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New Jersey Agricultural Experiment Station

NEW JERSEY ADULT MOSQUITO SURVEILLANCE
Report for 29 June to 05 July 2008, CDC Week 27

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Center for Vector Biology

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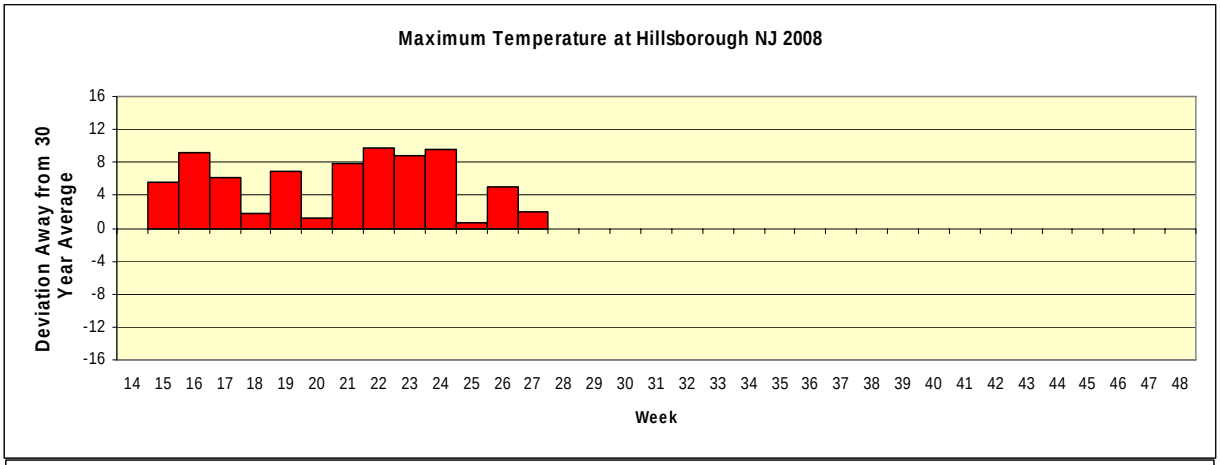
Summary table – Week 27

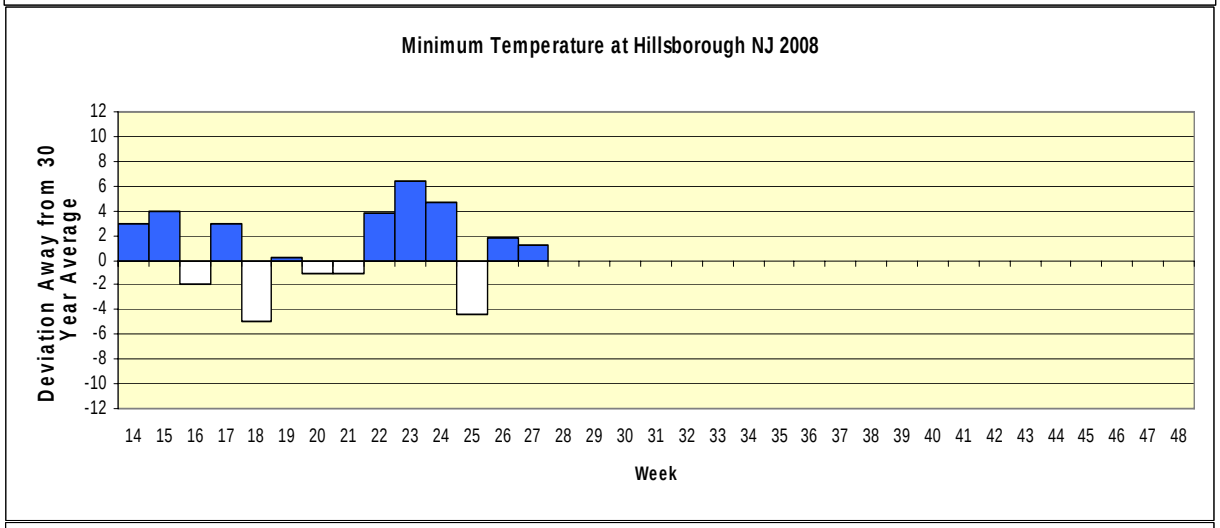
	Aedes vexans			*Culex* Mix			*Coquillettidia perturbans*			*Aedes sollicitans*		
Region	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase
Agricultural	0.11	6.88	0	0.81	4.90	0	0.37	0.67	0	0.03	0.67	0
Coastal	1.60	7.38	0	0.89	11.30	0	0.00	1.82	0	0.89	14.53	0
Delaware Bayshore	0.05	4.90	0	1.33	53.35	0	0.00	4.46	0	0.14	15.49	0
Delaware River Basin	0.00	26.69	0	0.00	9.76	0	0.00	0.34	0	0.00	0.30	0
New York Metro	0.81	4.50	0	1.73	11.59	0	0.03	0.22	0	0.11	0.77	0
North Central Rural	0.00	0.90	0	0.06	1.53	0	0.00	0.00	0	0.00	0.00	0
Northwest Rural	3.77	23.28	0	0.83	4.66	0	0.03	0.00	0	0.00	0.00	0
Philadelphia Metro	3.76	19.00	0	6.90	12.14	0	2.63	0.11	4	0.00	0.00	0
Pinelands	0.94	3.15	0	2.92	6.21	0	0.90	0.77	1	0.03	0.21	0
Suburban Corridor	0.51	12.01	0	1.12	3.94	0	0.13	0.03	4	0.00	0.01	0

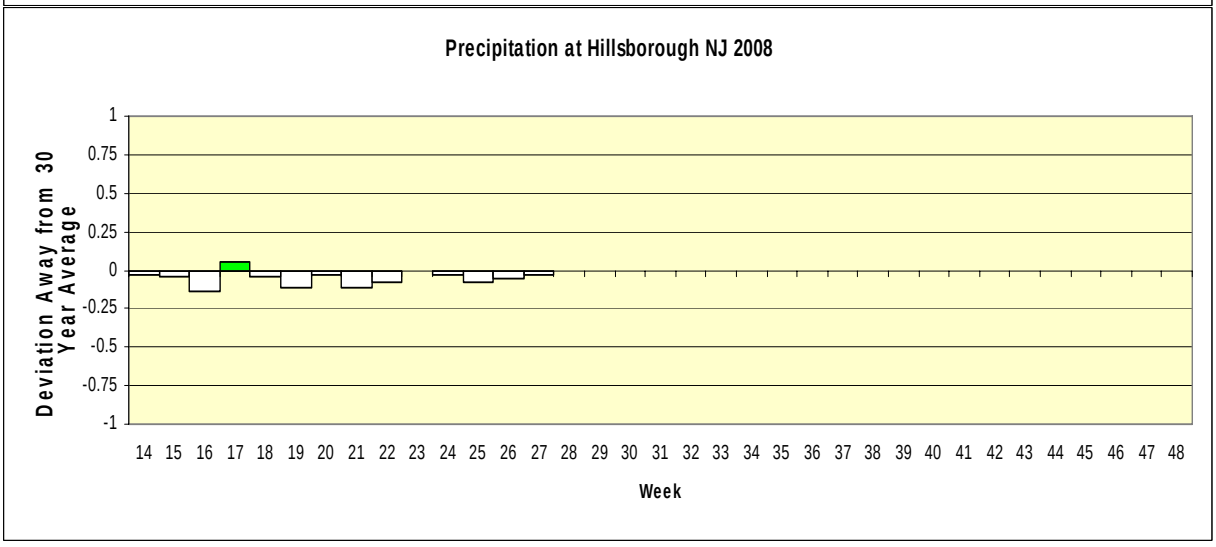
Averages represent data from, at most, the previous 5 years. Increase is a scale of current values from historical values where no difference or a decrease is represented by 0 (blue), up to 50% greater difference by 1 (green), up to 100% greater difference by 2 (yellow), up to 150% greater difference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

State Summary: The presence of *Coquillettidia perturbans* continues to be felt along the Suburban Corridor, Pinelands and the Philadelphia Metro regions.

