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New Jersey Agricultural Experiment Station

NEW JERSEY ADULT MOSQUITO SURVEILLANCE
Report for 13 July to 19 July 2008, CDC Week 29

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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.

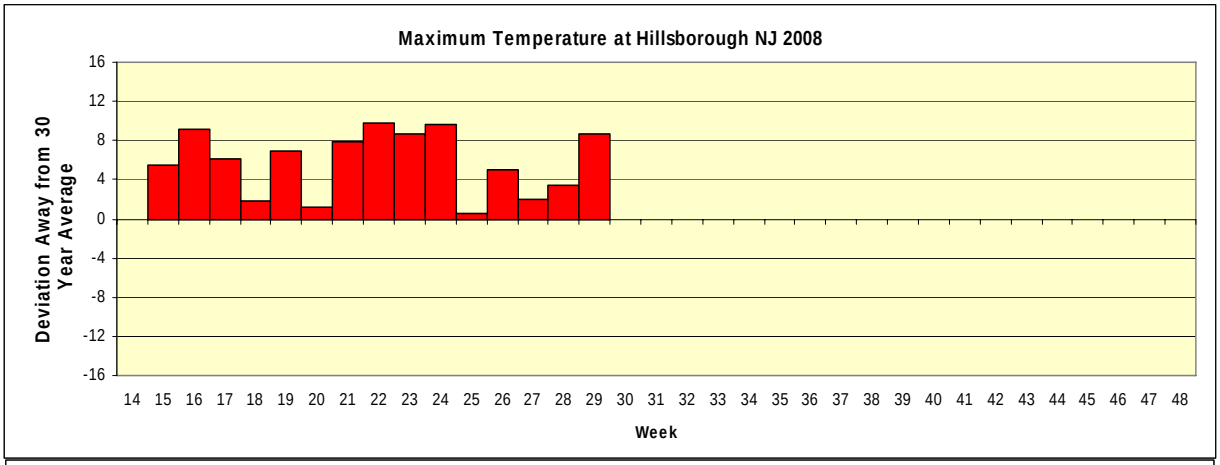
Summary table – Week 29

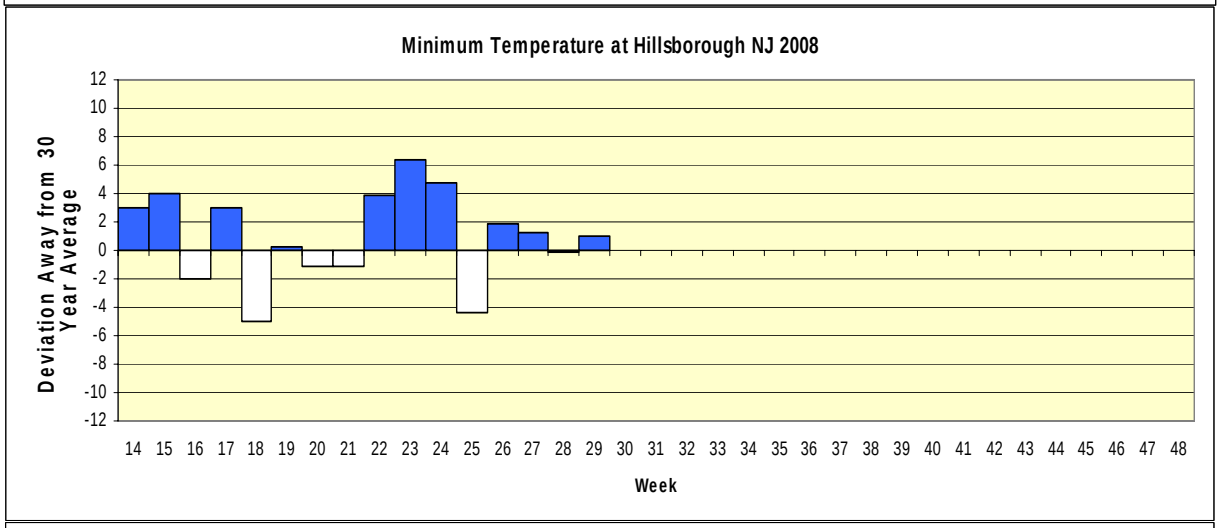
	Aedes vexans			*Culex* Mix			*Coquillettidia perturbans*			*Aedes sollicitans*		
Region	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase
Agricultural	0.26	3.95	0	0.50	6.17	0	0.21	0.74	0	0.00	0.74	0
Coastal	0.19	5.92	0	0.56	8.38	0	0.03	1.17	0	6.40	26.86	0
Delaware Bayshore	0.00	1.91	0	0.00	44.60	0	0.00	6.70	0	0.00	22.99	0
Delaware River Basin	0.00	18.56	0	0.00	14.35	0	0.00	0.26	0	0.00	0.14	0
New York Metro	0.94	3.83	0	3.10	10.16	0	0.01	0.23	0	0.00	0.62	0
North Central Rural	0.18	0.65	0	0.53	1.76	0	0.05	0.09	0	0.00	0.00	0
Northwest Rural	1.54	20.90	0	1.31	10.49	0	0.09	0.28	0	0.00	0.00	0
Philadelphia Metro	1.67	17.32	0	3.05	7.38	0	0.20	0.61	0	0.00	0.00	0
Pinelands	0.29	2.25	0	0.40	4.61	0	0.43	1.87	0	0.08	0.17	0
Suburban Corridor	1.51	8.35	0	2.56	3.40	0	0.15	2.15	0	0.03	0.01	4

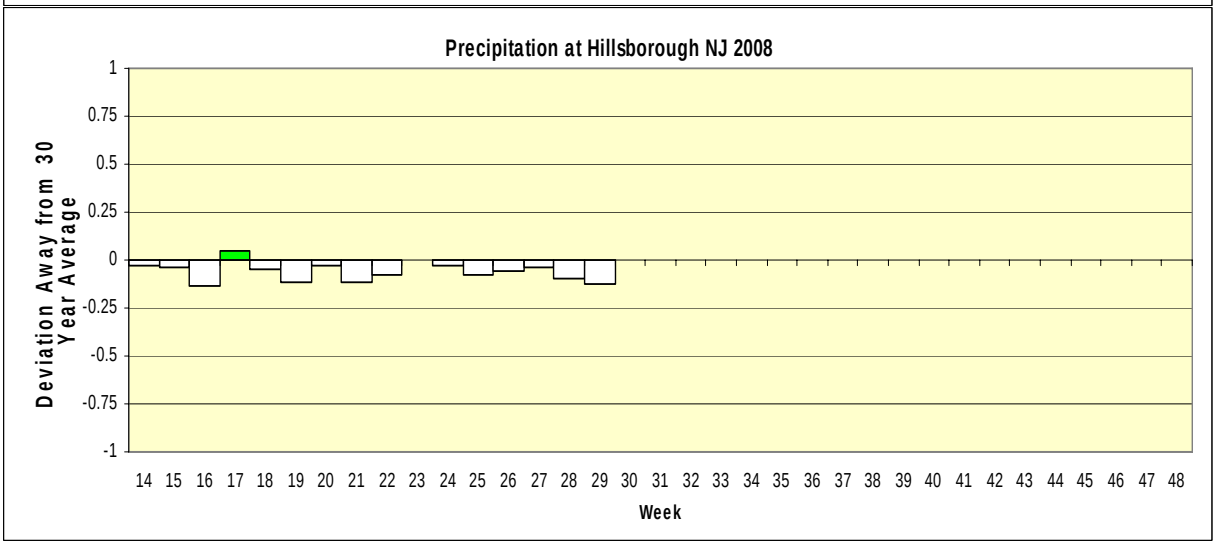
Averages represent data from, at most, the previous 5 years. Increase is a scale of current values from historical values where no difference or a decrease is represented by 0 (blue), up to 50% greater difference by 1 (green), up to 100% greater difference by 2 (yellow), up to 150% greater difference 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: *Aedes sollicitans* populations in the Suburban Corridor appear significantly higher than historical records; however, the overall numbers of individuals caught in this region are very few, particularly in comparison with the Coastal and Bayshore regions.

