NEW JERSEY STATEWIDE SURVEILLANCE

Week 26 & 27 Report for 25 June to 8 July, 2006

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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.

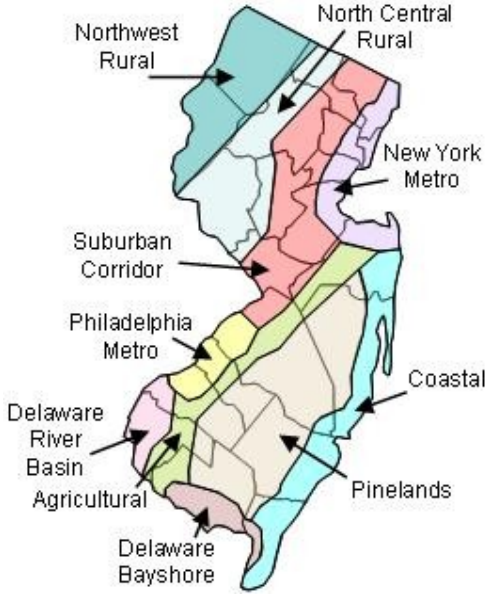


Figure 1b. Trap lat-long locations.

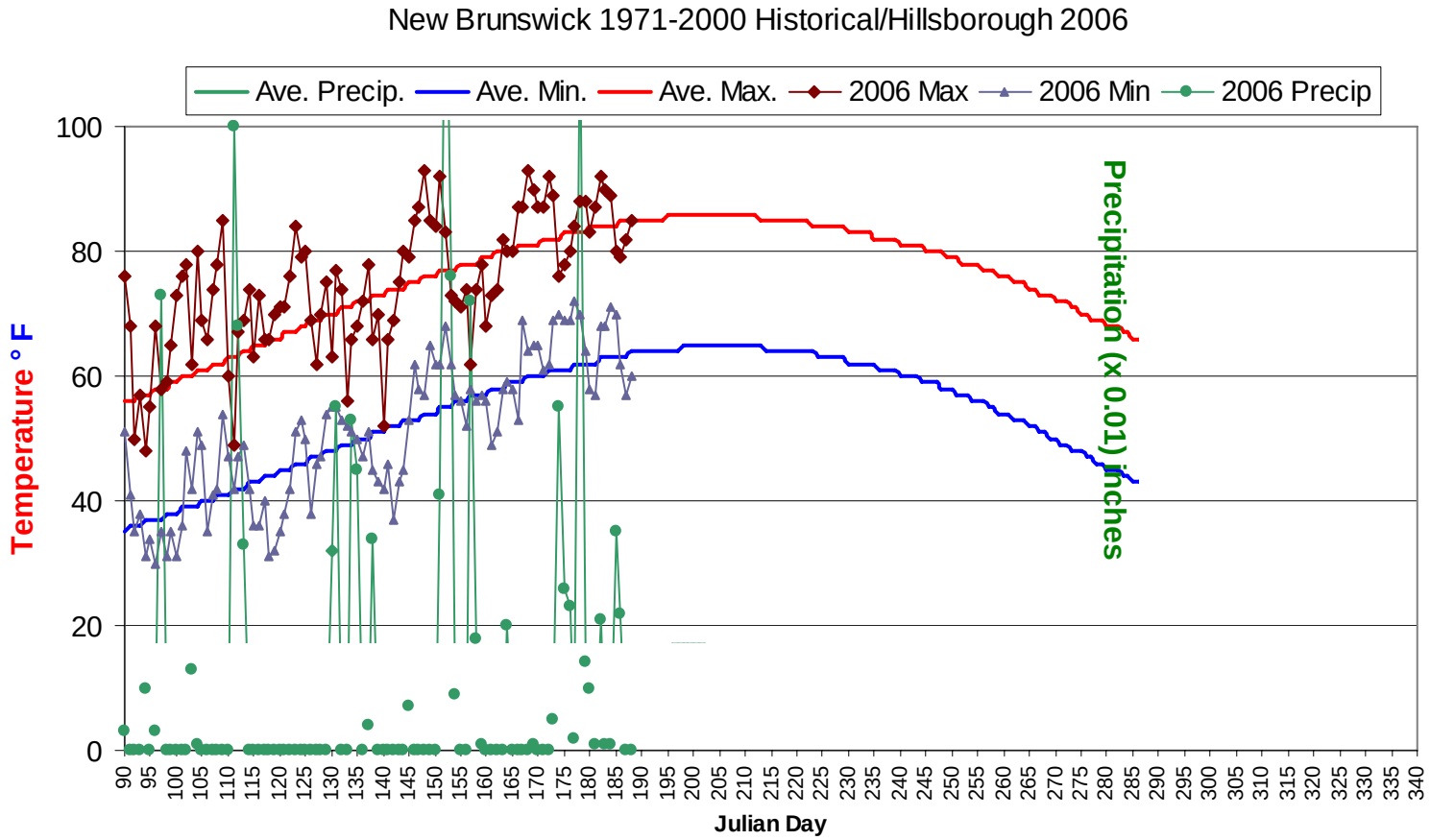
Summary table – Week ~~26 and~~ 27

	Aedes vexans		*Culex complex*		*Coquillettidia perturbans*		*Ochlerotatus sollicitans*	
Region	This Week	Average*	This Week	Average*	This Week	Average*	This Week	Average*
Agricultural	**2.11**	**6.39**	**0.95**	**6.12**	**0.00**	**0.33**	**0.00**	**0.36**
Coastal	**5.03**	**4.01**	**3.25**	**4.11**	**0.51**	**2.00**	**15.11**	**12.05**
Delaware Bayshore	**0**	**5.49**	**0**	**25.84**	**0**	**4.05**	**0**	**18.48**
Delaware River Basin	**0**	**26.49**	**0**	**16.49**	**0**	**0.46**	**0**	**1.48**
New York Metro	**6.81**	**2.20**	**3.69**	**6.16**	**0.11**	**0.05**	**0.27**	**1.24**
