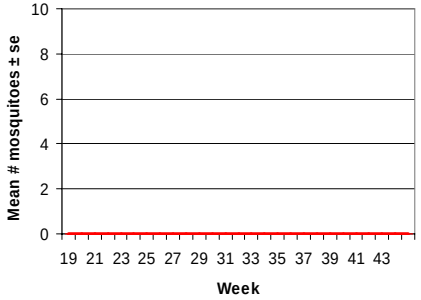
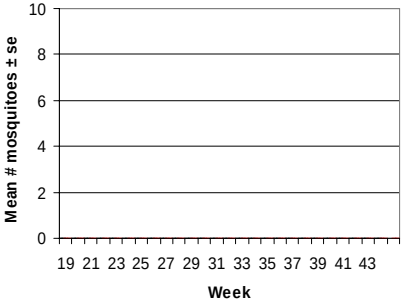
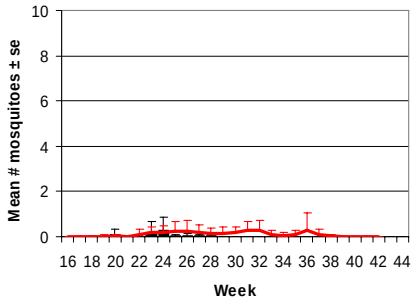
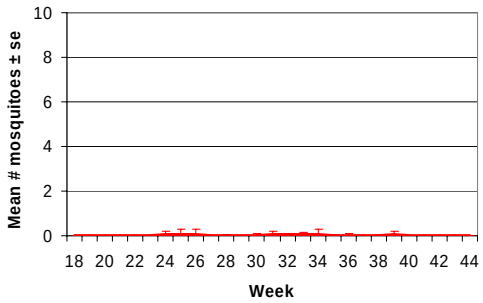
Suburban Corridor



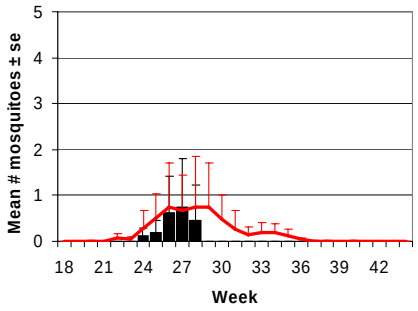
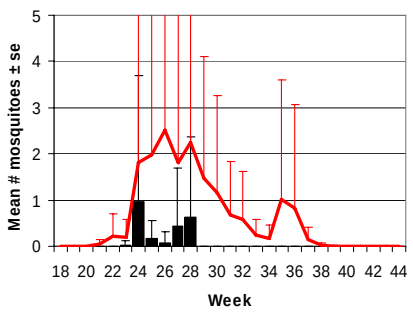
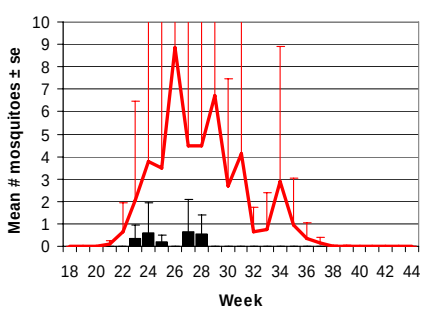
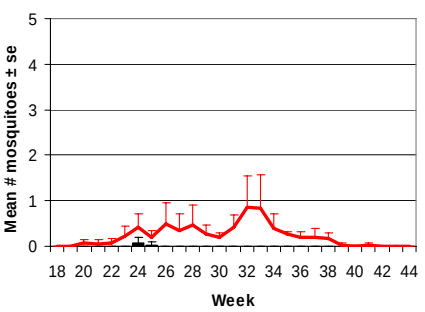
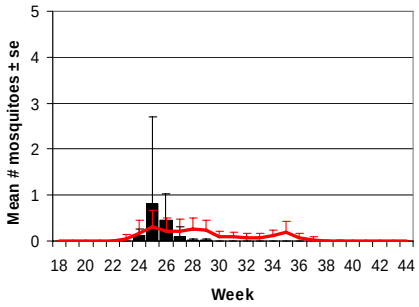
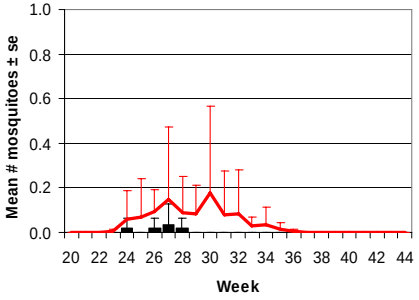
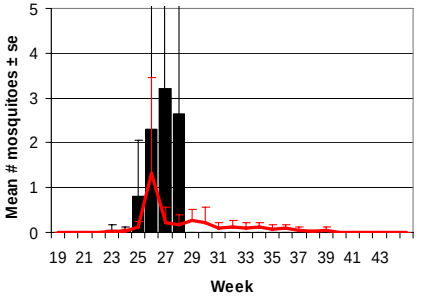
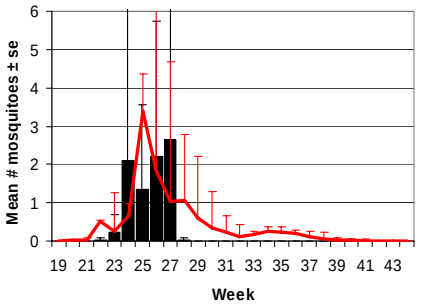
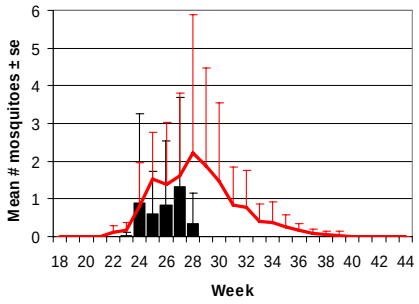
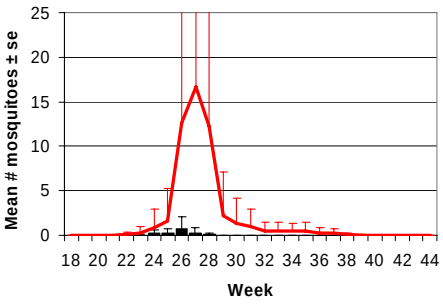
Comments