Climate Deviations

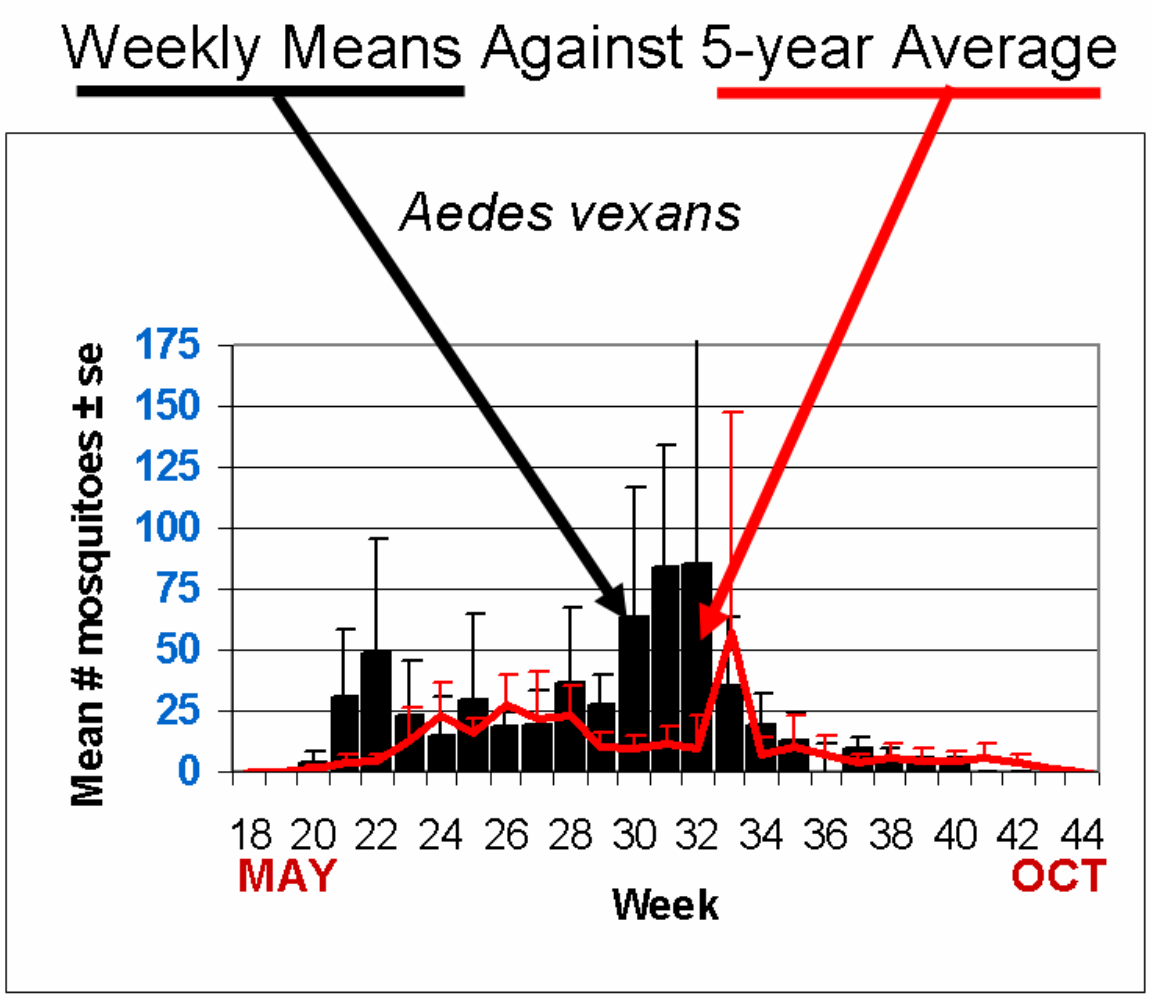




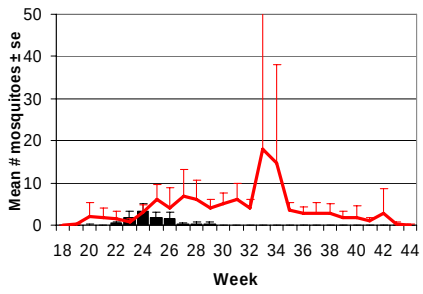
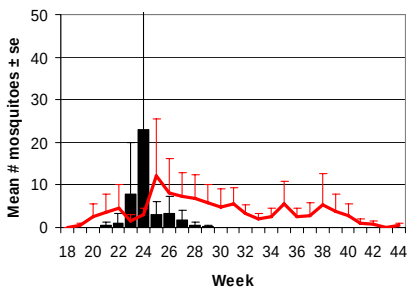
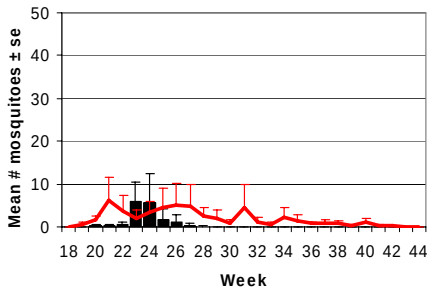
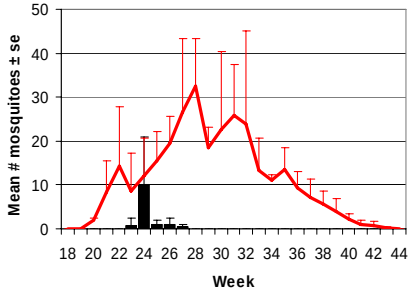
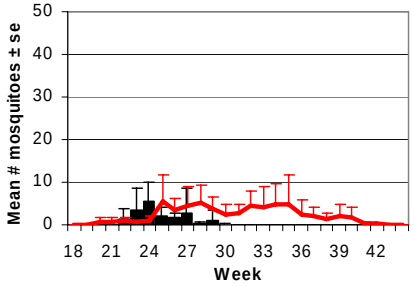
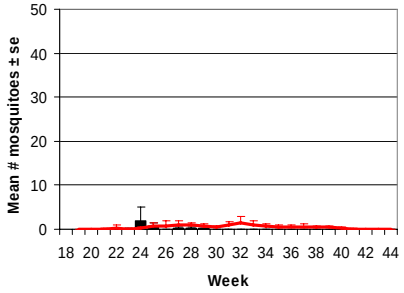
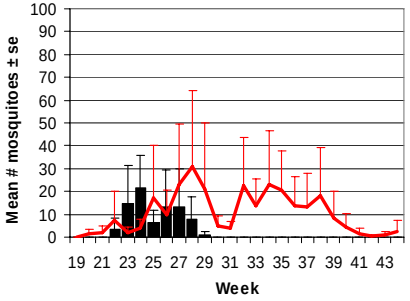
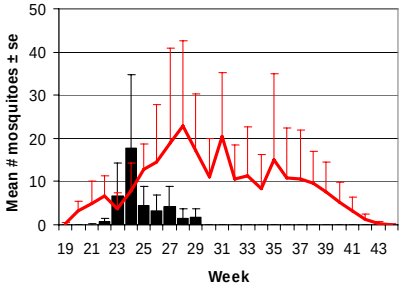
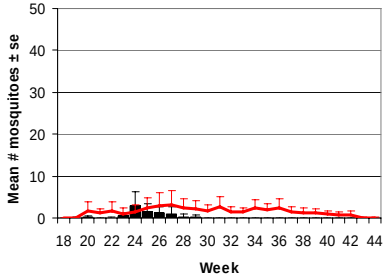
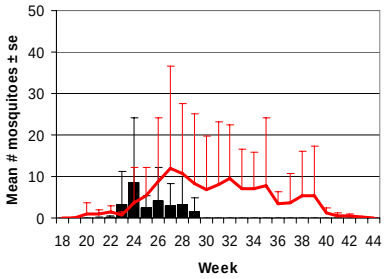