North Central Rural	**0.10**	**0.74**	**0.14**	**1.18**	**0.00**	**0.07**	**0.00**	**0.00**
Northwest Rural	**0**	**3.74**	**0**	**2.12**	**0**	**0.12**	**0**	**0.00**
Philadelphia Metro	**10.57**	**9.59**	**2.71**	**6.32**	**0.09**	**0.67**	**0.00**	**0.00**
Pinelands	**0.00**	**1.98**	**0.48**	**2.56**	**1.50**	**0.89**	**0.01**	**0.11**
Suburban Corridor	**2.33**	**8.38**	**0.75**	**4.18**	**0.01**	**1.12**	**0.00**	**0.07**

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

18 of 21 counties in one or both weeks; 20 of 21 counties reporting.

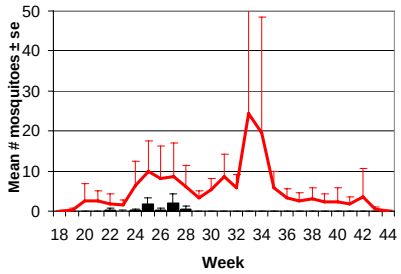
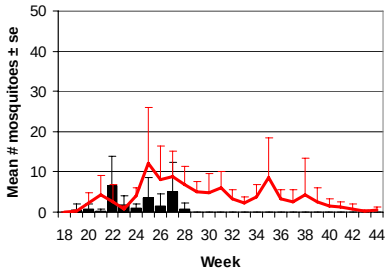
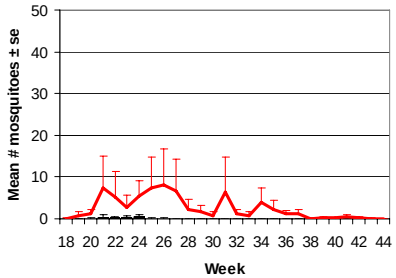
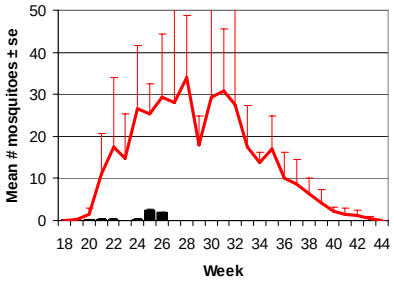
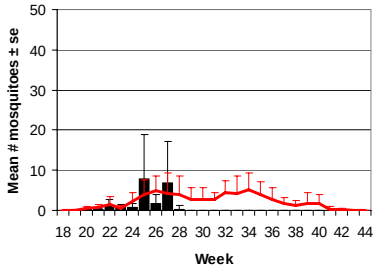
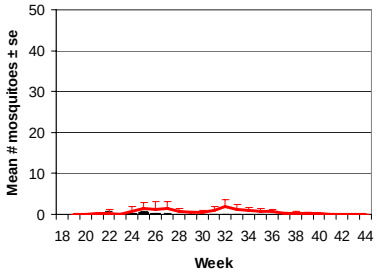
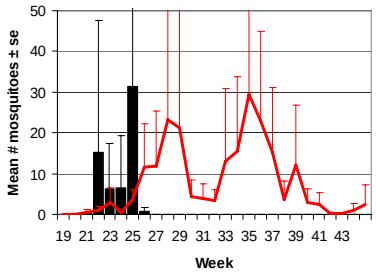
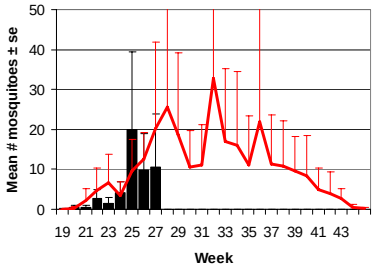
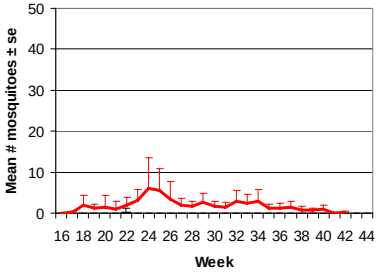
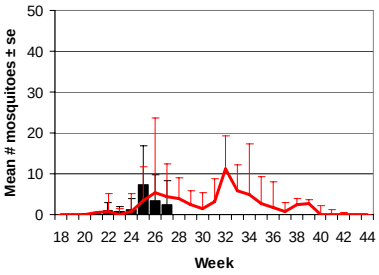
Climate Data



