NEW JERSEY STATEWIDE SURVEILLANCE

Week 40 Report for 2 October to 8 October, 2006

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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.

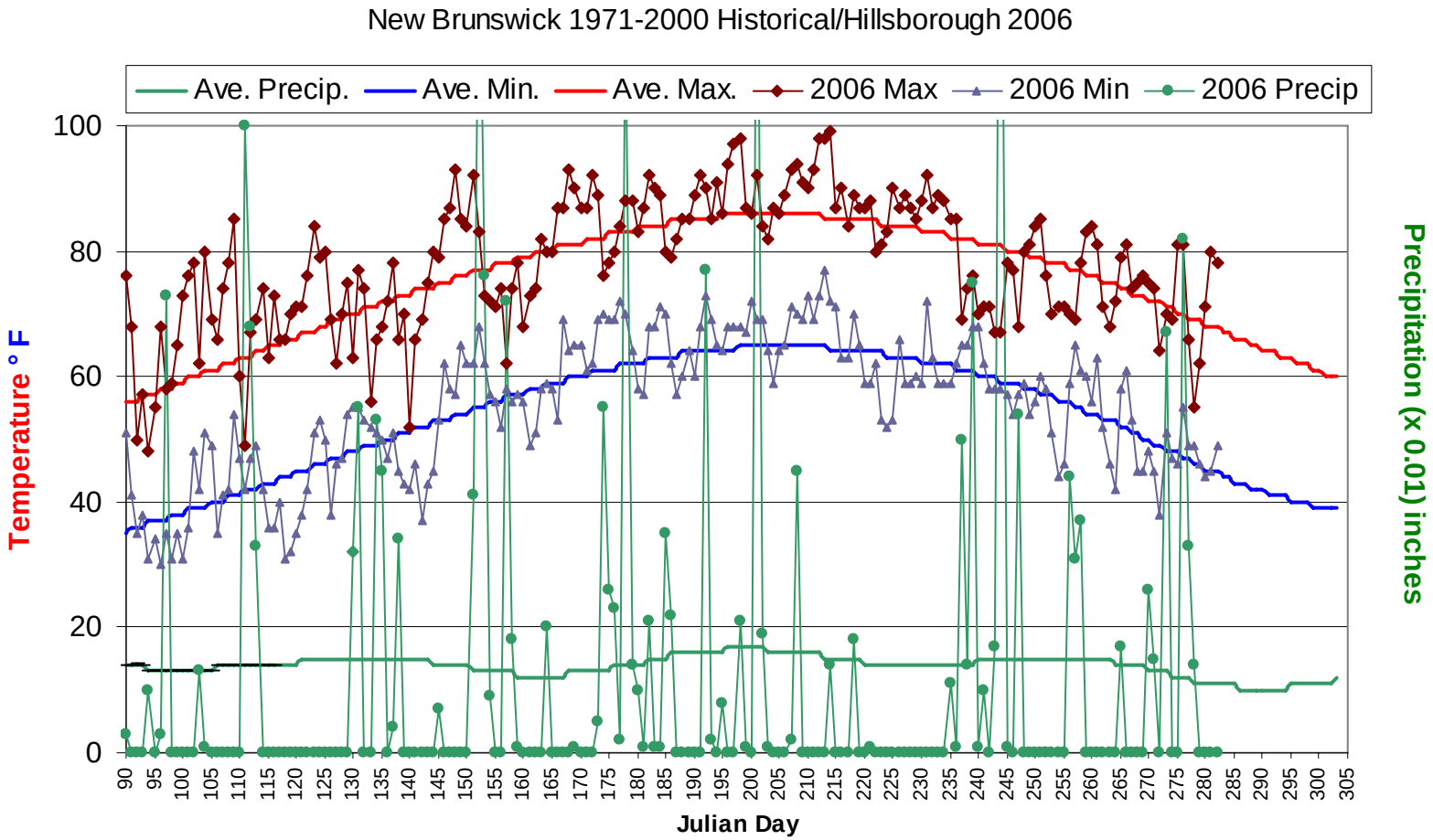
Summary table – Week 40

	Aedes vexans		*Culex complex*		*Coquillettidia perturbans*		*Ochlerotatus sollicitans*	
Region	This Week	Average*	This Week	Average*	This Week	Average*	This Week	Average*
Agricultural	**1.00**	**2.17**	**0.98**	**2.83**	**0.00**	**0.00**	**0.14**	**0.27**
Coastal	**0.70**	**1.59**	**0.13**	**1.35**	**0.00**	**0.00**	**0.10**	**6.26**
Delaware Bayshore	**0.29**	**0.21**	**2.69**	**4.41**	**0.00**	**0.00**	**1.50**	**22.95**
Delaware River Basin	**0.00**	**2.14**	**0.00**	**1.66**	**0.00**	**0.01**	**0.00**	**0.19**
New York Metro	**1.20**	**1.61**	**1.37**	**2.63**	**0.00**	**0.00**	**0.00**	**0.82**
North Central Rural	**0.00**	**0.20**	**0.00**	**0.14**	**0.00**	**0.00**	**0.00**	**0.00**