The figures show the average maximum temperature, minimum temperature and precipitation deviations from 30 year averages. Current data is from the Hillsborough NJ weather station (a station close to central NJ which recorded all three parameters and was available online at the NJ state climatologist) 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, Essex, Hudson, Hunterdon, Mercer, Middlesex, Morris, Ocean, Somerset, and Warren counties. Note: County data is sent in at a variety of times during the week.

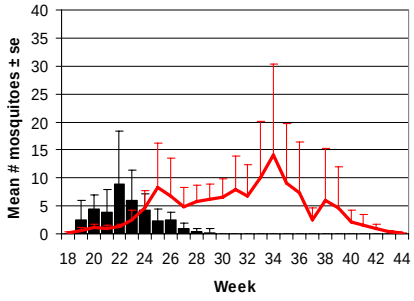


Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

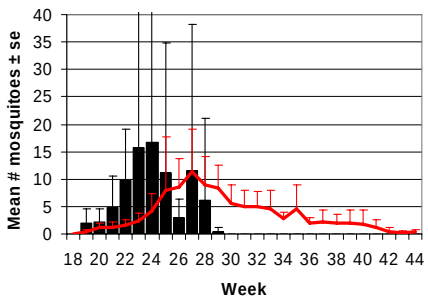
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		Lack of precipitation and higher temperatures have continued to reduce ephemeral water sources that are the mainstays of floodwater mosquito larval habitat, resulting in a reduction of those populations in general across the state. Local populations may exploit local habitat that appear, either from patchy rainfall or from upstream sources as these species tend to go from egg to adult quickly. NOTE: Significant rainfall has occurred throughout New Jersey overnight, with several inches of rain creating floodwater habitat. Continued warm weather should result in increased abundance in the coming week or two.	

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

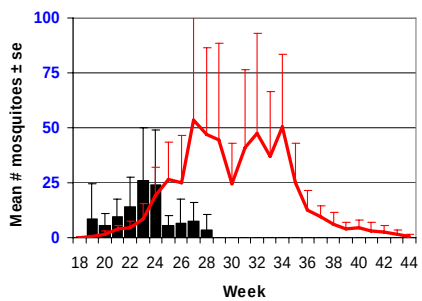
Agricultural



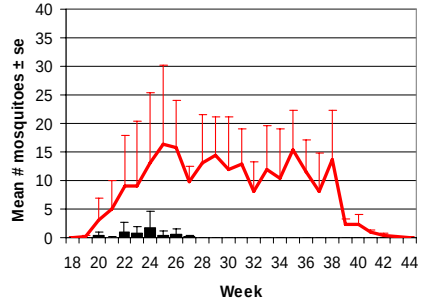
Coastal



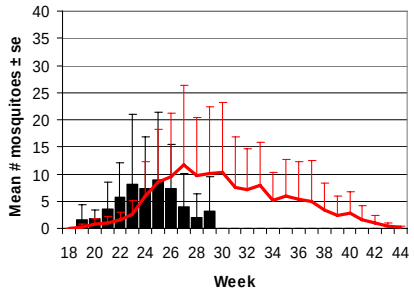
Delaware Bayshore



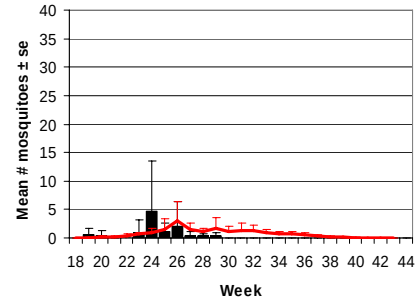
Delaware River Basin



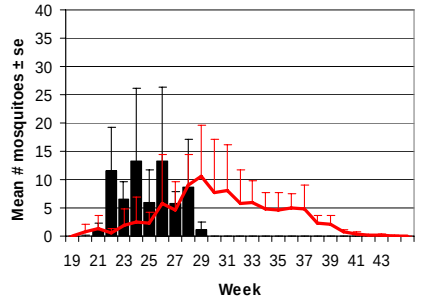
New York Metro



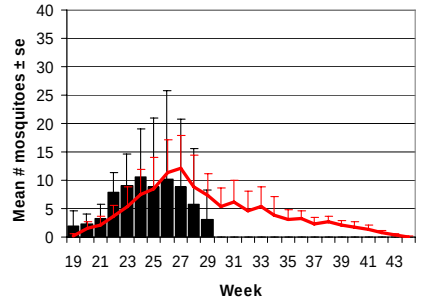
North Central Rural



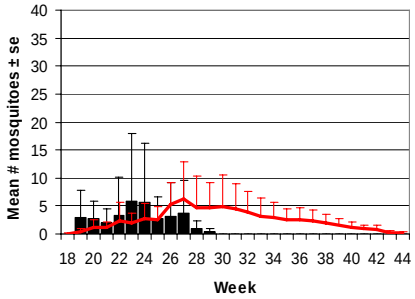
Northwestern Rural



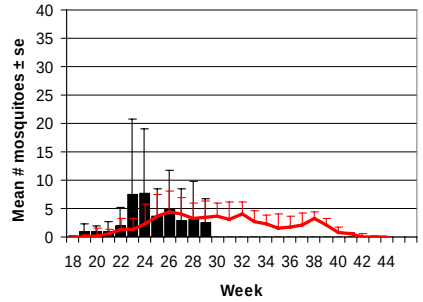
Philadelphia Metro



Pinelands



Suburban Corridor

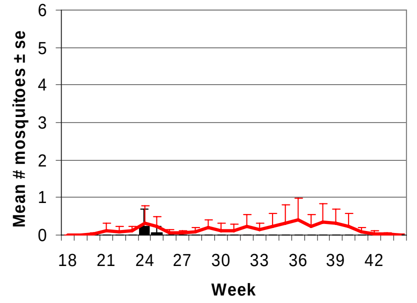


Comments

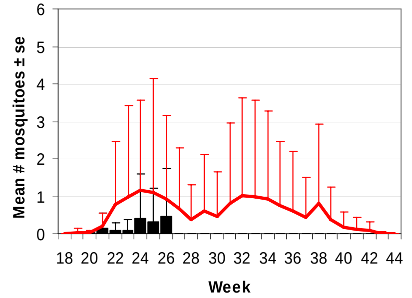
Culex Mixed species (*Cx. pipiens, restuans* and *salinarius*) continue to track historical trends, apart from the overall pattern that populations appeared higher early in the season. It remains to be seen if peaking early will result in a shift of the entire season earlier, or if *Culex* will remain on the wing to the usual fall end of season before going to overwinter in hibernaculae. Given that virus has been found in pools of *Culex pipiens* and *Culex* Mixed species, a shift in the initial number of infected mosquito contributing to the amplification and transmission of disease might affect the subsequent amount of virus in the system.