Climate Deviations

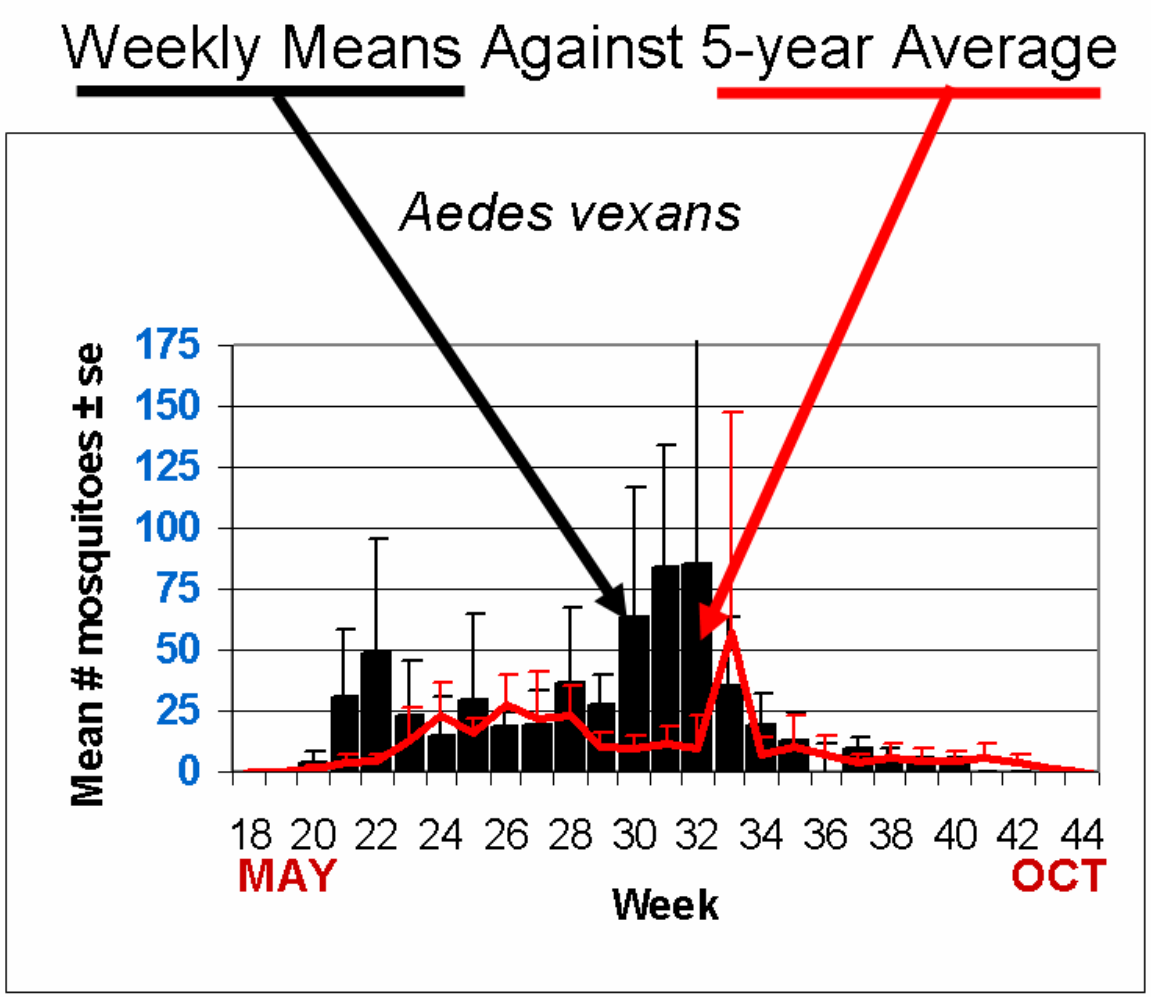




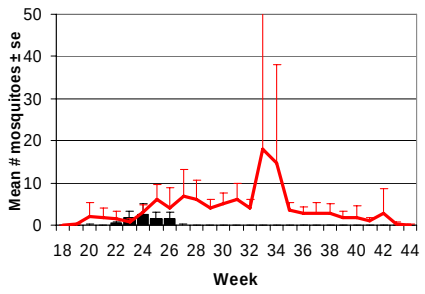
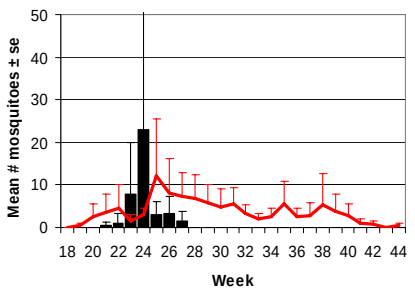
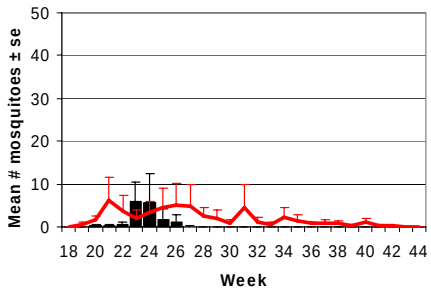
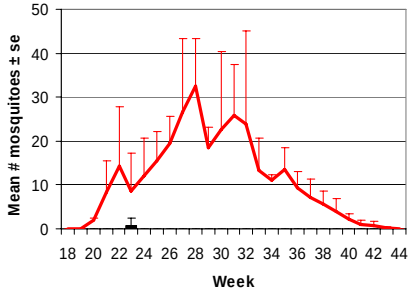
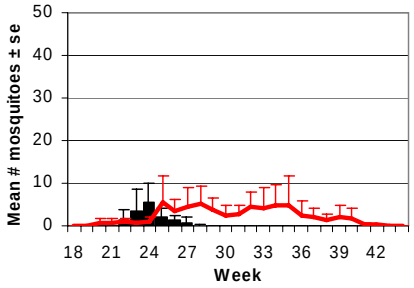
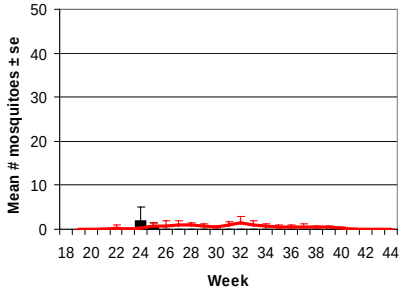
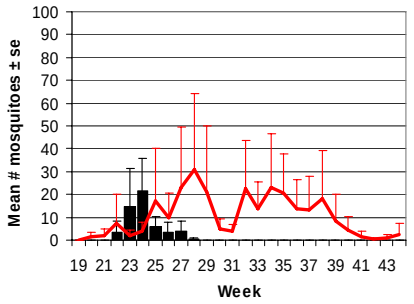
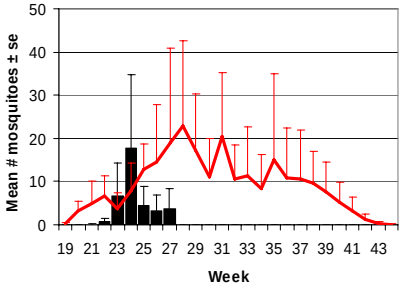
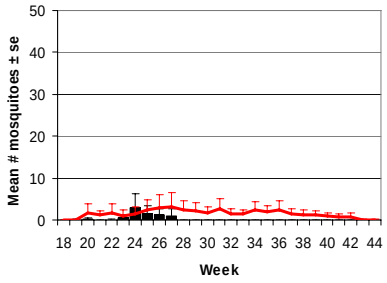
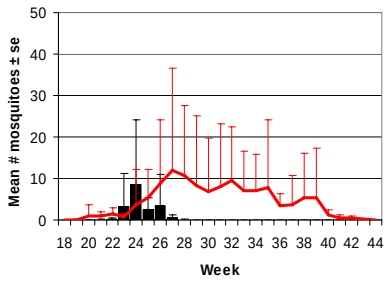


The figures show the average maximum temperature, minimum temperature and precipitation deviations from 30 year averages. Current data is from the Hillsborough NJ weather station (a station close to central NJ which recorded all three parameters and was available online at the NJ state climatologist)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

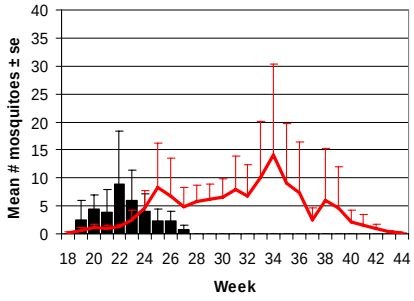


Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

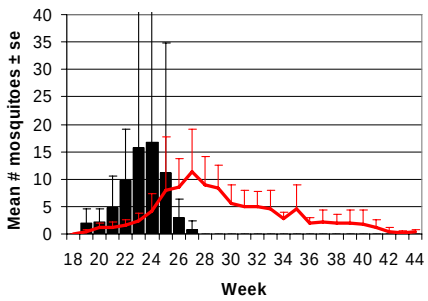
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		Precipitation has been widely scattered throughout the state, with the northern part of the state generally wetter than the southern. Local *Aedes vexans* and other floodwater species have been able to exploit ephemeral resources (rapidly vanishing larval habitat in warm days) to produce annoyances. This species is only moderately competent for West Nile virus, but does contribute significantly to the transmittal of dog heartworms.	

