NEW JERSEY ADULT SURVEILLANCE

Report for 15 May to 26 May, 2007

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Purpose: Data from 84 New Jersey light traps contributed by county mosquito control agencies are used to calculate trends in mosquito populations for species of nuisance or health concerns.

Calculations are based on regional distributions, with emphasis on mosquito habitat and land use. Trends will allow a statewide evaluation of changing mosquito populations, in response to control and/or changes in habitat.

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Figure 1a: Map of ten regions selected for the New Jersey Surveillance Program overlaid with county boarders.

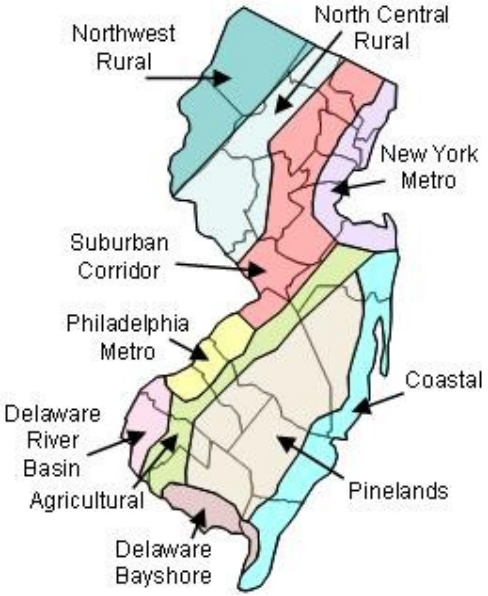


Figure 1b. Trap lat-long locations.

