NEW JERSEY STATEWIDE SURVEILLANCE

Week 22 Report for 28 May to 03 June, 2006

Submitted by Lisa M. Reed
Mosquito Research and Control Unit
Rutgers University, New Brunswick, NJ 08901

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.

This is New Jersey Agricultural Experiment Station publication No. PT-08-40500-22-06 supported by Hatch funds and funding from the NJ State Mosquito Control Commission. Prepared by Lisa M. Reed.

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

Figure 1b. Trap lat-long locations.

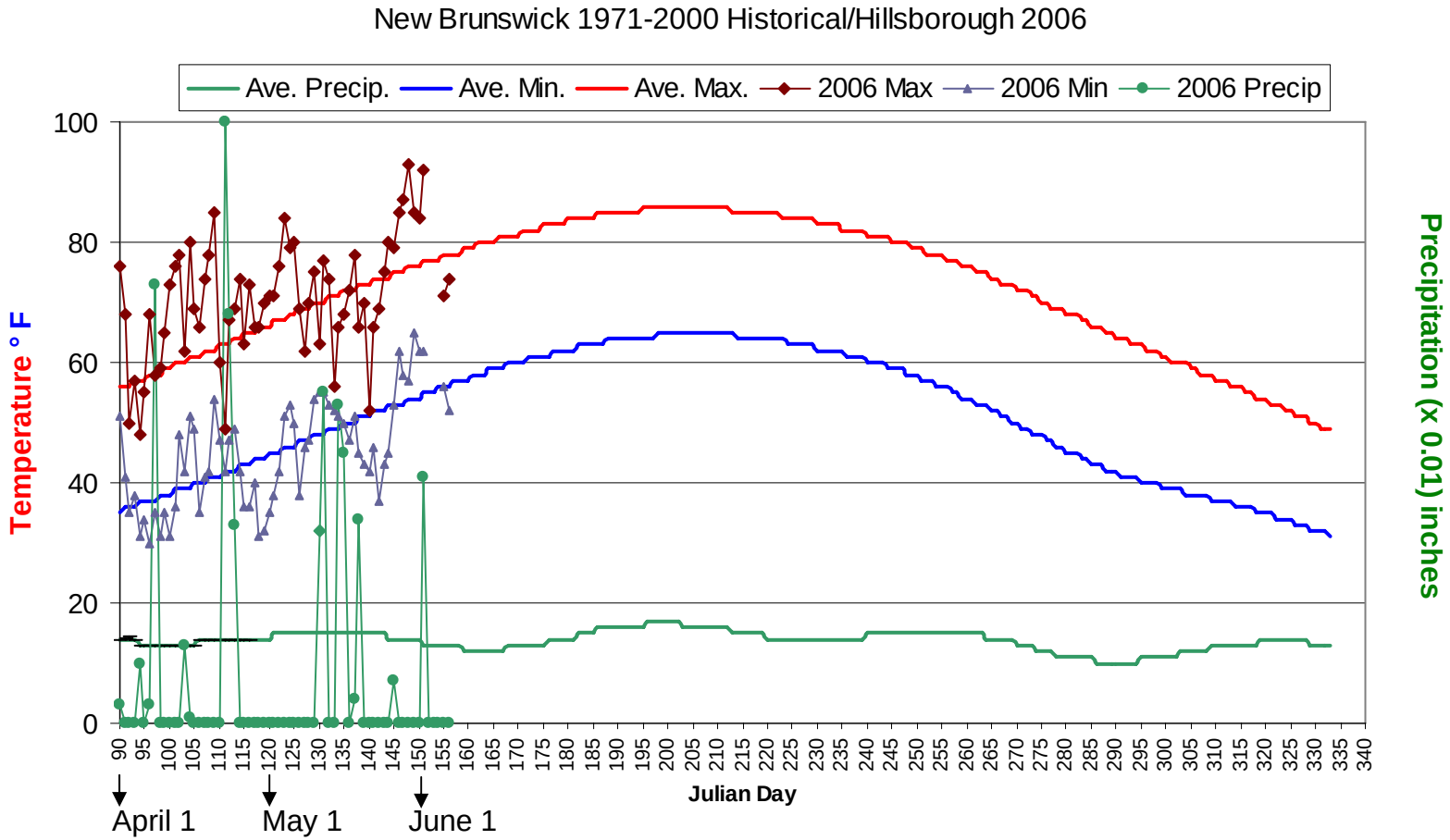
Summary table – Week 22

	Aedes vexans		*Culex complex*		*Coquillettidia perturbans*		*Ochlerotatus sollicitans*	
Region	This Week	Average*	This Week	Average*	This Week	Average*	This Week	Average*
Agricultural	**0.17**	**1.82**	**0.55**	**2.09**	**0.00**	**0.09**	**0.00**	**0.14**
Coastal	**0.71**	**2.60**	**1.33**	**1.42**	**0.02**	**0.22**	**1.89**	**0.61**
Delaware Bayshore	**1.10**	**5.25**	**0.57**	**4.83**	**0.07**	**0.44**	**1.02**	**4.64**
Delaware River Basin	**0.07**	**17.59**	**0.14**	**10.88**	**0.00**	**0.01**	**0.00**	**0.00**