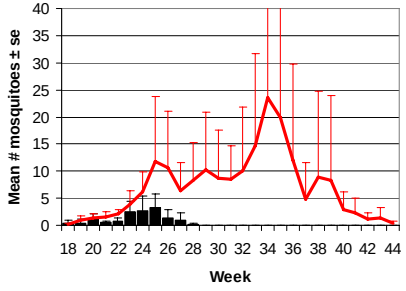
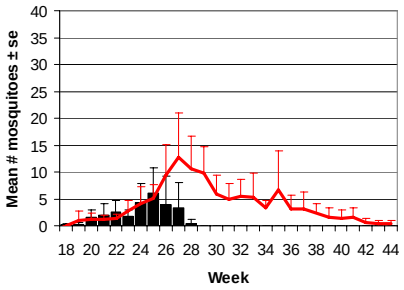
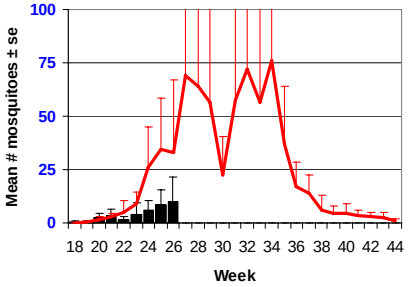
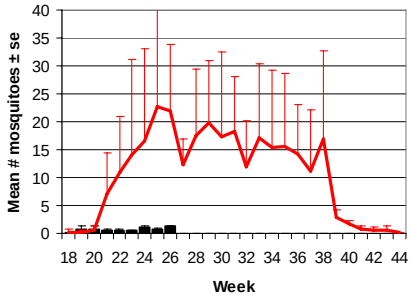
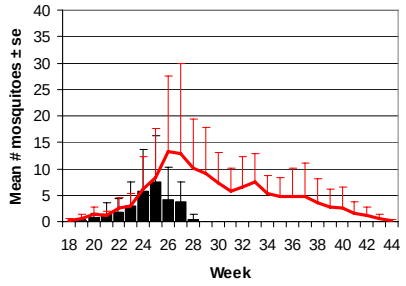
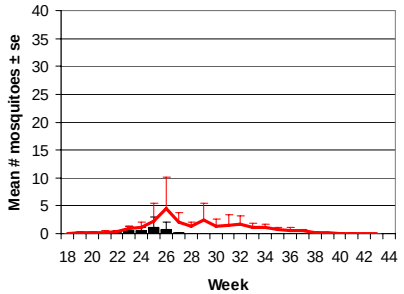
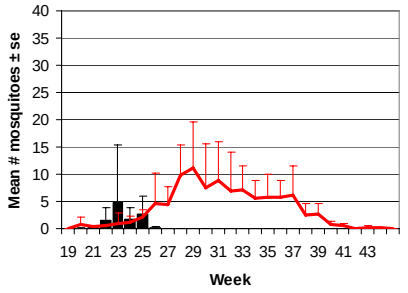
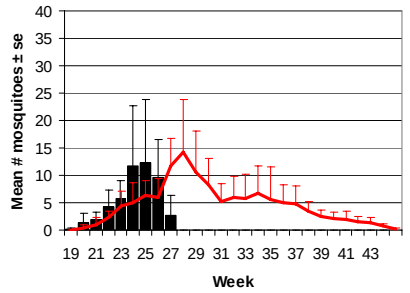
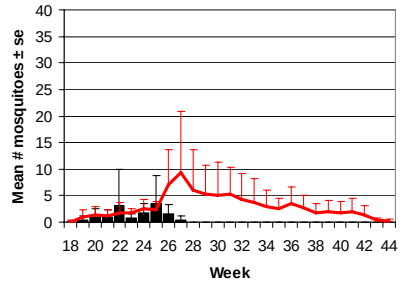
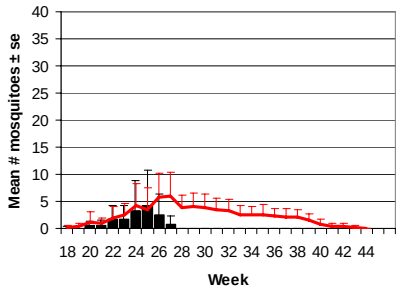
This figure shows historical average maximum and minimum temperatures and average precipitation recorded in the New Brunswick, NJ weather station over a recent 30 year period. Also graphed are the current year's minimum and maximum temperatures as recorded at the Hillsborough NJ weather station (a station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

The state climatologist reports that June was the 3rd wettest month since 1895 (111 years). Several areas of the tri-state region were affected by excessive rainfall, particularly from flooding that occurred as rivers and streams overfilled their banks. This, in addition to being the 19th warmest month, should provide plenty of prime habitat for floodwater species.

