NEW JERSEY STATEWIDE SURVEILLANCE

Week 32 Report for 3 August to 9 August, 2005

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Purpose: Data from 84 New Jersey light traps contributed by county mosquito control agencies are used to calculate trends in mosquito populations for species of nuisance or health concerns.

Calculations are based on regional distributions, with emphasis on mosquito habitat and land use. Trends will allow a statewide evaluation of changing mosquito populations, in response to control and/or changes in habitat.

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

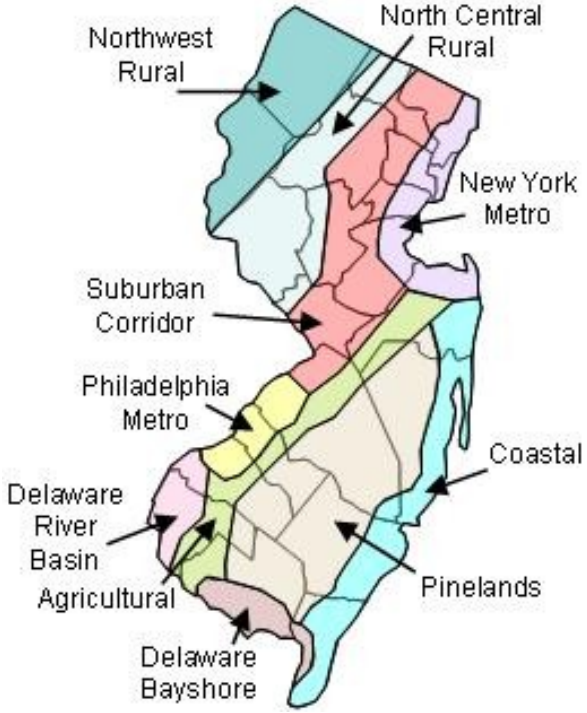


Figure 1b. Trap lat-long locations.

