NEW JERSEY STATEWIDE SURVEILLANCE

Week 22 Report for 24 May to 01 June, 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.

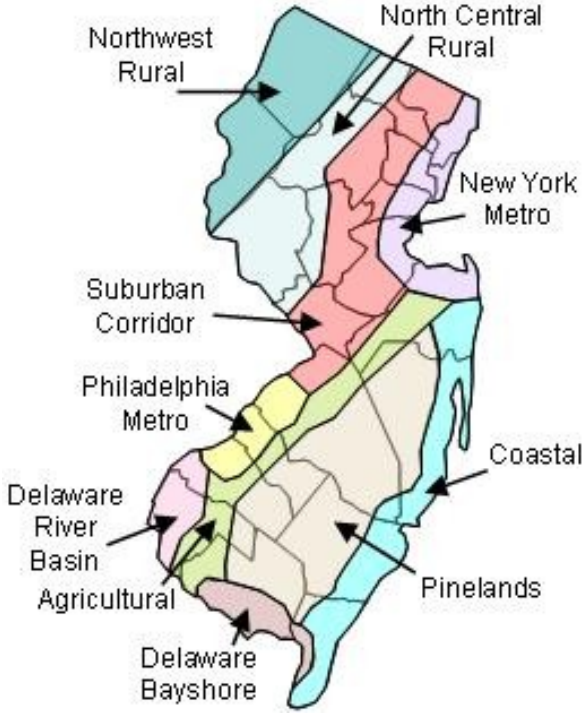


Figure 1b. Trap lat-long locations.

Summary table

	Aedes vexans		*Culex complex*		*Coquillettidia perturbans*		*Ochlerotatus sollicitans*	
Region	This Week	Average*	This Week	Average*	This Week	Average*	This Week	Average*
Agricultural	**0.38**	**0.49**	**0.29**	**5.98**	**0.05**	**0**	**0.40**	**0.07**
Coastal	**0.21**	**0.45**	**0.02**	**1.98**	**0**	**0**	**0.27**	**1.00**
Delaware Bayshore	**1.00**	**0.31**	**3.50**	**0.71**	**0**	**0**	**3.81**	**0.12**
Delaware River Basin	**1.21**	**4.39**	**0.04**	**2.94**	**0**	**0**	**0**	**0.03**
New York Metro	**0.33**	**0.97**	**0.23**	**2.58**	**0**	**0**	**0**	**0.01**
North Central Rural	**0**	**0**	**0**	**0.38**	**0**	**0**	**0**	**0**
Northwest Rural	**0.21**	**0.63**	**0**	**1.58**	**0**	**0.05**	**0**	**0**
Philadelphia Metro	**0**	**1.20**	**0**	**4.63**	**0**	**0.01**	**0**	**0**
Pinelands	**0.27**	**0.33**	**0.42**	**1.22**	**0.01**	**0.01**	**0**	**0.03**
Suburban Corridor	**0.19**	**0.98**	**0.02**	**3.11**	**0**	**0**	**0**	**0**

- Complete data not yet available.

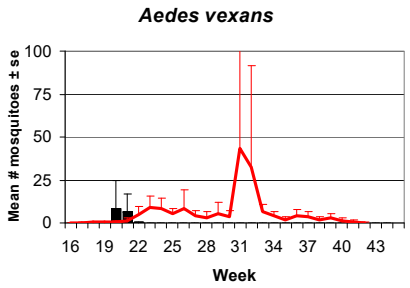
Please Note: Historical data is being entered and not yet complete. These values and graphics will change as more data is entered.

Additional Species, including *Cs. melanura*: Early season species - *Oc. canadensis, Oc. sticticus, Oc. stimulans*, and , *Ae. cinereus*

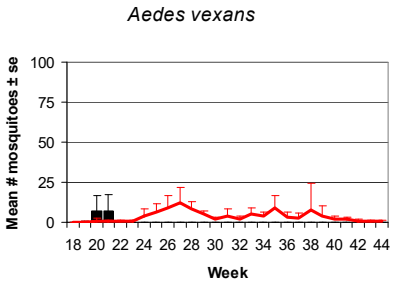
Please note: The dataset for the current year is incomplete as only 8 counties have submitted data. Interpretations must proceed with caution.