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

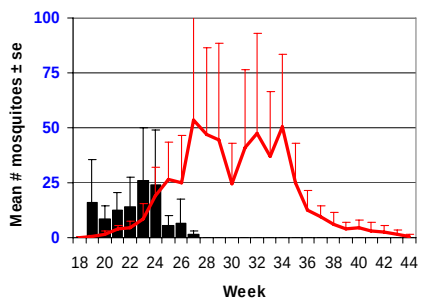
Agricultural



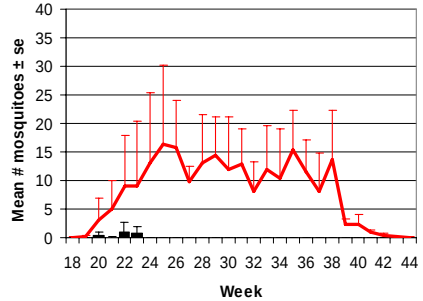
Coastal



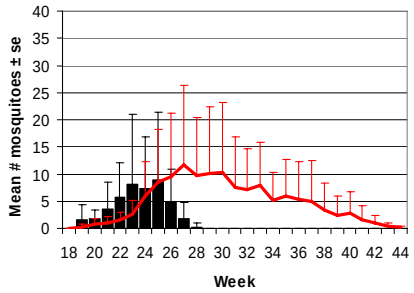
Delaware Bayshore



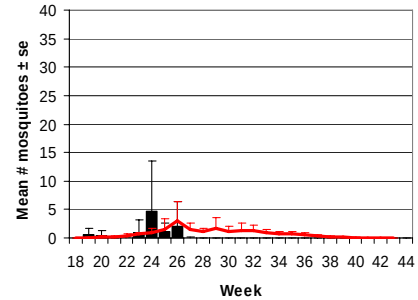
Delaware River Basin



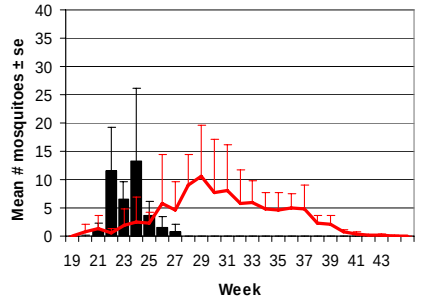
New York Metro



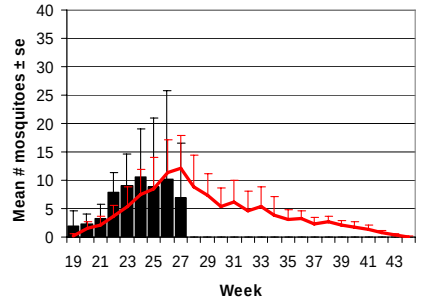
North Central Rural



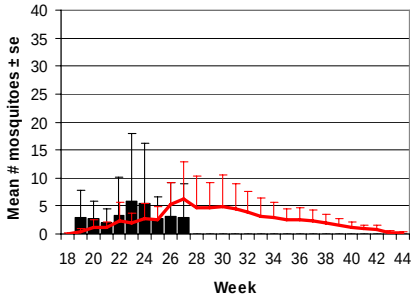
Northwestern Rural



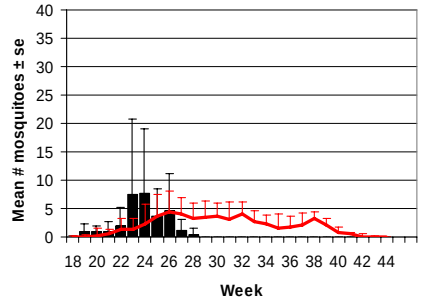
Philadelphia Metro



Pinelands



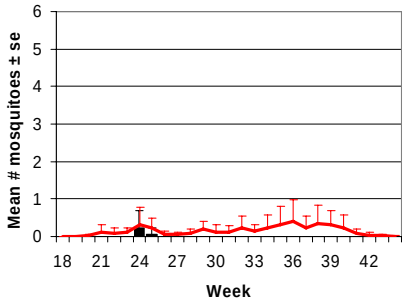
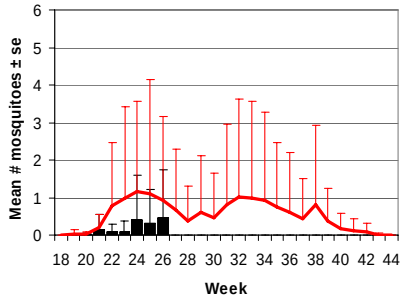
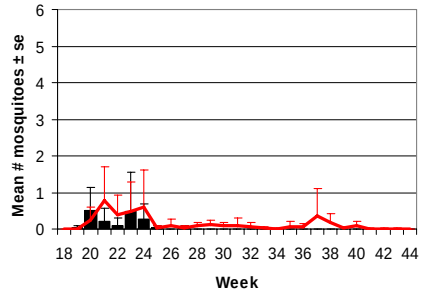
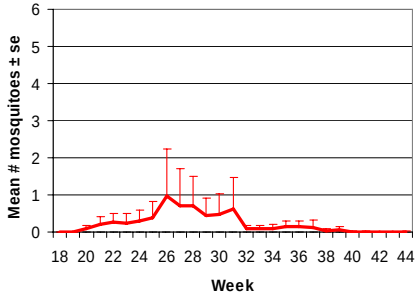
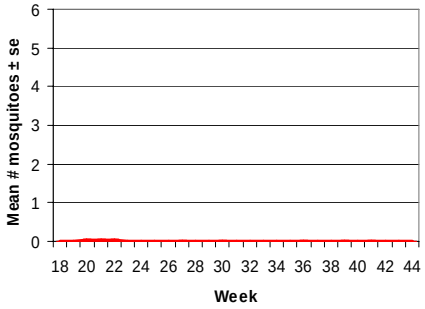
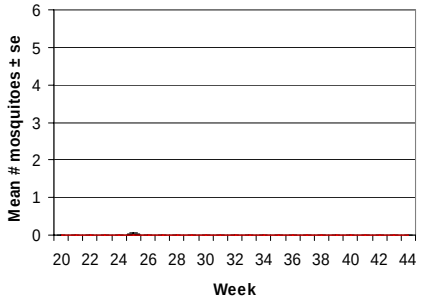
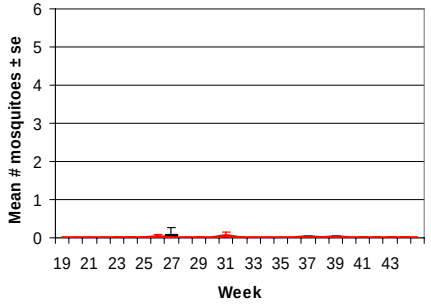
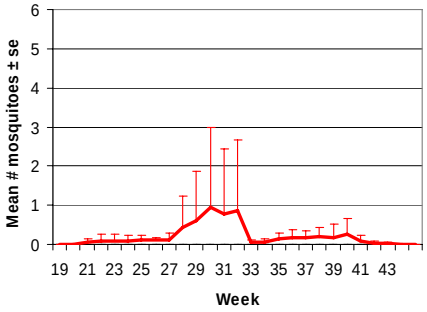
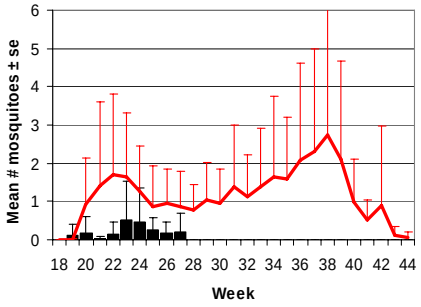
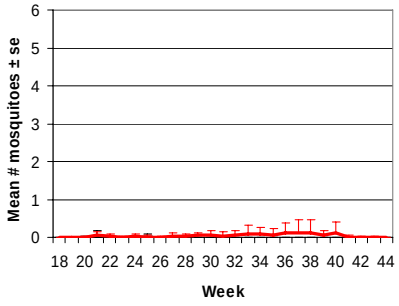
Suburban Corridor