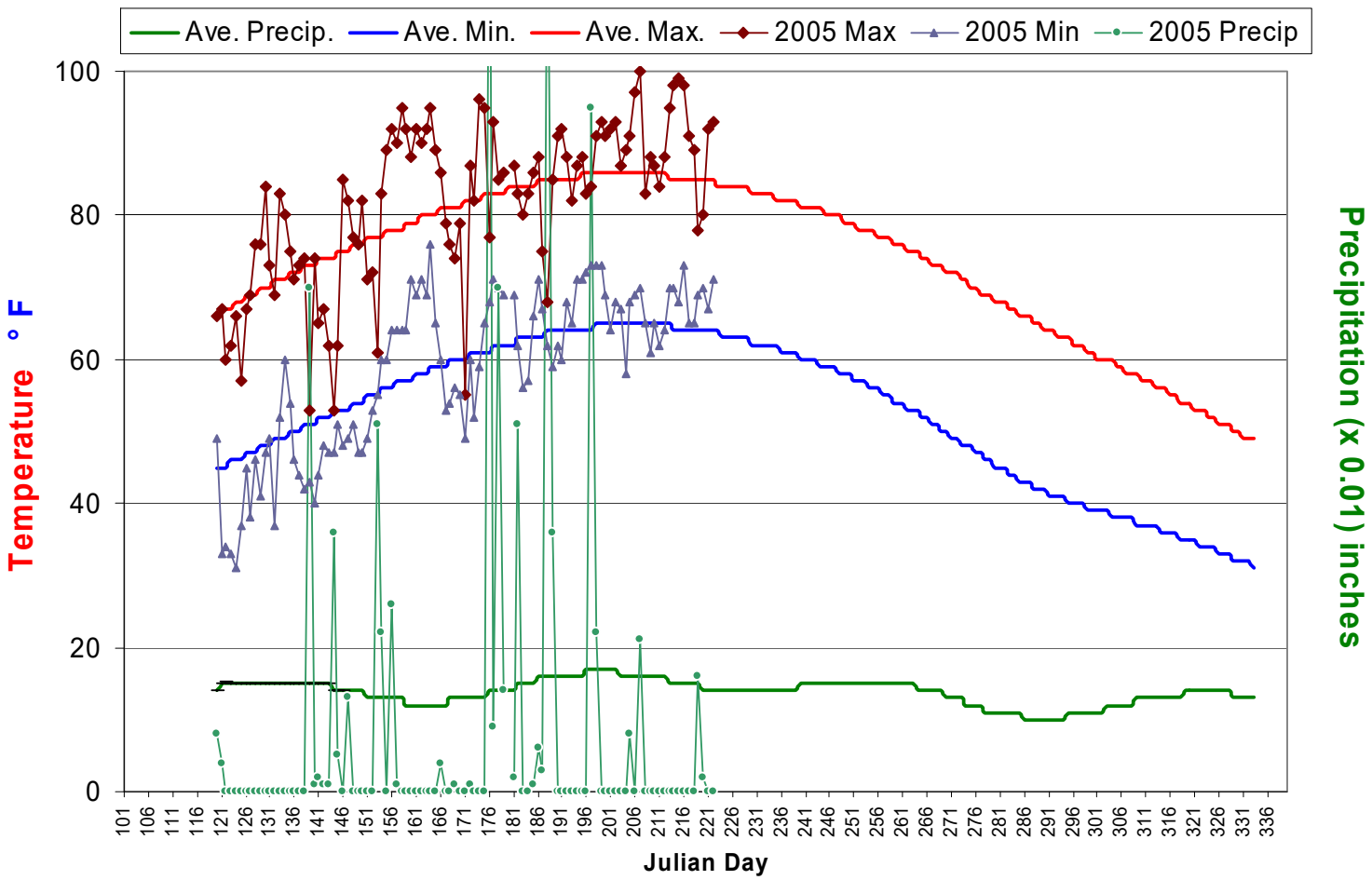
Summary table – Week 32

	Aedes vexans		*Culex complex*		*Coquillettidia perturbans*		*Ochlerotatus sollicitans*	
Region	This Week	Average*	This Week	Average*	This Week	Average*	This Week	Average*
Agricultural	**0.74**	**6.10**	**2.74**	**14.85**	**0.14**	**0.21**	**0.26**	**1.23**
Coastal	**4.27**	**2.36**	**2.02**	**5.01**	**0.68**	**0.08**	**67.56**	**30.09**
Delaware Bayshore	**0.07**	**1.83**	**52.02**	**72.45**	**0.00**	**0.76**	**9.55**	**16.58**
Delaware River Basin	**8.71**	**30.92**	**1.50**	**16.82**	**0.25**	**0.84**	**0.00**	**1.95**
New York Metro	**1.27**	**4.79**	**3.61**	**7.30**	**0.03**	**0.07**	**0.04**	**1.10**
North Central Rural	**0.55**	**2.21**	**0.20**	**1.52**	**0.00**	**0.09**	**0.00**	**0.00**
Northwest Rural	**3.10**	**8.60**	**0.38**	**5.99**	**0.00**	**0.11**	**0.00**	**0.00**
Philadelphia Metro	**5.31**	**15.71**	**1.50**	**6.12**	**0.29**	**0.03**	**0.00**	**0.00**
Pinelands	**1.49**	**1.60**	**1.19**	**4.72**	**1.94**	**0.58**	**0.10**	**0.30**
Suburban Corridor	**1.89**	**16.22**	**1.02**	**4.19**	**0.36**	**0.56**	**0.00**	**0.05**

Graphs include *Ae. vexans, Culex* complex (*Cx. pipiens, Cx. restuans, and Cx. salinarius*), *Oc. sollicitans, and Cs. melanura and Top Ten.*