Northwest Rural	**0.26**	**2.48**	**0.07**	**0.59**	**0.00**	**0.02**	**0.00**	**0.00**
Philadelphia Metro	**8.51**	**5.00**	**1.00**	**2.00**	**0.00**	**0.03**	**0.00**	**0.00**
Pinelands	**0.16**	**0.84**	**0.34**	**1.74**	**0.00**	**0.00**	**0.00**	**0.40**
Suburban Corridor	**0.45**	**1.30**	**0.12**	**0.80**	**0.00**	**0.01**	**0.00**	**0.01**

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

10 of 21 counties in one or both weeks; 20 of 21 counties reporting.

Climate Data

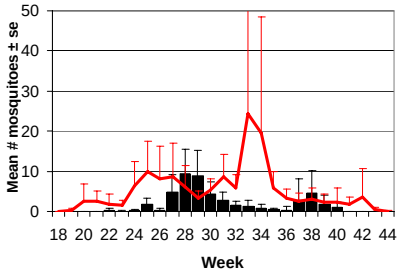
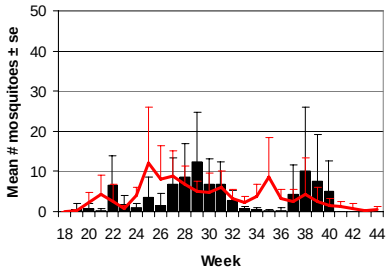
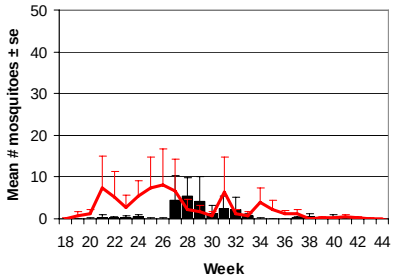
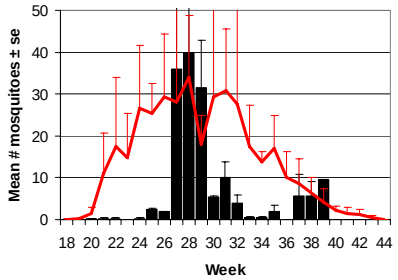
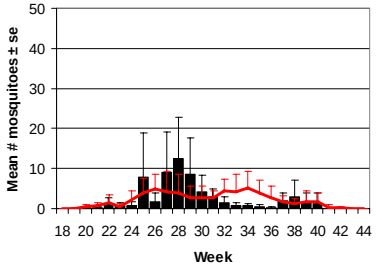
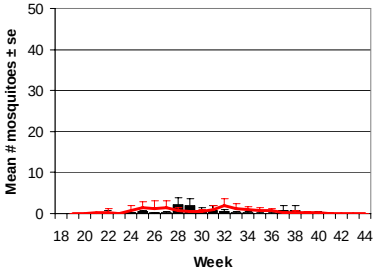
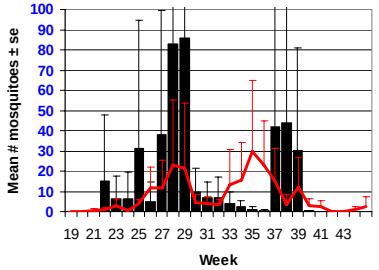
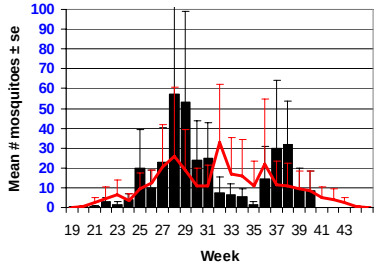
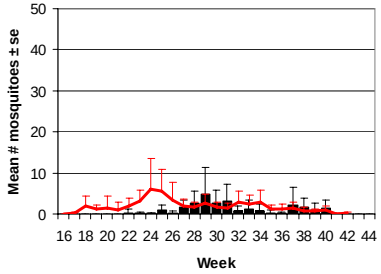
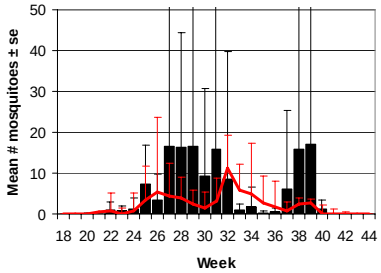


