NEW JERSEY STATE MOSQUITO CONTROL COMMISSION

A STATE MOSQUITO SURVEILLANCE PROGRAM FOR NEW JERSEY

FINAL WEEKLY REPORT FOR 2007 – SPECIES SUMMARIES

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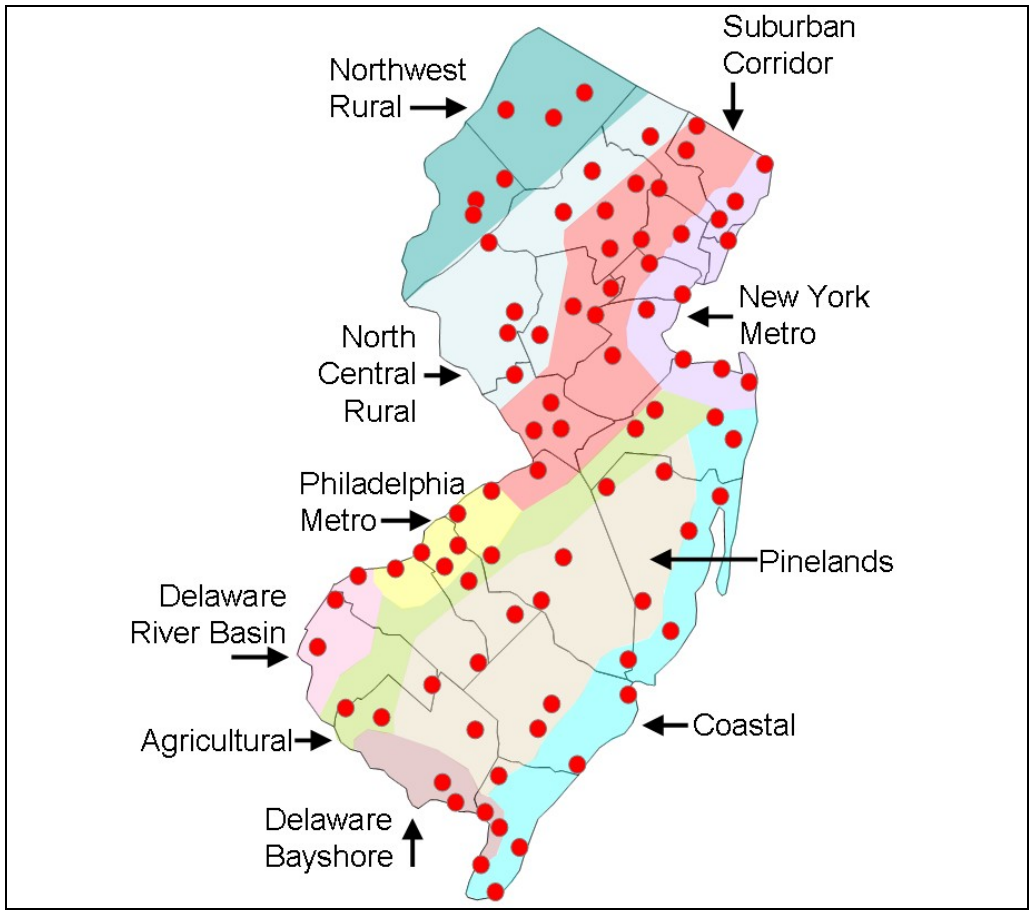
NEW JERSEY STATE SURVEILLANCE

Final Weekly Report for 2007

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.



The State Surveillance Program Overview
In New Jersey, county-level mosquito control agencies use New Jersey light traps to monitor certain nuisance and health-risk mosquito species. Agencies have many years worth of experience in the placement, use, and interpretation of light traps and their data as monitoring mosquito populations is an essential part of an integrated pest management approach. But county agencies are limited to county data, and a landscape-wide view of changing mosquito trends is not available. The purpose of this program is to cover that gap and provide information of nuisance and health-risk mosquito populations on a regional level.

The 2007 Season: Twenty of the 21 county mosquito control agencies participated in this program during the season. One county that was unable to participate during the regular season submitted data in after the season. Most agencies provided data in a timely matter. However, at times, most agencies were occasionally pressed to get the data to Headlee Labs. Therefore, interpretation of the data is more robust for the previous weeks' report than during the current week. Care must be taken with the interpretation of the most current week's data.

During 2007, 34 mosquito species were identified out of the 148,366 individual mosquitoes caught in the statewide surveillance light trap network throughout New Jersey. In comparison, over 300,000 individuals from 42 species were caught in 2004. From 2004, total numbers caught have declined, and we may actually be experiencing more "normal" overall totals and species diversity caught, and that 2004 was an unusually productive year. In 2005, less than 200,000 individuals were caught, and currently (at the time of this report) in 2008, about 130,000 individual mosquitoes have been collected and identified in this program.

The Coastal and Suburban Corridor continue to collect a wider variety of mosquitoes than do less populated areas. The number of traps set for each region is not significantly correlated with the number of species found (Table 1. Pearson's $r=0.521$, $df=8$, $p > 0.05$) so that regions with a larger number of species caught are not doing so because a greater number of traps are able to sample more environments. It may be that more suburban and urbanized areas have more diverse environments than those that catch fewer species.

Table 1. Number of county traps used in each region with the number of mosquito species identified in the traps.

Region	***Number of Traps***	***Number of Species***
Agricultural	6	25
Coastal	9	27
Delaware Bayshore	6	17
Delaware River Basin	4	21
New York Metro	10	26
North Central Rural	8	19
Northwestern Rural	7	26
Philadelphia Metro	6	23
Pinelands	11	24
Suburban	17	27
Statewide Total	84	34

The most abundant species caught statewide were the *Culex* Mixed (including *Cx. pipiens, Cx. salinarius* and *Cx. restuans*), *Aedes vexans, Ae. sollicitans* and *Ae. cantator* (Figure 1). In 6 of the 10 regions, the Mixed *Culex* populations were in greatest number. Significant in this is the fact that these mosquitoes provided the greatest number of positive pools for West Nile virus – the three species are involved in the amplification cycle with avian hosts and transmission to mammals. In most other areas, *Ae. vexans* was the predominant species. This species can transmit dog heartworm and is abundant in all regions except the Delaware Bayshore. *Ae. sollicitans* is a significant pest in 4 of the regions, but is outnumbered by *Ae. cantator* in the Coastal region. There was a brief, two week period in which *Ae. cantator* experienced a large emergence that far exceeded *Ae. sollicitans*.

A calibration class in the spring prior to the 2007 mosquito season was offered to any county that wished to learn about the proper maintenance and calibration of light traps of which several counties attended. Clean and calibrated traps infers compatibility of the dataset.

Figure 1. Cumulative totals for light trap species statewide and Top Ten for each region, 2007.

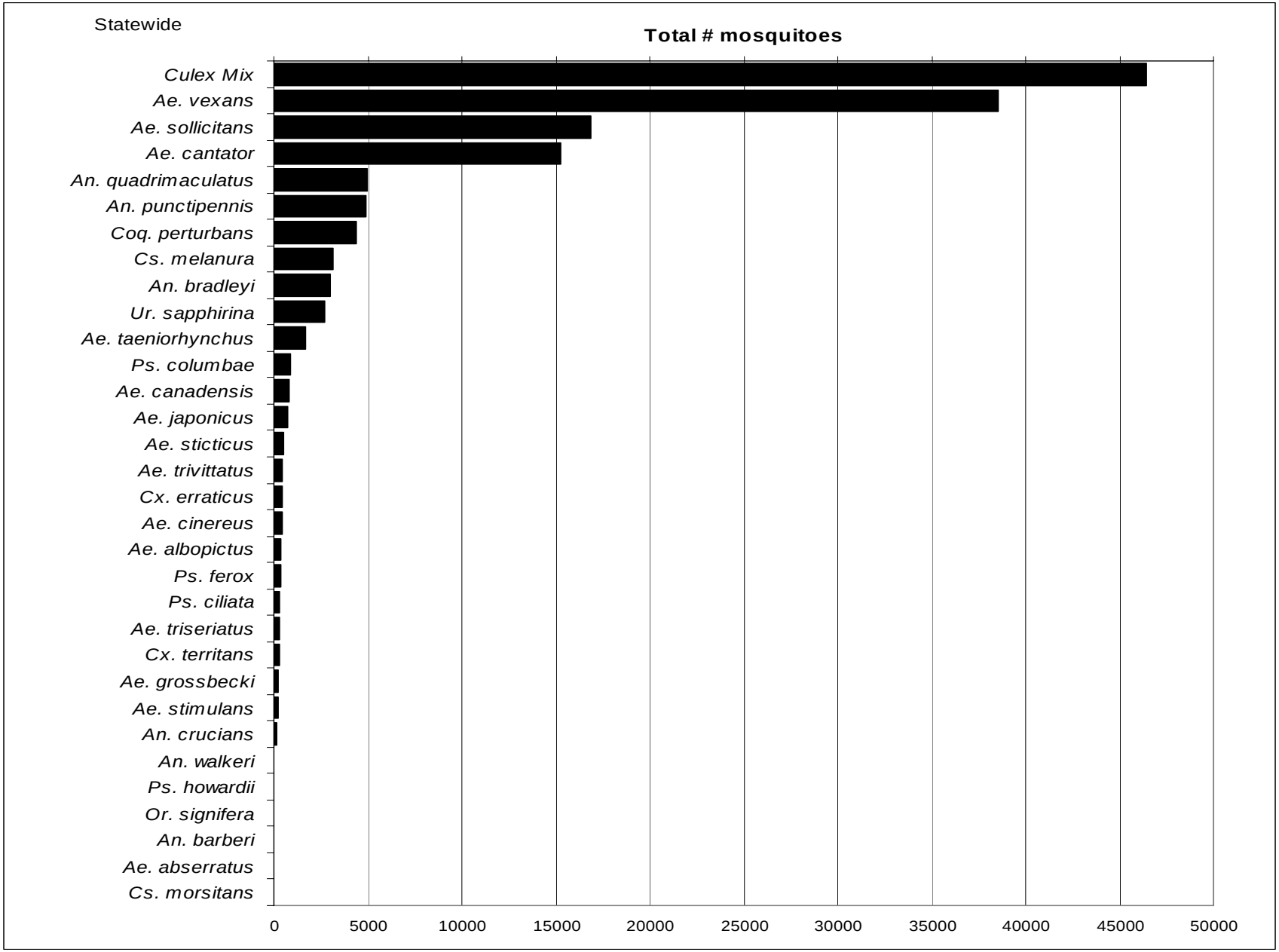


Figure 2. Agricultural Region.

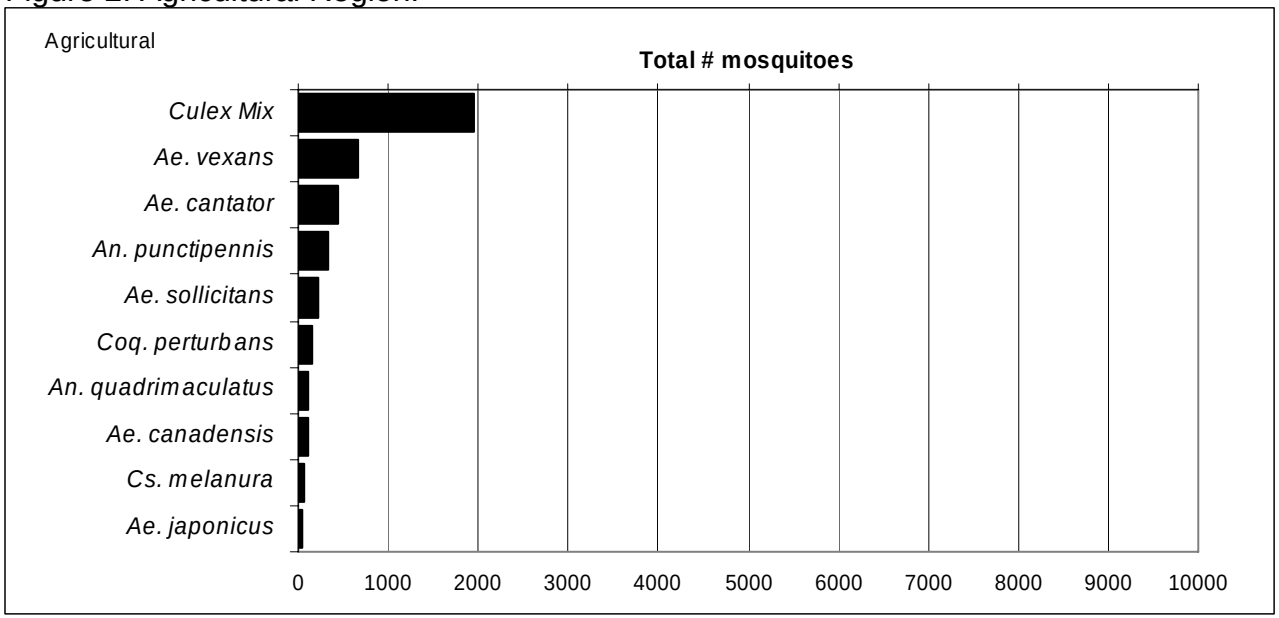


Figure 3. Coastal Region.

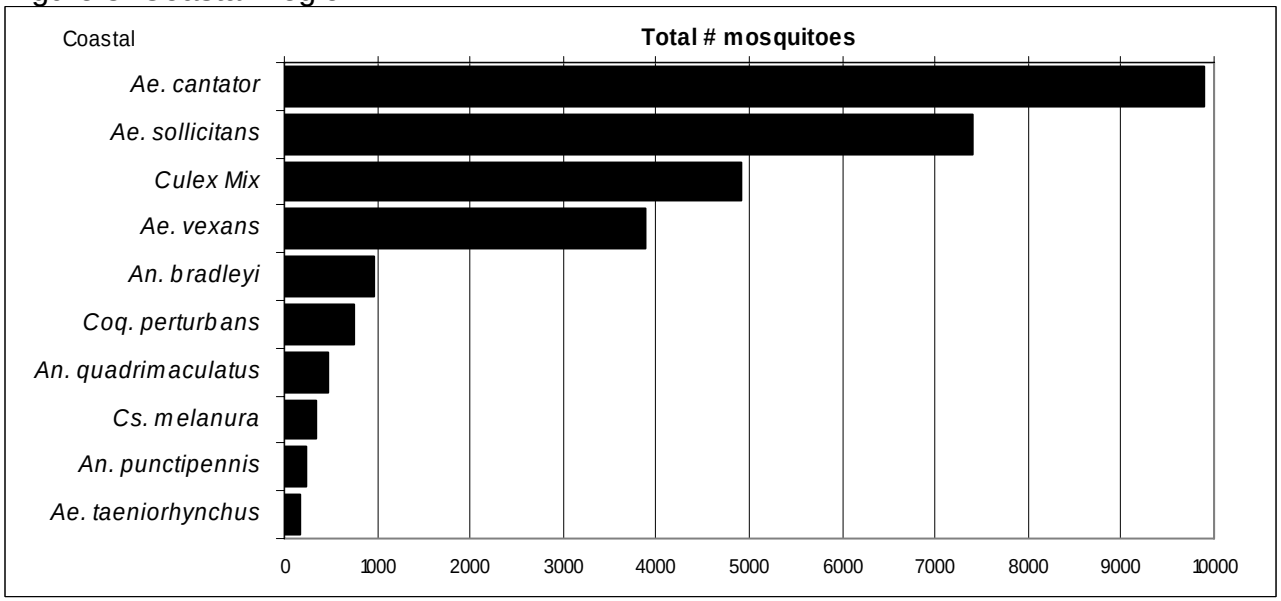


Figure 4. Delaware Bayshore Region.

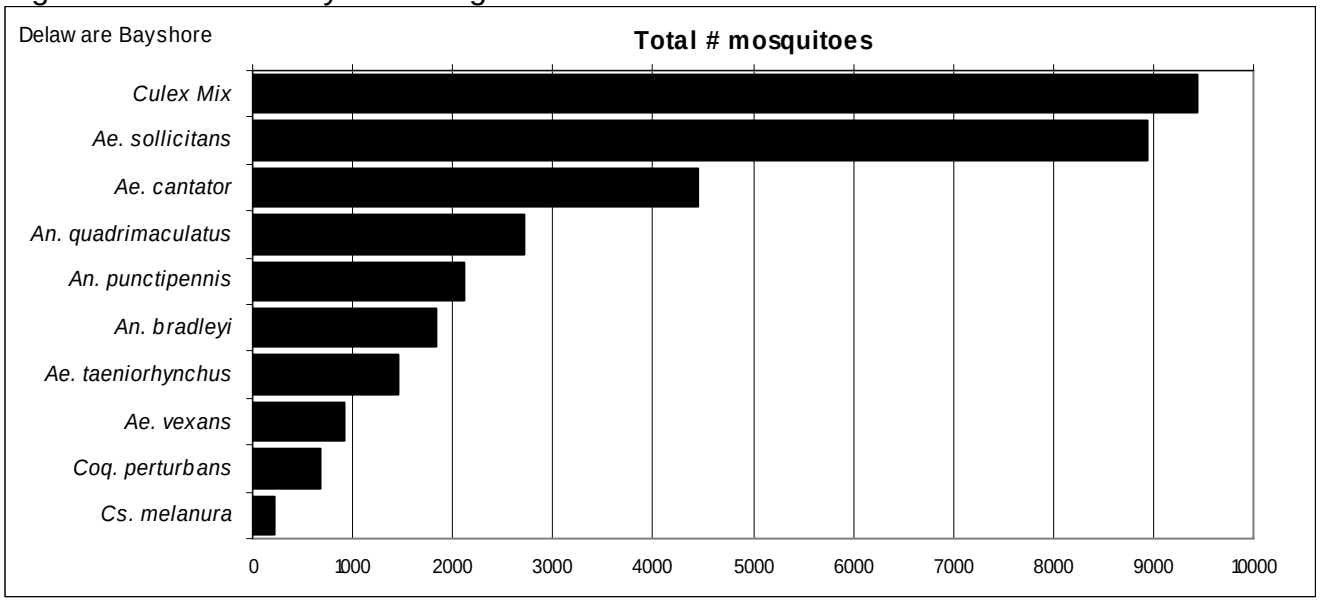


Figure 5. Delaware River Basin Region.

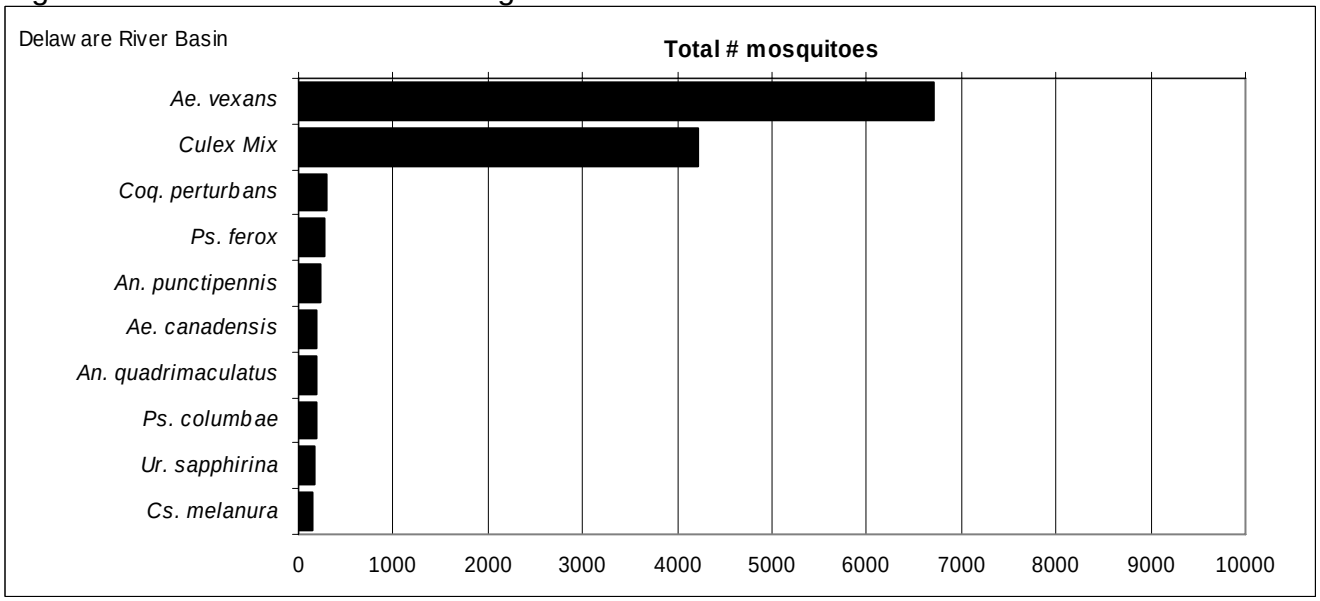


Figure 6. New York Metropolitan Region.

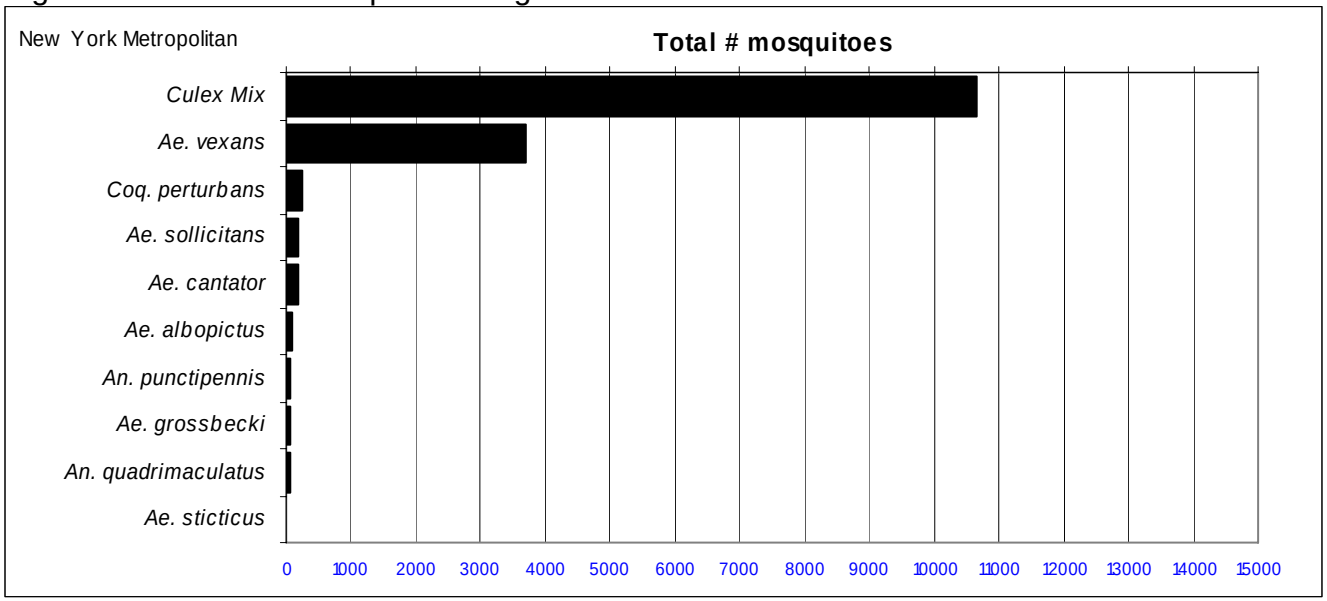


Figure 7. North Central Region.

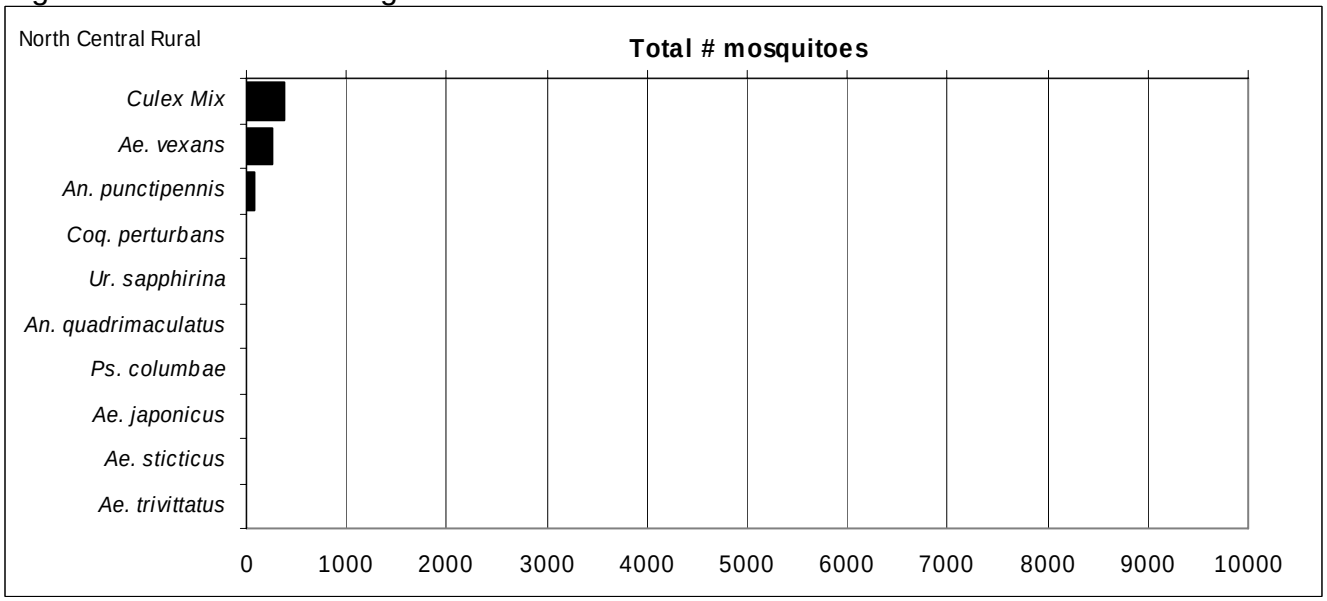


Figure 8. Northwestern Rural Region.

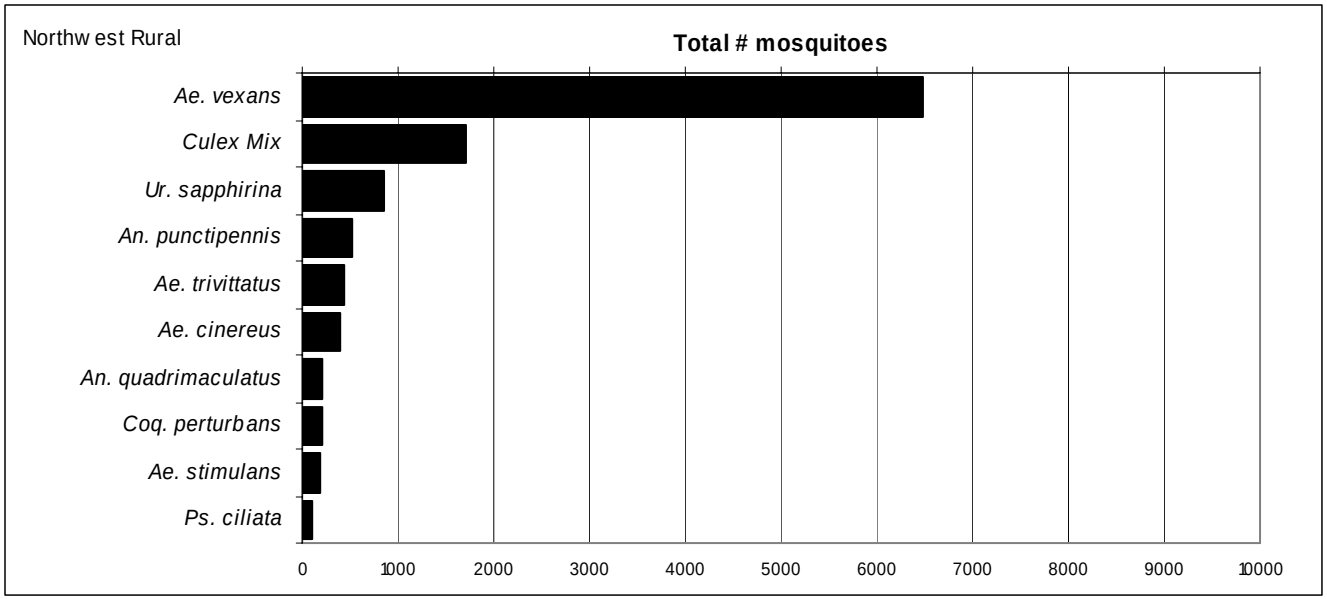


Figure 9. Philadelphia Metropolitan Region.

