NEW JERSEY STATE SURVEILLANCE

Weekly Report for Week 29, 15 July – 21 July, 2003

Submitted by Lisa Reed and Wayne Crans
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.

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

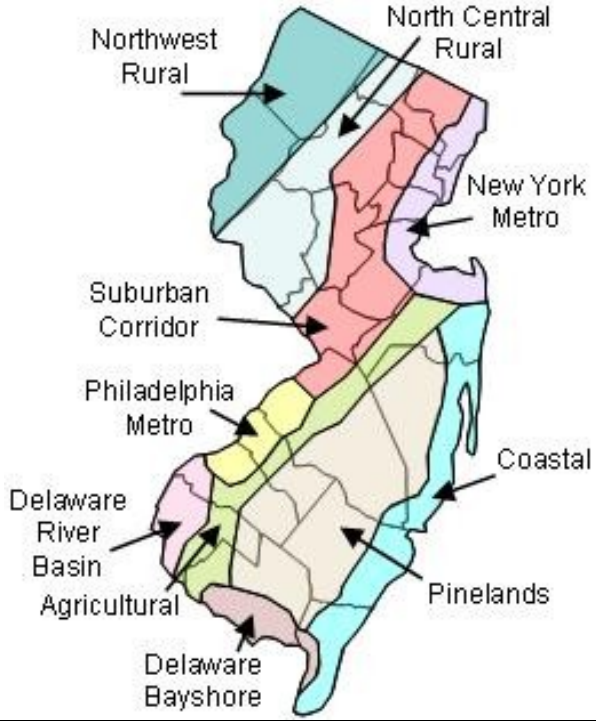


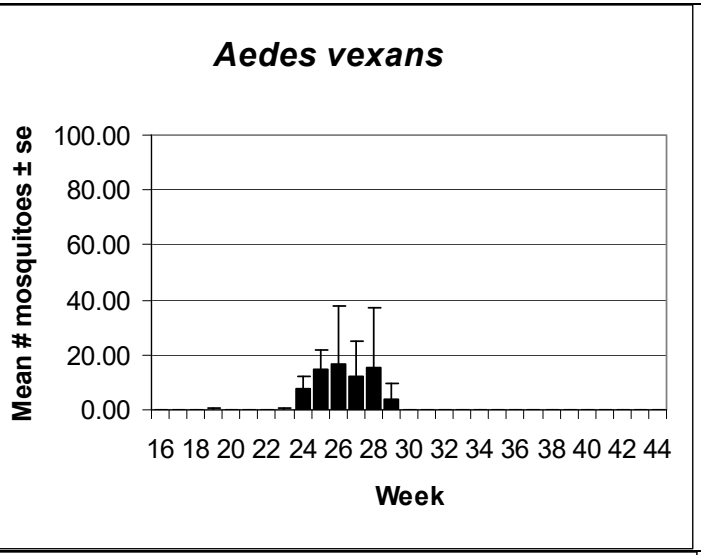
Figure 1b. Trap lat-long locations.

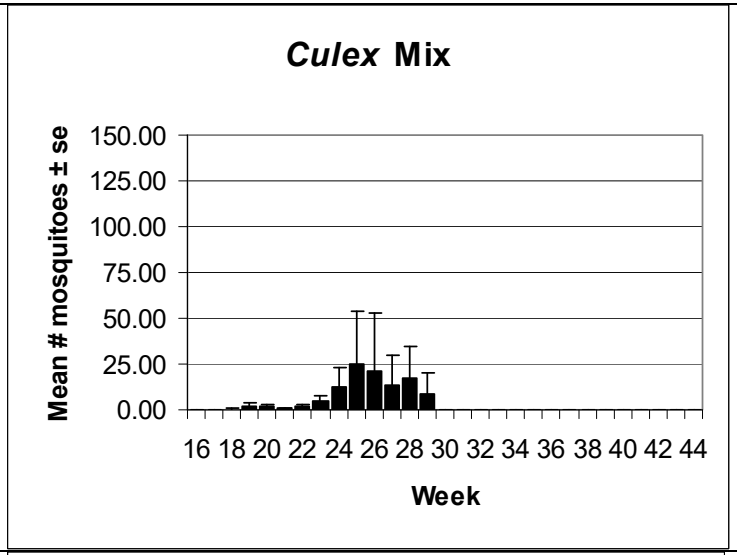
Summary table

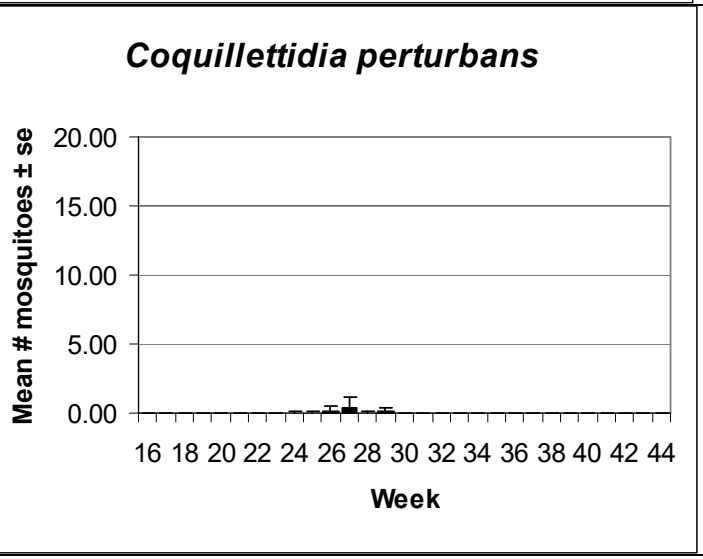
	Aedes vexans		*Culex complex*		*Coquillettidia perturbans*		*Ochlerotatus sollicitans*	
Region	This Week	Average*	This Week	Average*	This Week	Average*	This Week	Average*
Agricultural	**5.79**		**11.47**		**0.19**		**1.72**	
Coastal	**2.37**		**9.49**		**0.03**		**7.81**	
Delaware Bayshore	**0.00**		**0.00**		**0.00**		**0.00**	
Delaware River Basin	**13.50**		**17.29**		**0.00**		**0.57**	
New York Metro	**1.32**		**4.64**		**0.00**		**0.00**	
North Central Rural	**0.39**		**3.22**		**0.16**		**0.00**	
Northwest Rural	**3.21**		**3.71**		**0.00**		**0.00**	
Philadelphia Metro	**1.74**		**3.97**		**0.19**		**0.00**	
Pinelands	**0.96**		**6.57**		**0.68**		**0.03**	
Suburban Corridor	**2.35**		**4.16**		**0.33**		**0.00**	

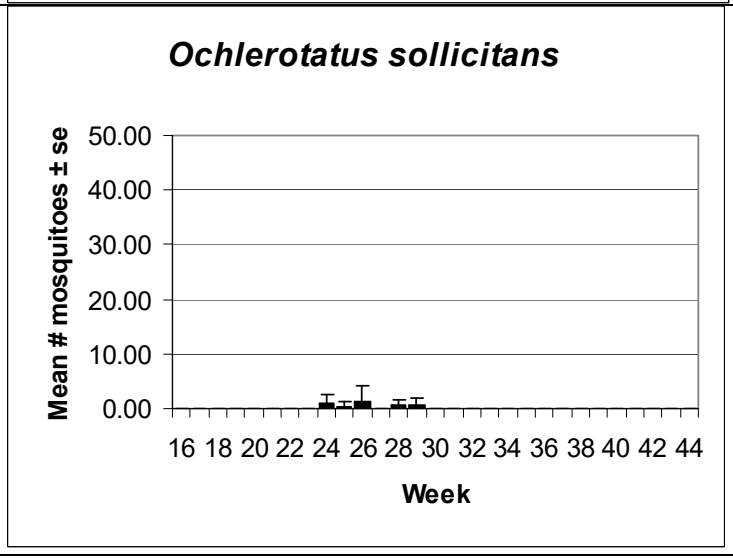
- Complete data not yet available.

Agricultural

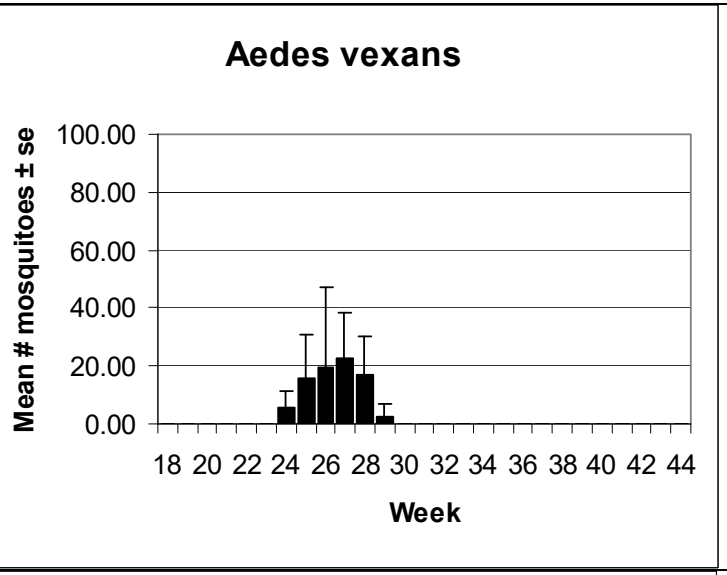


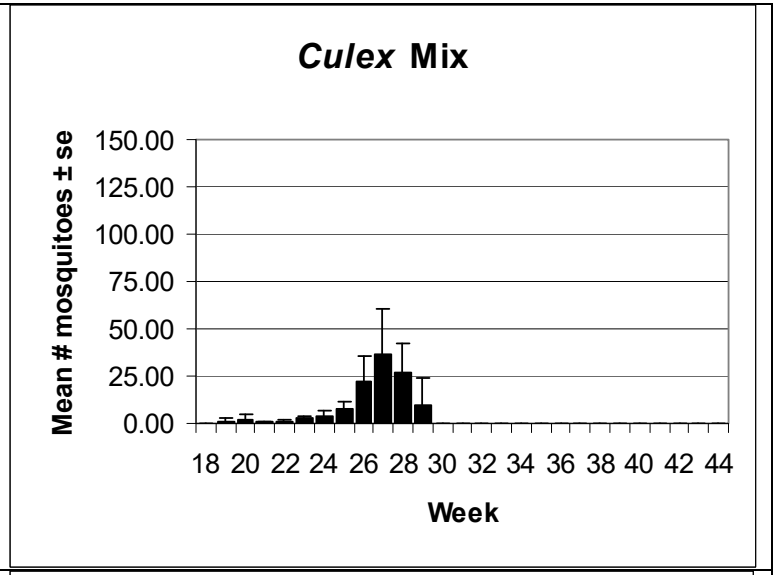






Coastal


Aedes vexans
Mean # mosquitoes ± se
100.00
80.00
60.00
40.00
20.00
0.00
18 20 22 24 26 28 30 32 34 36 38 40 42 44
Week