Aedes vexans - Fresh Floodwater Species

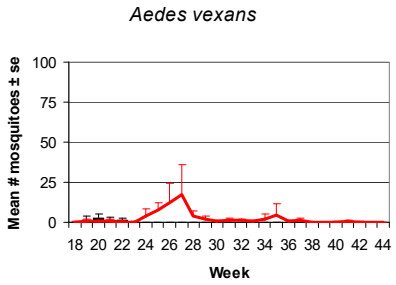
Agricultural



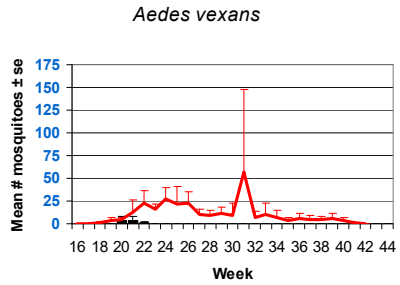
Coastal



Delaware Bayshore



Delaware River Basin



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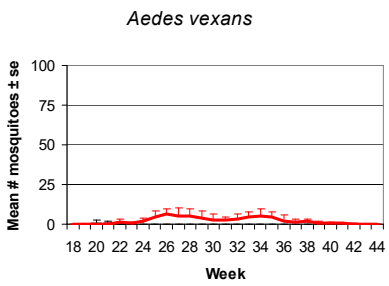
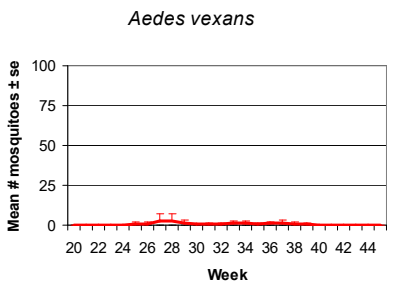
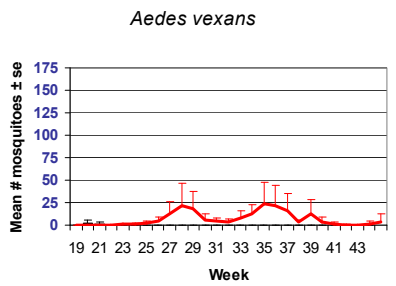


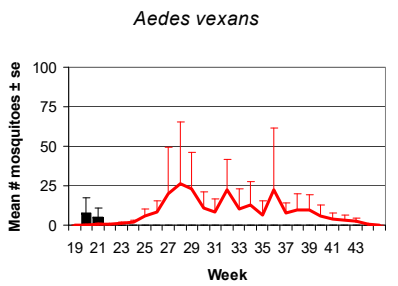
North Central Rural



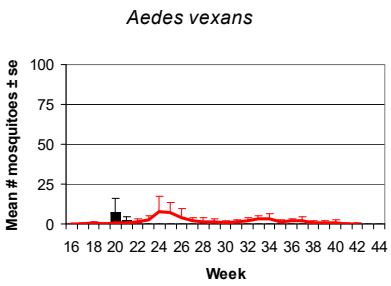
Northwestern Rural



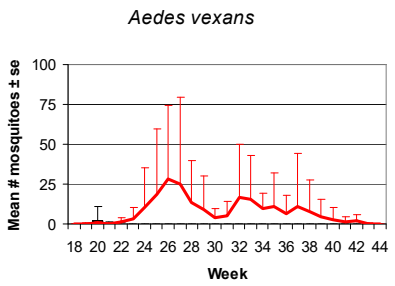
Philadelphia Metro



Pinelands



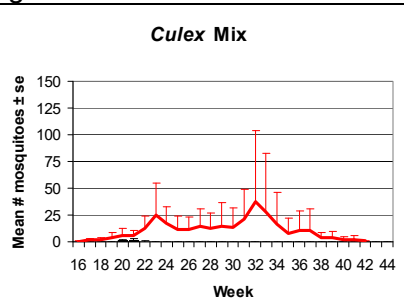
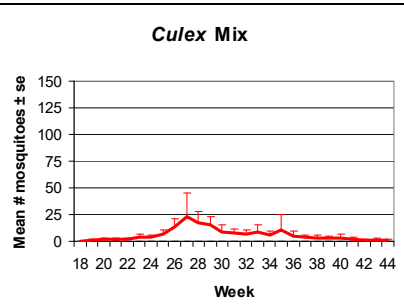
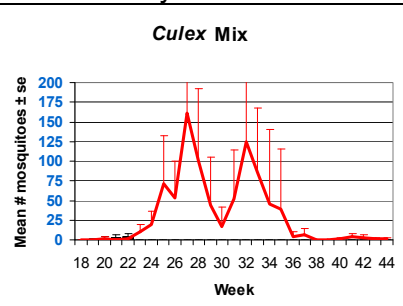
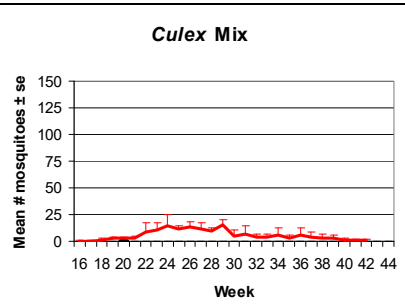
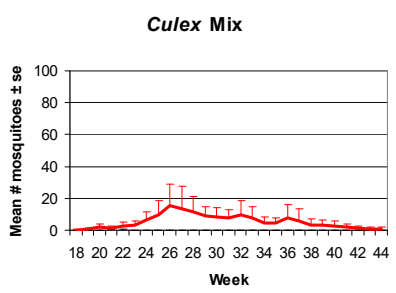
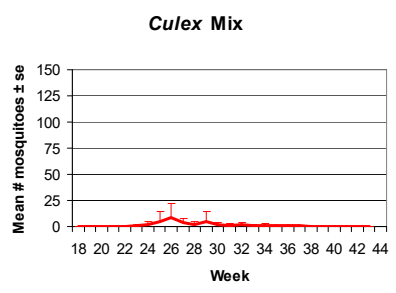
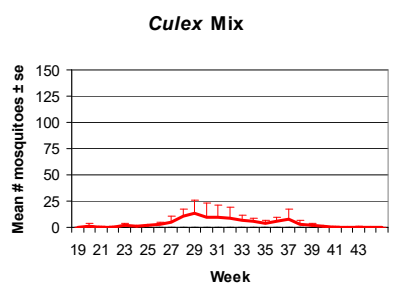
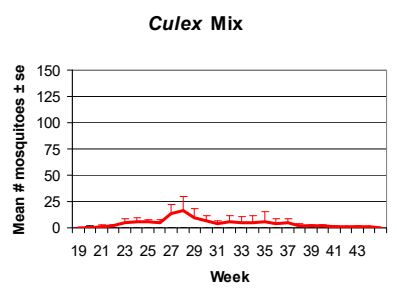
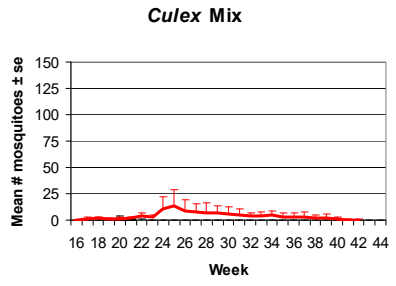
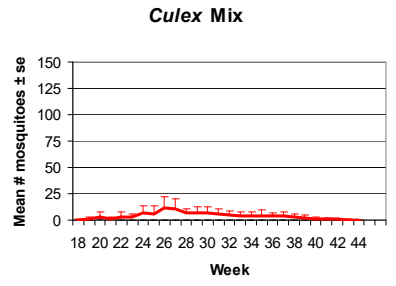
Suburban Corridor



