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New Jersey Agricultural Experiment Station

NEW JERSEY ADULT MOSQUITO SURVEILLANCE
Report for 15 May to 31 May 2008, CDC Week 22

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Center for Vector Biology

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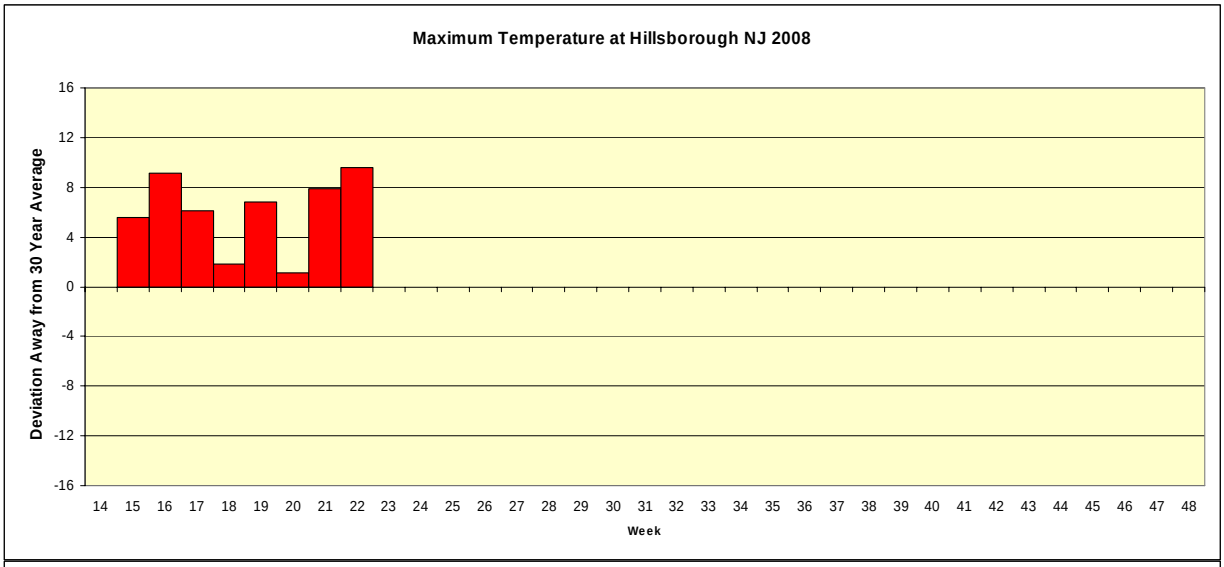
Summary table – Week 22

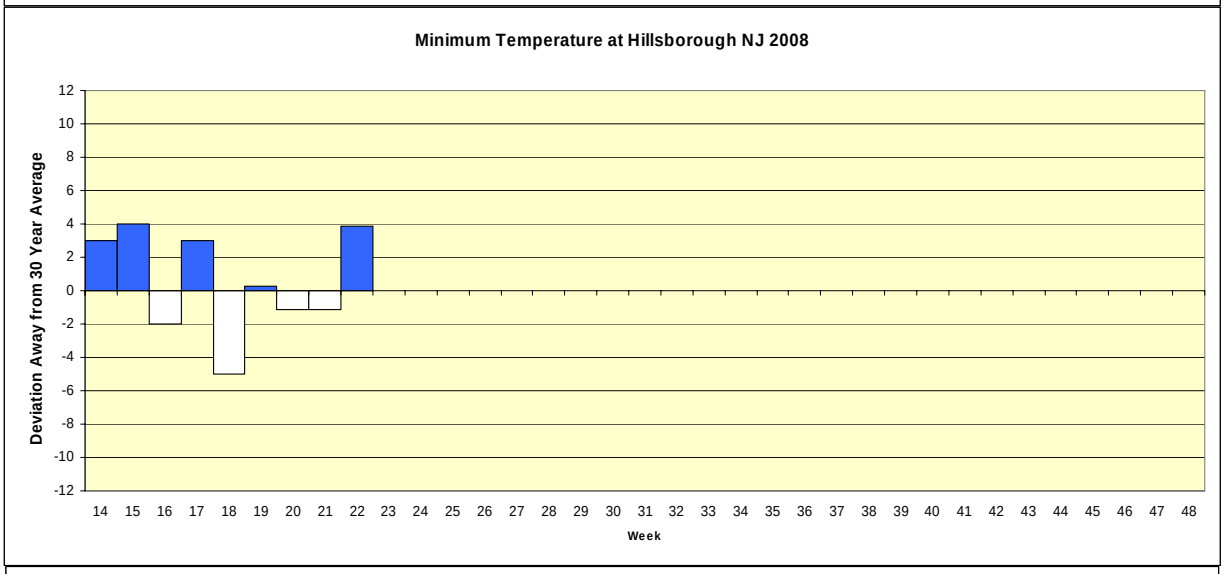
	Aedes vexans			***Culex* Mix**			***Coquillettidia perturbans***			***Aedes sollicitans***		
Region	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase
Agricultural	0.07	1.49	0	0.45	1.28	0	0.00	0.07	0	0.00	0.07	0
Coastal	0.06	4.48	0	1.29	1.67	0	0.00	0.21	0	2.33	2.66	0
Delaware Bayshore	0.00	3.67	0	0.00	4.42	0	0.00	0.67	0	0.00	4.02	0
Delaware River Basin	0.00	14.31	0	0.00	9.04	0	0.00	0.08	0	0.00	0.00	0
New York Metro	0.00	0.99	0	0.00	1.62	0	0.00	0.00	0	0.21	0.07	4
North Central Rural	0.00	0.35	0	0.06	0.39	0	0.00	0.00	0	0.00	0.00	0
Northwest Rural	0.00	7.34	0	0.00	0.61	0	0.00	0.01	0	0.00	0.00	0
Philadelphia Metro	0.21	6.62	0	2.81	3.56	0	0.00	0.52	0	0.00	0.00	0
Pinelands	0.05	1.67	0	0.52	2.37	0	0.00	0.11	0	0.01	0.10	0
Suburban Corridor	0.05	1.48	0	0.43	1.34	0	0.00	0.08	0	0.00	0.00	0