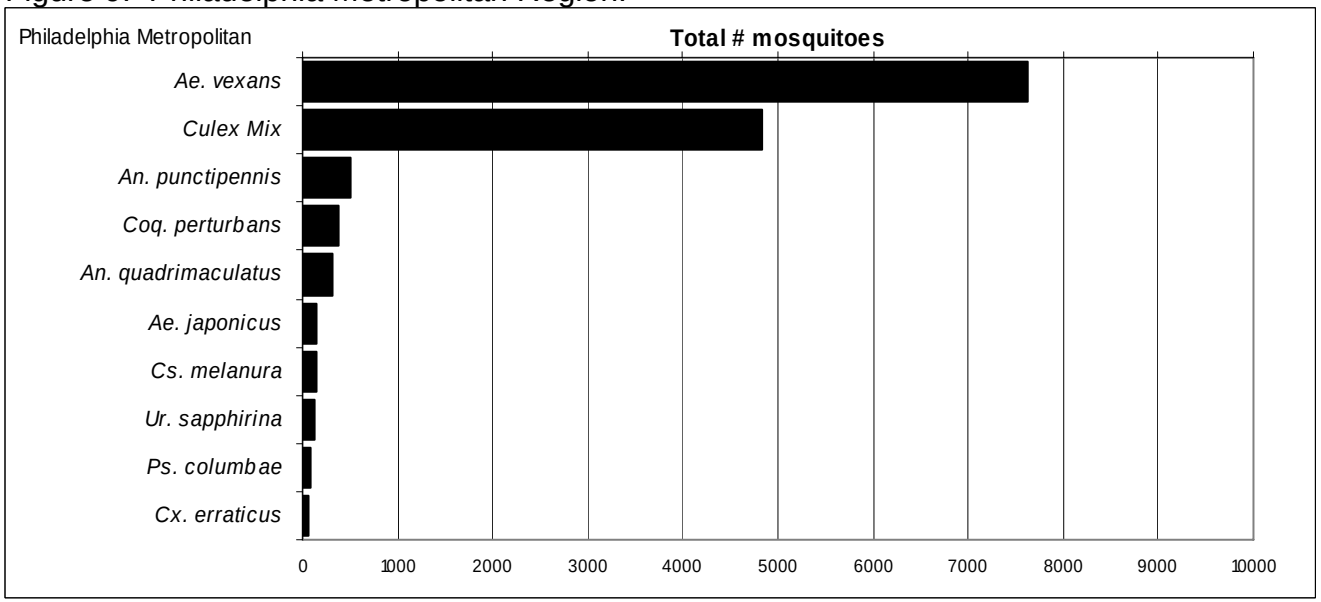


Figure 10. Pinelands Region.

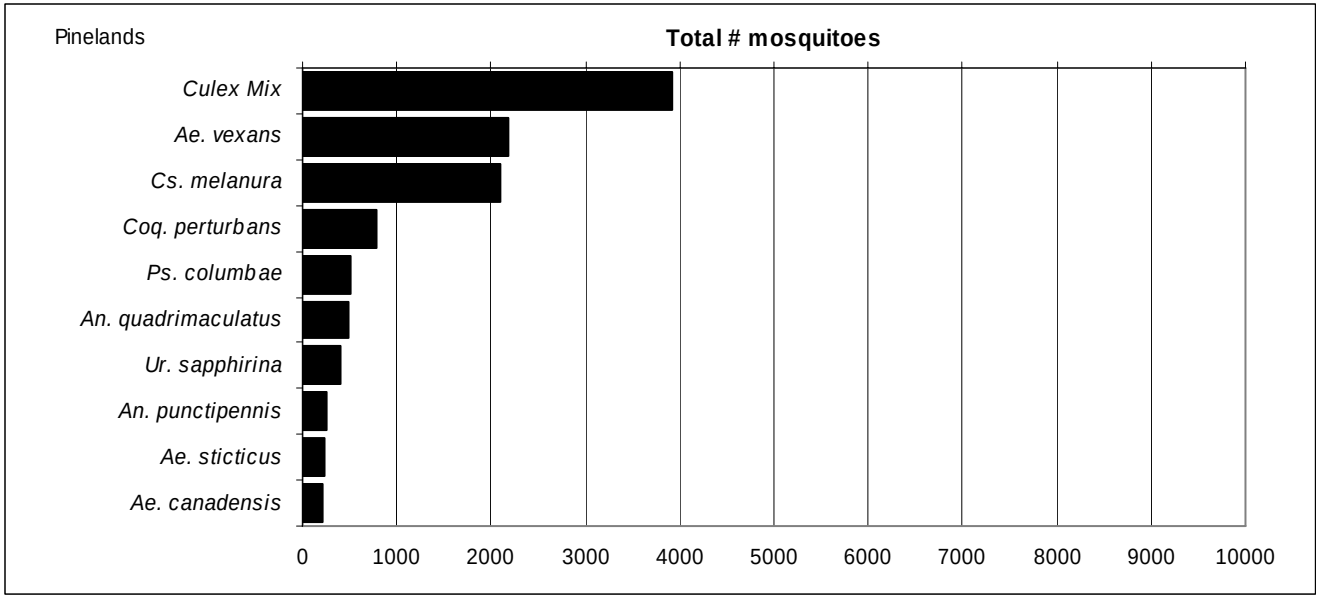
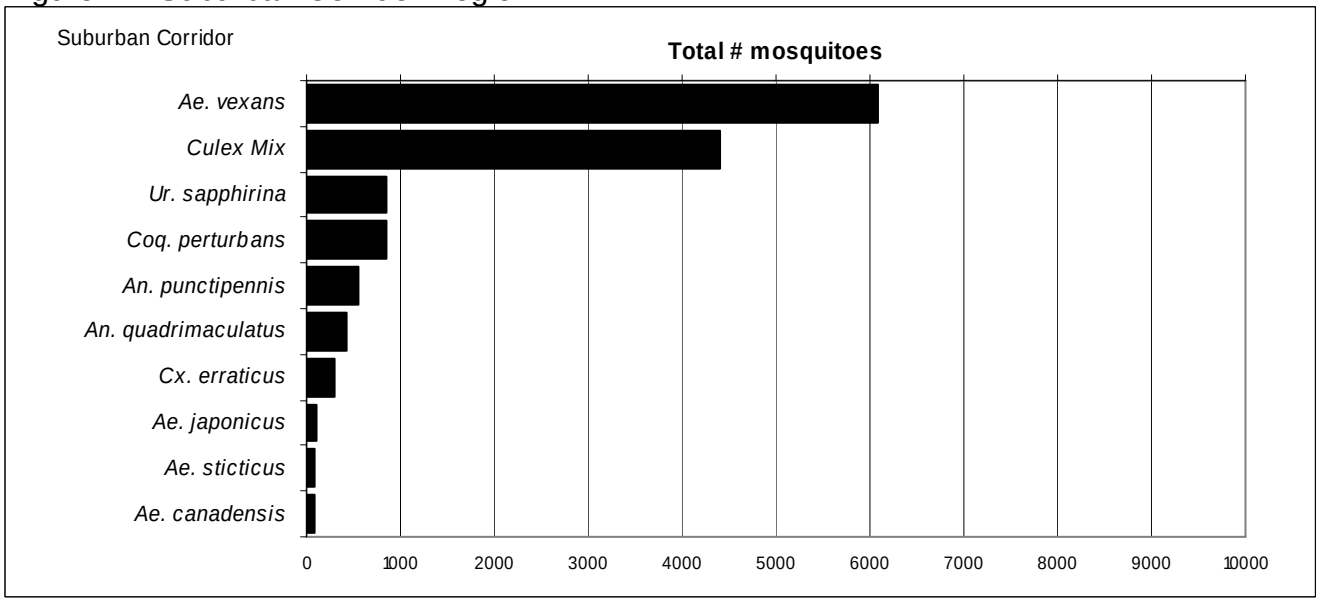


Figure 11. Suburban Corridor Region.



Figures 12-37: Species Summaries. The mosquitoes collected in county operated light traps belong to a series of very different life cycle types as described by Crans (2004). We present the seasonal data for the 26 species from 2007 in the life cycle types below. Historical data was entered for all regions as a running mean encompassing the previous five years. For some regions, historical data is based on fewer than 5 traps. By next year, most of the historical data will be based on the running mean of 5 years as the current dataset becomes incorporated into the historical dataset. Historical data is represented by a solid red line, plotted with error bars, against the black bars of the 2007's dataset:

Univoltine Aedine (*stimulans/canadensis*) Species: Members that belong to this group overwinter as eggs and have a single generation in early spring. The eggs hatch when water temperatures are still quite cold and the adults are usually on the wing during the month of May. In most species, the eggs lain in May and June enter diapause and do not hatch until they are flooded the following year. Some of the members in this group have a generation that reappears in the fall. Most biologists feel that these are eggs that did not hatch during the spring flooding and were left behind as survival insurance. Mosquito species collected in light traps that belong to this group include: *Ae. stimulans, Ae. canadensis, Ae. sticticus & Ae. cinereus.*

Multivoltine Aedine (*vexans*) Species: Members of this group also overwinter as eggs but do not hatch until later in the season when water temperatures rise to ideal levels. These mosquitoes have multiple generations during the summer months that are regulated by flooding patterns. Each period of excessive rainfall produces a major brood. Minor floodings can generate overlapping broods that are usually localized. Mosquito species collected in light traps that belong to this group include: *Ae. vexans, Ae. trivittatus, Ps. ferox, Ps. columbiae, Ps. ciliata*

Multivoltine Aedine (*sollicitans*) Species: Members that belong to this group overwinter as eggs but lay them on tidal marshes where lunar tides provide a method to inundate the eggs. There are multiple generations during the summer months with as many as 2 broods each month from May to October. Rainfall can produce egg hatch which complicates the picture. As a result, biting populations can include mosquitoes of mixed age. Mosquito species collected in light traps that belong to this group include: *Ae. sollicitans & Ae. cantator.*

Multivoltine Aedine (*triseriatus*) Species: These mosquitoes glue their eggs to the sides of containers above the water line and rely on rains to raise the water level and hatch the eggs. Like other Aedines, they overwinter as eggs and reappear each spring when water temperatures begin to rise. Most members of the group are active during the day and are enter light traps in very low numbers. Mosquito species collected in light traps that belong to this group include: *Ae. triseriatus & Ae. japonicus.*

Multivoltine Culex/Anopheline (*quadrimaculatus) Species*: Members that belong to this group have a life cycle strategy that is very similar to the Multivoltine *Culex*. They overwinter as mated females and build their populations over the course of the summer. They are included as a separate group because they represent an entire genus. Mosquito species collected in light traps that belong to this group include: A*n. quadrimaculatus, Cx. territans & Cx. erraticus.*

Multivoltine Culex/Anopheline (*salinarius*) Species: Members of this group overwinter as mated females that will lay eggs in a variety of brackish water, showing a wide degree of salt tolerance. Larvae generally reach highest numbers in brackish water and with

multiple generations, the populations can build throughout the season. *An. bradleyi* is an example of this type. *note* *Culex salinarius* is grouped with the Culex Complex due to the difficulty in distinguishing this species with *Culex pipiens* and *Culex restuans.*

Multivoltine Culex/Anopheline (*pipiens*) Species: Members that belong to this group overwinter as mated females. Populations in early spring are represented by mosquitoes that survived the winter and the numbers are at relatively low levels. These mosquitoes cannot become active until night time temperatures enter the 60's, thus host seeking and oviposition is delayed until late May or June. The first generation of larvae takes time to develop and populations do not build until mid-summer a t the earliest. As soon as night time temperatures begin to cool down, the mosquitoes mate, seek winter hibernaculae, enter diapause and hibernate. Only the females survive in this group. Males will not appear until the eggs hatch very late the following spring. Mosquito species collected in light traps that belong to this group include: The *Culex* Complex, *An. punctipennis*

Miscellaneous Group: The members in this group have little in common because each utilizes a unique life cycle strategy. The mosquito species collected in light traps that we have included in the group include: *Cq. perturbans, Cs. melanura & An. walkeri.*

Figure 12.

Aedes canadensis – Univoltine Aedine (*Aedes canadensis* Type)

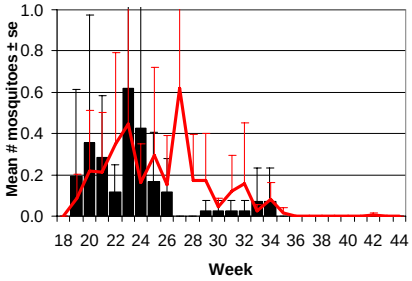
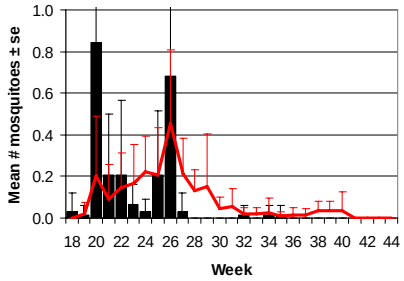
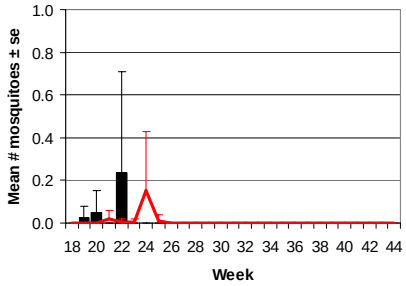
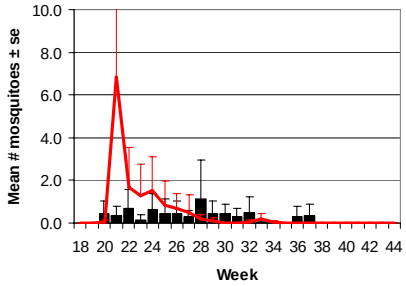
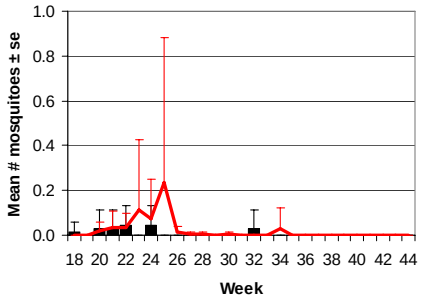
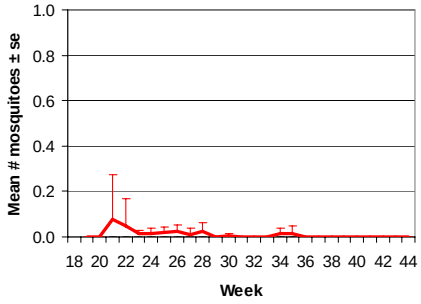
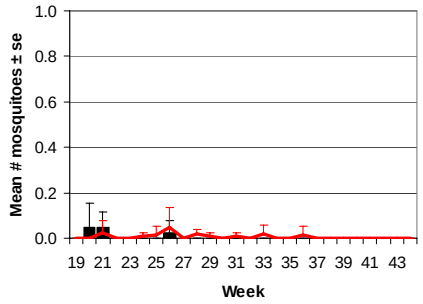
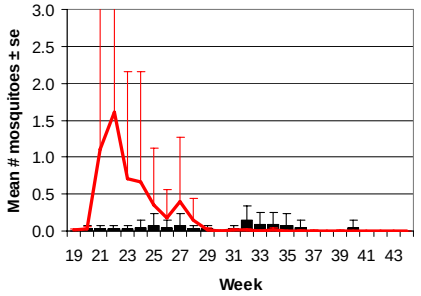
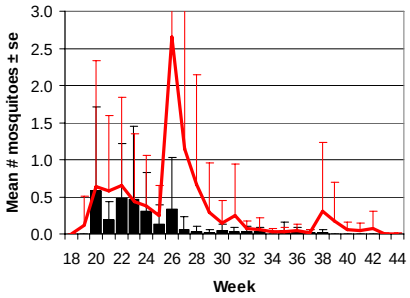
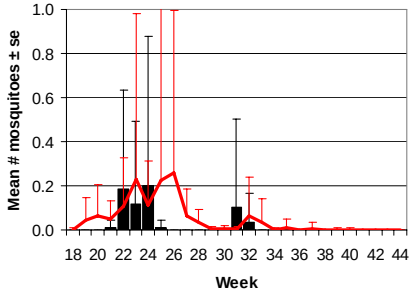
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes canadensis candensis* is an early season univoltine mosquito found throughout New Jersey. Appearances can occur later in the season, often around August. These second waves of *Ae. candensis* are not a second generation: this species is not considered to be multivoltine in New Jersey and thus the source of later emergences are eggs that failed to hatch early in the year. If flooding events are greater than events that initiated the spring emergence, then the smaller, late season emergence will occur. This occurred for several regions: Agricultural, Coastal, Delaware River Basin, New York Metro, Phildelphia Metro, the Pinelands and the Suburban Corridor.	

Figure 13.

Aedes cinereus – Univoltine Aedine (*Aedes canadensis* Type)

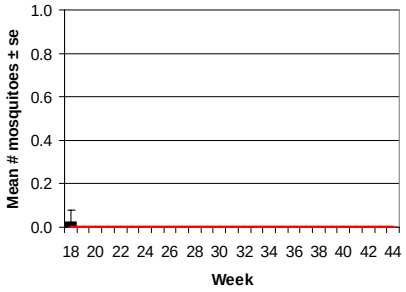
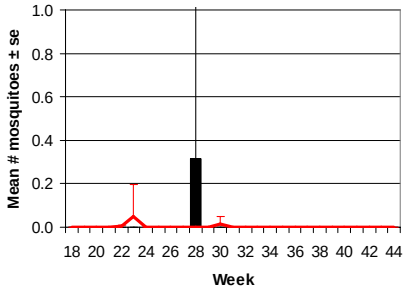
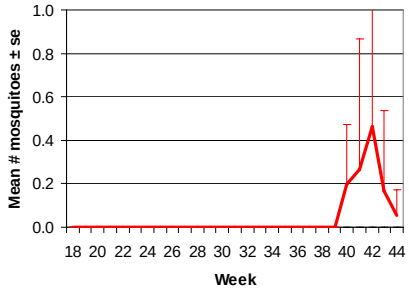
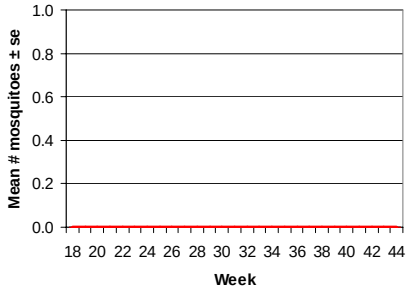
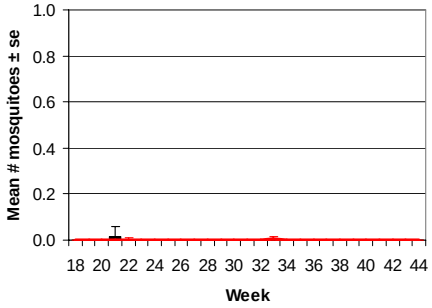
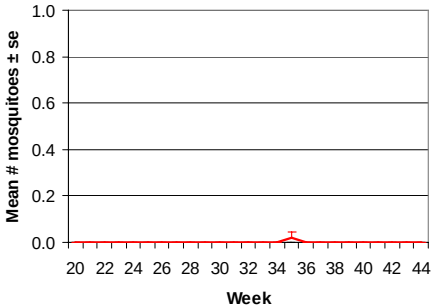
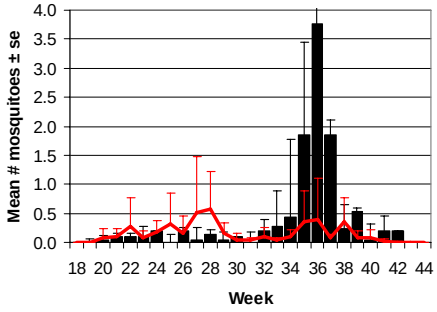
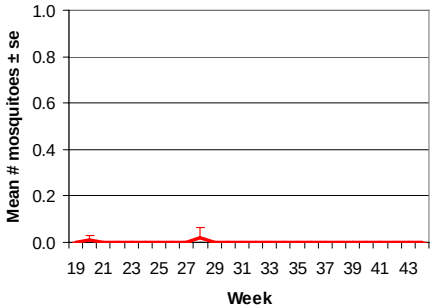
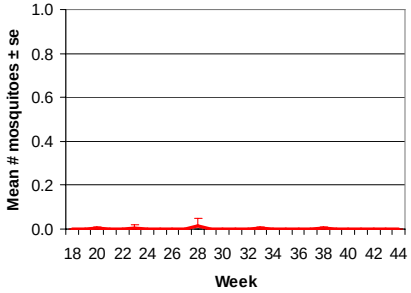
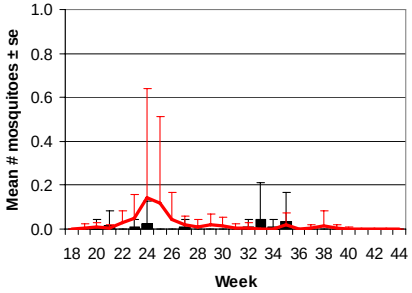
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes cinereus* is a species that appear after early-season species such as *Ae. excrucians* or *Ae. fitchii*. As with *Ae. canadensis*, later emergences can occur from eggs that had not previously hatched. Ae. cinereus is very cold-tolerant, with a range that extends into Canada and up through Alaska. If one does early season dipping for larvae, the late instars can be deceptively small. The Northwestern Rural region experienced just such an occasion, with abundances well above historical values.	

Figure 14.

Aedes grossbecki – Univoltine *Aedine* (*Ae. stimulans* Type)

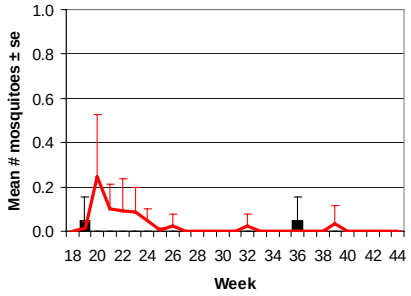
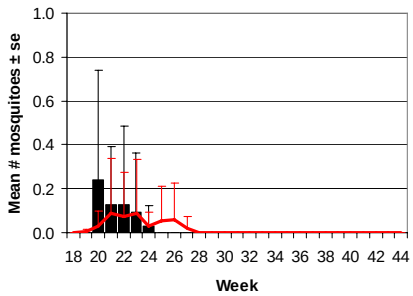
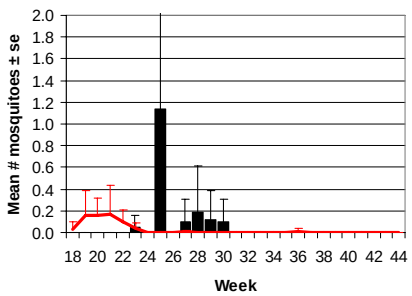
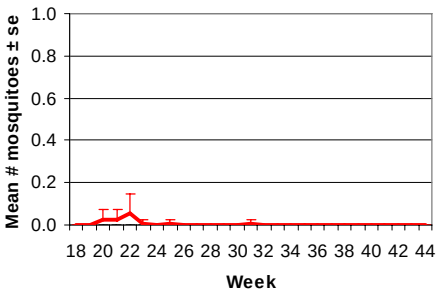
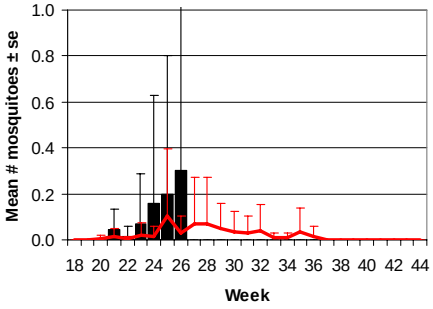
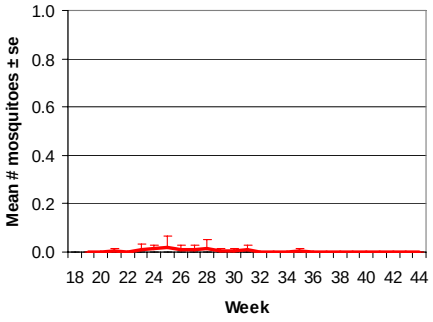
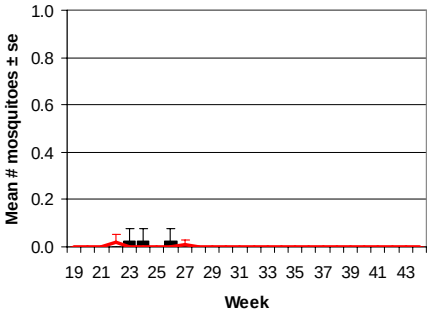
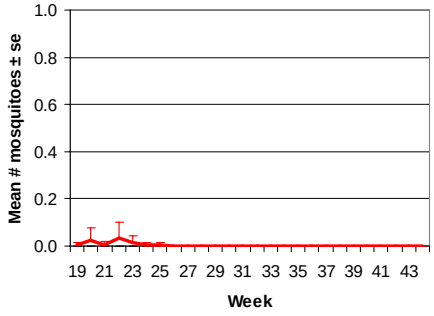
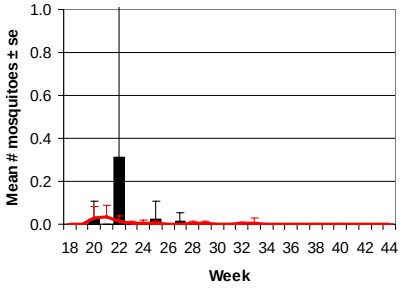
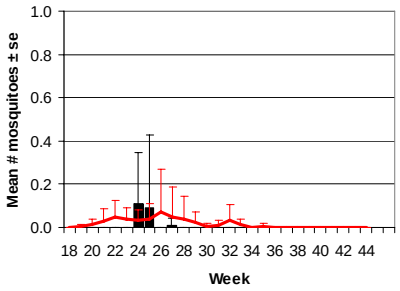
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes grossbecki*, an early to mid-season mosquito, is found in all regions of New Jersey, but with varying abundance. The Delaware Bayshore region can have a significant number of this univoltine species, as evidence by the large emergence that occurred there during Week 25. The New York Metropolotan region also had a significant population. This species is considered a “minor” pest because although it may have a noticeable bite, its overall numbers tend to be low with a muted distribution.	

Figure 15.

Aedes sticticus – Univoltine Aedine (*Aedes canadensis* Type)

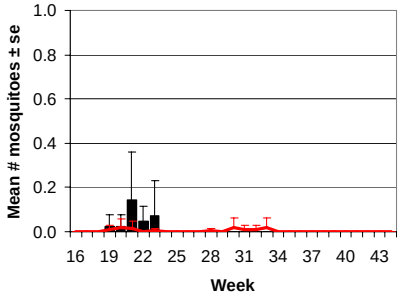
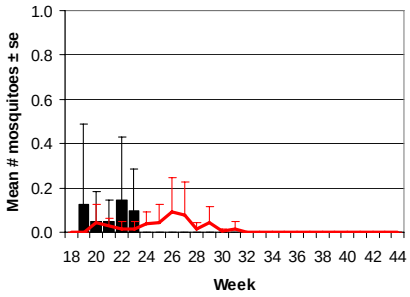
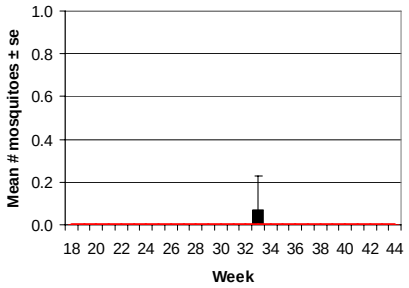
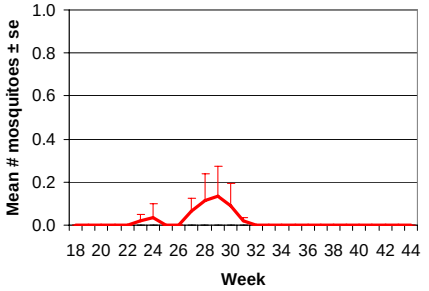
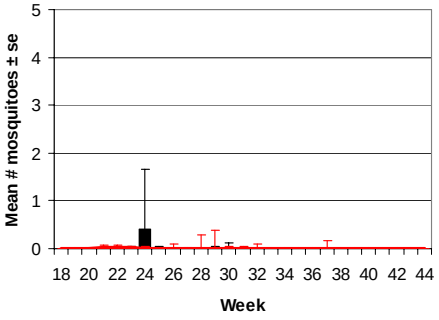
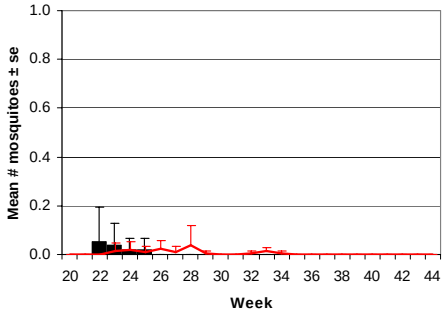
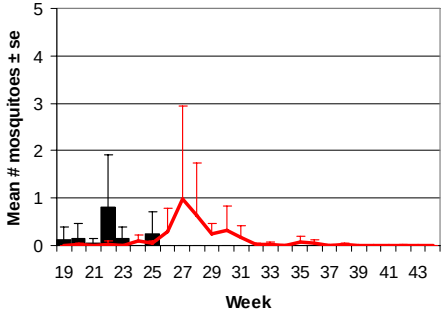
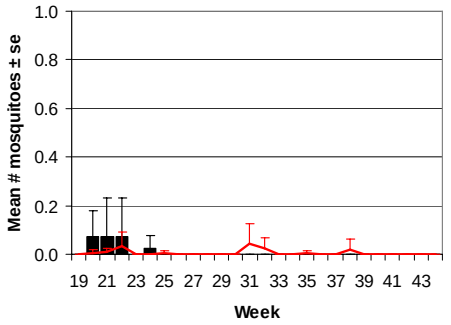
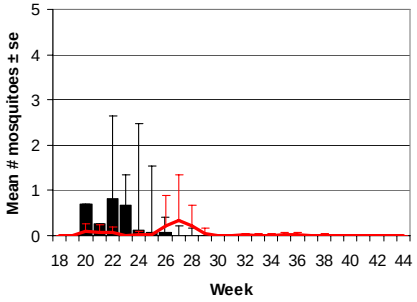
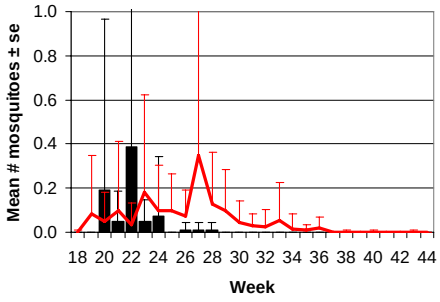
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes sticticus* is a univoltine aedine mosquito with re-occurrence patterns similar to *Aedes canadensis*. After an initial spring emergence from shaded woodland pools located in floodplains, an additional emergence will come from other pools located slightly elevated (i.e., near the edge of the floodplain) when these areas become flooded later during the summer. This double emergence can be seen most easily in the historical data of the Agricltural and Philadelphia Metro regions. This year, it appears that only the later emergence was detected by the light traps in the Delaware Bayshore region. Largest numbers are often found in the New York Metro region, which picks up mosquitoes from the Passaic River system.	