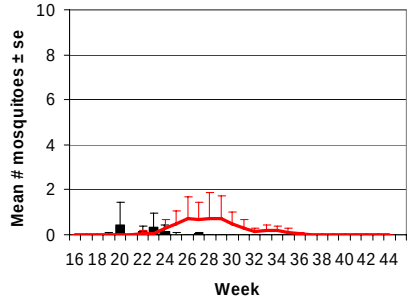
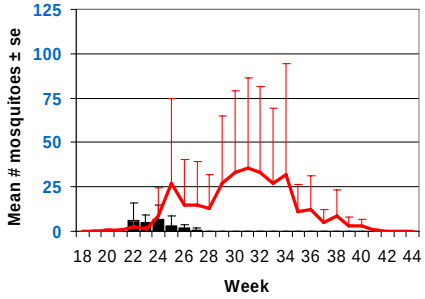
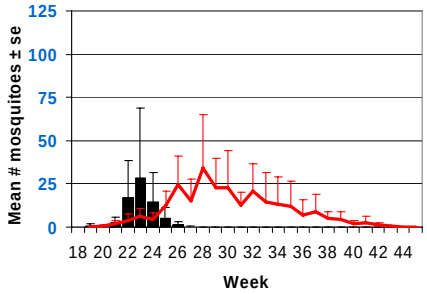
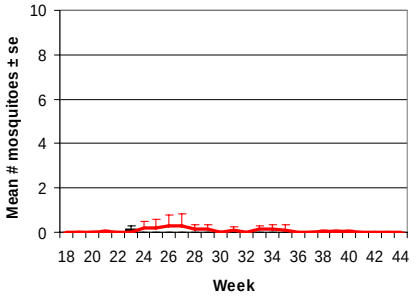
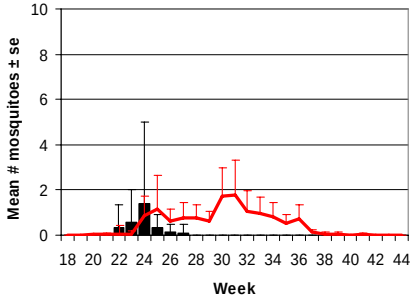
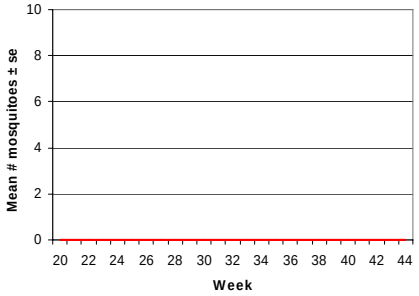
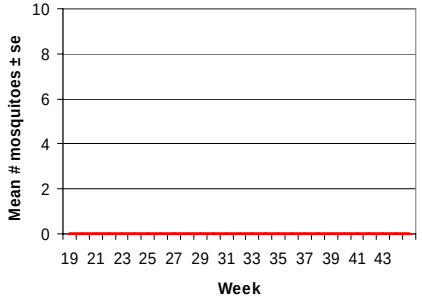
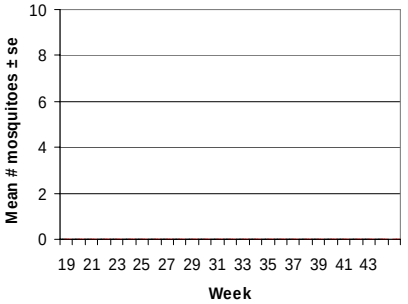
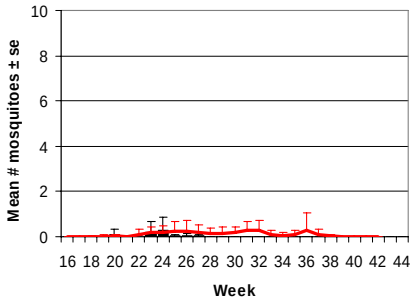
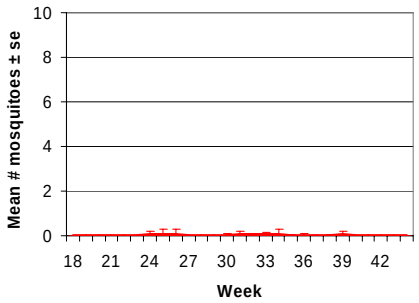
Comments

For some regions, *Culex* species (*Cs. pipiens, restuans, salinarius*) may be approaching their peak populations, such as in the Coastal, New York and Philadelphia Metro and Pinelands regions. But the slow decay of population abundance going well into the fall means that these species are around in force to contribute to amplification (*pipiens/restuans*) or transmittal (all three *Culex)* of West Nile virus.

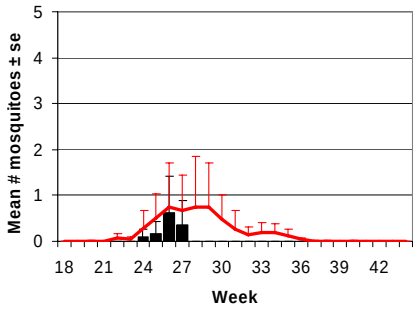
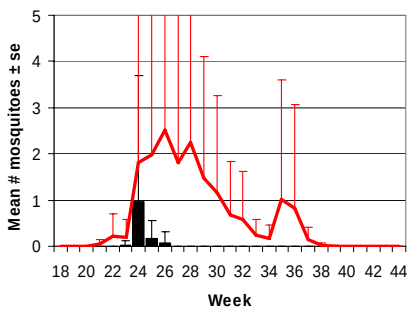
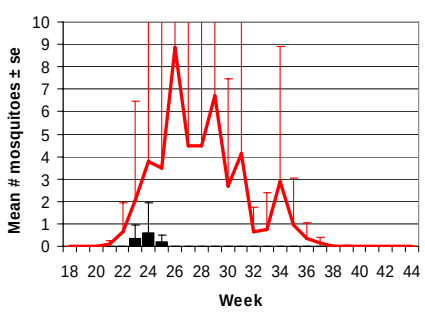
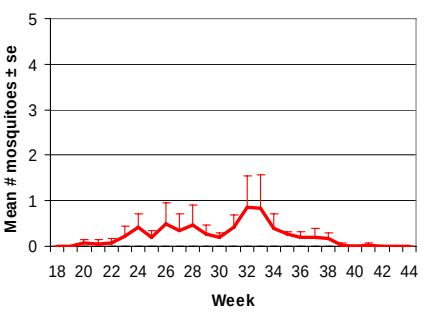
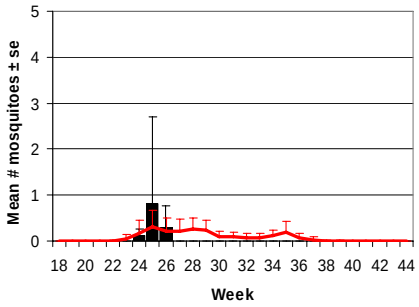
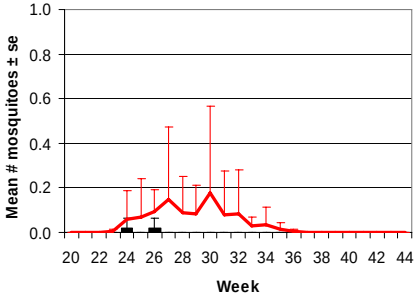
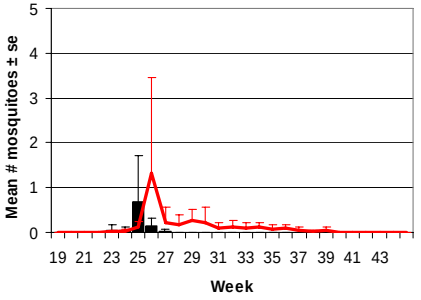
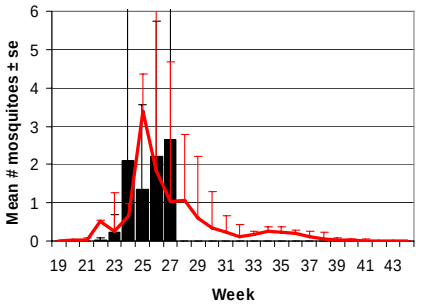
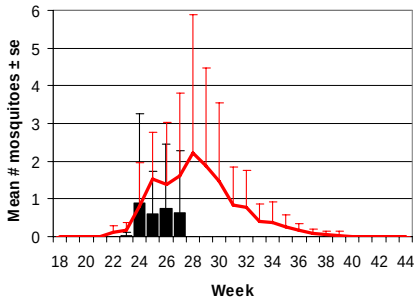
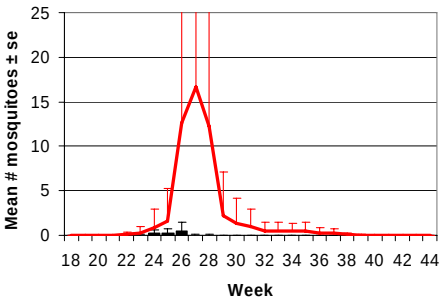
Culiseta melanura – Miscellaneous Group Unique (*Cs. melanura* Type)

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Culiseta melanura* populations have been very low in both the Vector Surveillance program which uses resting boxes as well as the light traps in this program. This appears to be a continuing trend for the past several years at several of the traditional monitoring sites for eastern equine encephalitis. These sites are generally set in pine plantations near White Cedar or Red Maple swamp habitat. Habitat changes both within larval areas or collection sites (salt water intrusions or an opening up of the canopy within adult resting sites) may have contributed to these changes.	