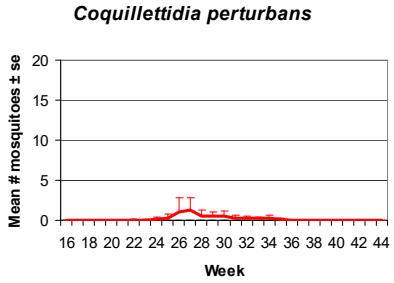
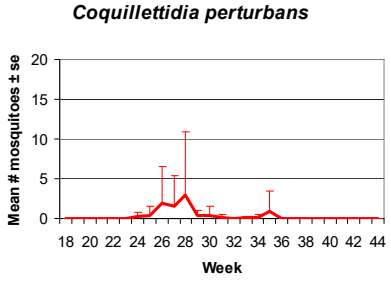
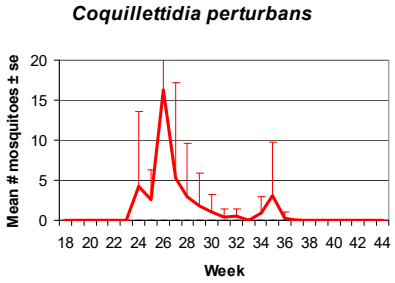
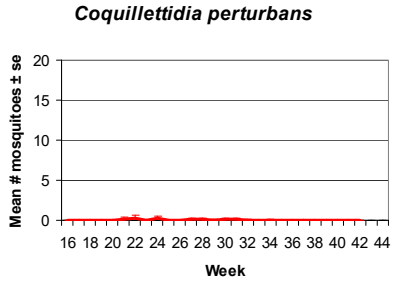
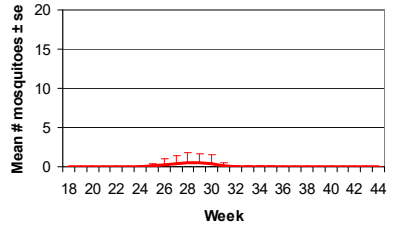
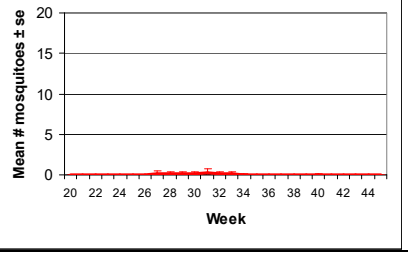
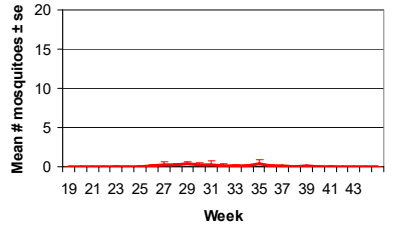
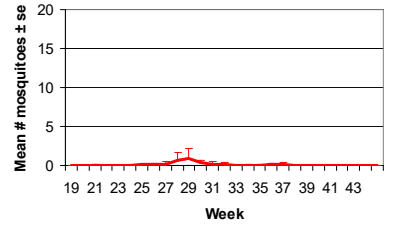
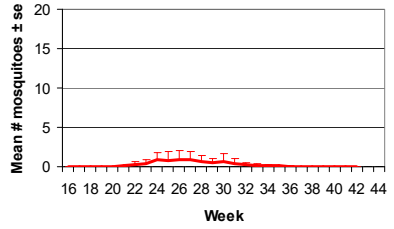
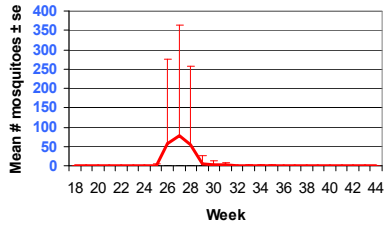
Comments

Historical data show that two to three major broods of *Ae. vexans* can be expected over the course of the season with multiple minor emergences from scattered rains. Populations appear to be historically highest in the Agricultural and Suburban Corridor regions.

