NEW JERSEY STATEWIDE SURVEILLANCE

Week 34 Report for 20 August to 27 August, 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 borders.

Figure 1b. Trap lat-long locations.

Summary table – Week 34

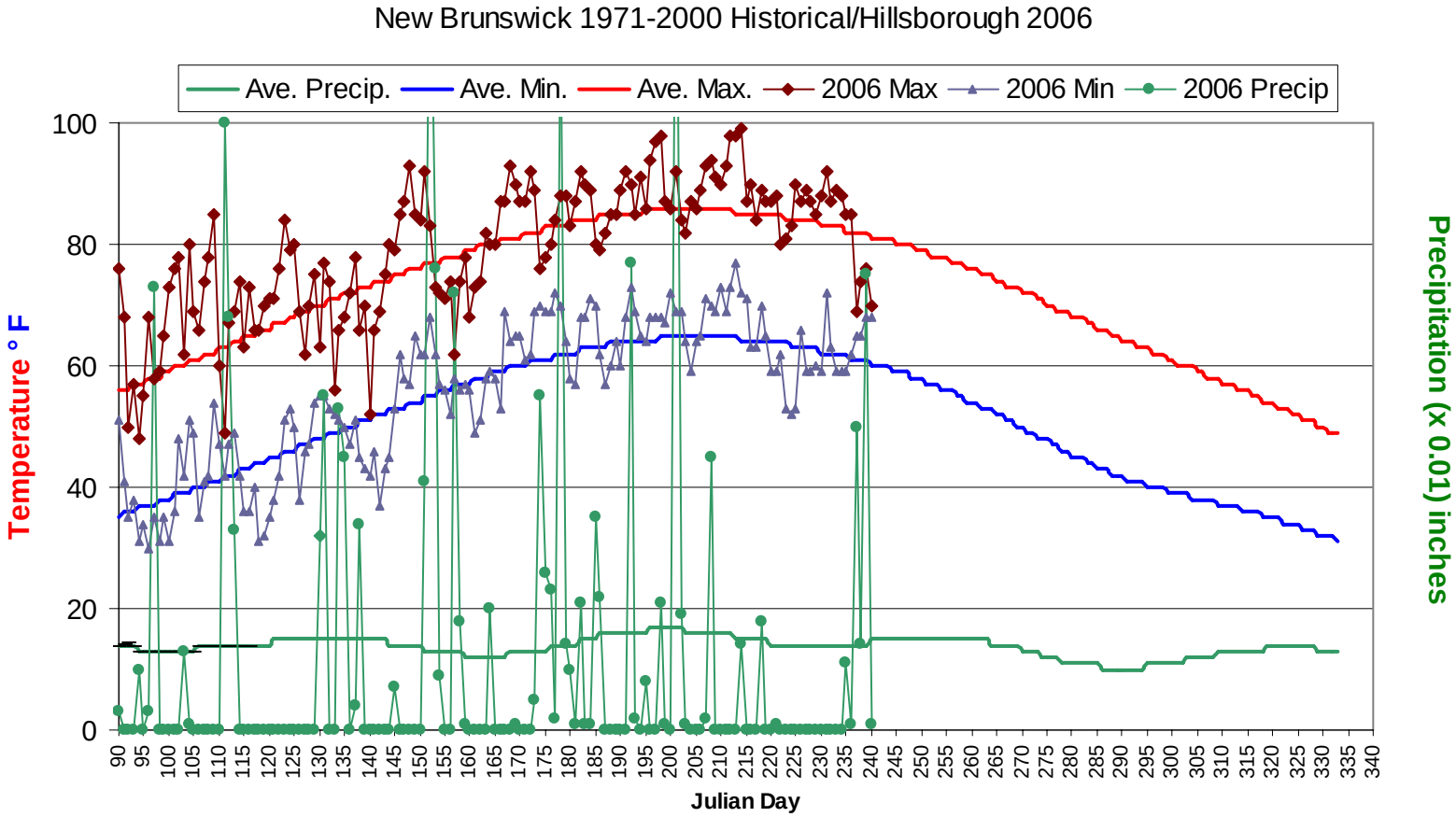
	Aedes vexans		*Culex complex*		*Coquillettidia perturbans*		*Ochlerotatus sollicitans*	
Region	This Week	Average*	This Week	Average*	This Week	Average*	This Week	Average*
Agricultural	**0.36**	**23.67**	**8.60**	**23.67**	**0.21**	**0.24**	**0.00**	**1.38**
Coastal	**0.46**	**3.78**	**0.73**	**3.37**	**0.25**	**0.25**	**4.92**	**43.65**
Delaware Bayshore	**0.00**	**3.84**	**4.52**	**75.89**	**0.00**	**4.73**	**5.12**	**13.50**
Delaware River Basin	**0.50**	**13.91**	**1.93**	**15.32**	**0.14**	**0.41**	**0.00**	**0.23**
New York Metro	**0.61**	**5.19**	**2.40**	**5.28**	**0.13**	**0.11**	**0.17**	**1.09**
North Central Rural	**0.04**	**0.92**	**0.14**	**1.10**	**0.00**	**0.06**	**0.00**	**0.00**
Northwest Rural	**1.43**	**29.58**	**0.74**	**5.67**	**0.12**	**0.24**	**0.00**	**0.00**
Philadelphia Metro	**2.11**	**11.07**	**0.52**	**5.59**	**0.29**	**0.26**	**0.00**	**0.00**
Pinelands	**0.00**	**2.86**	**1.23**	**2.94**	**0.06**	**0.43**	**0.00**	**0.34**
Suburban Corridor	**1.82**	**8.71**	**2.04**	**2.46**	**0.21**	**0.69**	**0.00**	**0.10**