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

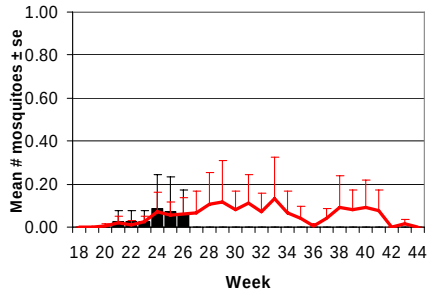
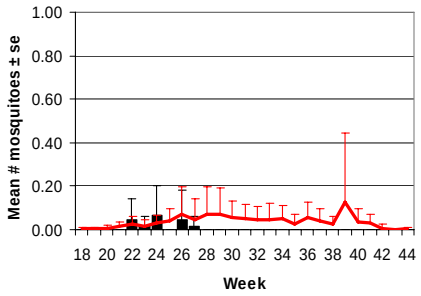
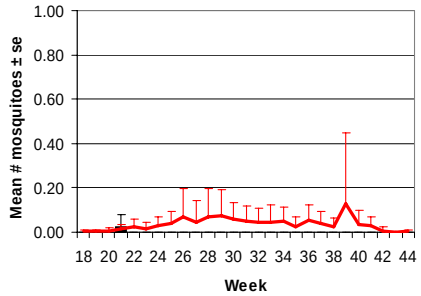
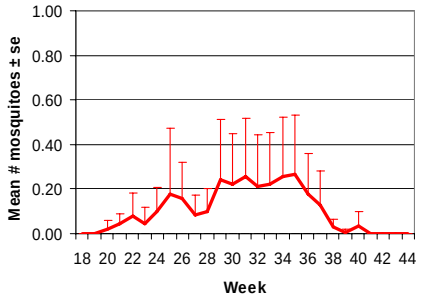
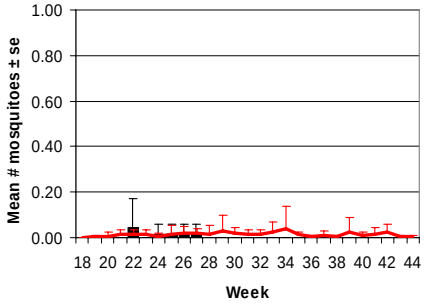
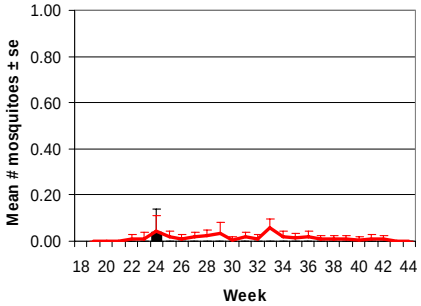
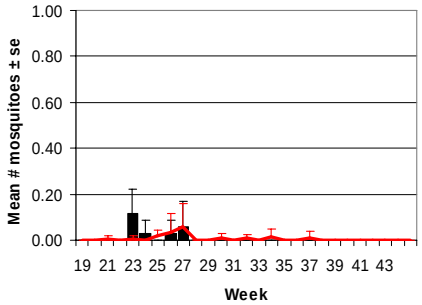
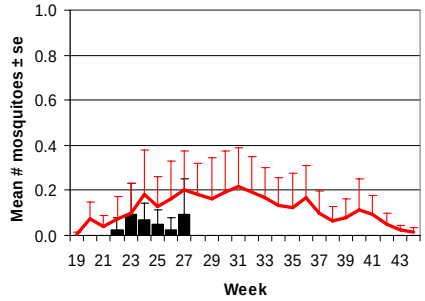
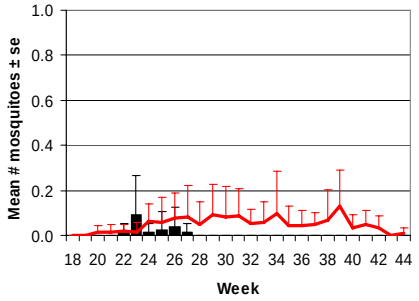
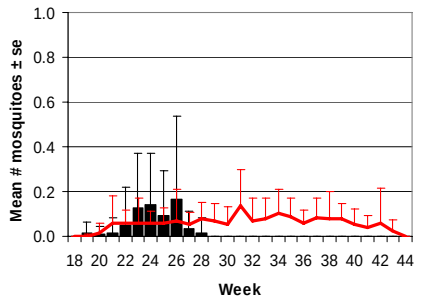
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes sollicitans* population data suggests that the second brood of the season has not yet emerged. The recent holiday, however, tends to delay transmittal of data from key counties, and it is very likely that the emergence of the second brood will be evident next week. If the size of the first brood is any indication to the size of the largest brood, then this upcoming emergence should be the largest for the Delaware Bayshore Region.	

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

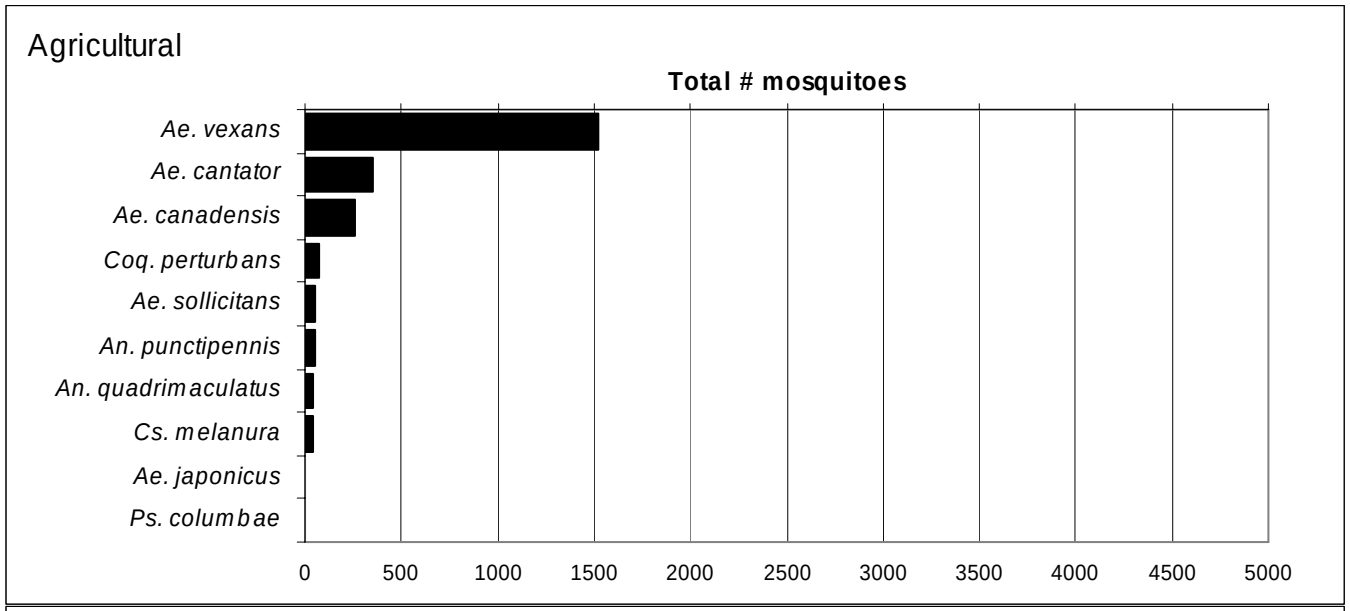
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Coquillettidia perturbans* abundances continue to track historical values for the Agricultural, Philadelphia and New York Metro regions as well as the Pinelands. Other regions appear to show a decline in numbers as compared with historical trends, although wide variation in historical data suggests that this may not be unusual. This species is often difficult to control which is a concern during times of high eastern equine encephalitis activity as this species is suspect of being the inland mammalian vector. ERRATA: Last week, historical data for the North Central to the Suburban Corridor was from *Cs. melanura*, not *Cq. perturbans*.	