Culiseta melanura populations continue to be low in the two regions that normally produce significant numbers, the Coastal and Pineland habitats. The Vector Surveillance reports are showing historical data plots that appear to indicate a sustained trend toward lower abundances. Regardless, low populations have produced mosquito pools positive for eastern equine encephalitis and subsequent transmission to vertebrates have occurred in years similar to this.

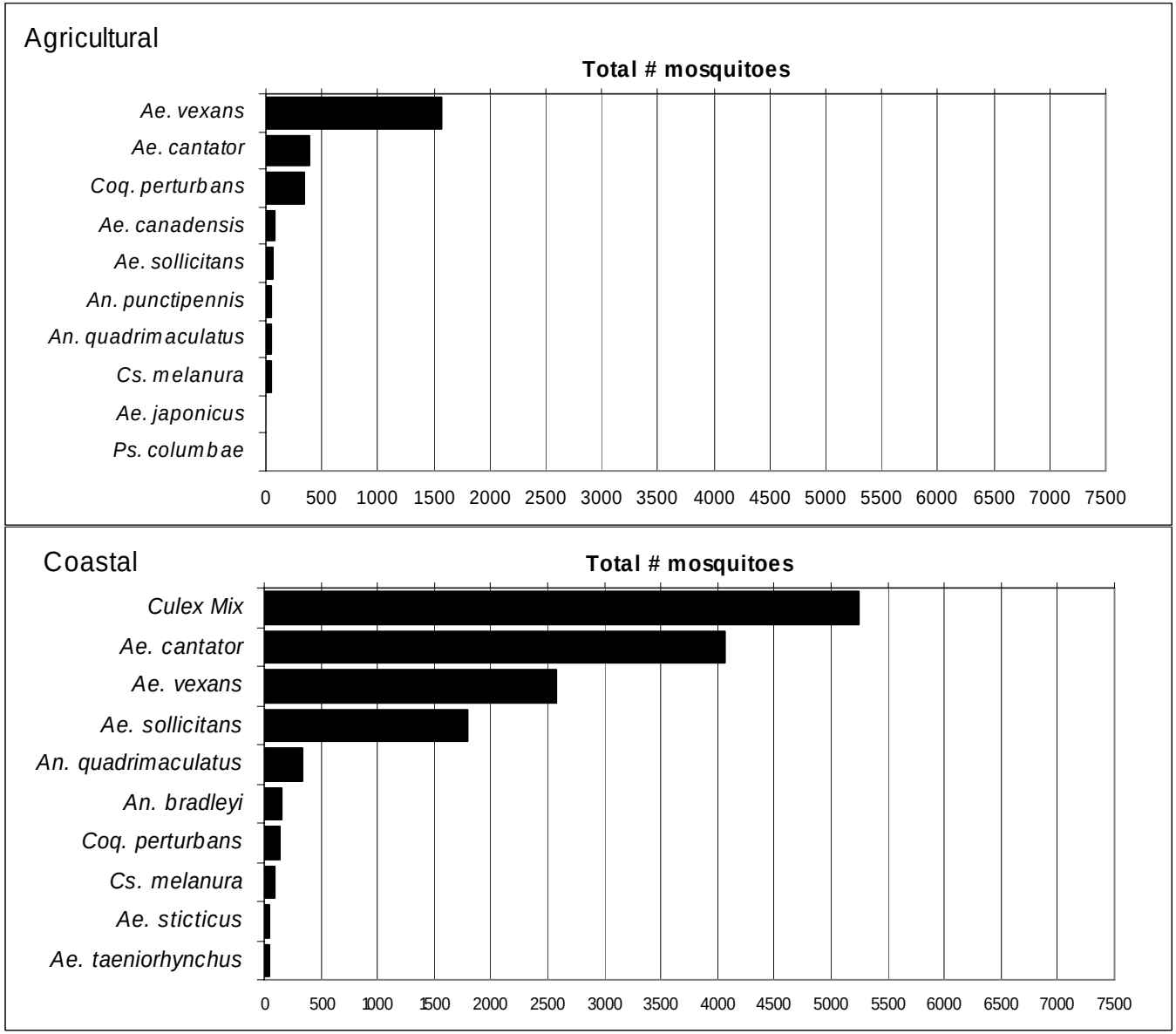
Aedes sollicitans - Salt Floodwater Species