Culex Mix
Mean # mosquitoes ± se
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125.00
100.00
75.00
50.00
25.00
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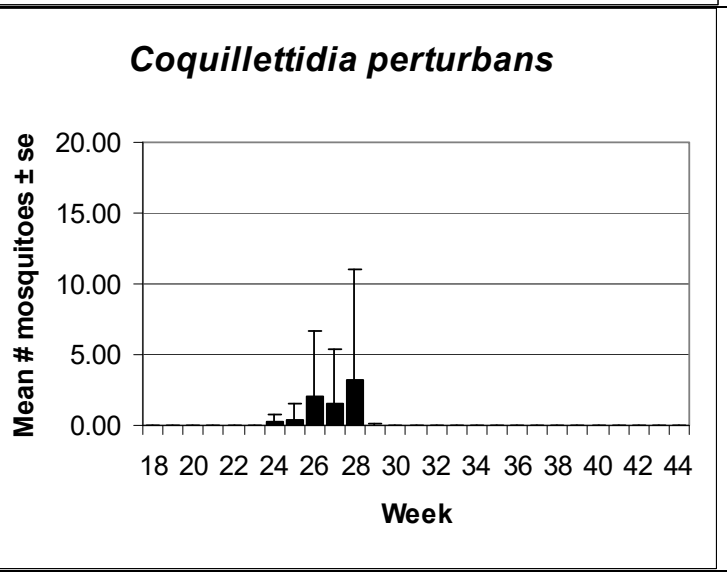
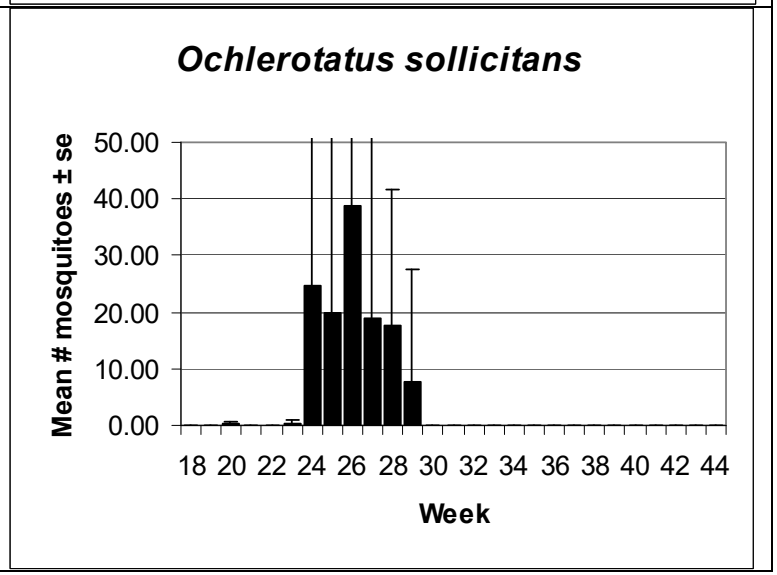
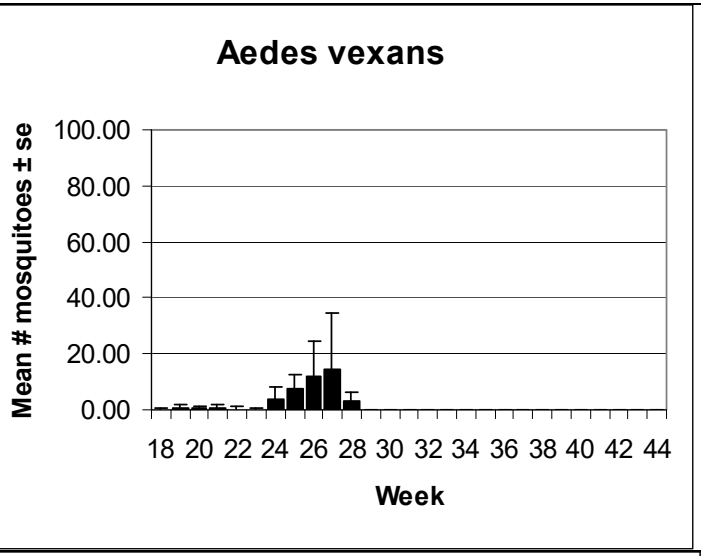
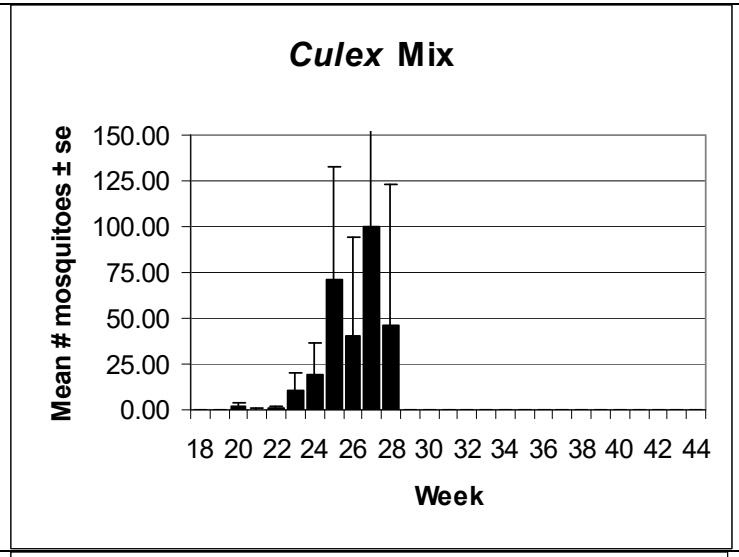
18 20 22 24 26 28 30 32 34 36 38 40 42 44
Week

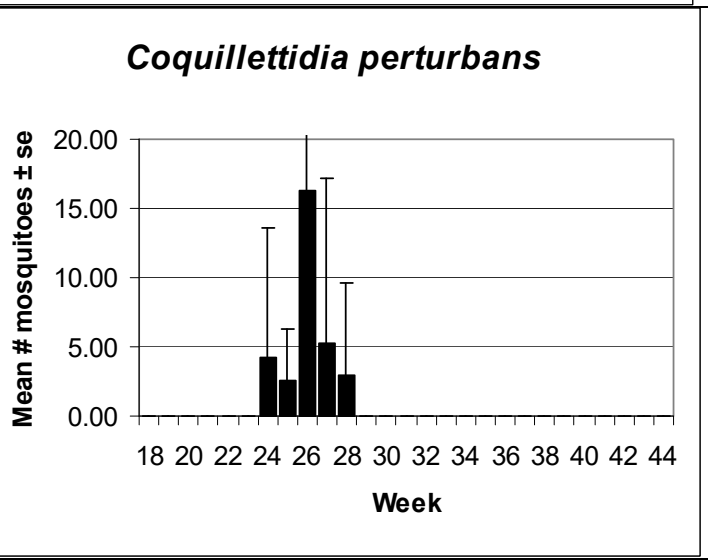

Coquillettidia perturbans
Mean # mosquitoes ± se
20.00
15.00
10.00
5.00
0.00
18 20 22 24 26 28 30 32 34 36 38 40 42 44
Week

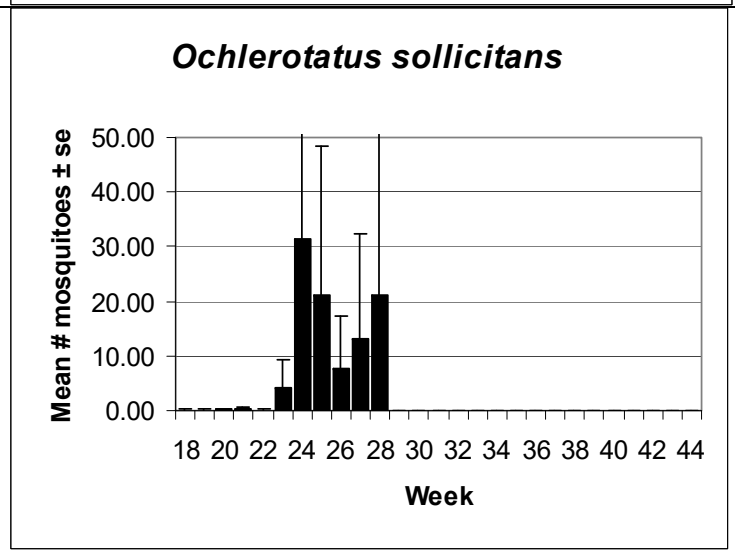

Ochlerotatus sollicitans
Mean # mosquitoes ± se
50.00
40.00
30.00
20.00
10.00
0.00
18 20 22 24 26 28 30 32 34 36 38 40 42 44
Week

