NEW JERSEY STATEWIDE SURVEILLANCE

Week 25 Report for 18 June to 24 June, 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.

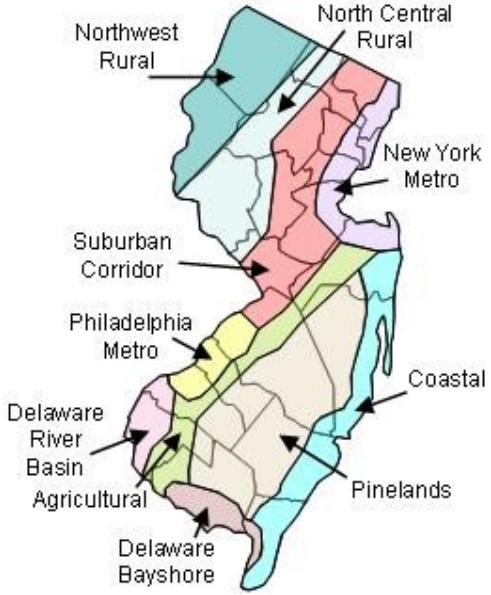


Figure 1b. Trap lat-long locations.

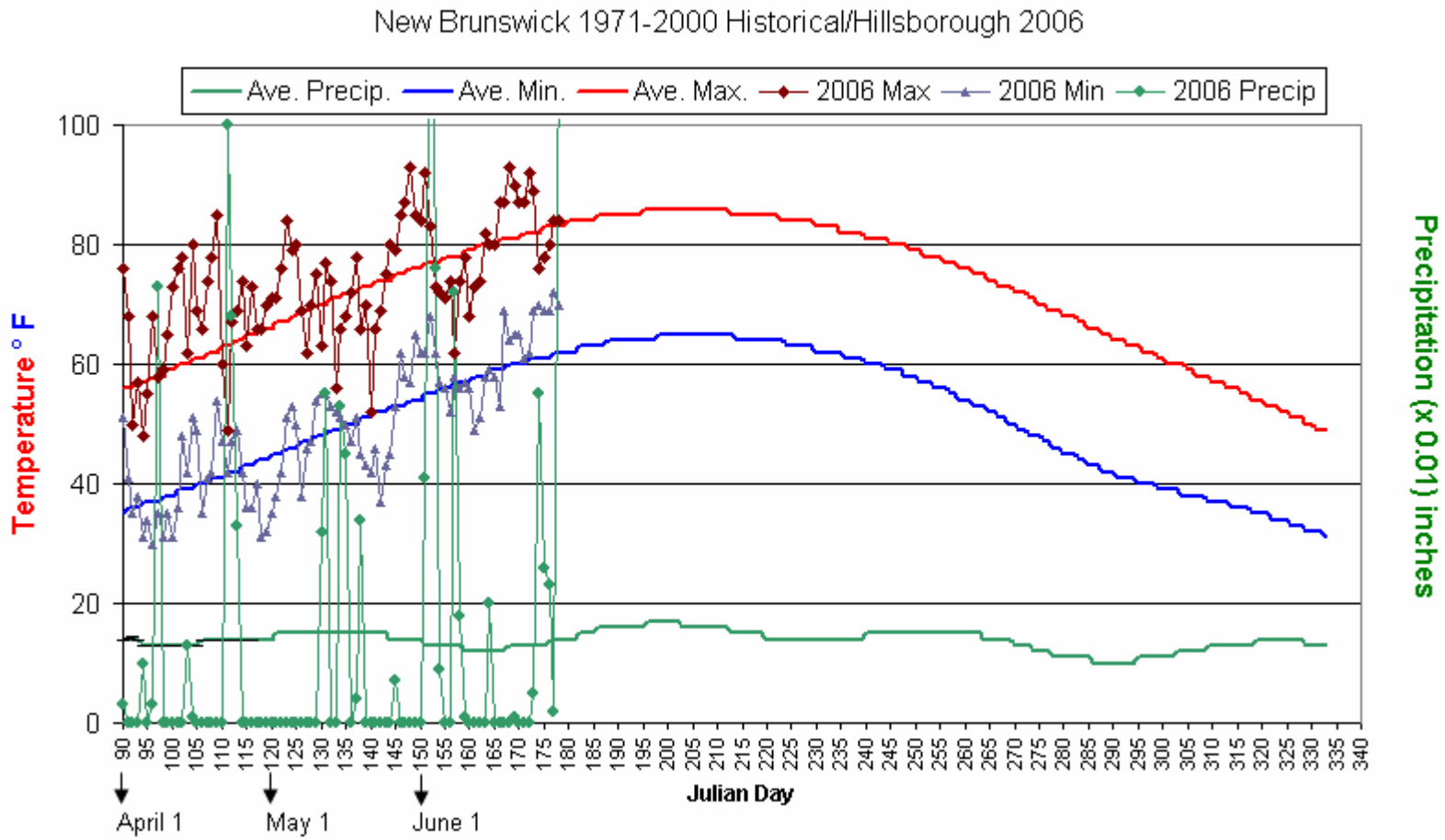
Summary table – Week 25

	Aedes vexans		*Culex complex*		*Coquillettidia perturbans*		*Ochlerotatus sollicitans*	
Region	This Week	Average*	This Week	Average*	This Week	Average*	This Week	Average*
Agricultural	**0.64**	**9.78**	**2.10**	**11.80**	**0.19**	**0.52**	**0.14**	**0.24**
Coastal	**1.43**	**12.24**	**3.24**	**5.00**	**0.79**	**1.27**	**0.90**	**32.33**
Delaware Bayshore	**0.00**	**7.31**	**7.86**	**34.33**	**6.43**	**2.07**	**1.24**	**34.88**
Delaware River Basin	**2.57**	**25.45**	**0.86**	**22.76**	**0.11**	**0.13**	**0.00**	**0.28**
New York Metro	**7.80**	**4.03**	**7.47**	**8.41**	**0.39**	**0.19**	**1.90**	**1.33**