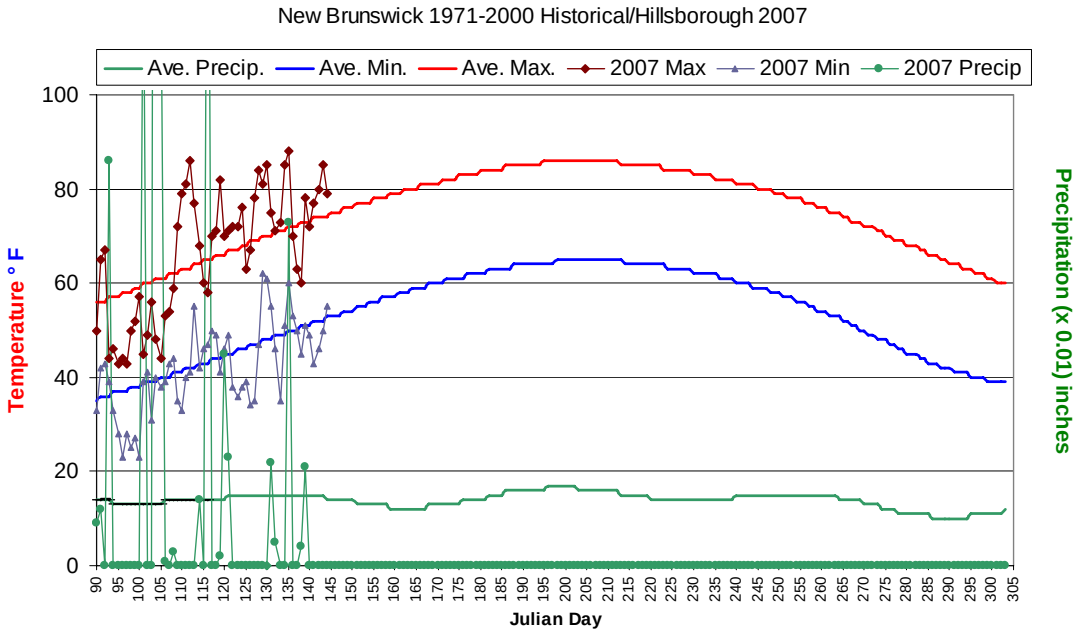
Summary table – Week 20

	Aedes vexans		*Culex complex*		*Coquillettidia perturbans*		*Aedes sollicitans*	
Region	This Week	Average*	This Week	Average*	This Week	Average*	This Week	Average*
Agricultural	**0.21**	**1.92**	**0.76**	**1.30**	**0.02**	**0.00**	**0.02**	**0.02**
Coastal	**2.37**	**2.00**	**0.54**	**1.30**	**0.00**	**0.00**	**0.08**	**0.75**
Delaware Bayshore	**0.67**	**0.88**	**0.90**	**1.62**	**0.00**	**0.00**	**3.00**	**1.29**
Delaware River Basin	**0.00**	**1.21**	**0.00**	**0.48**	**0.00**	**0.00**	**0.00**	**0.02**
New York Metro	**1.44**	**0.44**	**0.47**	**1.32**	**0.00**	**0.00**	**0.07**	**0.00**
North Central Rural	**0.00**	**0.01**	**0.00**	**0.12**	**0.00**	**0.00**	**0.00**	**0.00**
Northwest Rural	**0.21**	**0.60**	**0.00**	**0.86**	**0.00**	**0.00**	**0.00**	**0.00**
Philadelphia Metro	**1.54**	**1.65**	**0.43**	**1.05**	**0.00**	**0.00**	**0.00**	**0.00**
Pinelands	**0.14**	**1.68**	**0.97**	**1.19**	**0.01**	**0.00**	**0.00**	**0.01**
Suburban Corridor	**0.40**	**0.92**	**0.17**	**1.02**	**0.00**	**0.00**	**0.00**	**0.00**

Graphs include *Ae. vexans, Culex* complex (*Cx. pipiens, Cx. restuans, and Cx. salinarius*), *Cs. melanura, Ae. sollicitans, and Ae. cantator.*

8 of 21 counties in one or both weeks.

Climate Data

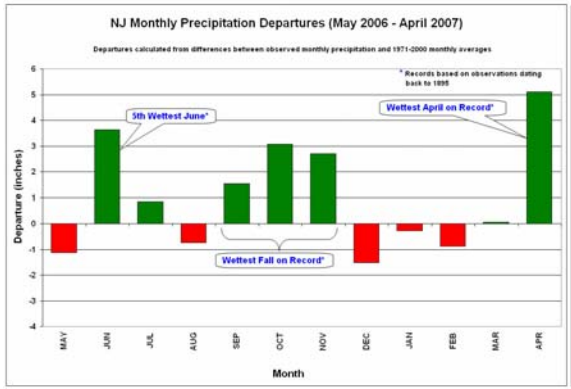


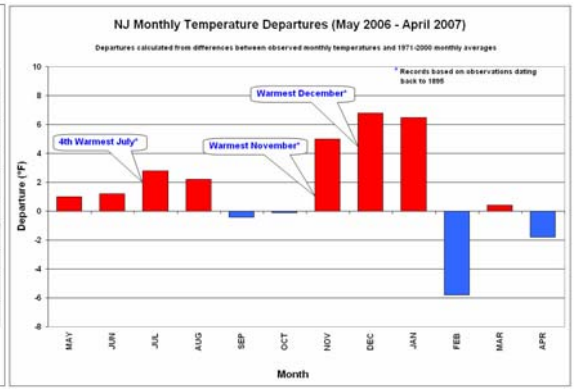
This figure shows historical average maximum and minimum temperatures and average precipitation recorded in the New Brunswick, NJ weather station over a recent 30 year period. Also graphed are the current year's minimum and maximum temperatures as recorded at the Hillsborough NJ weather station (a station close to central NJ which recorded all three parameters and was available online at the NJ state climatologist).