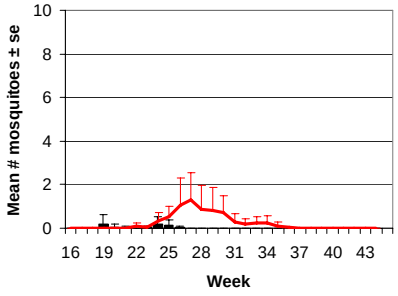
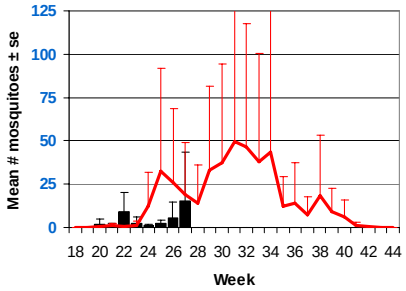
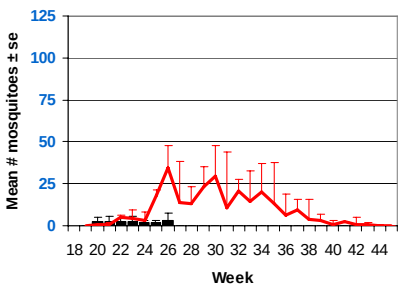
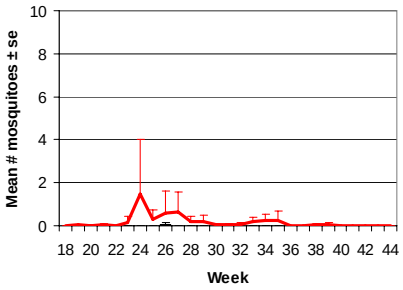
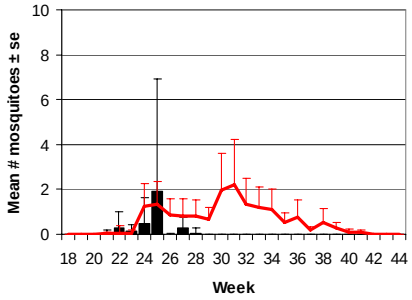
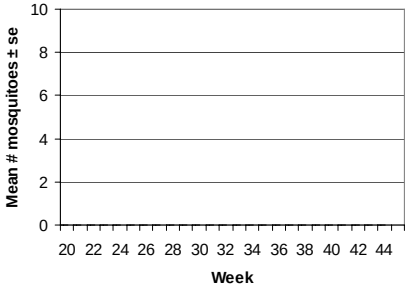
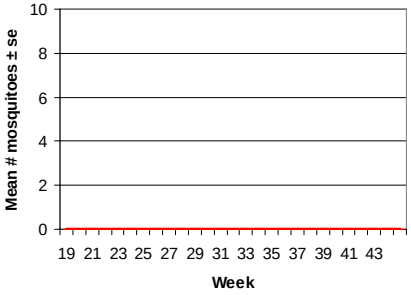
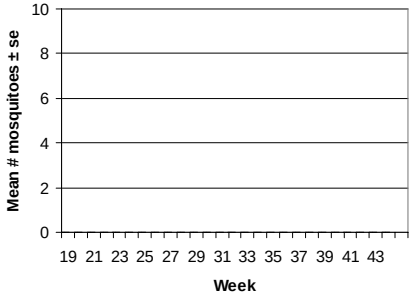
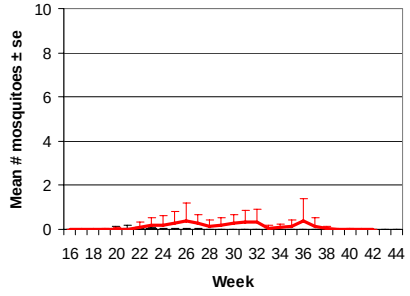
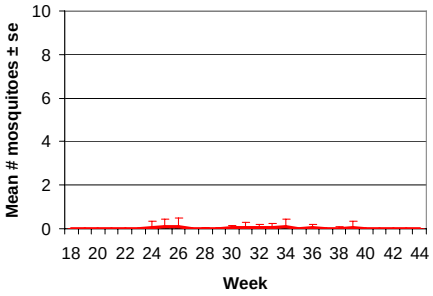
Aedes vexans - Fresh Floodwater Species

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes vexans* populations in regions on the western side of the state may have received a boost in the availability of larval habitat with the onset of recent rains and subsequent flooding events. With the onset of truly warmer weather, western populations, particularly those with an apparent history of relatively abundant numbers, should see a rise from previous values. Both the Philadelphia Metro and the Northwestern Rural already show populations of significant sizes.	

Culex Complex - Multivoltine Culex Species

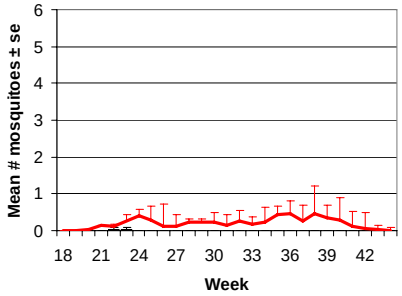
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Culex* populations are now beginning to separate out into those regions that are at or near historical abundances and those with lower than expected numbers. The two Delaware regions and possibly the North Central Rural region represent the latter. One region (Delaware River Basin), as noted on the last report, has eliminated a trap that was more representative of landfill rather than dredge activity (dredge activity could produce significant numbers of mosquitoes). But other species (*Ae. vexans*, for example) appear to have reduced activity and this reduction is also occurring in the adjacent Delaware Bayshore. This suggests either a more fundamental change has occurred (dredging operations, for example) or that the recent historical trends were more anomalous, or a combination of both effects.	

Ochlerotatus sollicitans - Salt Marsh Floodwater Species

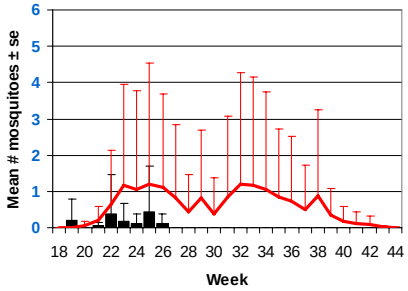
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		An emergence of *Ochlerotatus sollicitans* appears to be ongoing in the Coastal region while the Delaware Bayshore and southern portions of the New York Metro region remains rather subdued. It may be possible that the effects of this, the 3rd wettest month recorded in the past 111 years is affecting the ability of eggs laid earlier to effectively mature the serosal cuticle that envelopes the egg. Wide variation in the historical trends of the coastal populations suggest that larger emergences are possible, and have occurred in the past despite a less than impressive early season.	