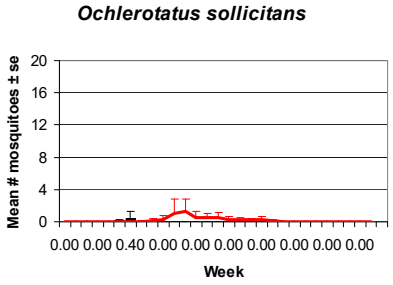
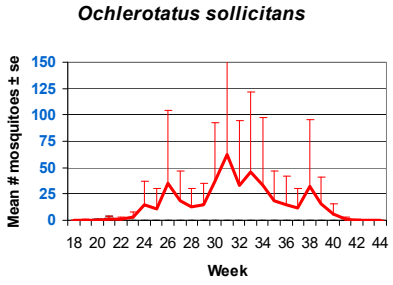
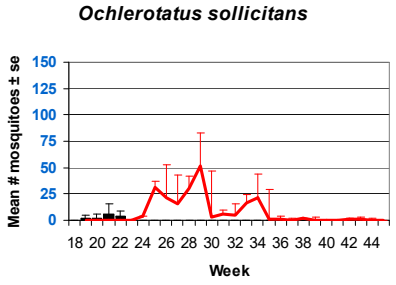
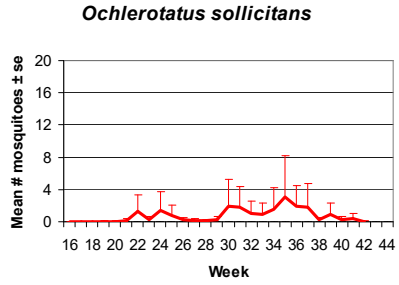
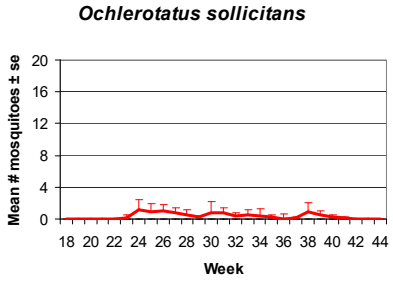
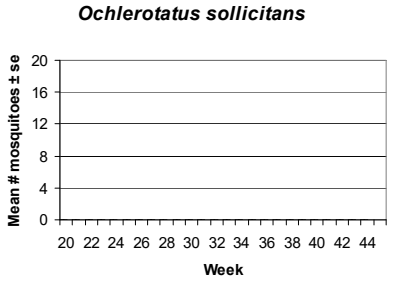
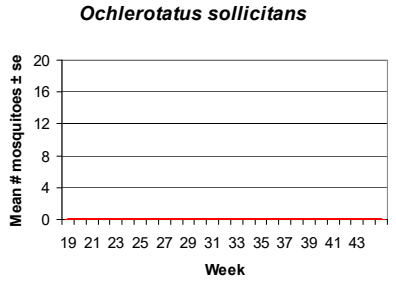
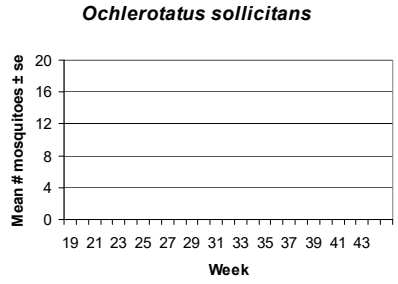
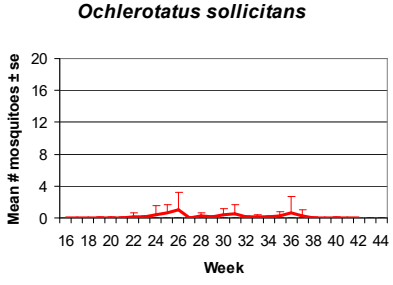
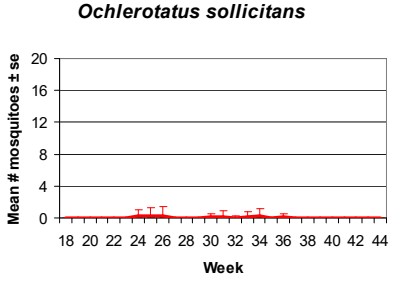
Culex Complex - Multivoltine *Culex* Species

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		Members of the *Culex* Complex overwinter as mated females and do not enter light traps until nighttime temperatures reach 60° F or higher. Adult populations typically build in numbers as the season progresses. Highest historical populations have been found in the Delaware Bayshore region, and likely reflect *Culex salinarius.* Inland populations, such as the Agricultural region, are usually composed of a mixture of *Culex p[ipiens* and *Culex resturans*, with lesser numbers of *Culex salinarius.*	

Coquillettidia perturbans - Unique Life Cycle

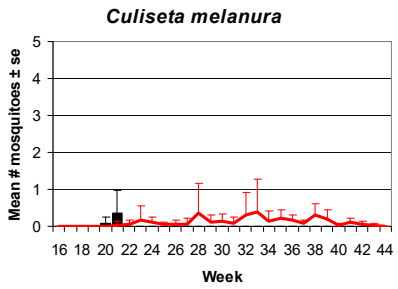
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Coquillettidia perturbans* overwinters as 2nd, 3rd, or 4th-stage larvae. This results in distinct emergences as cohorts develop through the season. Historical data suggests that the Delaware Bayshore region produces abundant numbers, but a well-placed trap in the suburban corridor reflected unusually high densities in 2003. Since the larvae typically overwinter in the 4th stage, the June emergence is usually the largest.	

