NEW JERSEY STATEWIDE SURVEILLANCE

Week 24 Report for 11 June to 17 June, 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.

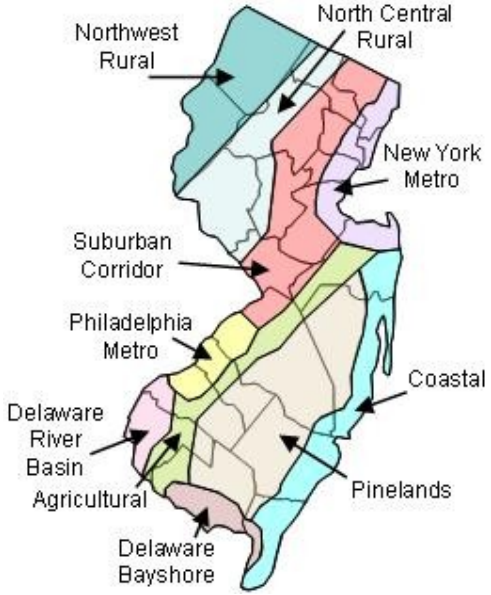


Figure 1b. Trap lat-long locations.

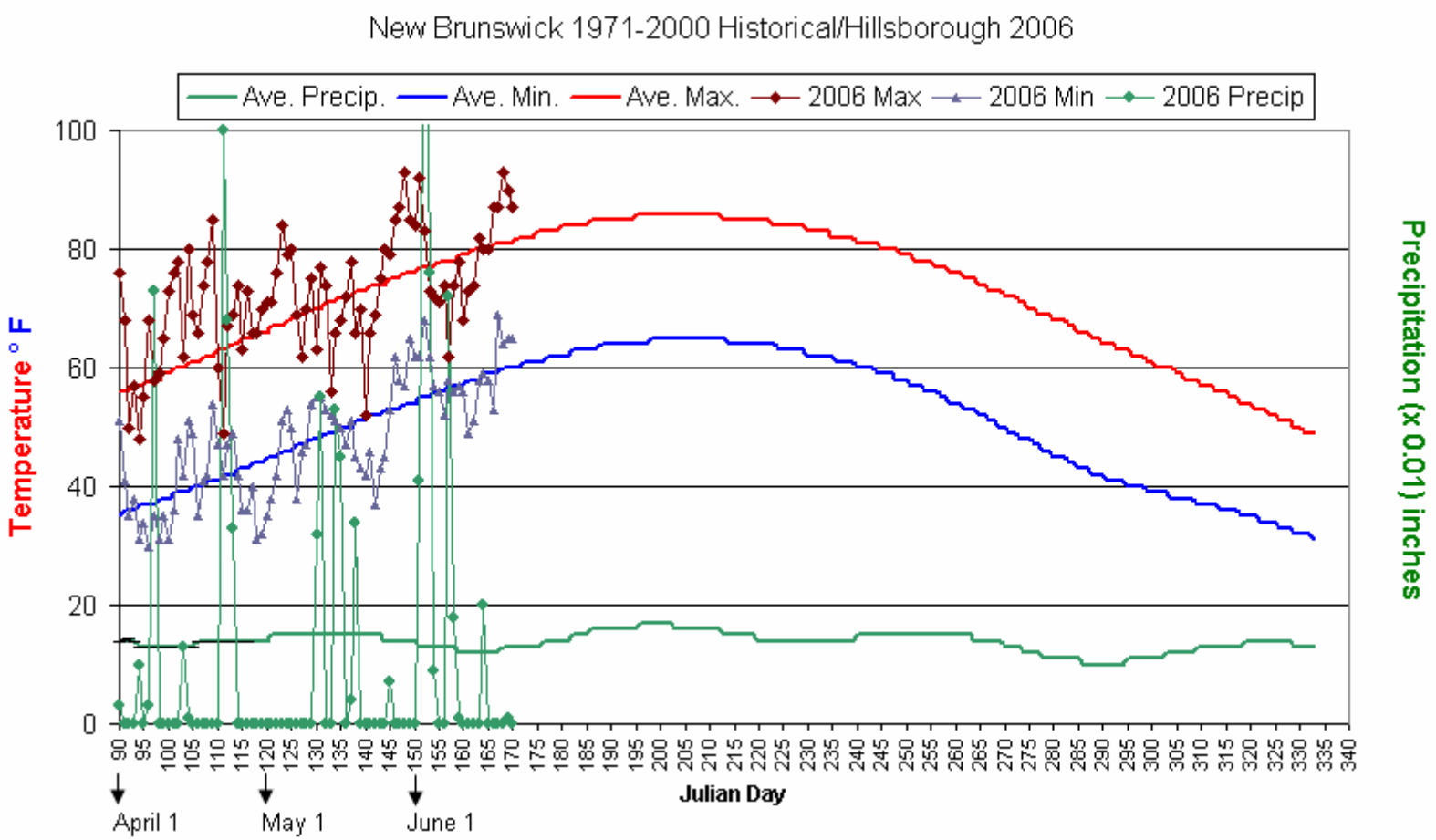
Summary table – Week 24

	Aedes vexans		*Culex complex*		*Coquillettidia perturbans*		*Ochlerotatus sollicitans*	
Region	This Week	Average*	This Week	Average*	This Week	Average*	This Week	Average*
Agricultural	**0.09**	**6.39**	**0.69**	**6.12**	**0.00**	**0.33**	**0.00**	**0.36**
Coastal	**0.35**	**4.01**	**1.11**	**4.11**	**0.00**	**2.00**	**0.79**	**12.05**
Delaware Bayshore	**0.00**	**5.49**	**0.00**	**25.84**	**0.00**	**4.05**	**0.00**	**18.48**
Delaware River Basin	**0.18**	**26.49**	**0.61**	**16.49**	**0.07**	**0.46**	**0.00**	**1.48**
New York Metro	**0.56**	**2.20**	**2.86**	**6.16**	**0.21**	**0.05**	**0.49**	**1.24**
North Central Rural	**0.12**	**0.74**	**0.35**	**1.18**	**0.00**	**0.07**	**0.00**	**0.00**
