NEW JERSEY STATEWIDE SURVEILLANCE

Week 21 Report for Start to 23 May, 2004

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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.

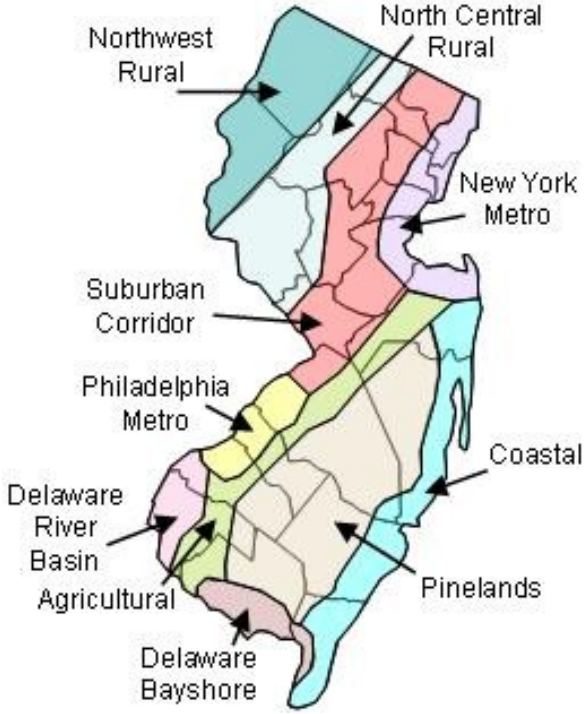
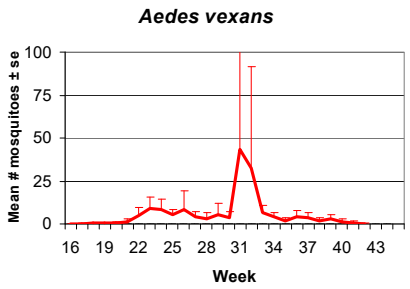
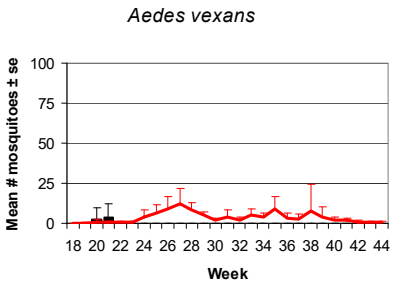
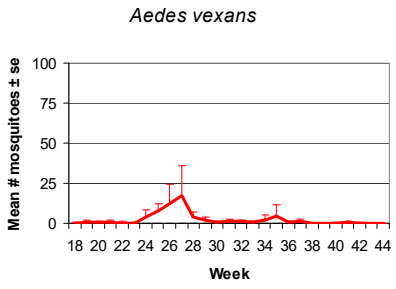
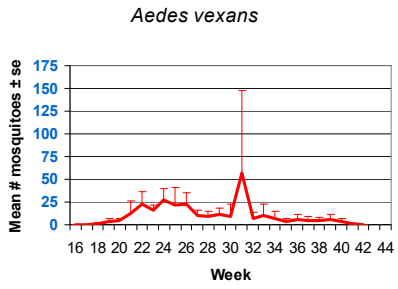
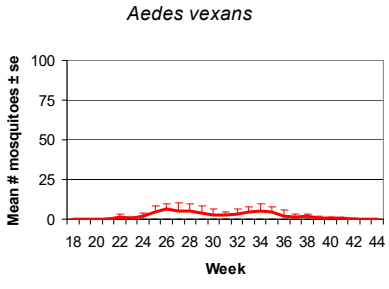
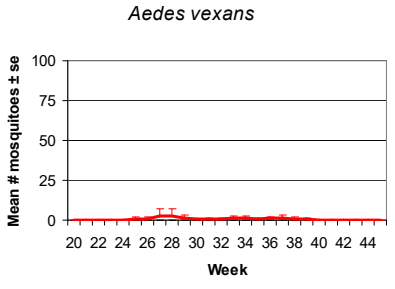
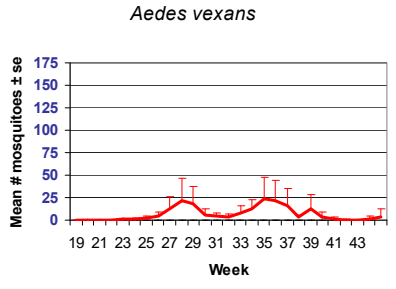
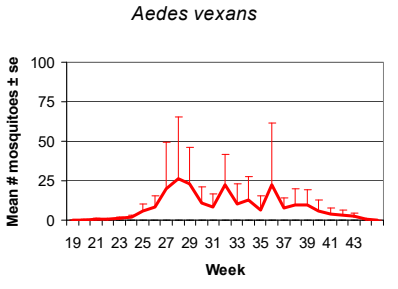
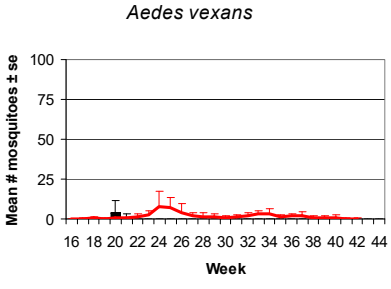
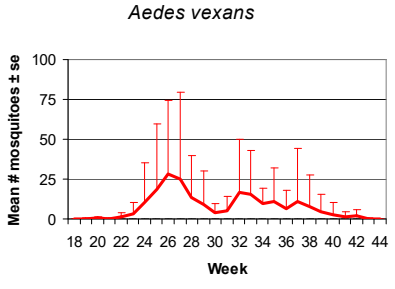