Multivoltine Aedine (*Ae. sollicitans* Type)

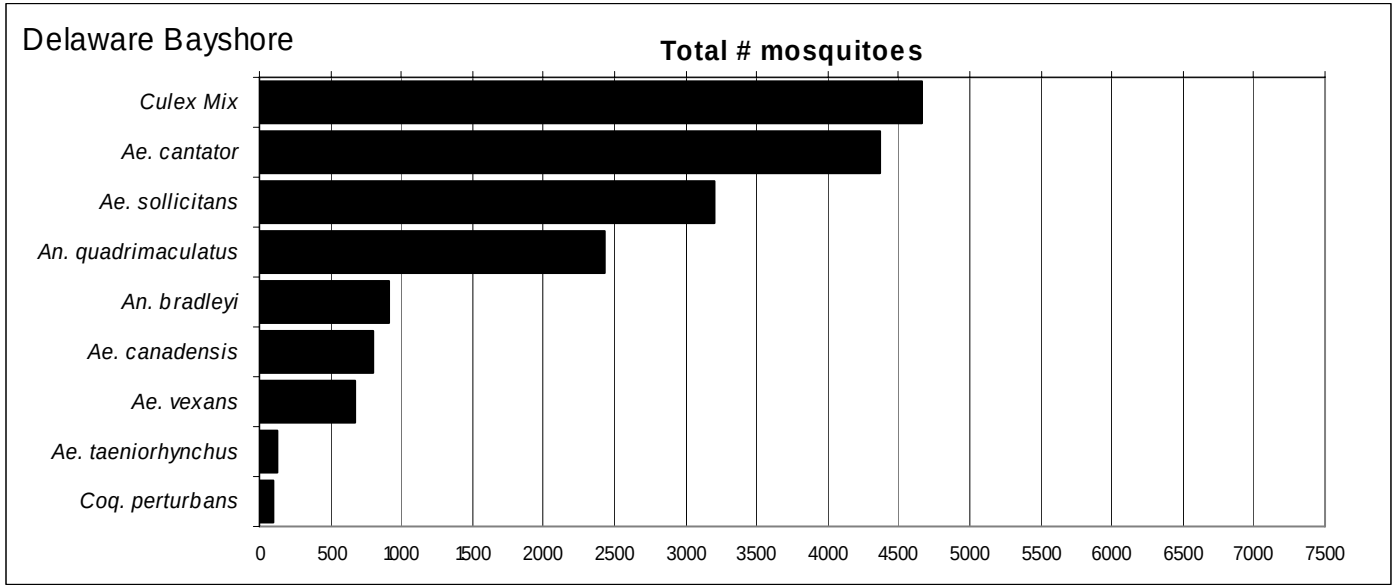
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		The second brood emergence of *Aedes sollicitans* is underway. Historical trends suggest that this may be the largest brood of the season. Work by Wayne Crans indicates that in New Jersey, this species is primarily a mammalian blood feeder, although a few bloodmeals may come from birds. Although females usually hostseek during crepuscular hours, they will readily attack during daylight hours when disturbed.	