Culiseta melanura – Miscellaneous Group

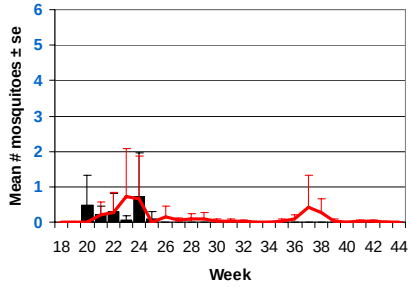
Agricultural



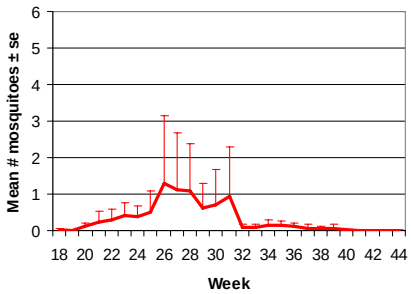
Coastal



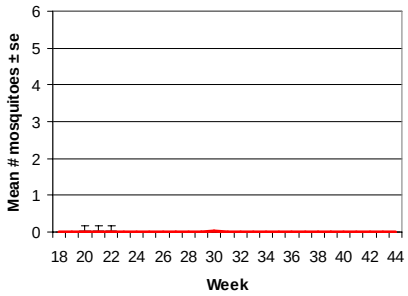
Delaware Bayshore



Delaware River Basin



New York Metro



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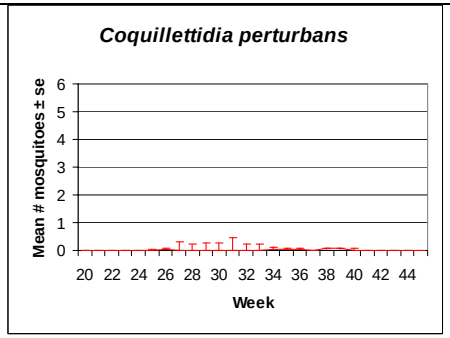
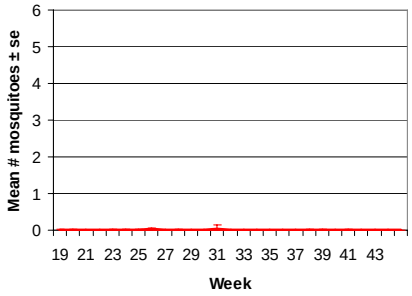
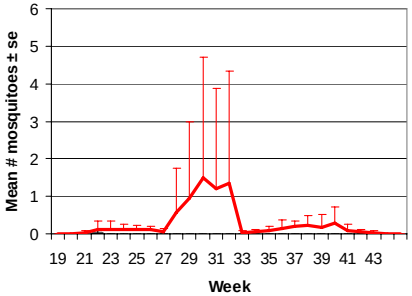