* 5-year running mean.

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

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

Climate Data

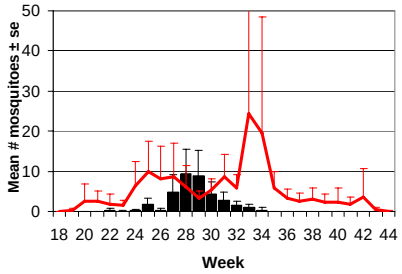
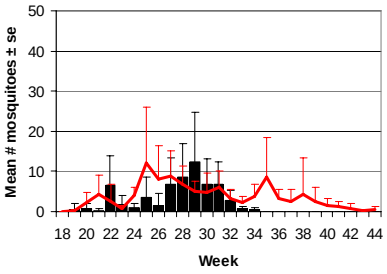
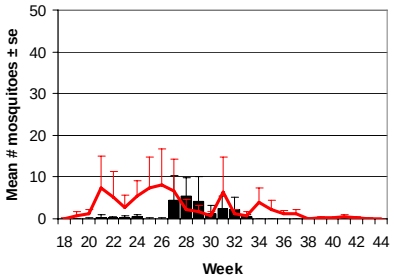
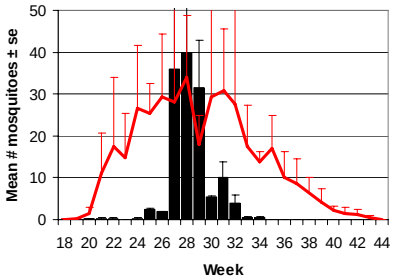
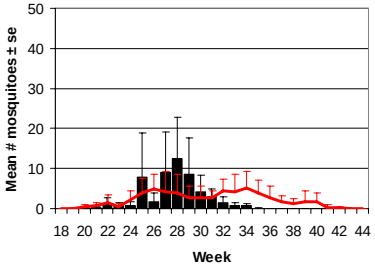
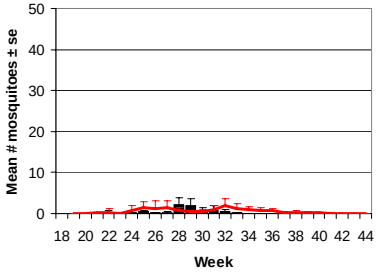
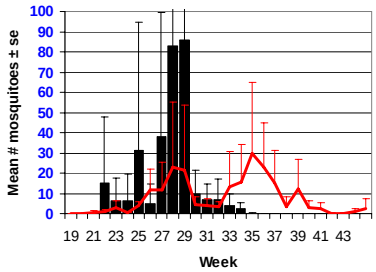
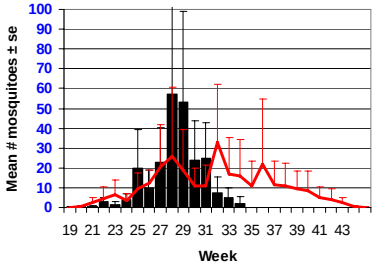
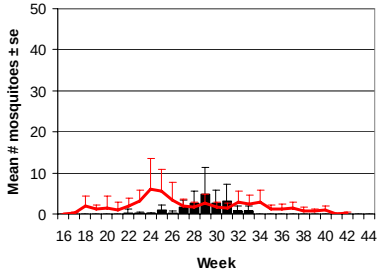
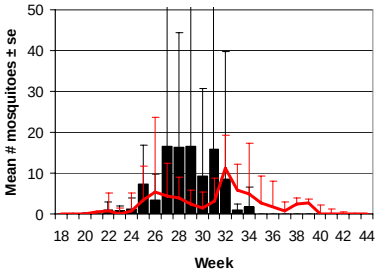