Ochlerotatus sollicitans - Salt Marsh Floodwater Species

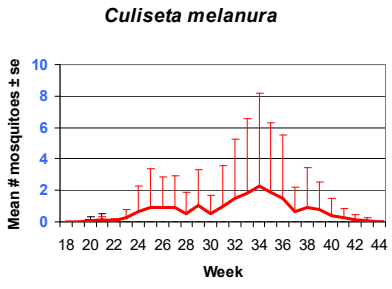
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Ochlerotatus sollicitans* is a saltmarsh species that relies on lunar tides to hatch eggs that are deposited on elevated marsh. Since lunar tides occur every two weeks, light traps sample overlapping broods. Historical data clearly reflect this trend, with largest populations occurring in the Coastal and Bayshore regions.	

Culiseta melanura - Miscellaneous Group

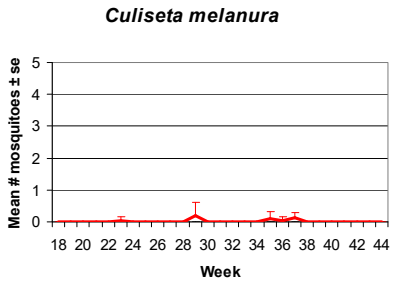
Agricultural



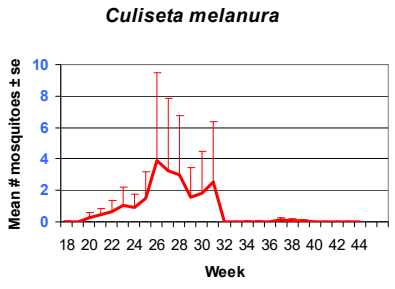
Coastal



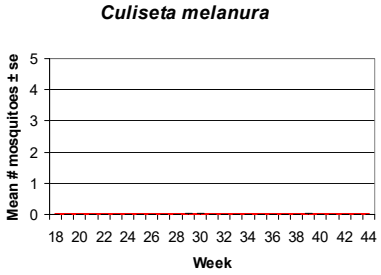
Delaware Bayshore



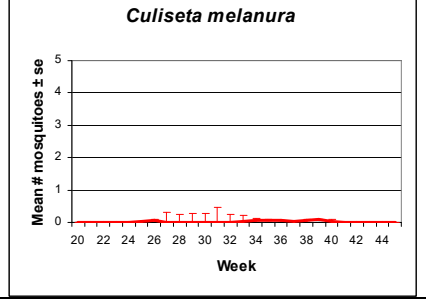
Delaware River Basin



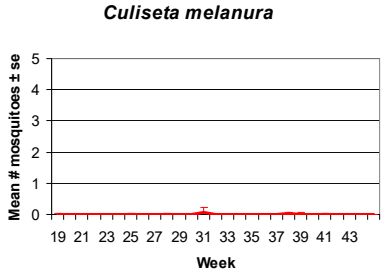
New York Metro



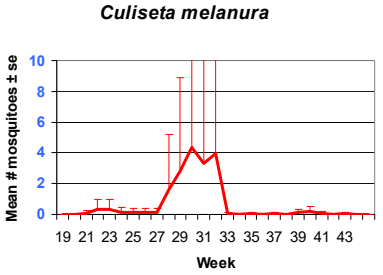
North Central Rural



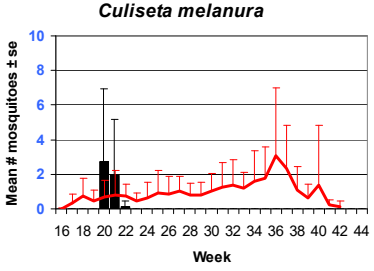
Northwestern Rural



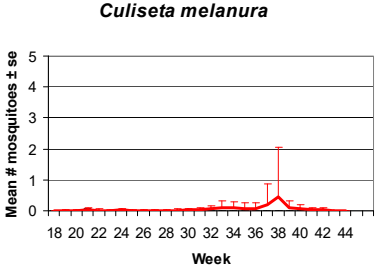
Philadelphia Metro



Pinelands



Suburban Corridor

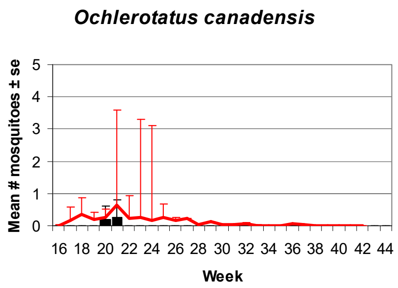


Comments

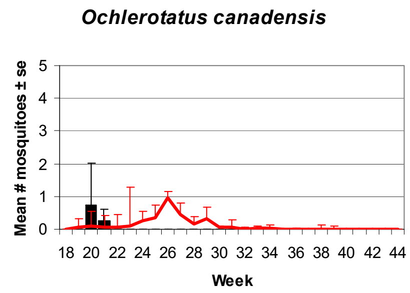
Culiseta melanura is the species that maintains the EEE cycle through its preferred avian bloodfeeding behavior. Larval habitat is most abundant in acidic environments, such as cedar swamps crypts. Within these habitats, populations are expected to build and peak throughout the season as overwintering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