Delaware Bayshore

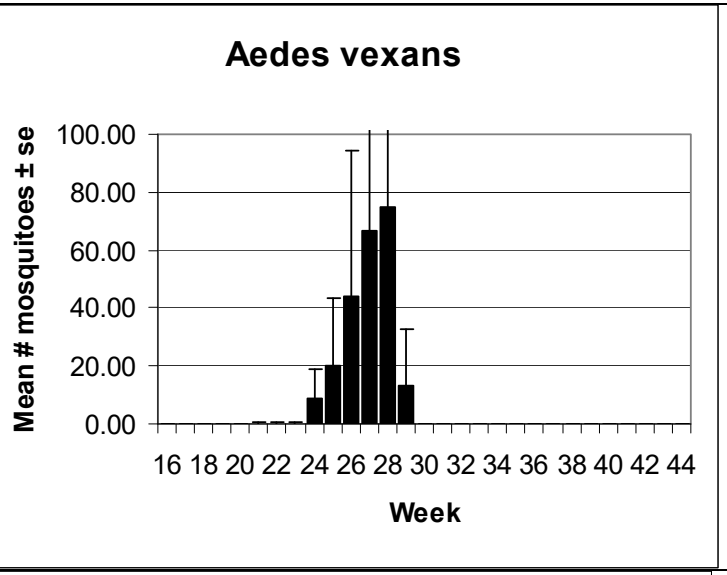


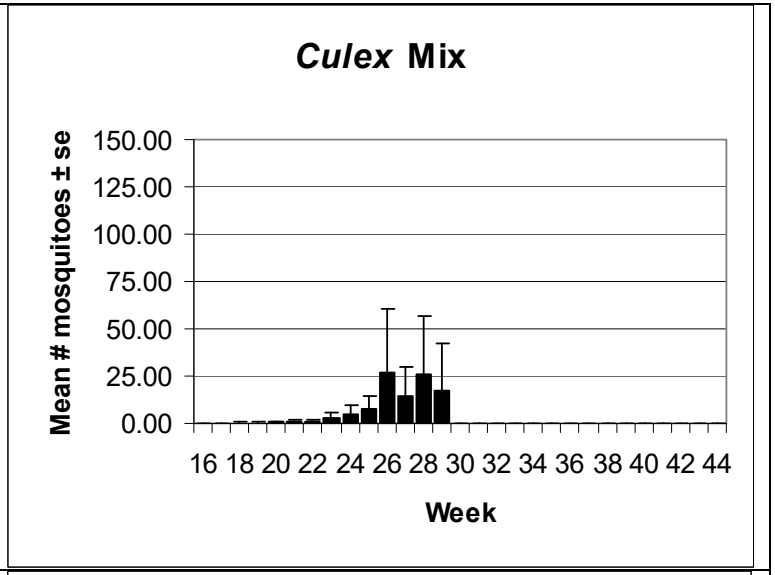


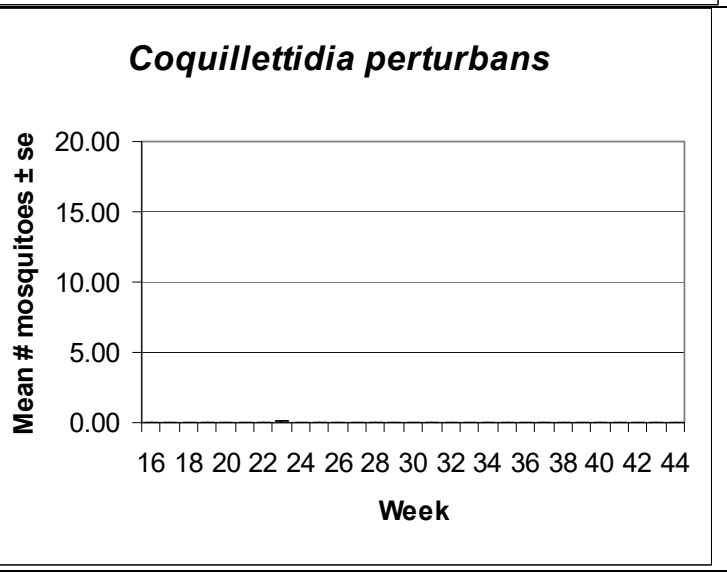


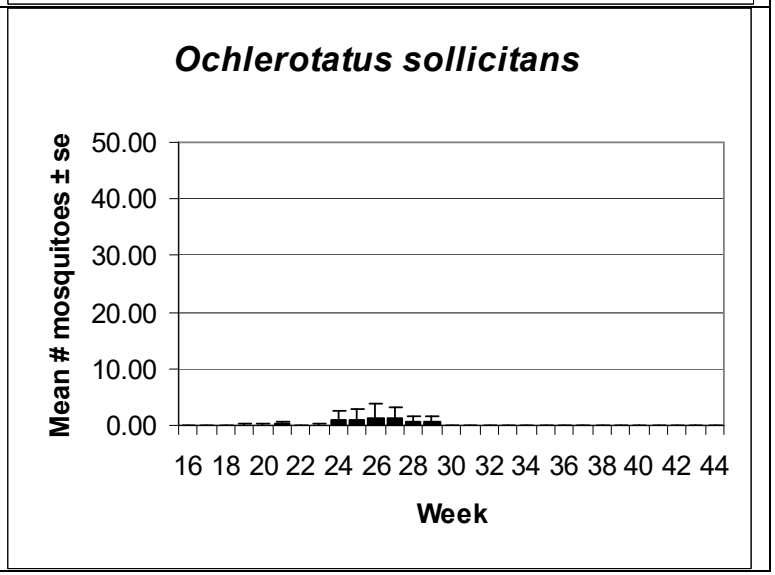


Delaware River Basin

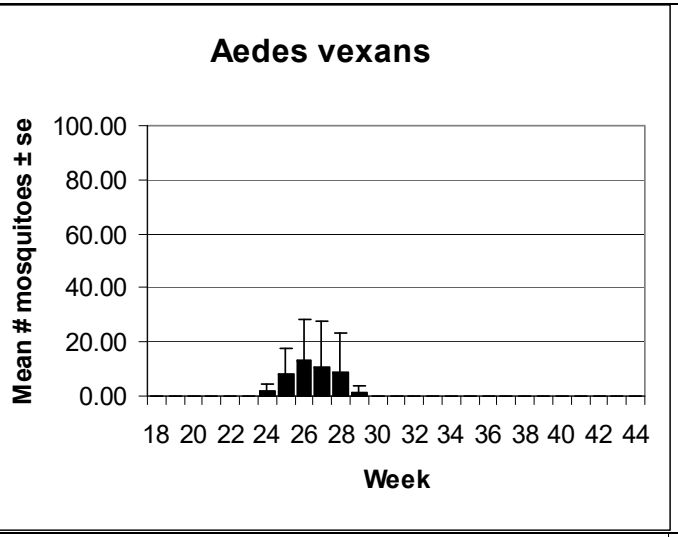


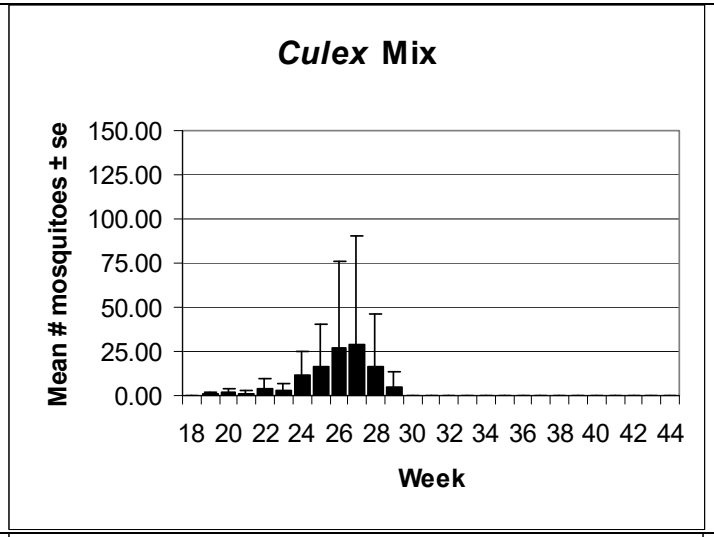


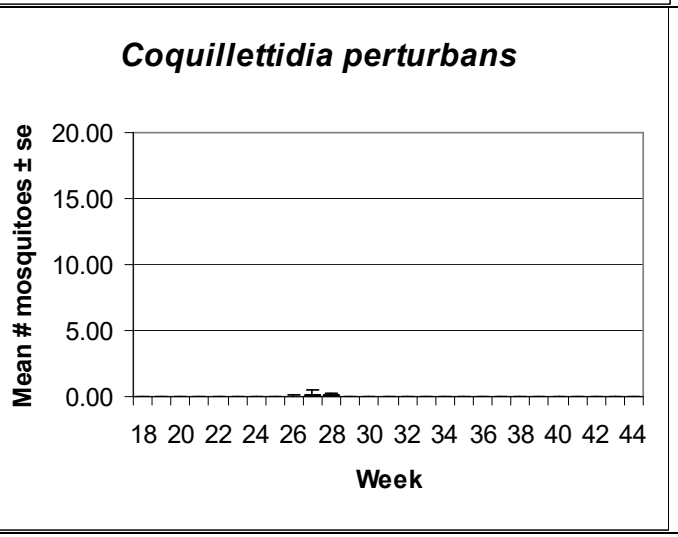


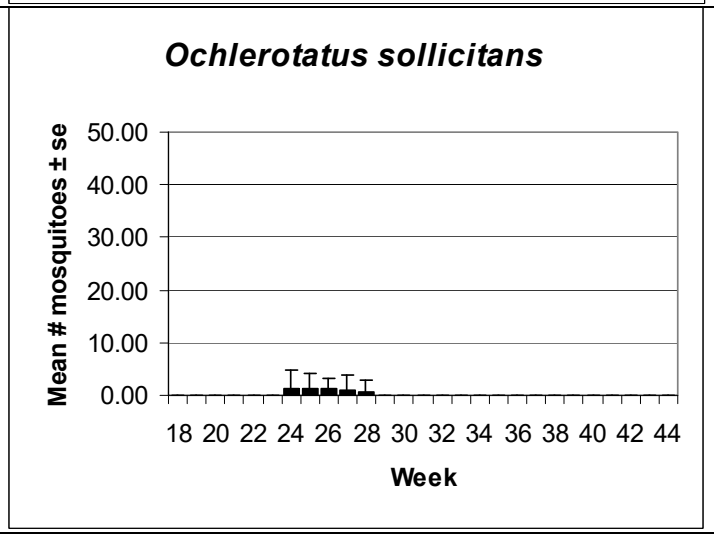


New York Metro

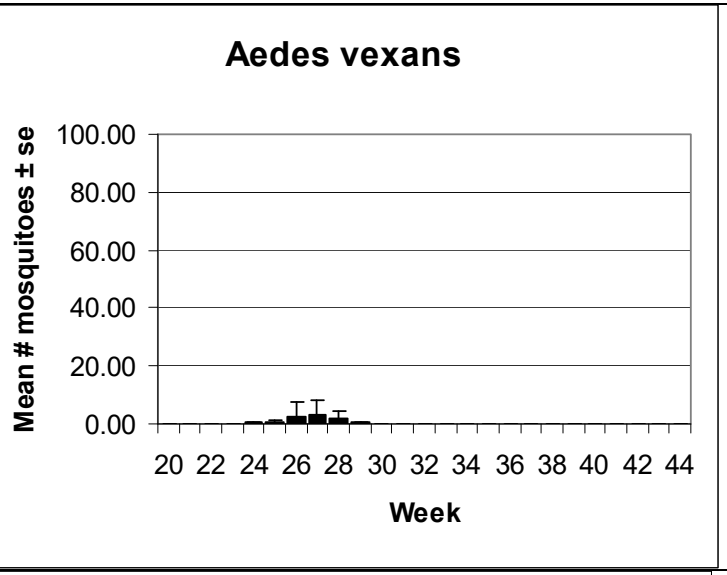


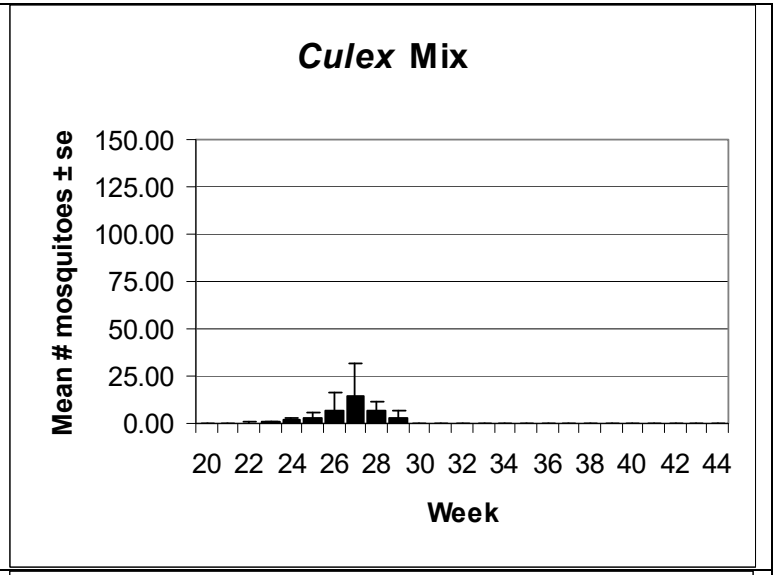


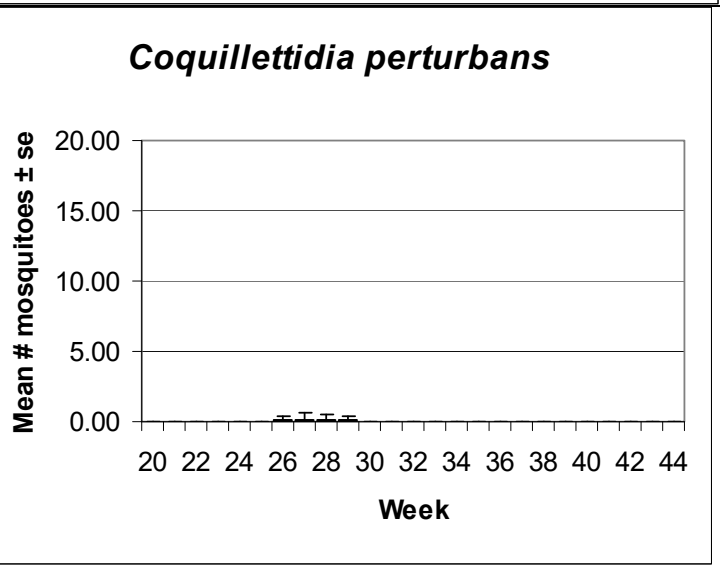


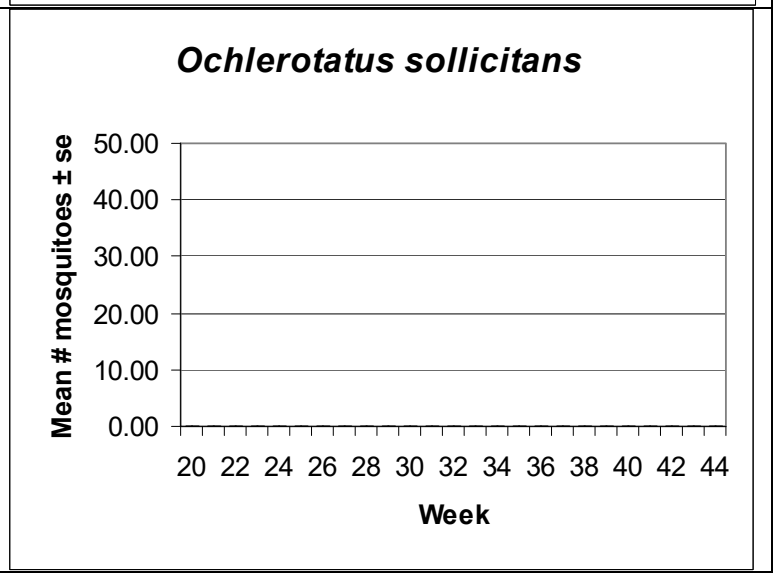