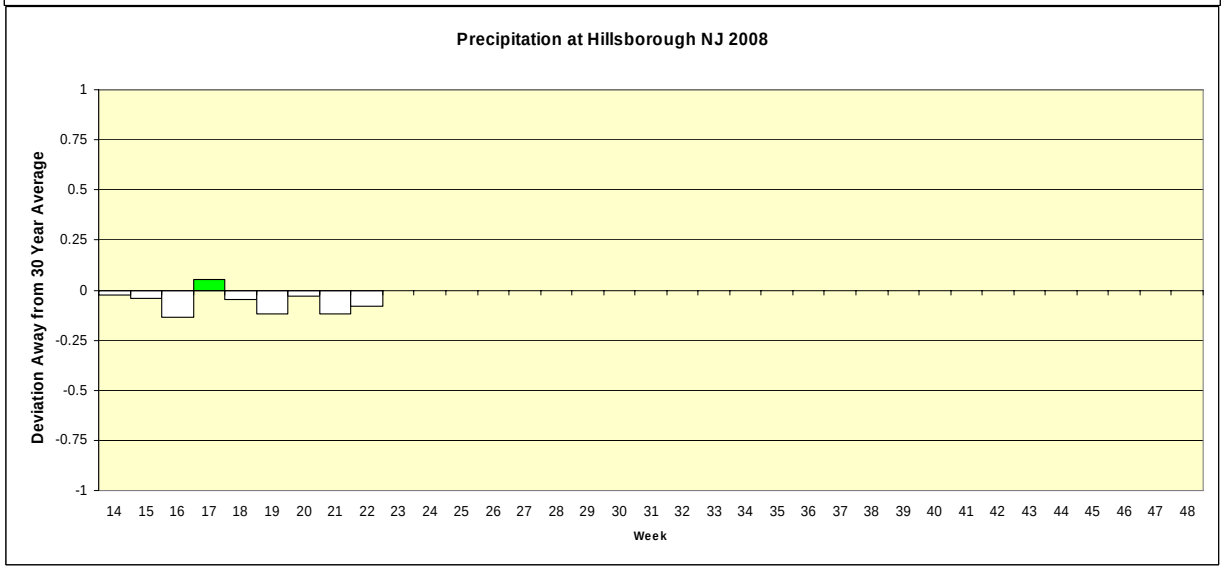
* Averages represent data from, at most, the previous 5 years. Increase is a scale of current values from historical values where no difference or a decrease is represented by 0 (blue), up to 50% greater difference by 1 (green), up to 100% greater difference by 2 (yellow), up to 150% greater difference 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. These end-of-year changes are generally minor unless otherwise noted.

State Summary: With about half of the counties reporting (some do not begin light trap operations until after June 1st), most mosquito populations appear to be below historical trends. Only *Aedes sollicitans* in the New York Metro region during this current week showed higher population abundances than historical trends among the four pestiferous species. Some populations of *Culex* in the previous week were in greater abundance than historical trends. Other species, such as *Aedes cantator* (reported below) and other early season species were locally abundant.

