NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report for 5 August to 11 August, 2007, Week 32

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Purpose: Samples from New Jersey light traps throughout the state are collected by county mosquito control agencies for use in their IPM programs. A portion of this data (about 82 traps) is sent to Rutgers and re-calculated to show statewide 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.

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 county mosquito control agencies in New Jersey.

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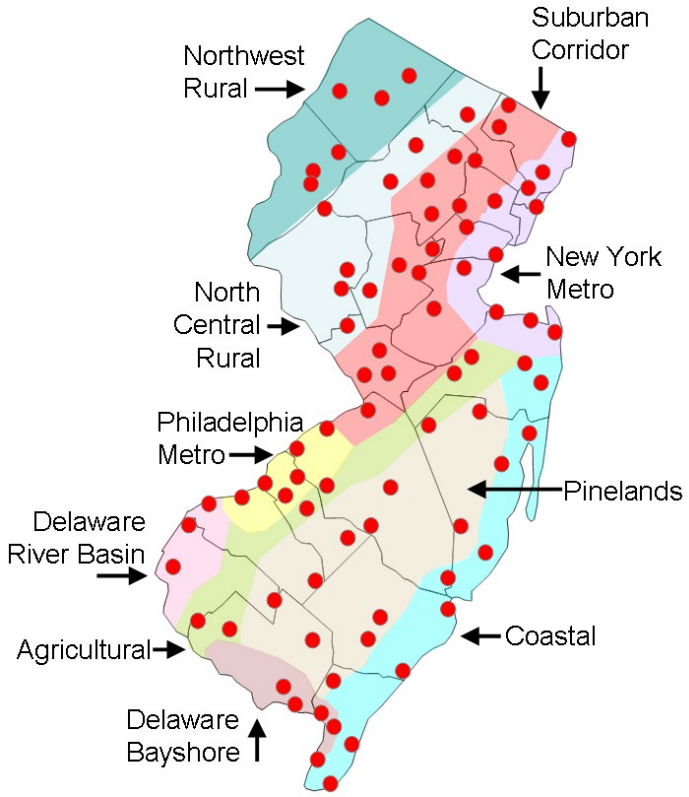


Figure 1: Ten regions selected for the New Jersey Adult Mosquito Surveillance Program overlaid with county borders. Trap locations indicated by red-filled circles.