North Central Rural

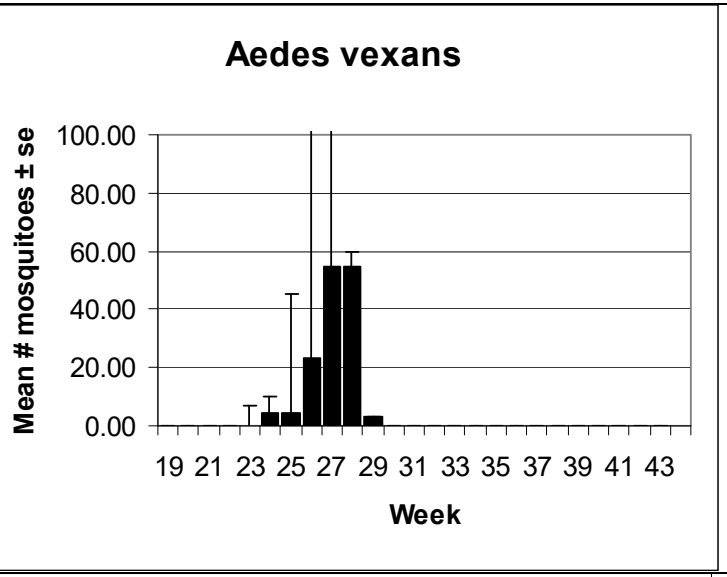


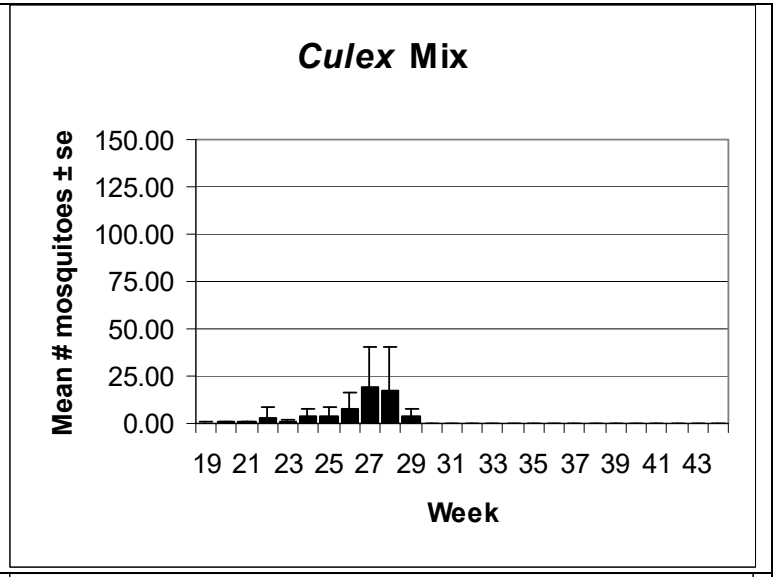


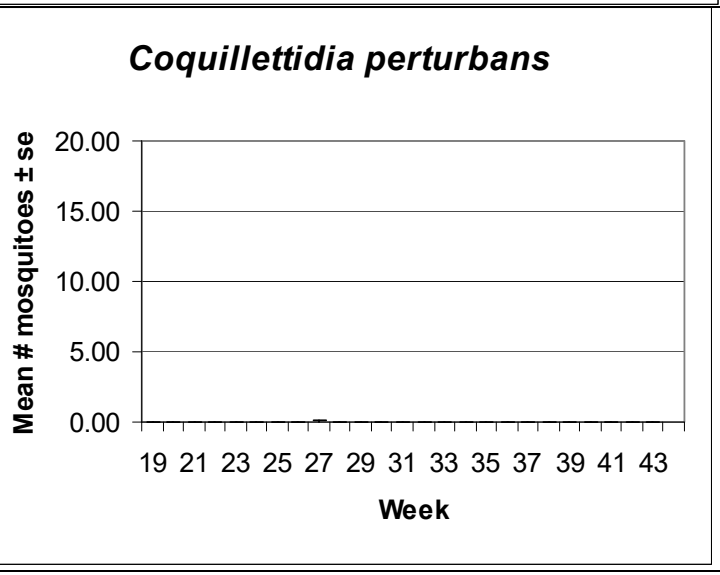


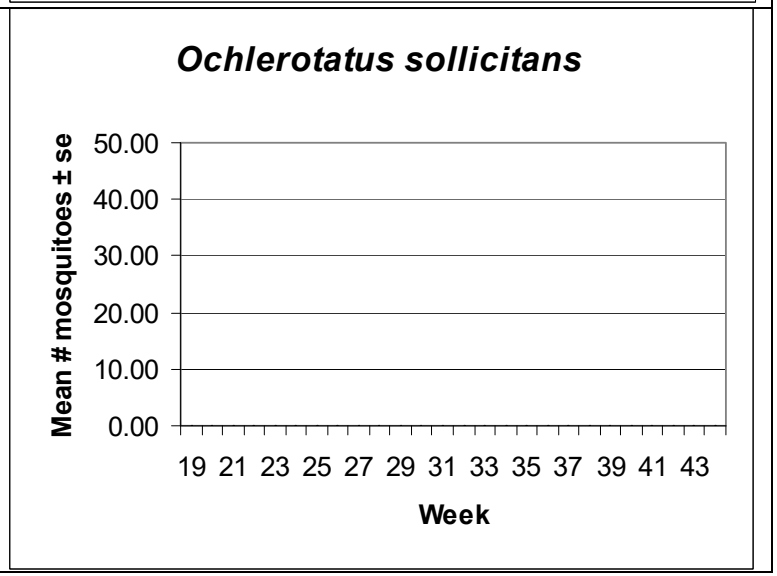


Northwestern Rural

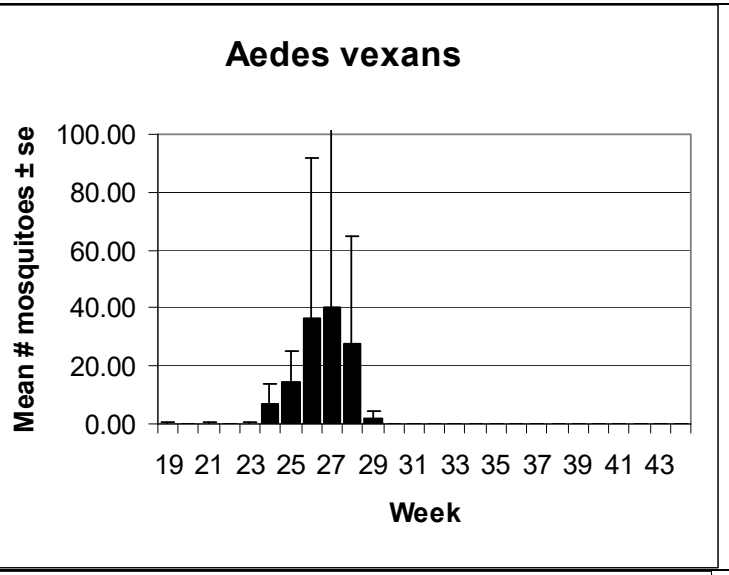


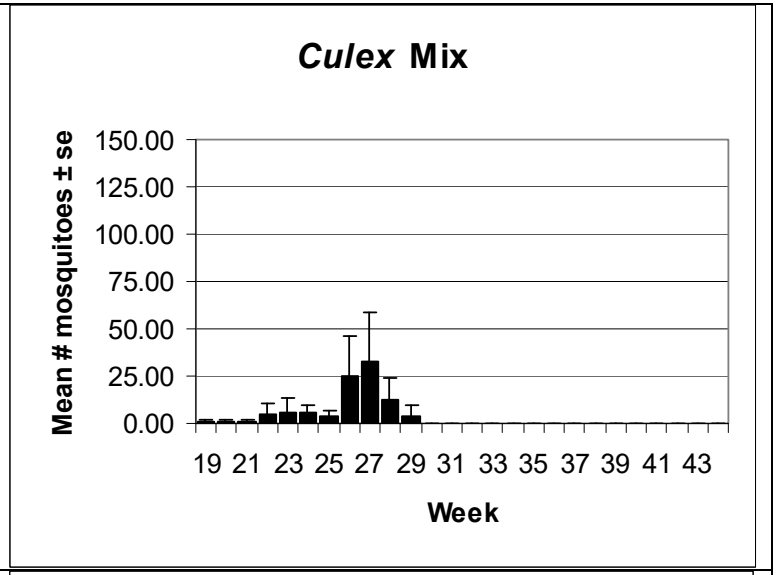


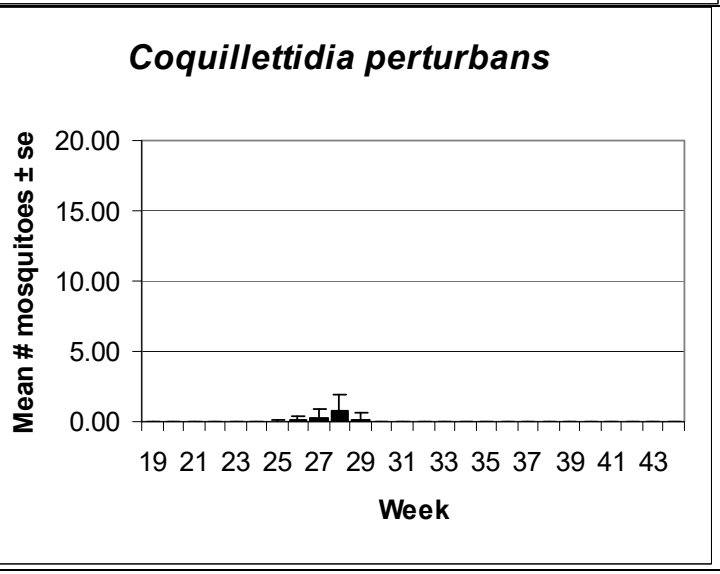


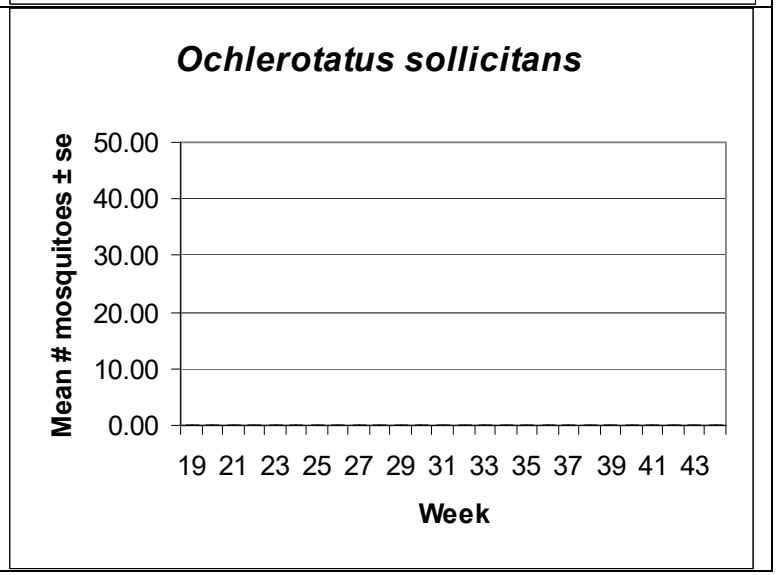


Philadelphia Metro

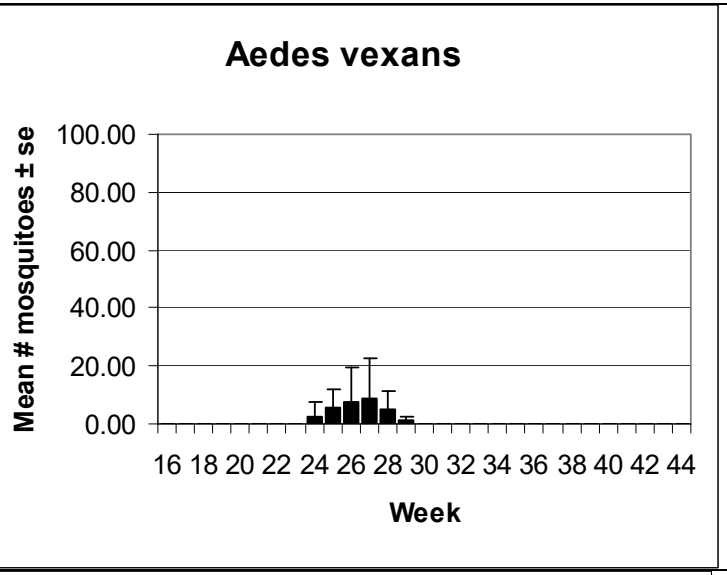








Pinelands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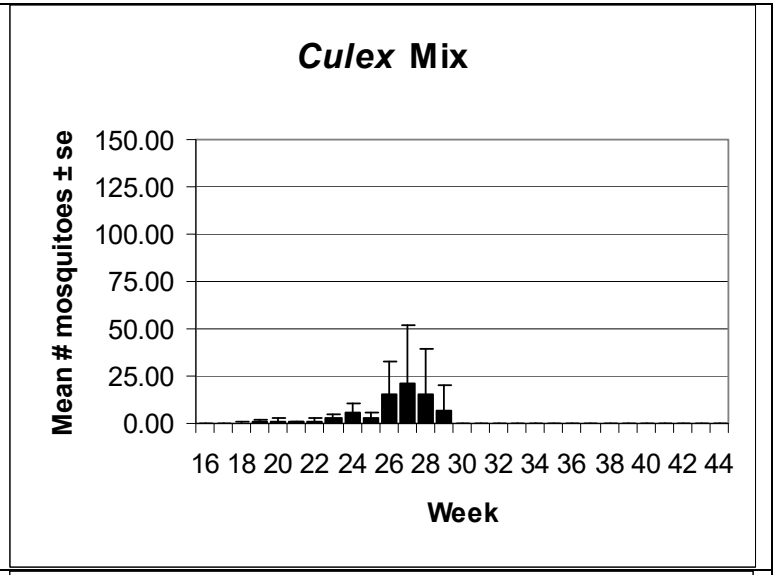