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

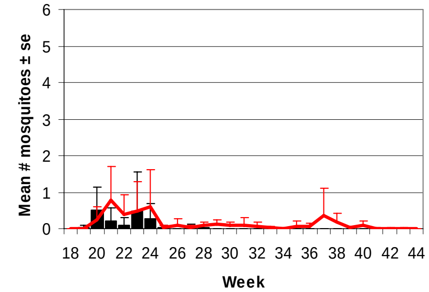
Agricultural



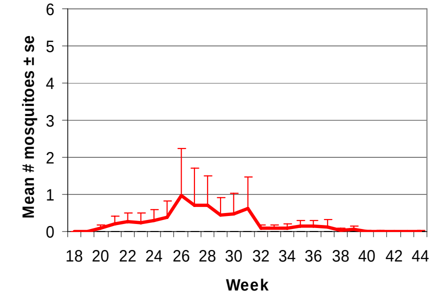
Coastal



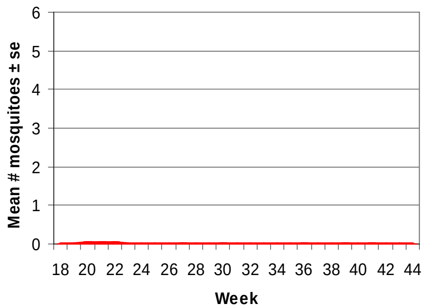
Delaware Bayshore



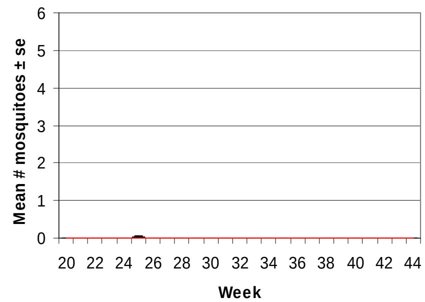
Delaware River Basin



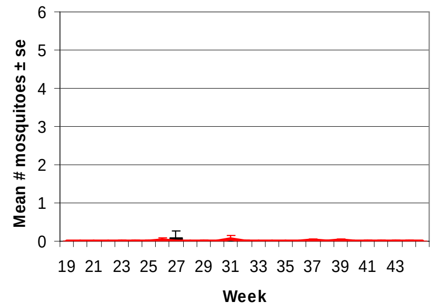
New York Metro



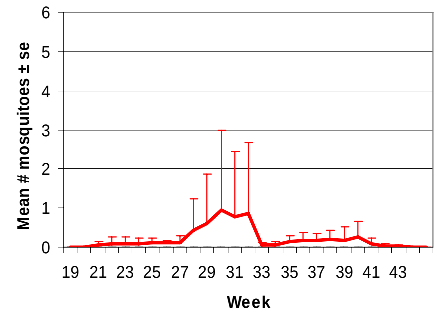
North Central Rural



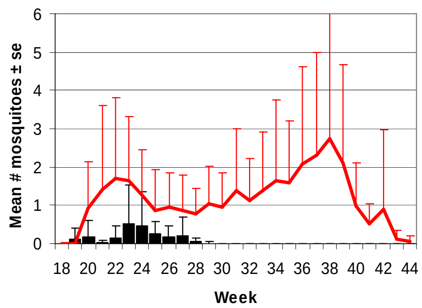
Northwestern Rural



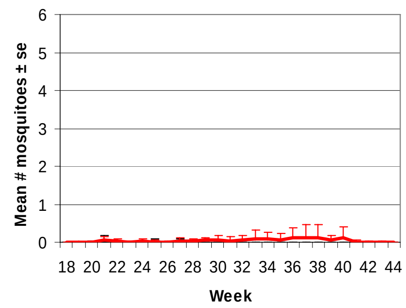
Philadelphia Metro



Pinelands



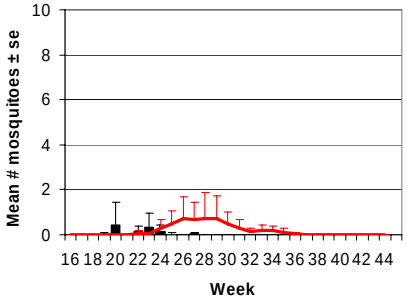
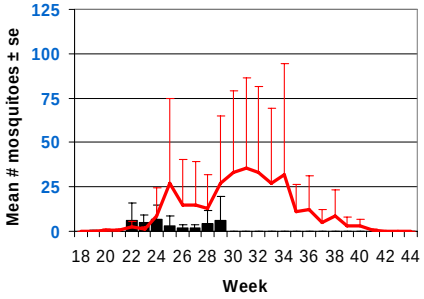
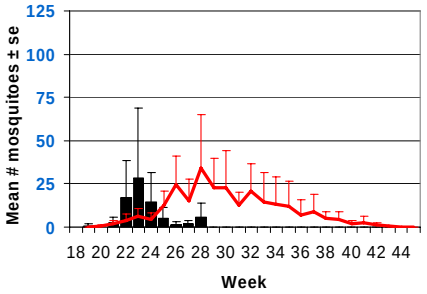
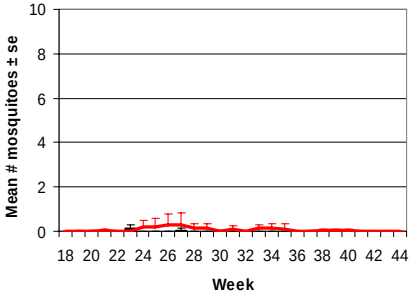
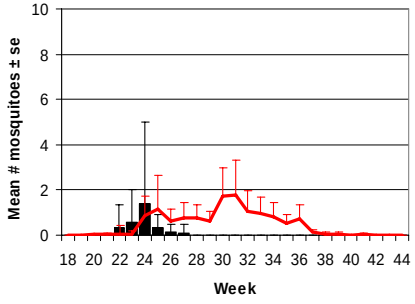
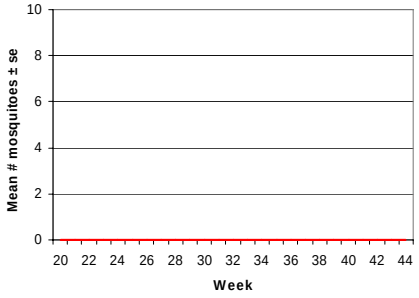
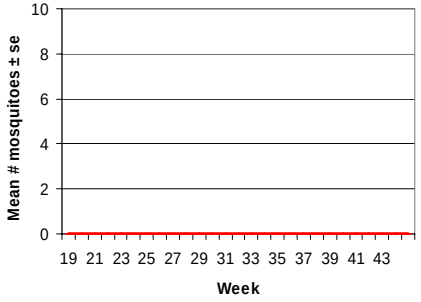
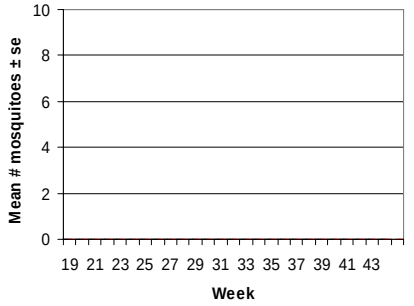
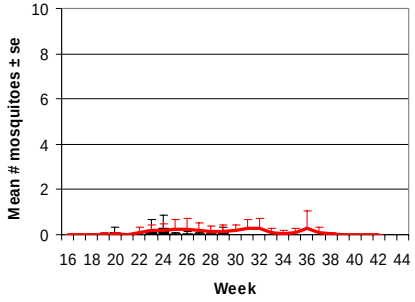
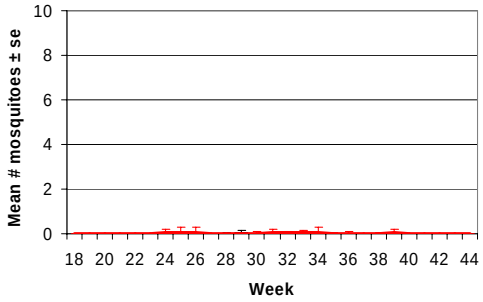
Suburban Corridor