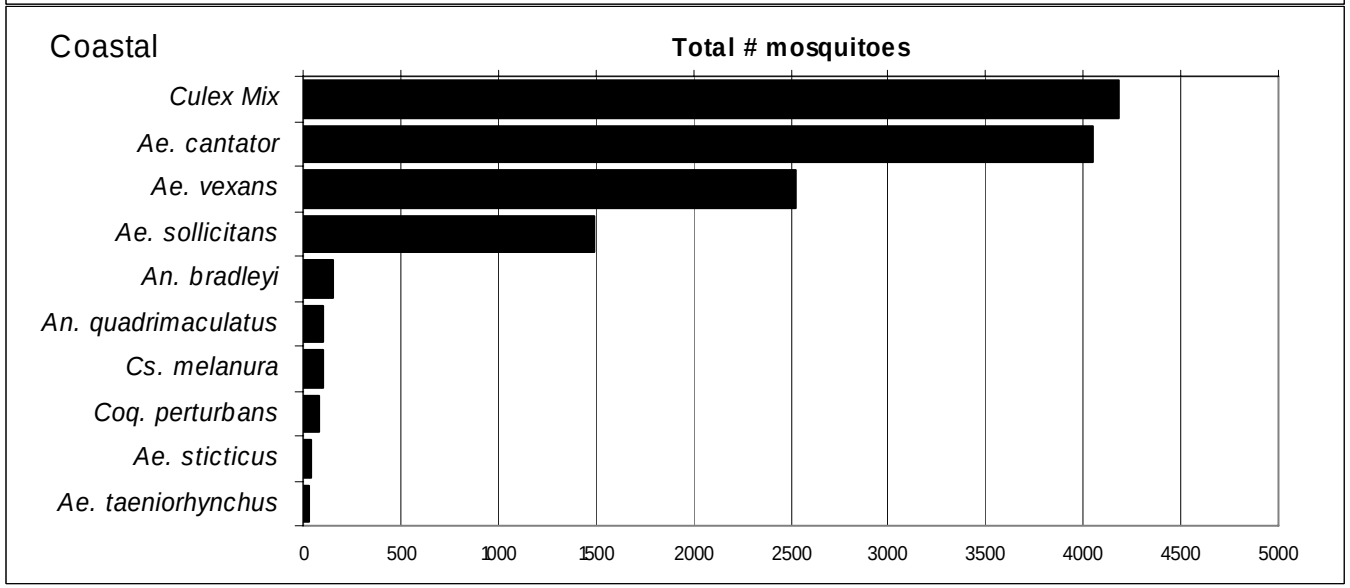
Aedes japonicus - Container Species

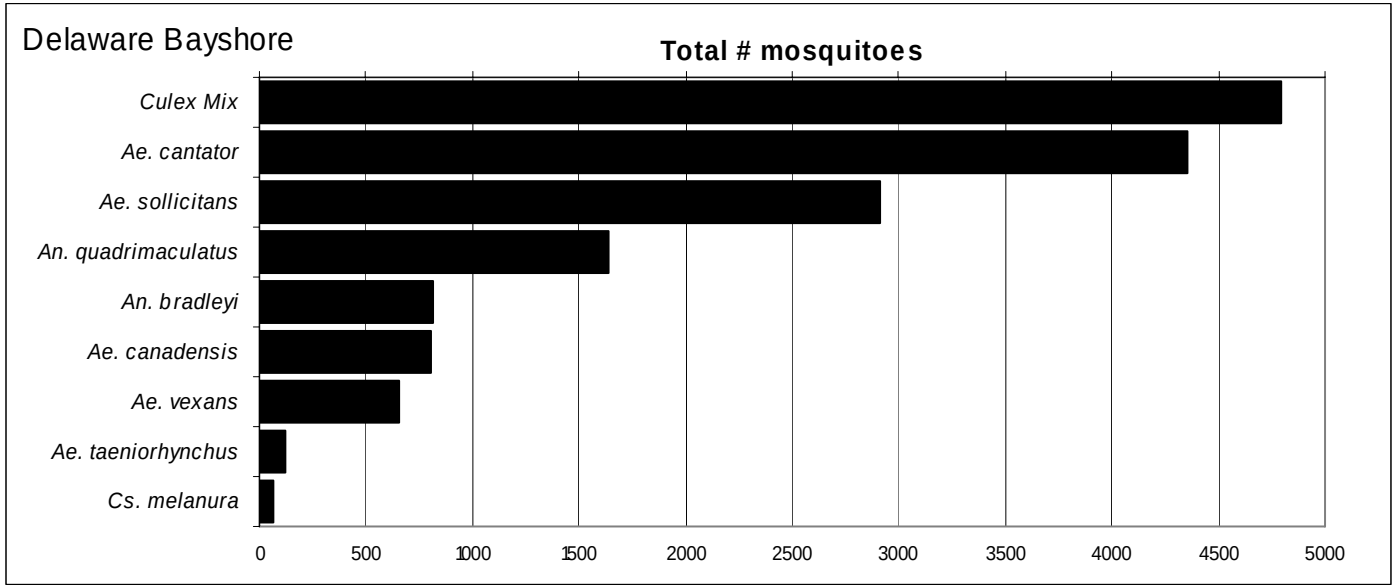
Multivoltine Aedine (*Ae. triseriatus* Type)

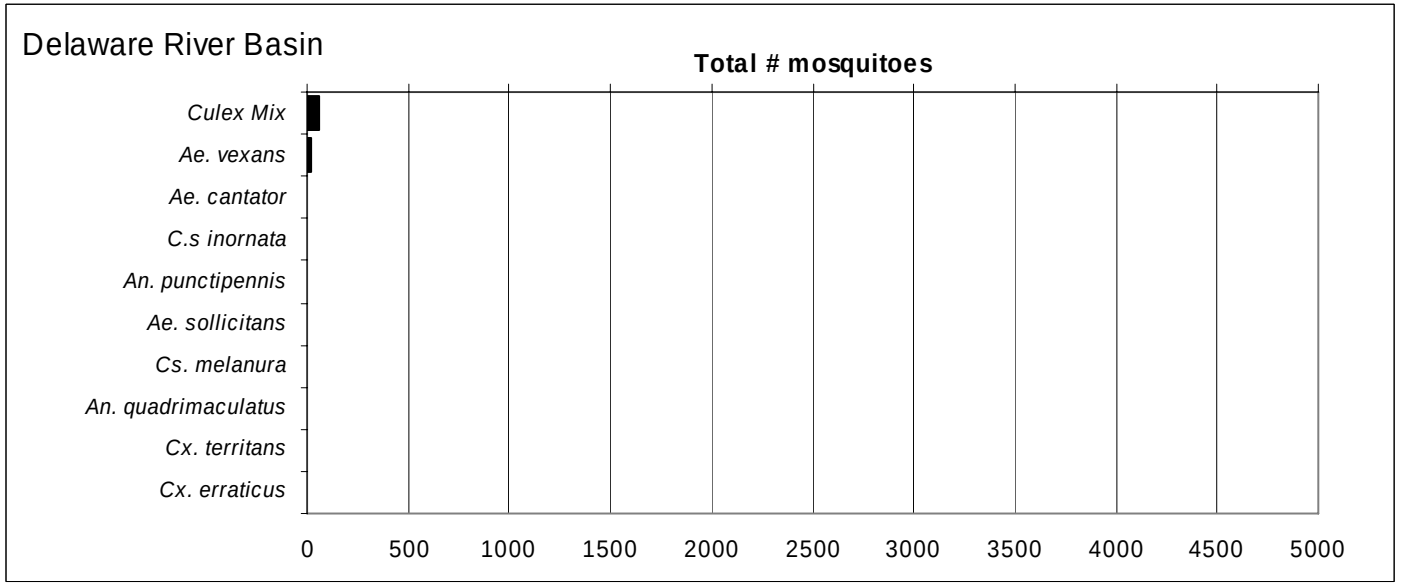
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes japonicus* populations, for most regions, appear to be following their recent historical trends. Abundance appears to be restricted in the Delaware Bayshore and Delaware River Basin regions after relatively high numbers a few years ago. The historical numbers reported suggests that this species was found in the northern portion of the region up through last year, but not the southern. When data from this area becomes available for this year, this species is likely to continue to show a presence. *Ae. japonicus* is a competent vector of WNV. Tires can be a source of larval habitat.	