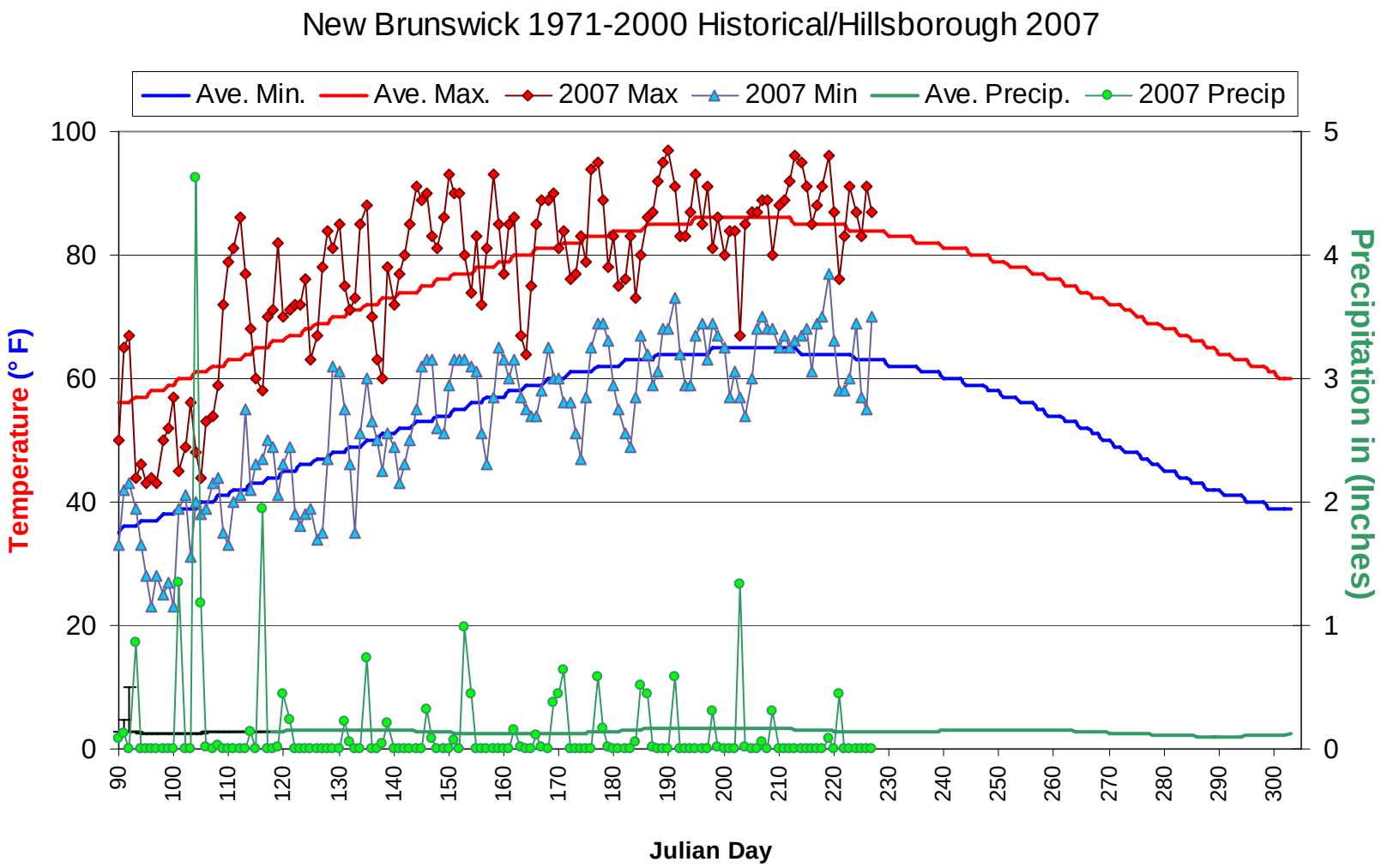
Summary table – Week 32

Region	*Aedes vexans*			*Culex* Mix			*Coquillettidia perturbans*			*Aedes sollicitans*		
	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase
Agricultural	0.21	5.05	0	2.79	7.65	0	0.05	0.38	0	0.36	0.19	2
Coastal	1.13	3.4	0	2.08	5.25	0	0.06	1.77	0	9.63	38.92	0
Delaware Bayshore	0.12	1.52	0	12.71	56.35	0	0.12	2.47	0	11.81	23.11	0
Delaware River Basin	0	24.78	0	0	9.47	0	0	1.16	0	0	0.01	0
New York Metro	2.74	3.57	0	9.1	5.94	2	0.07	0.074	0	0.14	1.24	0
North Central Rural	0.27	1.74	0	0.2	1.43	0	0	0.1	0	0	0	0
Northwest Rural	46.64	14.46	4	1.76	7.78	0	0.05	0.09	0	0	0	0
Philadelphia Metro	0.71	11.89	0	1.05	4.46	0	0.03	0.2	0	0	0	0
Pinelands	0.65	1.5	0	0.51	3.95	0	0.18	1.55	0	0.1	0.3	0
Suburban Corridor	4.88	9.9	0	2.13	4.54	0	0.27	1.29	0	0.01	0.03	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).