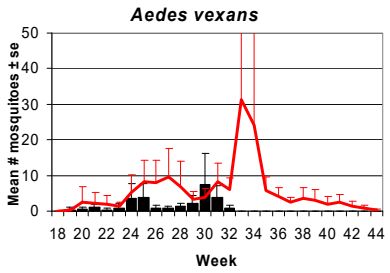
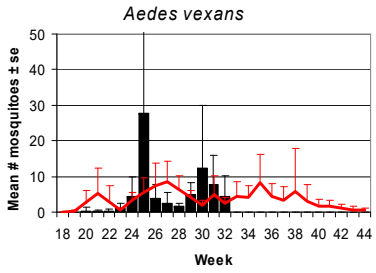
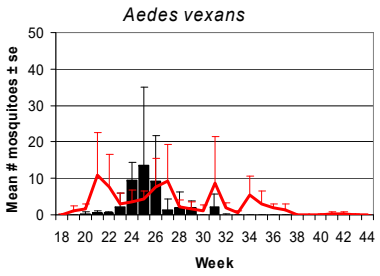
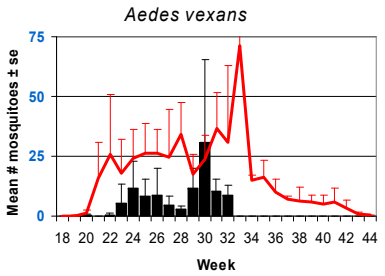
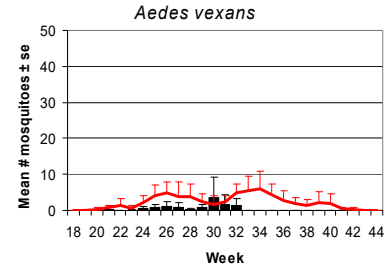
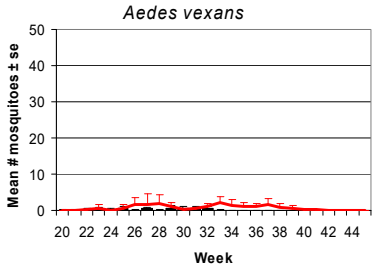
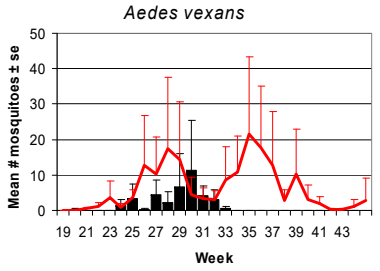
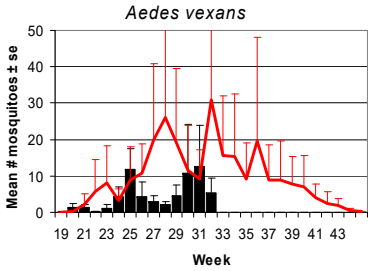
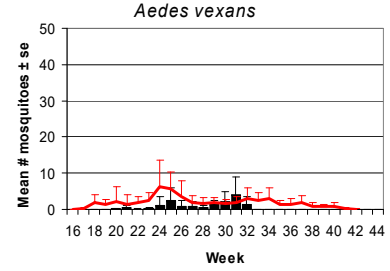
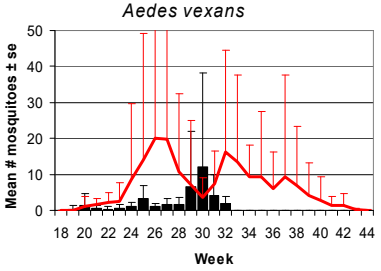
17 of 21 counties in current week; 20 of 21 counties reporting.

Climate Data

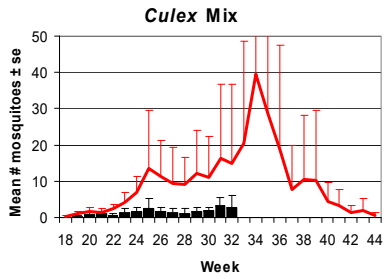
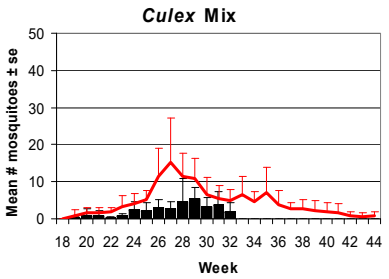
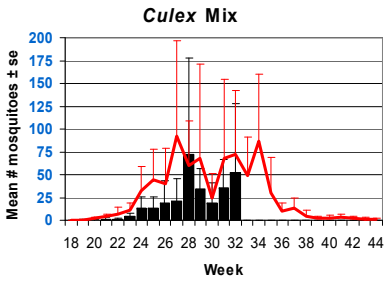
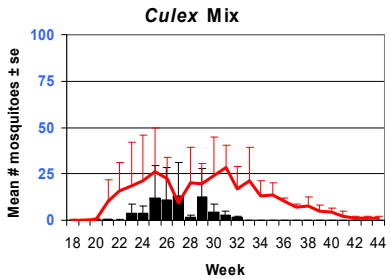
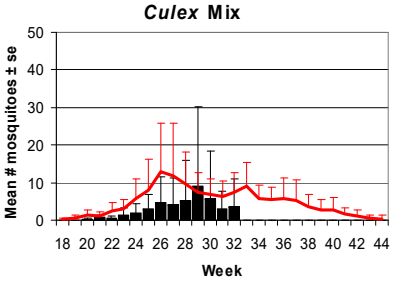
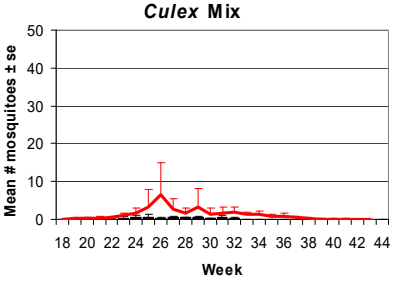
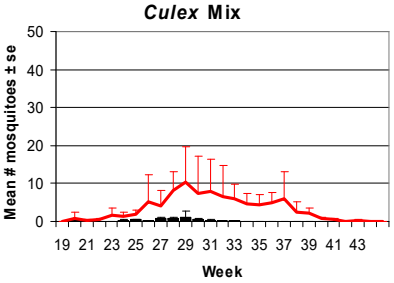
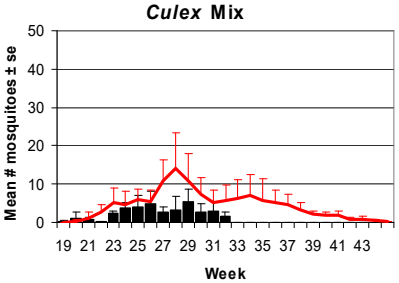
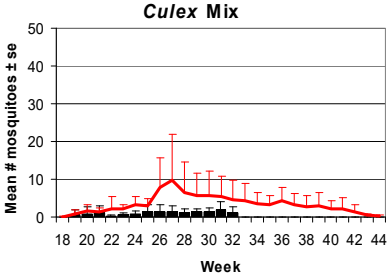
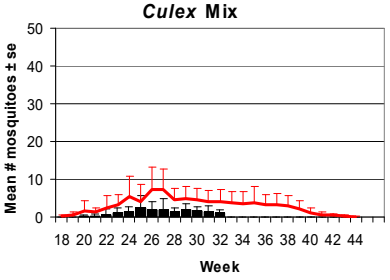