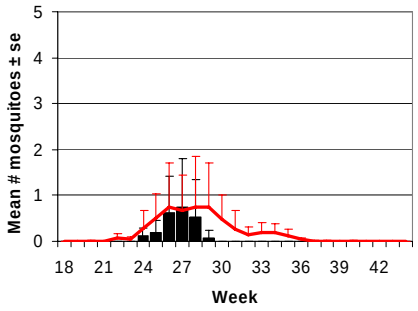
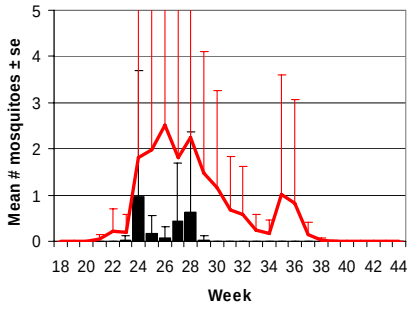
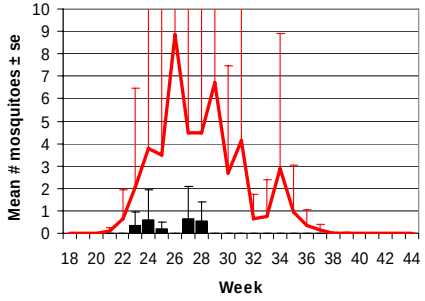
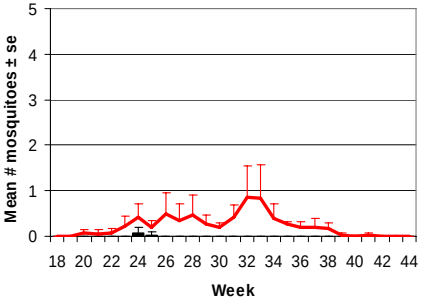
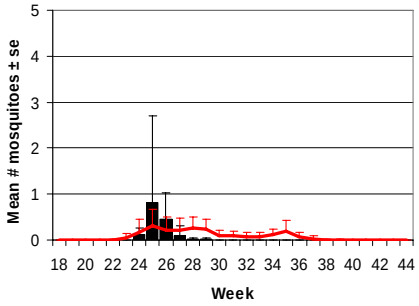
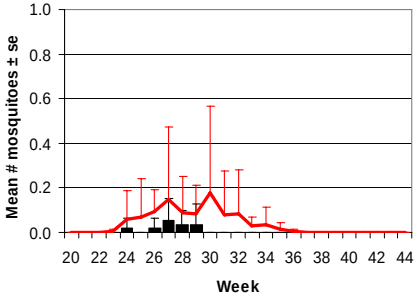
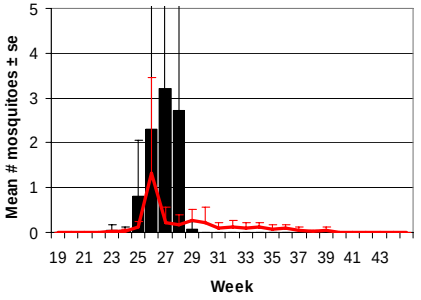
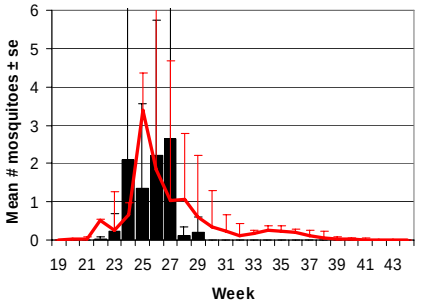
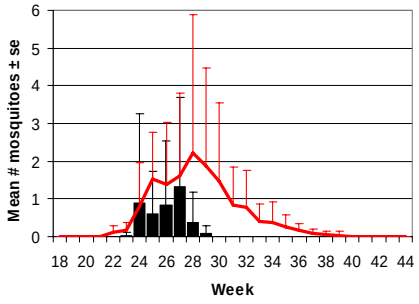
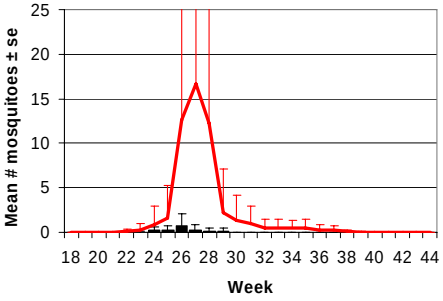
Comments

This year, Florida has had early involvement with eastern equine encephalitis and is rapidly approaching the state average of 70 equine cases per year. There are only 4 reported positive mosquito pools, but more than 50 positive sentinel flocks. Here in New Jersey, we have yet to find virus activity, either in mosquito pools, sentinel chicken flocks or horse cases. Low population of the primary enzootic vector *Culiseta melanura* may potentially reduce amplification. But, we typically find positive *Cs. melanura* pools and often at least a single horse case here in New Jersey.