Climate Deviations

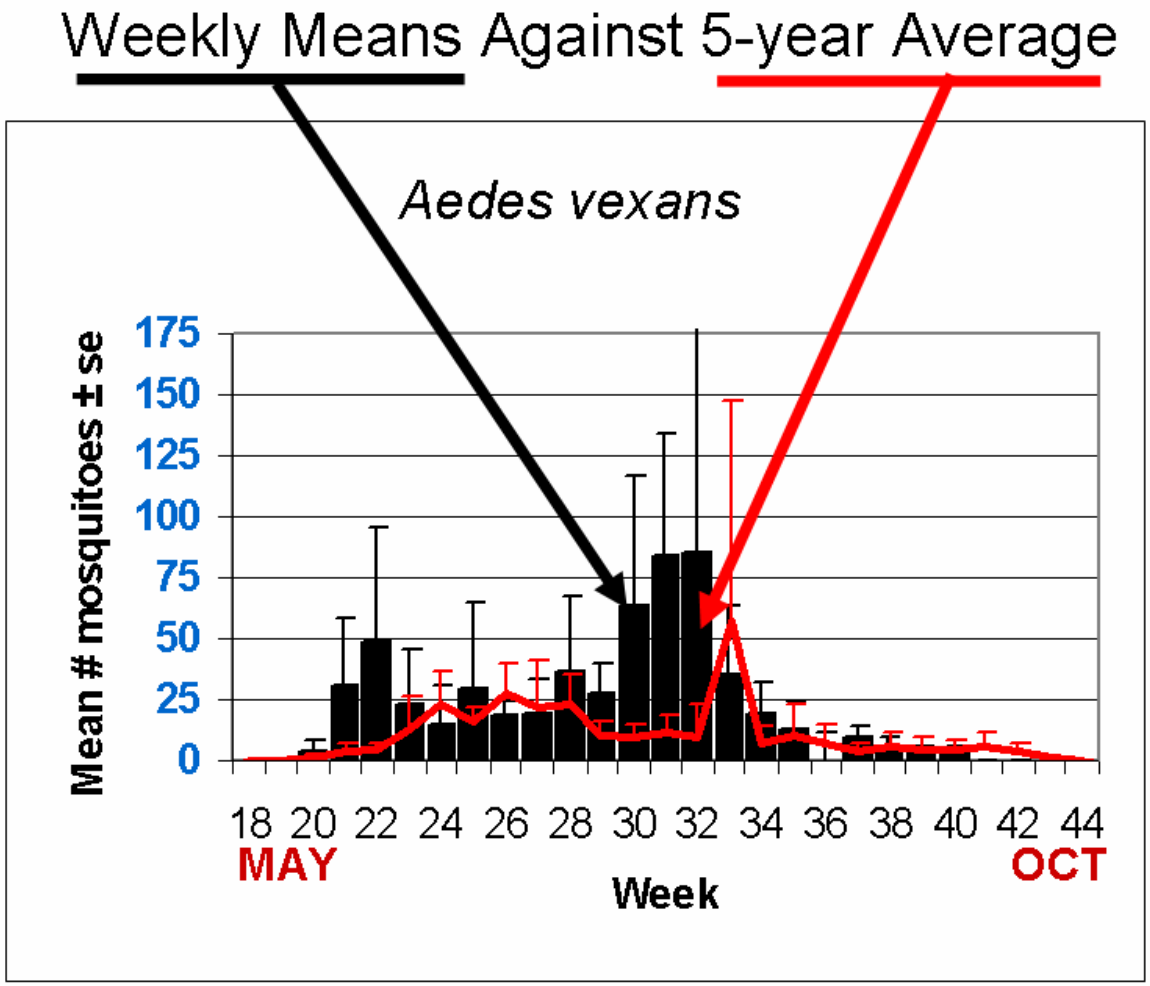






The figures show the average maximum temperature, minimum temperature and precipitation deviations from 30 year averages. Current data is from the Hillsborough NJ weather station (a station close to central NJ which recorded all three parameters and was available online at the NJ state climatologist) 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). Data for Week 22 are from Atlantic, Bergen, Burlington, Camden, Cape May, Essex, Hudson, Mercer, Ocean, Salem, Somerset and Warren counties. Note: Some counties do not begin their light trap season until June.