Ochlerotatus canadensis Early Season Species

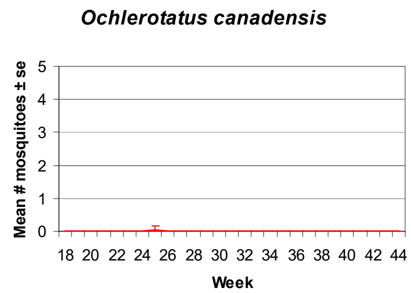
Agricultural



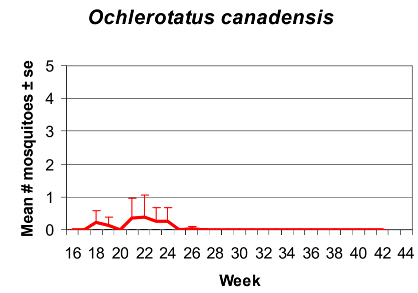
Coastal



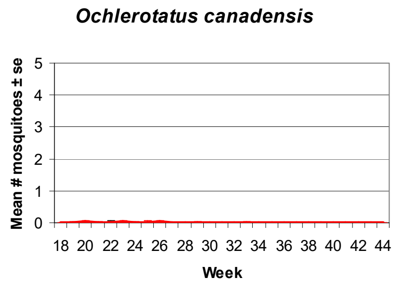
Delaware Bayshore



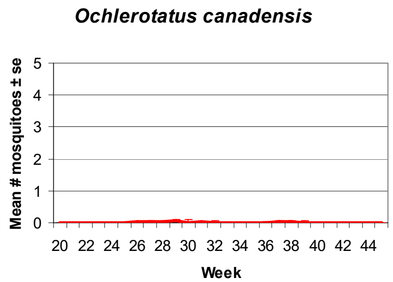
Delaware River Basin



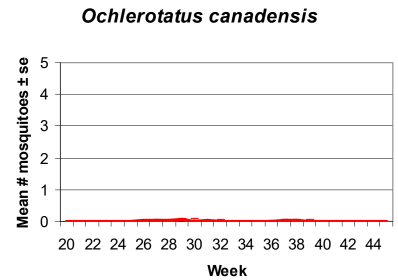
New York Metro



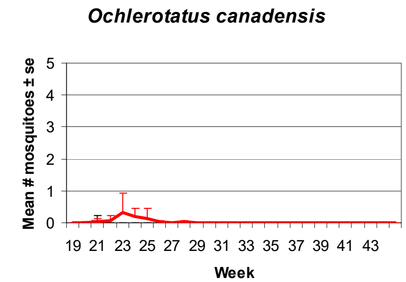
North Central Rural



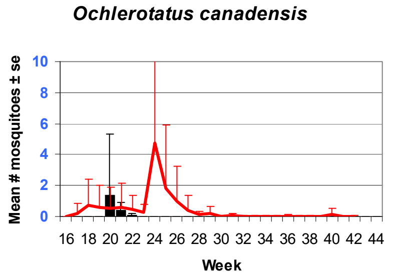
Northwestern Rural



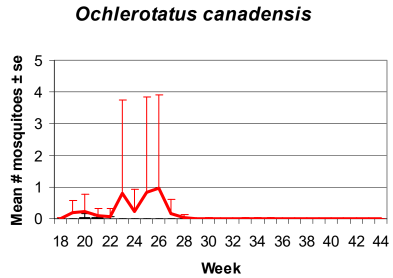
Philadelphia Metro



Pinelands



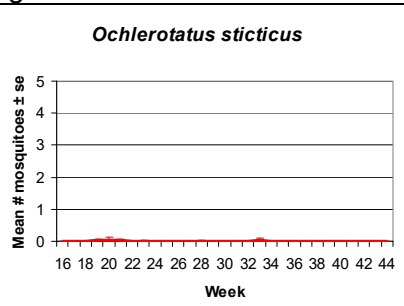
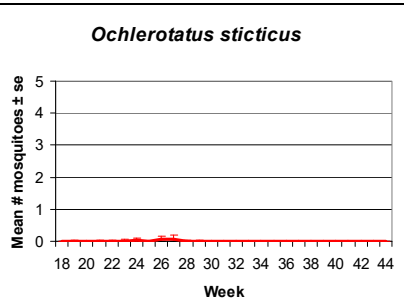
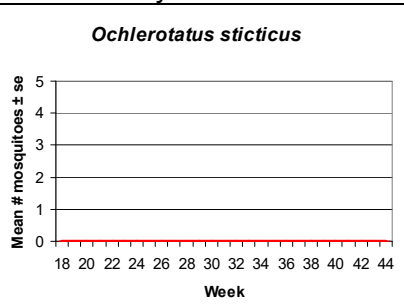
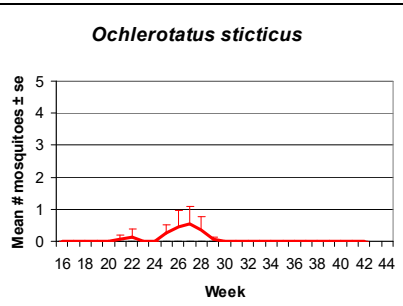
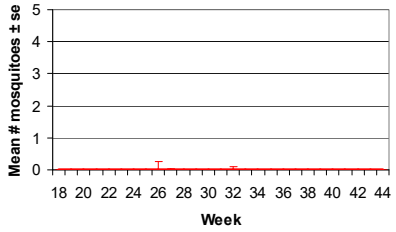
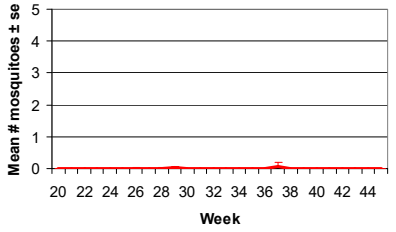
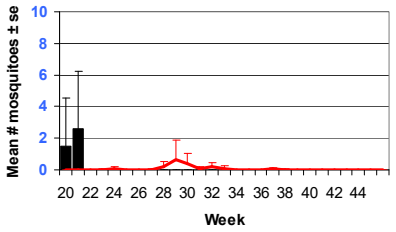
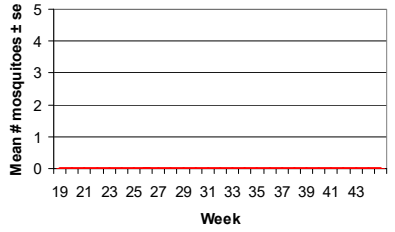
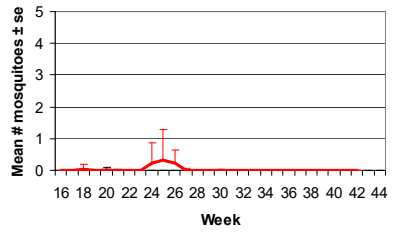
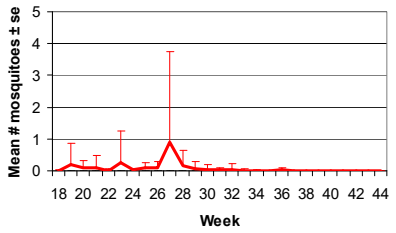
Suburban Corridor