North Central Rural	**0.33**	**1.34**	**1.00**	**1.18**	**0.00**	**0.09**	**0.00**	**0.00**
Northwest Rural	**31.29**	**11.62**	**1.71**	**4.66**	**0.10**	**0.74**	**0.00**	**0.00**
Philadelphia Metro	**5.30**	**12.57**	**6.84**	**8.78**	**0.34**	**3.44**	**0.00**	**0.00**
Pinelands	**0.00**	**3.05**	**0.81**	**2.25**	**0.40**	**1.47**	**0.01**	**0.19**
Suburban Corridor	**6.27**	**15.26**	**2.43**	**3.42**	**0.66**	**1.92**	**0.00**	**0.09**

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

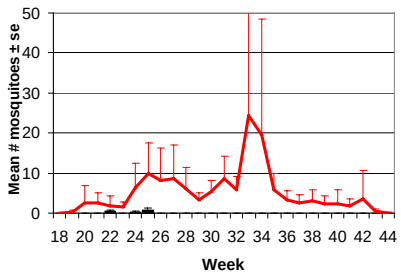
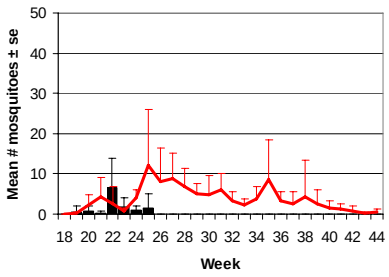
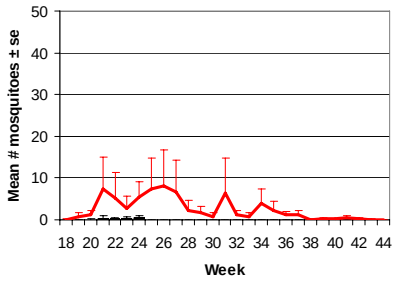
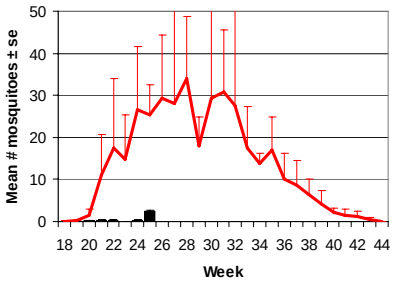
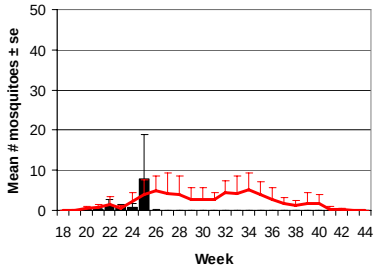
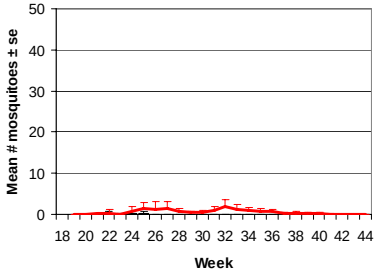
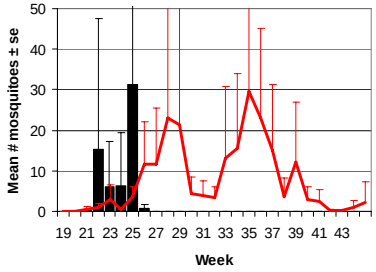
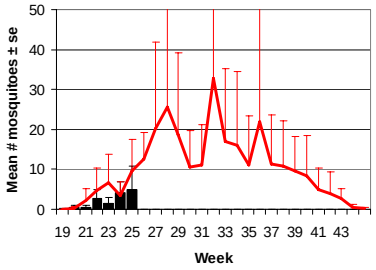
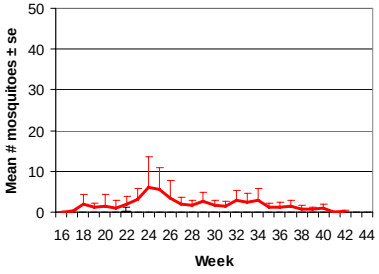
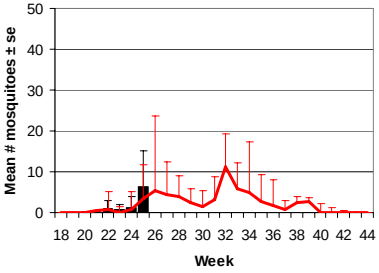
15 of 21 counties in current week; 20 of 21 counties reporting.