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

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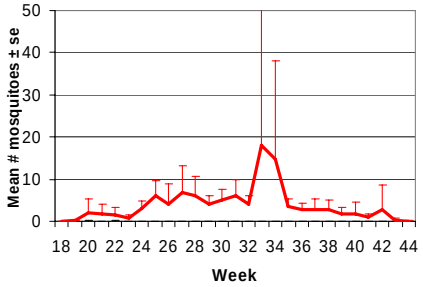
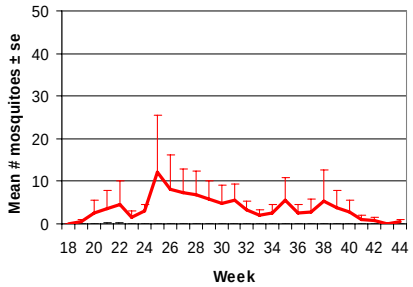
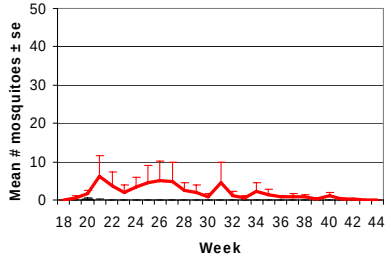
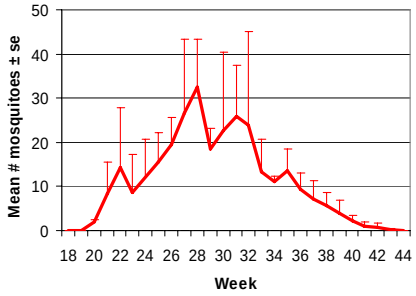
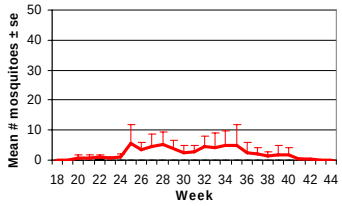
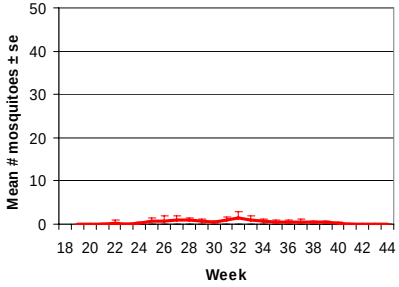
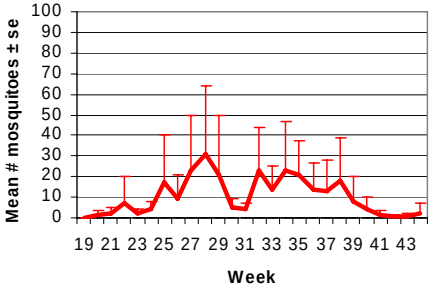
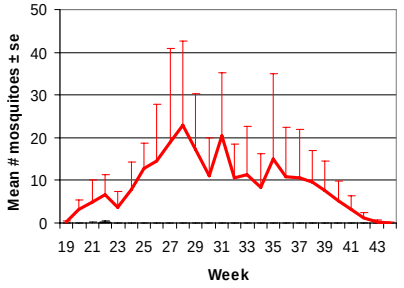
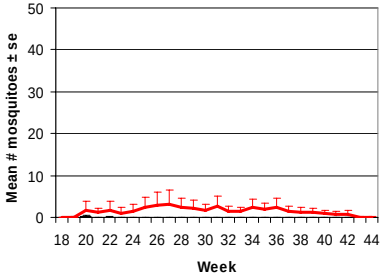
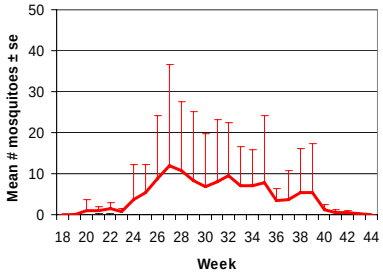
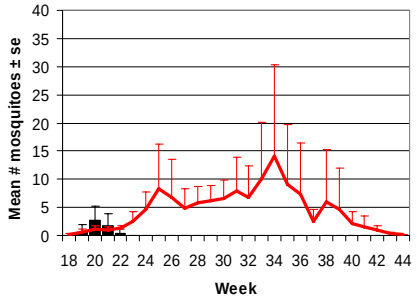
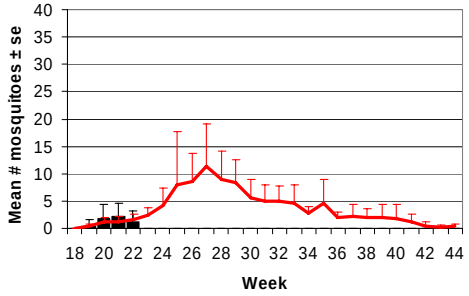
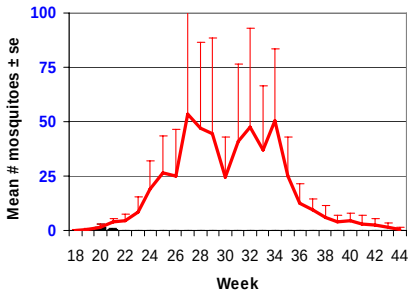
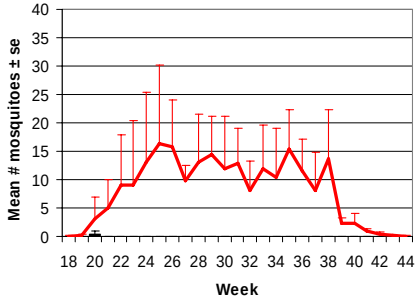
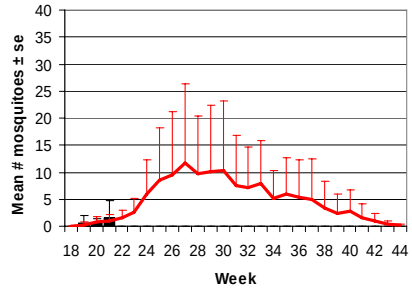
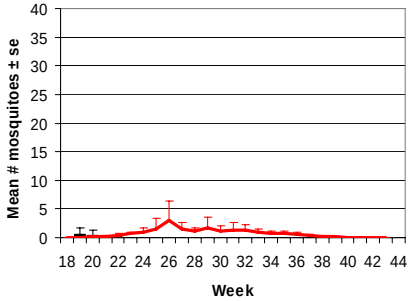
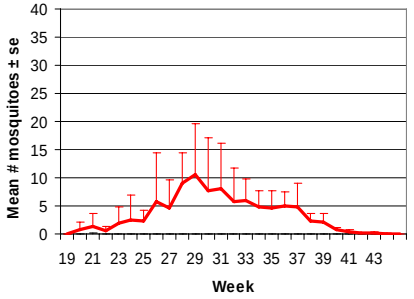
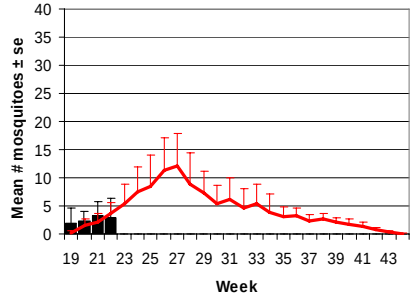
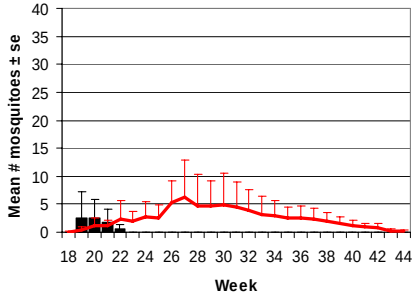
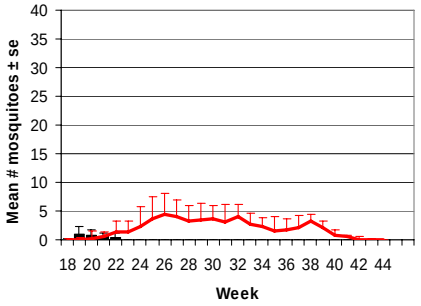
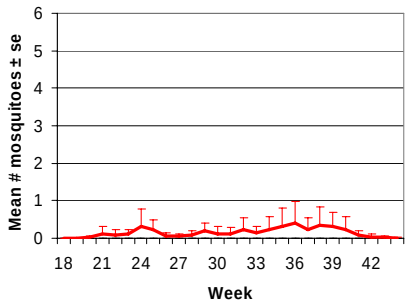
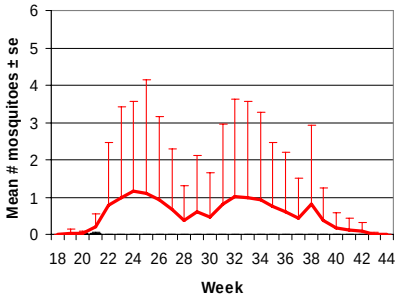
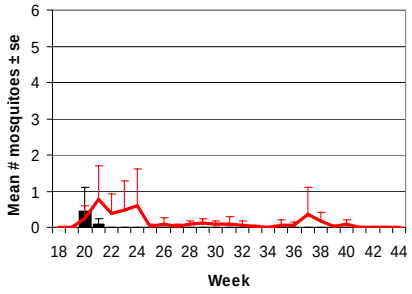
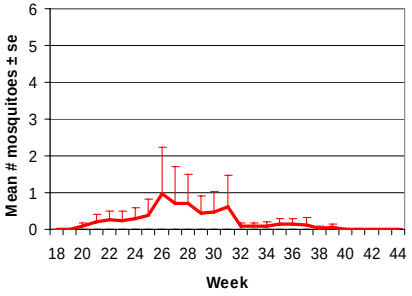
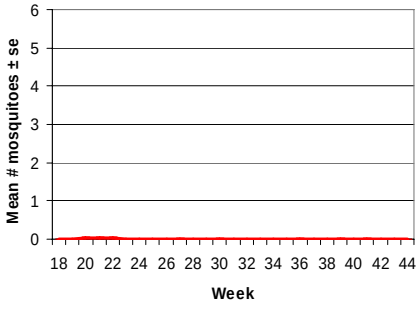
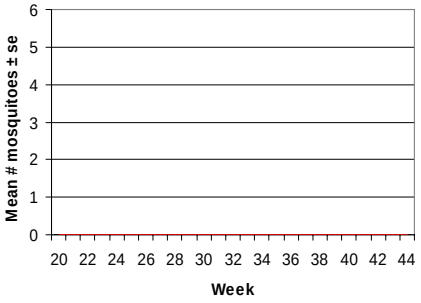
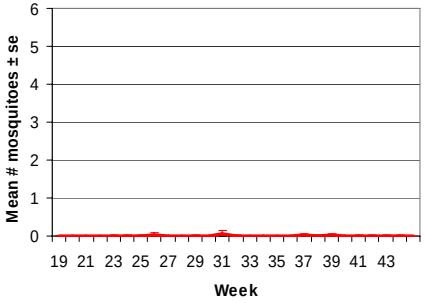
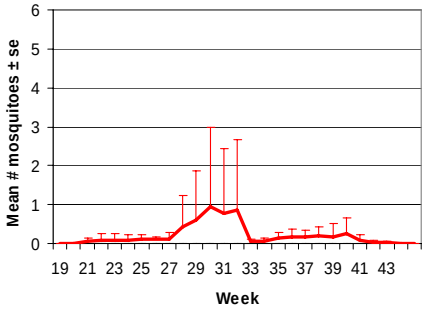
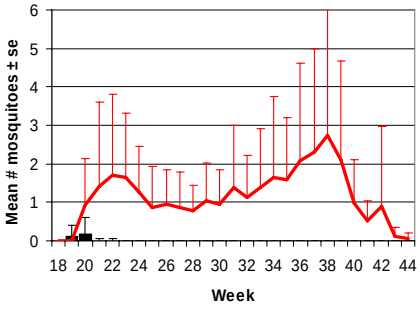
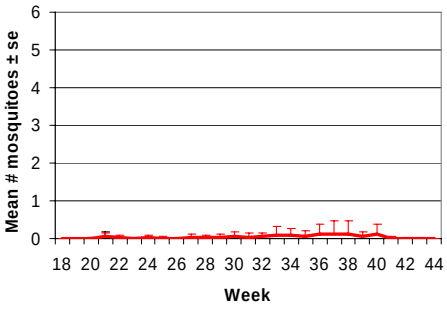
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes vexans* populations revolve around rain events and temperatures sufficient for egg development and larval emergence. The state climatologist has noted (http://climate.rutgers.edu/stateclim/) that this spring (through April) has been relatively warm but with less precipitation. Minor emergences have been noted in the Agricultural, Coastal, Delaware Bayshore, Pinelands and the Suburban Corridor. The largest population is currently found in the Philadelphia Metro region, but this is still well below recent historical trends for this time of year.	