Figure 1b. Trap lat-long locations.

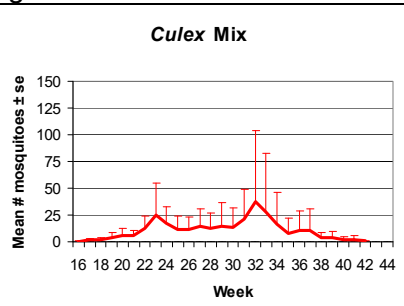
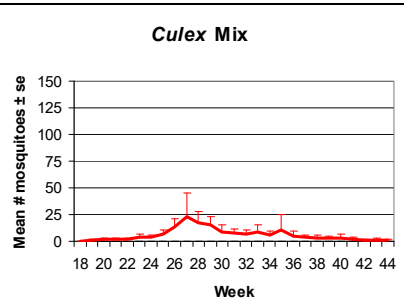
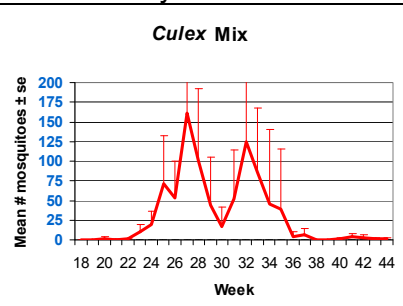
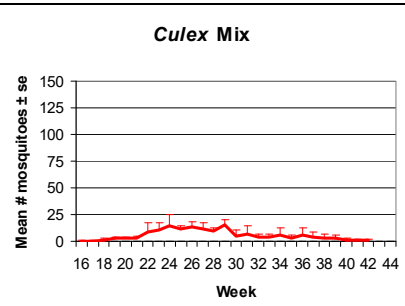
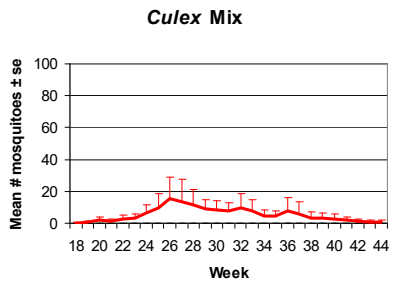
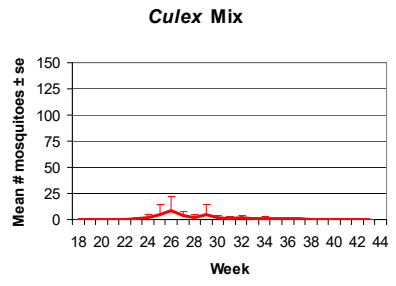
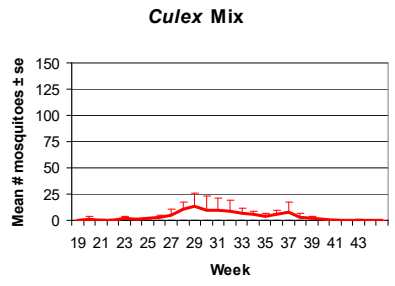
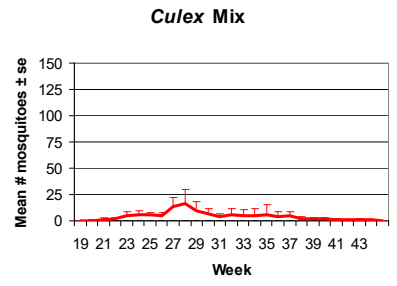
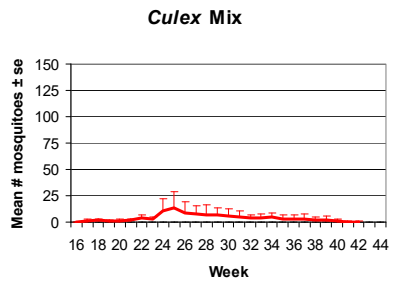
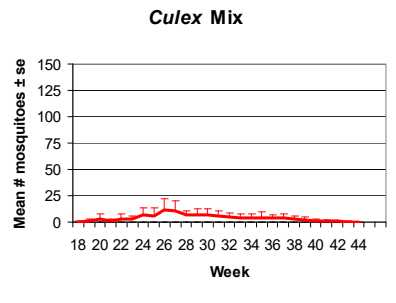
Summary table

