NEW JERSEY STATEWIDE SURVEILLANCE

Week 31 Report for 27 July to 02 August, 2005

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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.

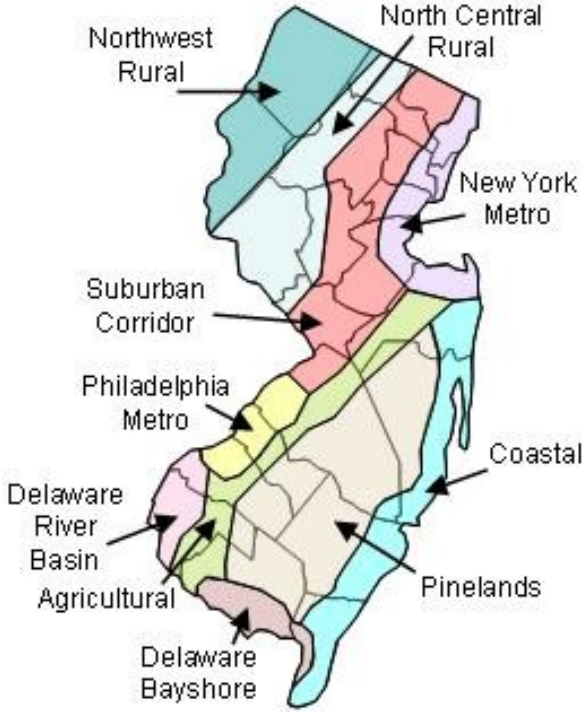


Figure 1b. Trap lat-long locations.