Figure 16.

Aedes stimulans – Univoltine *Aedine* (*Ae. stimulans* Type)

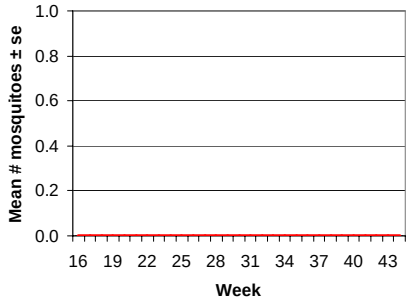
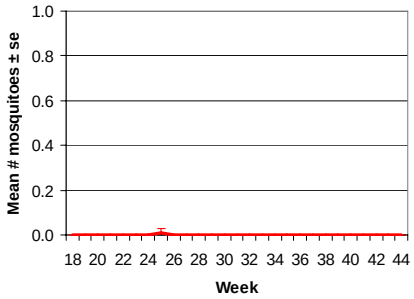
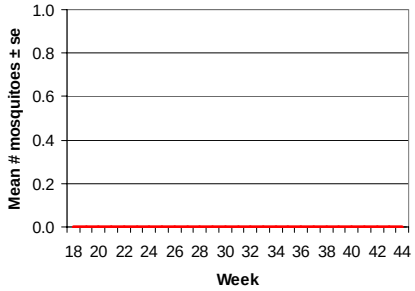
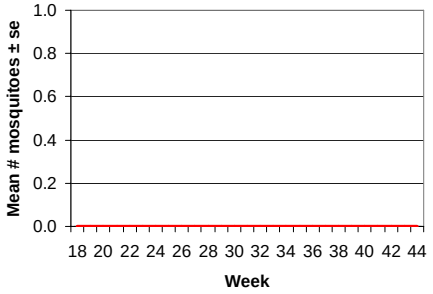
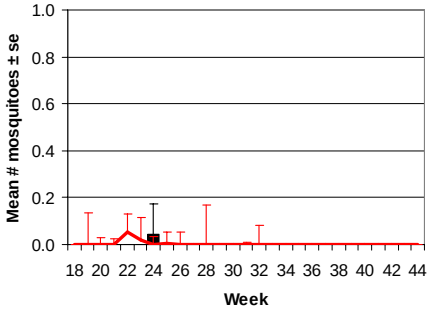
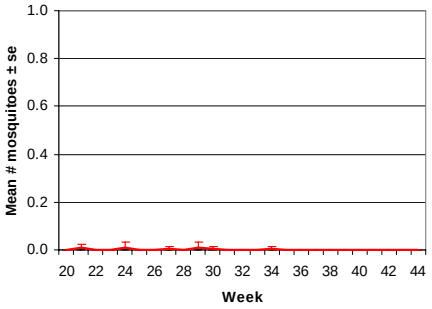
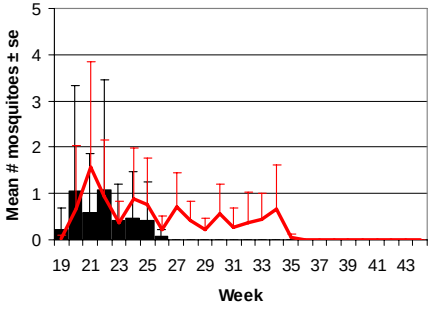
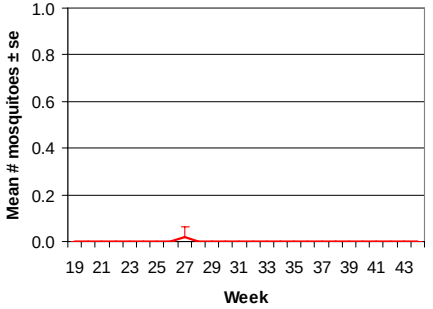
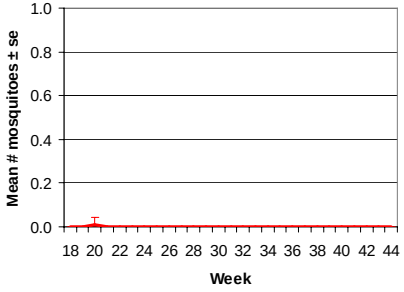
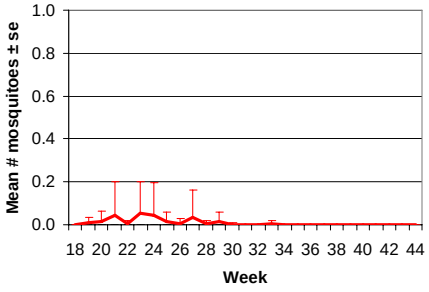
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		The snowpool mosquito, *Aedes stimulans* is appropriately named as it is found in woodland pools of the northeastern US and southwestern Canada. Here in New Jersey, the region with the most predictable populations is the Northwestern Rural. This cold tolerant mosquito develop from overwintering eggs in pools until in early spring when surrounding woodland trees develop leaves and subsequently drain the pools and force *Ae. stimulans* to emerge quickly. Thus, it may be on the wing before this surveillance program begins. Woodland pools in floodplains can also produce significant numbers. The current year pattern in the Northwestern Rural region is typical for this species, although individual mosquitoes can be caught as late as August as they can live a long time.	

Figure 17.

Aedes vexans – Multivoltine *Aedine* (*Ae. vexans* Type)

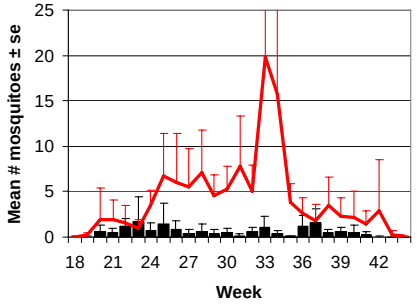
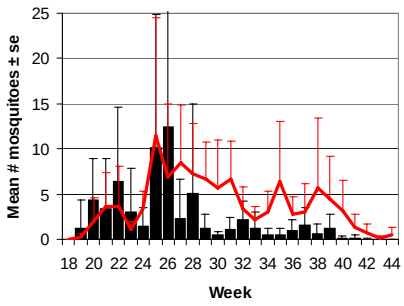
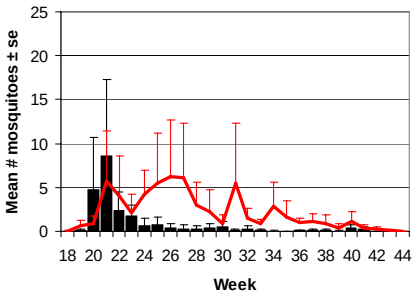
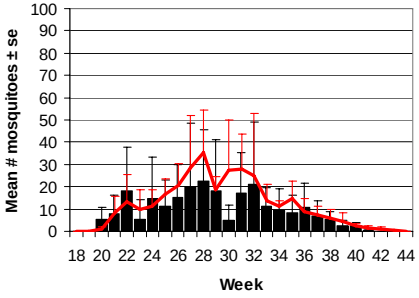
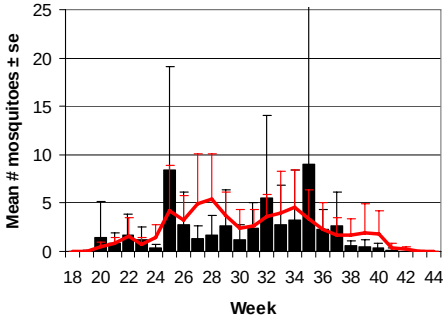
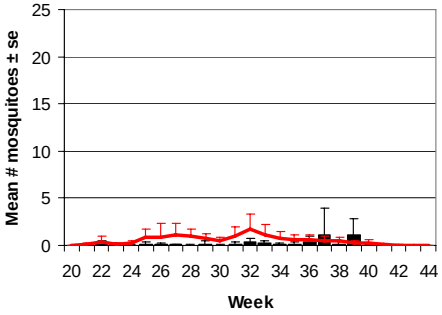
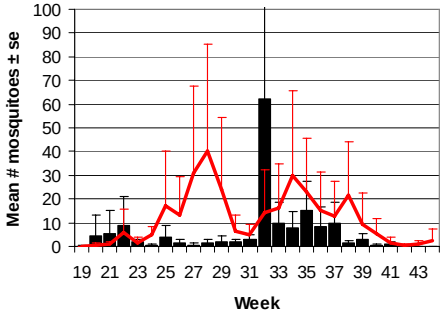
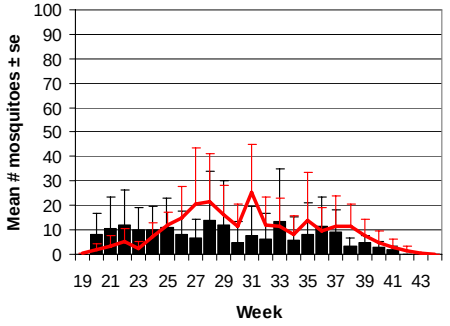
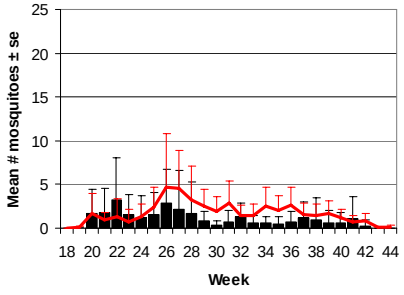
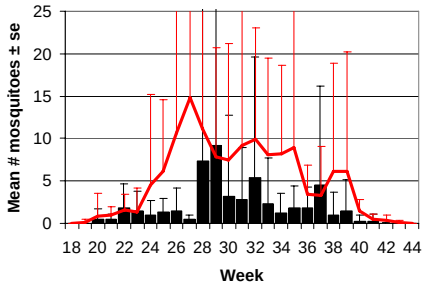
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes vexans* is the model for the fresh floodwater mosquito that produces multiple generations a year. Populations are very dependent on local conditions, although some areas can be influenced by distant conditions, such as floodwater from streams that overflow banks despite no local rains. This condition is found in the Northwestern Rural region, where three rivers meet and flood after rains from upstate New York flow into New Jersey. Rain patterns can vary each year and usually have an effect of creating large error bars not only because of annual differences, but also because of local variation within each region. *Ae. vexans* is a significant pest in New Jersey. West Nile virus has been detected in *Ae. vexans* pools in the past, but positive pools have been decreased in recent years and it is likely that the role of this mosquito is minimal.	

Figure 18.

Aedes trivittatus – Multivoltine *Aedine* (*Ae. vexans* Type)

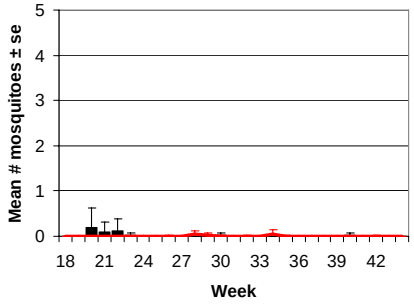
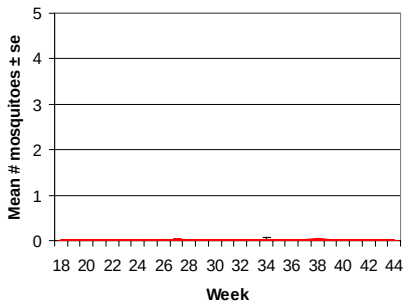
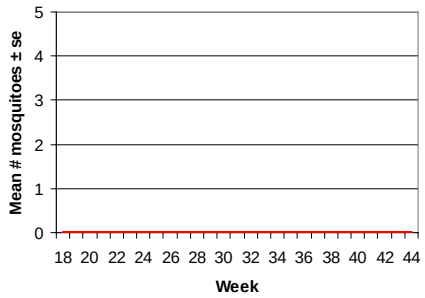
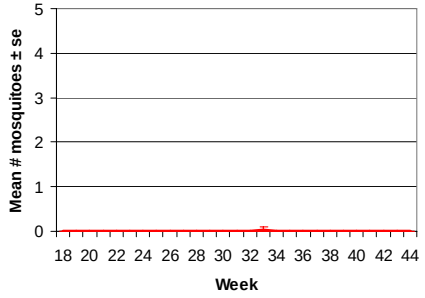
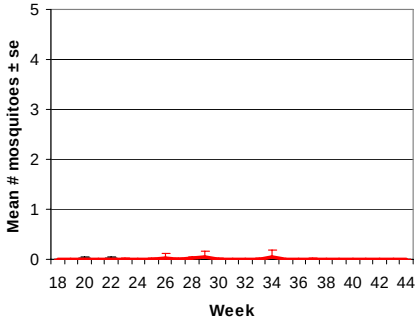
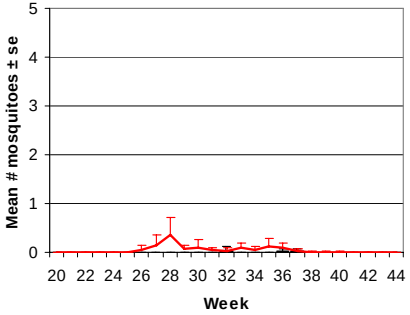
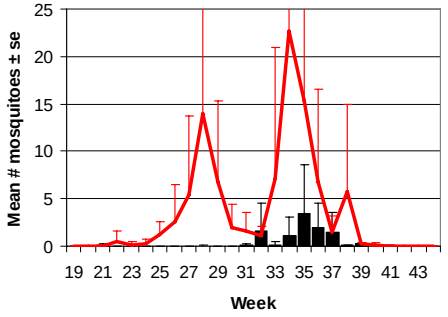
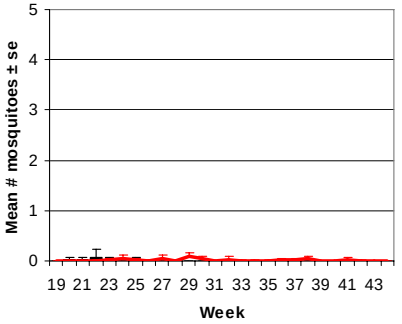
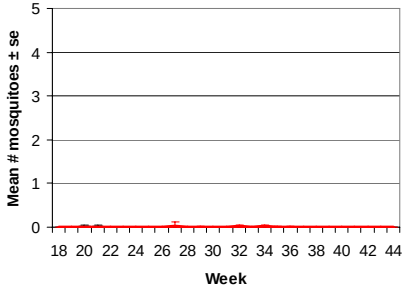
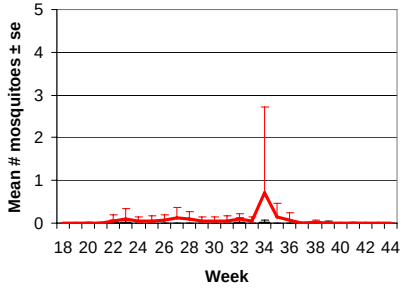
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes trivitattus*, a multivoltine floodwater species, can generate a number of complaints from residents after flooding events. This aggressive, persistent biter is most abundant in the Northwestern Rural region. It can transmit trivittatus virus to mammalian vertebrates, but this disease is virtually unknown in New Jersey. *Ae. trivittatus* can also transmit WNV when taken from a highly viremic source. This year, flooding events were fewer and subsequently these conditions minimized the local abundance of *Ae. trivittatus* in the Northwestern Rural region.	

Figure 19.

Psorophora ciliata – Multivoltine Aedine (Ae. vexans Type)

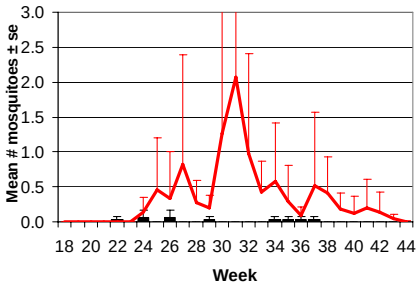
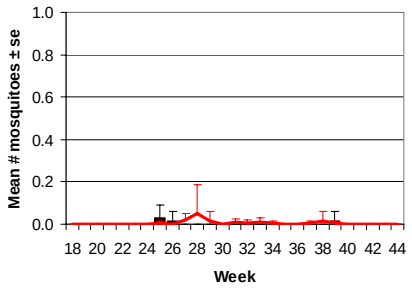
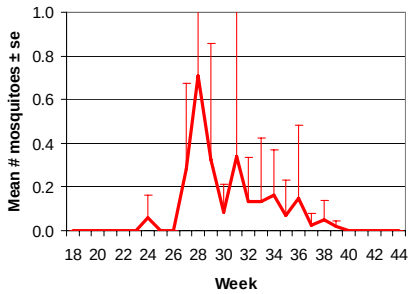
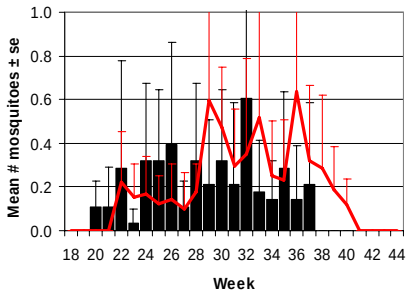
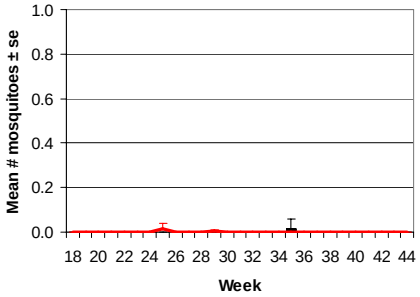
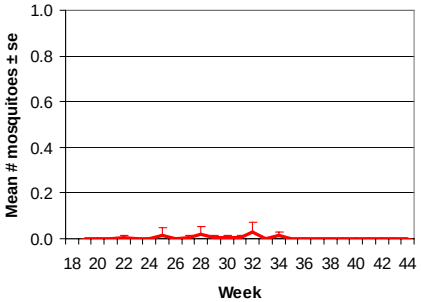
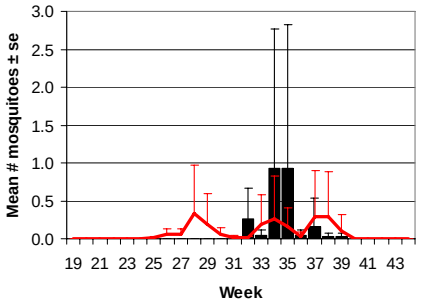
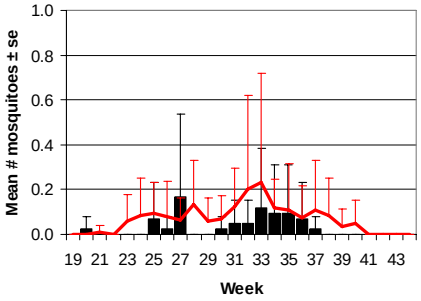
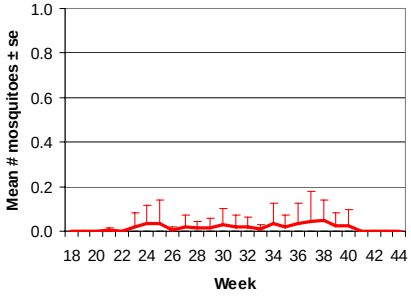
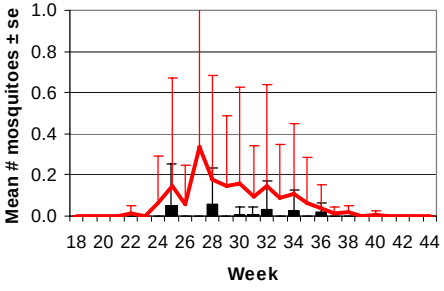
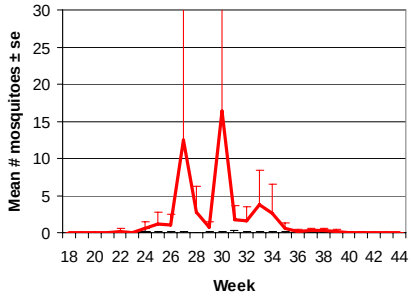
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Psorophora ciliata* is a large mosquito that prey upon *Psorophora columbiae* as larvae. As a floodwater mosquito, the abundance of populations rely not only on the presence of flooded habitat, but also the presence of prey items. This year, the lack of rain events not only limited larval habitat but also the amount of prey available. Subsequently, populations were reduced in a number of regions, including Agricultural, Delaware Bayshore and the Suburban Corridor. The Delaware River Basin remained populated due to flooding influences such as the operation of the dredge spoils.	

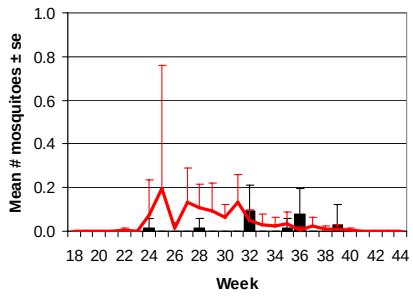
Figure 20.

Psorophora columbiae – Multivoltine Aedine (*Ae. vexans* Type)

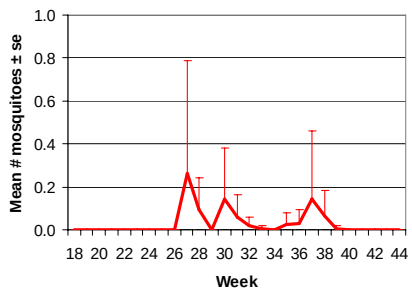
Agricultural



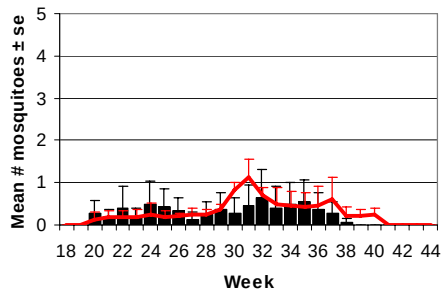
Coastal



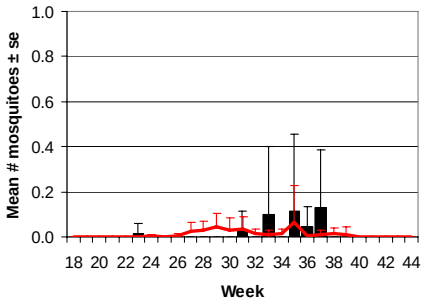
Delaware Bayshore



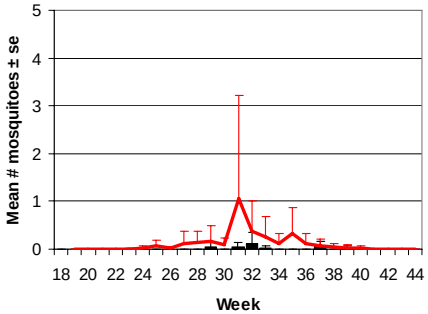
Delaware River Basin



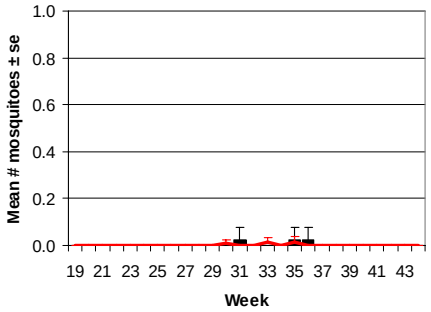
New York Metro



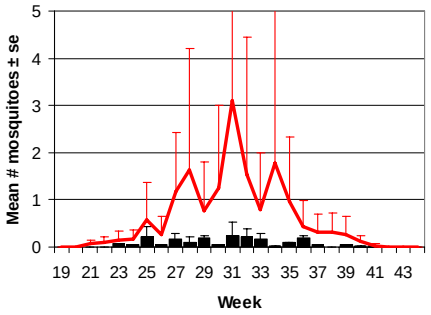
North Central Rural



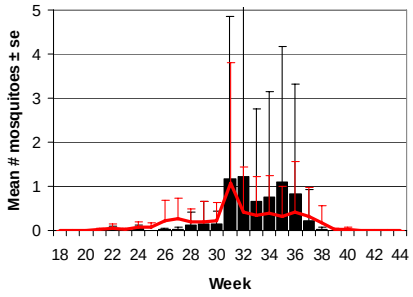
Northwestern Rural



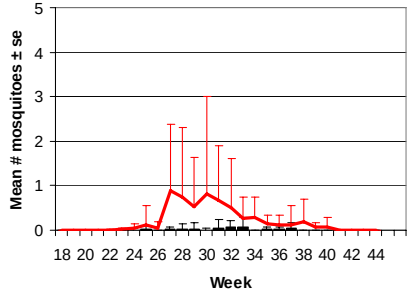
Philadelphia Metro



Pinelands



Suburban Corridor



Comments

Psorophora columbiae is a smaller psorophoran that is preyed upon by its larger brethren. All the psorophorans are floodwater mosquitoes in New Jersey. As such, and as one of the food sources for the larger psorophorans, the population size of this mosquito as well as rain events can regulate the larger psorophorans. This year, population levels were down in several regions including the Agricultural, Coastal, Delaware Bayshore. North Central Rural, Phildelphia Metro and the Suburban Corridor. These were similar regions affecting population levels of *Psorophora ciliata* and *Ps. ferox.* The Delaware River Basin populations appear less affected to drought conditions, likely due to the periodic flooding of the dredge spoils.

Figure 21.

Psorophora ferox – Multivoltine Aedine (*Ae. vexans* Type)

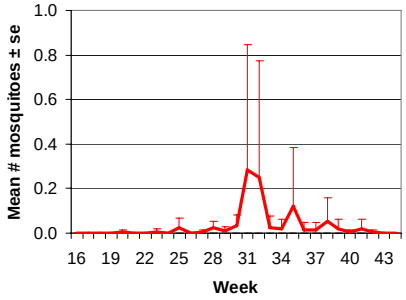
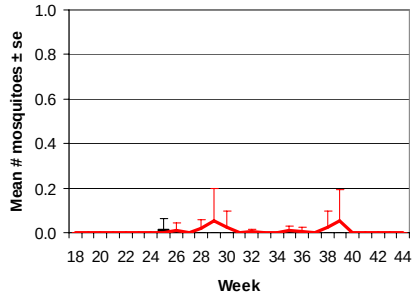
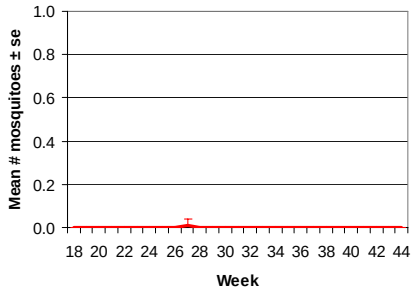
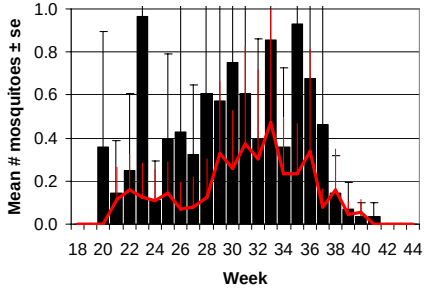
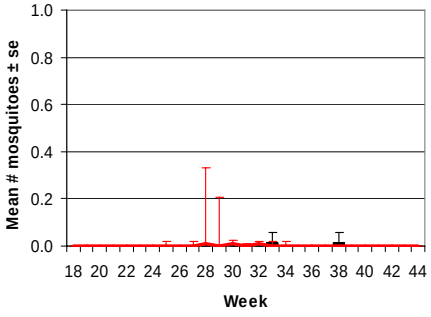
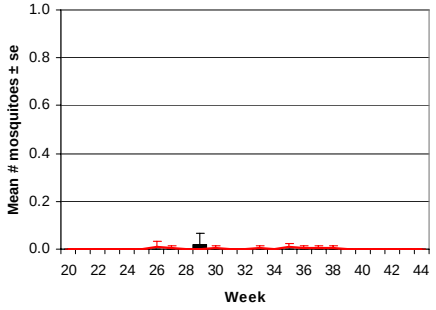
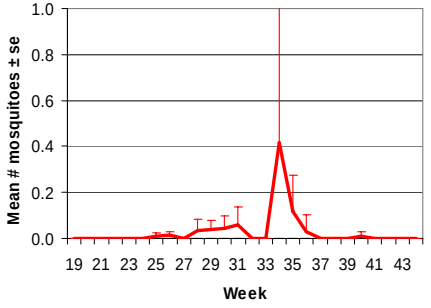
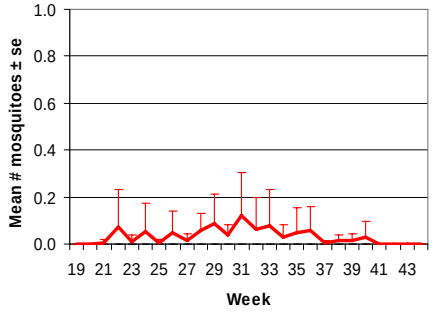
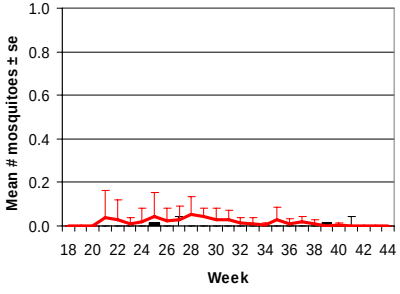
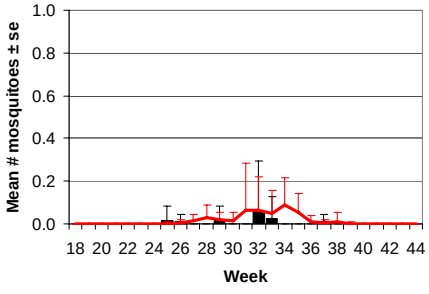
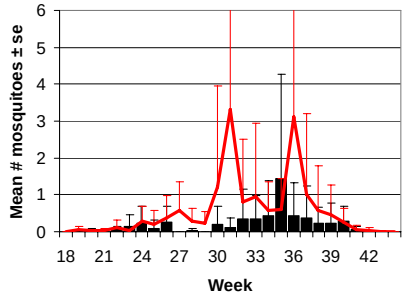
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Psorophora ferox* is a large mosquito that can be an aggressive biter as an adult. They can attack when disturbed at their resting site. As like other multivoltine aedine-type life cycles, *Ps. ferox* can emerge after flooding events. As a larval predator, populations depend not only on rain events but also on the size of the food base. This year saw a decline in the number of *Ps. ferox*, with no or few individuals caught in regions that normally do so: Agricultural, Coastal, New York Metro and Philadelphia Metro. The Delaware River Basin, on the other hand, experienced populations at or above historical levels.	