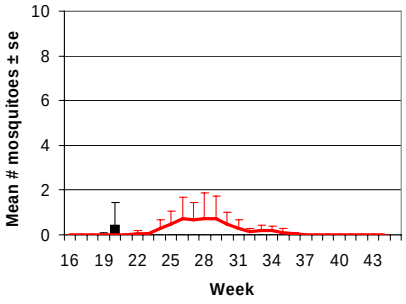
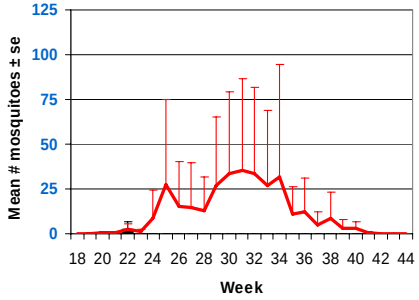
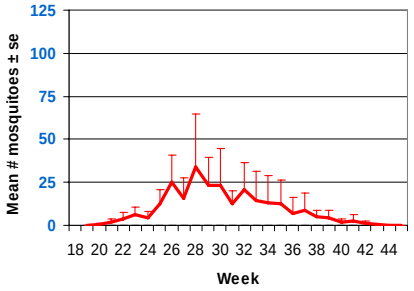
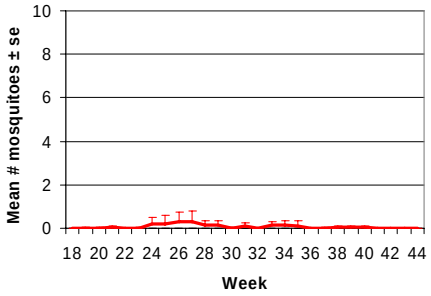
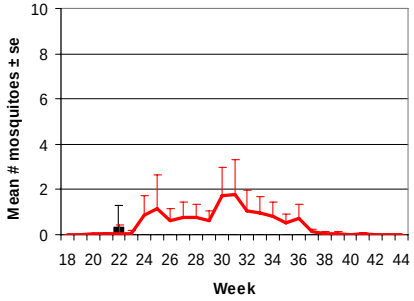
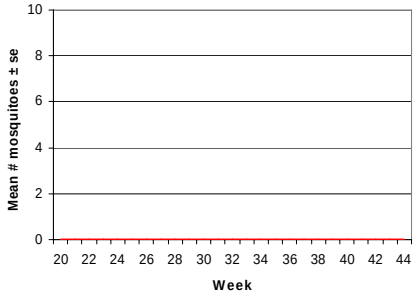
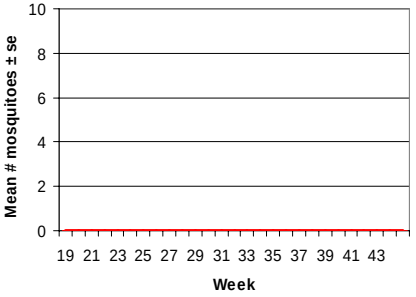
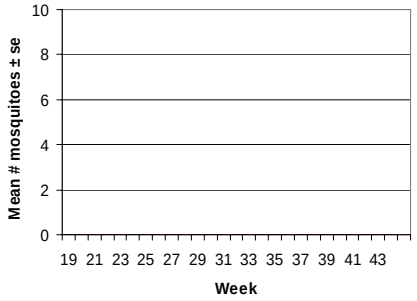
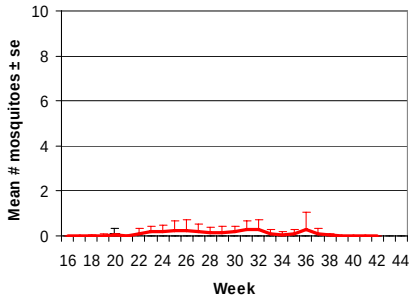
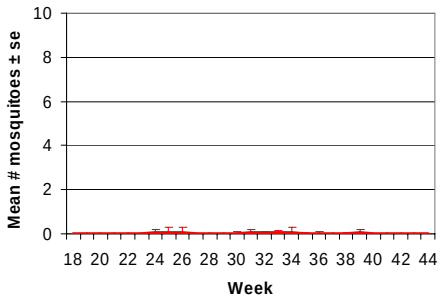
Culex Mix - Multivoltine *Culex* Species (*Cx. pipiens/Cx. salinarius* Type)