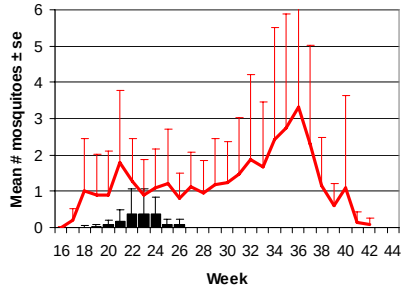
Northwestern Rural



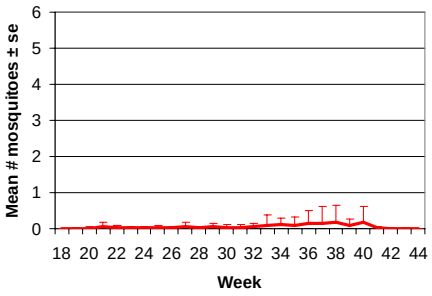
Philadelphia Metro



Pinelands



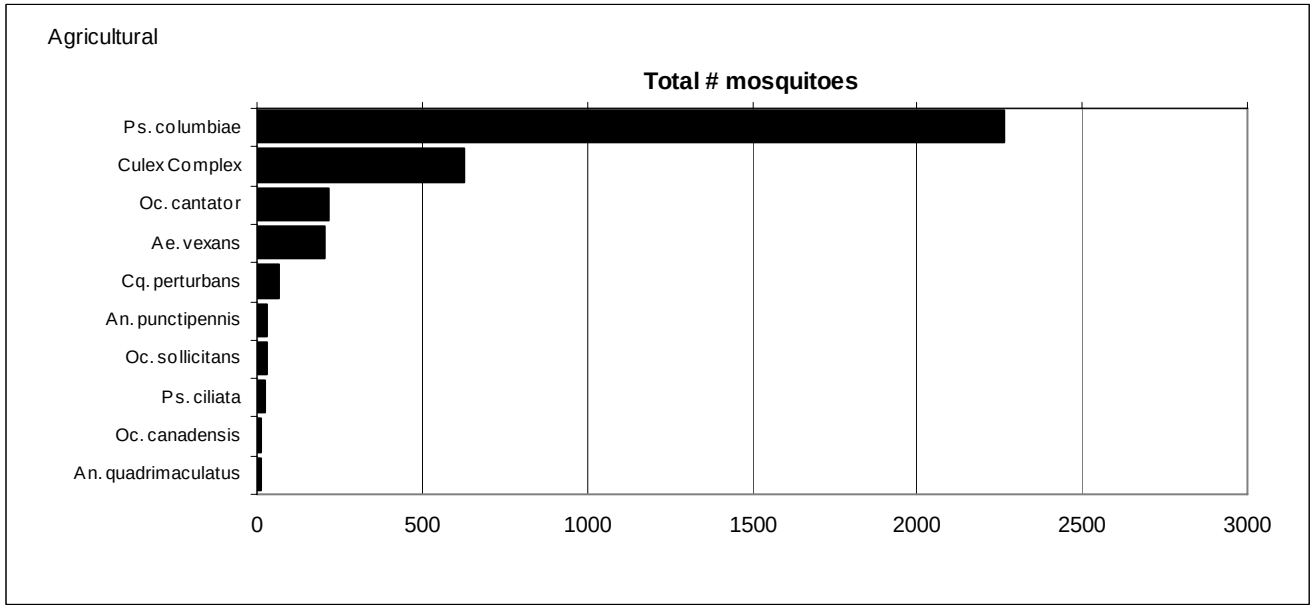
Suburban Corridor

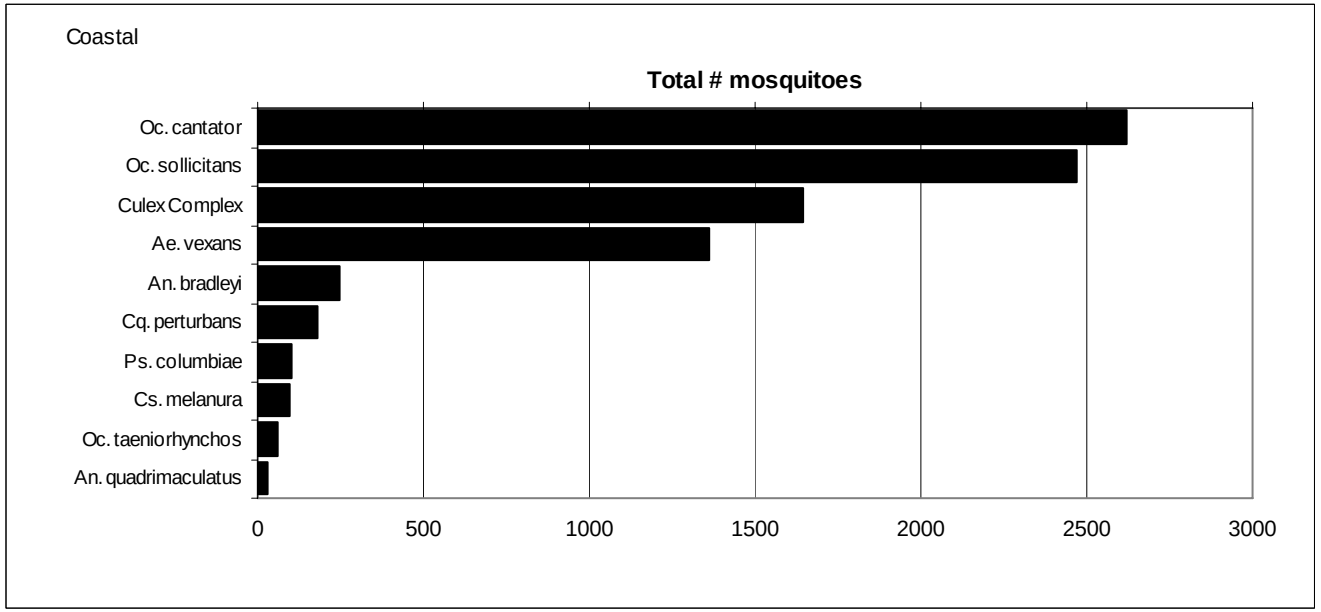


Comments

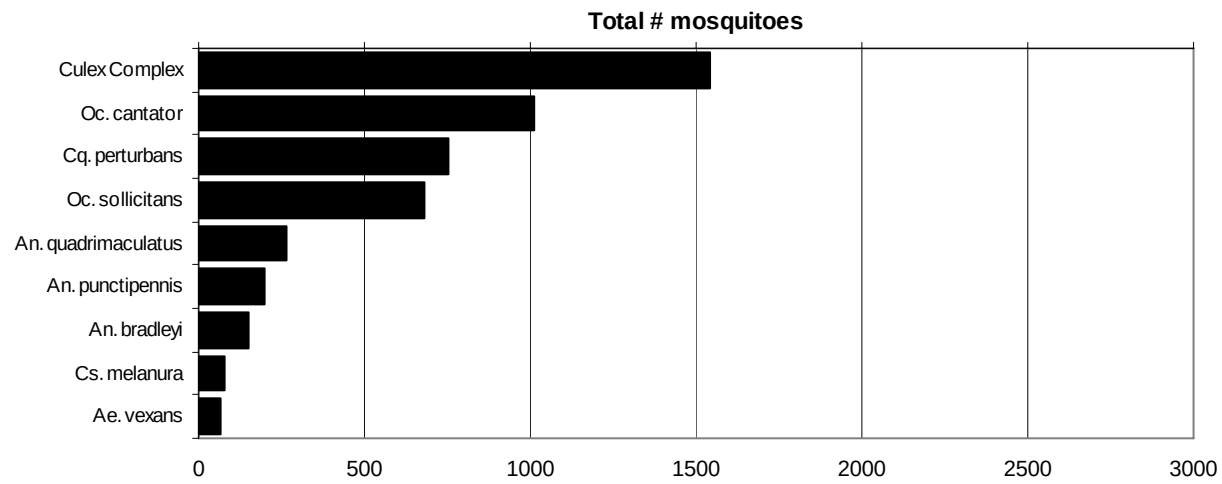
Culiseta melanura appear to be limited in areas that they normally thrive: the Coastal and Pinelands regions. Both light traps (to which *Cs. melanura* is not very attracted to) and their favored resting boxes show reduced populations. In addition, this reduction in population includes a delay or reduction in initial populations. As Wayne Crans pointed out in the Vector Surveillance report, low initial population levels for a multivoltine species suggests fewer cohorts that are likely involved in virus amplification. On the other hand, last year's perceived low initial populations also produced virus activity. However, unlike at this point, the populations were rebounding toward historical levels by mid-season.

Cumulative top ten species in each region.