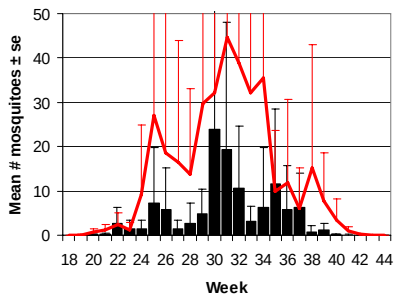
Figure 22.

Aedes sollicitans – Multivoltine Aedine (*Aedes sollicitans* Type)

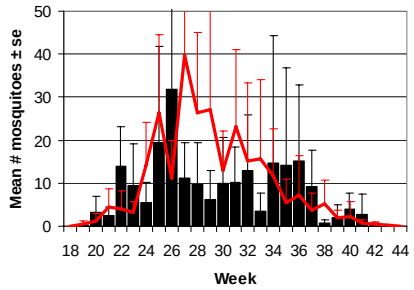
Agricultural



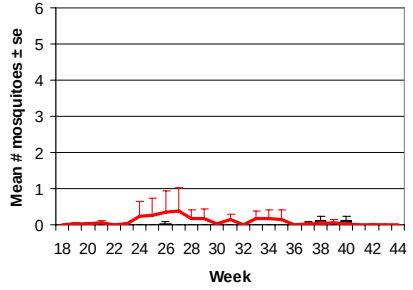
Coastal



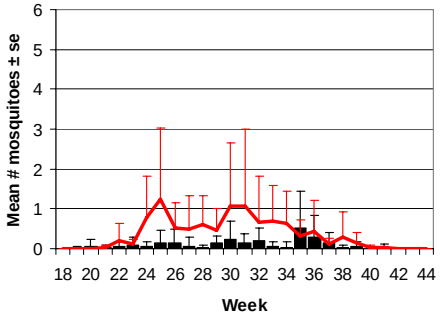
Delaware Bayshore



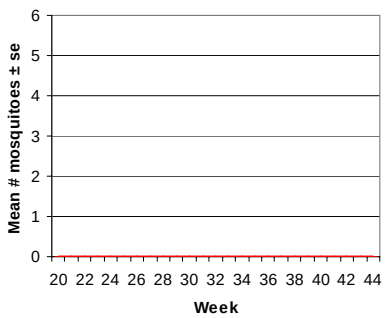
Delaware River Basin



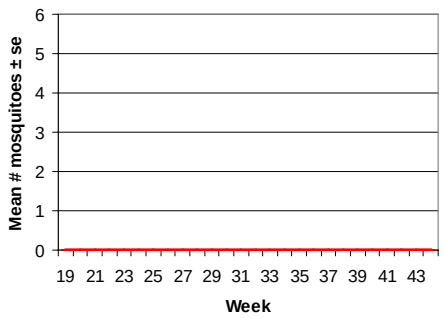
New York Metro



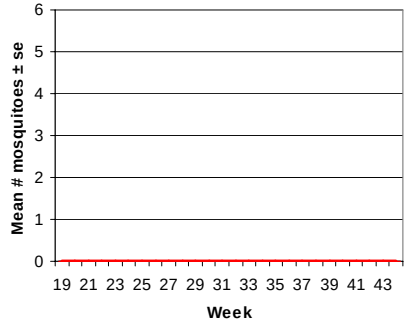
North Central Rural



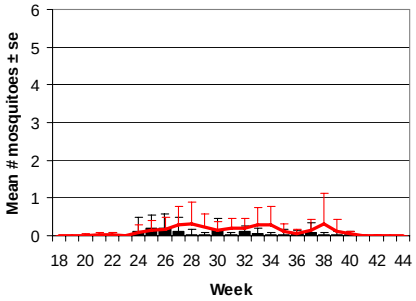
Northwestern Rural



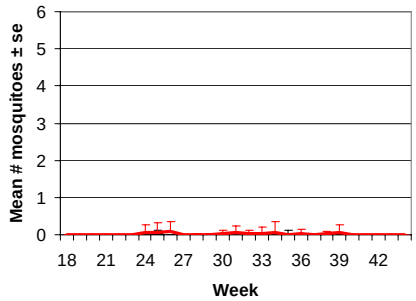
Philadelphia Metro



Pinelands



Suburban Corridor



Comments

Aedes sollicitans is a significant salt marsh floodwater mosquito along the eastern half of the US. Its large numbers and the readiness to bite when daytime resting places are invaded plus its ability to vector human (eastern equine encephalitis) and other (dog heartworm) diseases combine to make this species one to carefully monitor and control. In the Coastal region this year, *Ae. sollicitans* populations were generally below historical values, likely as a result of switching control from Abate and methoprene to *Bti* in counties of the Coastal region. (see also next species summary) There appears to have been from 3 to 4 emergences.

Figure 23.

Aedes cantator – Multivoltine Aedine (*Aedes sollicitans* Type)

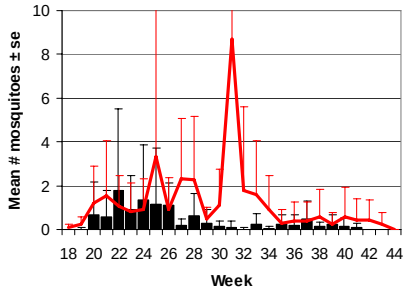
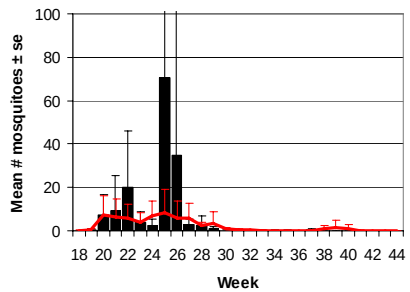
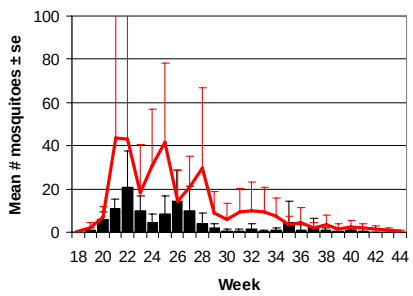
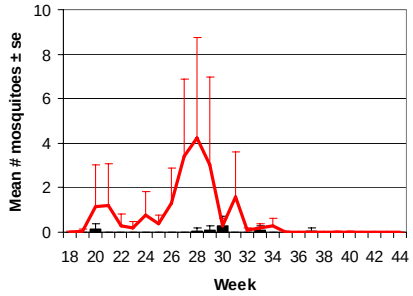
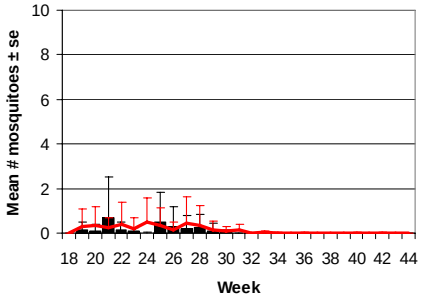
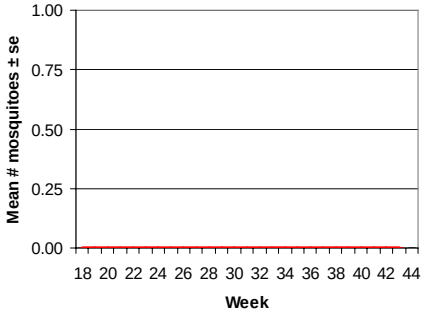
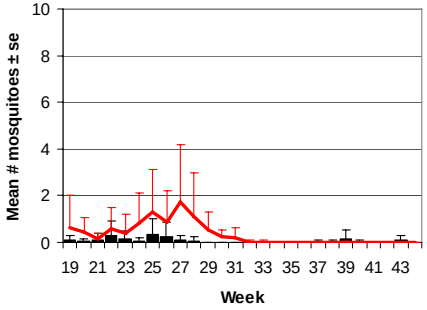
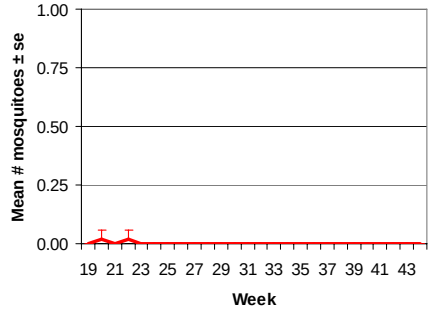
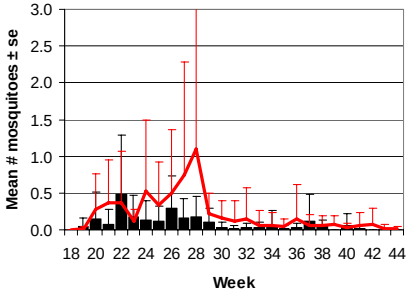
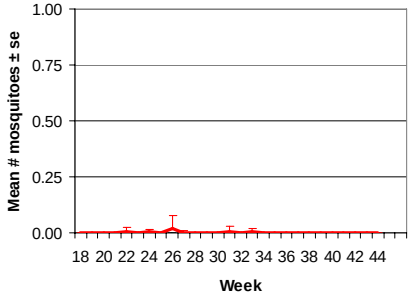
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes cantator* is a facultative salt marsh floodwater species that can exploit both natural and anthropogenic sources of saline habitat. Thus, it appears in the Northwestern Rural region at a textile factory (salt is used to affix dyes to cloth) and in Agricultural areas (fertilizing practices as well as in livestock feed) and subsequently, *Ae. cantator* appears in areas not usually thought of as salt marsh mosquito habitat. This species will generally appear before *Ae. sollicitans*, its largest competitor for resources. This year , *Ae. cantator* reached higher than historical levels in the Coastal region while the Delaware River Basin experienced very low levels of abundance. This increase in activity in the Coastal area may also have been due to a reduced competition by *Ae. sollicitans*, which was targetted for control by counties through the switch to *Bti*.	

Figure 24.

Aedes taeniorhynchus – Multivoltine Aedine (*Aedes sollicitans* Type)

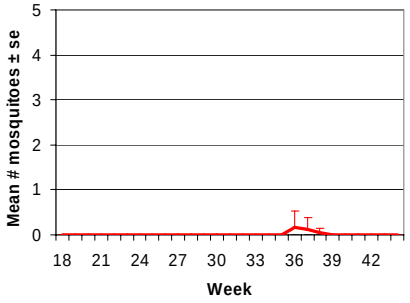
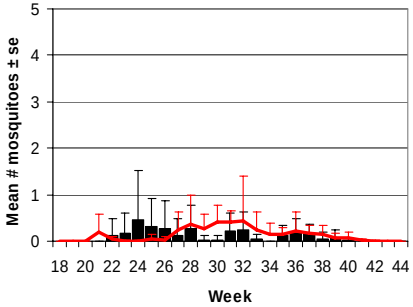
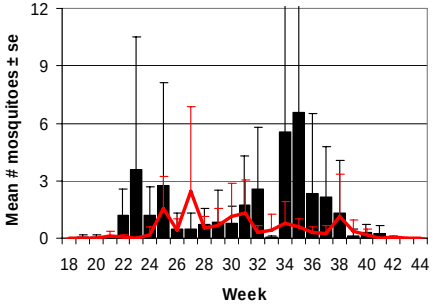
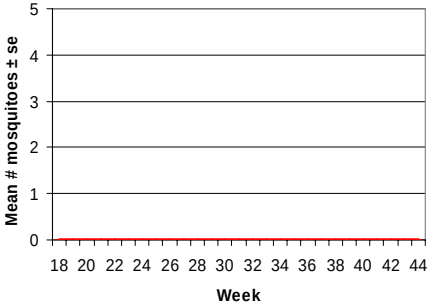
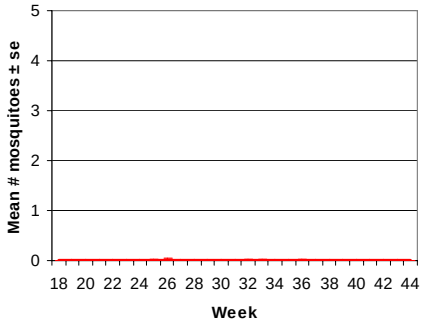
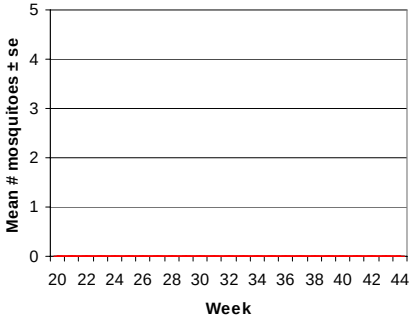
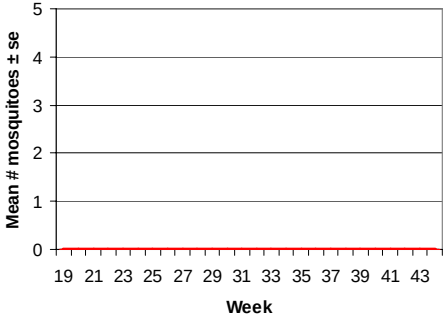
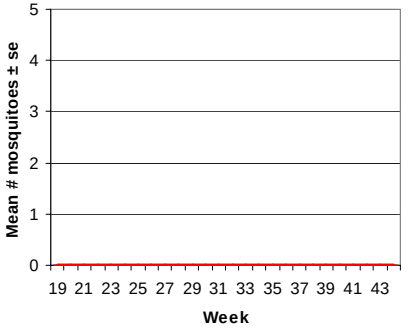
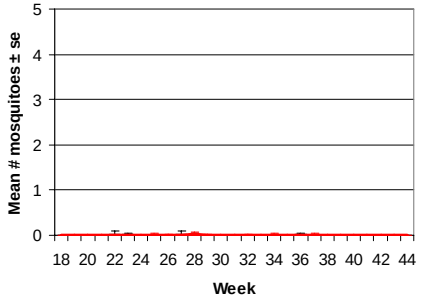
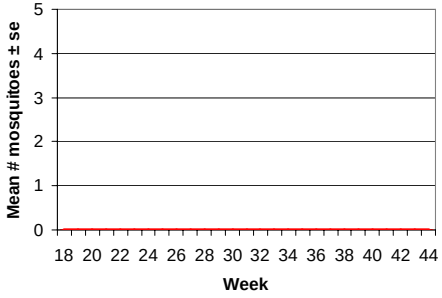
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes taeniorhynchus* is a floodwater species found primarily in coastal salt water habitats. Its most abundant populations are found along the Delaware Bayshore region and can often be found in conjunction with *Ae. sollicitans*, where both can be intolerable pests. Fortunately, *Ae. taeniorhynchus* is not an efficient vector or either EEE or WNV. Migration flights are not as long as *Ae. sollicitans* and this mosquito is usually not seen far from either the Delaware Bayshore or Coastal regions.	

Figure 25.

Aedes triseriatus – Multivoltine Aedine (*Aedes triseriatus* Type)

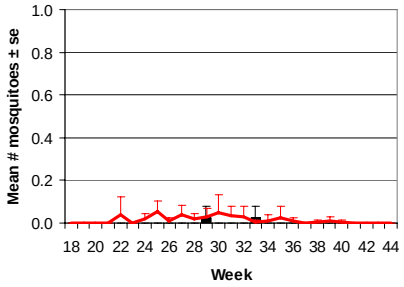
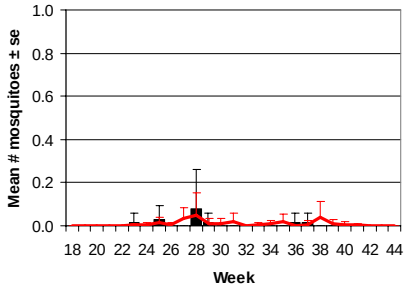
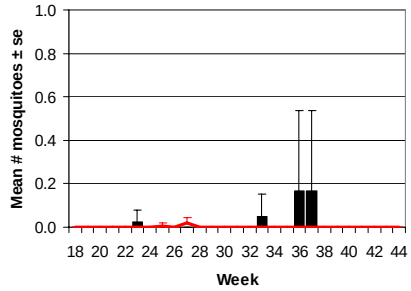
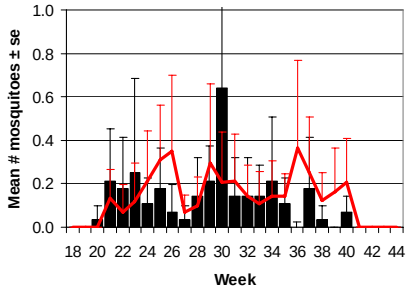
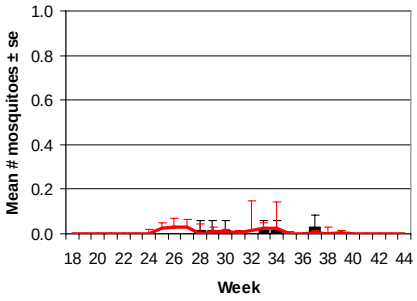
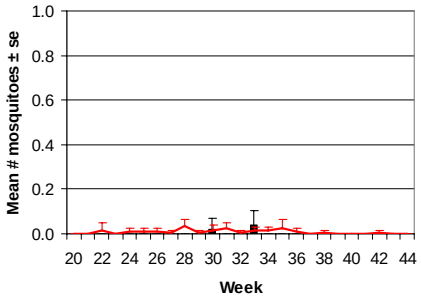
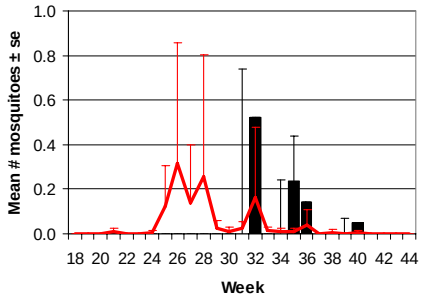
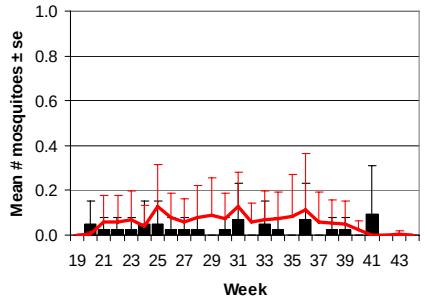
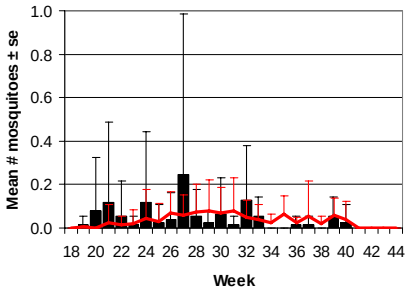
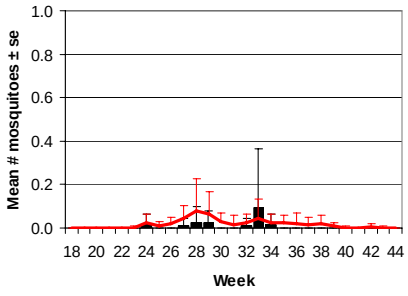
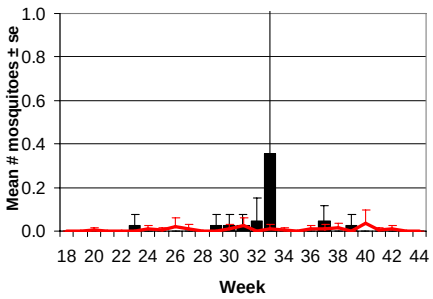
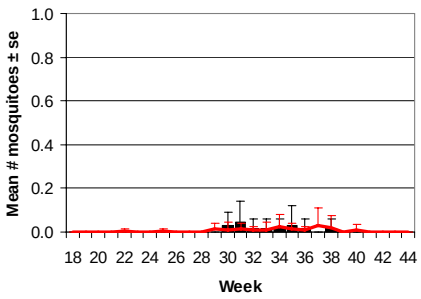
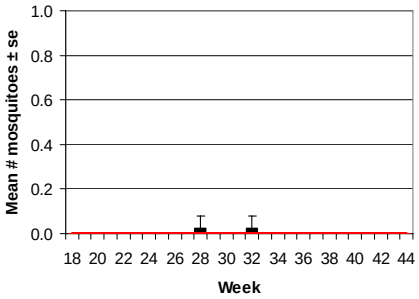
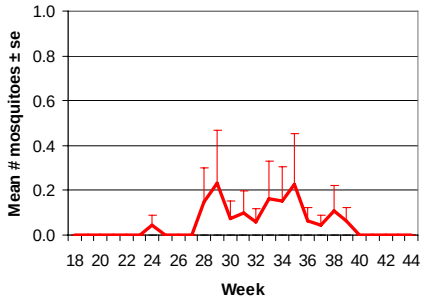
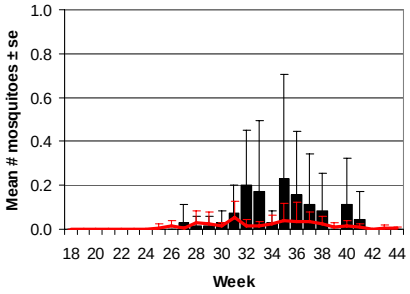
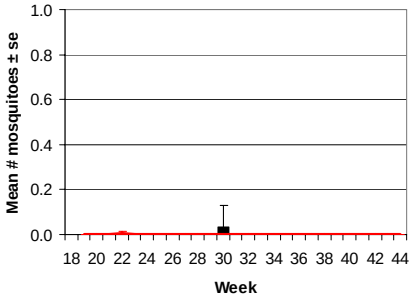
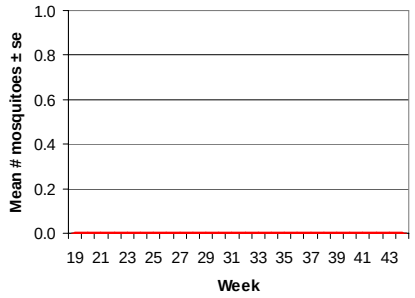
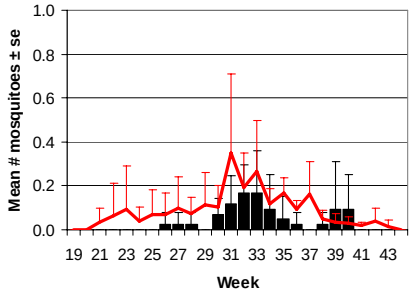
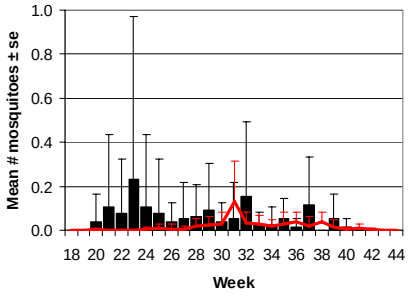
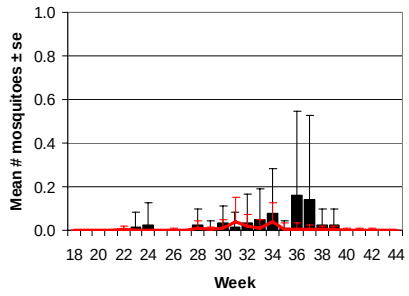
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes triseriatus*, the Eastern Treehole mosquito, is a known vector of La Crosse encephalitis virus. Transmission to the following year is through overwintering eggs (vertical transmission) that develop into infected adults. Amplification is through small vertebrates such as chipmunks and tree squirrels. The CDC reports 3 known cases of La Crosse in New Jersey, all occurring during the mid 1970's. This species is not well attracted to light traps. This year, the largest populations were trapped in the Delaware River Basin. The Northwestern Rural region, which can also have significant populations, first detected these mosquitoes well past the time they are normally seen. Samples from this region also were not submitted until September, suggesting that *Ae. triseriatus* had a late season compared to other years in the northern part of the state.	

Figure 26.

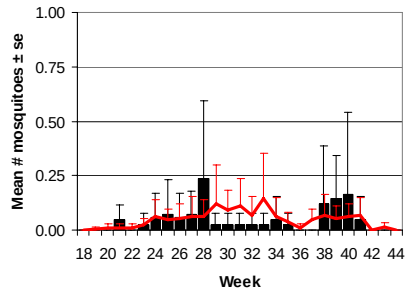
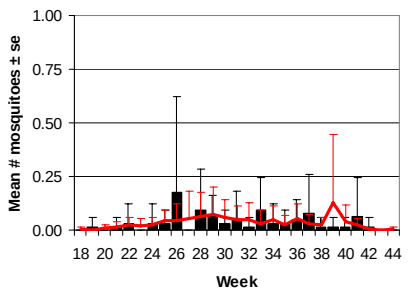
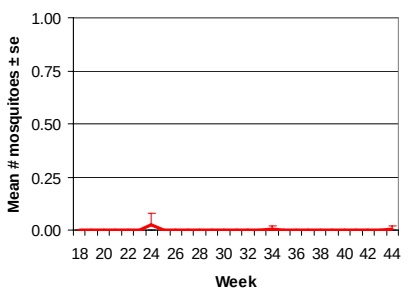
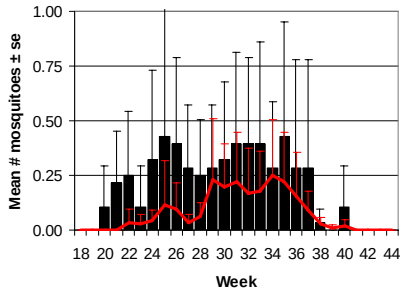
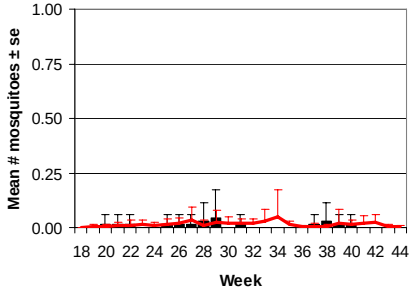
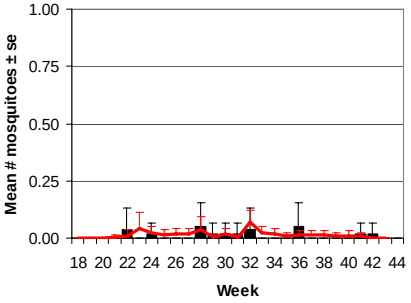
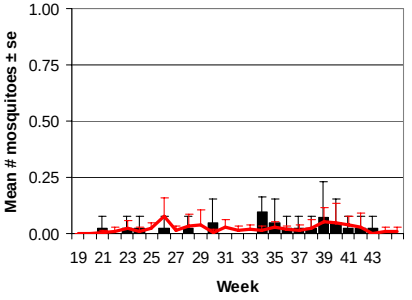
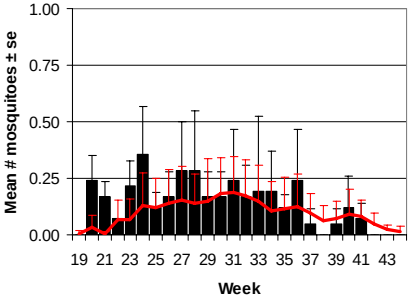
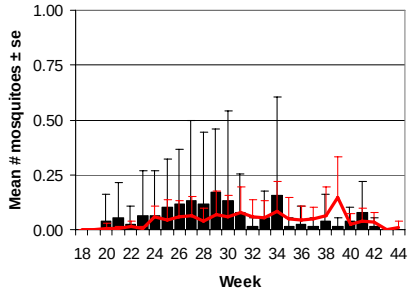
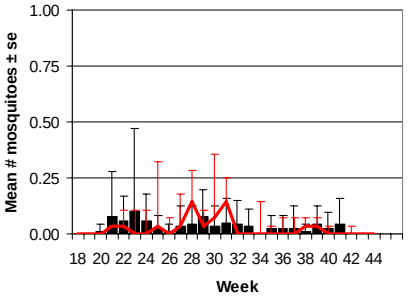
Aedes albopictus – Multivoltine Aedine (*Aedes triseriatus* Type)

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes albopictus* made its first appearance in New Jersey in 1995, ten years after the initial US invasion in Texas. This species has not yet shown up in light traps from the Northwestern Rural region. Populations in the Agricultural, New York Metro, Pinelands and Suburban Corridor experienced periods of above historical activity. This is an aggressive daytime biter that is highly competent for West Nile virus as well as Chikungunya (a virus currently experiencing widespread activity in the Indian Ocean). Travellers from infected areas can transport the virus – i.e., humans are NOT dead-end hosts. This occurred in the Ravenna Province in Italy, when the disease became apparent after the traveller arrived, and the local population of *Ae. albopictus* had been implicated in the likely transmission of nearly 200 cases (Angelini *et al.,* 2007).	

Angelini R, Finarelli AC, Angelini P, Po C, Petropulacos K, Macini P, Fiorentini C, Fortuna C, Venturi G, Romi R, Majori G, Nicoletti L, Rezza G, Cassone A. An outbreak of chikungunya fever in the province of Ravenna, Italy. Euro Surveill. 2007;12(36):pii=3260. Available online: http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=3260

Figure 27.