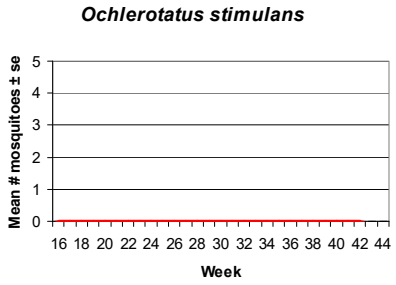
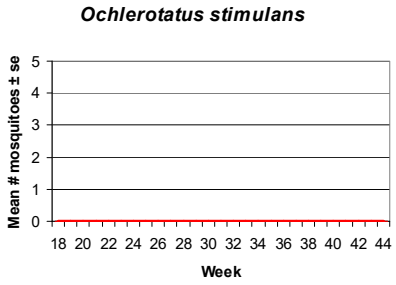
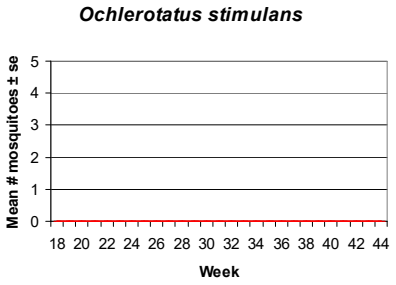
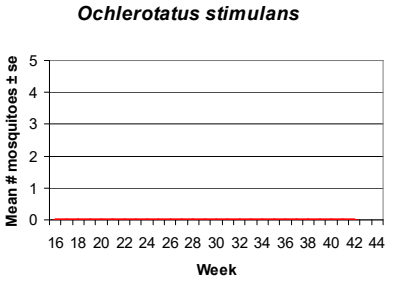
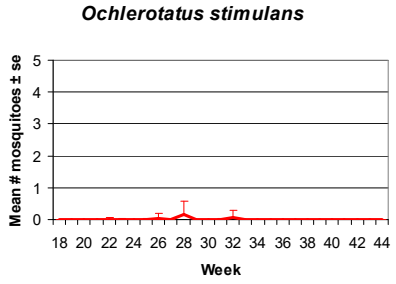
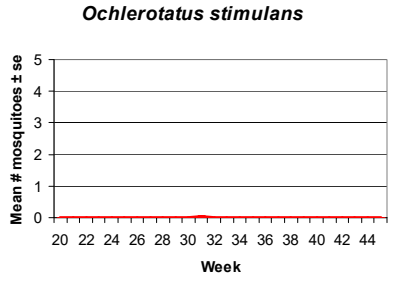
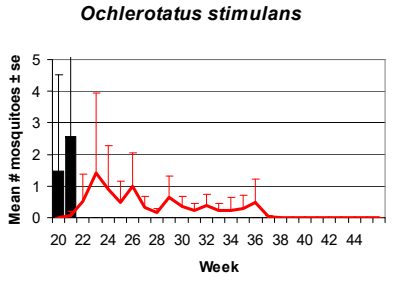
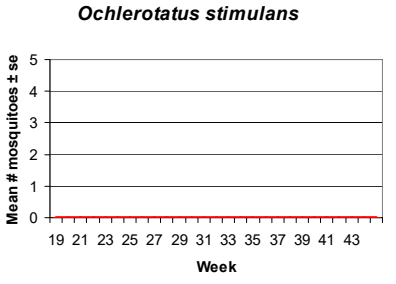
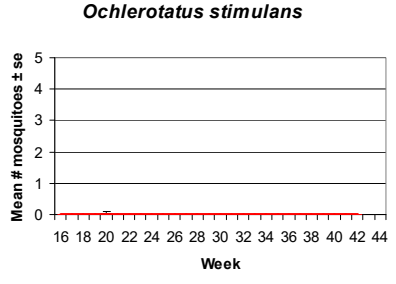
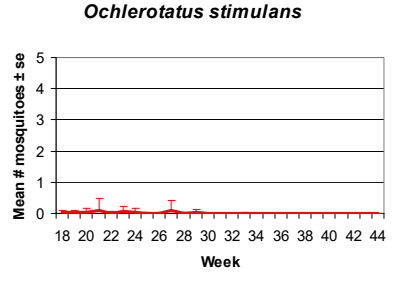
Comments

Oc. canadensis is an early-season mosquito that may re-appear later in the year. Historical data reflect May/June abundance with minor populations during the month of September.