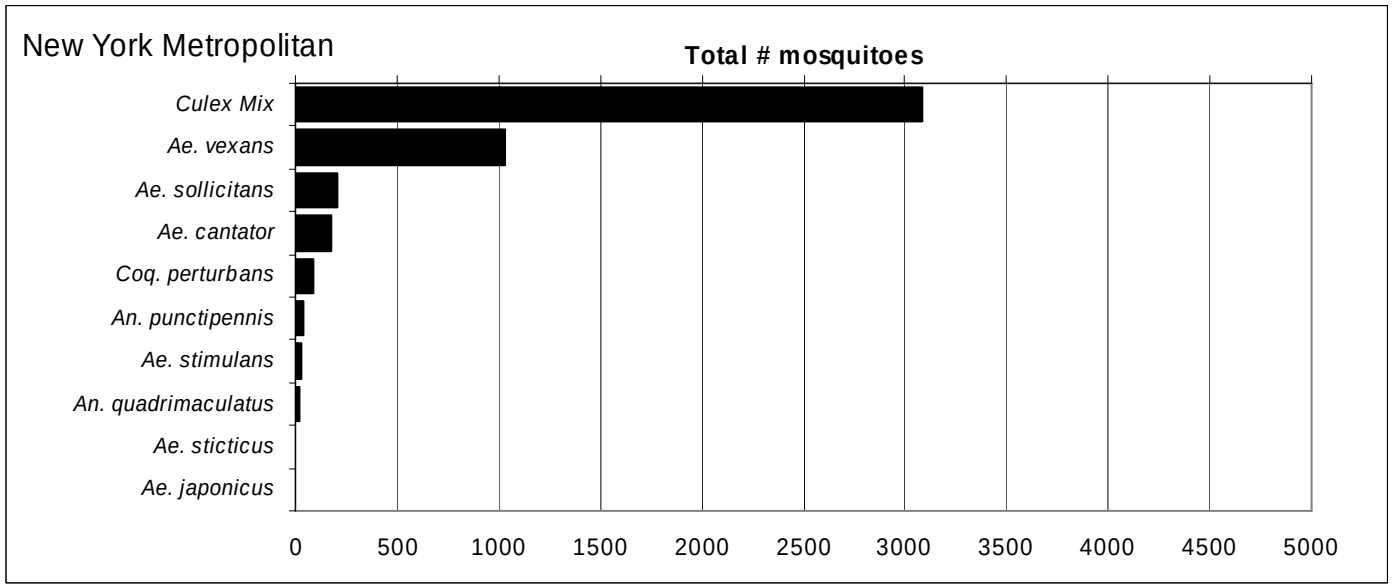
Top Ten Mosquito Species/Region

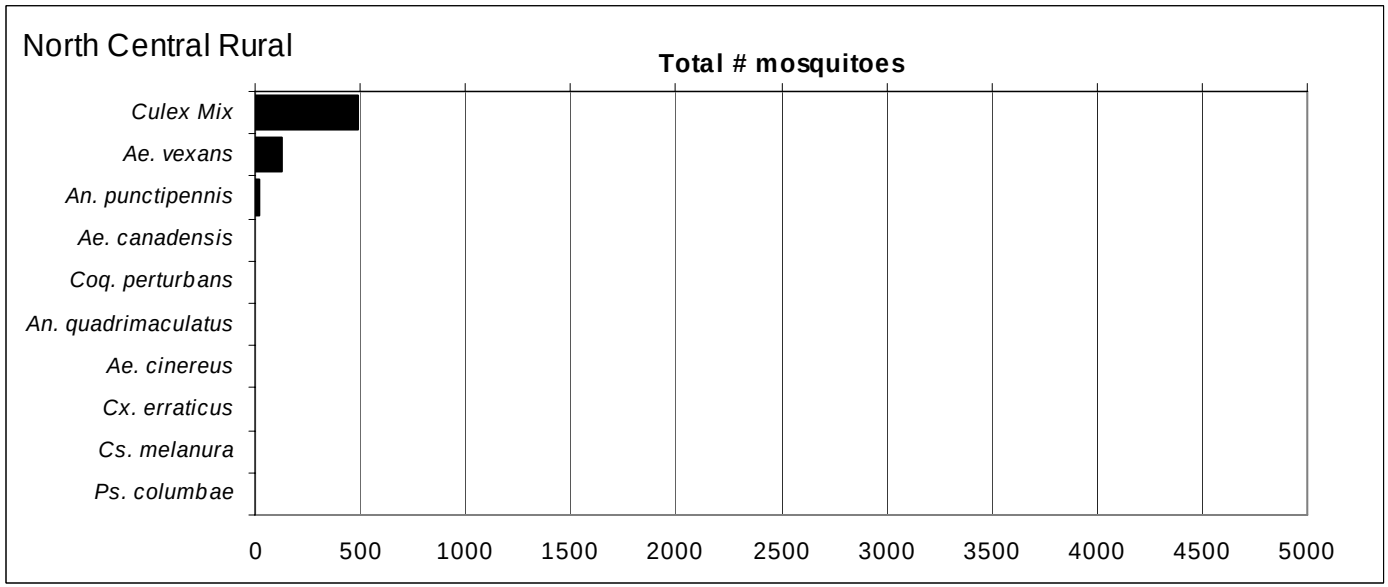


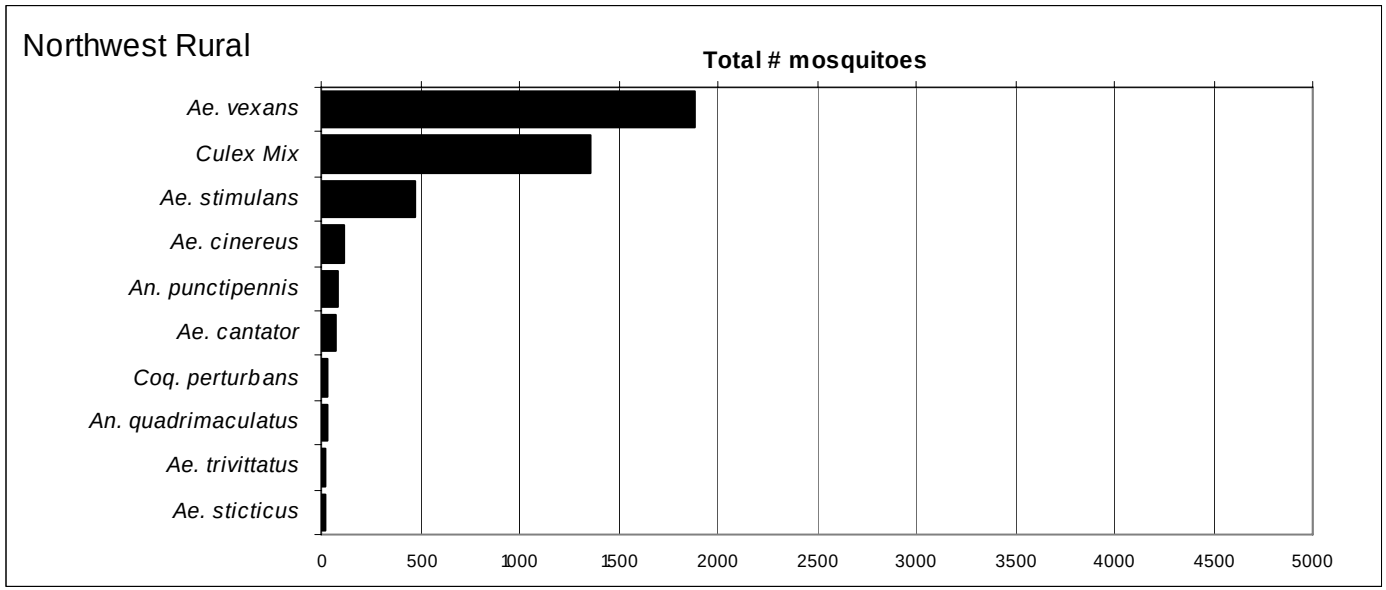


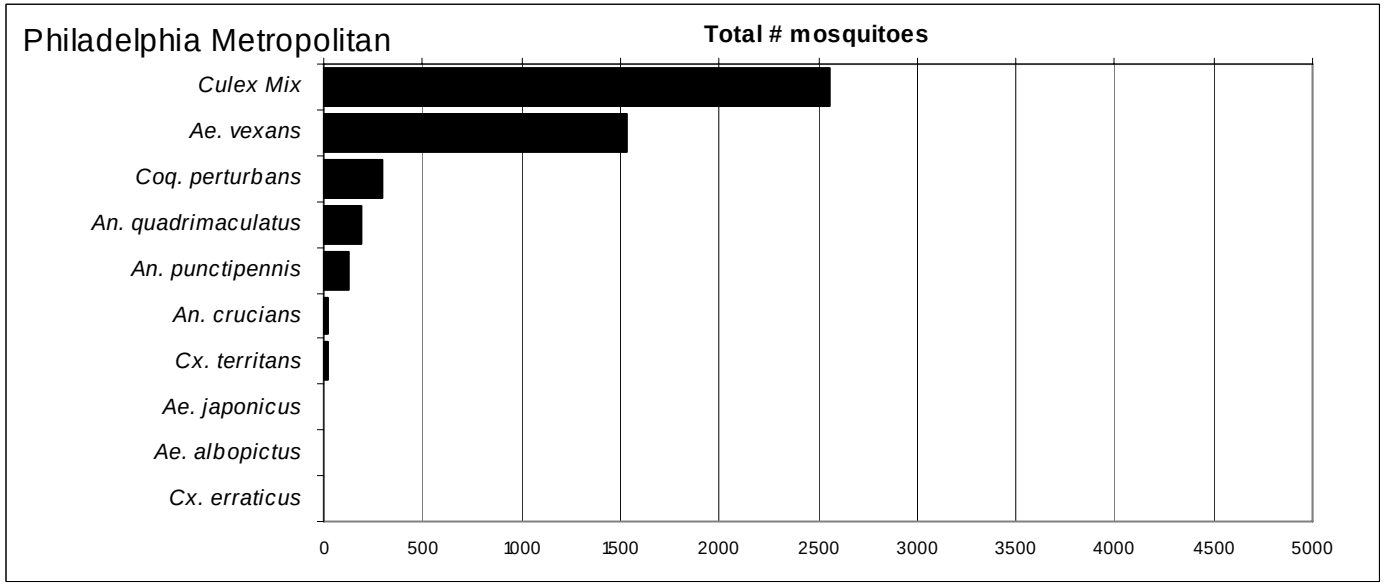

Delaware Bayshore
Total # mosquitoes
Culex Mix
Ae. cantator
Ae. sollicitans
An. quadrimaculatus
An. bradleyi
Ae. canadensis
Ae. vexans
Ae. taeniorhynchus
Cs. melanura
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000

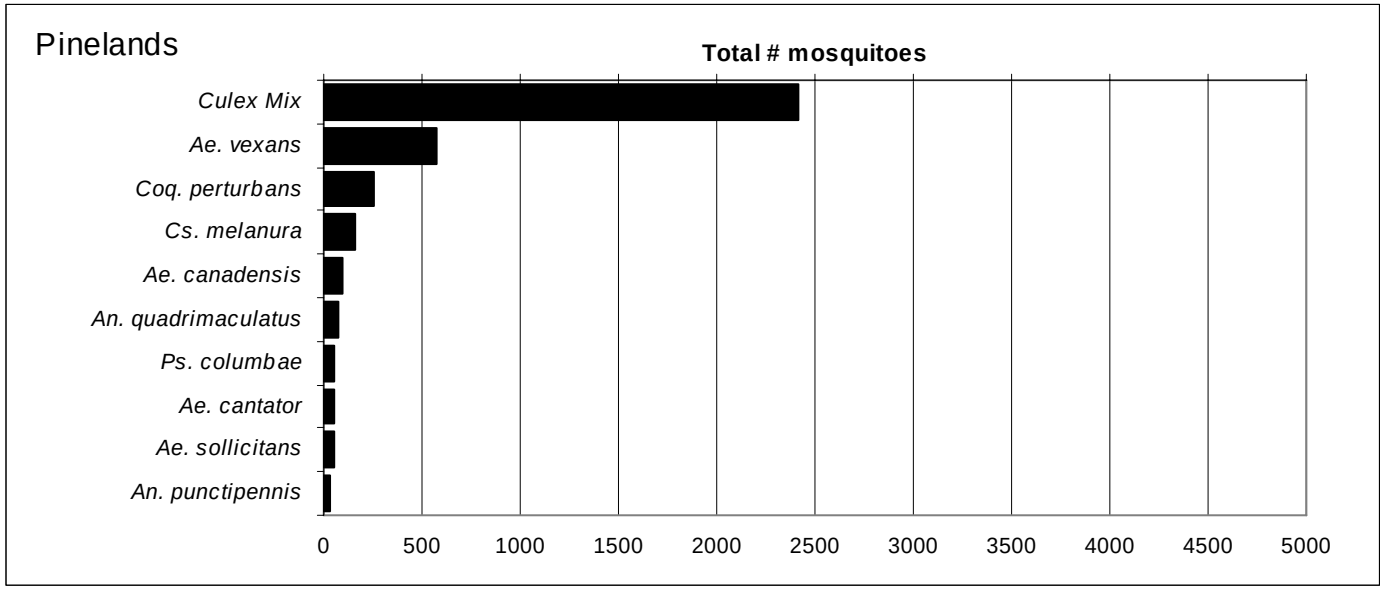

Delaware River Basin
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. cantator
C.s inornata
An. punctipennis
Ae. sollicitans
Cs. melanura
An. quadrimaculatus
Cx. territans
Cx. erraticus
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000

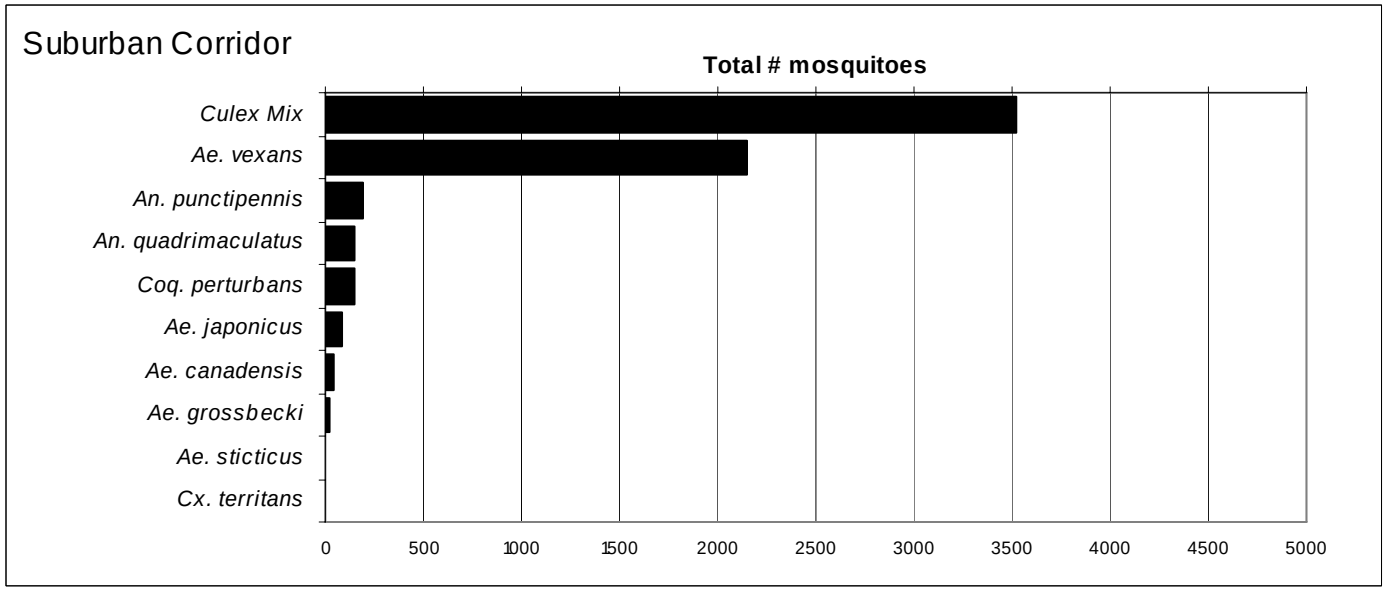

New York Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. sollicitans
Ae. cantator
Coq. perturbans
An. punctipennis
Ae. stimulans
An. quadrimaculatus
Ae. sticticus
Ae. japonicus
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000


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


Northwest Rural
Total # mosquitoes
Ae. vexans
Culex Mix
Ae. stimulans
Ae. cinereus
An. punctipennis
Ae. cantator
Coq. perturbans
An. quadrimaculatus
Ae. trivittatus
Ae. sticticus
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000


Philadelphia Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
Coq. perturbans
An. quadrimaculatus
An. punctipennis
An. crucians
Cx. territans
Ae. japonicus
Ae. albopictus
Cx. erraticus
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000


Pinelands
Total # mosquitoes
Culex Mix
Ae. vexans
Coq. perturbans
Cs. melanura
Ae. canadensis
An. quadrimaculatus
Ps. columbae
Ae. cantator
Ae. sollicitans
An. punctipennis
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000


Suburban Corridor
Total # mosquitoes
Culex Mix
Ae. vexans
An. punctipennis
An. quadrimaculatus
Coq. perturbans
Ae. japonicus
Ae. canadensis
Ae. grossbecki
Ae. sticticus
Cx. territans
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000