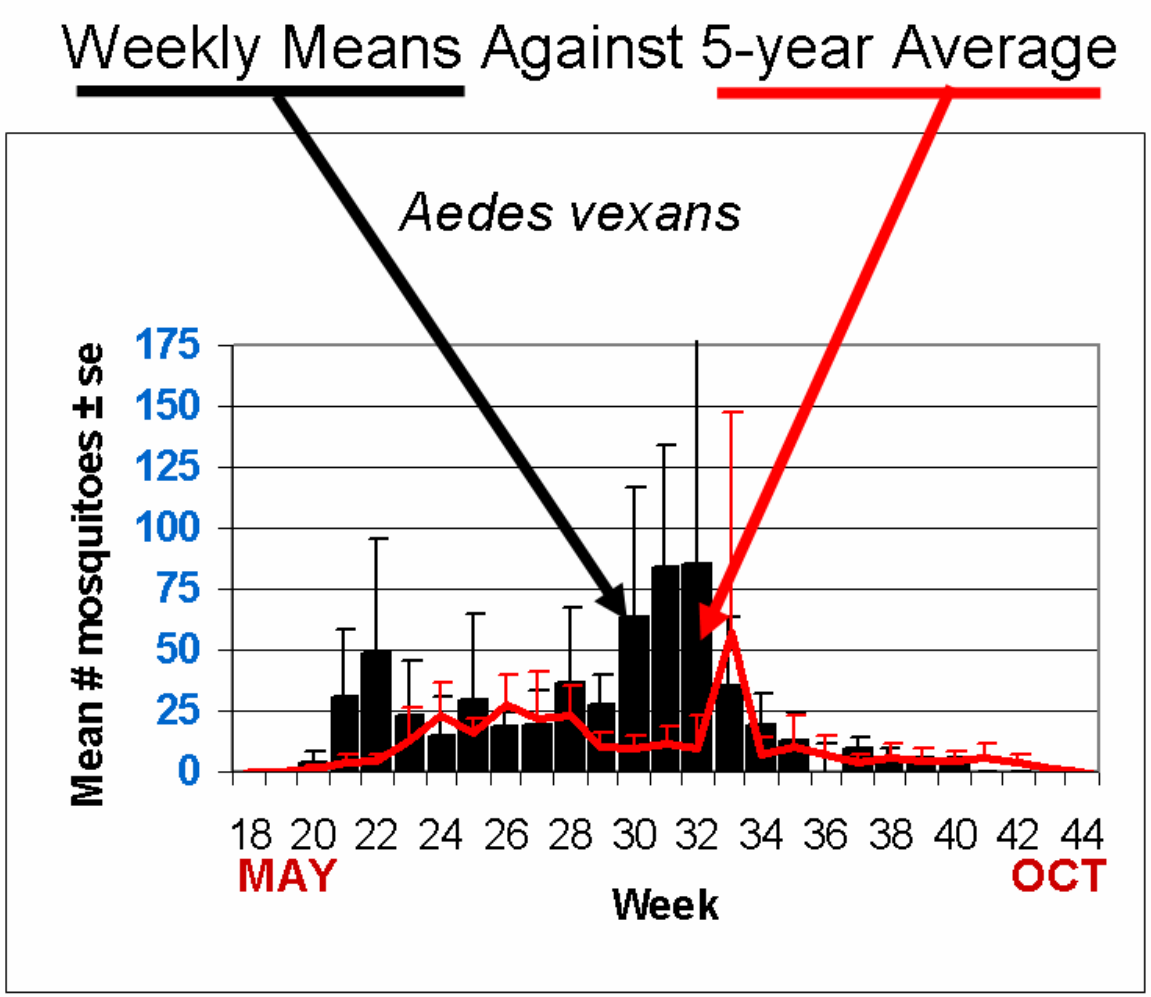
State Summary: *Aedes vexans* numbers increased greatly in the Northwestern Rural region, but this was primarily at one site. *Culex* Mix populations continue to be high in the New York Metro regions, and *Aedes sollicitans* is migrating from coastal regions to inland agricultural areas.