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Culex* species (*Cx. pipiens, restuans,* and *salinarius*) are reported together due to the difficulty of identifying similar looking species after the violence of a light trap. *Culex pipiens* and *Cx. restuans* are primarily bird-feeding mosquitoes and comprise the larger portion of inland populations while *Cx. salinarius* are generally found in coastal populations. This complex shows a slow build-up of populations reflective of the continually available habitat that supplies a continuous source of individuals (as opposed to the ephemeral floodwater habitats of the multivoltine Aedine mosquitoes).	

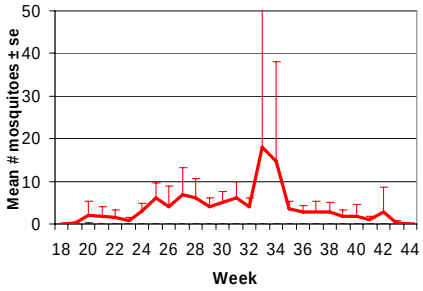
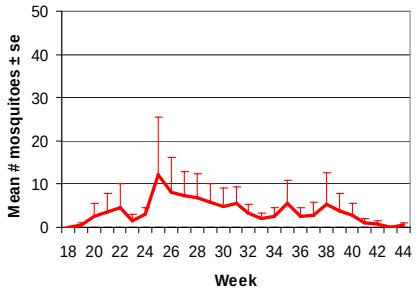
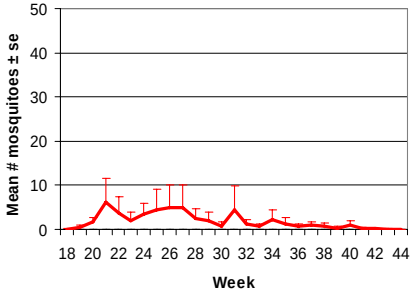
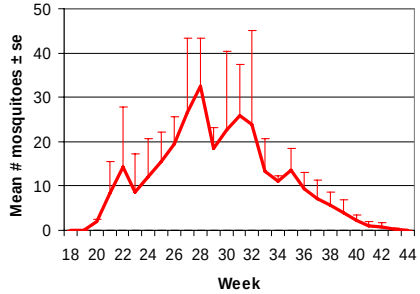
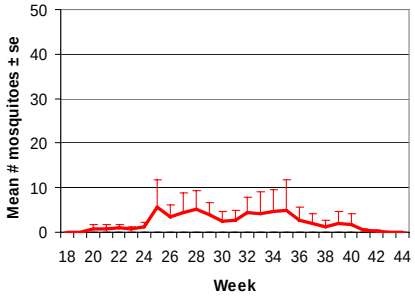
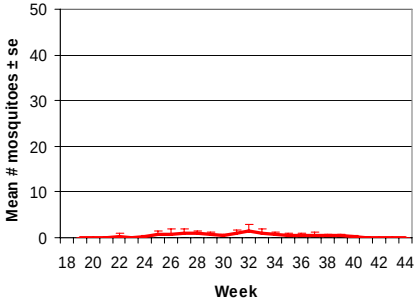
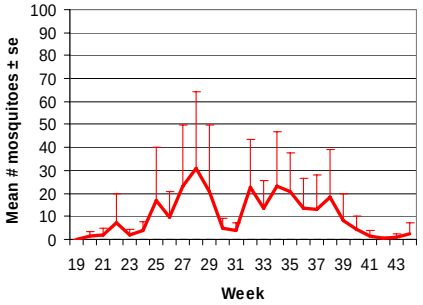
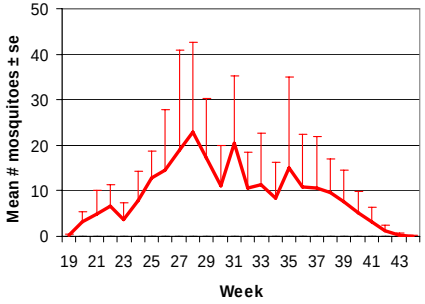
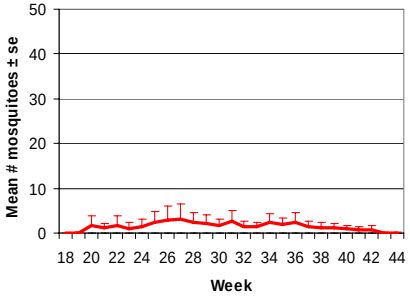
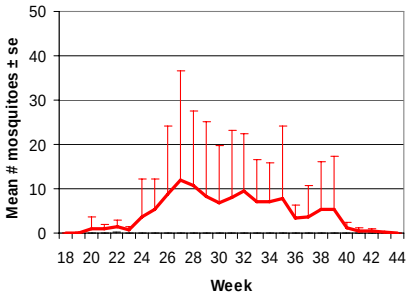
Culiseta melanura – Miscellaneous Group