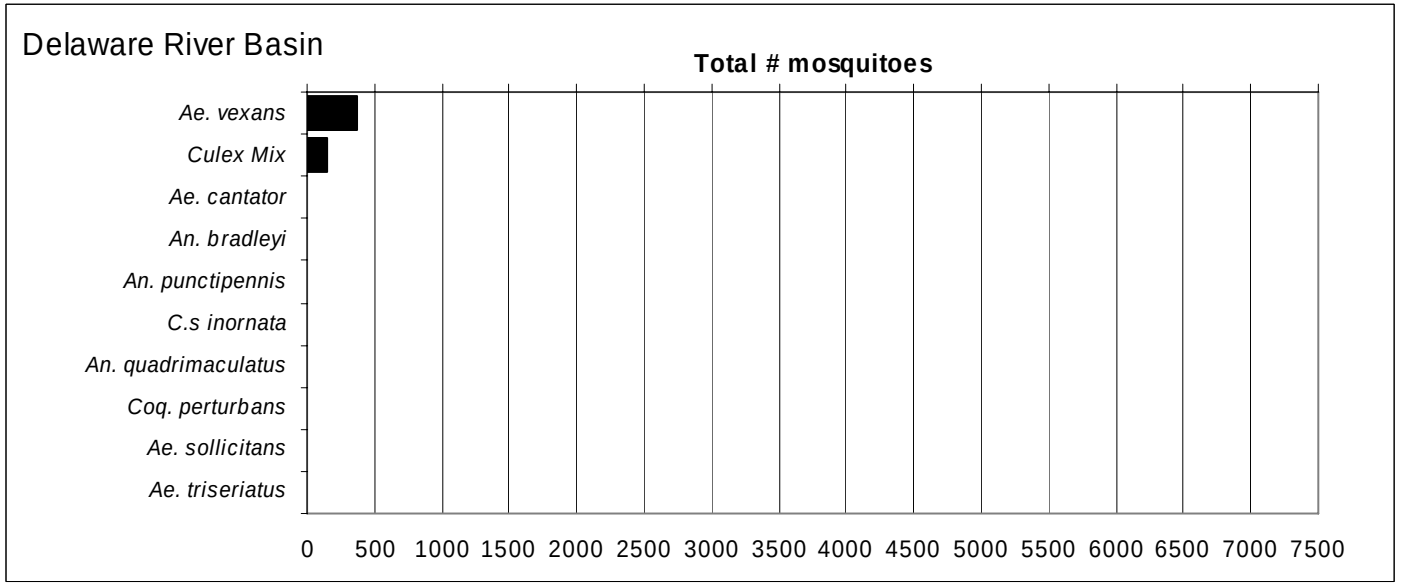
Coquillettidia perturbans- Monotypic Species
(*Cq. perturbans* Type)