The state climatologist has an extensive amount of climatological historical data as well as stations reporting current conditions and forecasts:

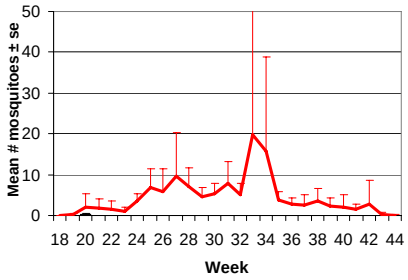
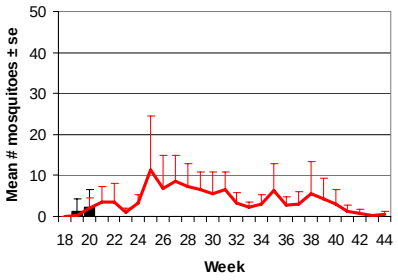
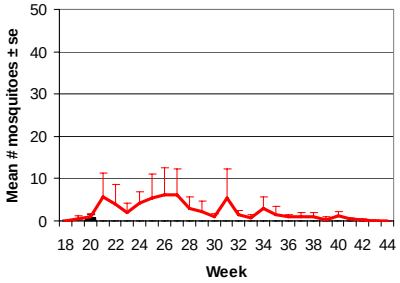
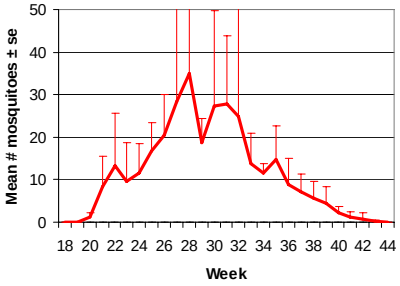
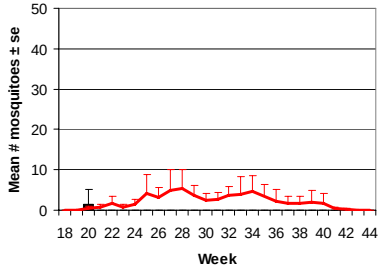
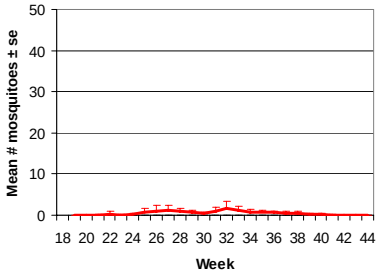
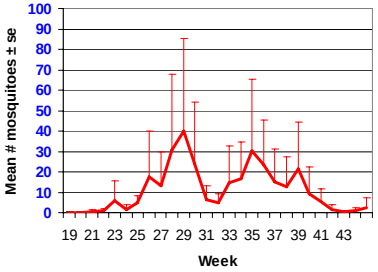
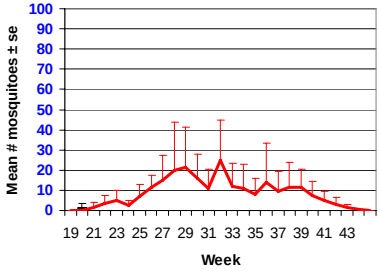
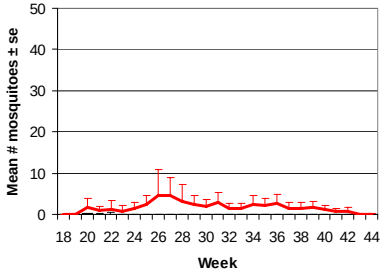
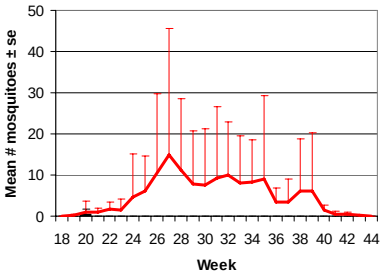
http://climate.rutgers.edu/stateclim/

The two graphs produced by that office reveal a warm fall/winter followed by a moderately cool spring and record April rains (click on maps to enlarged graphs on climate site.