Aedes japonicus – Multivoltine Aedine (*Aedes triseriatus* Type)

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes japonicus* is an invasive species that recently showed up in New Jersey within the past 10 years. Population levels were sporadic and low until two years ago when each region recorded this species. This year, the Delaware River Basin and the Philadelphia Metro regions both recorded several weeks with population levels higher than historical trends. These trends, despite the low numbers attracted to light traps, track natural population trends (Falco 2002). Pools positive for West Nile virus were found in this vector-competent species.	

Falco RC, Daniels TJ, Slamecka MC 2002 Prevalence and Distribution of *Ochlerotatus japonicus* (Diptera: Culicidae) in Two Counties in Southern New York State. Journal of Medical Entomology: 39(6):920–925.

Figure 28.

Anopheles quadrimaculatus – Culex/Anopheles (*An. quadrimaculatus* Type)

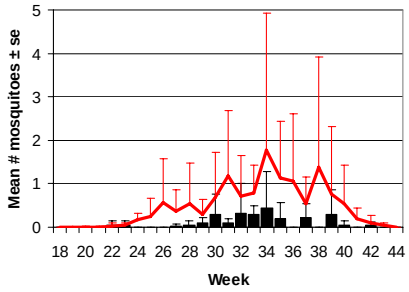
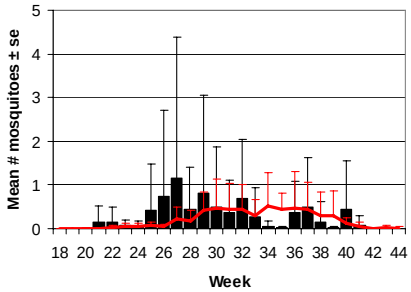
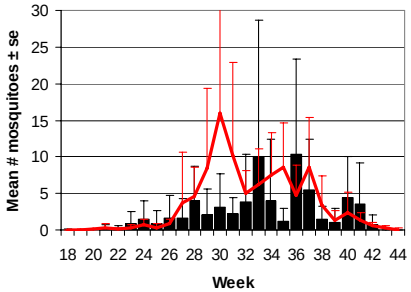
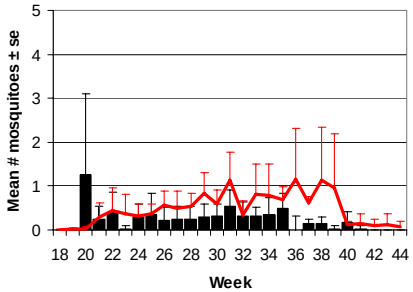
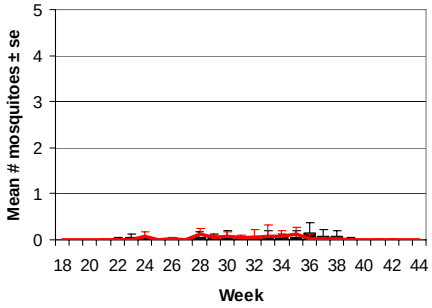
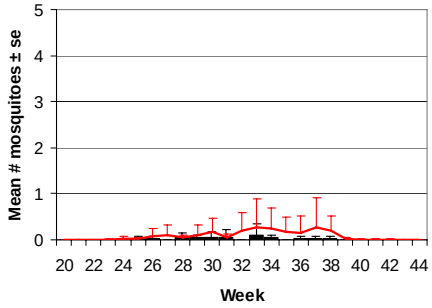
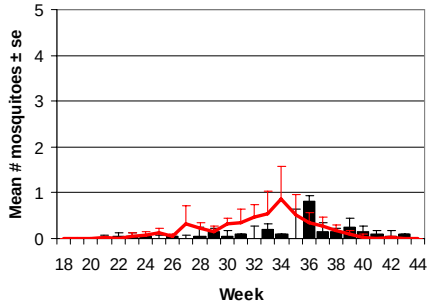
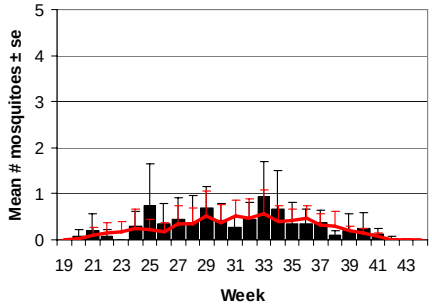
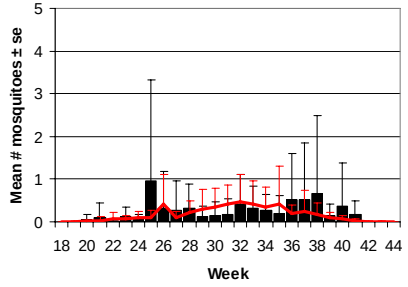
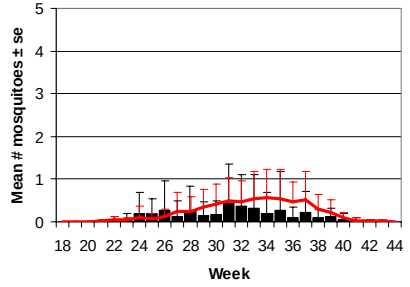
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		This species shows the typical population pattern of building up to a peak and then slowly declining as the season progresses. *Anopheles quadrimaculatus* is the type species for multivoltine mosquitoes that lay non-desiccant resistent eggs on clean water and that overwinters as adult females. *An. quadrimaculatus* will utilize brackish water for larval habitat, allowing it to exploit a variety of habitat that give it greatest range in New Jersey. In the past, *An. quadrimaculatus* has been a significant vector of malaria in New Jersey. This year, the Agricultural region experienced a reduction of this mosquito. Other regions experienced transitory reductions, some of which undoubtedly being the result of mosquito control efforts.	

Figure 29.

Culex erraticus – *Culex/Anopheles* (*An. quadrimaculatus* Type)

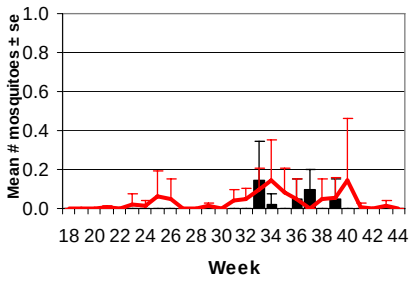
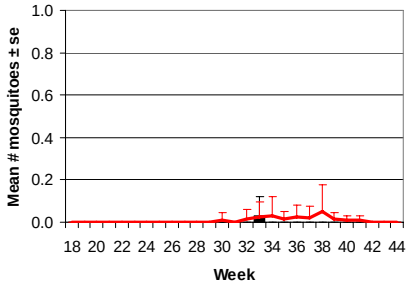
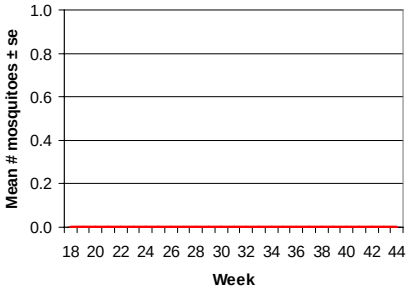
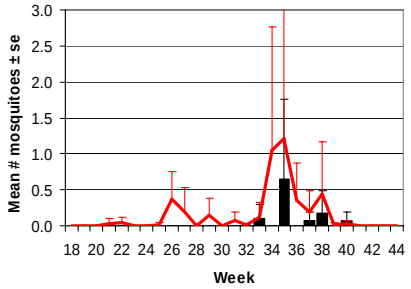
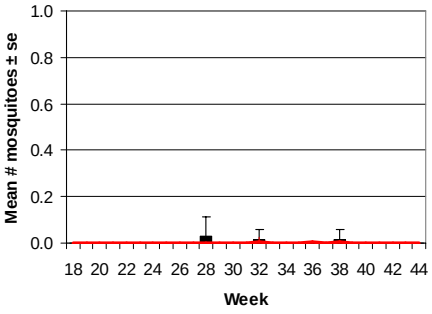
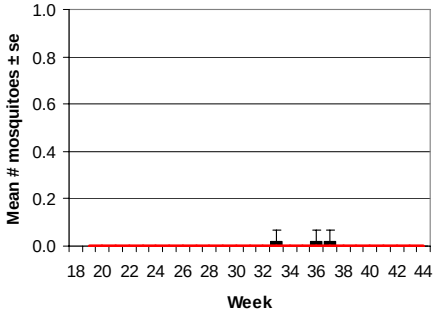
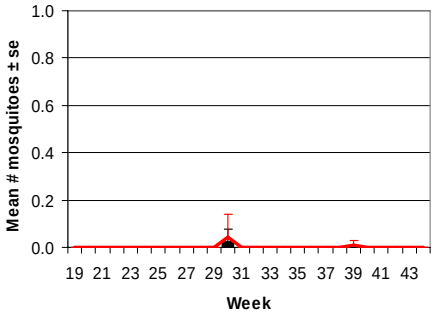
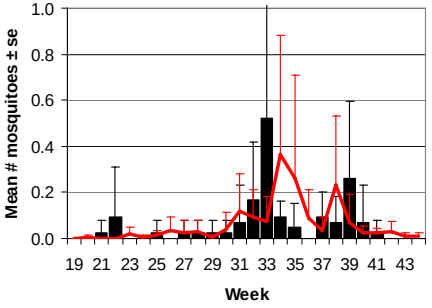
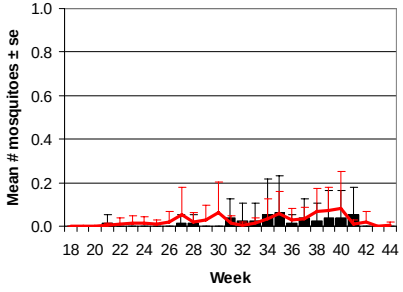
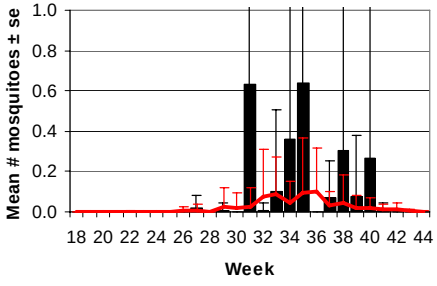
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Culex erraticus* was first detected in New Jersey in the late 1960's. For most of the years since then, this mosquito has been thought of as rare. Recently, populations have begun to show up more frequently in traps seen before as well as being seen for the first time in other areas. Catholic in its diet, *Cx. erraticus* has been implicated in the amplification and transmission cycle of eastern equine encephalitis. Avian hosts (about 30-50% of the diet) range from large Black-crowned Night Herons to tiny Carolina Chickadees. As this species increases its presence in New Jersey, its role may be come clearer with regard to the epidemiological cycle of EEE. Most noteworthy is the increase in the populated areas of the Suburban Corridor and the Philadelphia Metro regions.	

Figure 30.

Culex territans – Culex/Anopheles (*An. quadrimaculatus* Type)

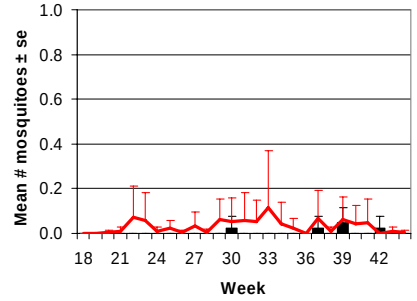
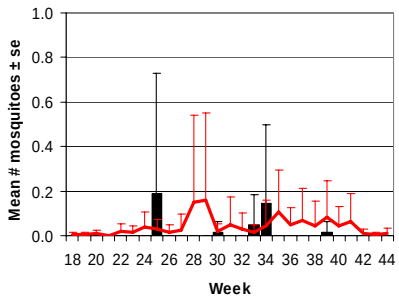
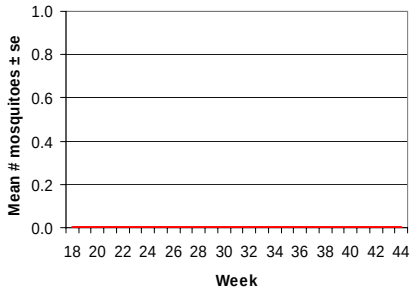
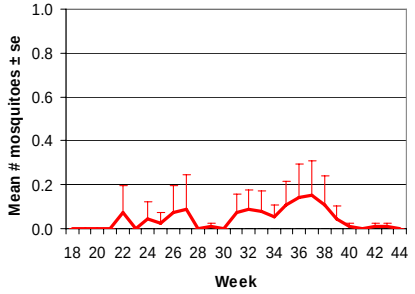
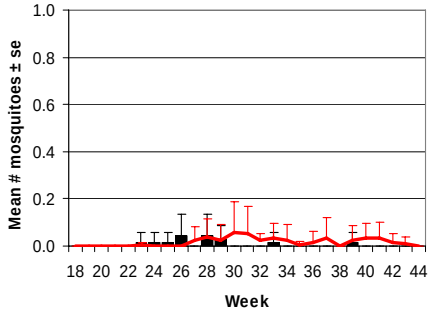
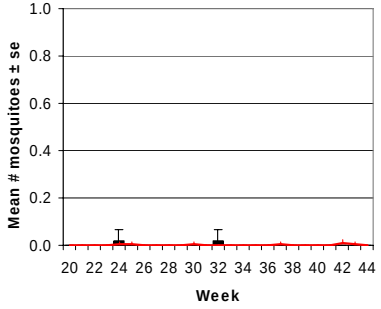
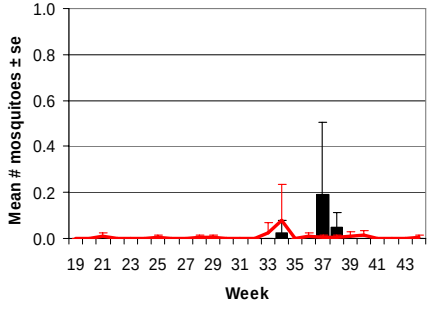
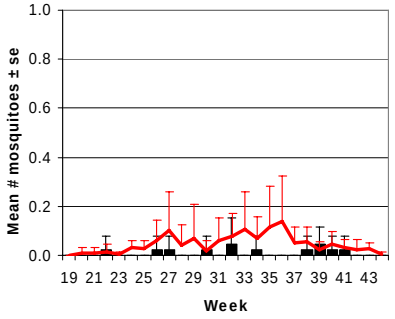
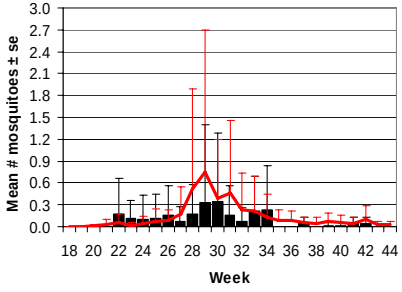
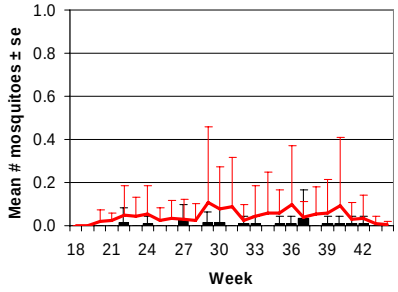
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Culex territans* is a specialized frog-feeder with cold tolerance that allows it to be present when early-season frogs appear. This means that a portion of the population is not likely recorded in the light traps as they have already appeared and disappeared before the traps were turned on. As with other *Culex*, females overwinter in protected hiubernaculae. This species is found throughout most of New Jersey, except for the northern and southern most regions. It is most common in the Pinelands regions although significant populations can also be found in human-populated areas that have provided habitat for their amphibian food source.	

Figure 31.

Uranotaenia sapphirina – Culex/Anopheles (*An. quadrimaculatus* Type)

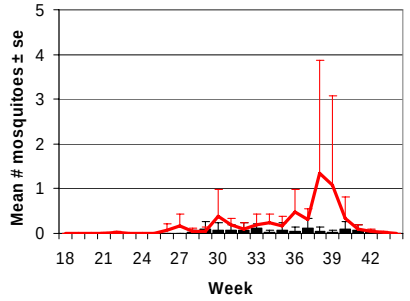
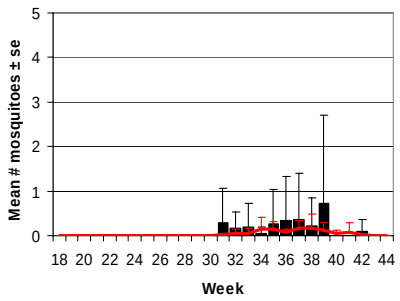
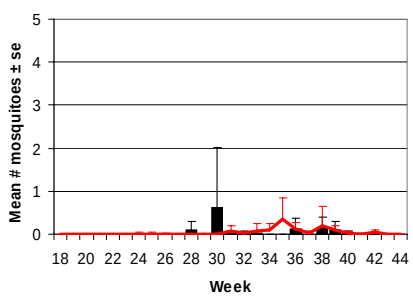
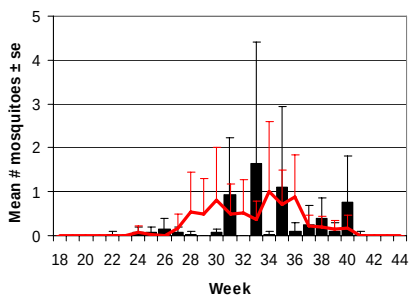
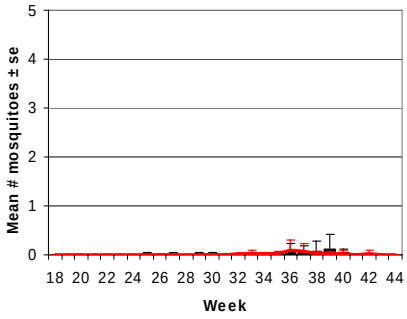
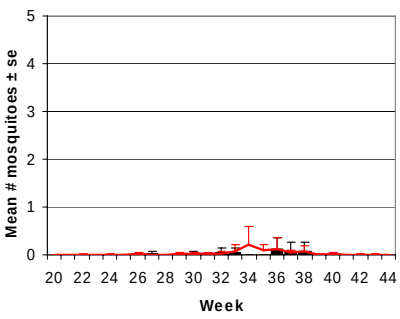
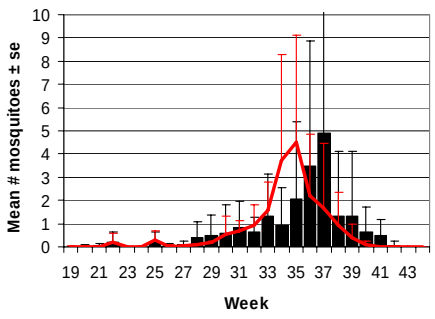
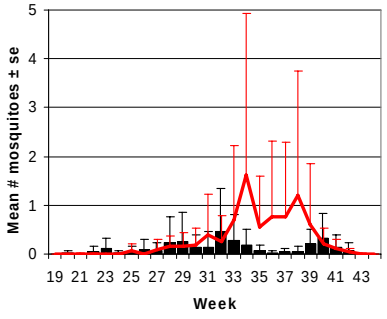
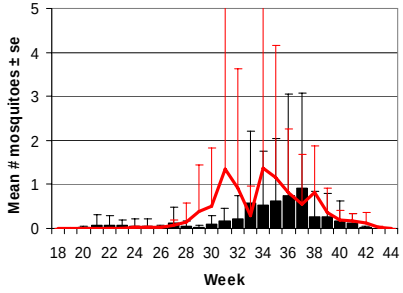
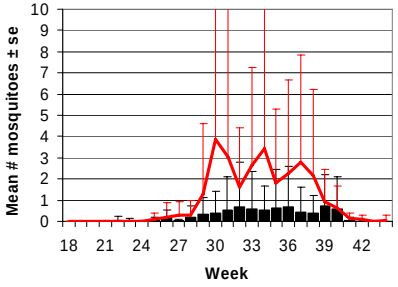
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		This small mosquito is generally considered not to be a health threat, although eastern equine encephalitis and West Nile viruses have been detected in them in the US. Although it is found throughout New Jersey and is often recorded in the light traps of this program and can overwinter near anthropogenic sources, this mosquito apparently bites few humans. Largest populations occur in the Northwestern Rural region and the Suburban Corridor. Typically, populations will build up, then slowly decline. This year, populations appeared suppressed in the Suburban Corridor, the Philadelphia Matro, Delaware River Basin and the Agricultural regions.	

Figure 32.

Anopheles bradleyi – Culex/Anopheles (*Cx. salinarius* Type)

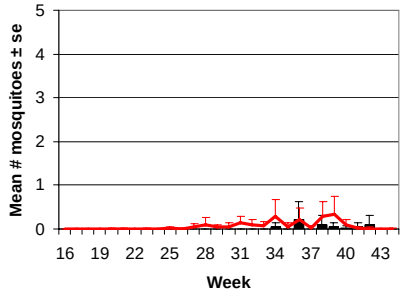
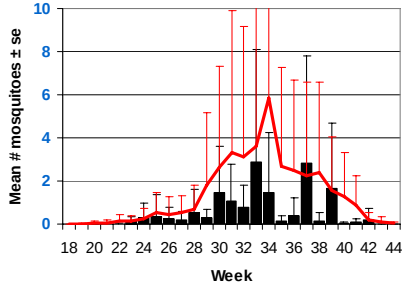
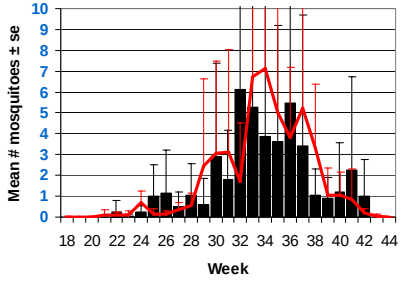
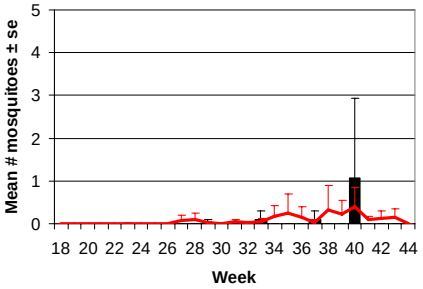
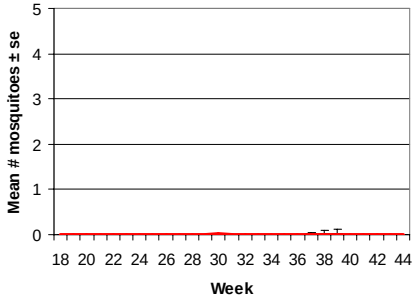
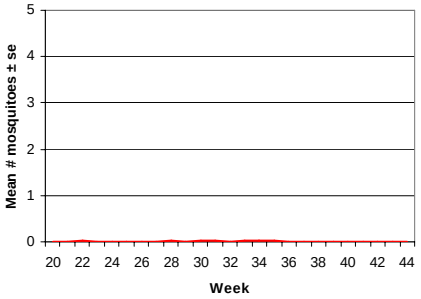
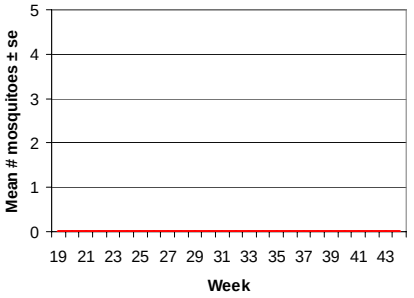
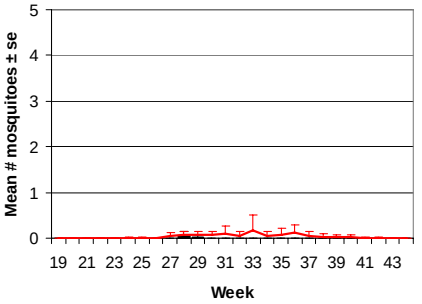
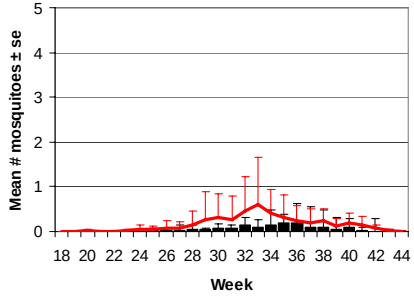
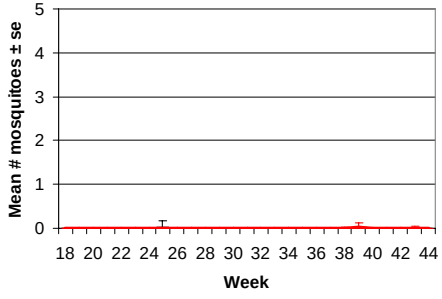
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Anopheles bradleyi* is a salt tolerant floodwater species that exploits more brackish water areas near salt marshes. Its largest populations are found in the Coastal and Delaware Bayshore, but surprisingly not in the Delaware River Basin, where dredge spoil impoundments have produced significant populations in earlier years (Slaff and Crans 1982). This year, populations approached historical levels, although less so in the Coastal region.	

Figure 33.

Mixed *Culex* spp. – Culex/Anopheles (*Cx pipiens/salinarius* Type)

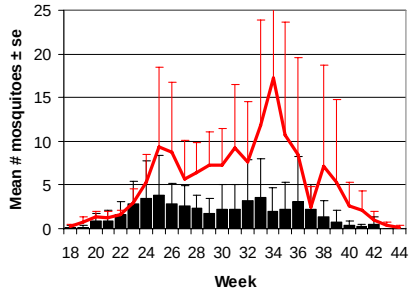
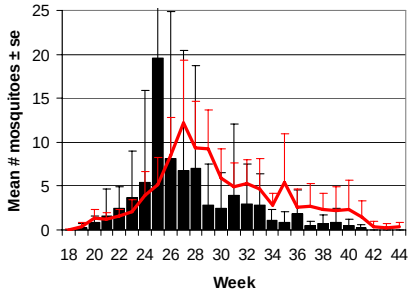
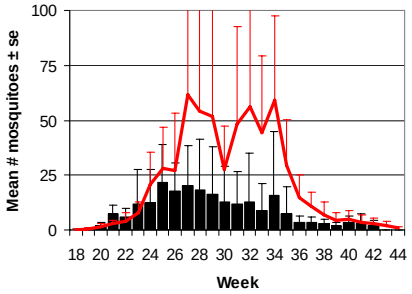
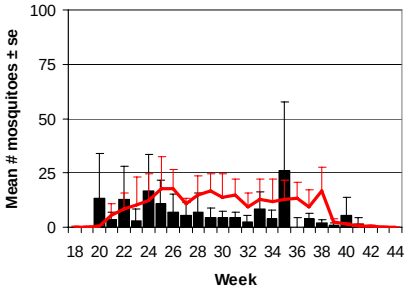
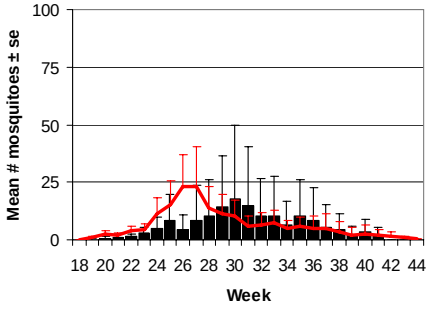
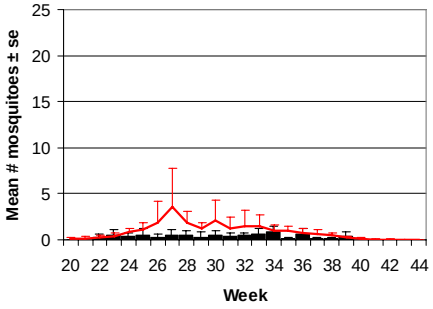
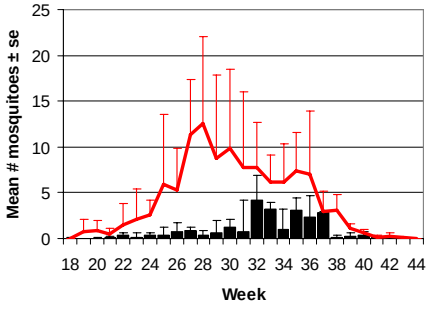
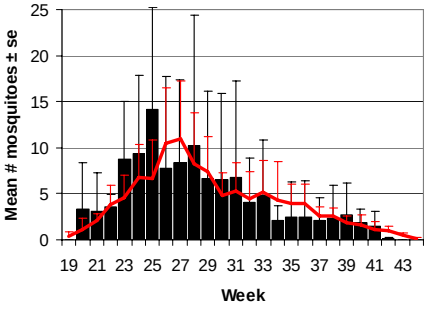
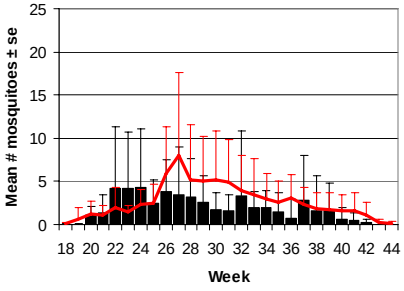
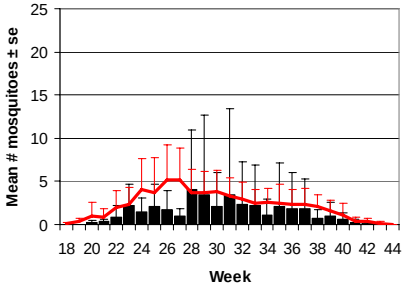
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		Mixed *Culex spp.,* including *Culex pipiens, Cx. restuans* and *Cx. salinarius,* are found throughout New Jersey. Proportions of each species may differ (e.g., more *Cx. restuans* found in the Agricultural region, more *Cx. pipiens* in the Suburban Corridor, and more *Cx. salinarius* in the Delaware River Basin), resulting in somewhat different patterns of emergence. All overwinter as inseminated females. This year, similar patterns were observed at the Agricultural and Delaware Bayshore (with a high degree of Delaware Bayshore influence on the most southerly Agricultural location), and a marked decrease in the population of the Northwestern Rural region. *Culex pipiens* is the major enzootic vector (and likely contributes to the epizootic cycle). *Culex restuans* and *Cx. salinarius* are also being detected with positive WNV pools.	