This figure shows historical average maximum and minimum temperatures and average precipitation recorded in the New Brunswick, NJ weather station over a recent 30 year period. Also graphed are the current year's minimum and maximum temperatures as recorded at the Hillsborough NJ weather station (a station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

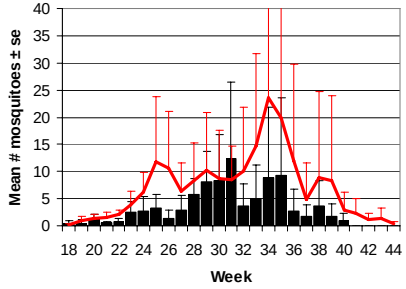
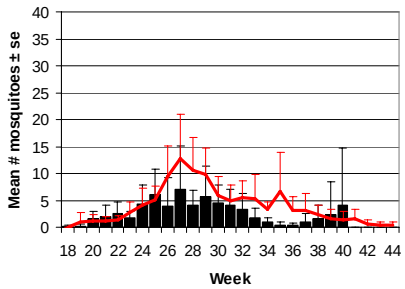
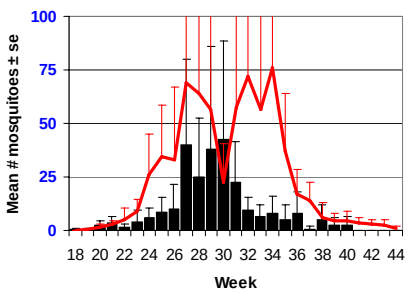
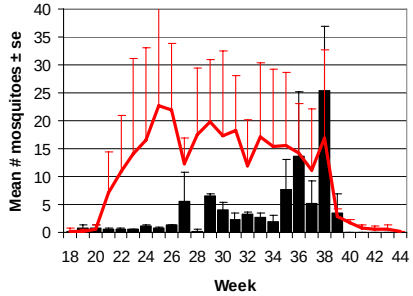
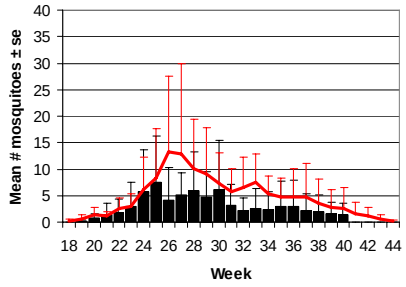
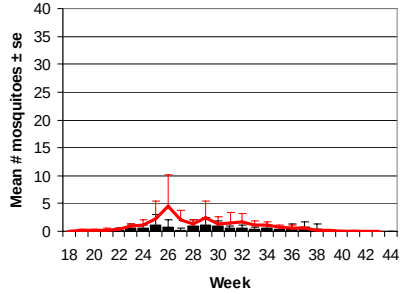
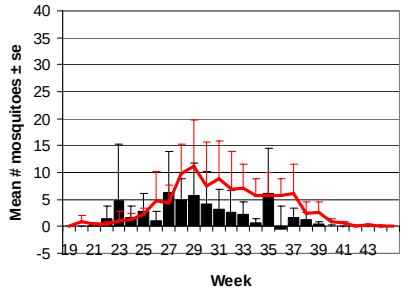
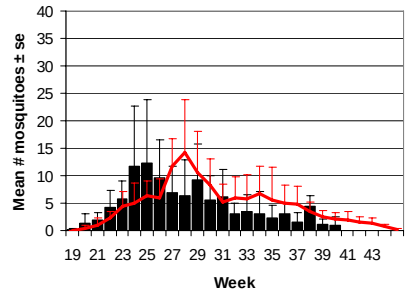
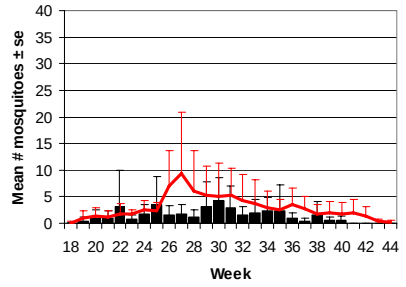
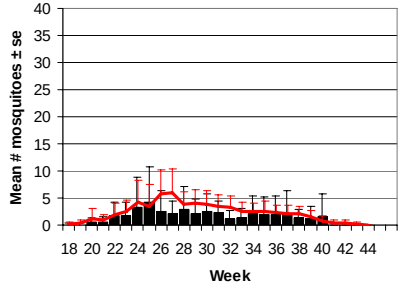
The state climatologist has an extensive amount of climatological historical data as well as stations reporting current conditions and forecasts:

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

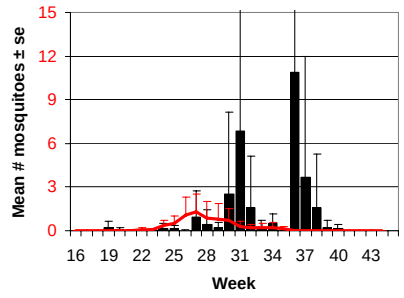
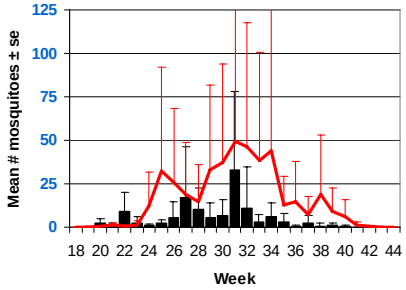
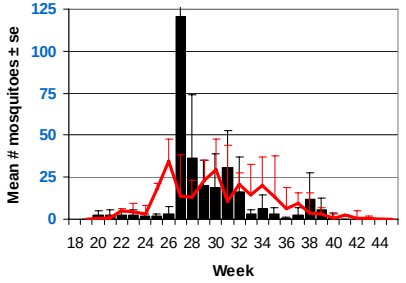
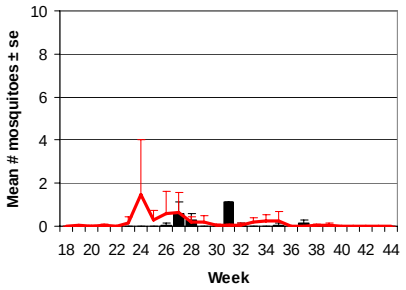
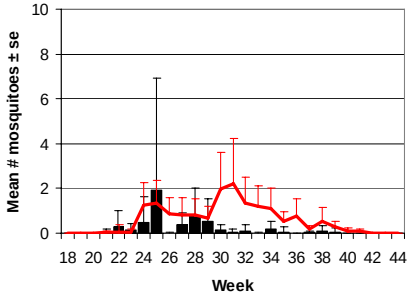
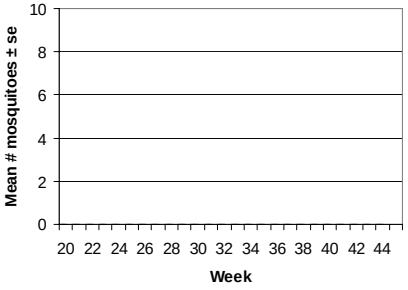
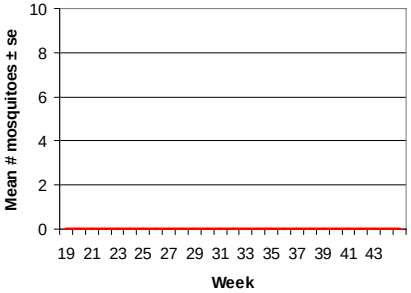
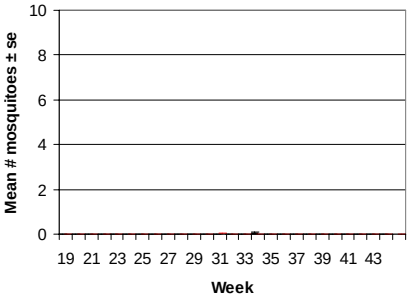
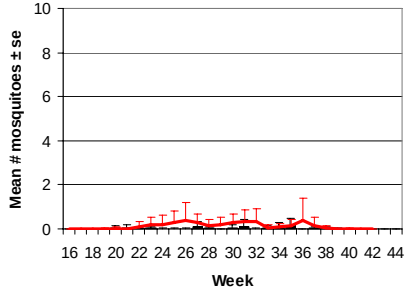
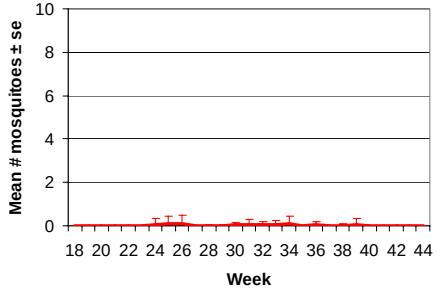
Aedes vexans - Fresh Floodwater Species