New York Metro	**1.03**	**1.42**	**1.63**	**2.49**	**0.01**	**0.00**	**0.26**	**0.04**
North Central Rural	**0.00**	**0.35**	**0.16**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**
Northwest Rural	**15.17**	**2.81**	**1.33**	**1.05**	**0.00**	**0.04**	**0.00**	**0.00**
Philadelphia Metro	**0.23**	**6.59**	**0.71**	**4.36**	**0.03**	**0.70**	**0.00**	**0.00**
Pinelands	**0.00**	**9.90**	**0.06**	**1.68**	**0.00**	**0.09**	**0.03**	**0.02**
Suburban Corridor	**0.74**	**1.75**	**1.05**	**1.94**	**0.10**	**0.00**	**0.00**	**0.00**

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

15 of 21 counties in current week; 18 of 21 counties reporting.

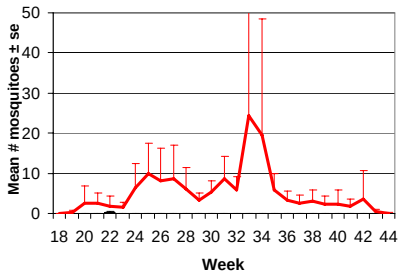
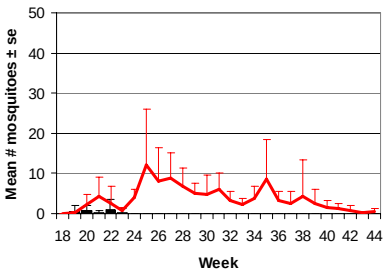
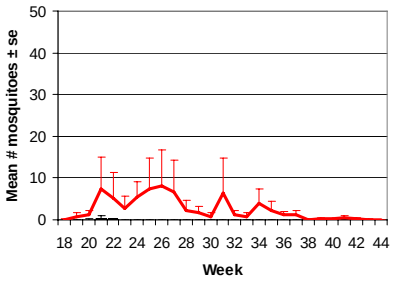
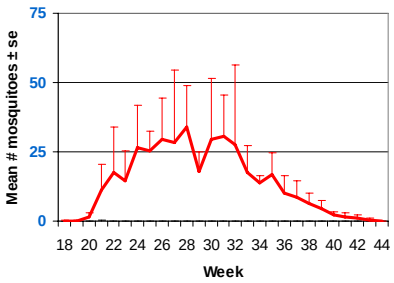
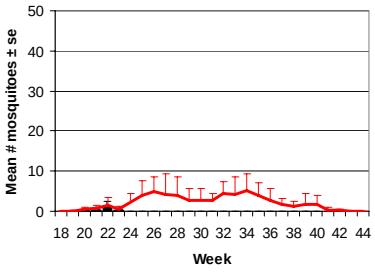
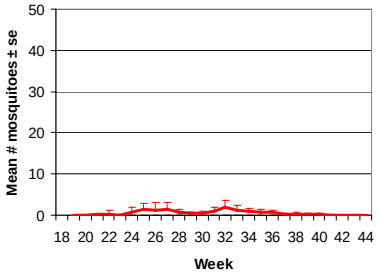
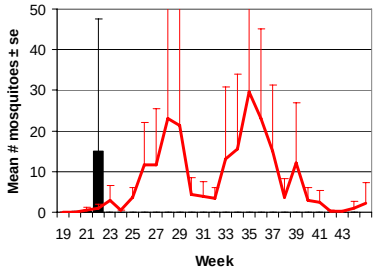
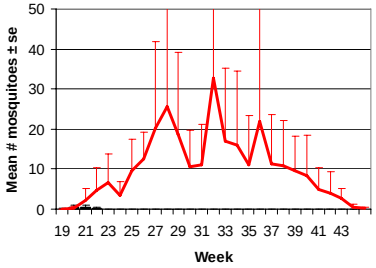
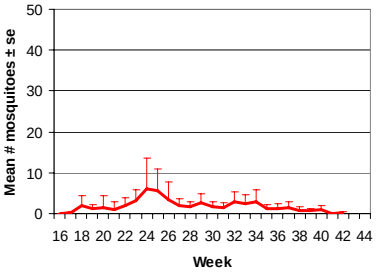
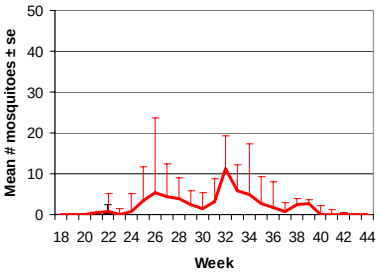
Climate Data