Figure 34.

Anopheles punctipennis – Culex/Anopheles (*Cx pipiens* Type)

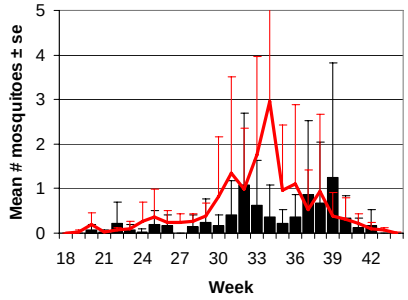
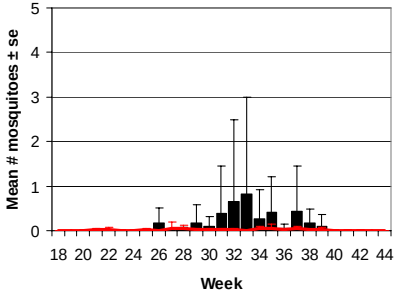
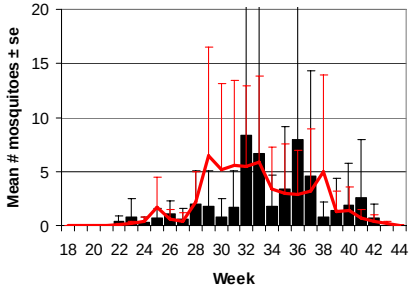
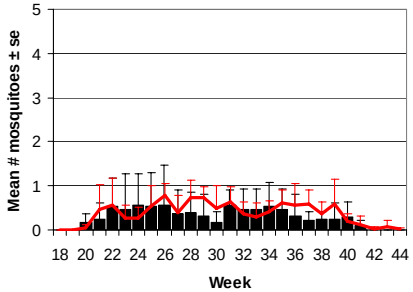
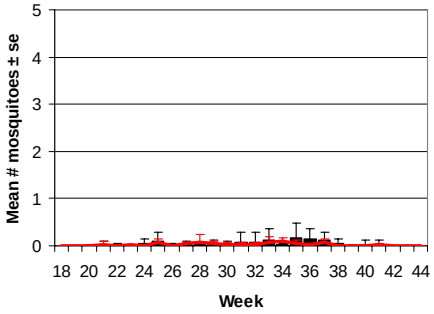
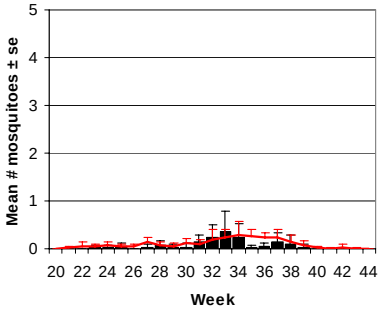
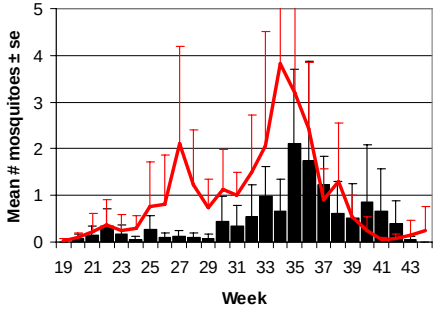
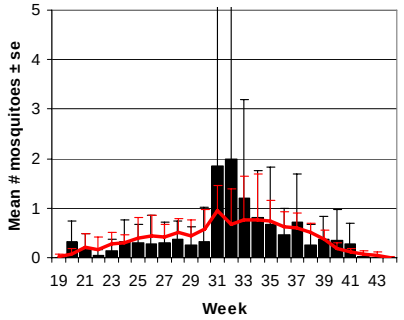
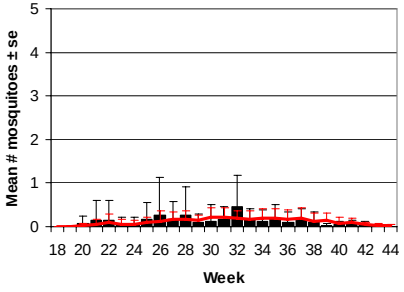
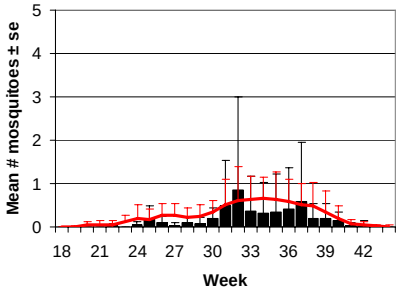
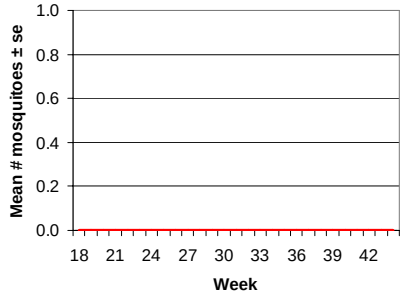
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		Last year, populations of *Anopheles punctipennis* were slightly higher than historical values. This year, several regions that were higher last year show suppressed populations (Agricultural, Delaware Bayshore and the Northwestern Rural regions). Some suppression may be from mosquito control activity, especially as the later two areas can experience pest or public health mosquitoes in large numbers. Several viruses have been isolated in this multivoltine species, including West Nile and Eastern Equine encephalitis. Malaria, caused by the *Plasmodium* protozoan, has also been found in this species, but unlike *An. quadrimaculatus*, *An. punctipennis* is not considered a major vector.	

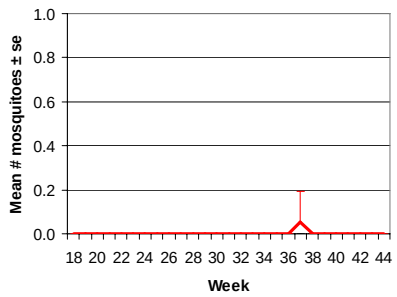
Figure 35.

Anopheles walkeri – Monotypic (*An. walkeri* Type)

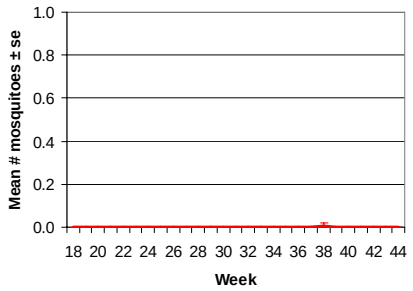
Agricultural



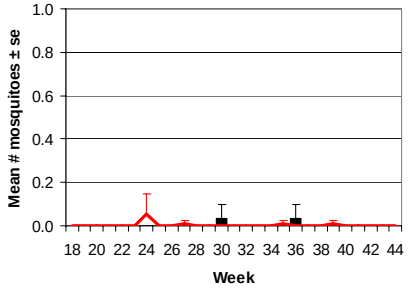
Coastal



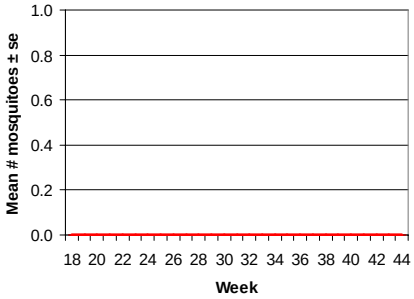
Delaware Bayshore



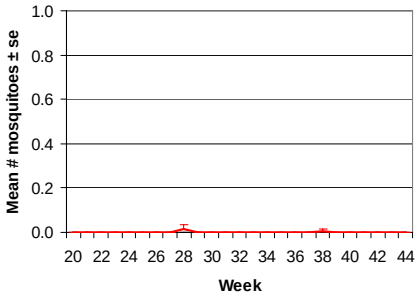
Delaware River Basin



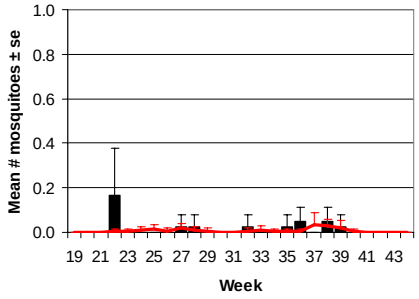
New York Metro



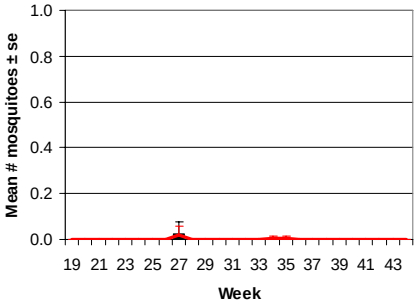
North Central Rural



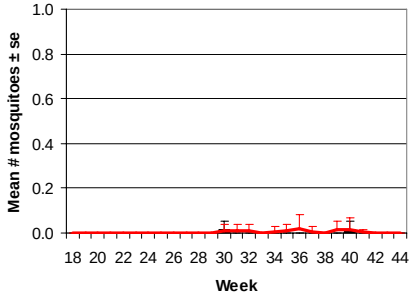
Northwestern Rural



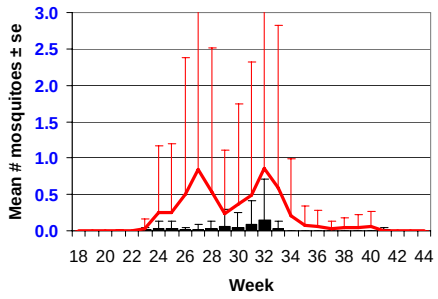
Philadelphia Metro



Pinelands



Suburban Corridor



Comments

Anopheles walkeri is the only anopheline to overwinter as an egg and is thus given its own life cycle classification (Crans 2004). This species has been found in association with beaver dams in the Northwestern Rural region (Duckworth 2002). Primary habitat is found in certain Suburban areas in Morris County as well as more rural areas in Sussex County. Prolonged drought conditions will reduce permanent water habitat and thus reduce the populations that emerge from it. This is the second year in a row that *An. walkeri* populations have been suppressed in the Suburban Corridor. This year's population levels were, however, slightly higher than the previous year.

Figure 36.

Coquillettidia perturbans – Miscellaneous Group

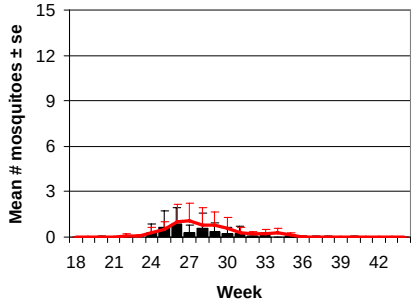
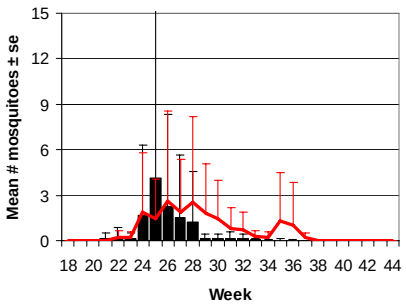
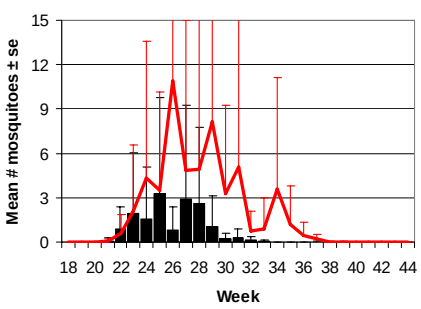
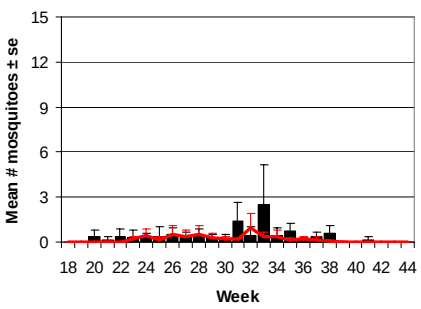
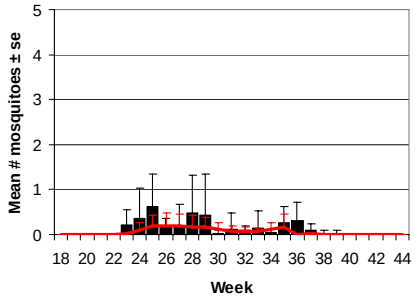
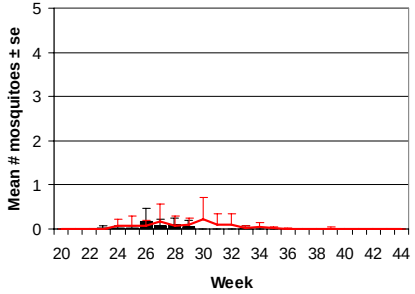
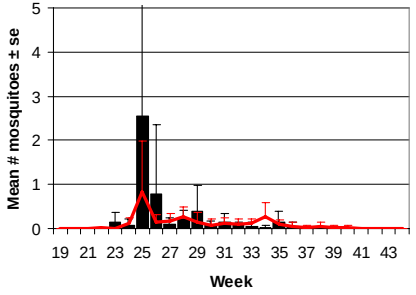
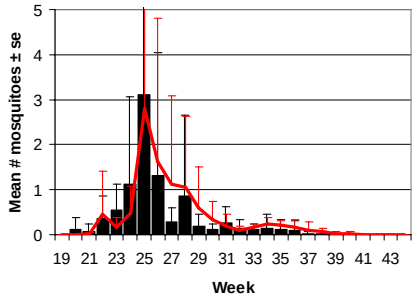
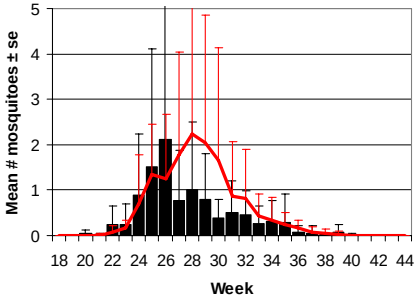
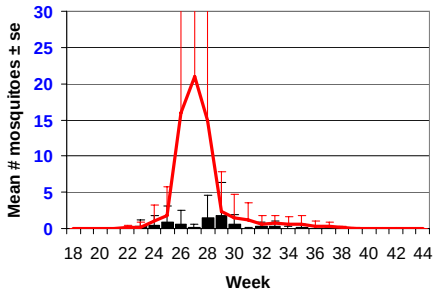
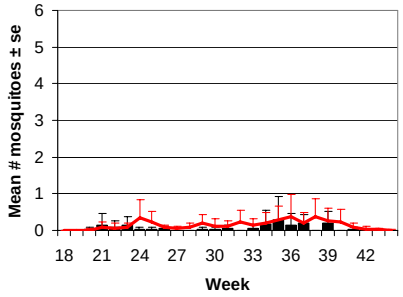
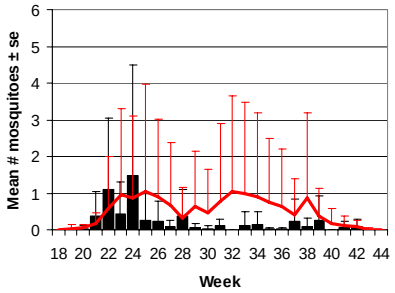
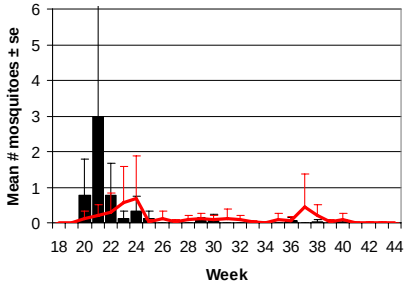
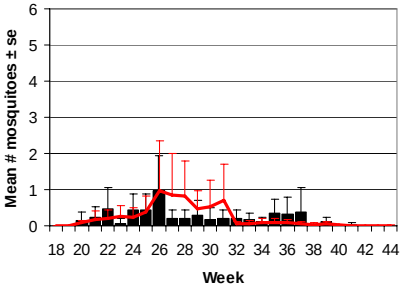
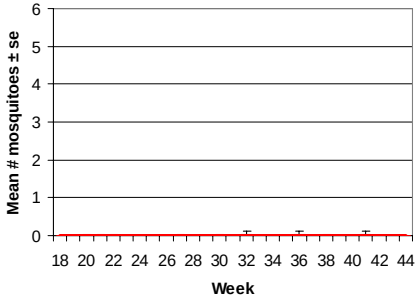
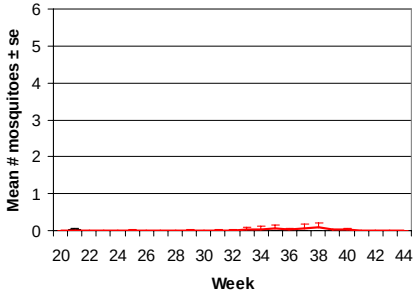
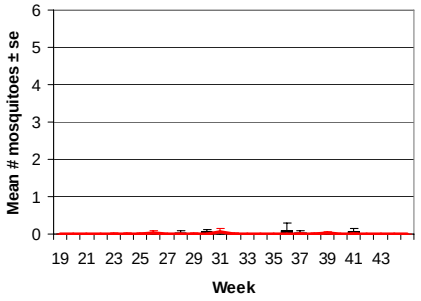
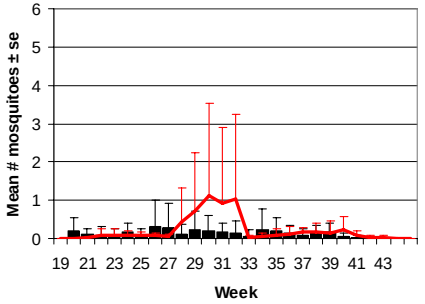
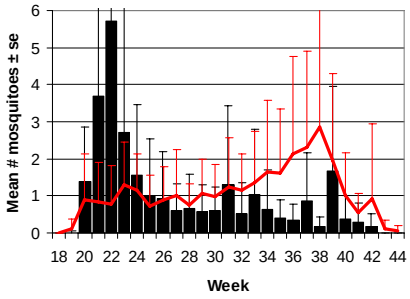
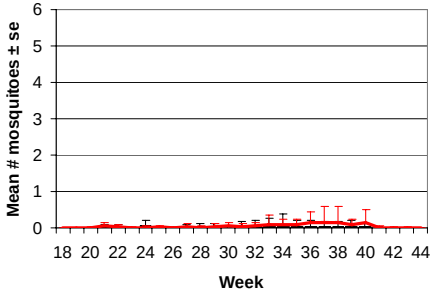
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Coquillettidia perturbans* populations begin as larvae attached on emergent vegetation. They are able to obtain oxygen through the plant's phloem rather than at the top of the water column making this species difficult not only to control but even to assess larval populations. After a particularly large emergence the previous year in the Suburban Corridor, *Coq. perturbans* populations appear to have declined toward more typical levels. The Delaware Bayshore region also experienced a decline from historical levels. This species was found positive for WNV during the year. However, it is an inefficient vector.	

Figure 37.

Culiseta melanura – Unique (*Cs. melanura* Type)

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 enzootic vector of eastern equine encephalitis virus. Evidence suggest that the virus overwinters in avian hosts, and then is picked up by *Cs. melanura* through recrudescence and passed back to naïve avian hosts for amplification. *Cs. melanura* population levels began very high in the primary habitat, the Pinelands region. Adult females were on the wing and at higher levels than historical trends woud suggest in both the Pinelands and the Delaware Bayshore regions. However, this trend did not last as drought conditions likely lowered water tables, and thus decreased larval habitat in root mats (normally thought of as a “stable” environment). Larvae that would have been part of the amplification cycle as adults during the second half of the season did not appear in the usual numbers. Despite this, fourteen pools of *Cs. melanura* were detected as positive for EEE.	

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NEW JERSEY ADULT MOSQUITO SURVEILLANCE
Report for 29 June to 05 July 2008, CDC Week 27

Prepared by Lisa M. Reed, Scott Crans and Dina Fonseca
Center for Vector Biology

This New Jersey Agricultural Experiment Station report is supported by Rutgers University, Hatch funds, funding from the NJ State Mosquito Control Commission and with the participation of the 21 county mosquito control agencies of New Jersey.

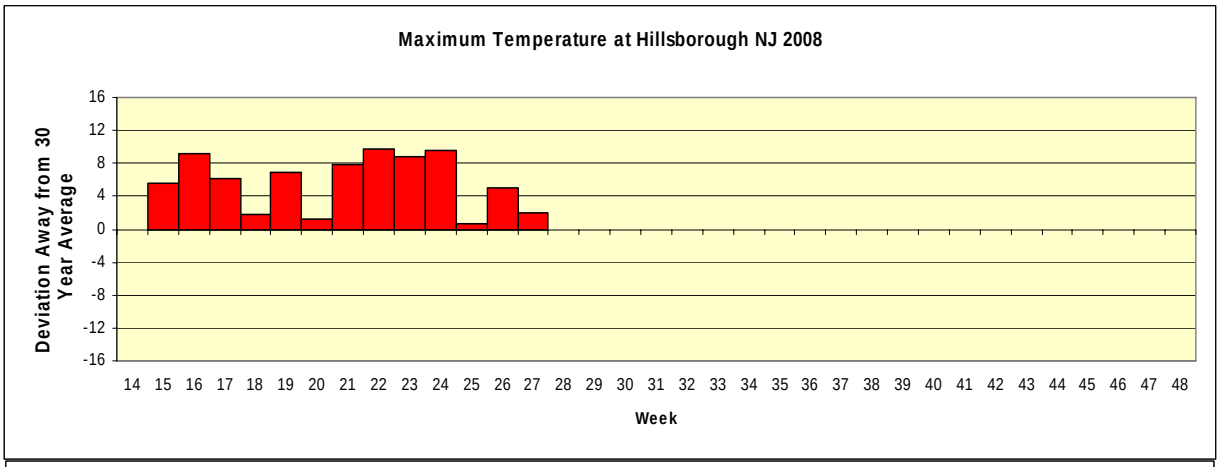
Summary table – Week 27

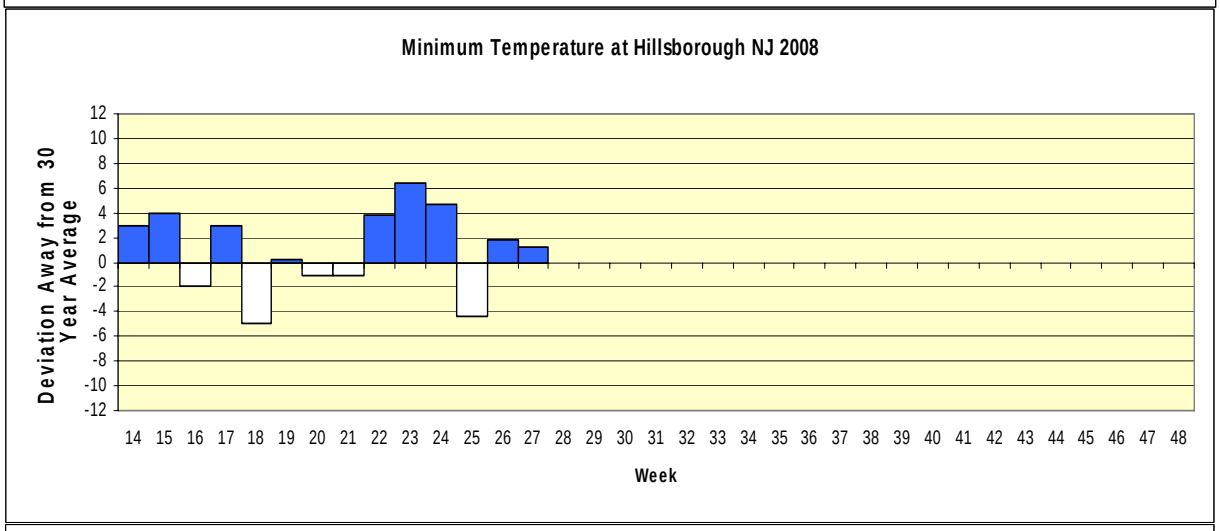
	Aedes vexans			*Culex* Mix			*Coquillettidia perturbans*			*Aedes sollicitans*		
Region	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase
Agricultural	0.11	6.88	0	0.81	4.90	0	0.37	0.67	0	0.03	0.67	0
Coastal	1.60	7.38	0	0.89	11.30	0	0.00	1.82	0	0.89	14.53	0
Delaware Bayshore	0.05	4.90	0	1.33	53.35	0	0.00	4.46	0	0.14	15.49	0
Delaware River Basin	0.00	26.69	0	0.00	9.76	0	0.00	0.34	0	0.00	0.30	0
New York Metro	0.81	4.50	0	1.73	11.59	0	0.03	0.22	0	0.11	0.77	0
North Central Rural	0.00	0.90	0	0.06	1.53	0	0.00	0.00	0	0.00	0.00	0
Northwest Rural	3.77	23.28	0	0.83	4.66	0	0.03	0.00	0	0.00	0.00	0
Philadelphia Metro	3.76	19.00	0	6.90	12.14	0	2.63	0.11	4	0.00	0.00	0
Pinelands	0.94	3.15	0	2.92	6.21	0	0.90	0.77	1	0.03	0.21	0
Suburban Corridor	0.51	12.01	0	1.12	3.94	0	0.13	0.03	4	0.00	0.01	0

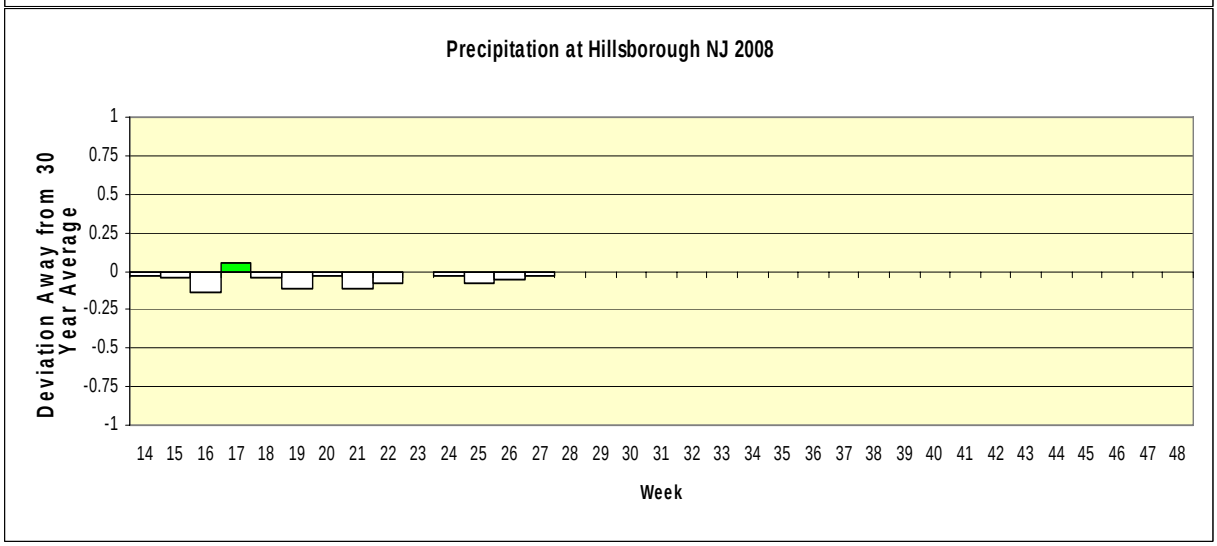
Averages represent data from, at most, the previous 5 years. Increase is a scale of current values from historical values where no difference or a decrease is represented by 0 (blue), up to 50% greater difference by 1 (green), up to 100% greater difference by 2 (yellow), up to 150% greater difference by 3 (orange) and greater than 150% increase by 4 (red). White cells denote increases from an historic zero and thus no value can be appropriately given.

State Summary: The presence of *Coquillettidia perturbans* continues to be felt along the Suburban Corridor, Pinelands and the Philadelphia Metro regions.