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		The recent spectacular emergences of *Aedes vexans* in most regions have begun to slow, in many areas at a rapid rate. The Northwestern Rural region continues to produce healthy *Ae. vexans* numbers, primarily due to the same location that produced significant emergences during weeks 28 and 29. This location is the confluence of two medium order streams that occurs on a floodplain and provides generous floodwater habitat under the appropriate conditions (rainfall both locally and upstream). Although biting activity may have shifted earlier from twilight to late afternoon, nighttime low temperatures will quickly curtail the activity of this species over the next two weeks. *Errata* Week 39 report: "…those that partake of that significant first meal can produce a considerable number of eggs ~~rafts~~ during their 3-month life."	

Culex Complex - Multivoltine Culex Species

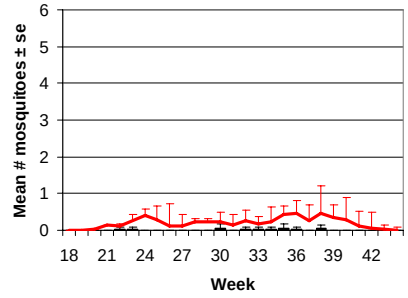
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Culex* populations continue to largely decline throughout most region, although the Delaware River Basin has experienced locally abundant *Cx. salinarius*. *Cx. salinarius* is more likely to stay active longer into the season than the other *Culex*, and also has a mixed diet (birds and mammals). Fortunately, no *Cx. salinarius* pools have been found to be positive for West Nile virus in New Jersey.	

Ochlerotatus sollicitans - Salt Marsh Floodwater Species

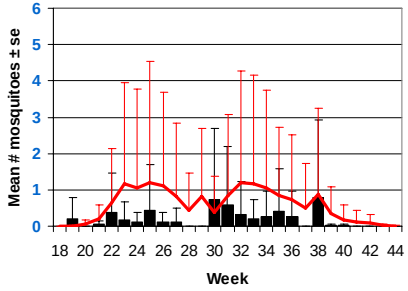
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Ochlerotatus sollicitans* populations are on the clear decline. Eggs deposited now are most likely to enter diapause and overwinter.	