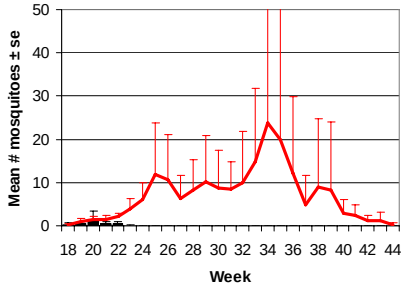
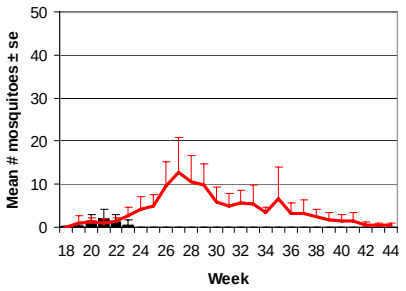
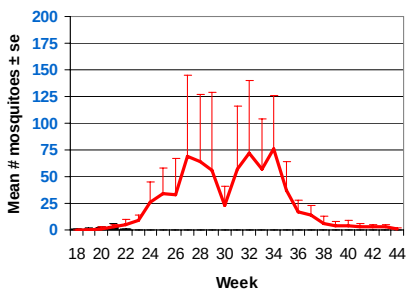
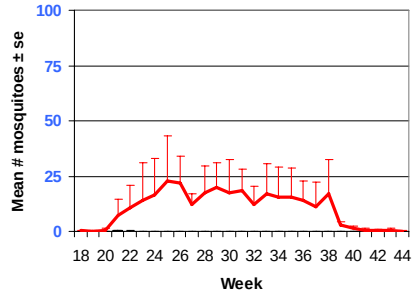
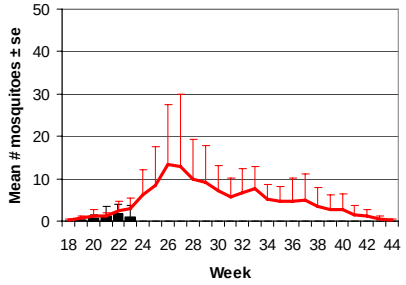
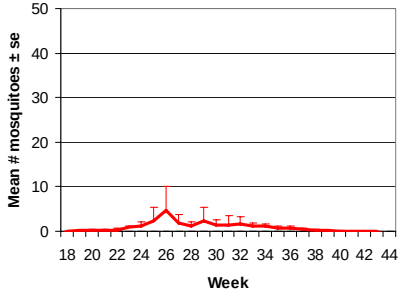
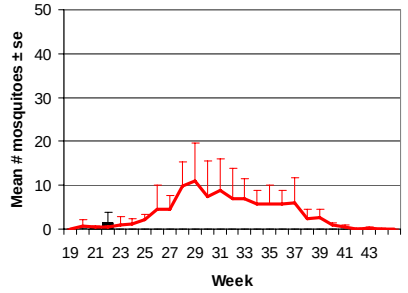
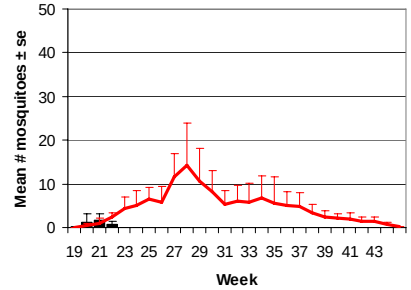
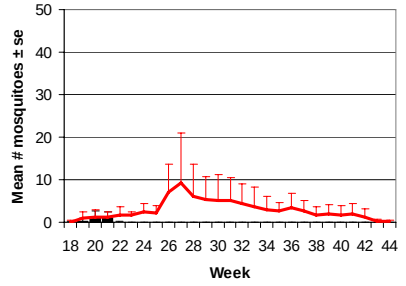
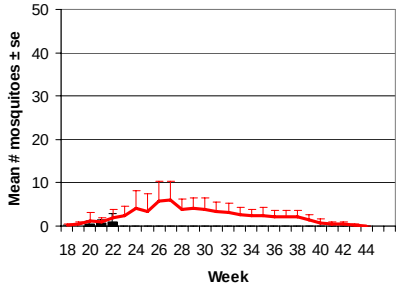
This figure shows historical average maximum and minimum temperatures and average precipitation recorded in the New Brunswick, NJ weather station over a recent 30 year period. Also graphed are the current year's minimum and maximum temperatures as recorded at the Hillsborough NJ weather station (a station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