This figure shows historical average maximum and minimum temperatures and average precipitation recorded in the New Brunswick, NJ weather station over a recent 30 year period. Also graphed are the current year's minimum and maximum temperatures as recorded at the Hillsborough NJ weather station (a station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

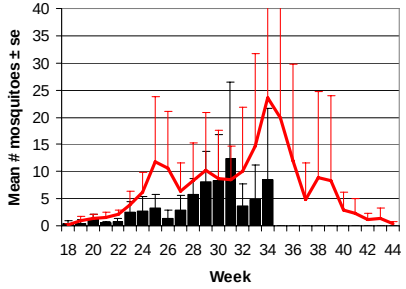
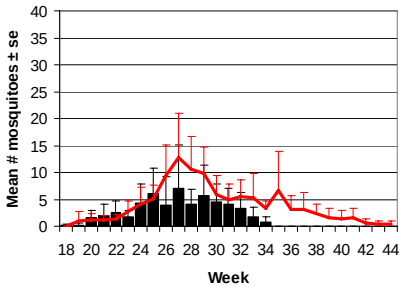
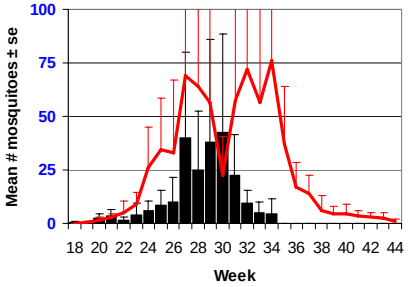
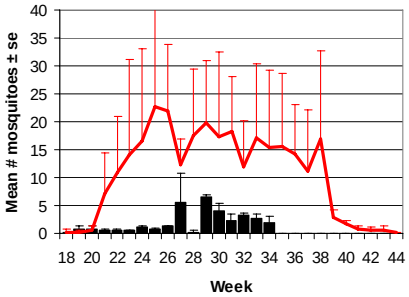
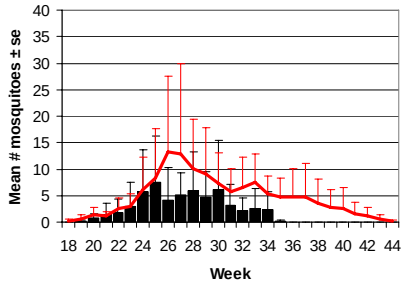
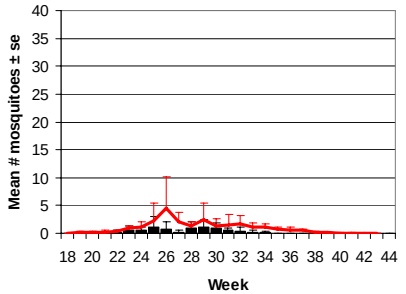
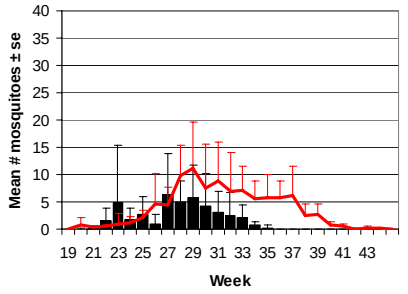
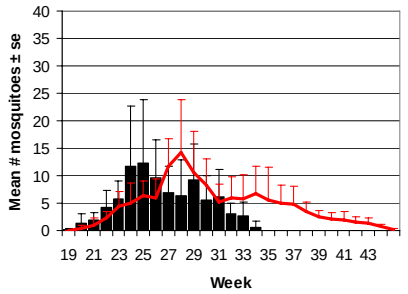
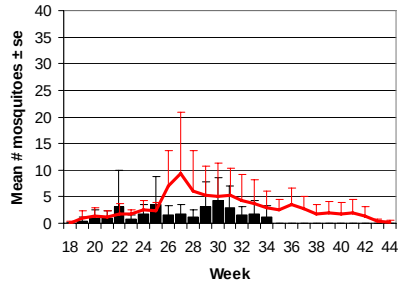
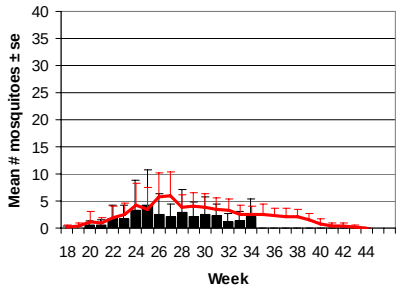
The state climatologist has an extensive amount of climatological historical data as well as stations reporting current conditions and forecasts:

http://climate.rutgers.edu/stateclim/

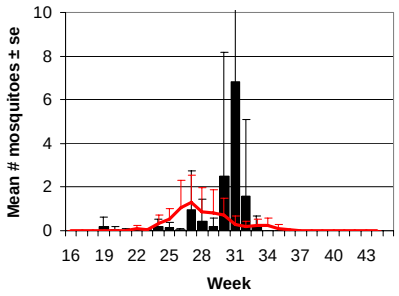
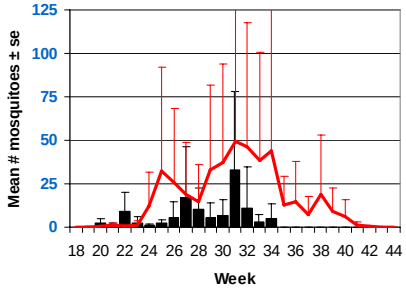
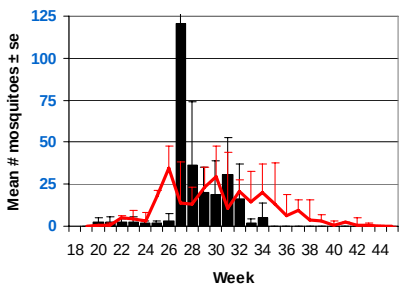
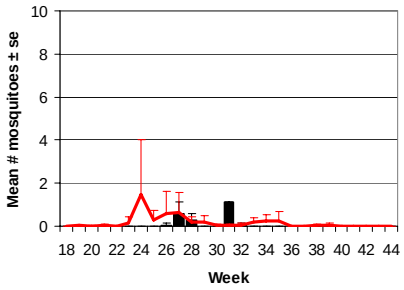
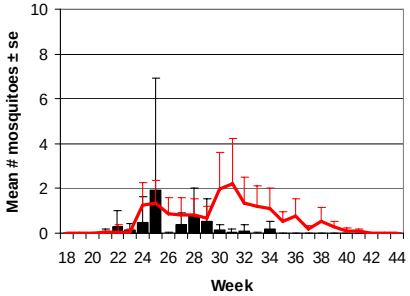
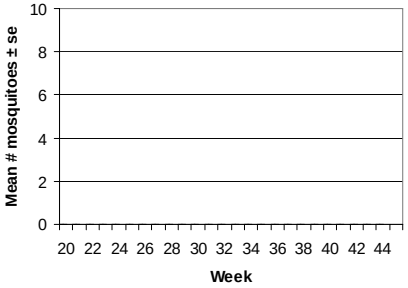
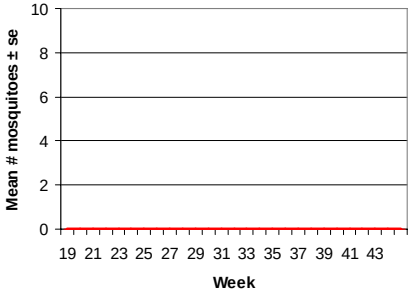
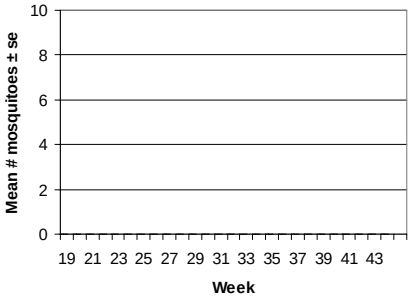
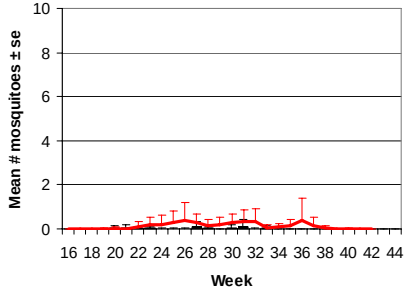
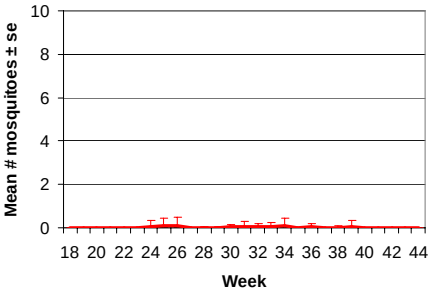
Aedes vexans - Fresh Floodwater Species