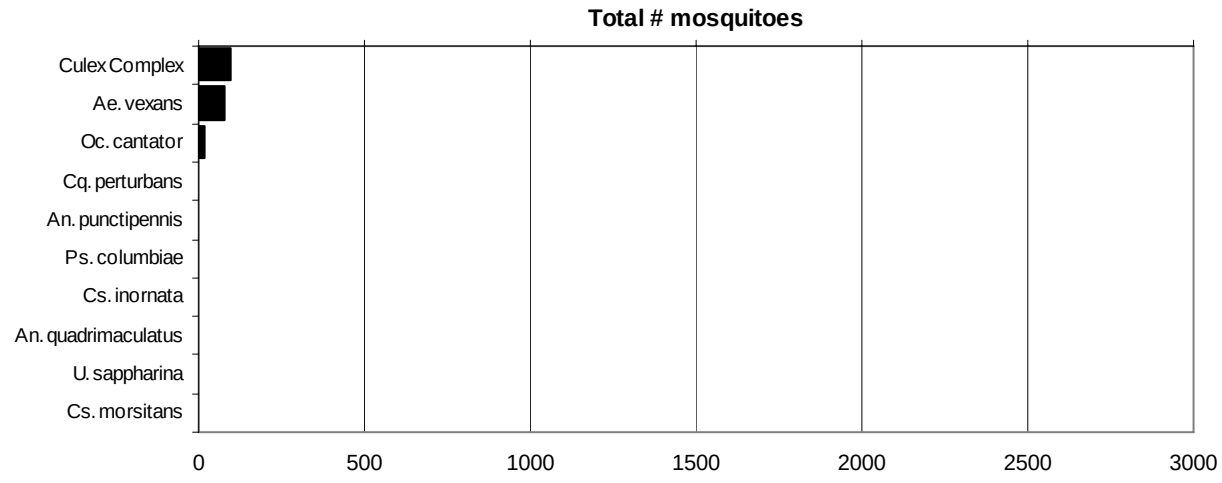




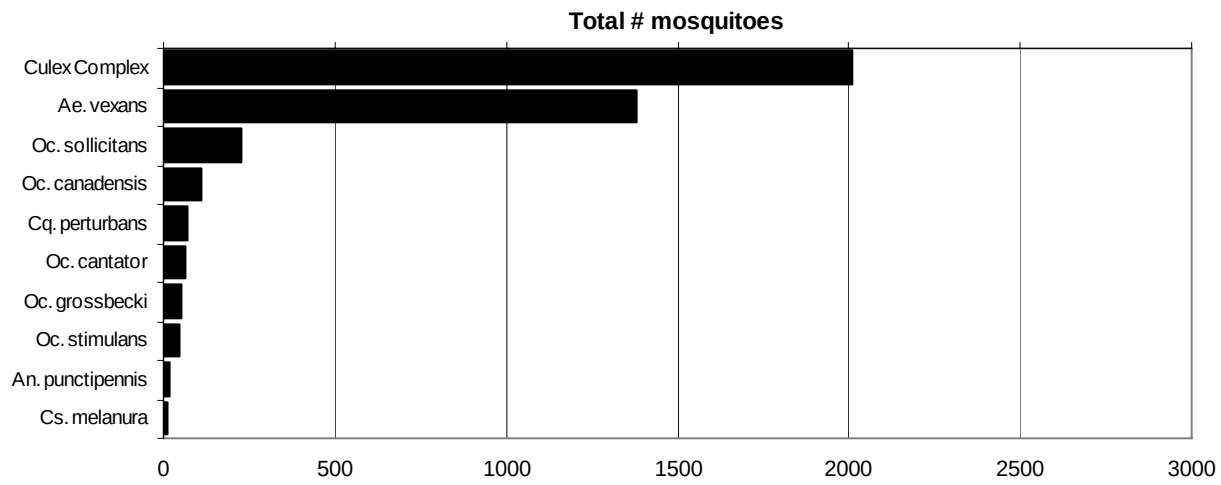
Delaware Bayshore



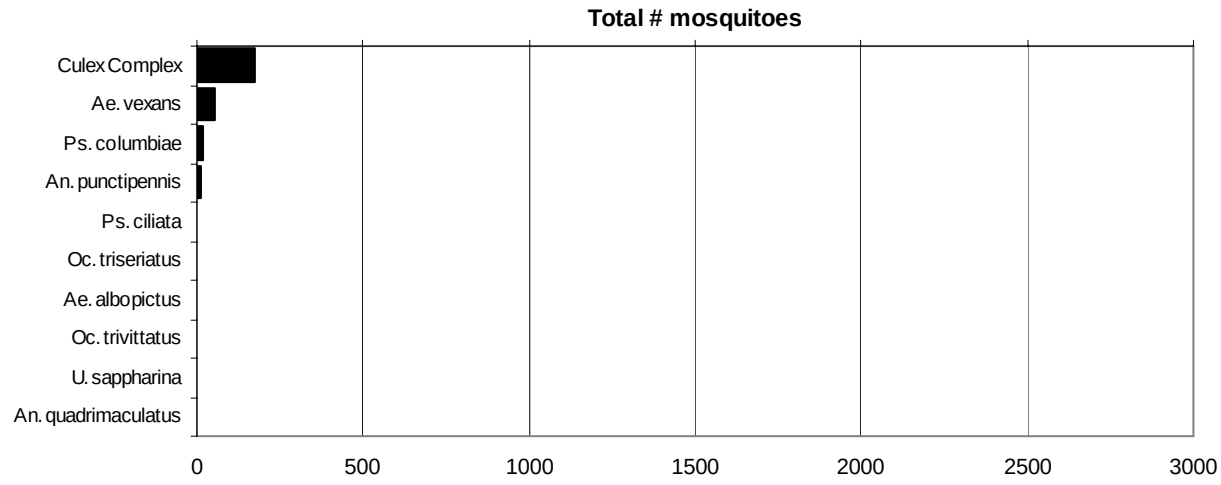
Delaware River Basin



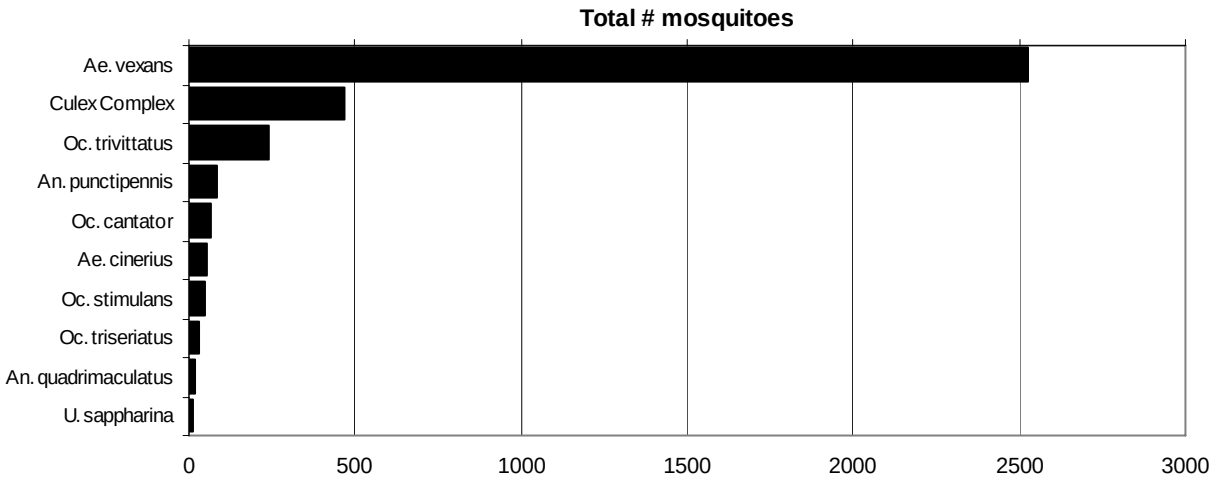