Over the past week, some areas of the state had received a considerable amount of rain. This is not reflected in the above graph, partially because there is a gap of missing data. This illustrates the inadequacy of the current graph and what it is trying to convey. Current conversations with the State Climatologist should lead to a solution.

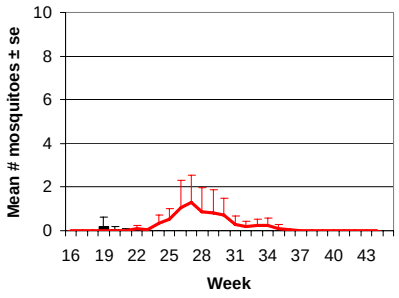
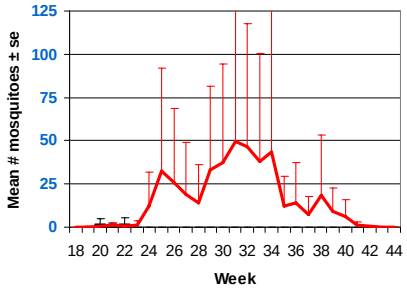
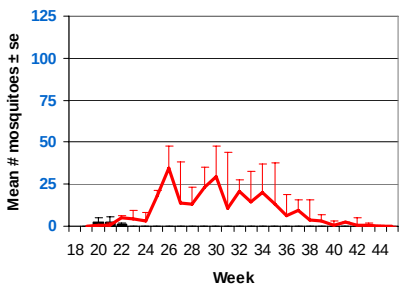
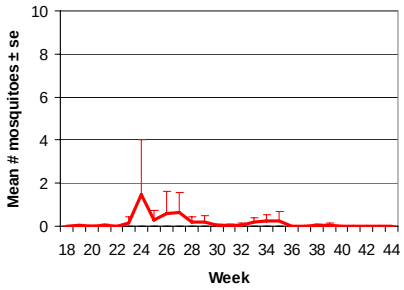
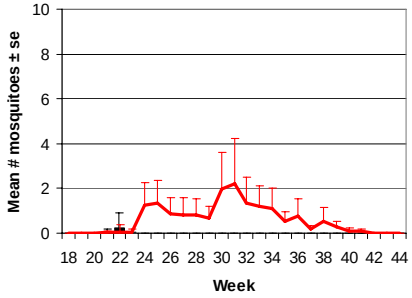
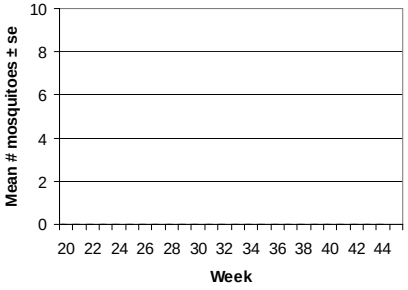
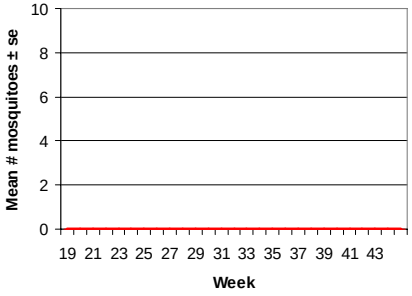
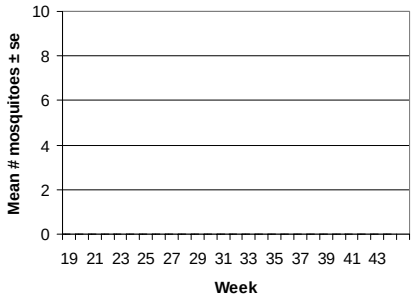
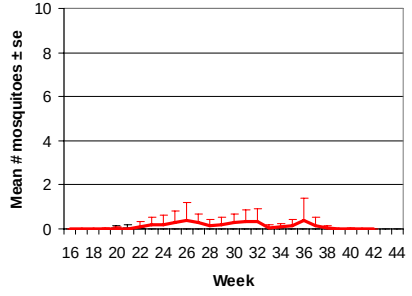
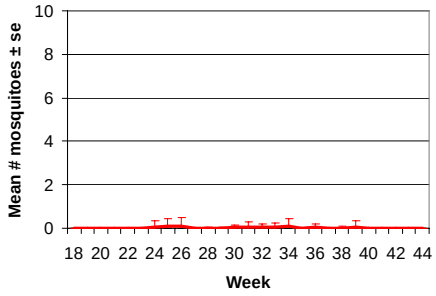
Aedes vexans - Fresh Floodwater Species