	Aedes vexans		*Culex complex*		*Coquillettidia perturbans*		*Ochlerotatus sollicitans*	
Region	This Week	Average*	This Week	Average*	This Week	Average*	This Week	Average*
Agricultural	**0**	**0.38**	**0**	**3.63**	**0**	**0**	**0**	**0.01**
Coastal	**3.68**	**0.52**	**0.06**	**1.90**	**0**	**0**	**0.90**	**1.42**
Delaware Bayshore	**0**	**0.81**	**0**	**0.33**	**0**	**0**	**0**	**0.19**
Delaware River Basin	**0**	**3.36**	**0**	**3.25**	**0**	**0**	**0**	**0.04**
New York Metro	**0**	**0.14**	**0**	**1.29**	**0**	**0**	**0**	**0.02**
North Central Rural	**0**	**0**	**0**	**0.17**	**0**	**0**	**0**	**0**
Northwest Rural	**0**	**0.06**	**0**	**0.44**	**0**	**0**	**0**	**0**
Philadelphia Metro	**0**	**0.39**	**0**	**2.12**	**0.05**	**0**	**0**	**0**
Pinelands	**0.78**	**0.33**	**0.08**	**1.04**	**0**	**0**	**0**	**0.04**
Suburban Corridor	**0**	**0.13**	**0**	**1.30**	**0**	**0**	**0**	**0**

Aedes vexans - Fresh Floodwater Species

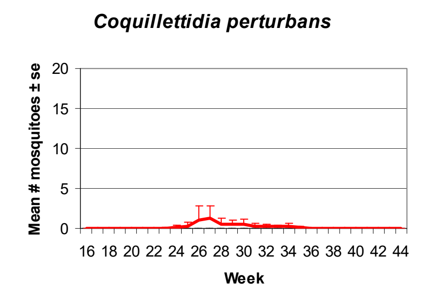
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		Extended spring rainfall with consistent increase in temperatures brings together the two factors that encourage robust *Ae. vexans* population emergences. Historical data suggests that the largest brood emergences occur in agricultural, Northwest Rural and suburban regions. Local broods frequently occur in the Delaware River Basin (dredge spoils) and the Philadelphia Metro region. The severity of population emergences will depend on the extent that suitable habitat is available. This year's rainfall pattern breaks from past drought conditions and increases this likelihood.	