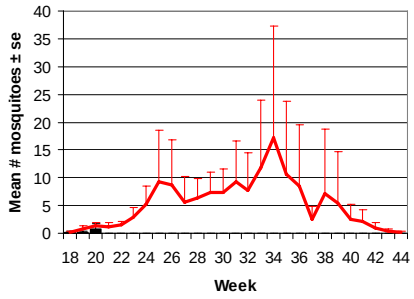
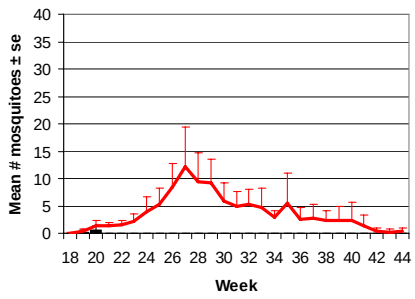
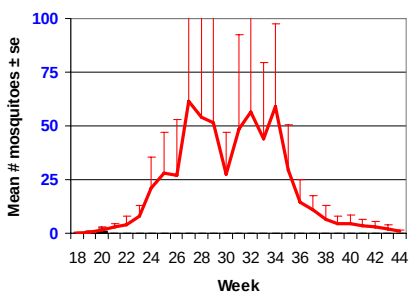
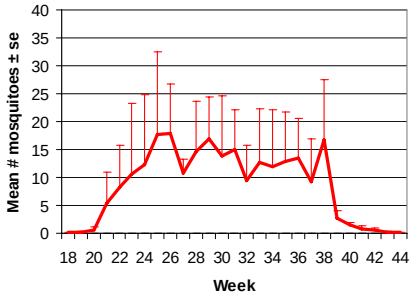
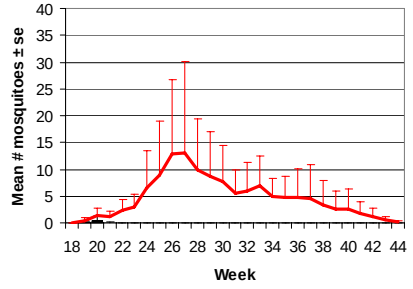
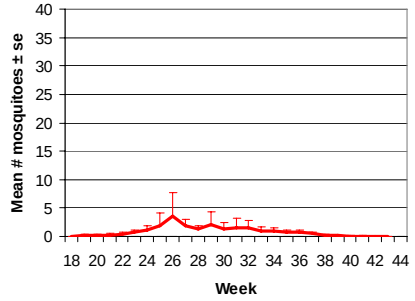
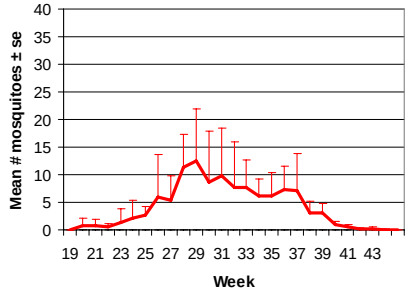
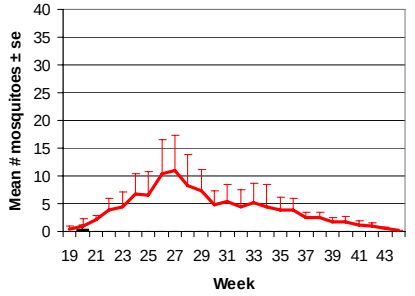
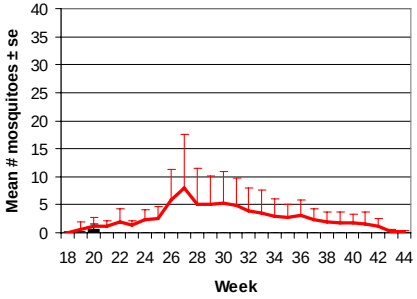
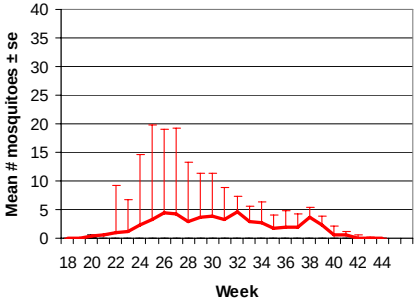