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes vexans* populations continue to decline throughout the regions. Passing tropical storms, such as the ones that have recently produced numerous fresh floodwater areas may provide the opportunity for locally abundant emergences, at least until nighttime temperatures stay above 50°F. Although *Ae. vexans* is a moderately competent vector of WN, this species has not yet been shown to be positive in any pools collected to date, and few positive pools prior to this year. This may indicate that 1) *Ae. vexans* is disinclined to feed upon primary hosts (birds), 2) *Ae. vexans* is less likely to feed upon secondary hosts most likely to carry WNv (deer), 3) there is a decline in viral load in either birds or mammals or both, or some combination of all three.	

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* numbers continue to pace historical trends, but at lower values. As the season progresses, inseminated females will begin to enter hibernaculae and may switch to a carbohydrate-based diet to develop fat bodies to get them through the winter. As with *Ae. vexans, Cx. pipiens* is moderately competent for WN. However, field infection rates are much higher, and *Culex* have previously been clearly implicated in the enzootic cycle due to their taste for avian blood.	

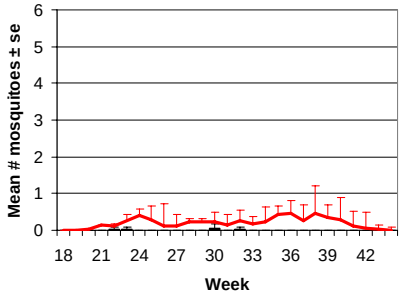
Ochlerotatus sollicitans - Salt Marsh Floodwater Species

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Ochlerotatus sollicitans* populations continue to decline. While *Oc. sollicitans* is normally a considerable coastal nuisance, this years population trends have generally been on the low side and not indicative of the pestiferous nature of this mosquito*.	

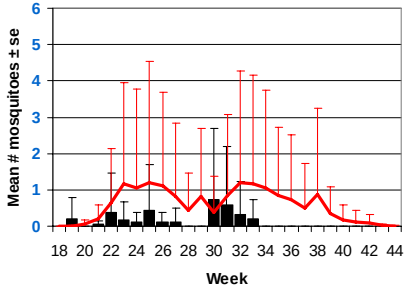
However, see Abbitt and Abbitt 1981 Fatal exsanguination of cattle attributed to an attack of salt marsh mosquitoes (Aedes sollicitans). J. Am Med Vet, 179(12): 397-400.