Climate Data

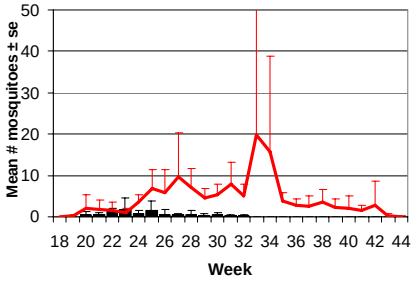
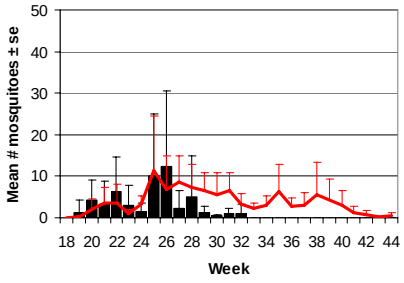
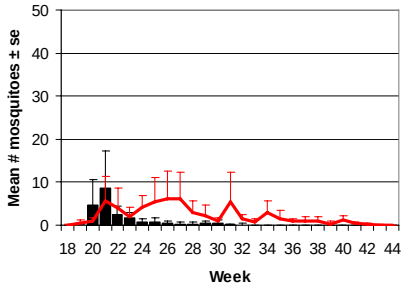
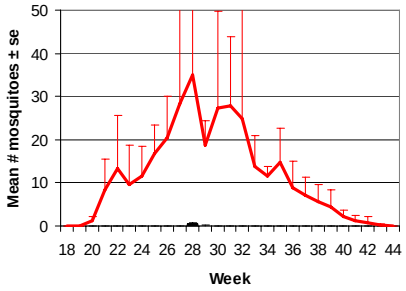
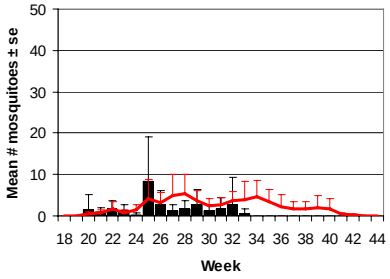
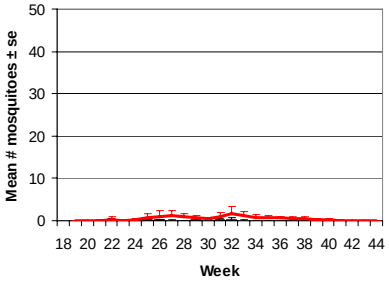
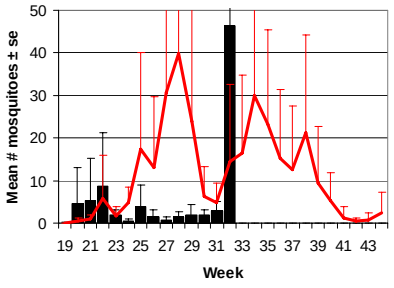
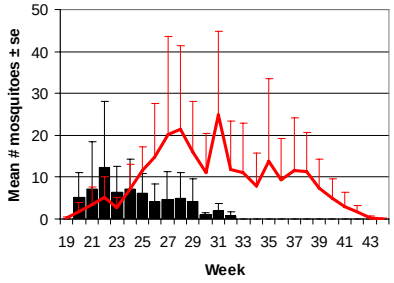
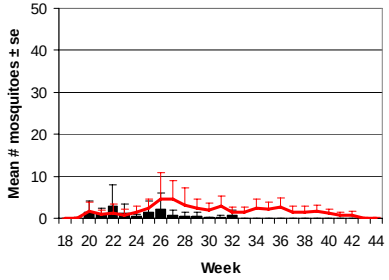
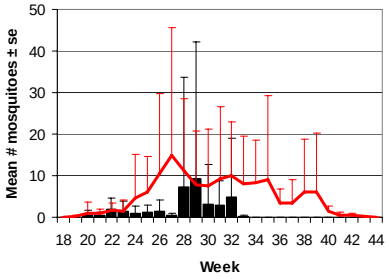


This figure shows historical average maximum and minimum temperatures and average precipitation recorded in the New Brunswick, NJ weather station over a recent 30 year period. Also graphed are the current year's minimum and maximum temperatures as recorded at the Hillsborough NJ weather station (a station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