Climate Data

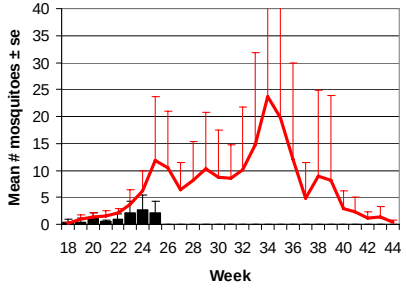
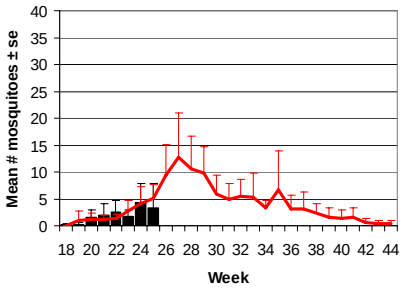
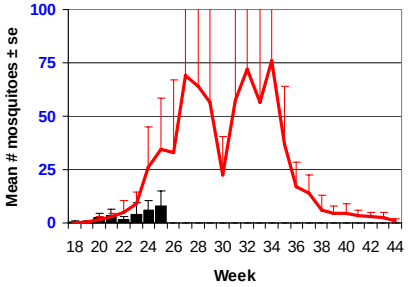
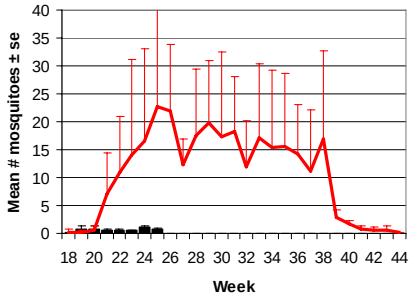
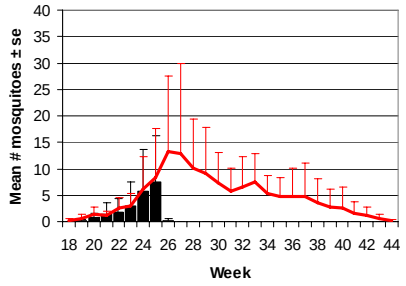
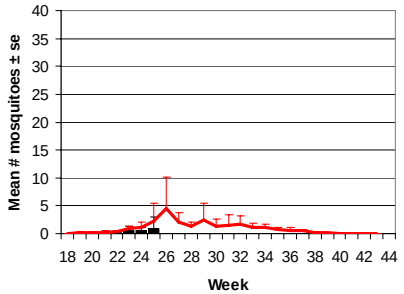
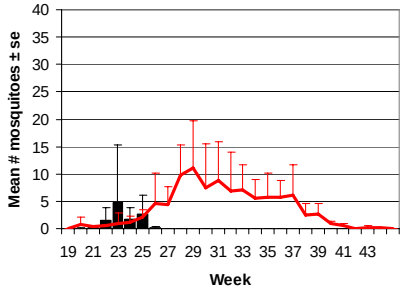
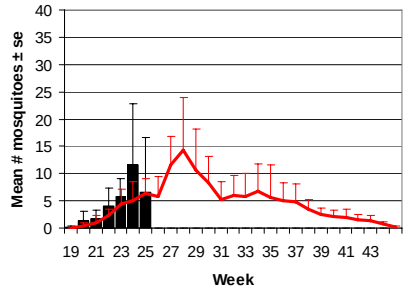
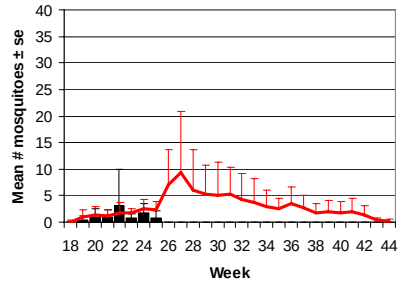
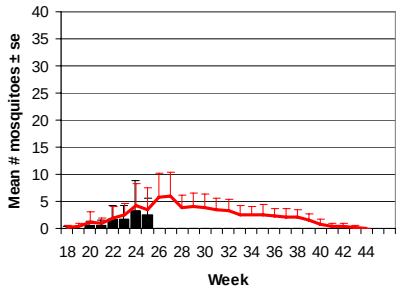