Culex Complex - Multivoltine *Culex* Species

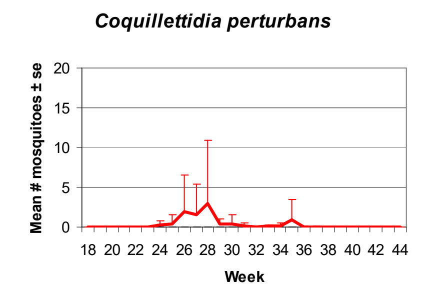
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		These graphs are represented by 3 species and therefore must be interpreted with caution. Regions surrounded by saltwater (Coastal and Delaware Bayshore) are most likely representative of *Cx, salinarius* while inland sites can be varying combinations of *Cx. pipiens* and *Cx. restuans*. *Cx. pipiens* is decidedly cosmopolitan in choice of larval habitat. Organic, polluted waters are tolerated and thus *Cx. pipiens* will be the dominant species in areas where others species cannot breed (catch basins). *Cx. restuans* is similarly ubiquitous, and frequently breeds opportunistically in woodland pools with decaying leaf matter after early-season aedines have emerged.	

Coquillettidia perturbans - Unique Life Cycle

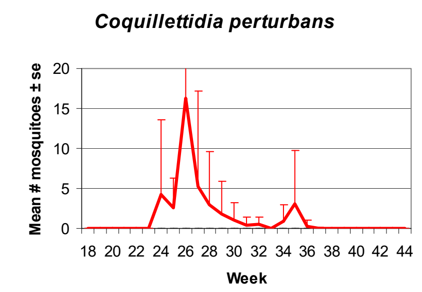