Climate Deviations

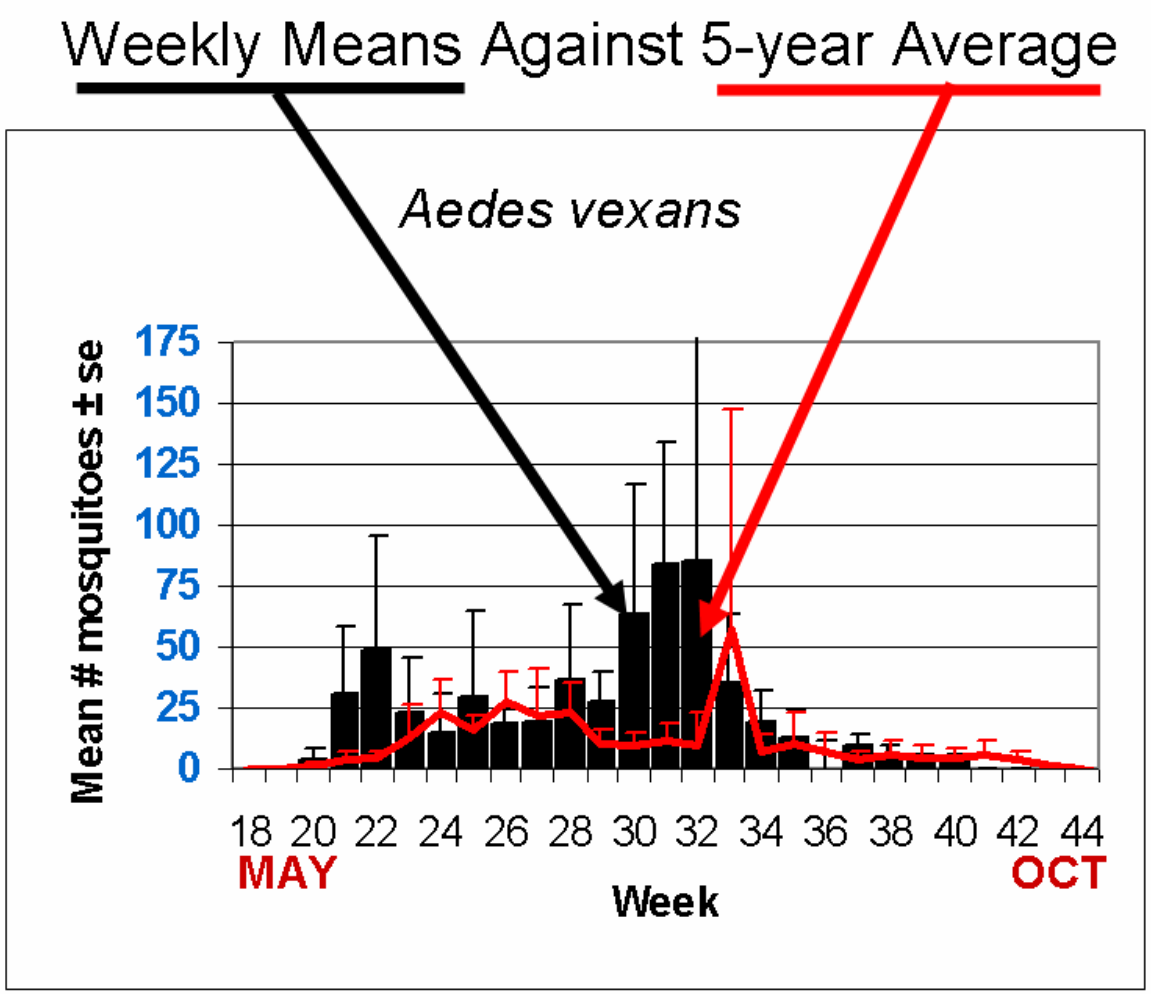




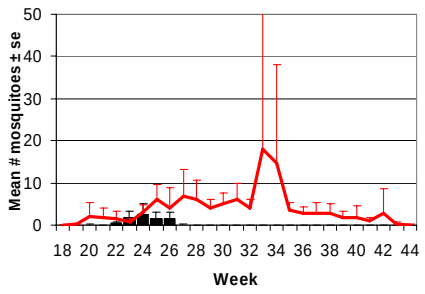
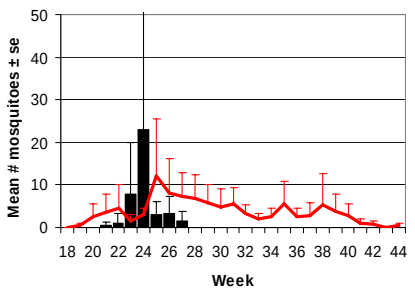
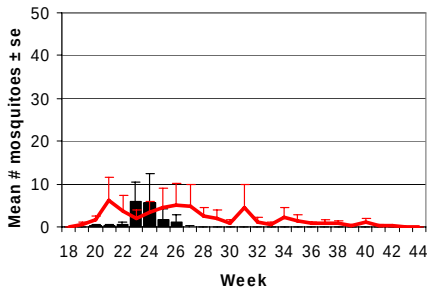
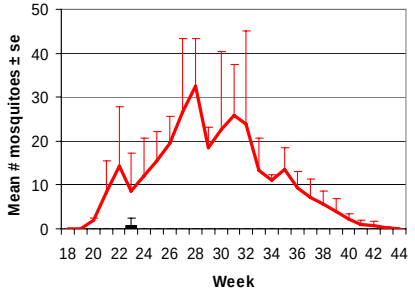
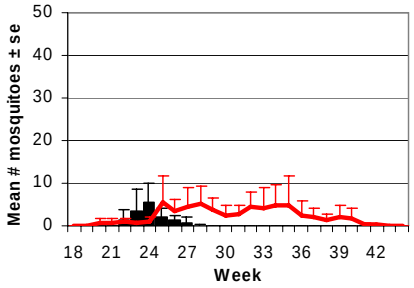
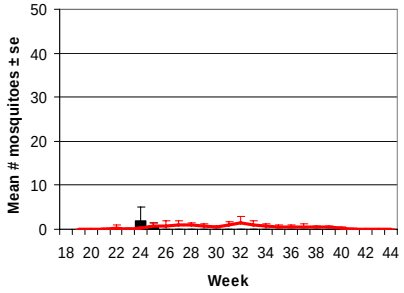
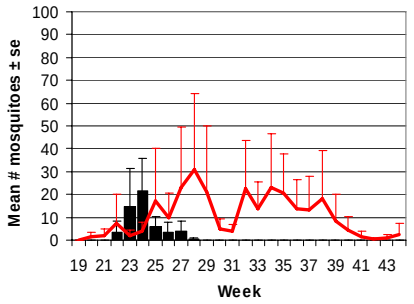
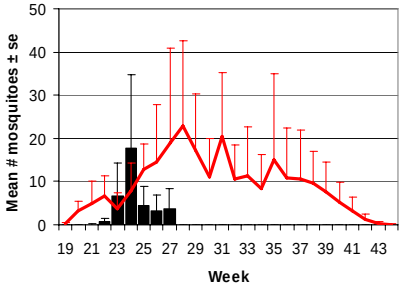
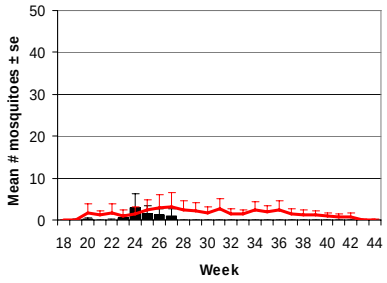
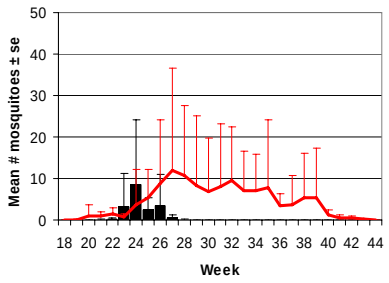


The figures show the average maximum temperature, minimum temperature and precipitation deviations from 30 year averages. Current data is from the Hillsborough NJ weather station (a station close to central NJ which recorded all three parameters and was available online at the NJ state climatologist) while historical data was from the New Brunswick weather station. Color bars above the zero line indicate warmer maximum or minimum temperatures and wetter conditions while white bars indicate cooler temperatures and dryer conditions.

The Species Graphs: The species graph pages include a graph with two plots for each of the ten regions defined on the first page (Agricultural, Coastal, Delaware Bayshore, Delaware River, New York Metro, North-Central, Northwestern, Philadelphia Metro, Pinelands, and Suburban Corridor). Below is an example of one graph from one species within one region. The bar plot show the average number of mosquitoes per trap within the region (weekly means) and line plots show the historical trend as the average number of mosquitoes from the previous 5 years (5-year average). In general, historical data are running means from the previous 5 years, but on occasion, will include data from fewer years. Adjustments are made to account for year discrepancies. Data for this week are from Atlantic, Bergen, Burlington, Camden, Cumberland, Essex, Mercer, Monmouth, Ocean, Union and Warren counties. Note: County data is sent in at a variety of times during the week.

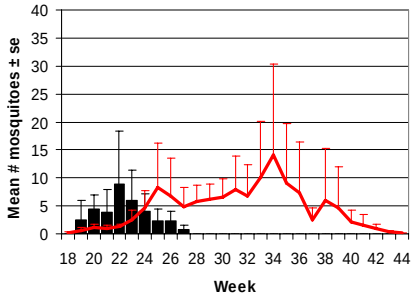


Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

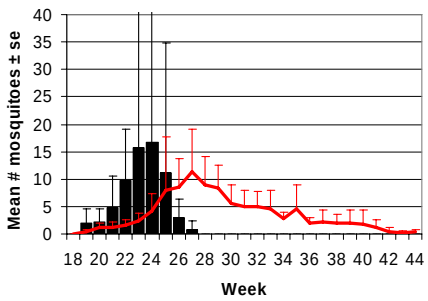
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		Precipitation has been widely scattered throughout the state, with the northern part of the state generally wetter than the southern. Local *Aedes vexans* and other floodwater species have been able to exploit ephemeral resources (rapidly vanishing larval habitat in warm days) to produce annoyances. This species is only moderately competent for West Nile virus, but does contribute significantly to the transmittal of dog heartworms.	

Culex Mix – Permanent Water Species
Multivoltine *Culex/Anopheles* (*Cx. pipiens* Type)

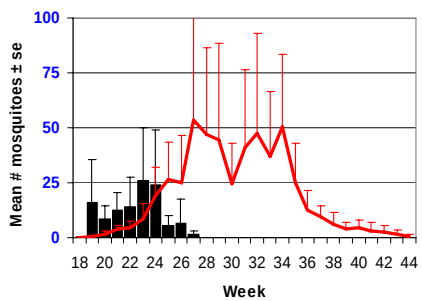
Agricultural



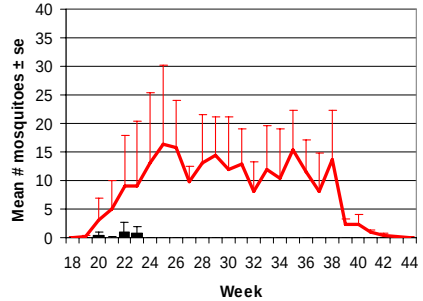
Coastal



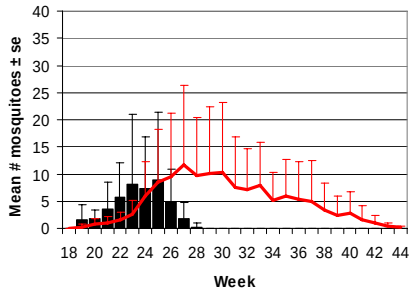
Delaware Bayshore



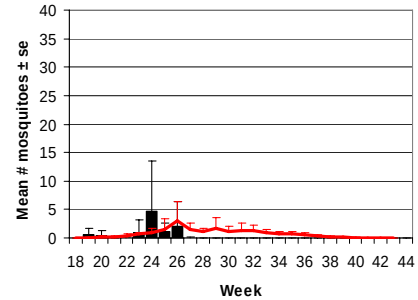
Delaware River Basin



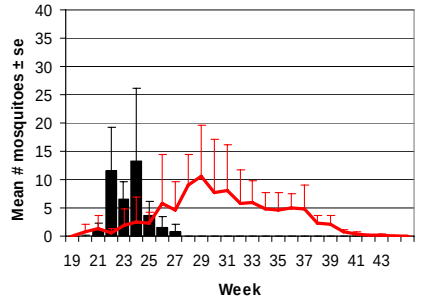
New York Metro



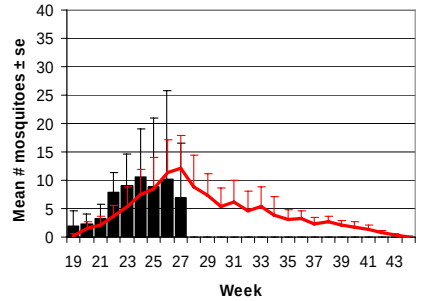
North Central Rural



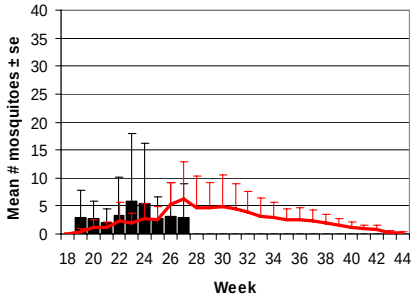
Northwestern Rural



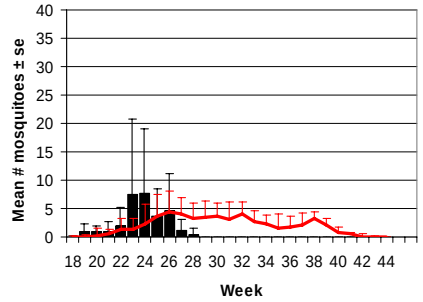
Philadelphia Metro



Pinelands



Suburban Corridor

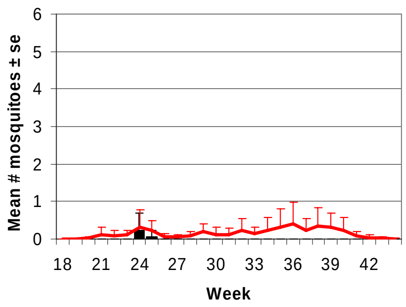


Comments

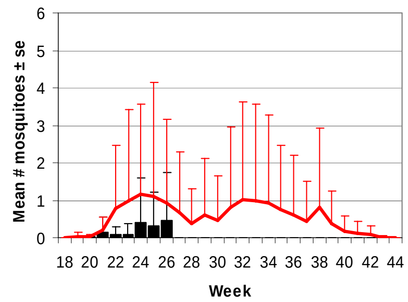
For some regions, *Culex* species (*Cs. pipiens, restuans, salinarius*) may be approaching their peak populations, such as in the Coastal, New York and Philadelphia Metro and Pinelands regions. But the slow decay of population abundance going well into the fall means that these species are around in force to contribute to amplification (*pipiens/restuans*) or transmittal (all three *Culex)* of West Nile virus.

Culiseta melanura – Miscellaneous Group
Unique (*Cs. melanura* Type)

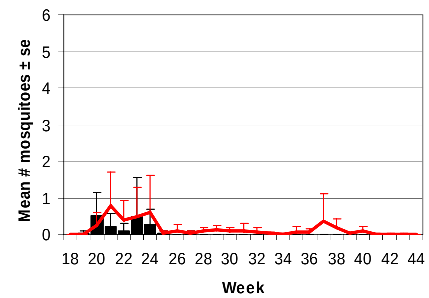
Agricultural



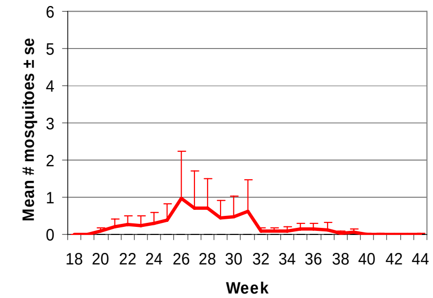
Coastal



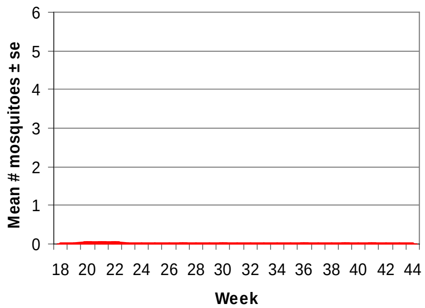
Delaware Bayshore



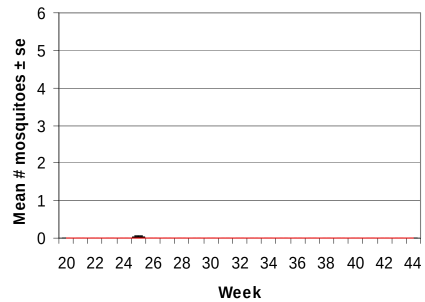
Delaware River Basin



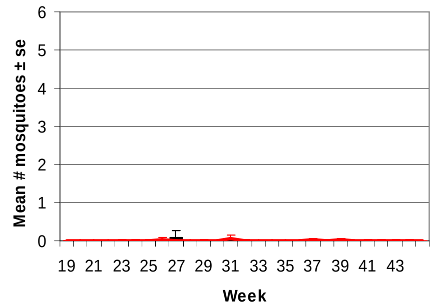
New York Metro



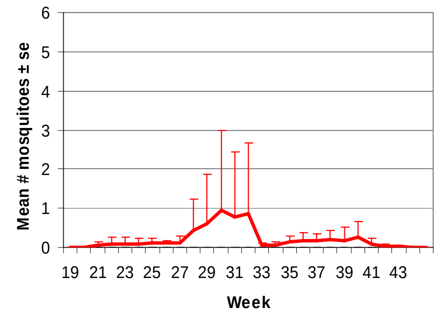
North Central Rural



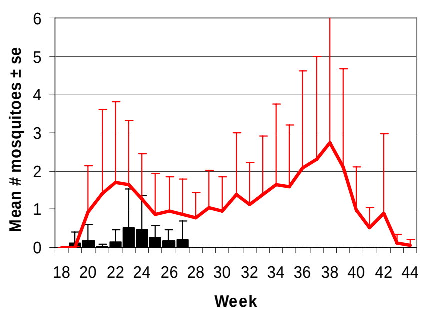
Northwestern Rural



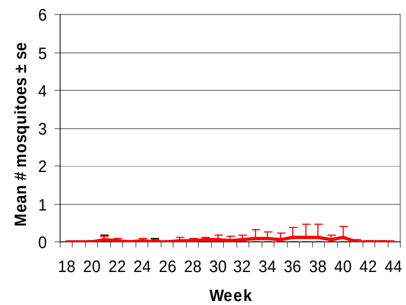
Philadelphia Metro



Pinelands



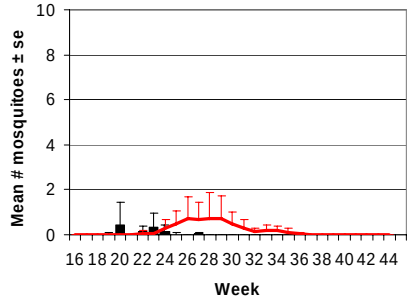
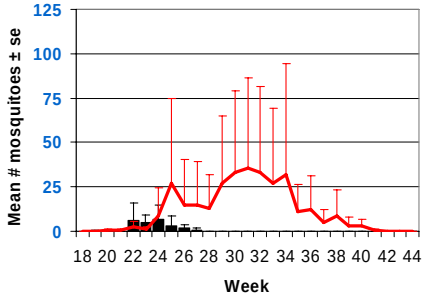
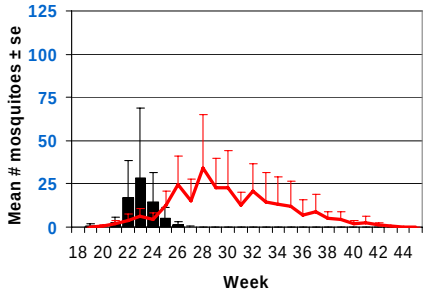
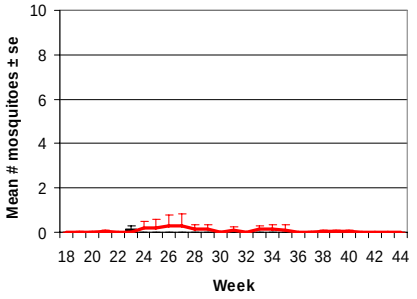
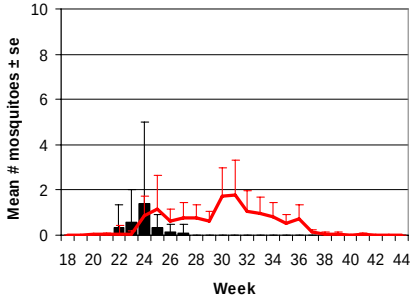
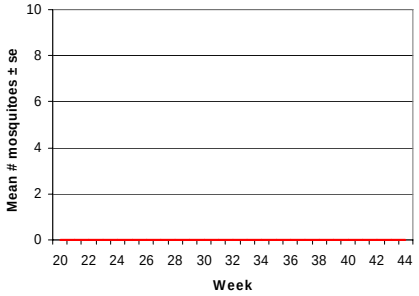
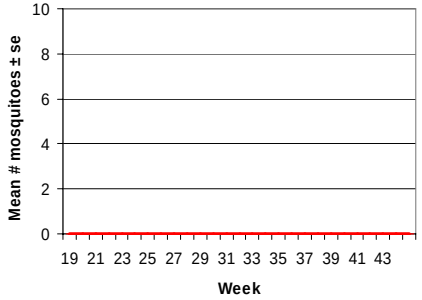
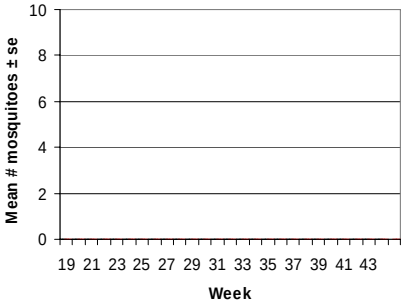
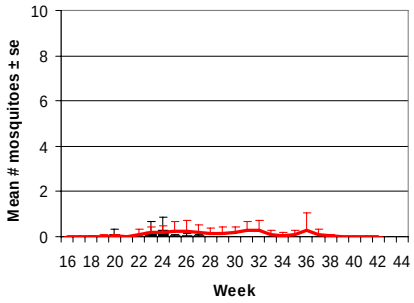
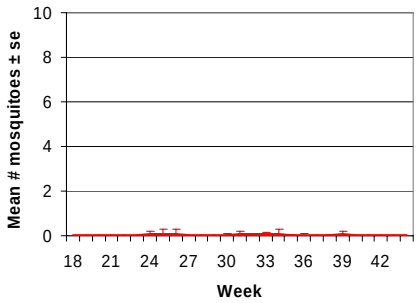
Suburban Corridor



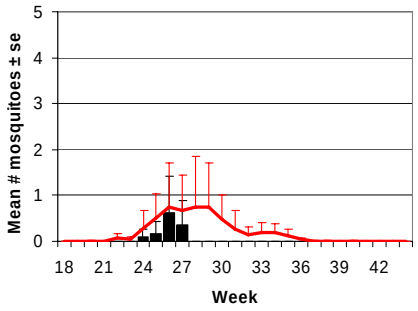
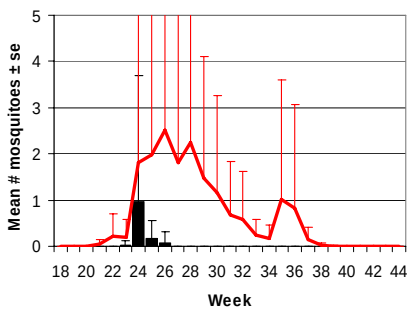
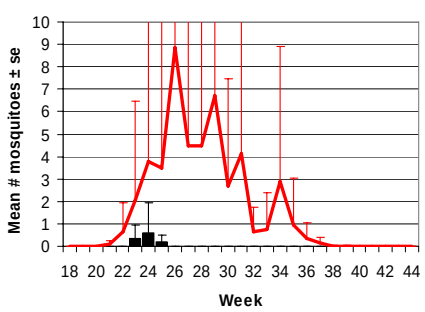
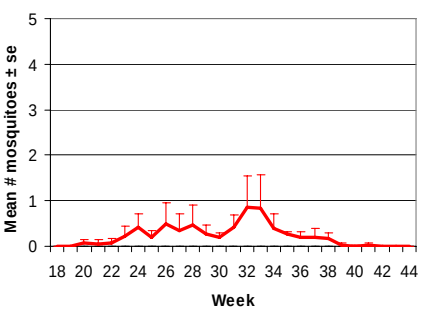
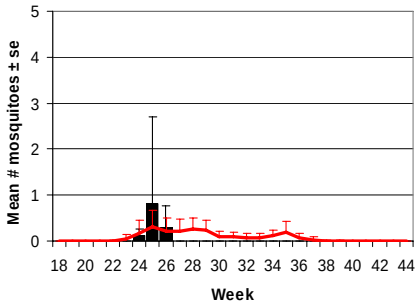
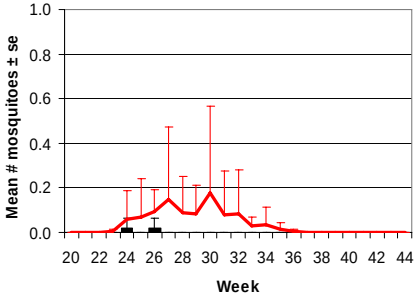
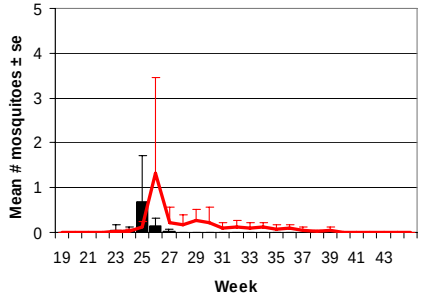
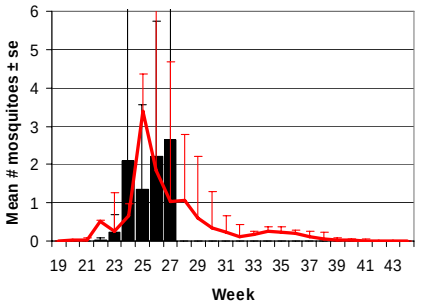
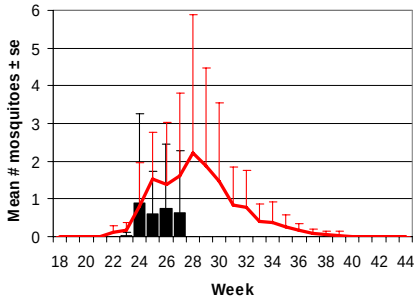
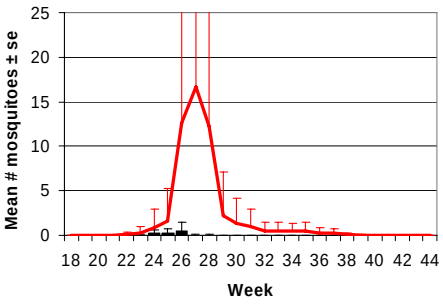
Comments

Culiseta melanura populations have been very low in both the Vector Surveillance program which uses resting boxes as well as the light traps in this program. This appears to be a continuing trend for the past several years at several of the traditional monitoring sites for eastern equine encephalitis. These sites are generally set in pine plantations near White Cedar or Red Maple swamp habitat. Habitat changes both within larval areas or collection sites (salt water intrusions or an opening up of the canopy within adult resting sites) may have contributed to these changes.

Aedes sollicitans - Salt Floodwater Species
Multivoltine Aedine (*Ae. sollicitans* Type)

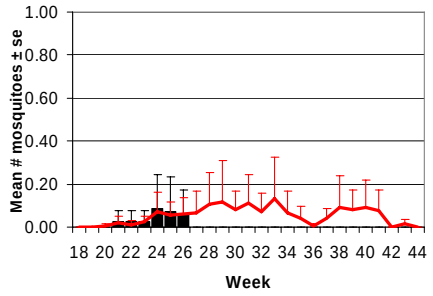
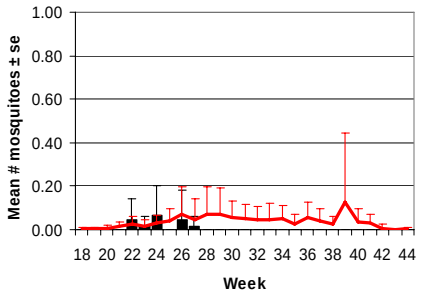
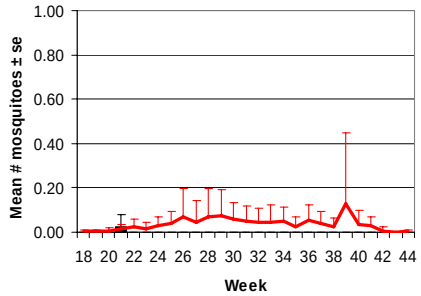
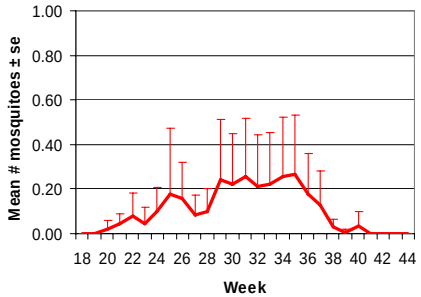
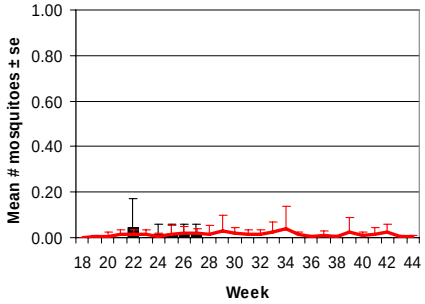
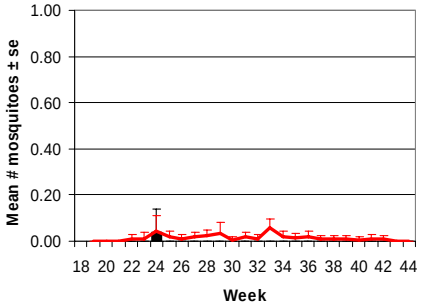
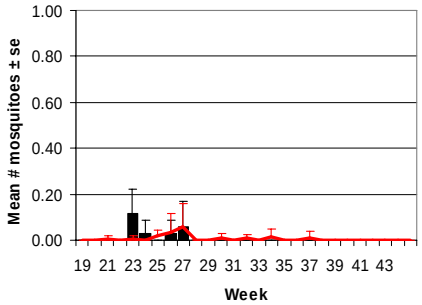
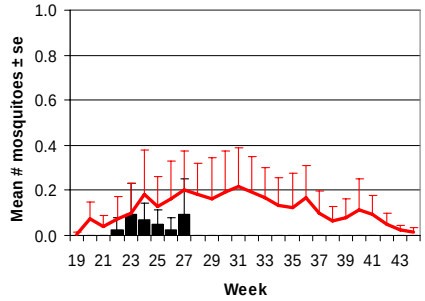
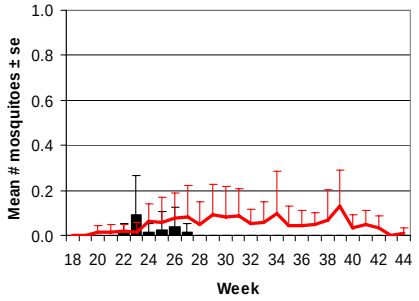
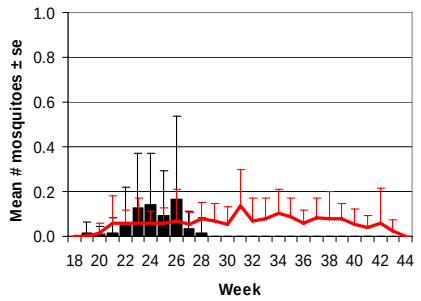
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes sollicitans* population data suggests that the second brood of the season has not yet emerged. The recent holiday, however, tends to delay transmittal of data from key counties, and it is very likely that the emergence of the second brood will be evident next week. If the size of the first brood is any indication to the size of the largest brood, then this upcoming emergence should be the largest for the Delaware Bayshore Region.	