Aedes vexans - Fresh Floodwater Species

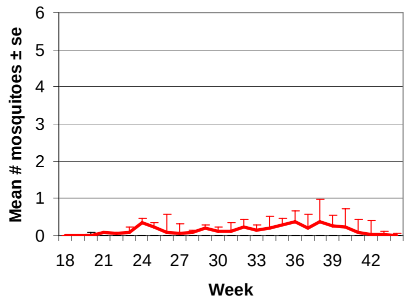
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		Areas where nighttime temperatures are sustained above 40°F can maintain a flying population of *Aedes vexans*. Activity for this species has already been reported for most regions including Agricultural, Coastal, Delaware Bayshore, New York Metro, Philadelphia Metro, Pinelands, and the Suburban Corridor. This species can exploit ephemeral larval habitats, such as water collected in floodplains to more urban settings of poorly-performing drainage systems. *Ae. vexans* is a moderately competent WNV vector where potentially large populations can make this species a player in the transmission cycle.	

Culex Mix - *Multivoltine Culex Species*

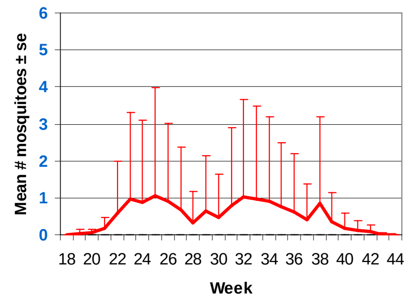
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		Permanent water, multivoltine species, and persistence in individuals are characteristics of the *Culex* group of mosquitoes. These characteristics contribute to the slow-growth population that peak then slowly decline. "*Culex* Mix" refer to *Culex pipiens, Cx. restuans* and *Cx. salinarius* and are combined because of the difficulty in accurately separating these mosquitoes when not in pristine condition. Thus, each graph represents varying portions of these species. *Cx. salinarius*, for example, dominates in the Delaware River Basin region while *Cx. restuans* can be found in high number in agricultural habitat.	