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes vexans* should be on the wing in most areas, although numbers may be quite low this early in the season. Large numbers as seen in certain habitats such as the Delaware River Basin are likely the result of human activity like dredging. Other spikes, such as the one seen in the Northwestern Rural Region, are probably the result of unusual habitat. In this case, one light trap is near the confluence of the Wawayanda and Pochuck Creeks, the latter a known producer of massive amounts of *Aedes* and other floodwater species. This particular emergence is earlier than normal.	

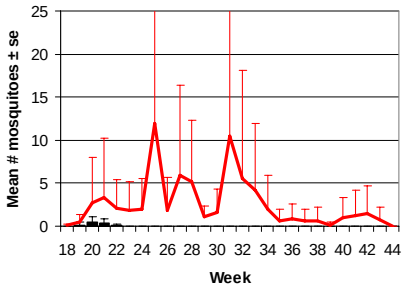
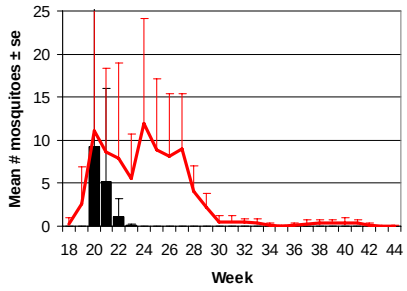
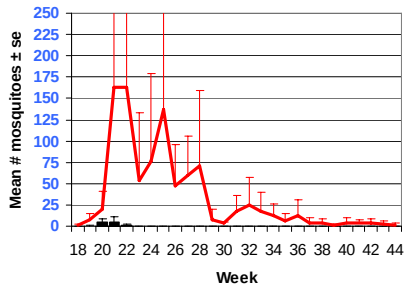
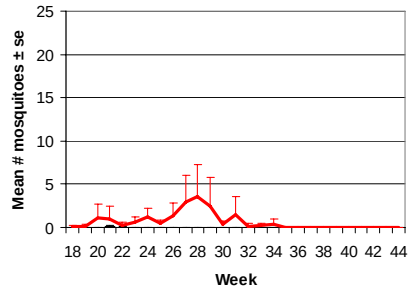
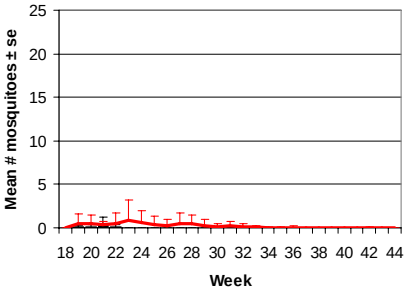
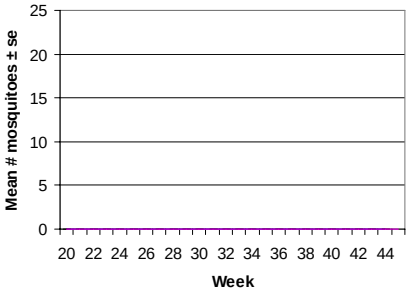
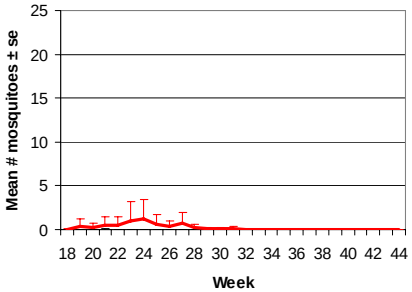
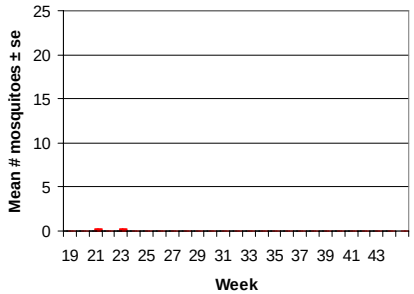
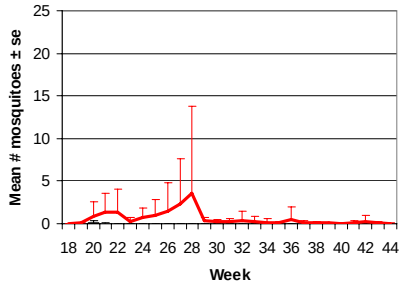
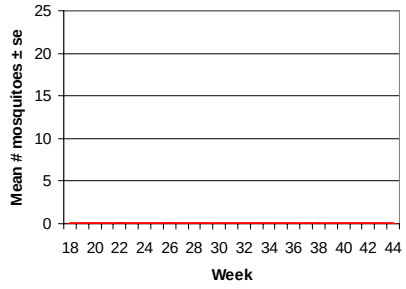
Culex Complex - Multivoltine Culex Species