This figure shows historical average maximum and minimum temperatures and average precipitation recorded in the New Brunswick, NJ weather station over a recent 30 year period. Also graphed are the current year's minimum and maximum temperatures as recorded at the Hillsborough NJ weather station (a station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

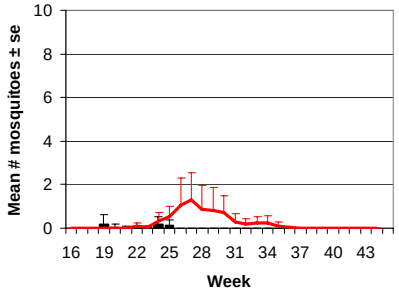
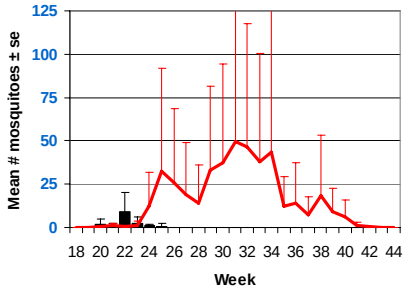
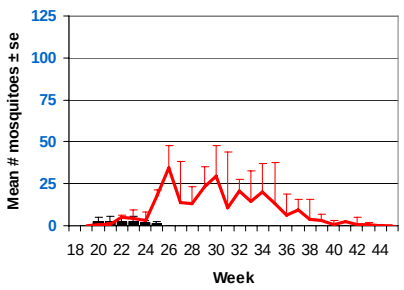
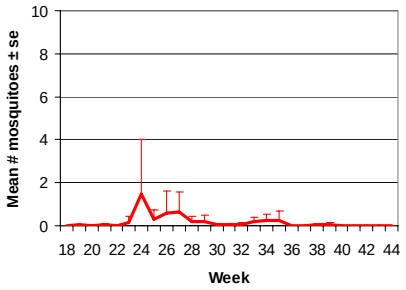
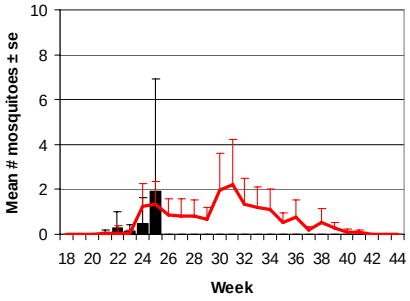
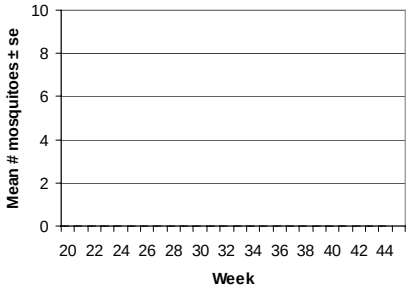
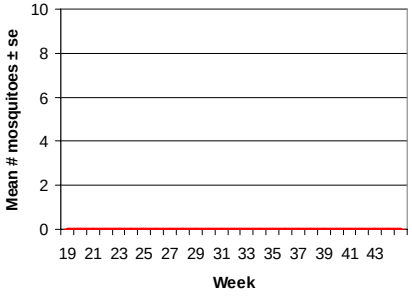
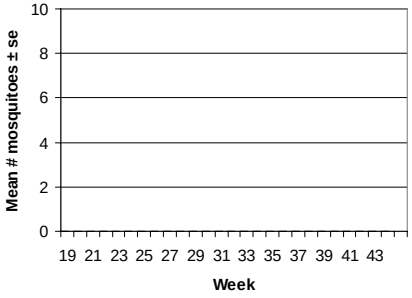
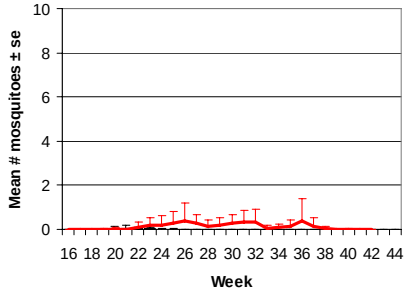
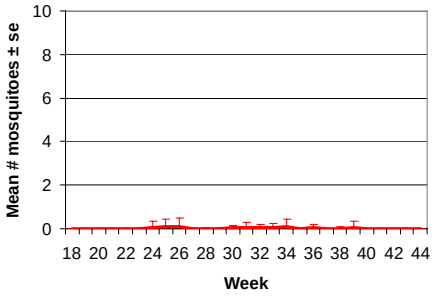
Aedes vexans - Fresh Floodwater Species