Culiseta melanura – Miscellaneous Group

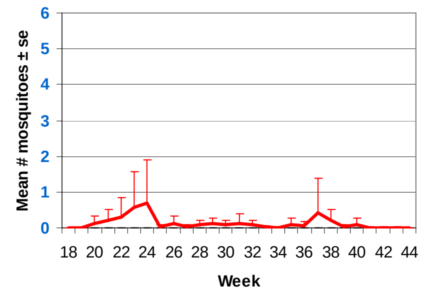
Agricultural



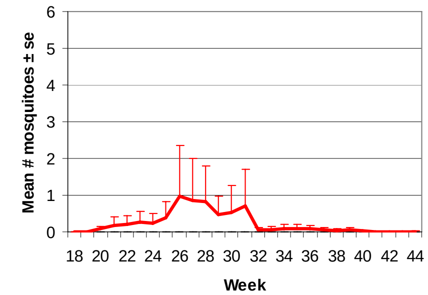
Coastal



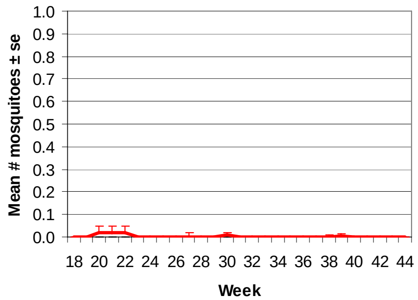
Delaware Bayshore



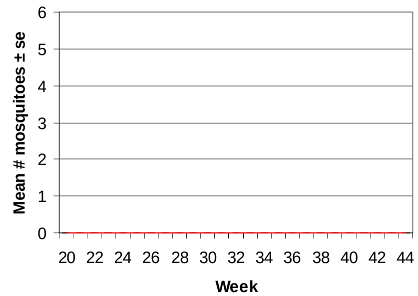
Delaware River Basin



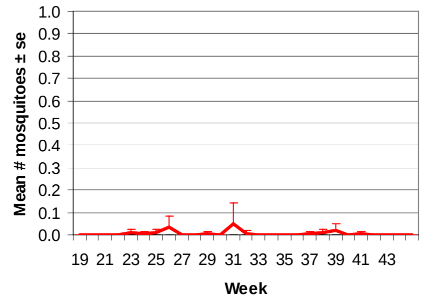
New York Metro



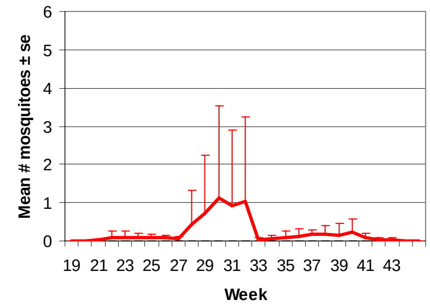
North Central Rural



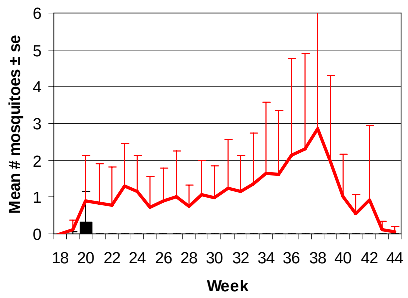
Northwestern Rural



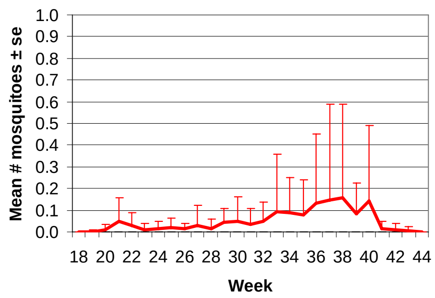