This figure shows historical average maximum and minimum temperatures and average precipitation recorded in the New Brunswick, NJ weather station over a recent 30 year period. Also graphed are the current year's minimum and maximum temperatures as recorded at the Hillsborough NJ weather station (a station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

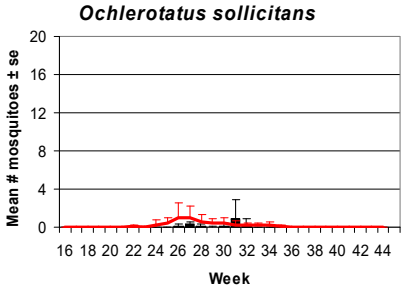
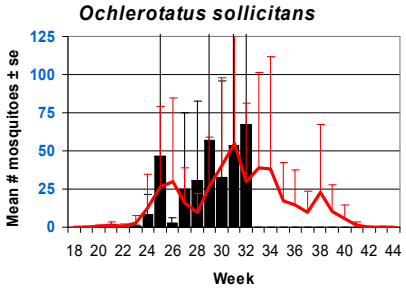
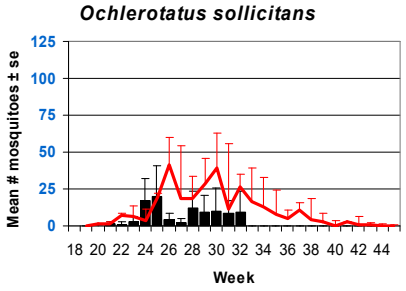
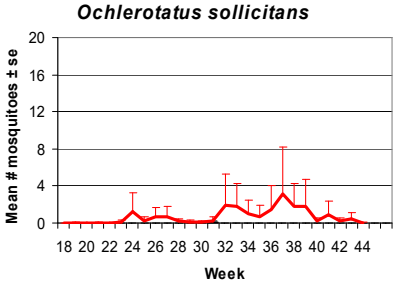
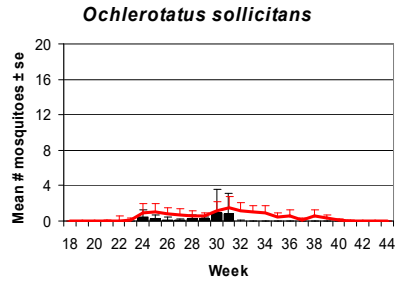
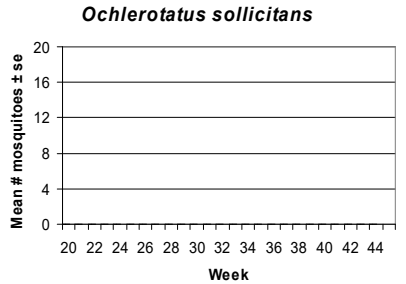
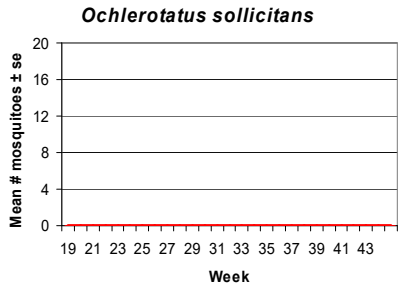
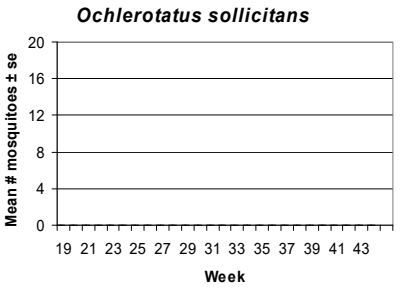
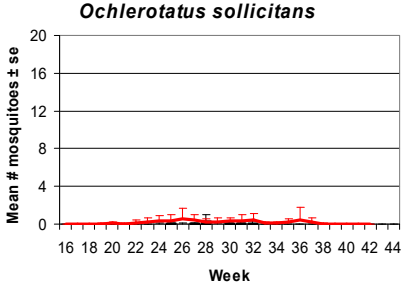
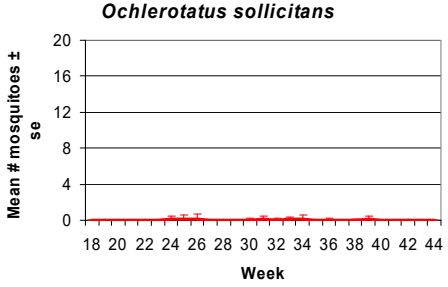
Aedes vexans - Fresh Floodwater Species