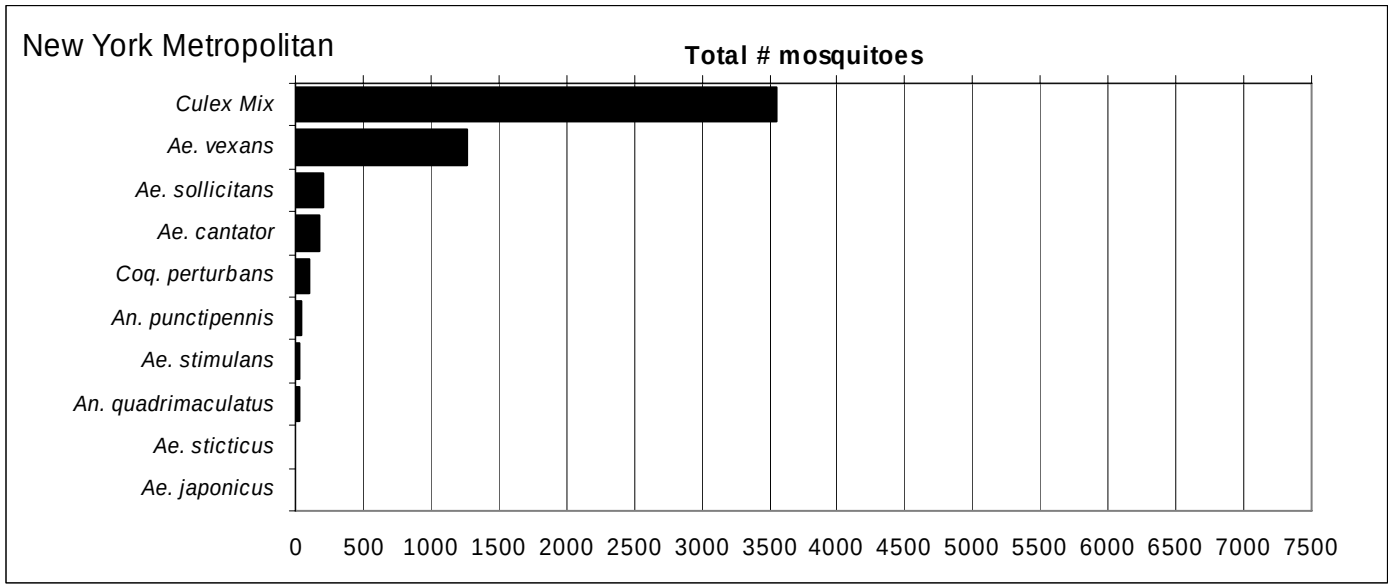
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		Larger than usual numbers of *Coquillettidia perturbans* have been evident in the Northwestern Rural region, while more southerly populations (Coastal and the Delaware Bayshore) have been well below historical levels. This species is cosmopolitan in bloodmeals, attacking mammals, birds, reptiles and amphibia. While it is not a competent vector of West Nile, it is suspected in contributing toward the inland horse cases of eastern equine encephalitis.	