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Culex* species continue their slow population buildup. Mated adult *Culex* females have been exiting their overwintering hibernacula, either as *Cx. pipiens, Cx. restuans,* and/or *Cx. salinarius*. Their first brood has been emerging the past recent weeks. Populations will build up slowly through the season. Then, the process reverses itself, and mated females search for the protection of caves, basements, and drainage pipes to last out the winter.	

Ochlerotatus sollicitans - Salt Marsh Floodwater Species

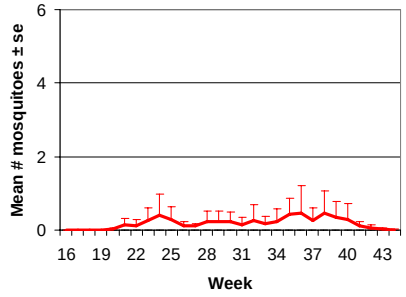
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		Small numbers of *Ochlerotatus sollicitans* have already been observed in light traps particularly in the regions most expected: the Coastal and Delaware Bayshore Regions. The truly massive populations that define mosquito control here in New Jersey are yet to come. *Oc. sollicitans* may experience a significant brood emergence in the next week or two given that recent rains have also preceded and overlapped with this last high tide. Flooding effects that result in emergences can come from multiple sources.	

Ochlerotatus cantator – Multivoltine Aedine, sollicitans type

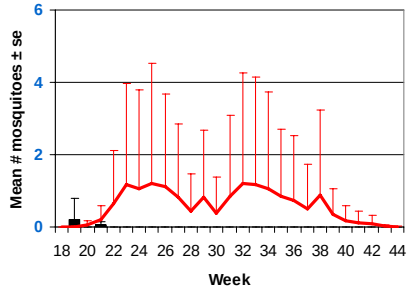
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Ochlerotatus cantator* has emerged in number in the Coastal Region, but appears more suppressed in the Delaware Bayshore Region than historical trends would indicate. However, the large error bars for that region's historical data would suggest a variable response by this species. *Oc. cantator's* early-season habits can be clearly seen by the historical trends in the Coastal and Delaware Bayshore regions. But note that is most regions of significant populations, a late-summer emergence of minor magnitude appear. This species will also take advantage of habitat formed with anthropogenic sources of salt.	