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes vexans* population trends continue to be variable both throughout the state and within each region as a consequence of their floodwater life history. This species is most notorious as a vector for dog heartworm, but may have been involved in the EEE outbreak that occurred here in New Jersey in 1959 (particularly inland cases). A warm, wet July set the stage for the large mosquito populations of that summer that helped maintain and amplify the virus. Currently, no EEE-positive *Ae. vexans* pools have been found.	

Culex Complex - Multivoltine *Culex* Species

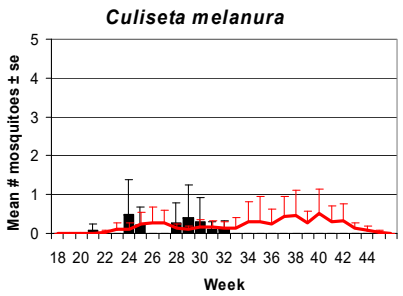
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		All of the West Nile virus-positive pools (35 at the time of this writing) of mosquito submissions to the New Jersey state health department continue to come from *Culex* species, in either a mixed pool (*Cx pipiens, Cx. restuans, and/or Cx salinarius)* or individual pools of *Cx. pipiens* or *Cx. restuans*. *Culex* populations throughout the state, as a general trend, are reduced from historical levels, particularly in the Agricultural region. *Culex pipiens* is a facultative ornithophage and although it may be tempting to correlate relatively few WN-positive corvids found by the NJDHSS with these low population levels, it must be remembered that host population immunity is also playing a role.	

Ochlerotatus sollicitans - Salt Marsh Floodwater Species

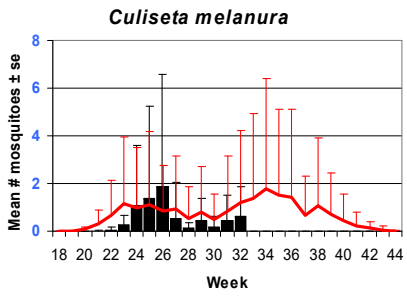
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Ochlerotatus sollicitans* is undergoing a third emergence in the Coastal Region. This emergence is likely to signal the peak of *Oc. sollicitans* abundance, corresponding to similar peaks in the historical dataset. A slow decline in the population should begin and continue through to early fall. However, their nuisance factor may change as the blood-seeking behavior of this mosquito changes seasonally. Late-season mosquitoes can shift their bloodseeking time from a crepuscular and/or evening period to daylight. Increased contact with humans results in increased complaints.	