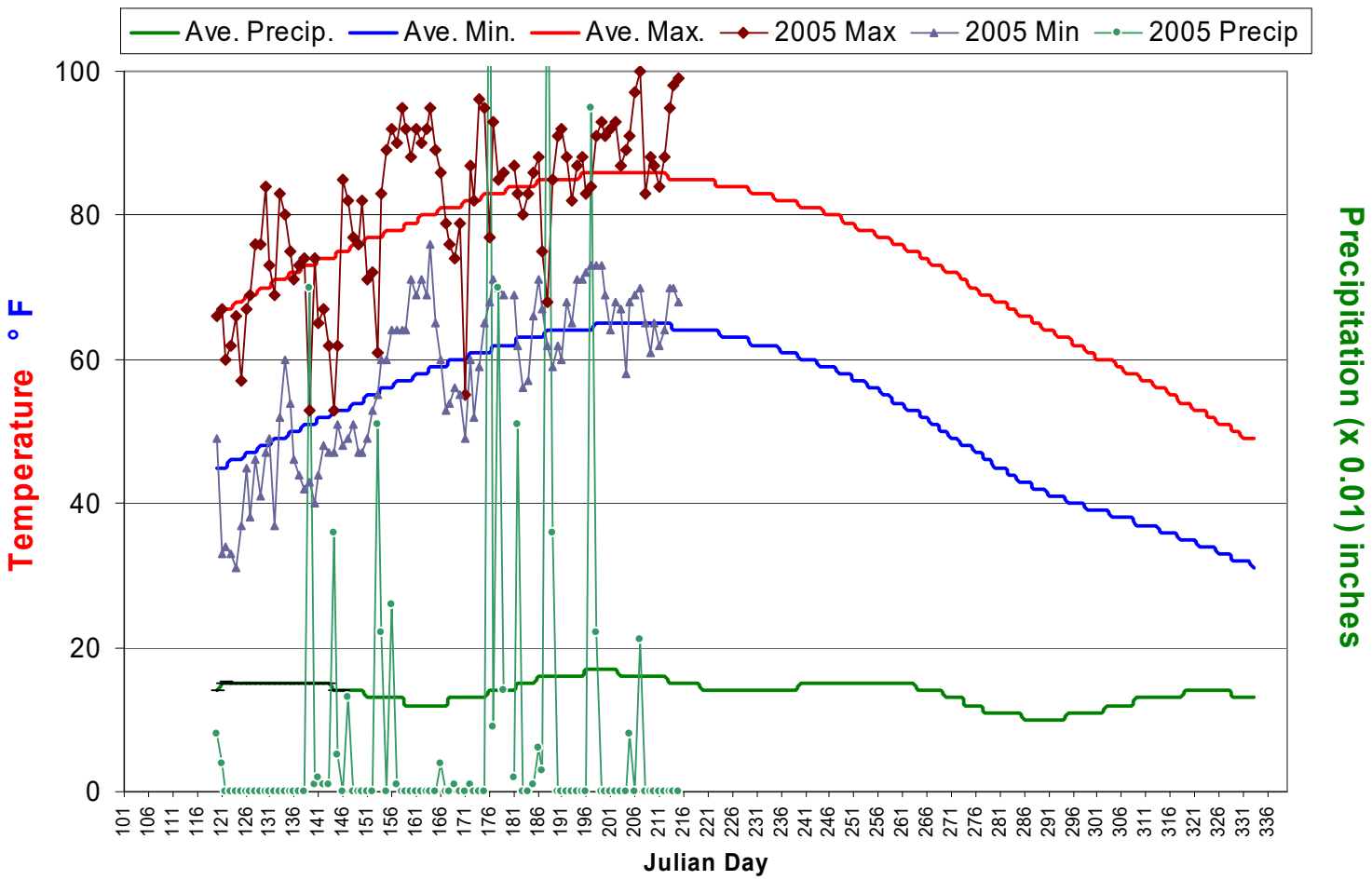
Summary table – Week 31

	Aedes vexans		*Culex complex*		*Coquillettidia perturbans*		*Ochlerotatus sollicitans*	
Region	This Week	Average*	This Week	Average*	This Week	Average*	This Week	Average*
Agricultural	**3.67**	**8.35**	**2.86**	**16.28**	**0.33**	**0.27**	**0.88**	**3.15**
Coastal	**7.29**	**5.06**	**3.54**	**5.56**	**2.33**	**0.19**	**37.35**	**54.99**
Delaware Bayshore	**2.17**	**8.64**	**35.29**	**68.26**	**2.48**	**8.23**	**8.31**	**26.58**
Delaware River Basin	**4.86**	**36.58**	**0.82**	**28.35**	**0.00**	**0.23**	**0.00**	**0.26**
New York Metro	**1.73**	**2.54**	**2.94**	**6.23**	**0.03**	**0.13**	**0.86**	**1.54**
North Central Rural	**0.45**	**0.95**	**0.29**	**1.45**	**0.00**	**0.08**	**0.00**	**0.00**
Northwest Rural	**1.43**	**2.98**	**0.05**	**6.68**	**0.00**	**0.13**	**0.00**	**0.00**
Philadelphia Metro	**11.29**	**30.98**	**2.43**	**5.80**	**0.19**	**0.13**	**0.00**	**0.00**
Pinelands	**3.48**	**1.78**	**1.64**	**5.52**	**1.64**	**0.50**	**0.05**	**0.27**
Suburban Corridor	**3.03**	**7.34**	**0.90**	**4.17**	**0.18**	**1.44**	**0.00**	**0.10**