Culiseta melanura – Miscellaneous Group

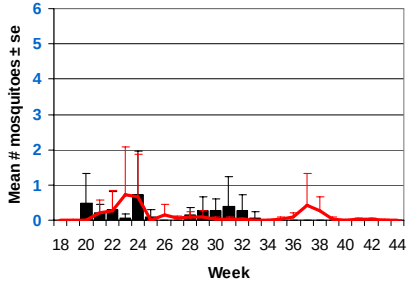
Agricultural



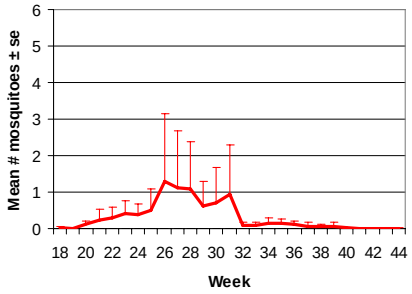
Coastal



Delaware Bayshore



Delaware River Basin



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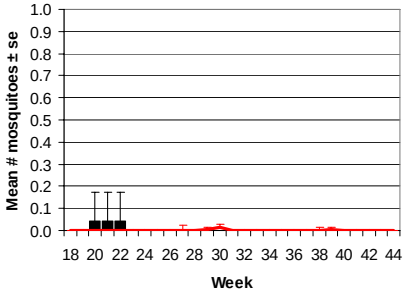
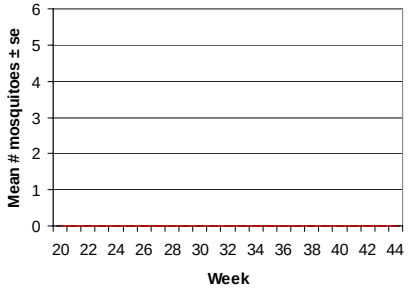


North Central Rural



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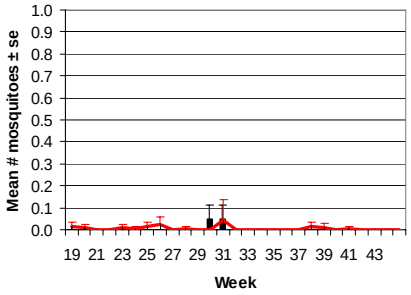
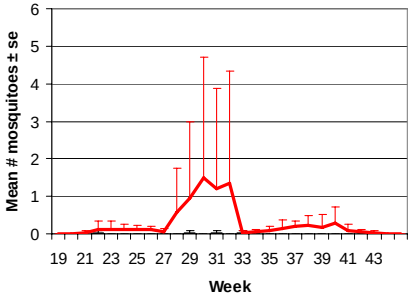
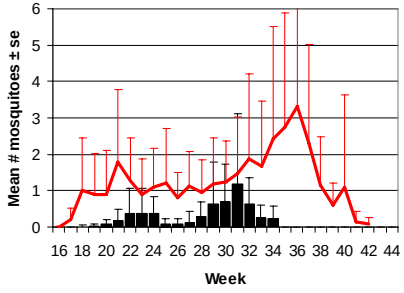


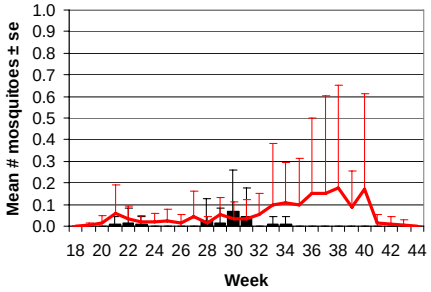
Philadelphia Metro



Pinelands



Suburban Corridor



Comments

Culiseta melanura populations continue to decline. Most notable is the decline in the Pinelands which appear to show this years' trend as condensed, with a late initial emergence and possibly an early seasonal peak. While there is still time for an end of season surge in the population, it is unlikely to result in much, if any, EEE activity.