Culiseta melanura – Miscellaneous Group

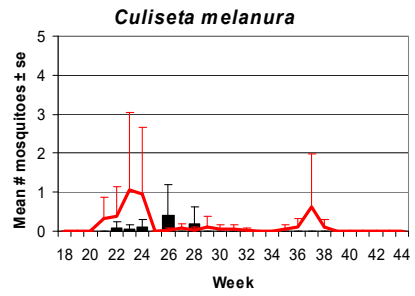
Agricultural



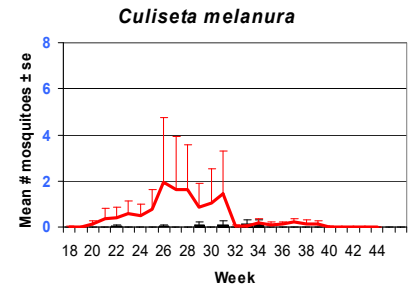
Coastal



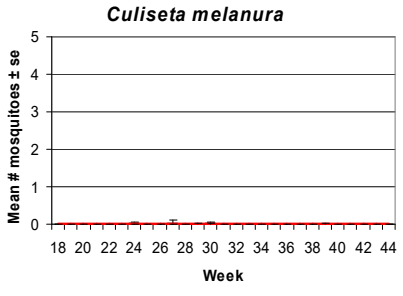
Delaware Bayshore



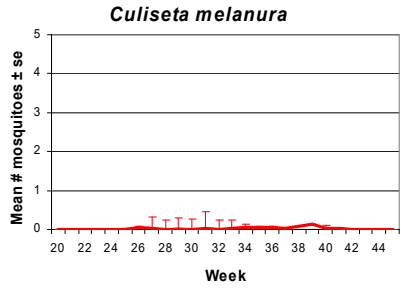
Delaware River Basin



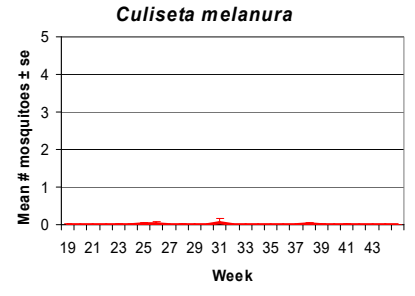
New York Metro



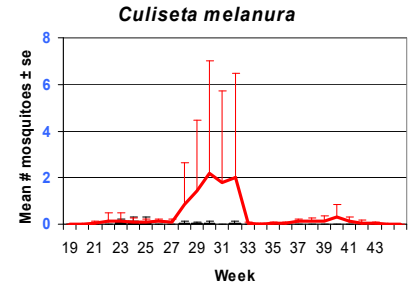
North Central Rural



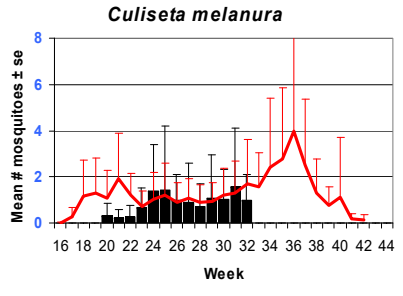
Northwestern Rural



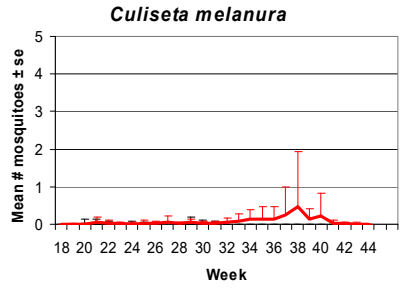
Philadelphia Metro



Pinelands



Suburban Corridor



Comments

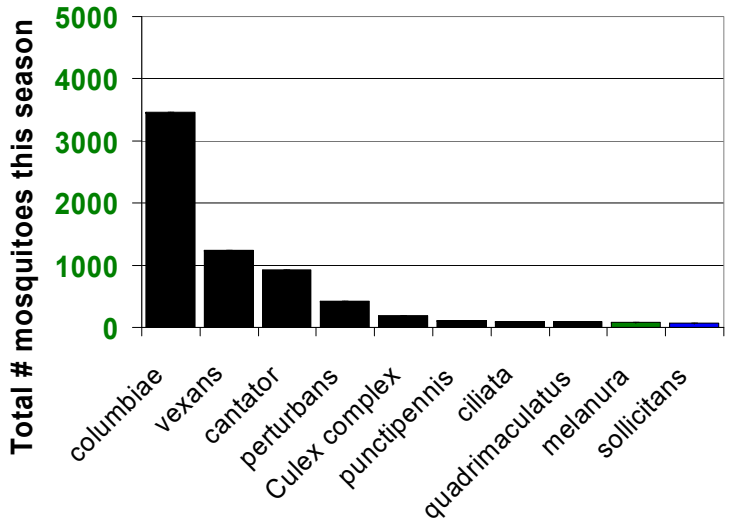
Trends of *Culiseta melanura* populations appear on course with historical data at the Pinelands and Coastal regions, despite a late-season start. This species has shown up in nearly all regions. *Cs. melanura* is the quintessential ornithophage, equipped with a long-curving proboscis capable of penetrating a feathery coat.

The avian species with the highest amount of EEE exposure found in one Cape May site is, ironically, the Blue Jay (~70% of the population). This corvid, like apparently all New World corvids, is extremely sensitive to West Nile but seemingly unaffected by EEE. With time, immunity to WN will build.