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

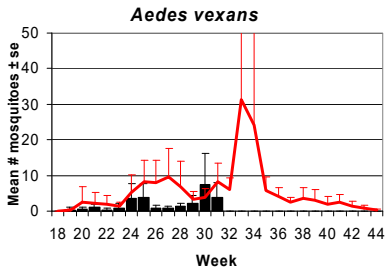
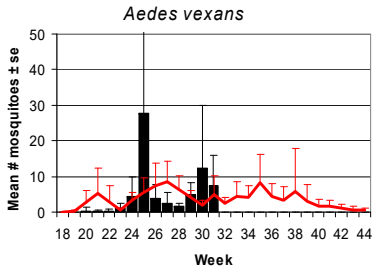
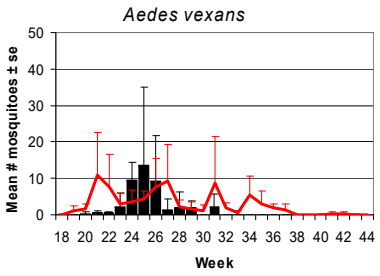
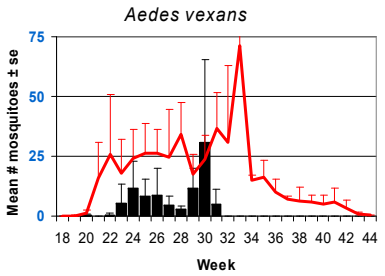
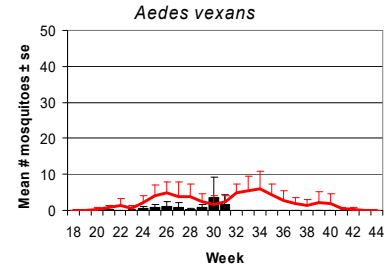
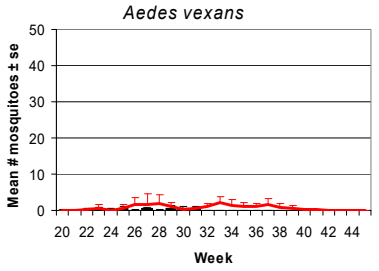
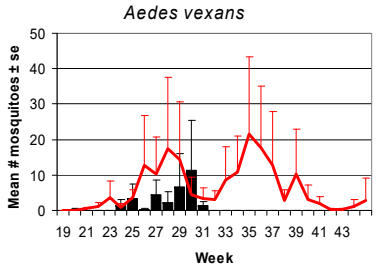
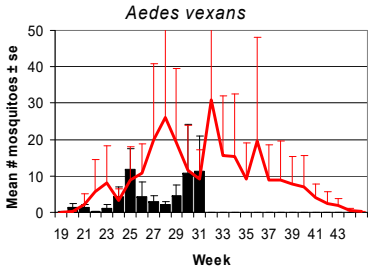
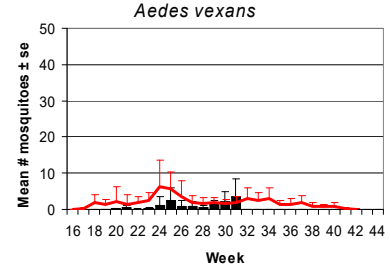
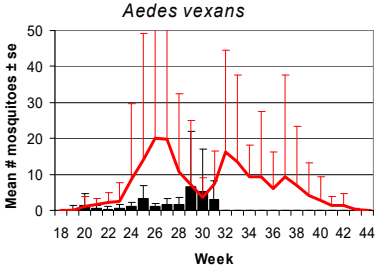
16 of 21 counties in current week; 20 of 21 counties reporting.