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes vexans* populations are varying widely among regions with respect to deviations away from historical trends. These mammalian feeders are implicated in the transmission of dog heartworm and likely play a role as a bridge vector in a number of arbovirus diseases. They will readily lay eggs in dampened soil that later will become flooded, and when in sunlit areas such as pastures, can produce prodigious populations quickly. The Northwest Rural region again experienced a significant emergence, and the Coastal, the two Metros regions, and the Suburban Corridor all appear to be following historical trends. There is a less-than-expected abundance in the two Delaware areas.	

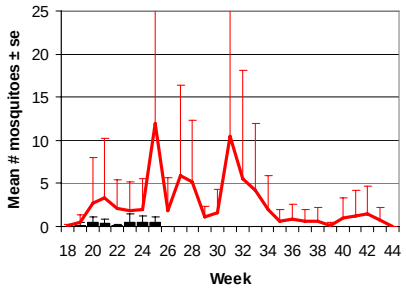
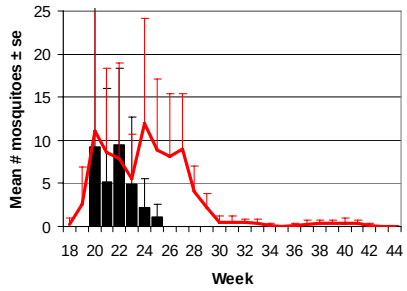
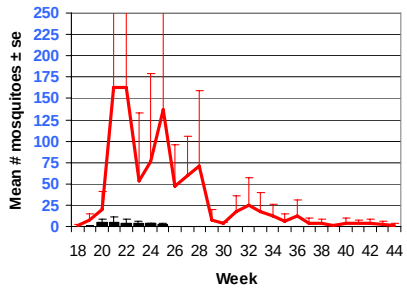
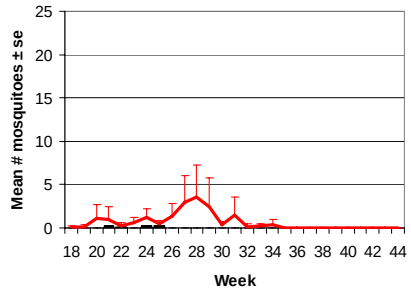
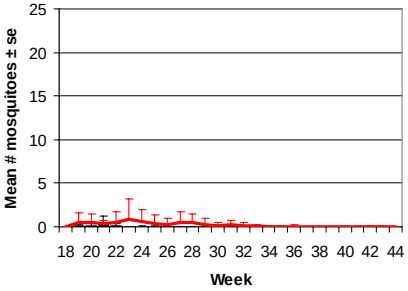
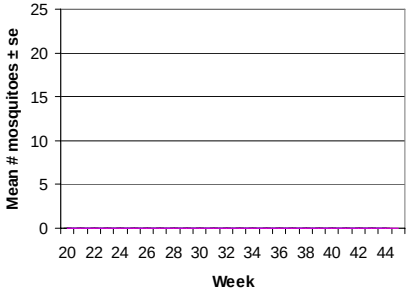
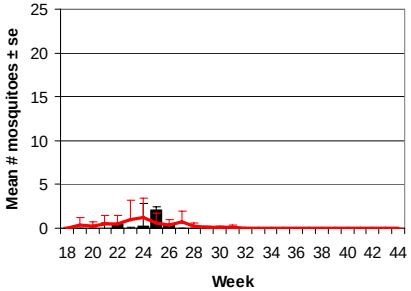
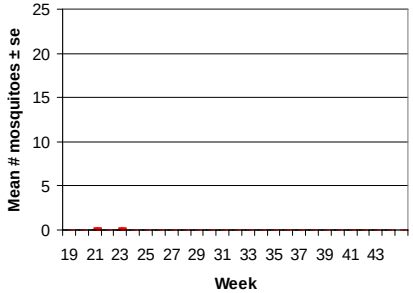
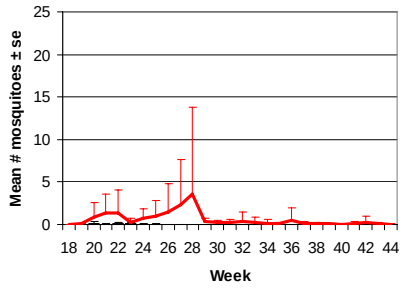
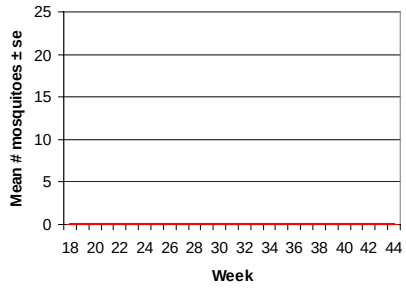
Culex Complex - Multivoltine Culex Species