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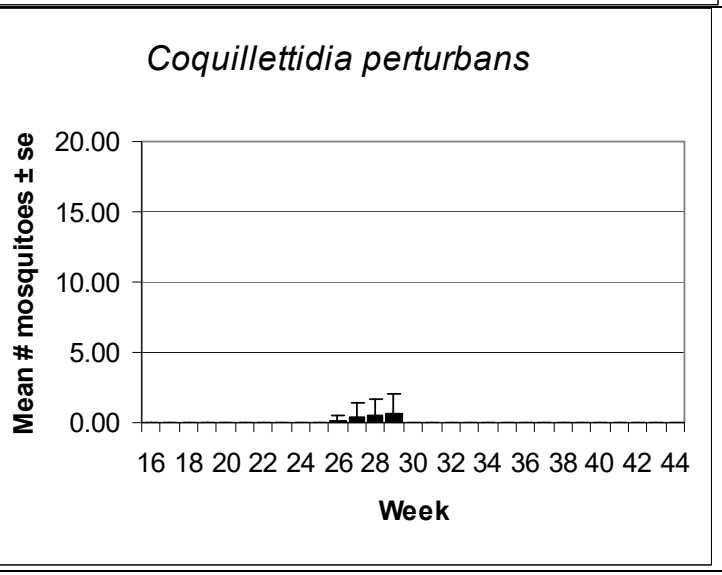
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5.00
0.00
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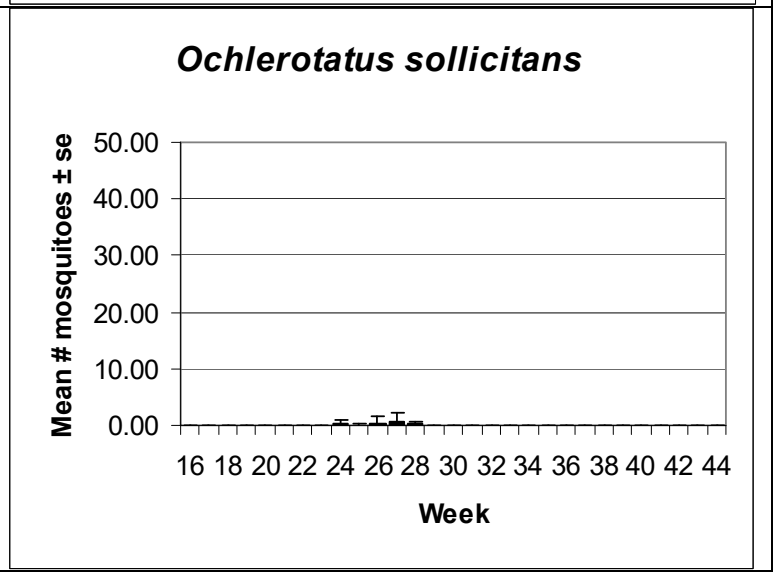
Week


Ochlerotatus sollicitans
Mean # mosquitoes ± se
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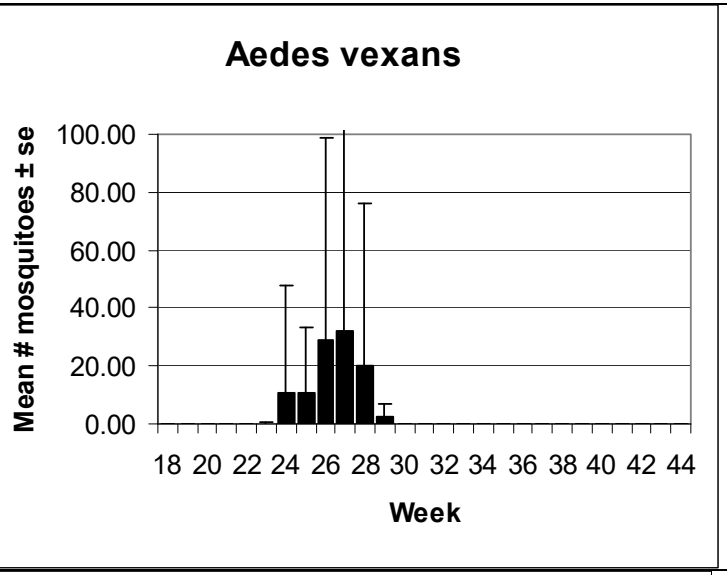
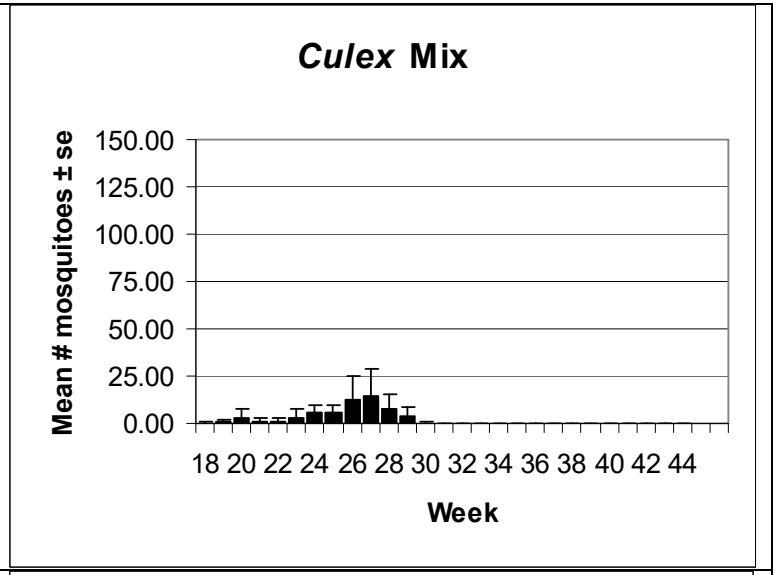
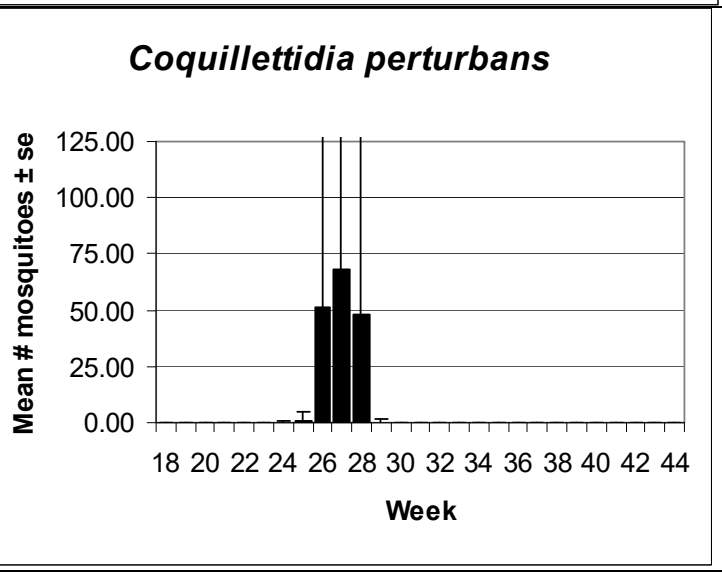
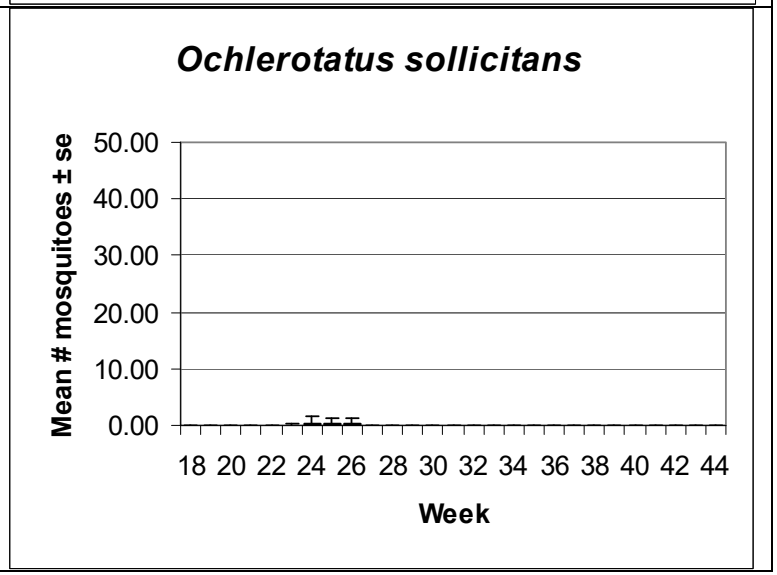
0.00
16 18 20 22 24 26 28 30 32 34 36 38 40 42 44
Week