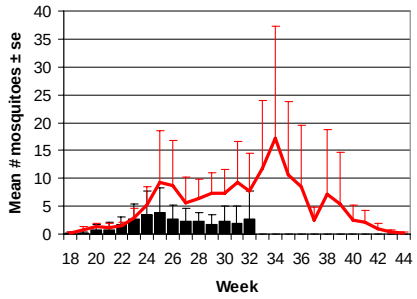
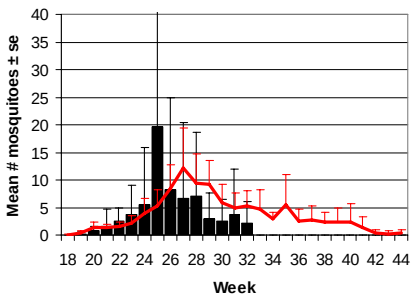
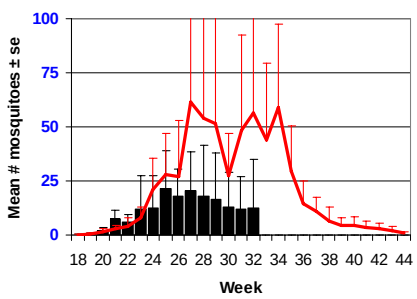
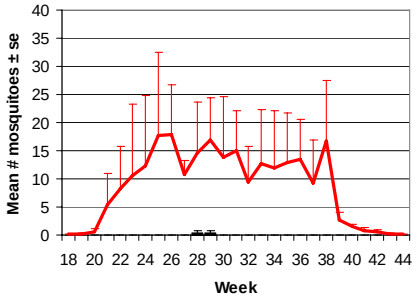
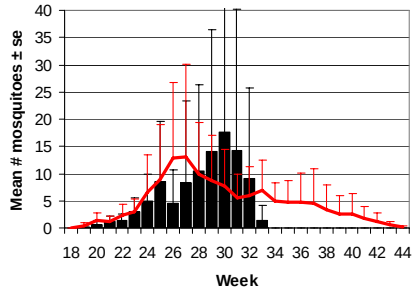
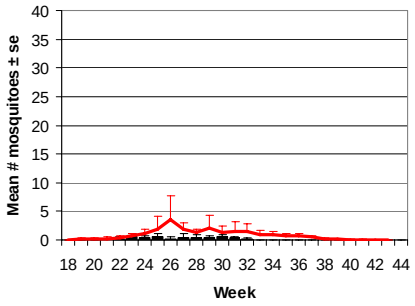
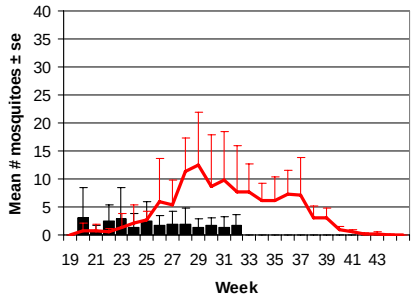
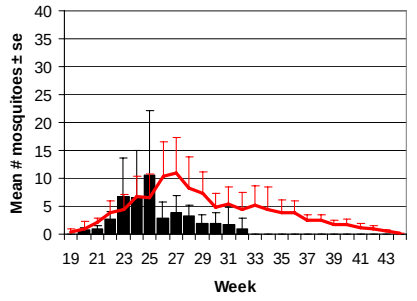
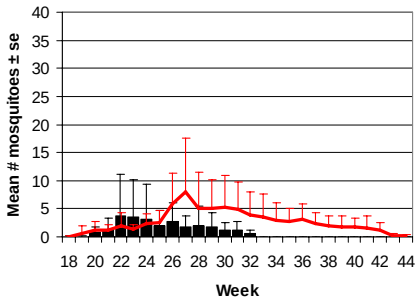
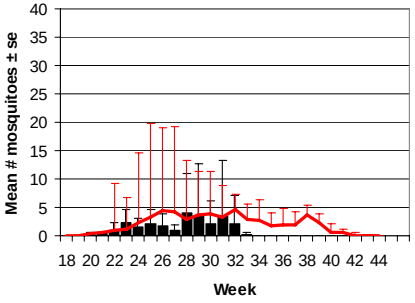
The Species Graphs: The species graph pages include a graph with two plots for each of the ten regions defined on the first page (Agricultural, Coastal, Delaware Bayshore, Delaware River, New York Metro, North-Central, Northwestern, Philadelphia Metro, Pinelands, and Suburban Corridor). Below is an example 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 Week 32 are from Atlantic, Bergen, Camden, Cape May, Cumberland, Hudson, Hunterdon, Mercer, Middlesex, Morris, Ocean, Passaic, Somerset, Sussex and Warren counties.



Aedes vexans - Fresh Floodwater Species

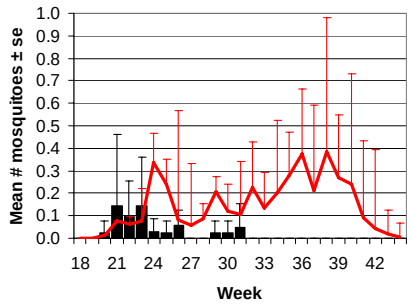
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes vexans* at one locale in the Northwestern region emerged in very large numbers. On the 8th and 10th of this month, over an inch of rainfall occurred each day while less than a quarter of an inch fell in southern New Jersey, reflecting the variation in northern verses southern precipitation. High daytime temperatures accelerate development of the larvae, a notable characteristic of mosquitoes that use ephemeral larval habitat.	

Culex Mix - *Multivoltine Culex Species*

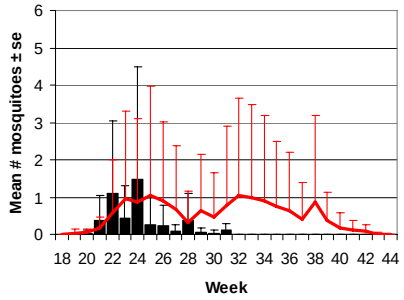
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		For the third week in a row, *Culex* species (*Cx. pipiens, restuans,* and *salinarius*) are at greater abundance than the historical means in the New York Metropolitan region. Amplification of West Nile continues as more positive pools of *Culex* are found in this and the Suburban Corridor regions. In addition to the primarily bird-feeding *Culex* (*pipiens* and *restuans*), *Cx. salinarius* have also been found positive in the New York Metro region.	