Philadelphia Metro



Pinelands



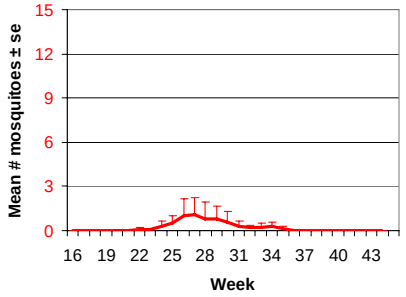
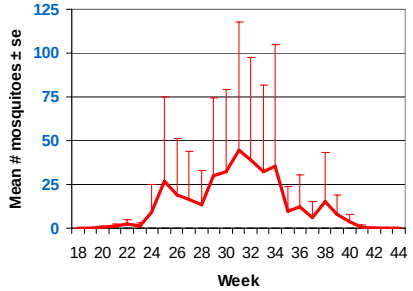
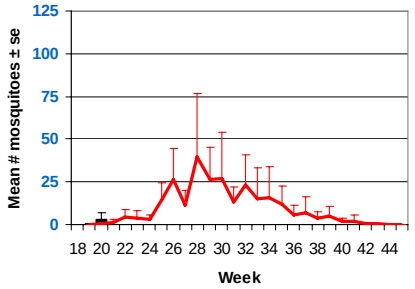
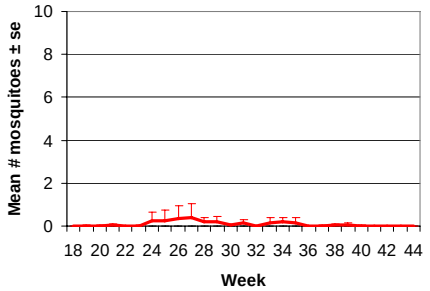
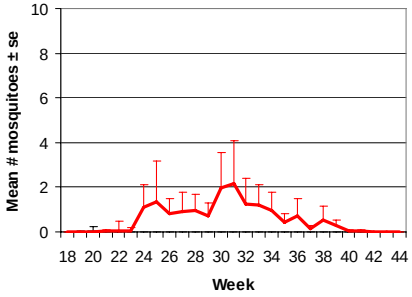
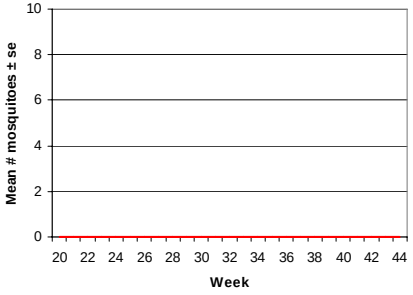
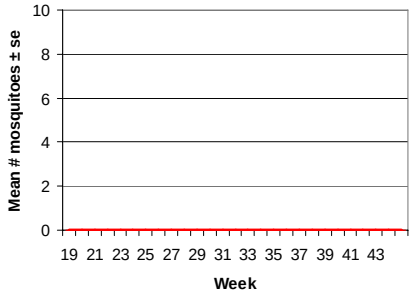
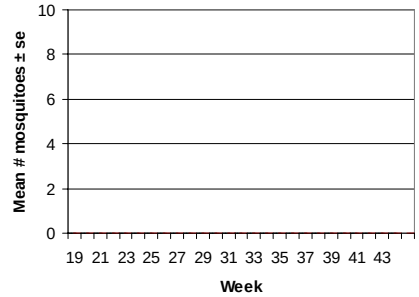
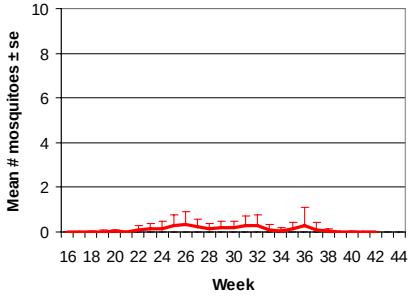
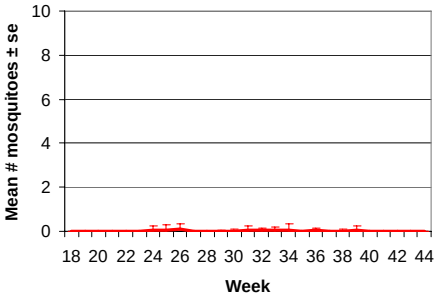
Suburban Corridor