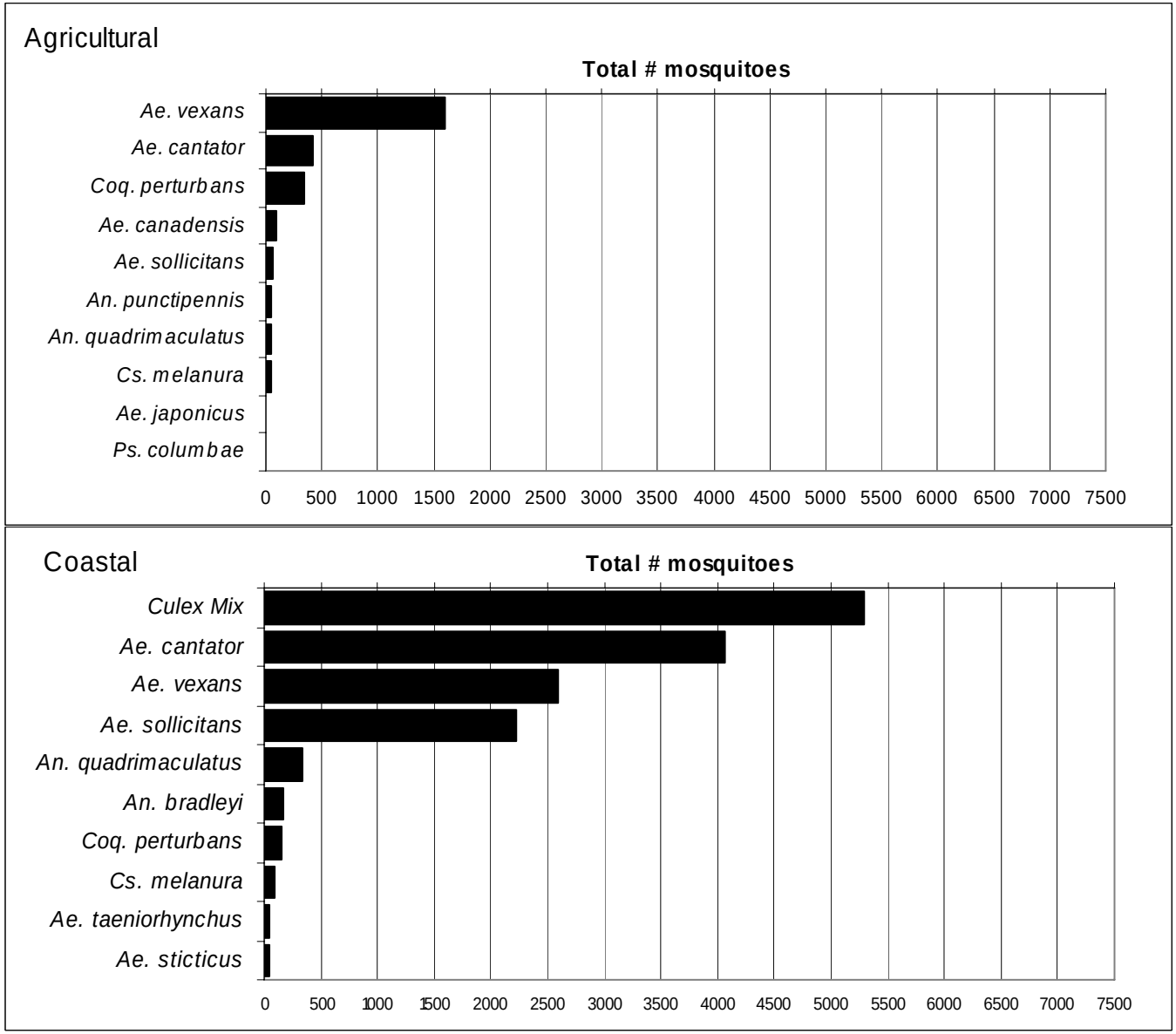
Aedes sollicitans - Salt Floodwater Species
Multivoltine Aedine (*Ae. sollicitans* Type)

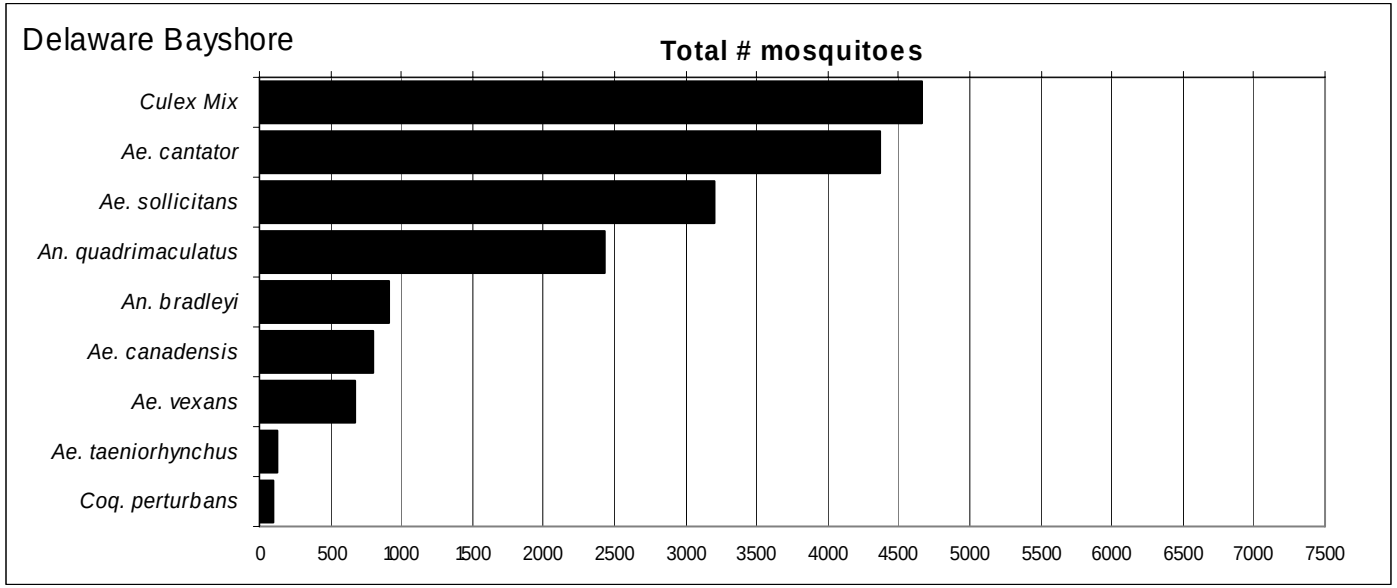
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		The second brood emergence of *Aedes sollicitans* continues. As with *Culex* patterns, it would appear that *Ae. sollicitans* populations began earlier than historical record would suggest as typical. Currently, abundances in the Coastal and Delaware Bayshore regions appear less than historical trends suggest. This has been the pattern for the past two years.	