New Yorl Metropolitan



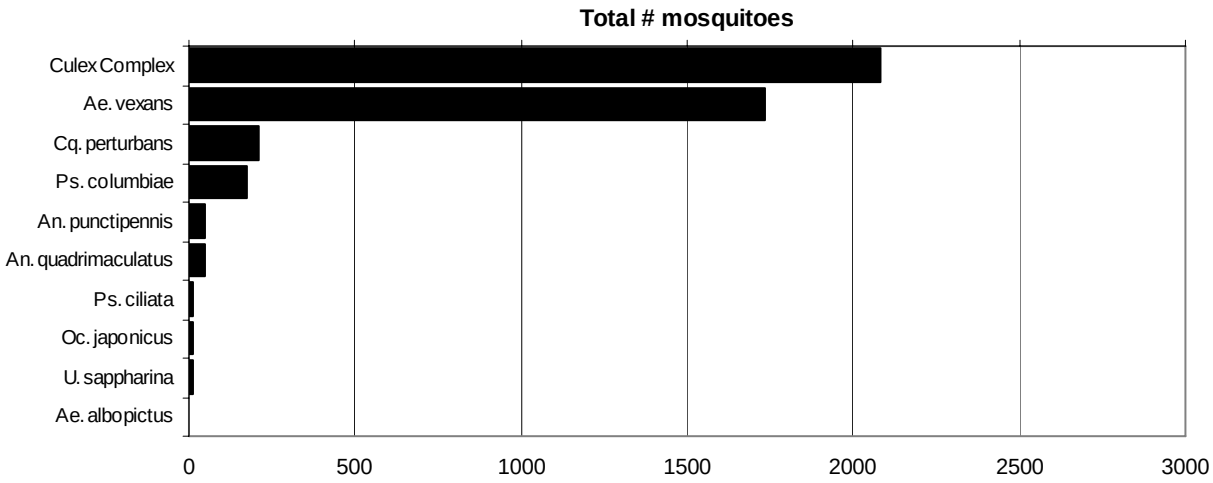
North Central Rural



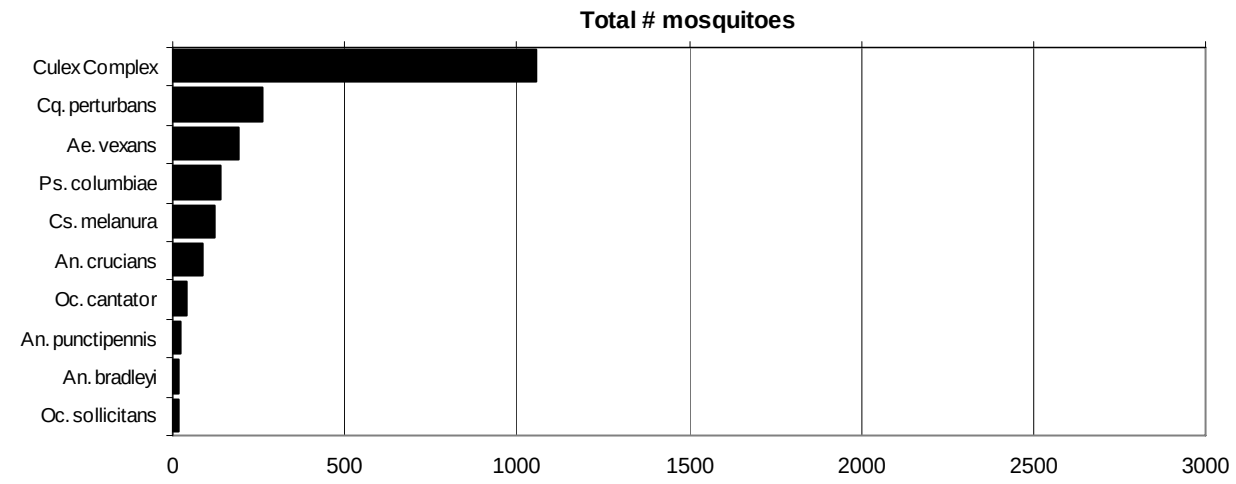
Northw est Rural



Philadelphia Metropolitan



Pinelands



Suburban Corridor