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		For most regions, *Culex* Complex (*Cx. pipiens, Cx. restuans,* and *Cx. salinarius*) continue their predictable rise and tracking of historical trends. This steady progression is in stark contrast to the life history patterns of those species following floodwater events – the latter is a boon or bust for those species and is usually dependent on rainfall. These facultative bird feeders provide a steady recruitment to maintain an arbovirus cycle. The *Culex* populations, primarily *Cx. salinarius*, in the Delaware Bayshore region appear to be somewhat lower than historical trends.	

Ochlerotatus sollicitans - Salt Marsh Floodwater Species

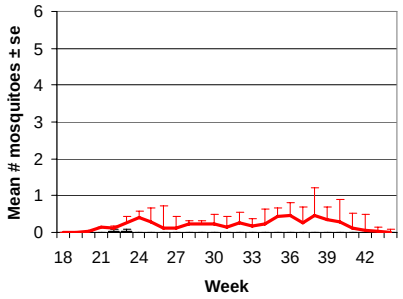
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Ochlerotatus sollicitans* numbers have been a little bit behind historical trends to date in the traditionally producing areas of the Coastal and Delaware Bay regions. But counties there have reported significant larval numbers, and the first major emergence is expected to be right upon us. The New York Metro region had a jump in numbers at a few traps.	

Ochlerotatus cantator – Multivoltine Aedine, sollicitans type

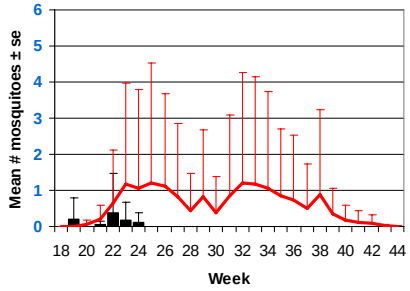
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Ochlerotatus cantator* continues its moderate decline in the Coastal region. Recent rains combined with tidal events that could provide the same flooding that is likely to stimulate a significant *sollicitans* emergence. While this species is generally a crepuscular biter, *cantator* will feed on unsuspecting mammals in the habitat that disturb it. While *cantator* appears to be an opportunistic feeder and as such, can potentially play a role in arbovirus transmission, it is an incompetent vector of West Nile virus.	