Suburban Corridor



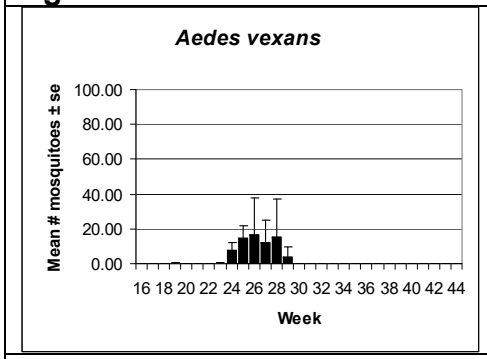




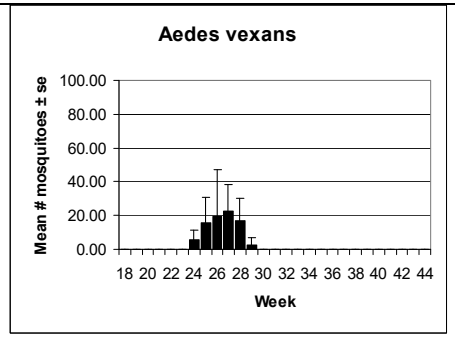


Aedes vexans

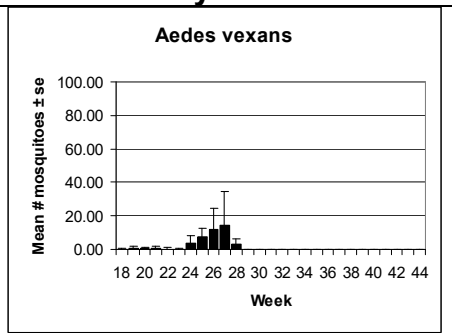
Agricultural



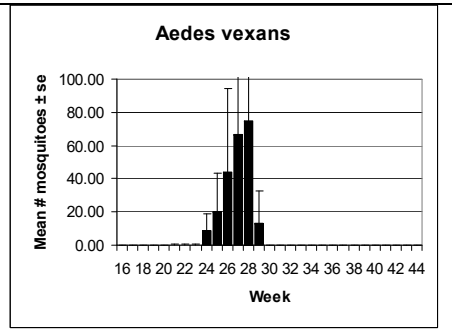
Coastal



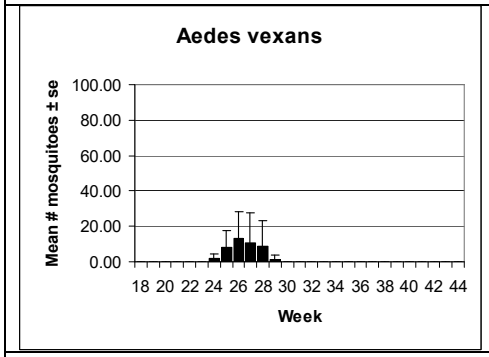
Delaware Bayshore



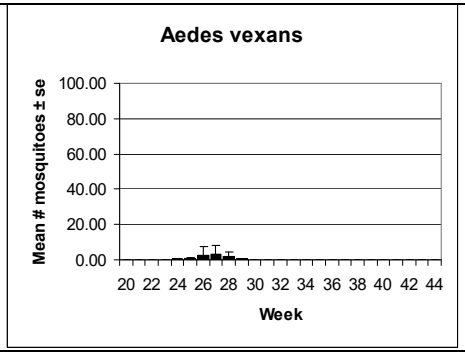
Delaware River Basin



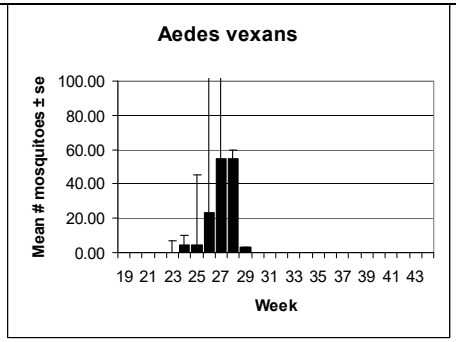
New York Metro



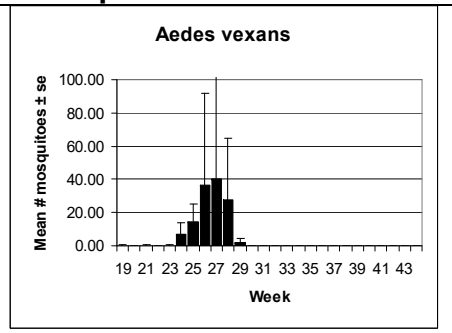
North Central Rural



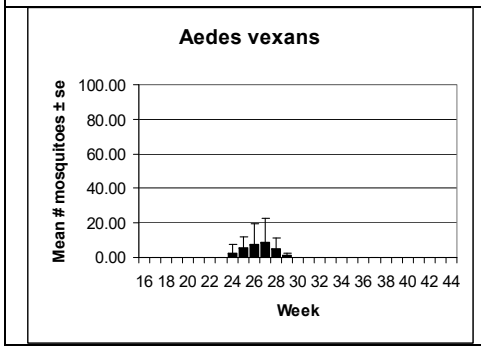
Northwestern Rural



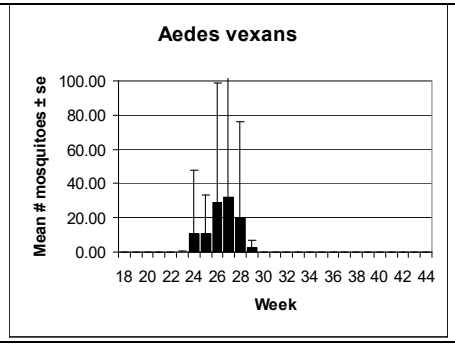
Philadelphia Metro



Pinelands



Suburban Corridor

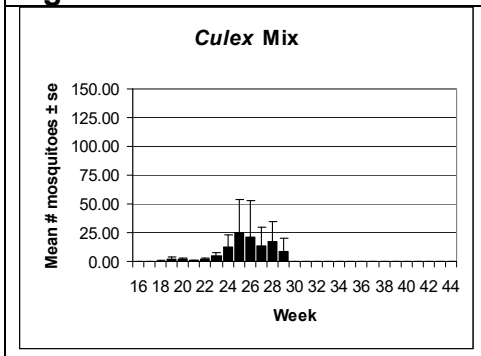


Comments

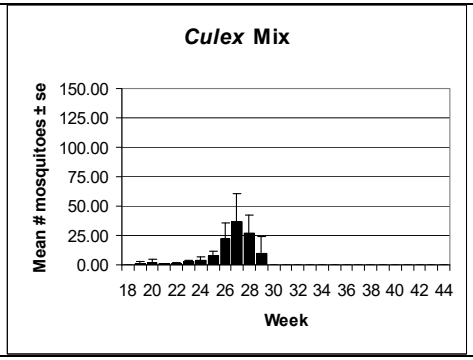
State Surveillance light trap data clearly define the first brood of *Ae. vexans* for the 2003 season. Light Trap collections were minimal during May and early June until a long period of extended rainfall triggered egg hatch and emergence. The brood peaked during week 27 in most of the regions and remained on the wing for about 2 weeks. Populations were highest in the Delaware River Basin and Northwestern Rural Regions. Populations were lowest in the North Central Rural and Pinelands Regions. Thunderstorm activity predicted for the 3rd week of July should trigger the next brood of this species sometime in early August.

Culex Complex

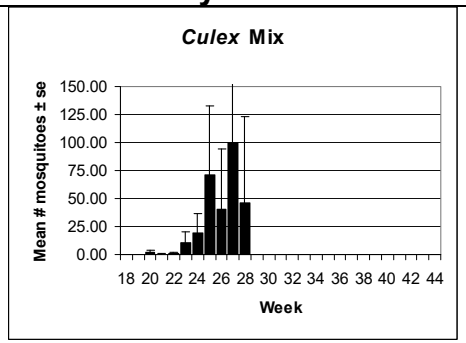
Agricultural



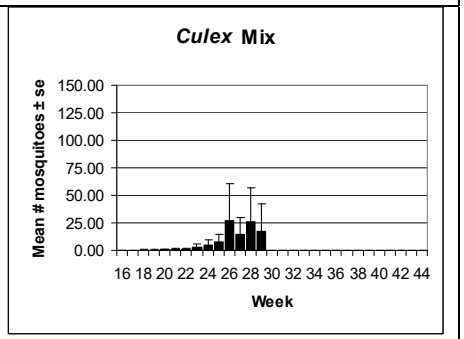
Coastal



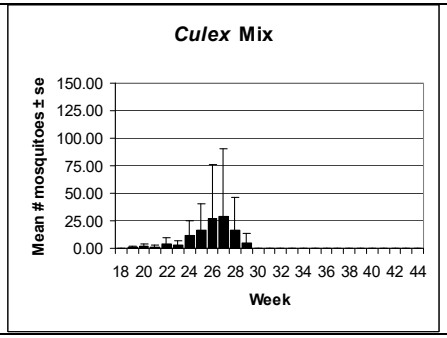
Delaware Bayshore



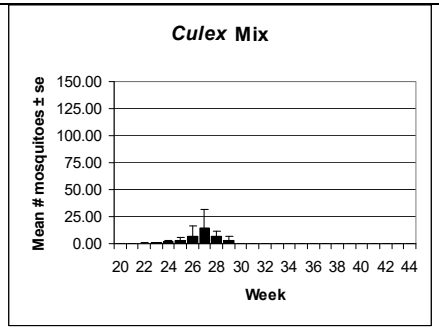
Delaware River Basin



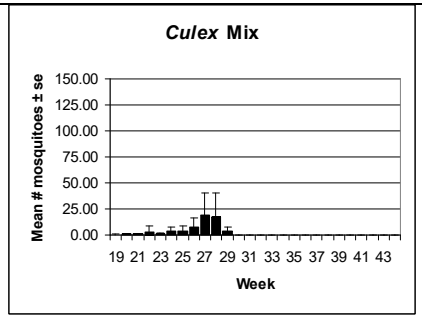
New York Metro



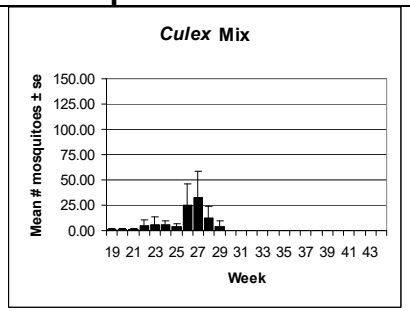
North Central Rural



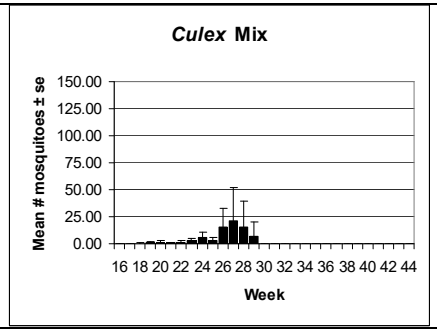
Northwestern Rural



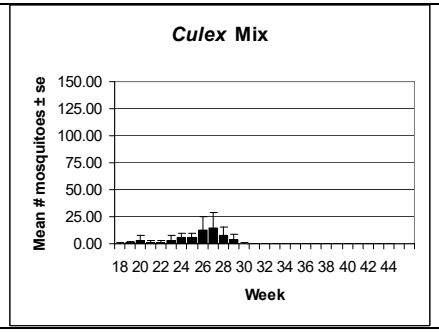
Philadelphia Metro



Pinelands



Suburban Corridor

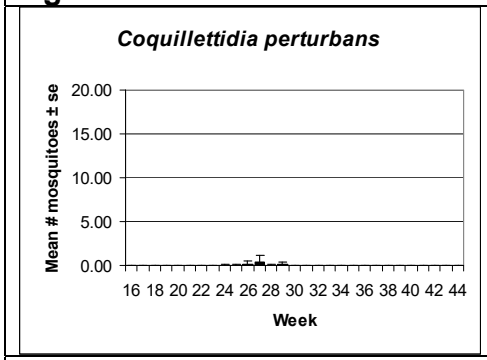


Comments

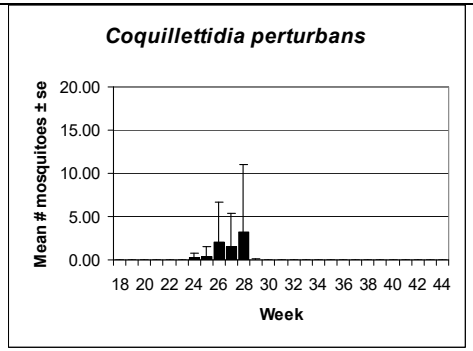
Culex species began appearing in NJ light traps a month earlier than *Ae. vexans* and populations gradually increased through the months of June and July. *Culex* populations have been highest in the Delaware Bayshore Region, likely composed of *Cx. salinarius* emerging from brackish water habitat in that area. *Culex* populations have declined somewhat in recent weeks but can be expected to increase steadily through the month of August and into September. Most regions have peak populations averaging between 20 and 25 *Culex* per trap night through this point in the season.