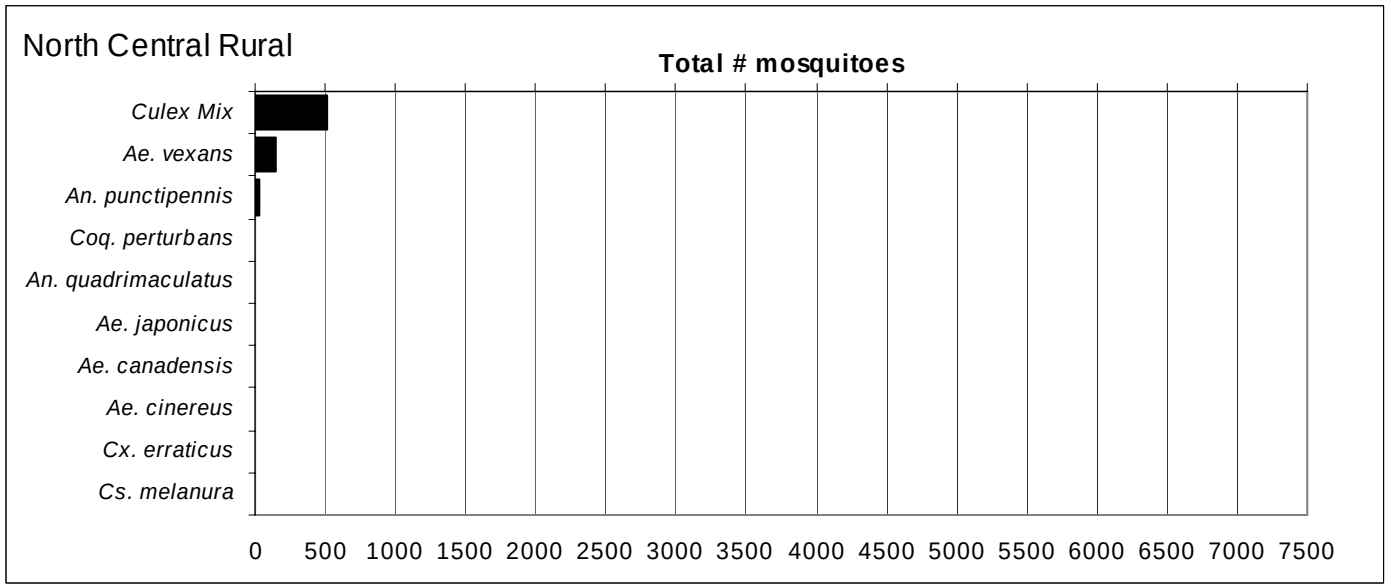
Top Ten Mosquito Species/Region



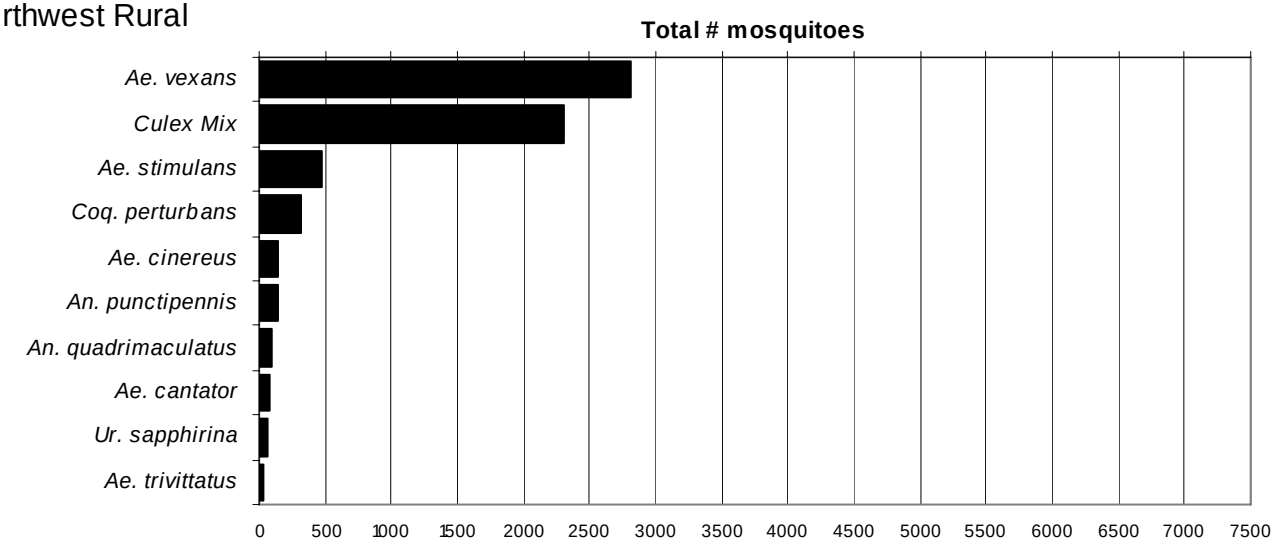

Delaware Bayshore
Total # mosquitoes
Culex Mix
Ae. cantator
Ae. sollicitans
An. quadrimaculatus
An. bradleyi
Ae. canadensis
Ae. vexans
Ae. taeniorhynchus
Coq. perturbans
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
6500
7000
7500


Delaware River Basin
Total # mosquitoes
Ae. vexans
Culex Mix
Ae. cantator
An. bradleyi
An. punctipennis
C.s inornata
An. quadrimaculatus
Coq. perturbans
Ae. sollicitans
Ae. triseriatus
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
6500
7000
7500