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Culiseta melanura* overwinter as larvae in protected sphagnum cavities around the roots of trees in swamps. As such, they are more protected against minor perturbations in rainfall and temperature. Populations have appeared in areas that have had higher abundances in the past: the Coastal, Delaware Bayshore and the Pinelands. The Pinelands historical trends demonstrate the bivoltine patterns often seen. The late spring peak represent overwintering larvae (generally the 4th instars) which in turn produce the second peak during late summer. This mosquito is the primary enzootic vector of eastern equine encephalitis being largely (but not solely) ornithophilic.	

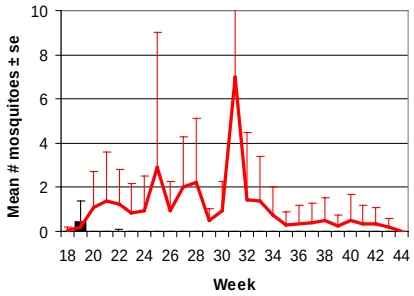
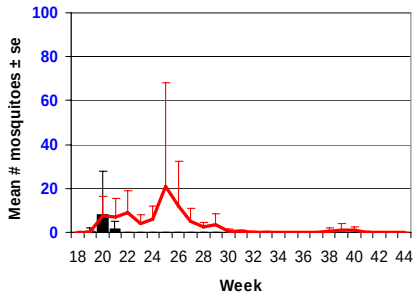
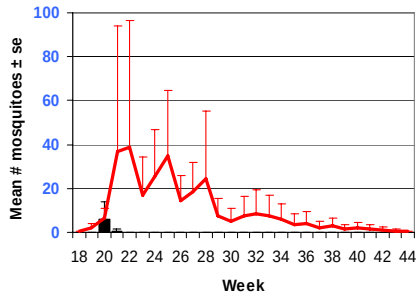
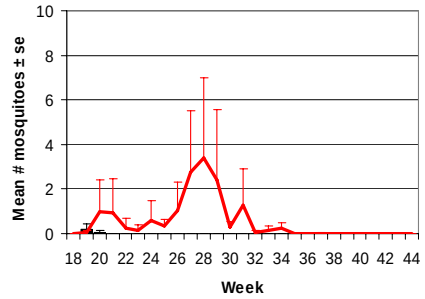
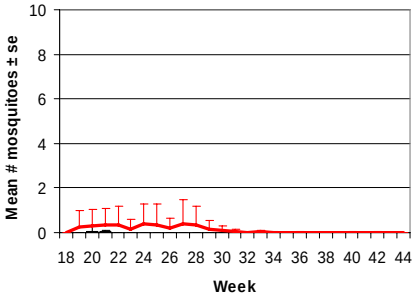
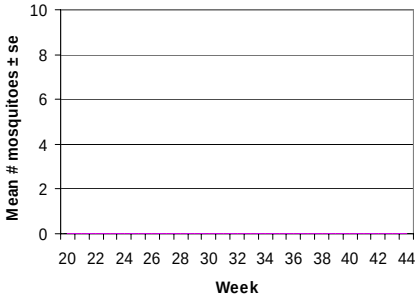
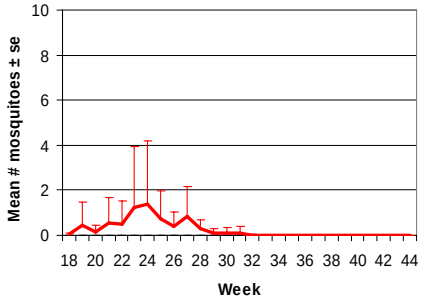
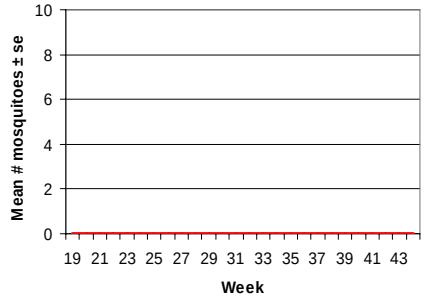
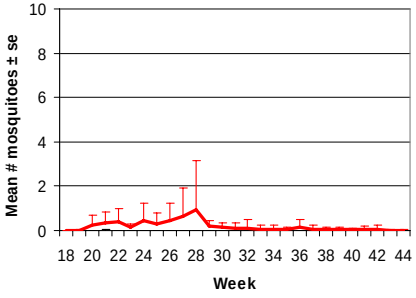
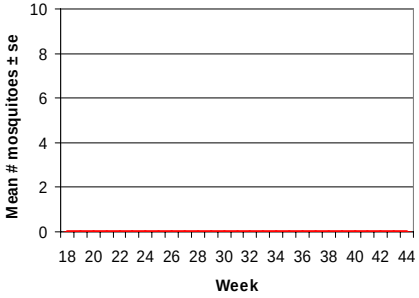
Aedes sollicitans – Multivoltine Aedine (*Ae. sollicitans* Type)

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes sollicitans* is a salt floodwater species whose populations are not only influenced by rainfall but also by high water events such as lunar high tides. The last full moon to produce high tides on the salt marsh occurred on the 5th of May. Increases in coastal populations occurred during this past week. In the Agricultural regions, the most southerly light trap is also close to the Delaware Bayshore region and can often show patterns similar to that region. Currently, the Agricultural region shows the emergence of a population, not the later migration toward inland sites typical of this far-ranging species. *Ae. sollicitans* also has emerged early in the New York Metro region	