Coquillettidia perturbans- Monotypic Species
(*Cq. perturbans* Type)

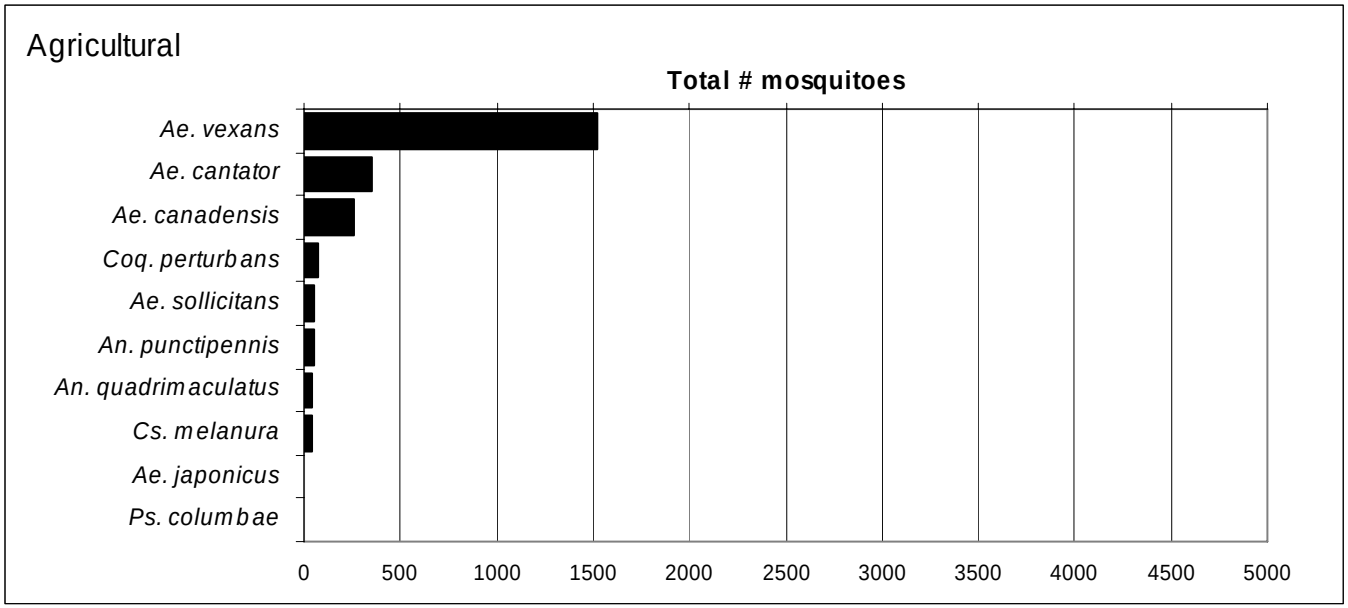
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Coquillettidia perturbans* abundances continue to track historical values for the Agricultural, Philadelphia and New York Metro regions as well as the Pinelands. Other regions appear to show a decline in numbers as compared with historical trends, although wide variation in historical data suggests that this may not be unusual. This species is often difficult to control which is a concern during times of high eastern equine encephalitis activity as this species is suspect of being the inland mammalian vector. ERRATA: Last week, historical data for the North Central to the Suburban Corridor was from *Cs. melanura*, not *Cq. perturbans*.	

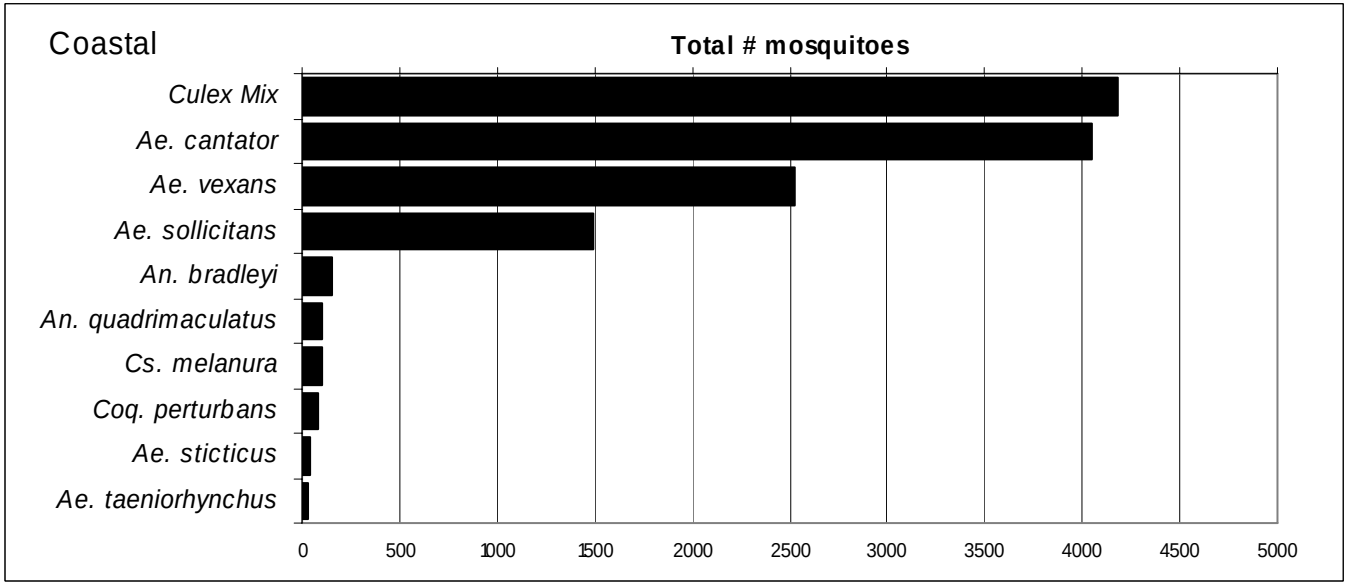
Aedes japonicus - Container Species

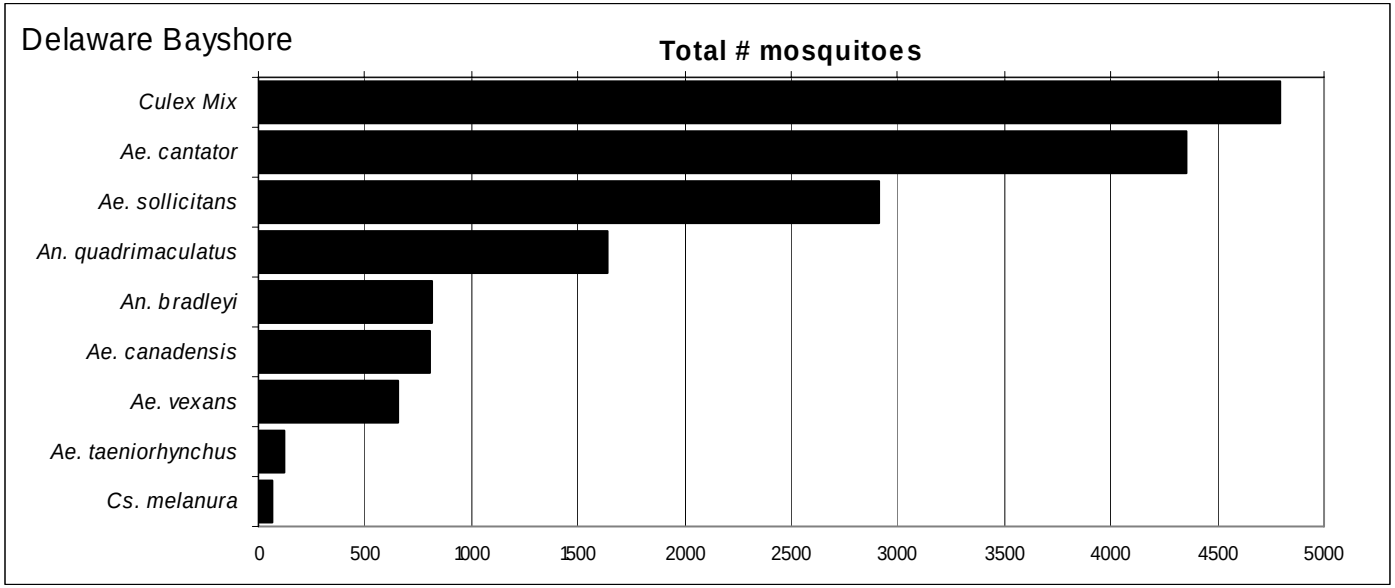
Multivoltine Aedine (*Ae. triseriatus* Type)

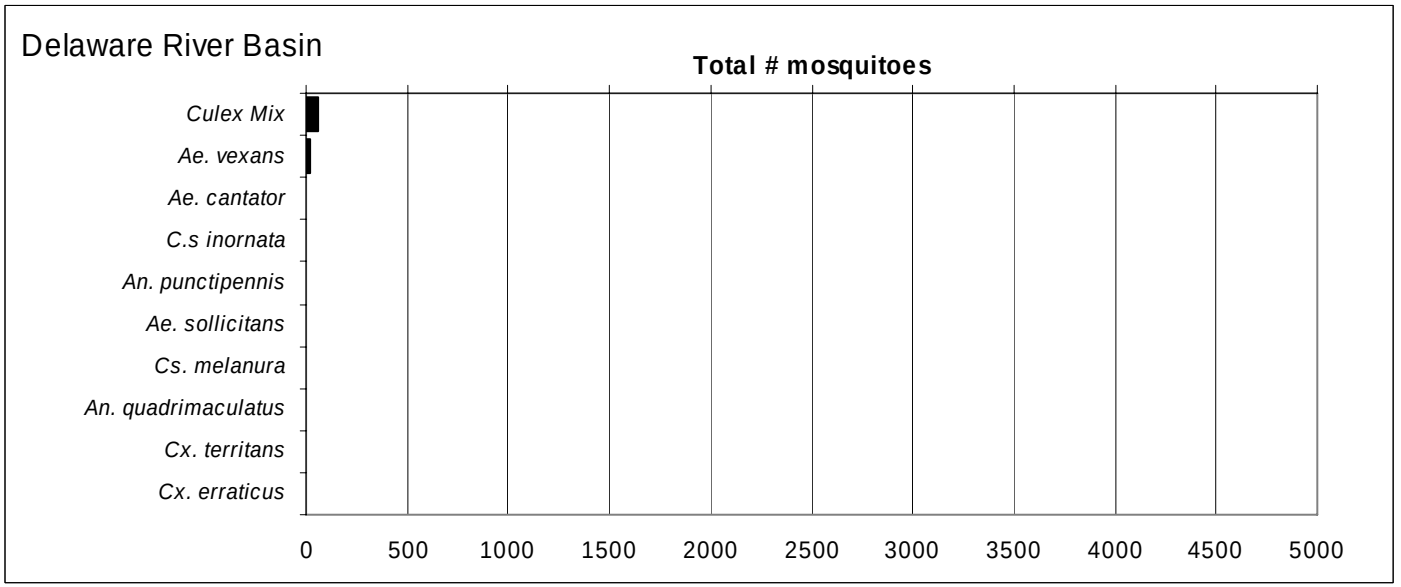
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes japonicus* populations, for most regions, appear to be following their recent historical trends. Abundance appears to be restricted in the Delaware Bayshore and Delaware River Basin regions after relatively high numbers a few years ago. The historical numbers reported suggests that this species was found in the northern portion of the region up through last year, but not the southern. When data from this area becomes available for this year, this species is likely to continue to show a presence. *Ae. japonicus* is a competent vector of WNV. Tires can be a source of larval habitat.	

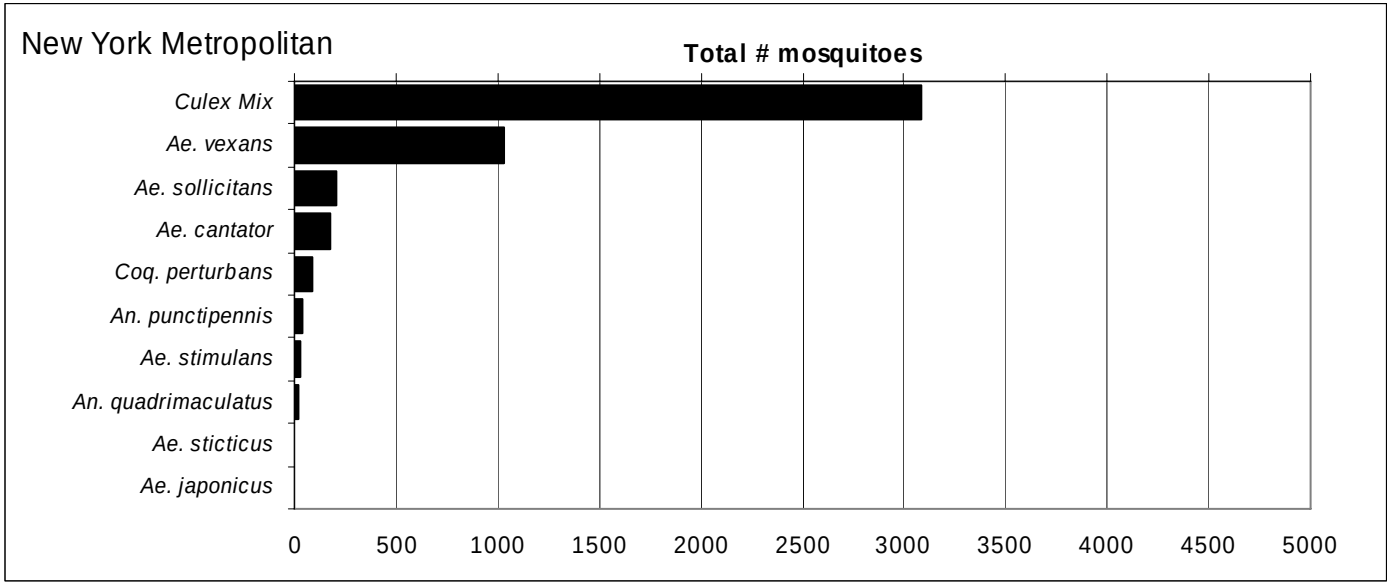
Top Ten Mosquito Species/Region

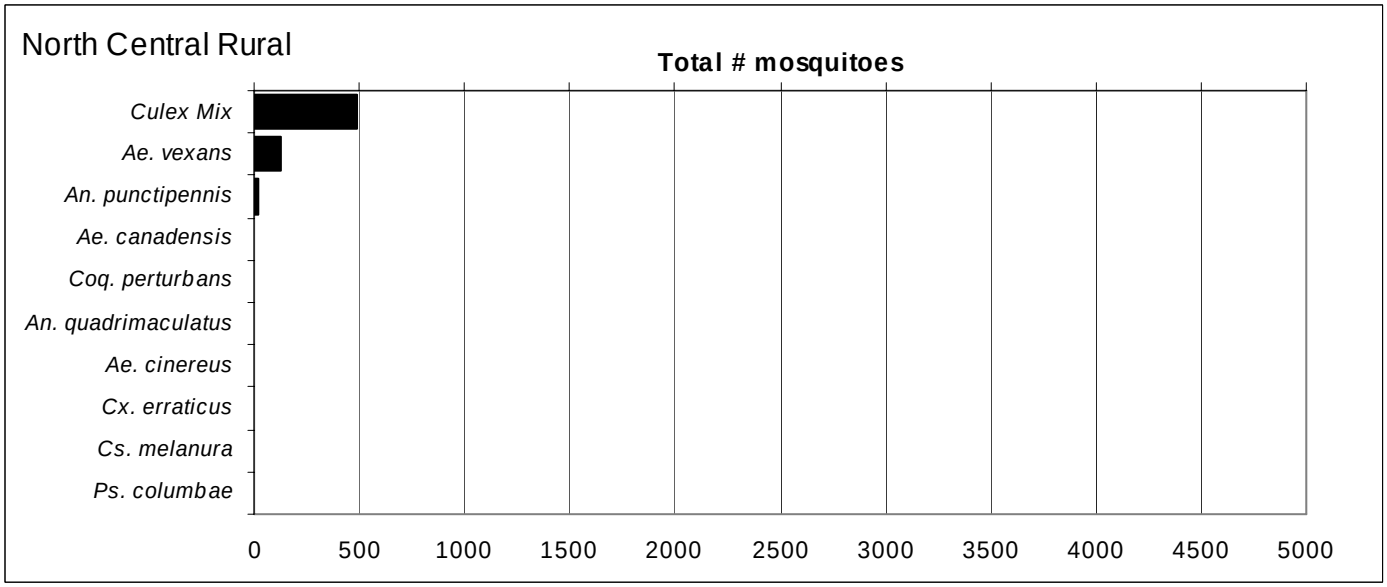


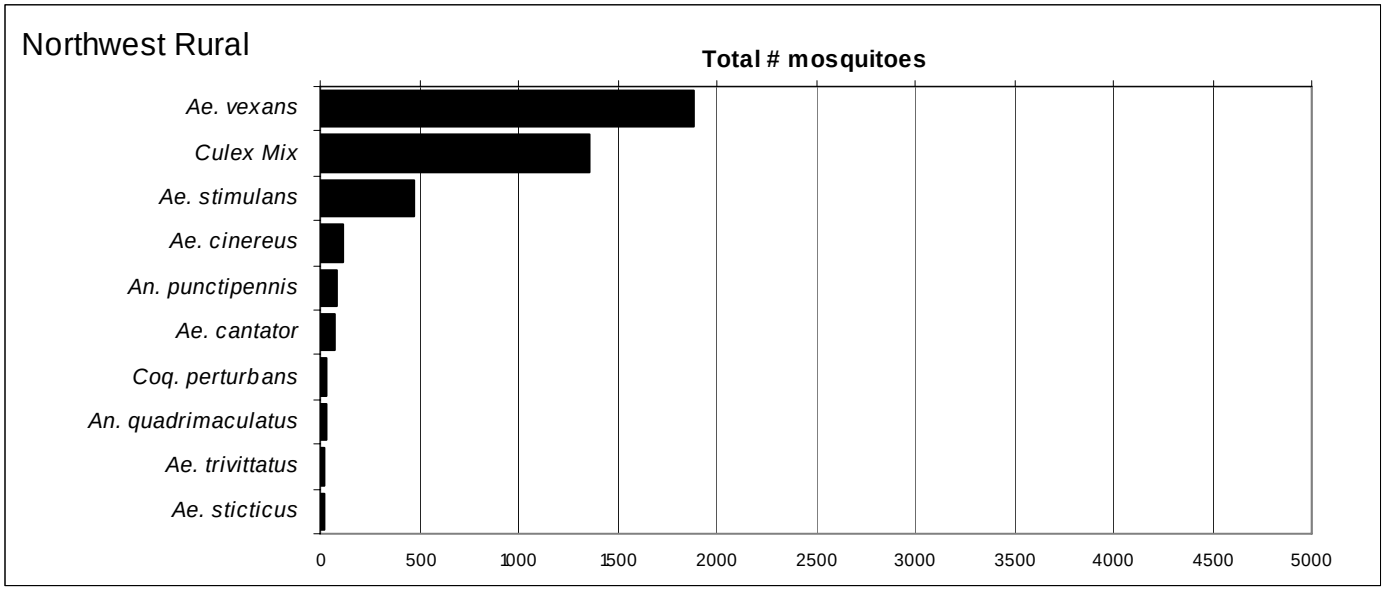


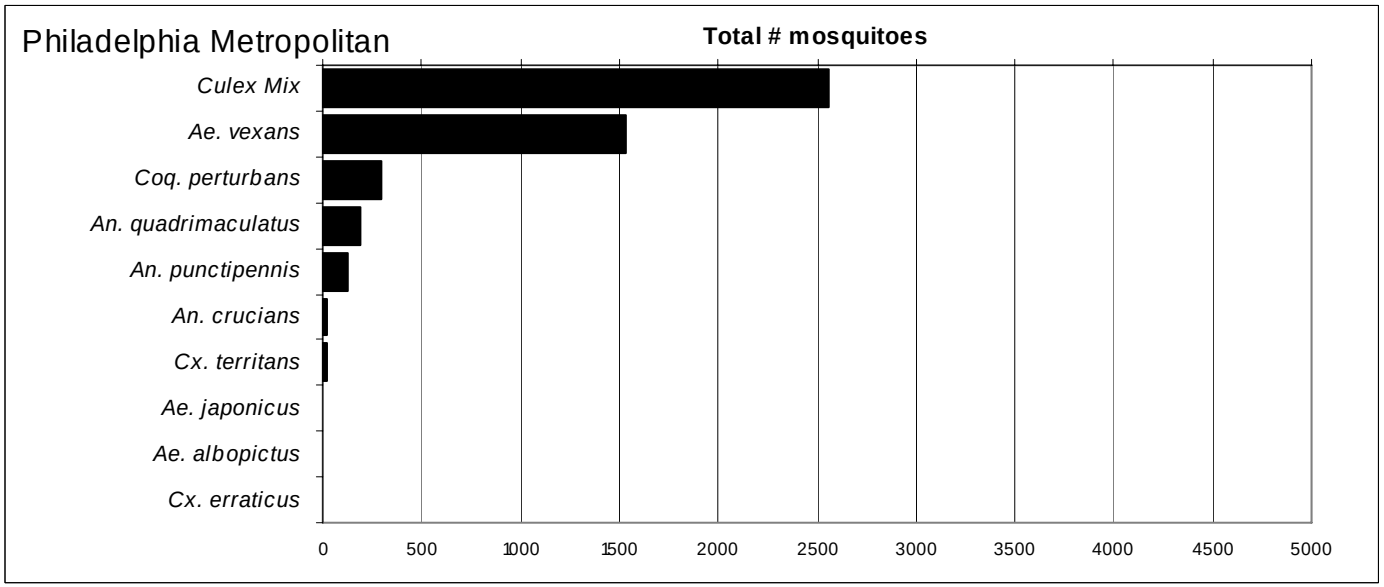

Delaware Bayshore
Total # mosquitoes
Culex Mix
Ae. cantator
Ae. sollicitans
An. quadrimaculatus
An. bradleyi
Ae. canadensis
Ae. vexans
Ae. taeniorhynchus
Cs. melanura
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000

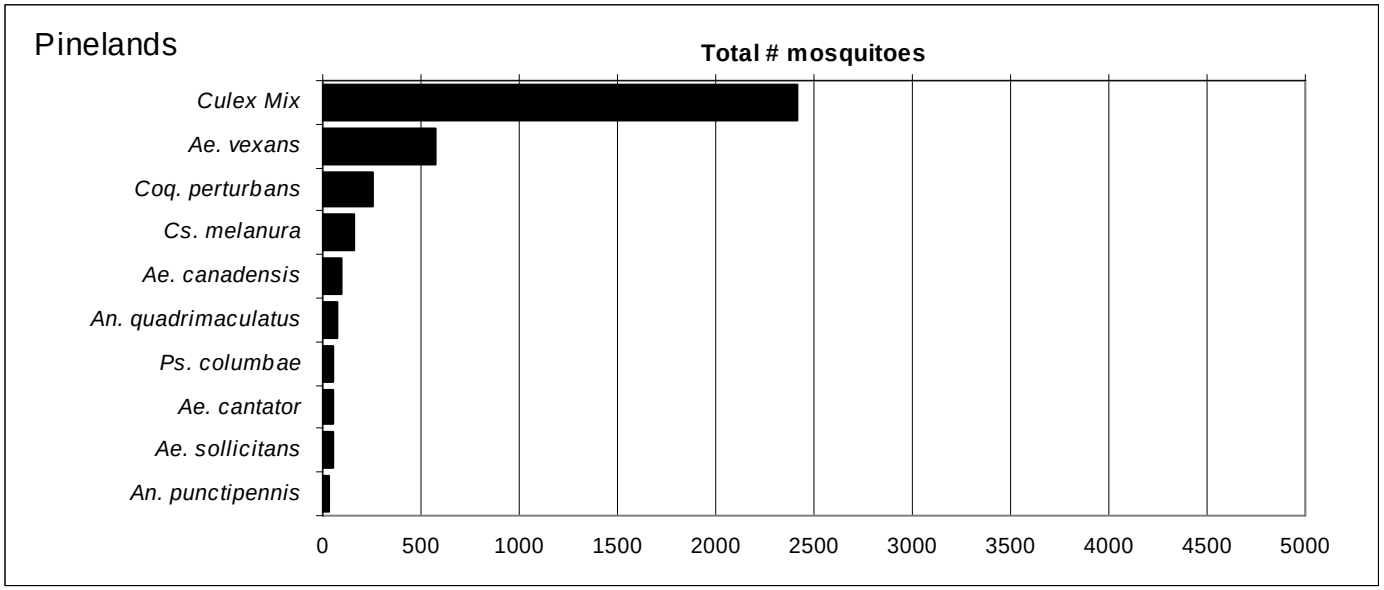

Delaware River Basin
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. cantator
C.s inornata
An. punctipennis
Ae. sollicitans
Cs. melanura
An. quadrimaculatus
Cx. territans
Cx. erraticus
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000

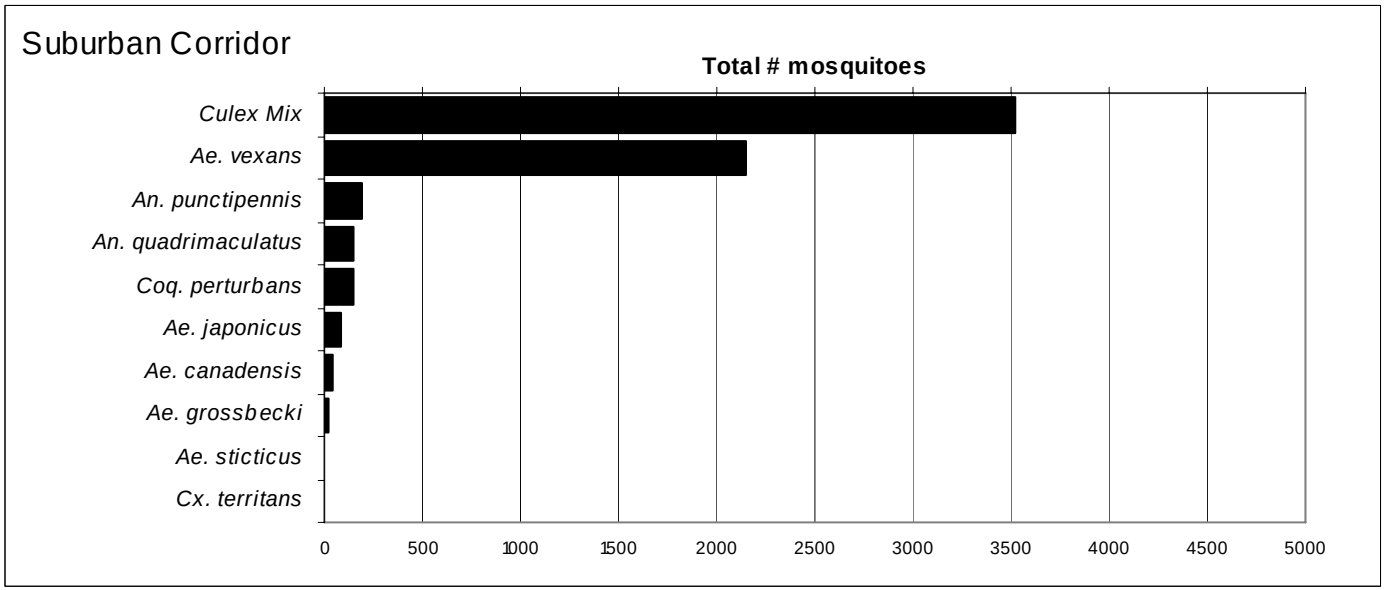

New York Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. sollicitans
Ae. cantator
Coq. perturbans
An. punctipennis
Ae. stimulans
An. quadrimaculatus
Ae. sticticus
Ae. japonicus
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000


North Central Rural
Total # mosquitoes
Culex Mix
Ae. vexans
An. punctipennis
Ae. canadensis
Coq. perturbans
An. quadrimaculatus
Ae. cinereus
Cx. erraticus
Cs. melanura
Ps. columbae
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000


Northwest Rural
Total # mosquitoes
Ae. vexans
Culex Mix
Ae. stimulans
Ae. cinereus
An. punctipennis
Ae. cantator
Coq. perturbans
An. quadrimaculatus
Ae. trivittatus
Ae. sticticus
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000


Philadelphia Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
Coq. perturbans
An. quadrimaculatus
An. punctipennis
An. crucians
Cx. territans
Ae. japonicus
Ae. albopictus
Cx. erraticus
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000


Pinelands
Total # mosquitoes
Culex Mix
Ae. vexans
Coq. perturbans
Cs. melanura
Ae. canadensis
An. quadrimaculatus
Ps. columbae
Ae. cantator
Ae. sollicitans
An. punctipennis
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000


Suburban Corridor
Total # mosquitoes
Culex Mix
Ae. vexans
An. punctipennis
An. quadrimaculatus
Coq. perturbans
Ae. japonicus
Ae. canadensis
Ae. grossbecki
Ae. sticticus
Cx. territans
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000