Culiseta melanura – Miscellaneous Group

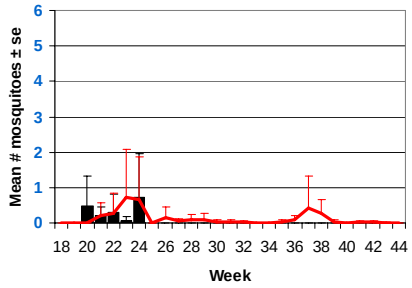
Agricultural



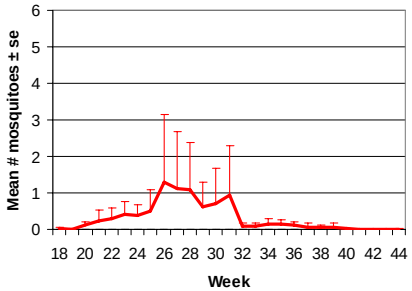
Coastal



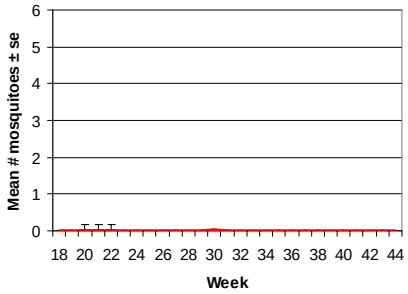
Delaware Bayshore



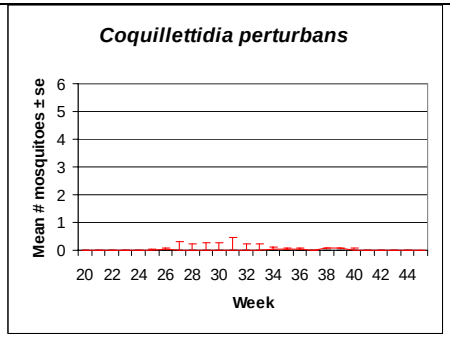
Delaware River Basin



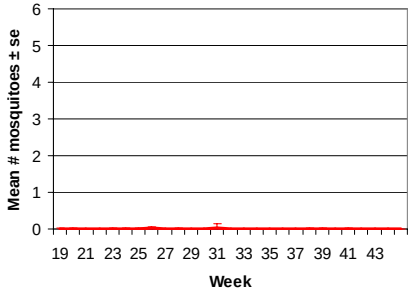
New York Metro



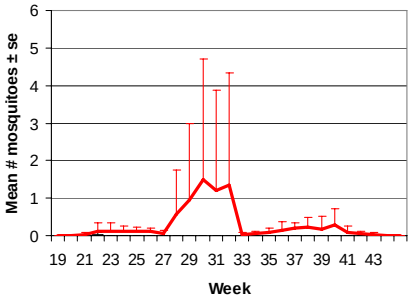
North Central Rural



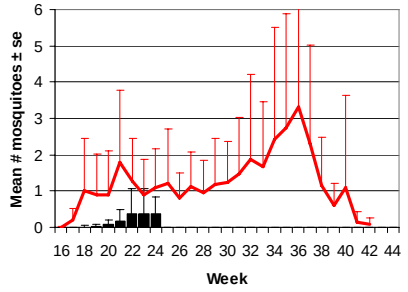
Northwestern Rural



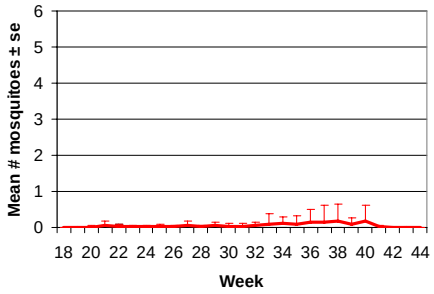
Philadelphia Metro



Pinelands



Suburban Corridor



Comments

Culiseta melanura populations continue to appear lower than historical trends suggest, and this is also reflected in the Vector Surveillance resting box program (resting boxes being a better sampling devise of this species). Both the Coastal and Pinelands regions show smaller populations. This early-season difference is against historical trends that show wide variation in the size of the *melanura* population over the past 5 years. Last year, the first indication of virus in a *melanura* pool was collected from a small population. This bird feeder is our first indication of Eastern Equine Encephalitis virus in an area. An indication of the amount of virus in the avian hosts is the amount of virus calculated per number of mosquitoes caught in the pooled samples. Denominators are critical for determining the severity of threat in an area.