Climate Data

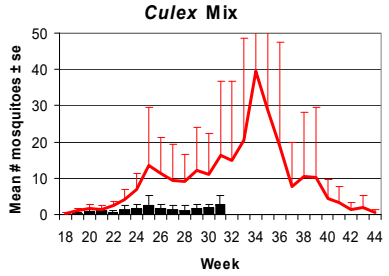
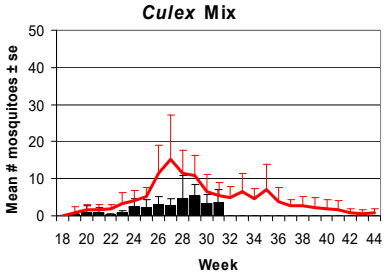
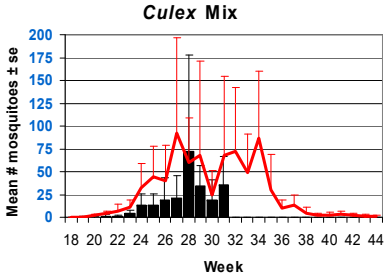
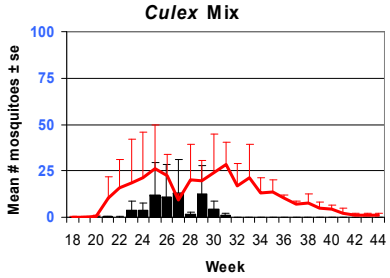
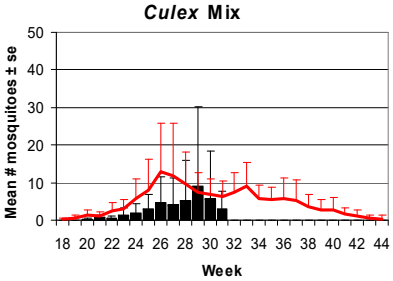
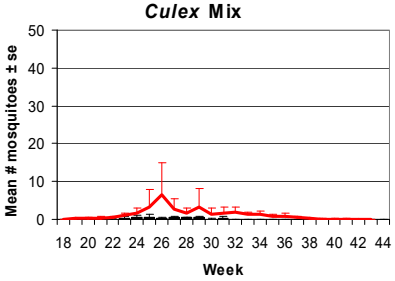
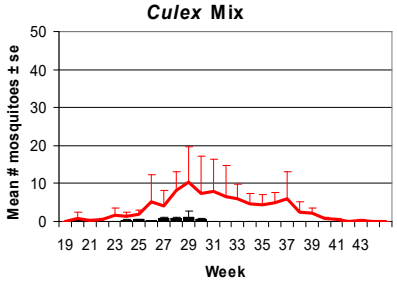
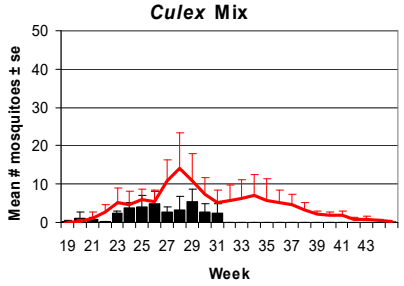
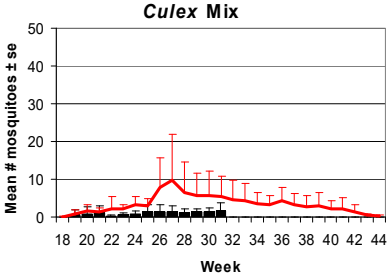
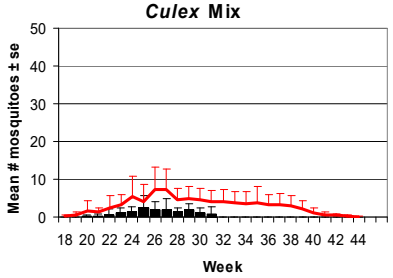


This figure shows historical average maximum and minimum temperatures and average precipitation recorded in the New Brunswick, NJ weather station over a recent 30 year period. Also graphed are the current year's minimum and maximum temperatures as recorded at the Hillsborough NJ weather station (a station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

Aedes vexans - Fresh Floodwater Species

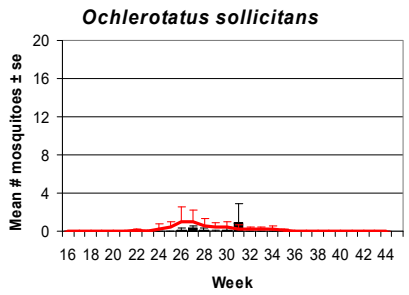
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes vexans* population trends reflect how variable rainfall has been throughout the state. Brood emergence has occurred in restricted rainfall areas. Currently, the weather has been warm and dry, resulting in limited but abundant broods. If current rainfall patterns continue, *Ae. vexans* impact may be reduced. However, climatological researchers forecast a higher-than-normal hurricane active year (http://hurricane.atmos.colostate.edu/forecasts/2005/june2005/).	