Coquillettidia perturbans

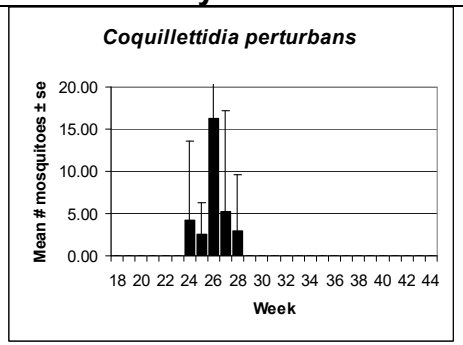
Agricultural



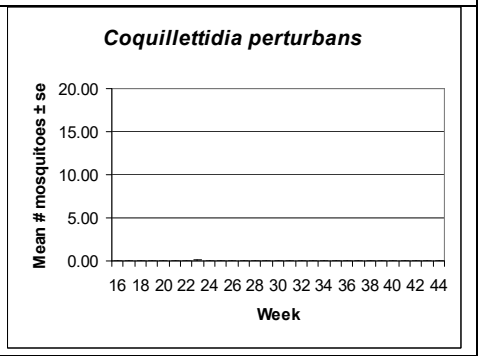
Coastal



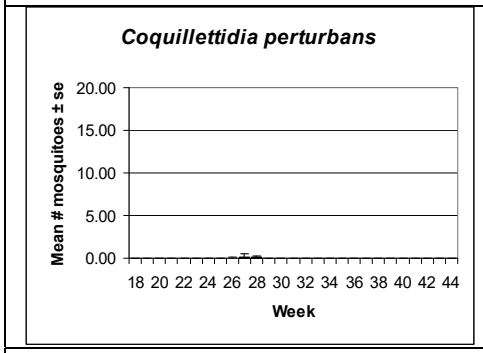
Delaware Bayshore



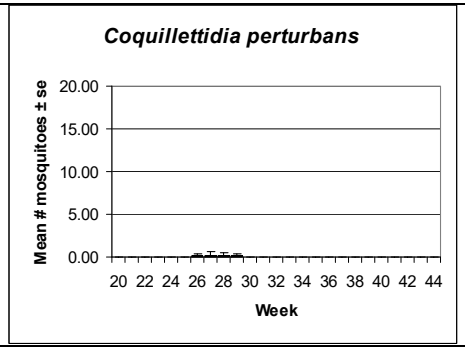
Delaware River Basin



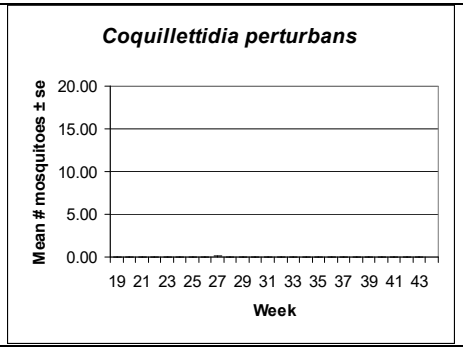
New York Metro



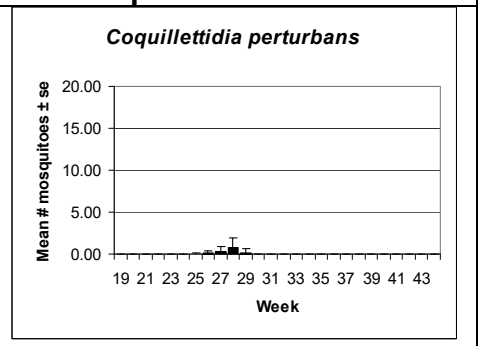
North Central Rural



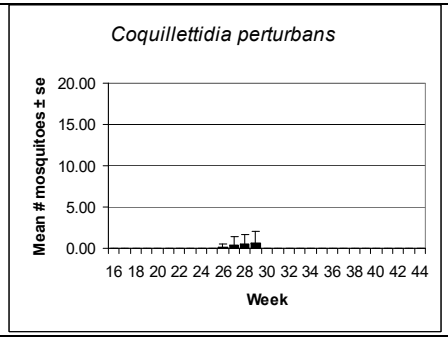
Northwestern Rural



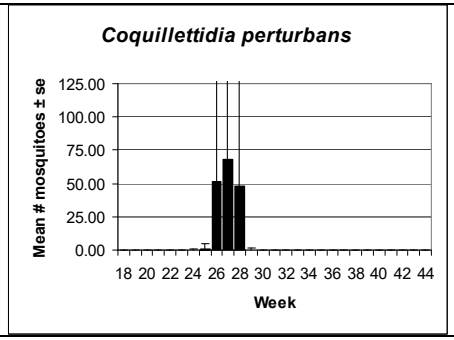
Philadelphia Metro



Pinelands



Suburban Corridor

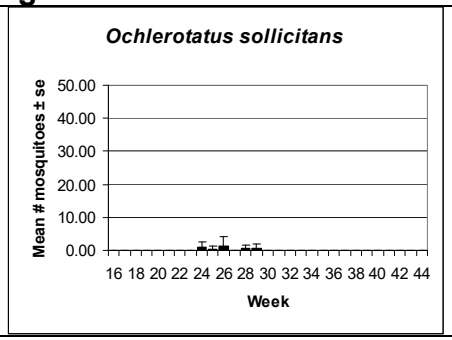


Comments

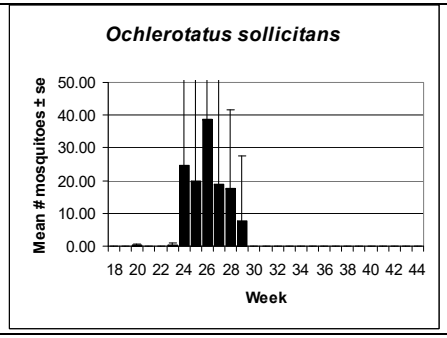
The early cohort of *Cq. perturbans* is currently on the wing with the largest populations in the Suburban Corridor Region. Distribution of this species is spotty on a statewide basis this season, probably due to last year's severe drought conditions. Habitat dry down can virtually eliminate *Cq. perturbans* for a period of up to several years. State Surveillance light trap data indicate that populations within the Suburban Corridor and Coastal Regions were least impacted by the drought conditions New Jersey experienced last year.

Ochlerotatus sollicitans

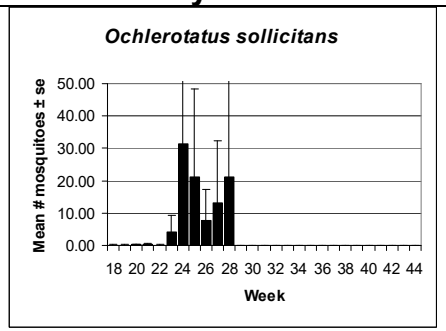
Agricultural



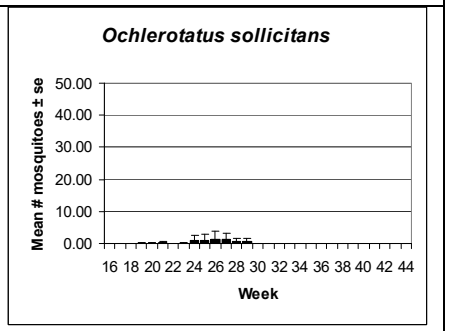
Coastal



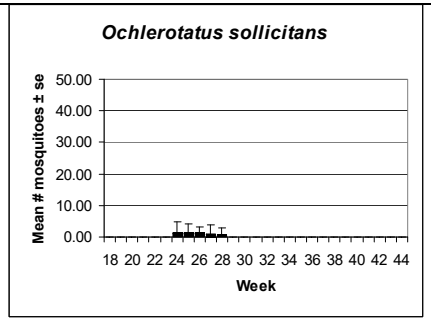
Delaware Bayshore



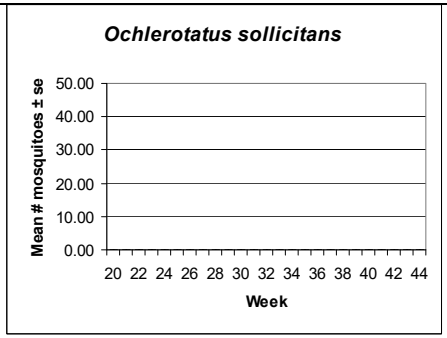
Delaware River Basin



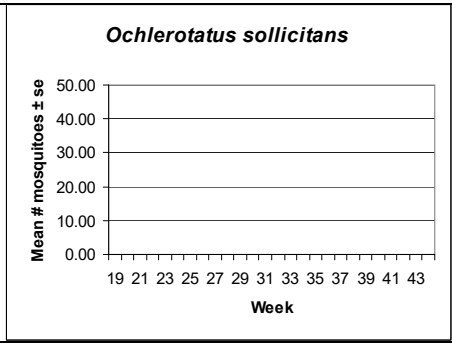
New York Metro



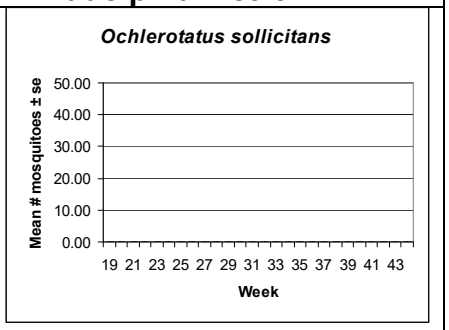
North Central Rural



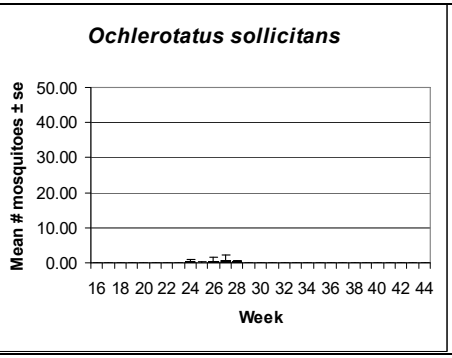
Northwestern Rural



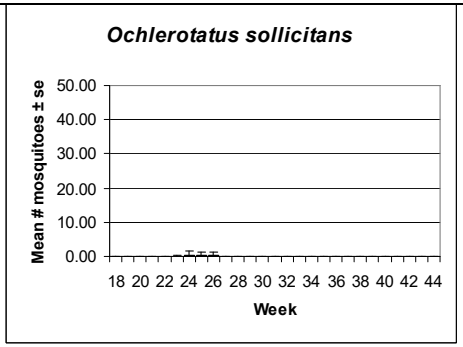
Philadelphia Metro



Pinelands



Suburban Corridor

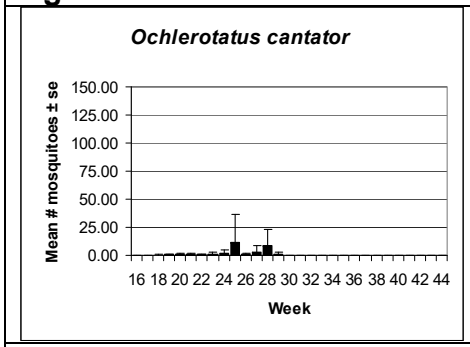


Comments

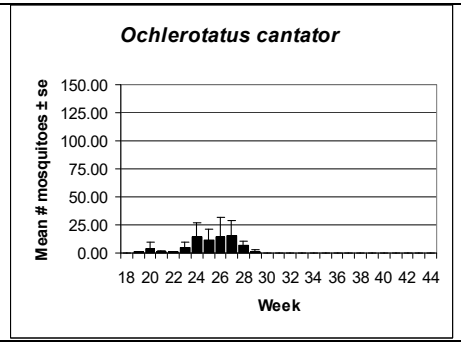
Light trap data indicate that coastal areas of New Jersey may have had overlapping broods of *Oc. sollicitans* over the last 6 weeks. The brood that emerged in early June had not fully dissipated when it was replaced by an apparent second emergence in early July. *Oc. sollicitans* often moves many miles inland from its coastal breeding habitat, particularly during the months of June, July and August. Light trap data from this year's surveillance effort indicate that inland penetration by this species has been minimal to date.