Agricultural



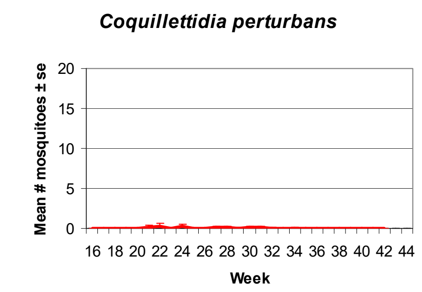
Coastal



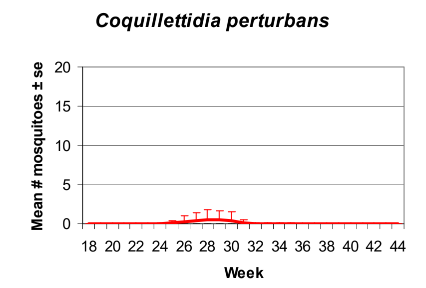
Delaware Bayshore



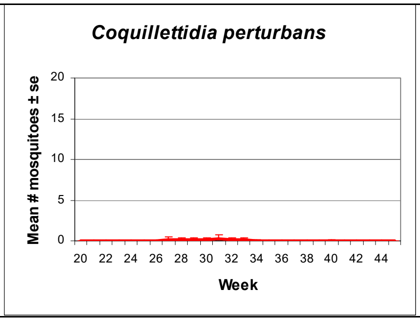
Delaware River Basin



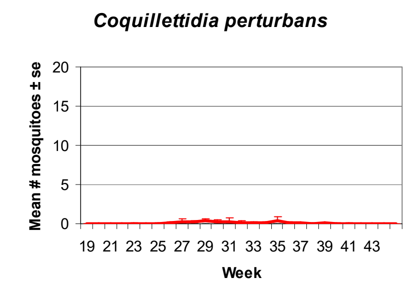
New York Metro



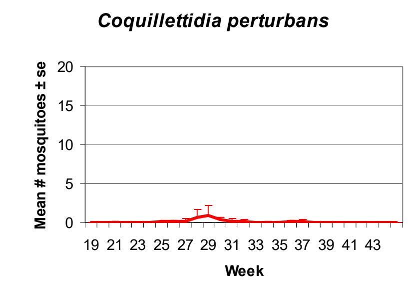
North Central Rural



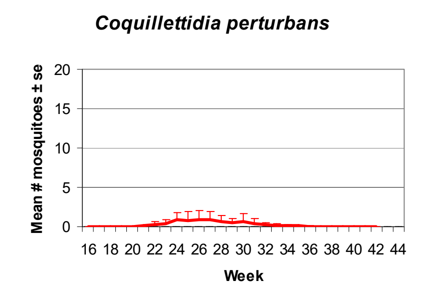
Northwestern Rural



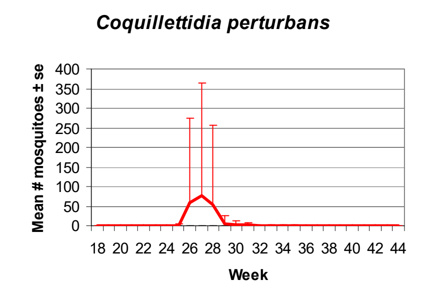
Philadelphia Metro



Pinelands



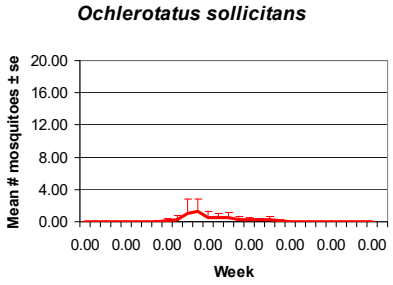
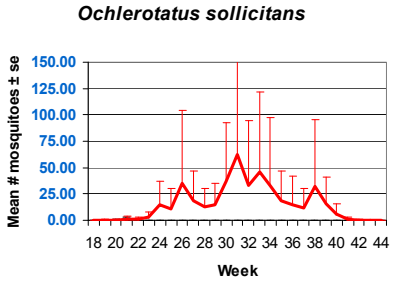
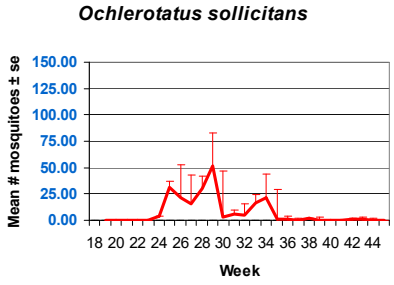
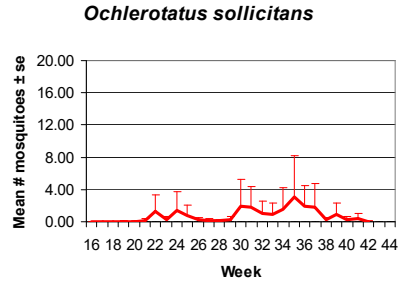
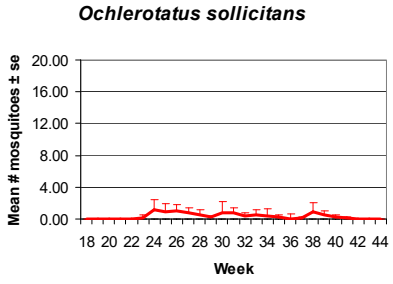
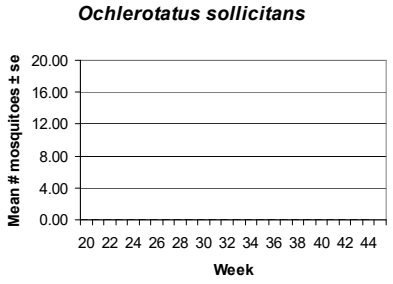
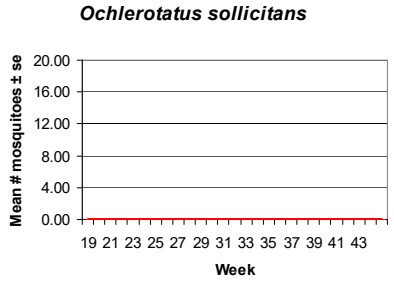
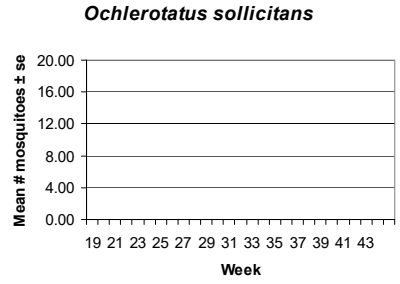
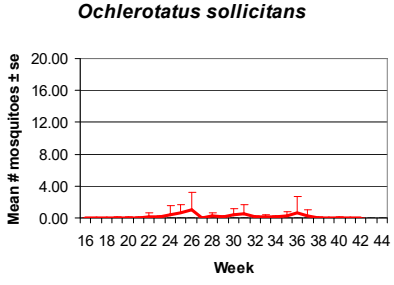
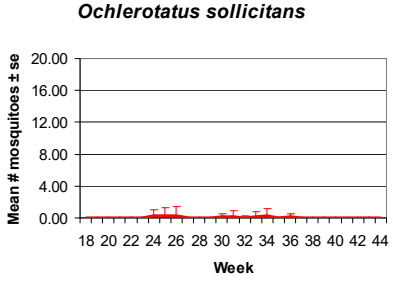
Suburban Corridor