Culiseta melanura – Miscellaneous Group

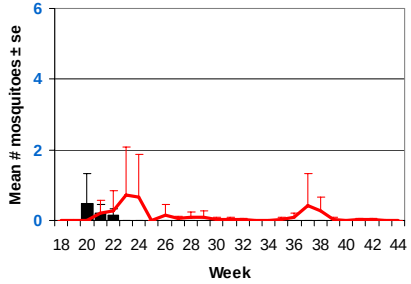
Agricultural



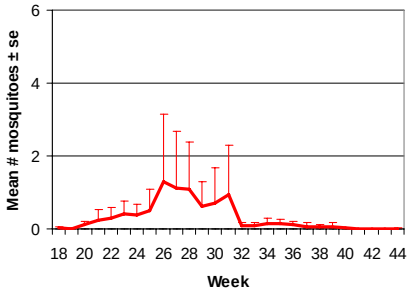
Coastal



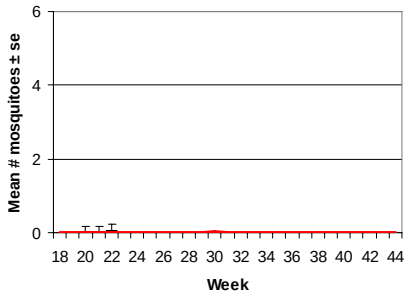
Delaware Bayshore



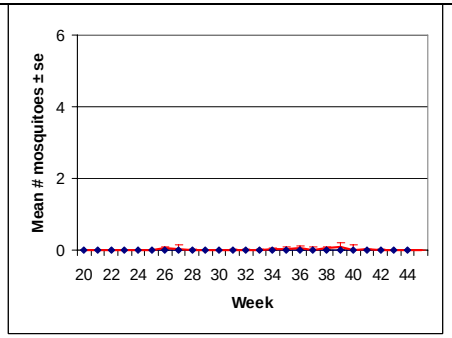
Delaware River Basin



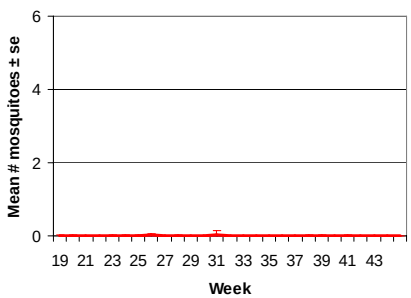
New York Metro



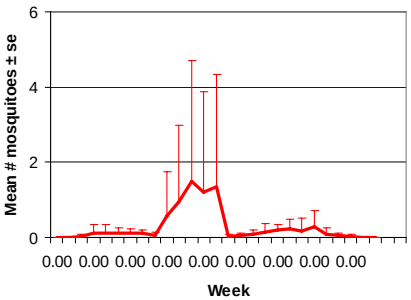
North Central Rural



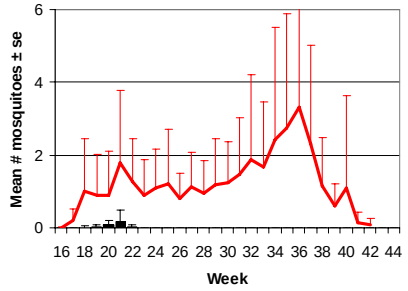
Northwestern Rural



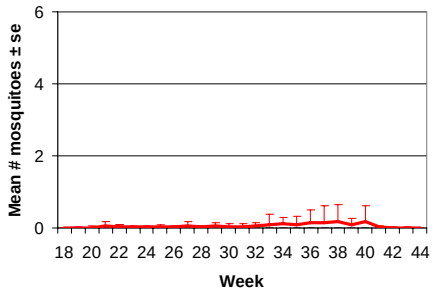
Philadelphia Metro



Pinelands



Suburban Corridor



Comments

The vector of significance for Eastern Equine Encephalitis, *Culiseta melanura,* has begun to emerge from their overwintering crypts in several regions. The Pinelands Region appears to show a significant suppression of the population, but this pattern is not replicated in other regions. Last year, population suppressions, possibly due to a cooler and drier spring, did not last through the entire season, and population numbers approached historical trends once into the summer. EEE activity did not appear to be suppressed due to an initially lower vector population.