Culiseta melanura – Miscellaneous Group

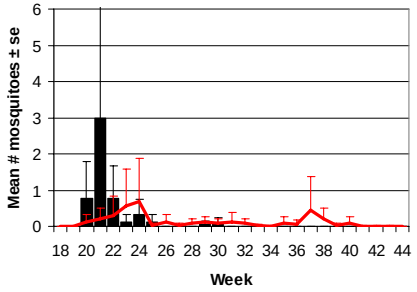
Agricultural



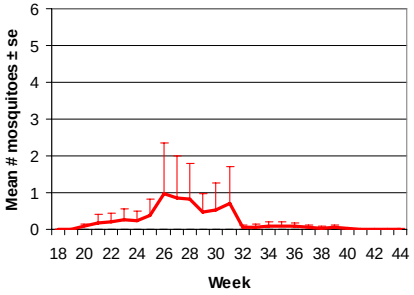
Coastal



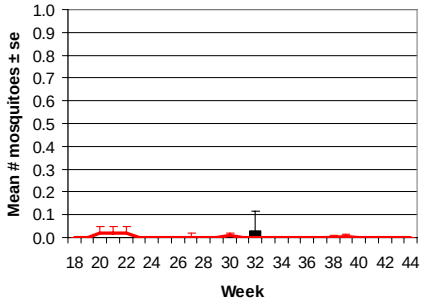
Delaware Bayshore



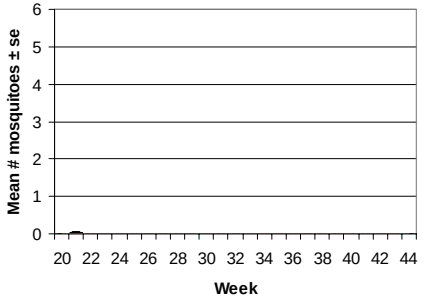
Delaware River Basin



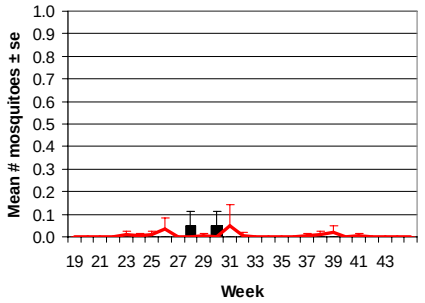
New York Metro



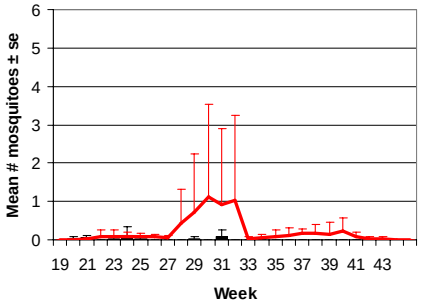
North Central Rural



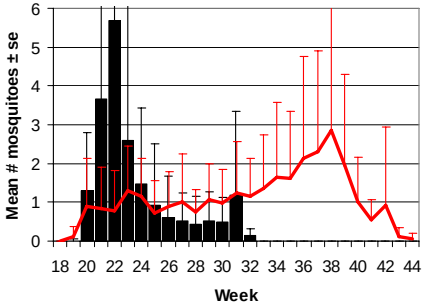
Northwestern Rural



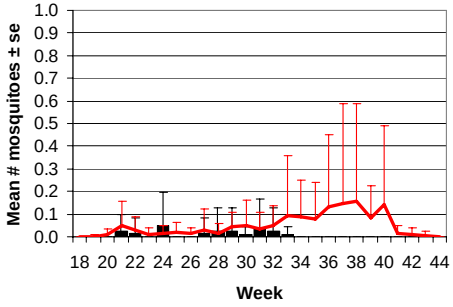