Comments

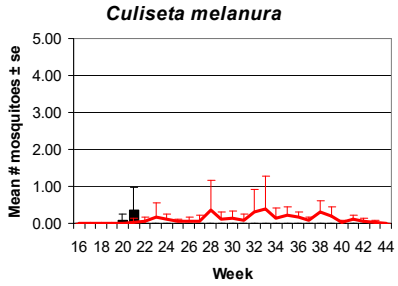
Coquillettidia perturbans, the Cattail mosquito, emanates from habitats with heavy emergent vegetation. Local emergences can be heavy but the highest populations do not normally appear until June. Historical data show that populations are highest in the Coastal, Delaware Bayshore and the Suburban Corridor regions. One trap in the Suburban region last year caught more than 20000 specimens in three weeks. Regions with the suitable habitat (emergent vegetation that the larvae can attach itself to) include the Coastal and Delaware Bayshore. It is primarily a mammalian feeder and has been implicated in the EEE cycle.

Ochlerotatus sollicitans - Salt Marsh Floodwater Species

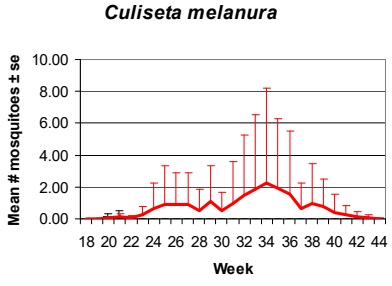
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Ochlerotatus sollicitans*, the Salt Marsh mosquito, typifies those species that respond to flooding conditions in salt water: lunar tides factor heavily in adult emergences, as well as local rainfall. These patterns are most evident in the Coastal region. *Oc. sollicitans* is a major pest producing sizeable populations whose influence, due to the ability to fly a respectable distance, can be felt far beyond the coastal borders. Its numbers and aggressive nature make it a significant factor in arboviral transmissions. Historical data indicates that genuine population emergences should begin in about 2 to 3 weeks.	