Culiseta melanura – Miscellaneous Group

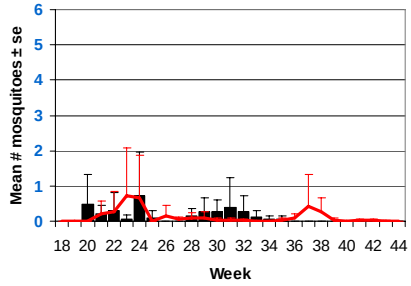
Agricultural



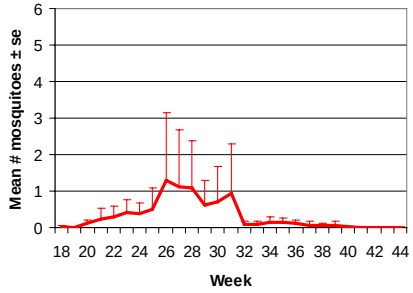
Coastal



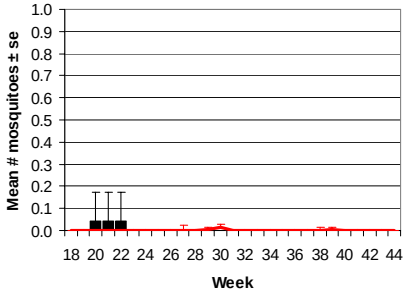
Delaware Bayshore



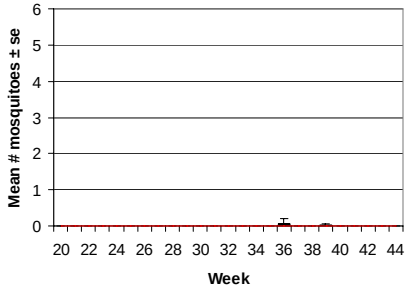
Delaware River Basin



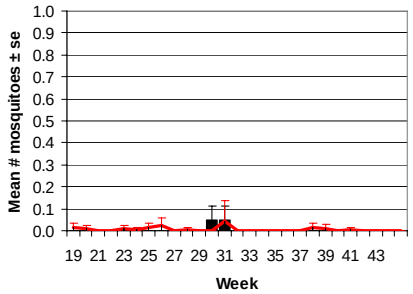
New York Metro



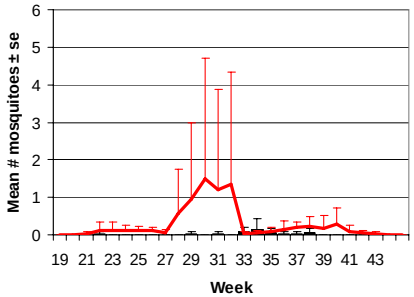
North Central Rural



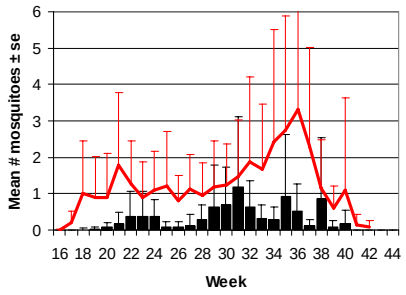
Northwestern Rural



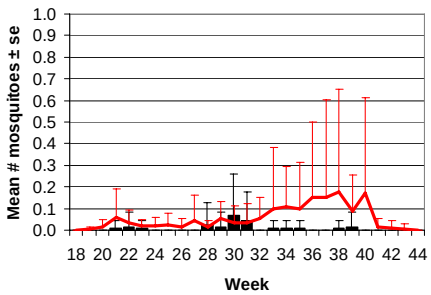
Philadelphia Metro



Pinelands



Suburban Corridor

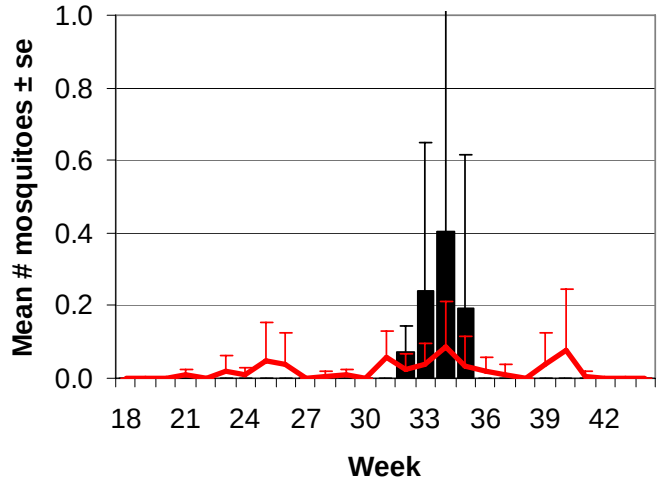


Comments

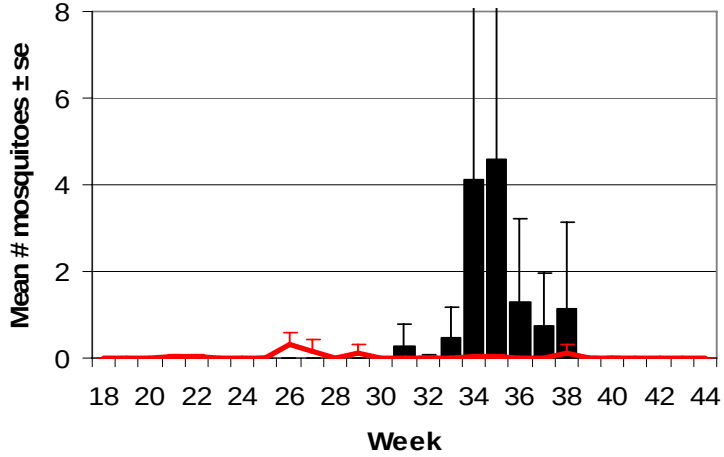
Culiseta melanura populations continue to decline as the season rapidly comes to a close for this endemic vector of EEE. Females active in the latter portion of this season laid the egg rafts that produce the overwintering cohorts. The cohorts that