Philadelphia Metro



Pinelands



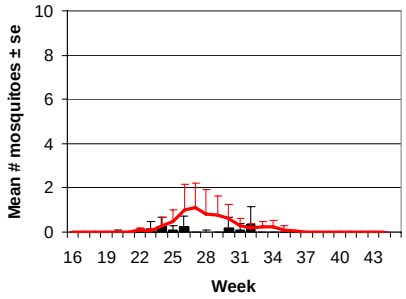
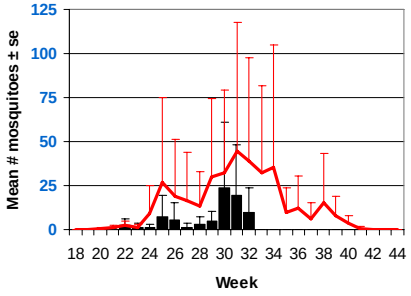
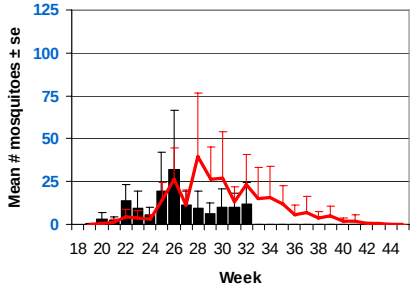
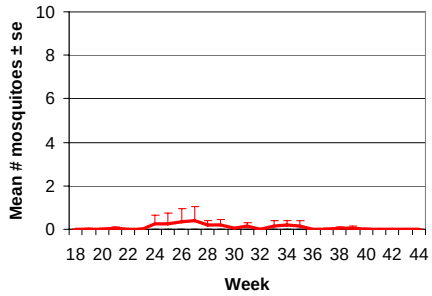
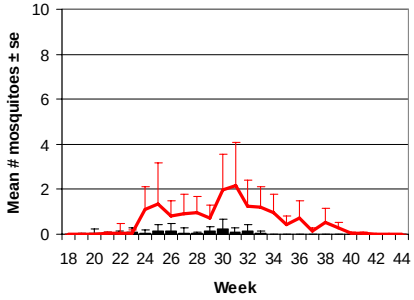
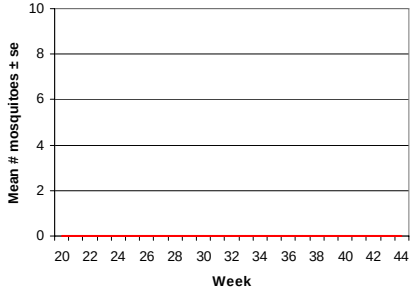
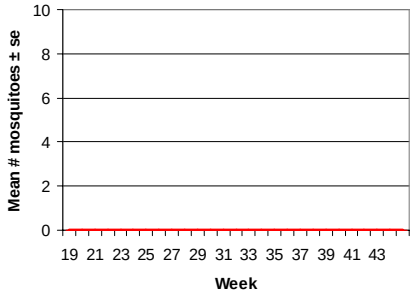
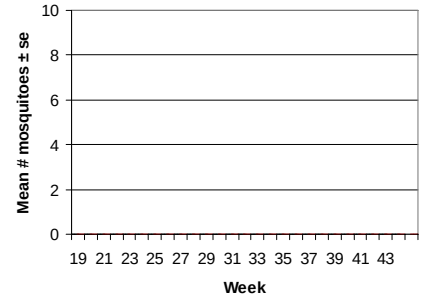
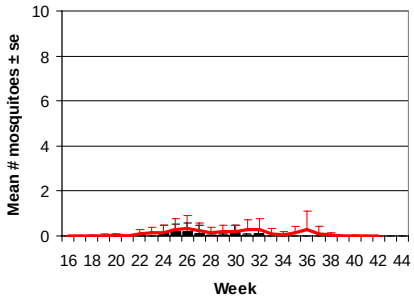
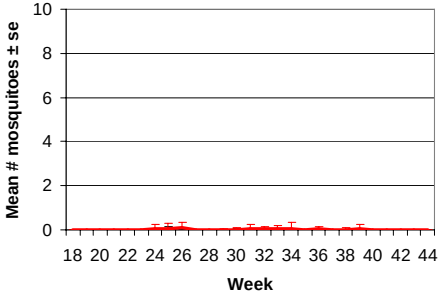
Suburban Corridor