Culiseta melanura - Miscellaneous Group

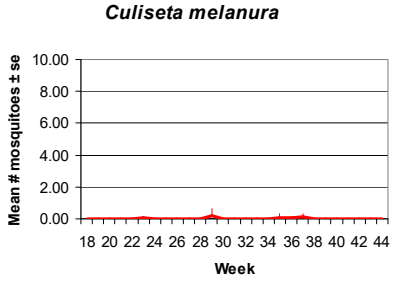
Agricultural



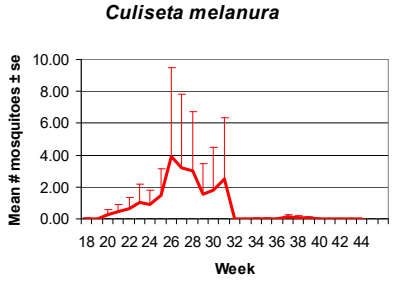
Coastal



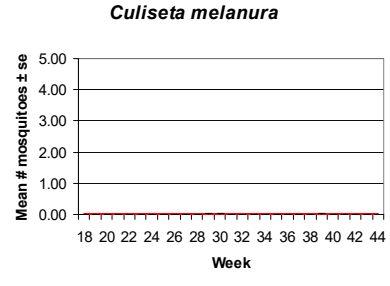
Delaware Bayshore



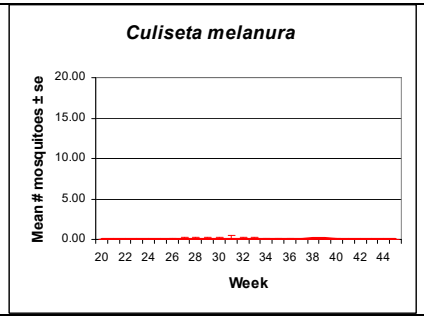
Delaware River Basin



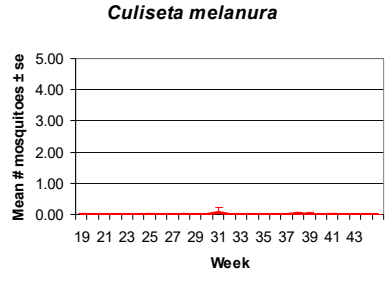
New York Metro



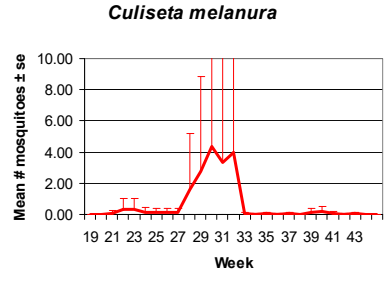
North Central Rural



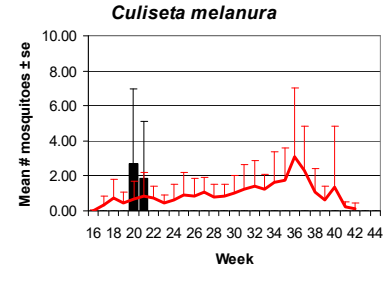
Northwestern Rural



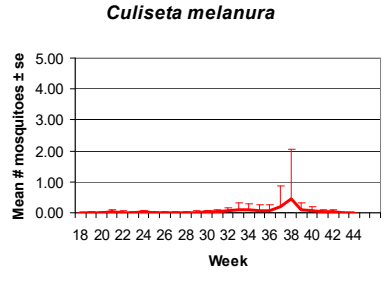
Philadelphia Metro



Pinelands



Suburban Corridor



Comments

Culiseta melanura is the species that maintains the EEE cycle through its preferred avian bloodfeeding behavior. Larval habitat is most abundant in acidic environments, such as cedar swamps crypts. Within these habitats, populations are expected to build and peak throughout the season as overwintering instars develop and emerge. Early vector surveillance with resting boxes on southern New Jersey populations signaled a significant EEE year in 2003. Similar patterns of early population growth are showing up in the Pinelands, agricultural, and Coastal regions this year, suggesting vigilance.