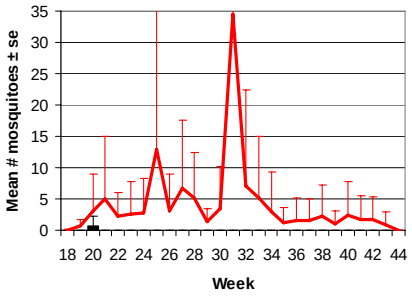
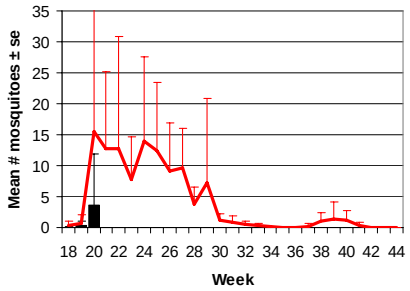
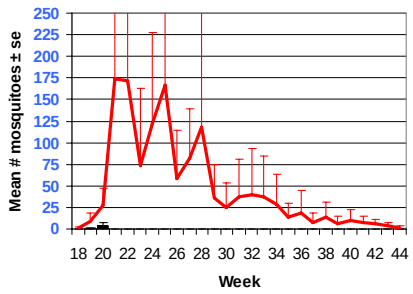
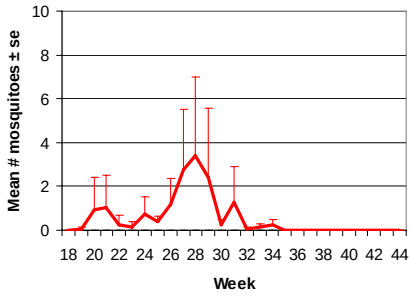
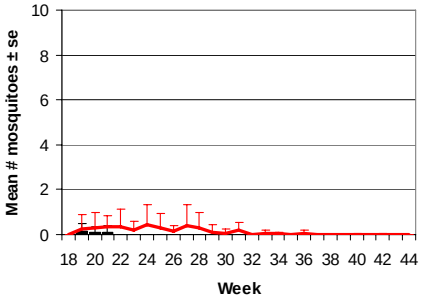
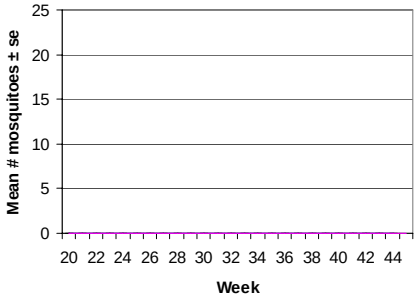
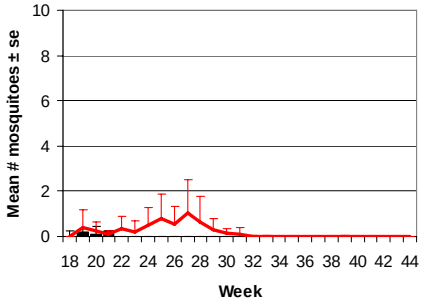
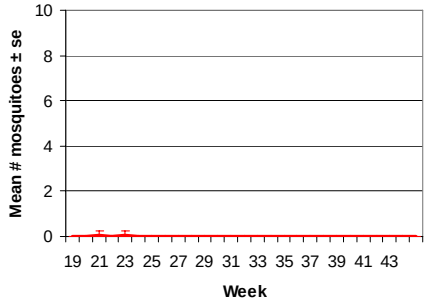
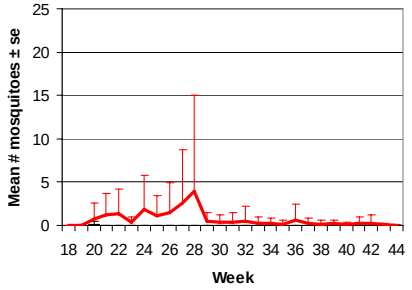
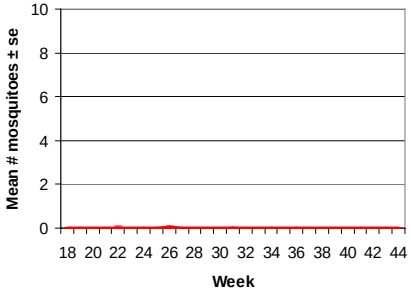
Comments

Culiseta melanura generally show up in New Jersey light traps at low levels, but their overall seasonal pattern is similar to that found in resting boxes. This species is the endemic vector for eastern equine encephalitis with avian species being the preferred host. At one EEE foci, the bird species most often found infected with virus is the Blue Jay. While EEE has little apparent effect on Blue Jay morbidity, at this point in time West Nile still does.

Aedes sollicitans - Salt Marsh Floodwater Species

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes sollicitans* has begun activity in the Delaware Bayshore, Coastal, and New York Metro regions, but the truly spectacular numbers that hallmark this species are yet to come. Floodwater from both lunar tide activity and rainfall will promote emergences. Daily tidal action generally does not flood high enough to reach the slightly elevated areas where *Ae. sollicitans* eggs are often deposited such as *Spartina patens* clumps.	

Aedes cantator – 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 cantator* occupies a niche similar to *Ae. sollicitans*. *Ae. cantator* can reduce competition from *sollicitans* by occupying an earlier portion of the season. In addition, while both *cantator* and *sollicitans* are facultative halophiles, *cantator* appears to be more tolerant of less saline conditions. They can be found in association with numerous species like the similar-appearing *Aedes canadensis.*	