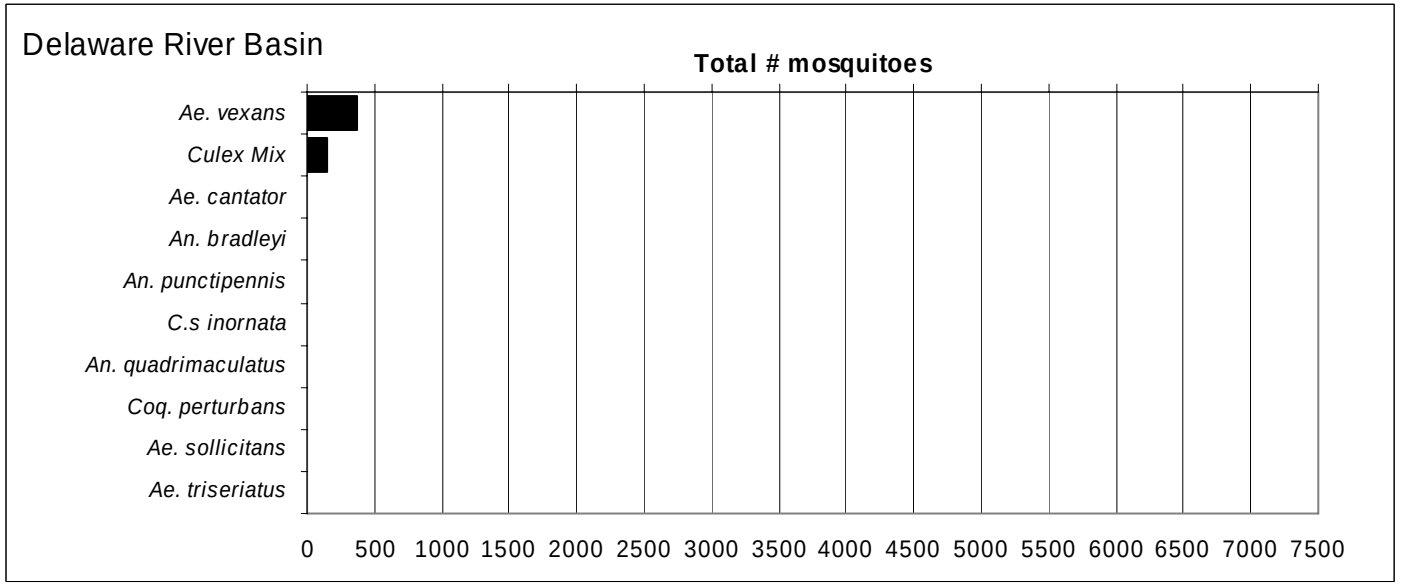
Coquillettidia perturbans- Monotypic Species
(*Cq. perturbans* Type)

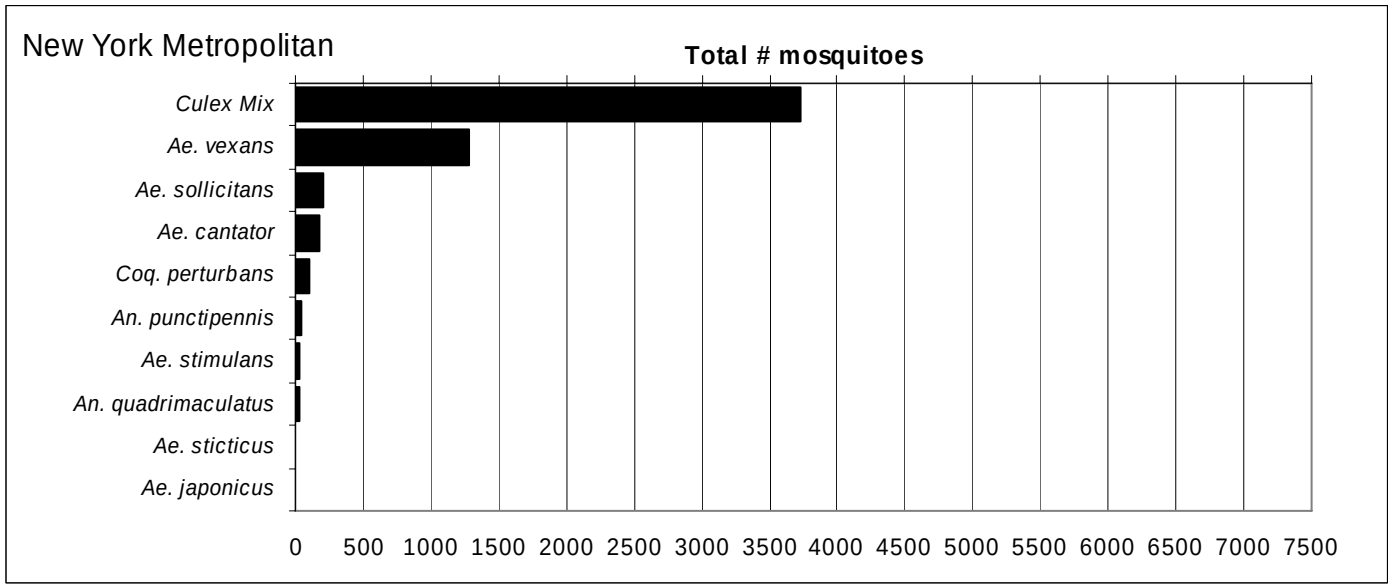
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Coquillettidia perturbans* have dropped off in areas where they were previously abundant, such as the Philadelphia Metro and possibly the Northwestern Rural. This mid-season mosquito may be involved with inland vertebrate cases of EEE and *Cq. perturbans* activity and abundance should always be considered when EEE activity is present.	