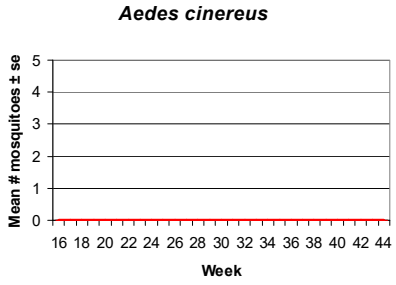
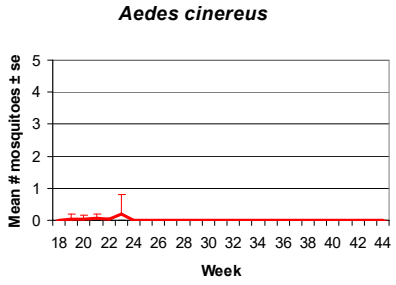
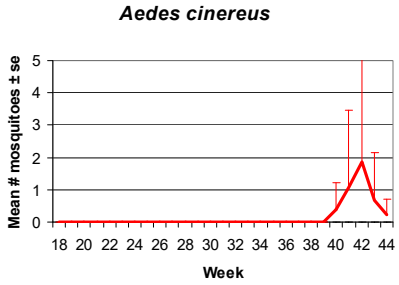
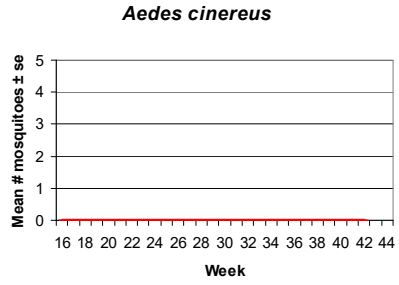
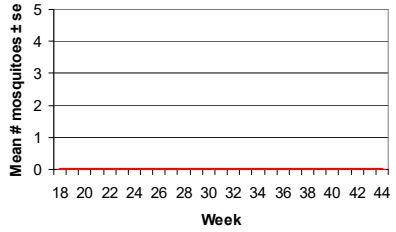
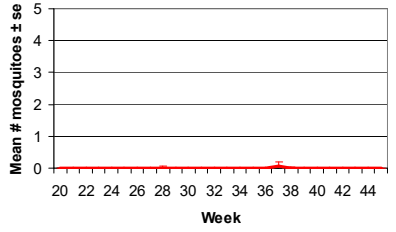
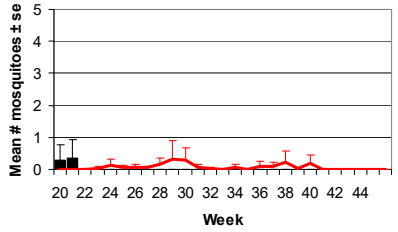
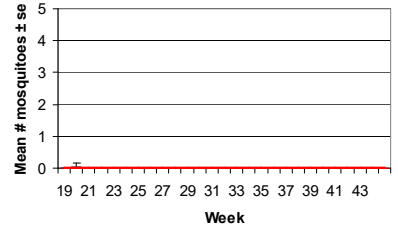
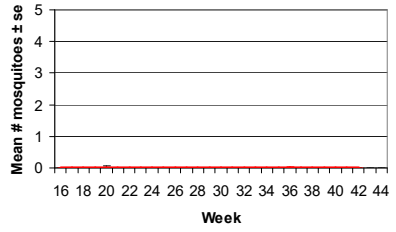
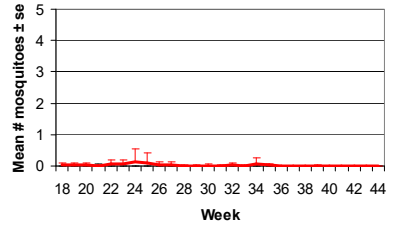
Ochlerotatus sticticus - Early Season Species

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Oc. sticticus* is a floodwater species with a life cycle similar to that of *Oc. canadensis* . Historical data indicates a May/June emergence in most areas followed by low numbers later in the season. This year's dataset shows a significant emergence in the Northwestern Rural region, well ahead of the usual trends for this species.	

Ochlerotatus stimulans - Early Season Species

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Oc. stimulans* is a univoltine woodland pool species with adults that persistent well into the summer. Historical data from the Northwestern Rural region show the typical trend. As with *Oc. sticticus*, this species emerged far earlier and in large numbers in the Northwestern Rural region than expected by indications of historical records.	

Aedes cinereus - Early Season Species

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	North Central Rural	Northwestern Rural	Philadelphia Metro
			
Pinelands	Suburban Corridor	Comments	
		*Aedes cinereus* is the third univoltine species that may re-appear later in the season. Historical data show a spring brood (the Coastal region), a fall brood (the Delaware Bayshore region) and the typical two emergences in the North Central Rural, Northwestern Rural, and Suburban Corridor regions.	