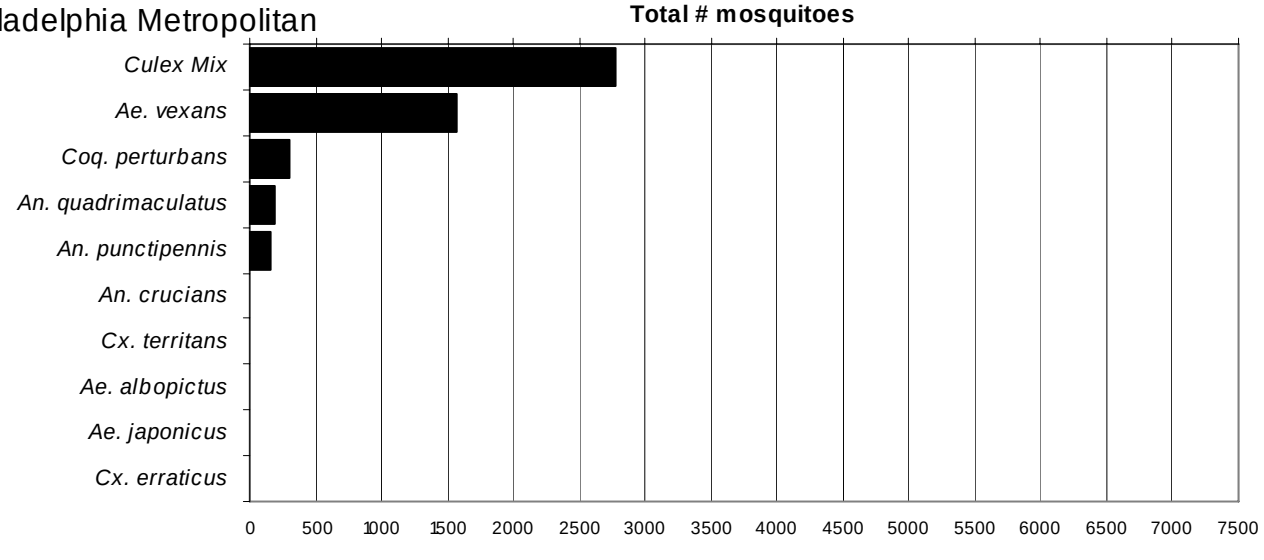

New York Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. sollicitans
Ae. cantator
Coq. perturbans
An. punctipennis
Ae. stimulans
An. quadrimaculatus
Ae. sticticus
Ae. japonicus
0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 6000 6500 7000 7500


North Central Rural
Total # mosquitoes
Culex Mix
Ae. vexans
An. punctipennis
Coq. perturbans
An. quadrimaculatus
Ae. japonicus
Ae. canadensis
Ae. cinereus
Cx. erraticus
Cs. melanura
0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 6000 6500 7000 7500

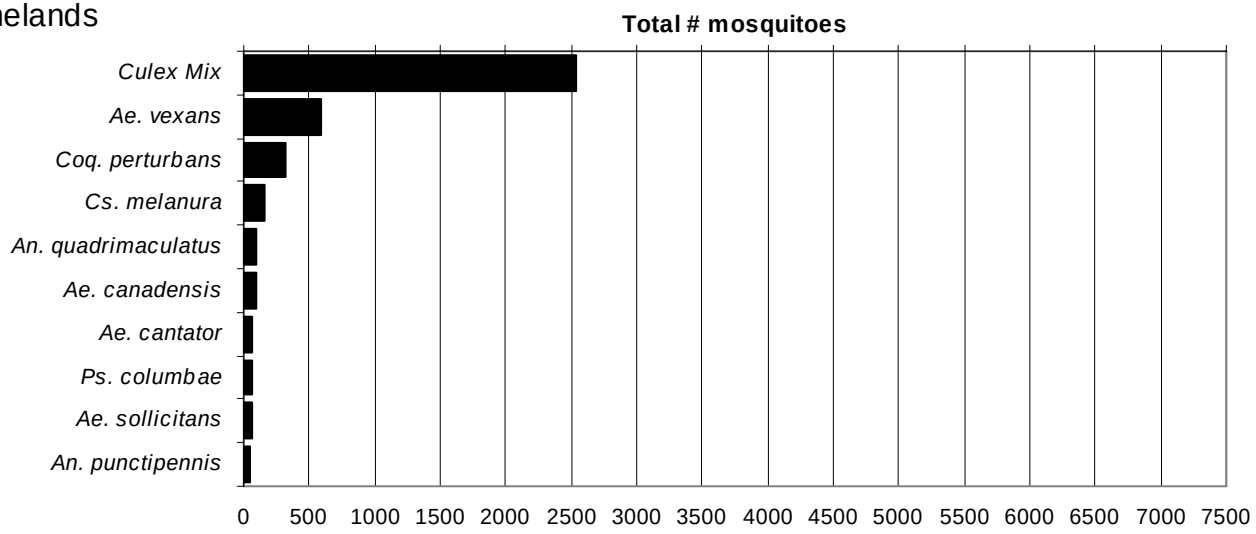
Northwest Rural



Philadelphia Metropolitan



Pinelands



Suburban Corridor