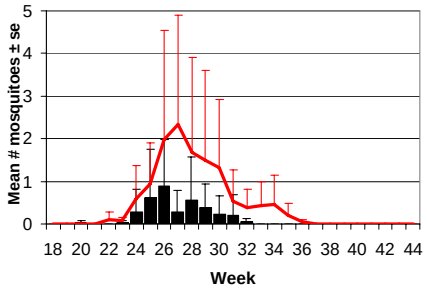
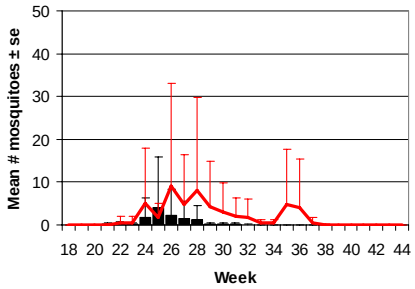
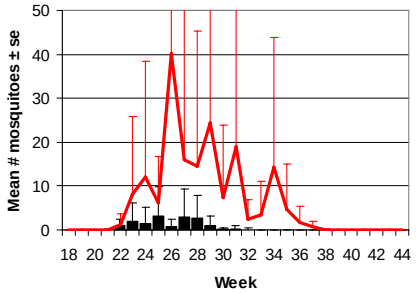
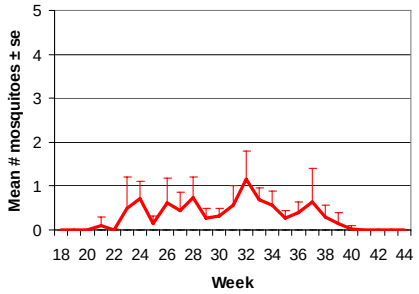
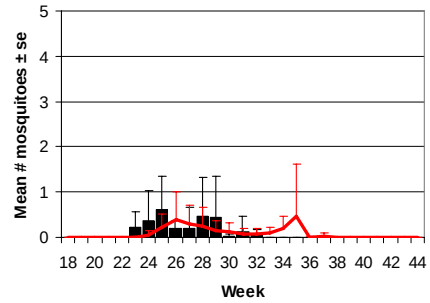
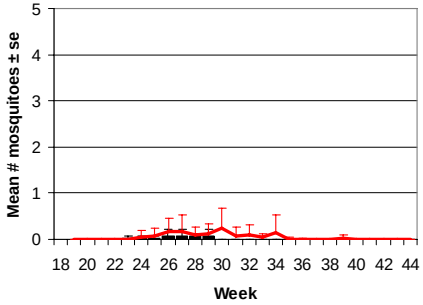
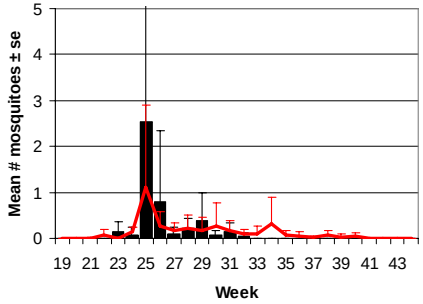
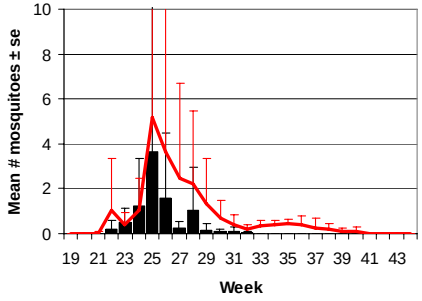
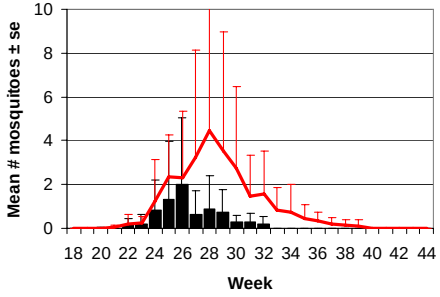
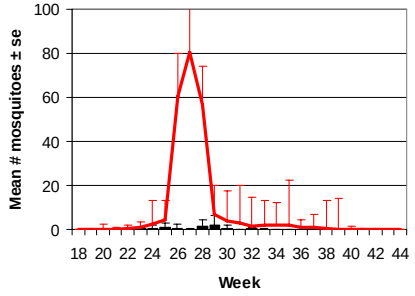
Comments

Last week *Culiseta melanura* populations in the Pinelands appeared to be around historical levels, increasing from the usual mid-season low values. This week, however, abundance appears to have declined in this habitat. The vector surveillance program is observing a wide variation in population levels at both the coastal and pinelands monitoring sites. Some sites have very few individuals found in the resting boxes while others are showing a slow increase in population sizes.

Aedes 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**	
		*Aedes sollicitans* in the Coastal region is heading toward the nadir after the third emergence. Individuals from this last emergence are now showing up at inland agricultural sites as this long-distance migrant moves away from the salt marsh. This mosquito has been implicated in the transmission of eastern equine encephalitis to humans along coastal regions.	

Coquillettidia perturbans – Unique Life History

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Coquillettidia perturbans* numbers are decreasing throughout the state. This will be the last report unless late season activity increases in conjunction with eastern equine encephalitis virus activity.	