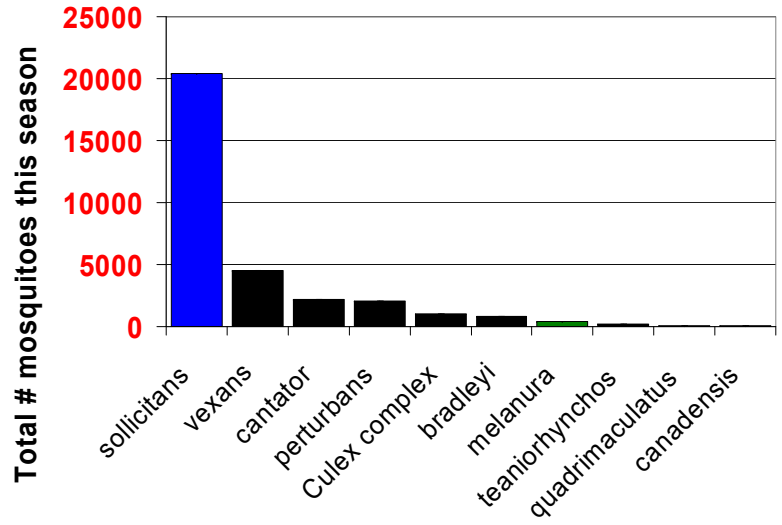
Top Ten Species in each Region – *NOTE THE DIFFERENT SCALES USED FOR DIFFERENT REGIONS.* As was wisely pointed out to me, it should also be noted that this list is only based on what was caught in those light traps that are included in this report. Not all species are attracted to light traps equally. Interpretations should keep these points in mind.

Aedes vexans is the most commonly reported light-trapped species in 5 out of 10 regions. *Ochlerotatus sollicitans* is not only noteworthy in coastal habitats such as the Coastal, Delaware Bayshore, and the New York Metro, but also appears at inland sites in significant numbers (migratory effects). *Psorophora columbiae* has recently shown up in light traps in abundance at Agricultural and the North Central Regions.