Culex Complex - Multivoltine *Culex* Species

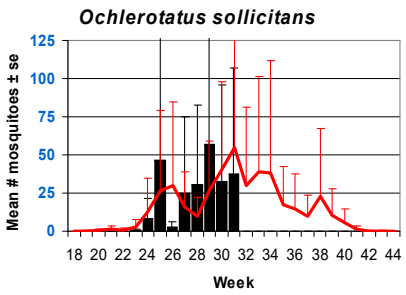
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		The presence of West Nile virus has been detected in pooled mosquito submissions to the state health department, with all of the to-date 18 positive pools coming from *Culex* complex and *Culex pipiens* collections. The Suburban Corridor/New York Metropolitan regions have been most active. However, the number of positive pools reported at any particular time of the year continues to decline after the initial emergence of West Nile in 1999. The current low levels of *Culex* populations this year may contribute to the decrease in West Nile, but the decrease may also be part of the natural ecology of this arbovirus.	

Ochlerotatus sollicitans - Salt Marsh Floodwater Species

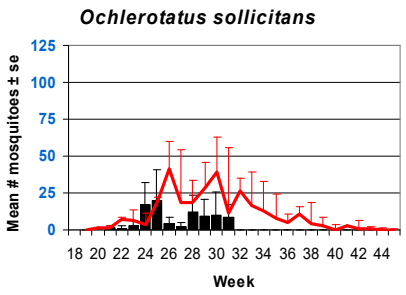
Agricultural



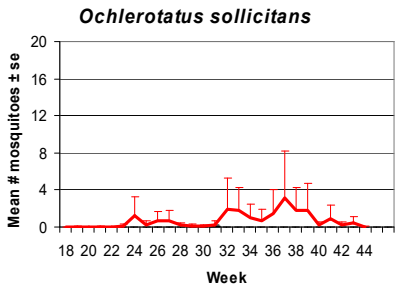
Coastal



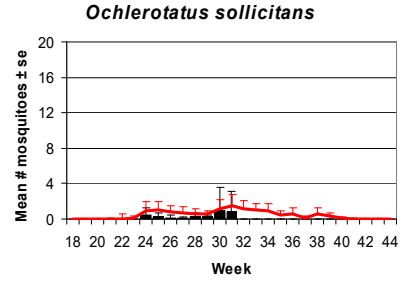
Delaware Bayshore



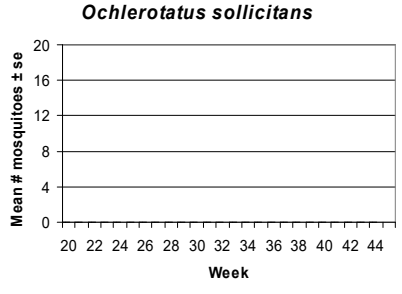
Delaware River Basin



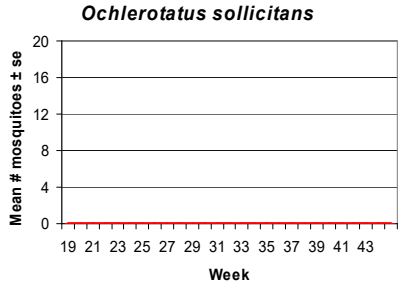
New York Metro



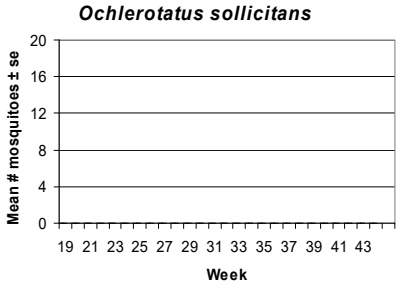
North Central Rural



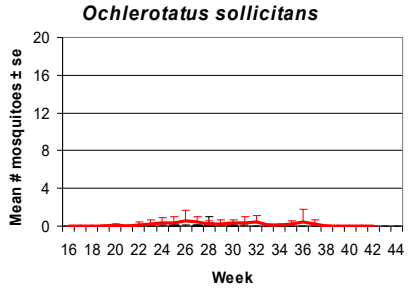
Northwestern Rural



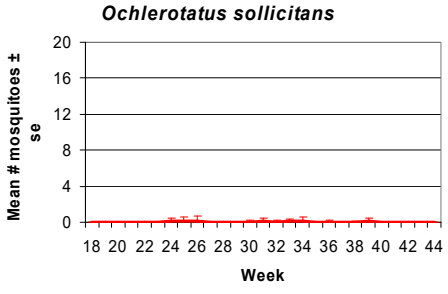
Philadelphia Metro



Pinelands



Suburban Corridor

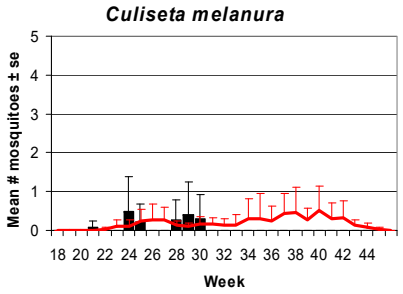


Comments

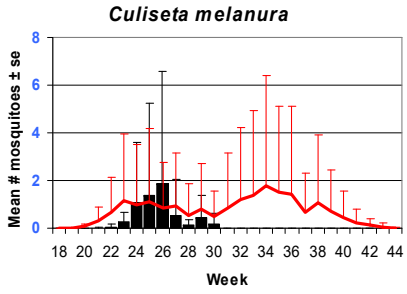
Ochlerotatus sollicitans trends should begin to decline slowly, according to the historical trends. But, tidal activity combined with the recent warm weather may contribute to one more emergence that actually marks the seasonal peak.