overwinter as older instars are the first to emerge the following spring. Despite two consecutive years of apparently an attenuated population of the main endemic vector, there was still sufficient virus in the vertebrate hosts for disease transmission this year.

Culex erraticus in New Jersey is at its northern range of distribution. This species does not seem particularly attracted to light trap, but can be found readily in resting boxes. This year, activity appears to be on the increase, particularly in the regions below. Note the Y-scale differences between the Agricultural and Suburban Corridors (more typical) and the Delaware River Basin and the Philadelphia Metro regions.

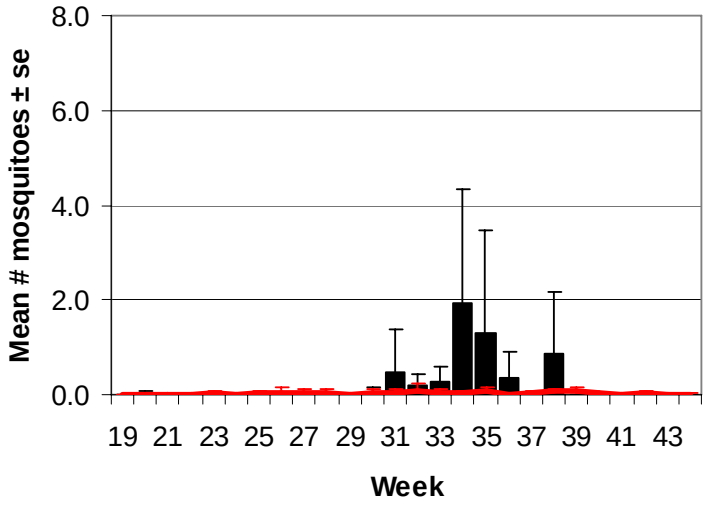
Culex erraticus in Agricultural Region



Culex erraticus in the Delaware River Basin



Culex erraticus in the Philadelphia Metro



Culex erraticus in the Suburban Corridor