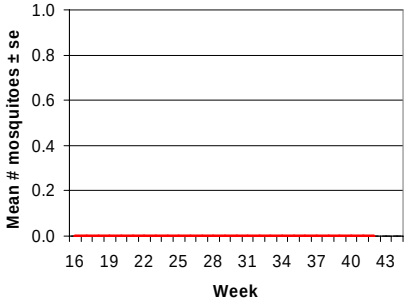
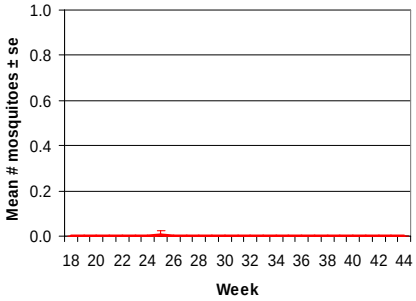
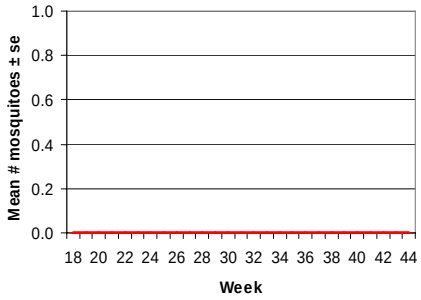
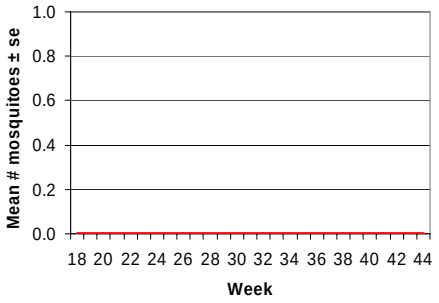
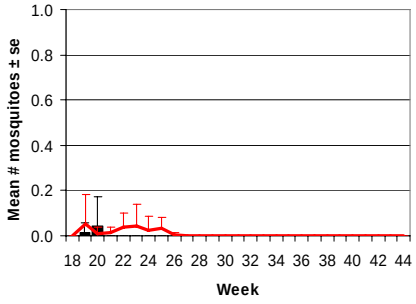
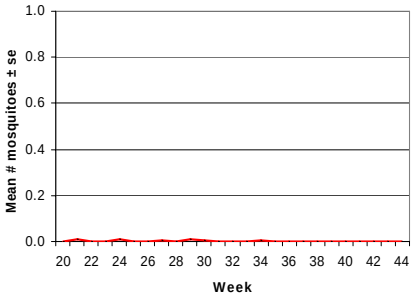
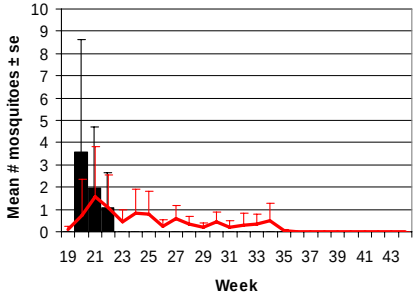
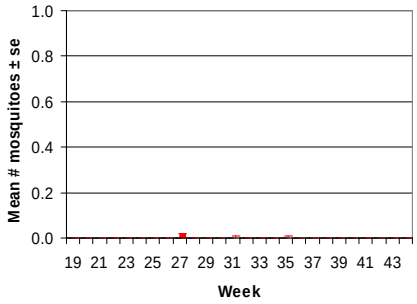
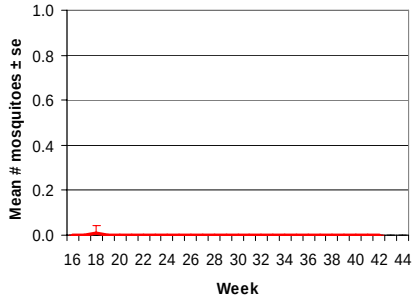
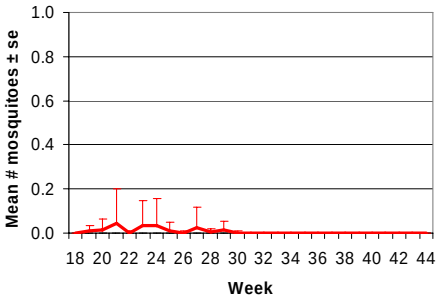
Aedes canadensis – Univoltine Aedine (*Ae. canadensis* type)

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes canadensis* is a univoltine species found throughout New Jersey. This cosmopolitan species is found in association with a wide range of other mosquitoes, from snow pool inhabitants such as *Ae. stimulans* to flood water species such as *Ae. vexans.* This species can be an aggressive biter, taking blood meals primarily from mammals, but also amphibians, reptile and on occasion, birds. Currently, few *Ae. canadensis* is being reported from counties submitting data.	

Aedes cantator – 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**	
		As with *Ae. sollicitans, Aedes cantator* is a salt floodwater species and can often be found in association with the former, as well as *Cx. salinarius* and *An. bradleyi. Ae. cantator* can also take advantage of manmade saline habitats, such as textile factories found in the Northwestern Rural region. But their greatest numbers occur in the Coastal and Delaware Bayshore regions where they are often out earlier and peaking several weeks before than *Ae. sollicitans*. Cape May reported significant early populations as represented by both the Coastal and Delaware Bayshore regions. This mosquito is attracted to light traps.	

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**	
		*Aedes stimulans* is a cold-tolerant snow pool species found in substantial abundance in the Northwestern region and areas in the northern third of the state. Snow pools that *Ae. stimulans* favor tend to be surrounded by trees, dropping their leaves into the pool and producing a tannic-rich larval habitat. These seasonal pools can disappear swiftly when surrounding trees develop leaves. *Aedes stimulans* is often found with other cold-tolerant residents of snow pools, including *Ae. excrucians, Ae. communis* and the ubiquitous *Ae. canadensis*. It is both a mammalian and bird feeder.	