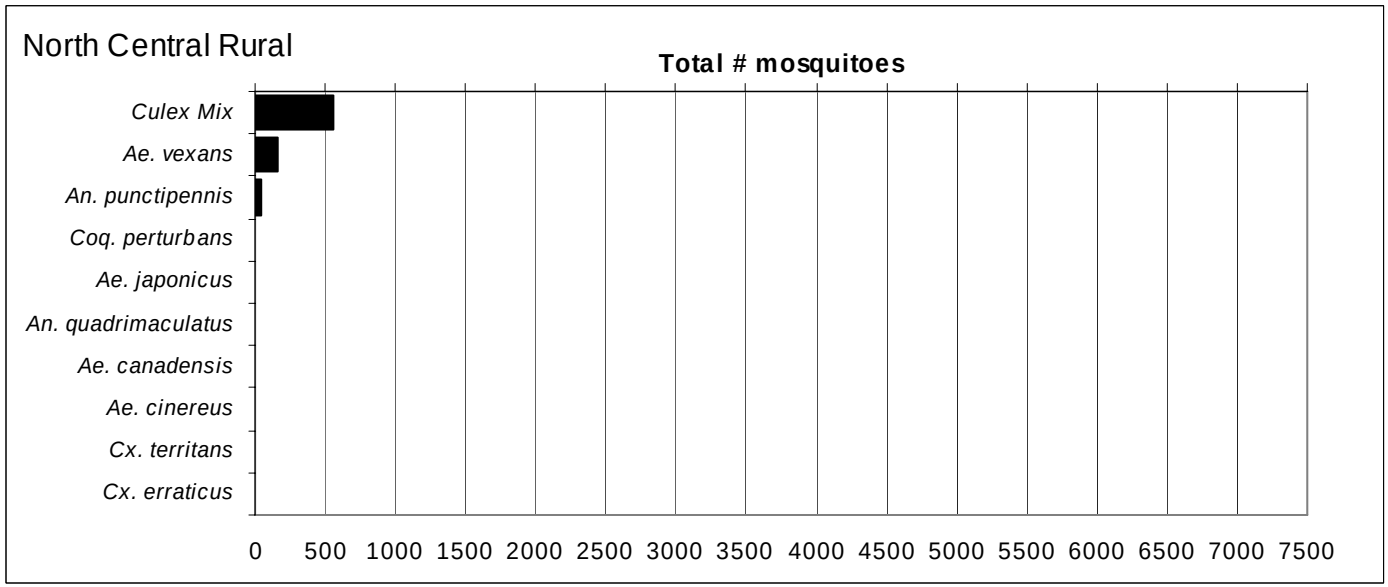
Top Ten Mosquito Species/Region



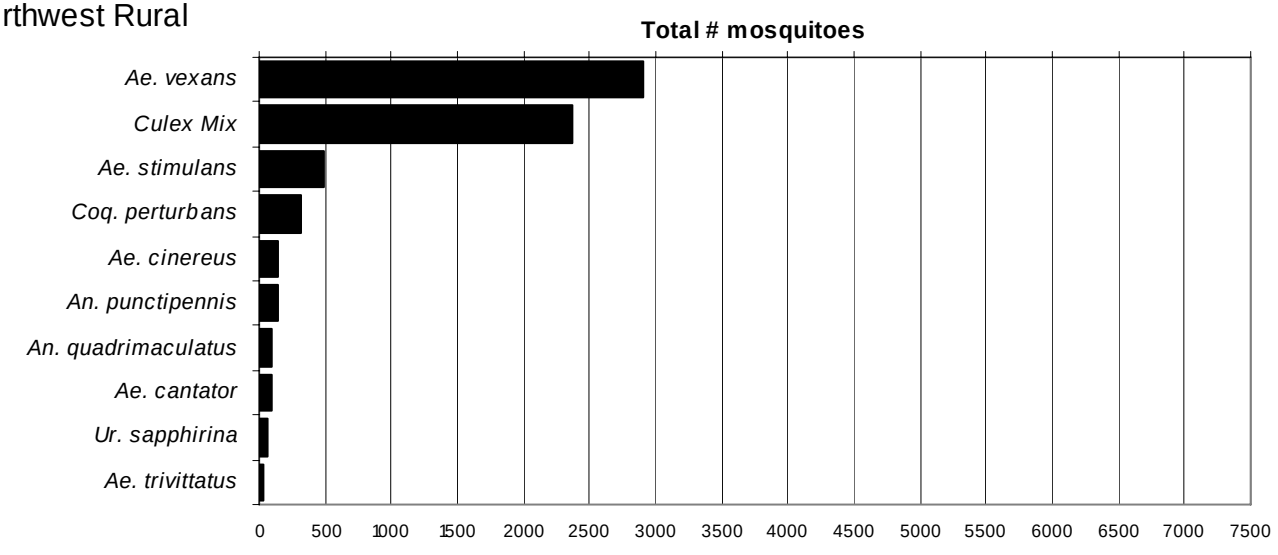

Delaware Bayshore
Total # mosquitoes
Culex Mix
Ae. cantator
Ae. sollicitans
An. quadrimaculatus
An. bradleyi
Ae. canadensis
Ae. vexans
Ae. taeniorhynchus
Coq. perturbans
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
6500
7000
7500


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

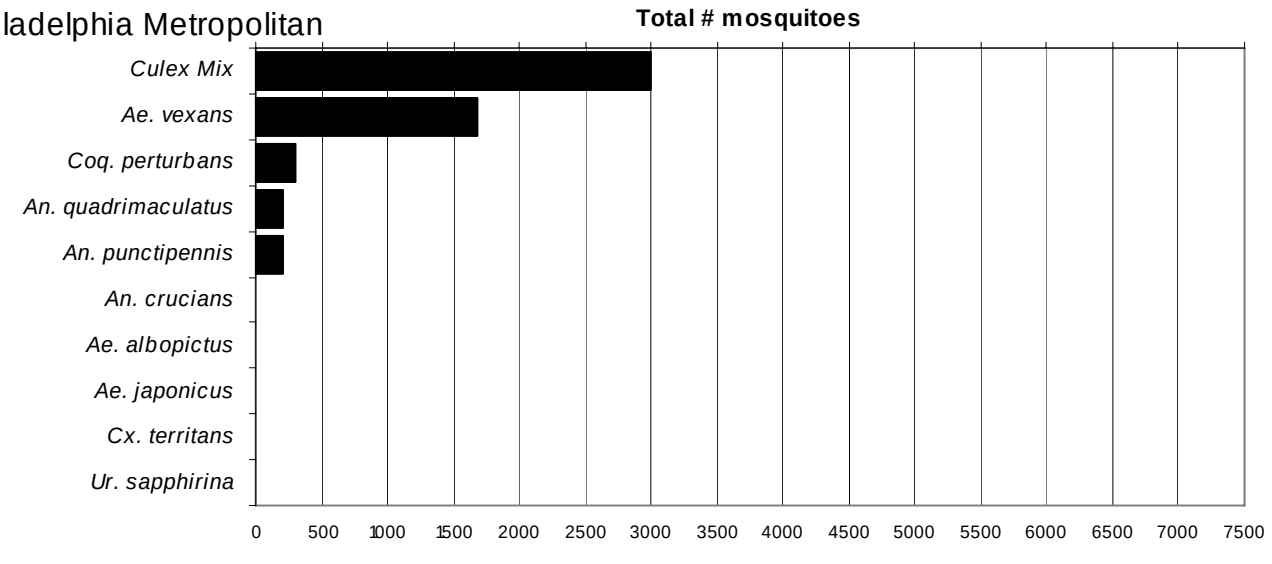

New York Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. sollicitans
Ae. cantator
Coq. perturbans
An. punctipennis
Ae. stimulans
An. quadrimaculatus
Ae. sticticus
Ae. japonicus
0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 6000 6500 7000 7500


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

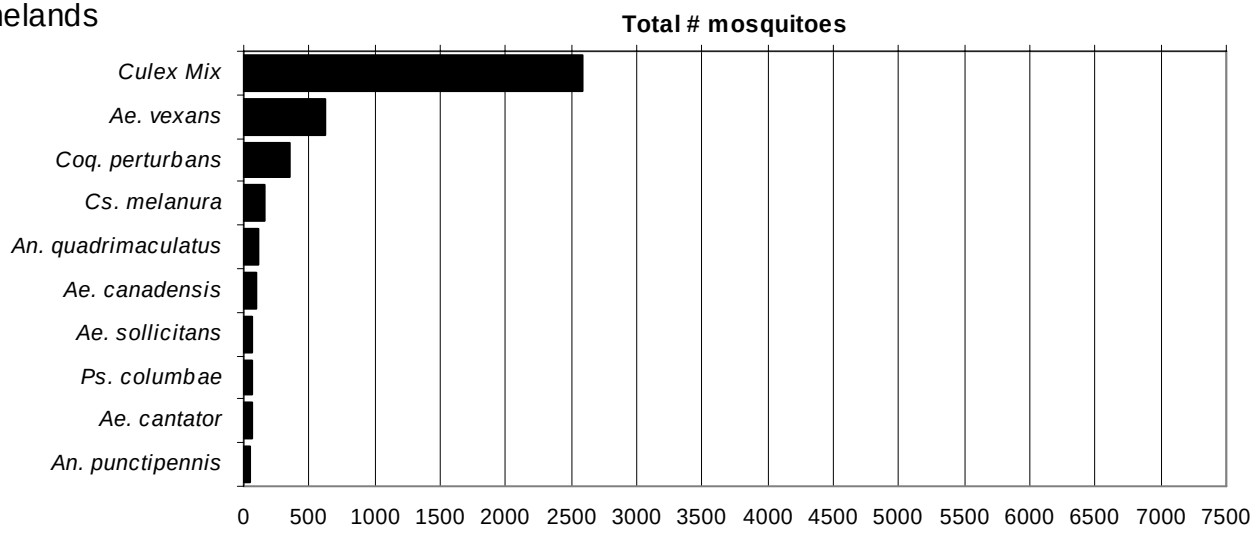
Northwest Rural



Philadelphia Metropolitan



Pinelands



Suburban Corridor