Ochlerotatus cantator

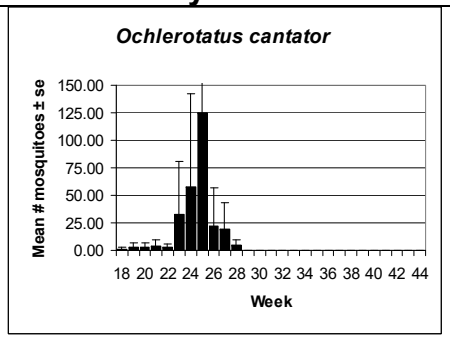
Agricultural



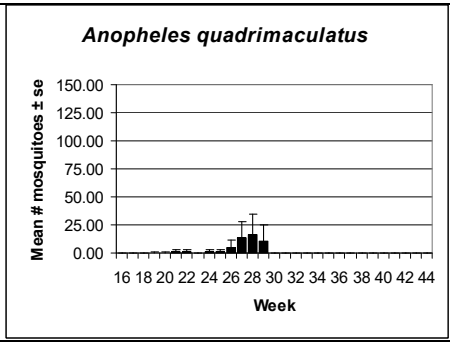
Coastal



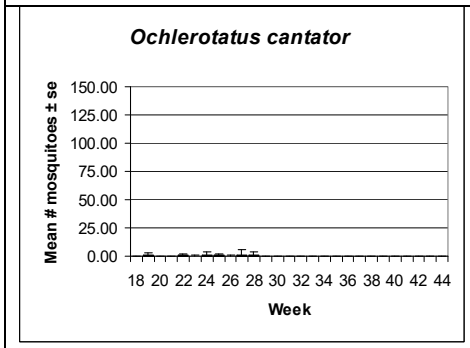
Delaware Bayshore



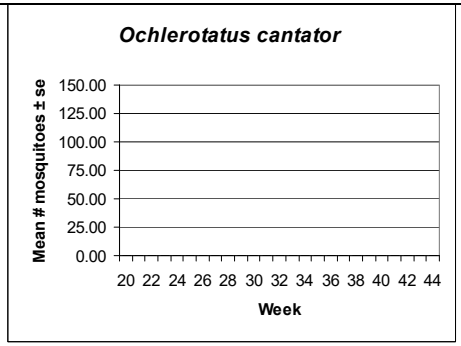
Delaware River Basin



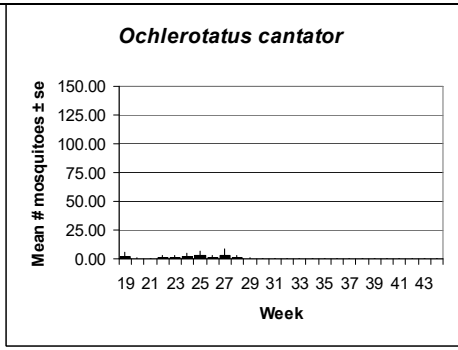
New York Metro



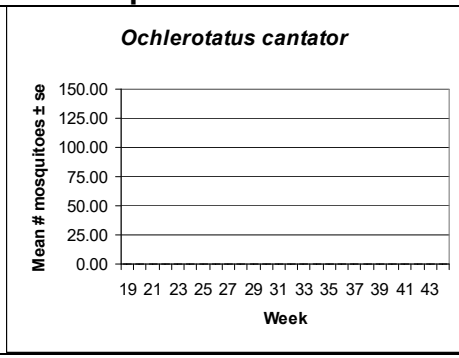
North Central Rural



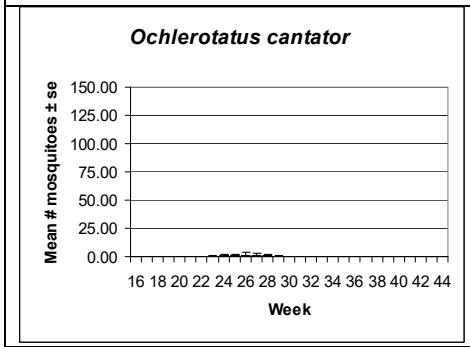
Northwestern Rural



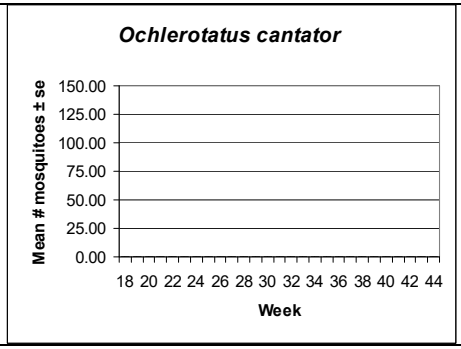
Philadelphia Metro



Pinelands



Suburban Corridor

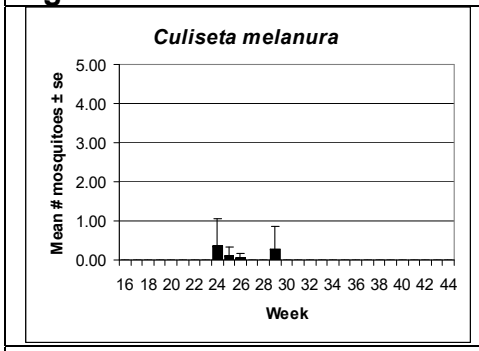


Comments

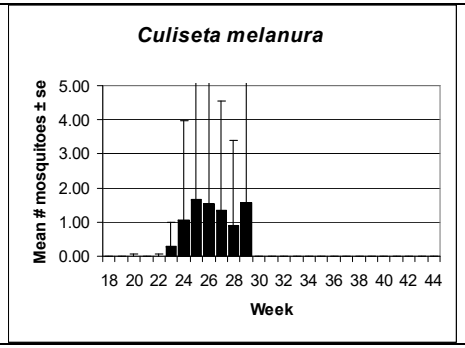
Oc. cantator is an early season saltmarsh mosquito that emerges about 1 month before *Oc. sollicitans* in most coastal areas of the state. Inland populations are fairly common but never reach the numbers generated by coastal marine habitats. The Delaware Bayshore Region produced the highest populations this year with light trap numbers as high as 125 mosquitoes per trap night at the population peak. Populations *of Oc. cantator* have dissipated in recent weeks and numbers should remain comparatively low for the remainder of this season.

Culiseta melanura

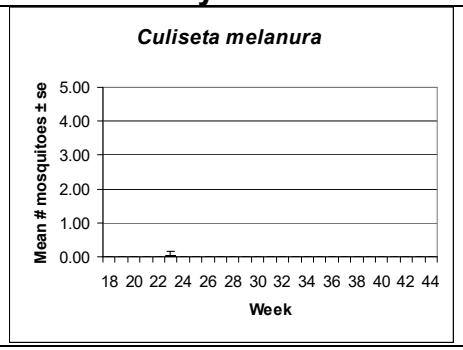
Agricultural



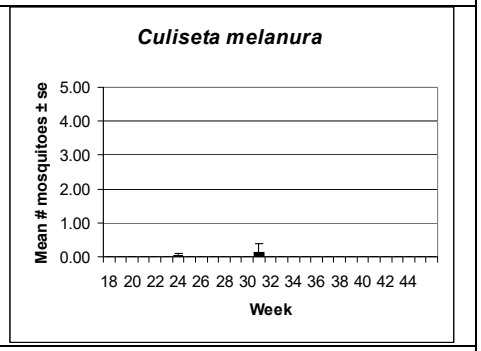
Coastal



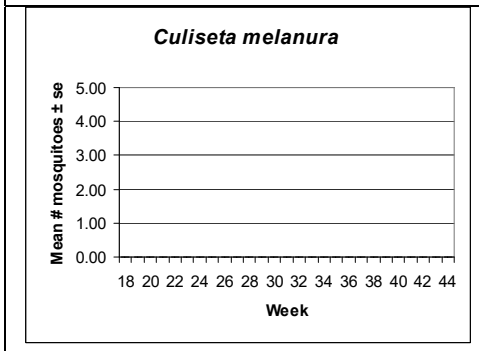
Delaware Bayshore



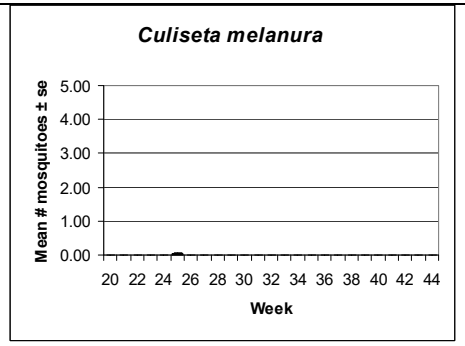
Delaware River Basin



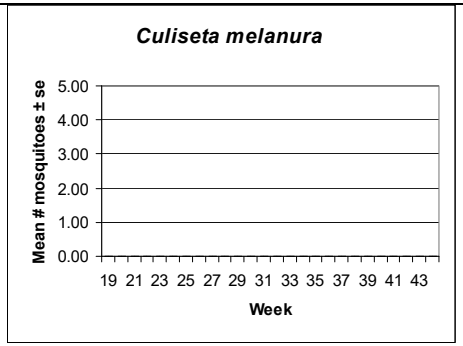
New York Metro



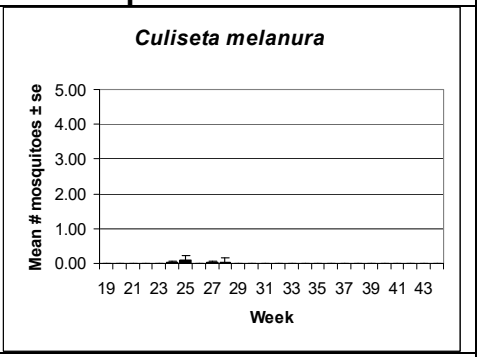
North Central Rural



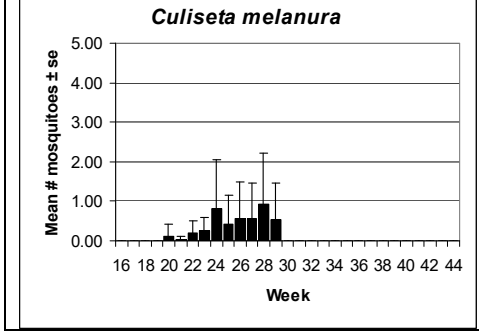
Northwestern Rural



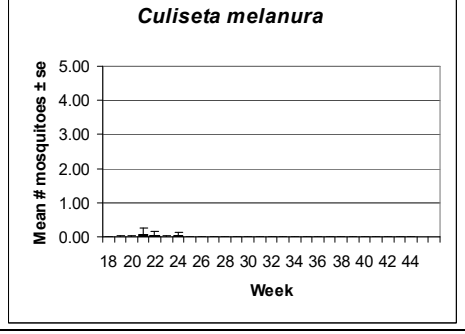
Philadelphia Metro



Pinelands



Suburban Corridor



Comments

Culiseta melanura occurs statewide but reaches greatest numbers in the southern half of the state where Atlantic White Cedar provides ideal acid water breeding habitat. State Surveillance light trap data indicate that *Cs. melanura* populations are highest in the Coastal and Pinelands Regions at the present time. *Cs. melanura* population levels warrant special attention as the season progresses because the species serves as the primary amplification vector of eastern equine encephalitis, a mosquito-borne disease that is currently active in the southern USA.