Culiseta melanura – Miscellaneous Group

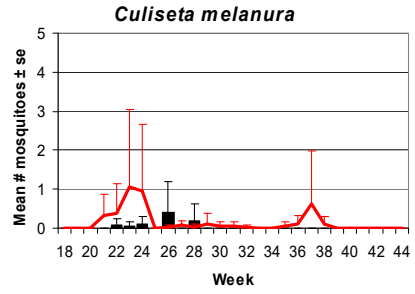
Agricultural



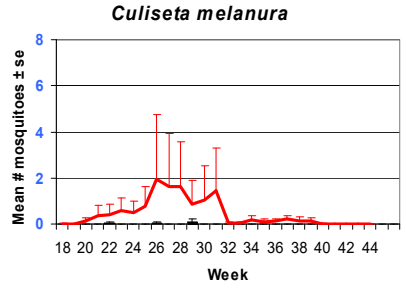
Coastal



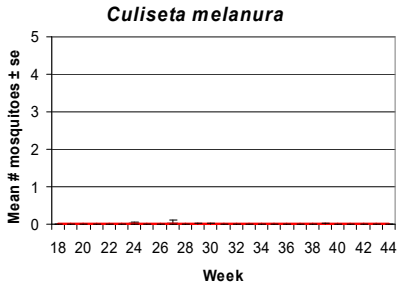
Delaware Bayshore



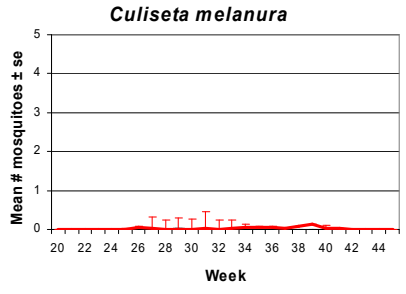
Delaware River Basin



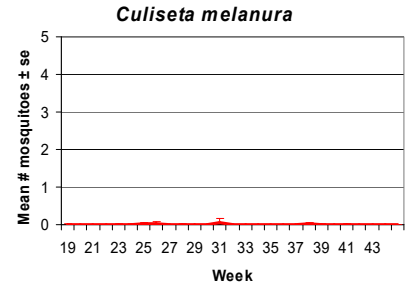
New York Metro



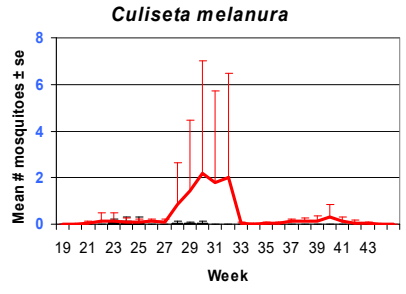
North Central Rural



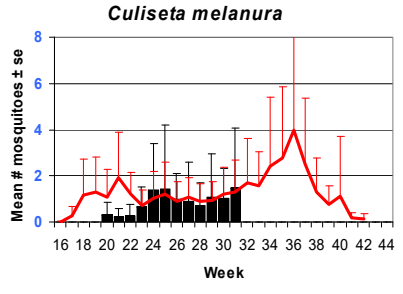
Northwestern Rural



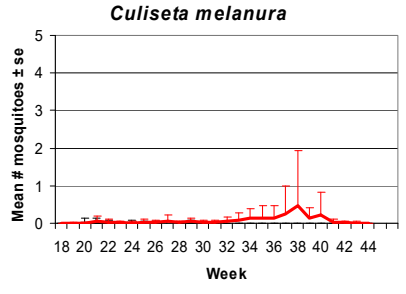
Philadelphia Metro



Pinelands

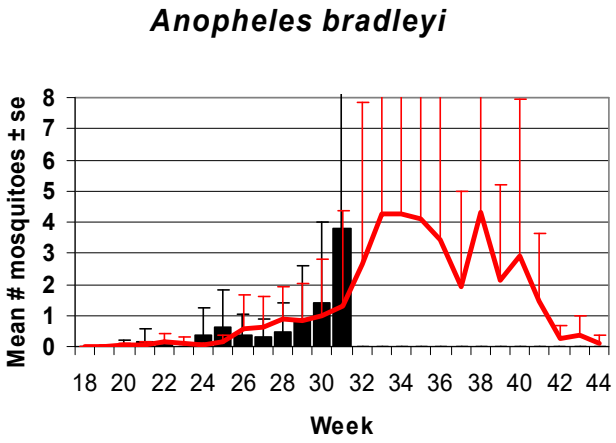


Suburban Corridor



Comments

The first Eastern Equine Encephailitis-positive pools of *Culiseta melanura* were reported last week, reflecting this year's activity levels all along the eastern seaboard. Current population trends, although delayed, appear to be in line with historical levels from the past five years. Both the Delaware River Basin and the Philadelphia Metro regions continued to show little activity at those light traps. It is of interest to note that the positive EEE pool came from a site with generally lower than expected population levels.



Anopheles bradleyi is a permanent-water anopheline that is often difficult to differentiate with *An. crucians.* An. bradleyi is brackish-tolerant and often found with other saline lovers such as *Oc. cantator, Oc. sollicitans,* and *Oc. taeniorhynchus*. And, like other associative saltwater species, *An. bradleyi* is a vector for the dog heartworm *Dirofilaria immitis*. This graph shows *An. bradleyi* in the Coastal region. *Anopheles bradleyi*'s complex cohort, *An. crucians*, can be considered the inland ecological equivalent of *An. bradleyi.*

Ochlerotatus cantator is a floodwater species that is tolerant of salt or brackish water. Their preference for larval habitat with a saline component means that they can appear in seemingly unusual places, such as the Northwest Rural or Agricultural Regions. Closer inspection reveals the extent of the anthropogenic saline use: textile industry in the Northwest Rural with their use of salts in the curing process, and the use of salts on roadways that are next to areas prone to floodwater effects (Agricultural).

Northwest Rural	Agricultural