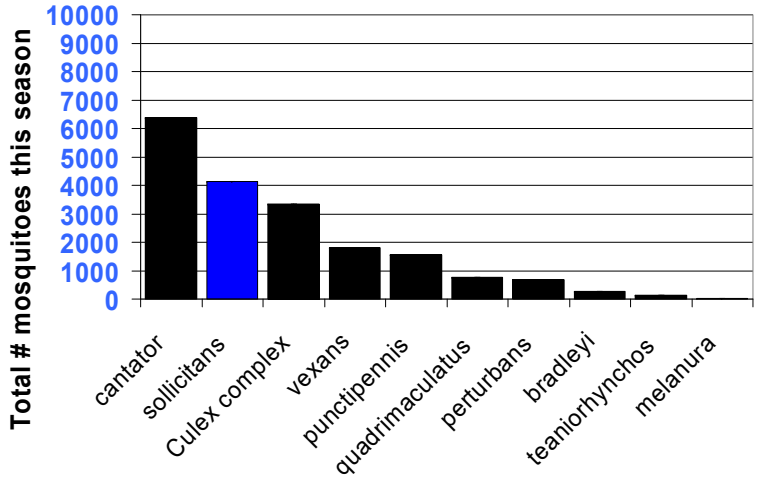
Agricultural



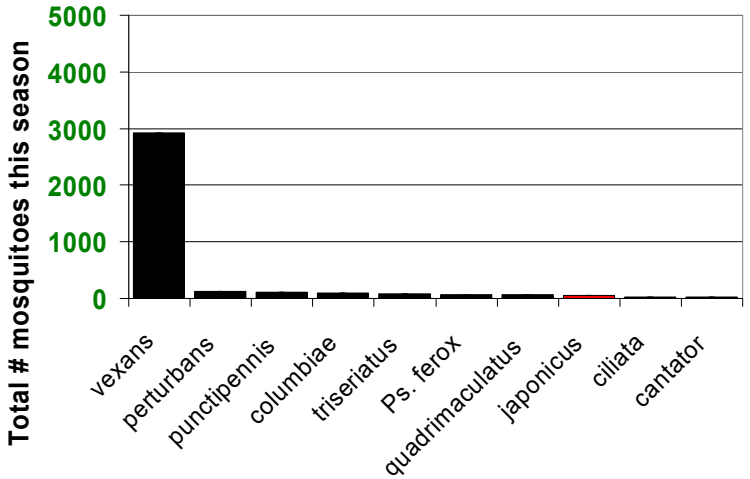
Coastal



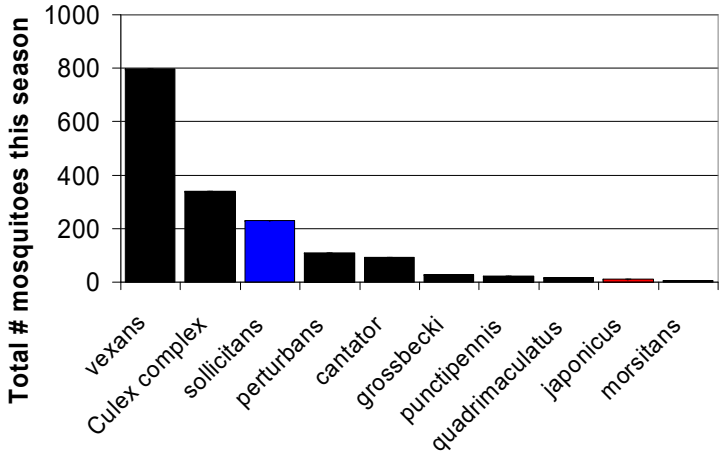
Delaware Bayshore



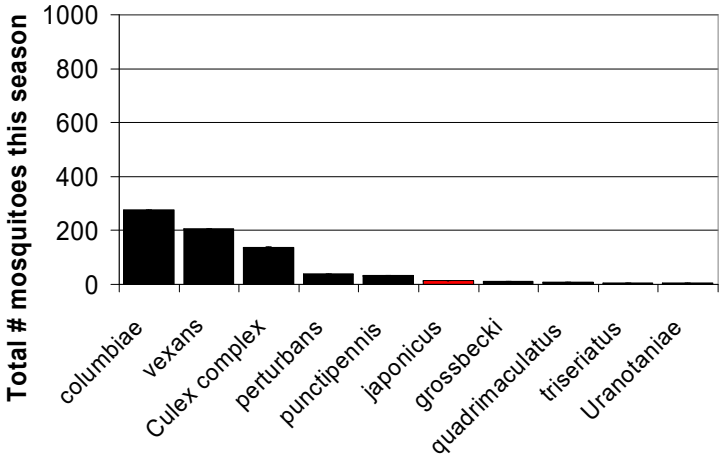
Delaware River Basin



New York Metro



North Central Rural



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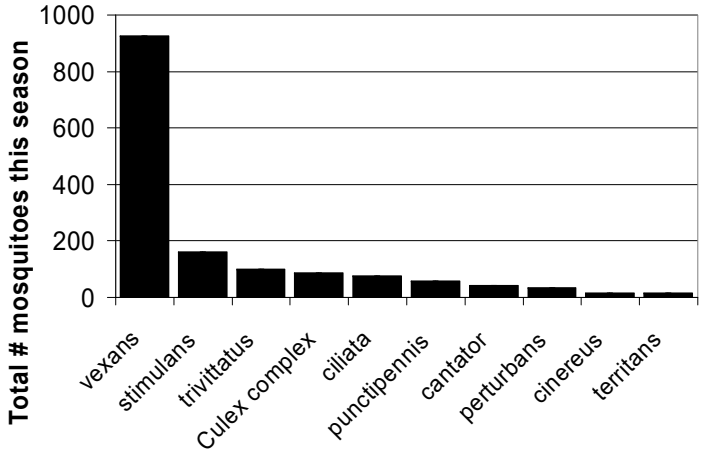
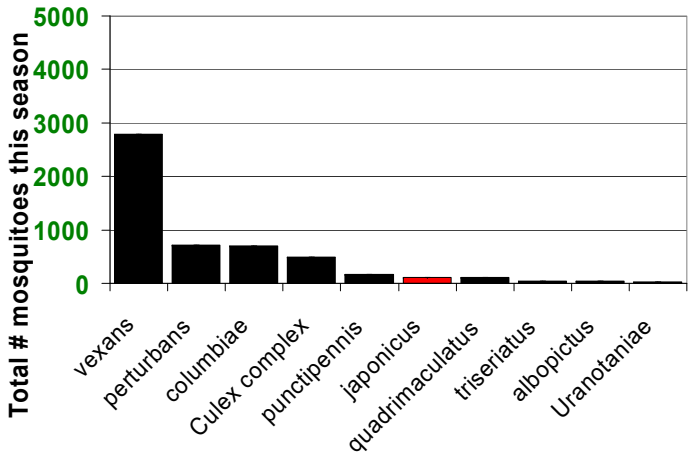
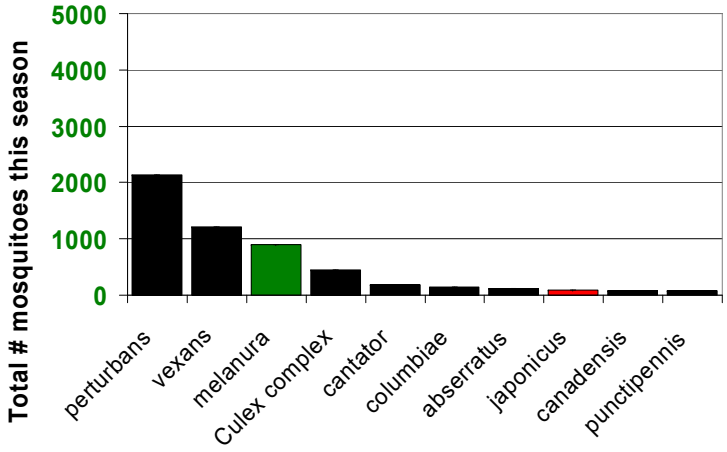


Philadelphia Metro



Pinelands



Suburban Corridor