Northwest Rural	**6.14**	**3.74**	**1.24**	**2.12**	**0.02**	**0.12**	**0.00**	**0.00**
Philadelphia Metro	**2.03**	**9.59**	**6.89**	**6.32**	**0.26**	**0.67**	**0.00**	**0.00**
Pinelands	**0.00**	**1.98**	**1.03**	**2.56**	**0.09**	**0.89**	**0.03**	**0.11**
Suburban Corridor	**0.57**	**8.38**	**3.05**	**4.18**	**0.23**	**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.*

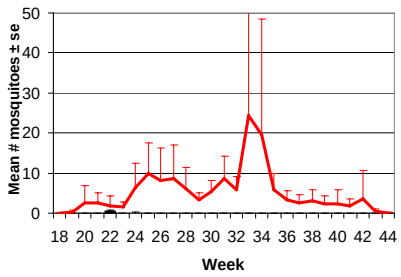
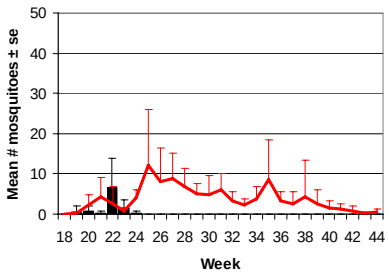
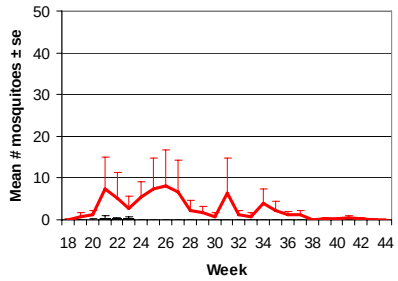
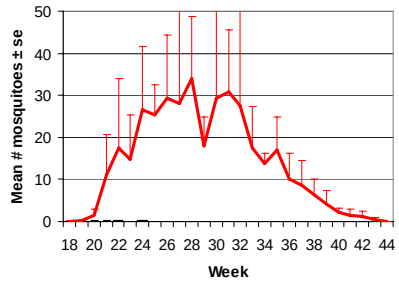
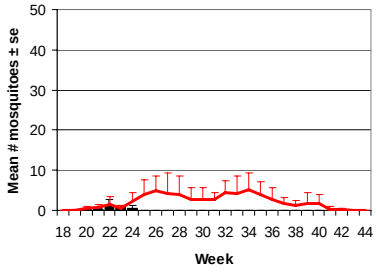
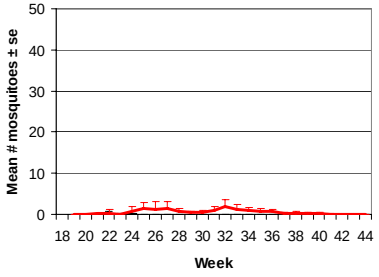
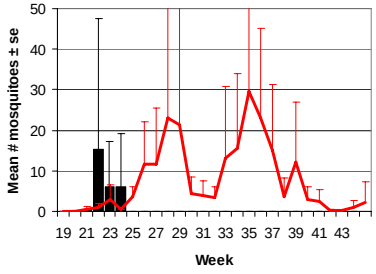
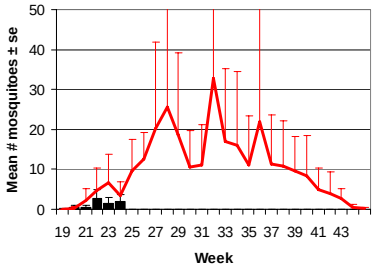
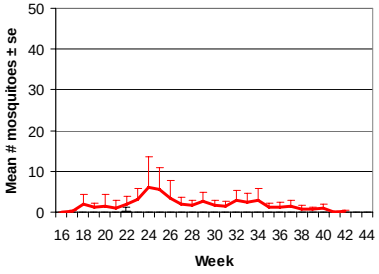
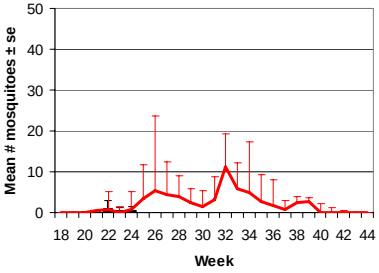
15 of 21 counties in current week; 18 of 21 counties reporting.

Climate Data

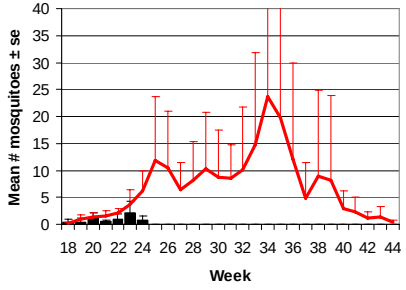
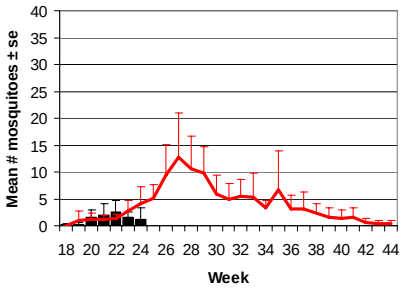
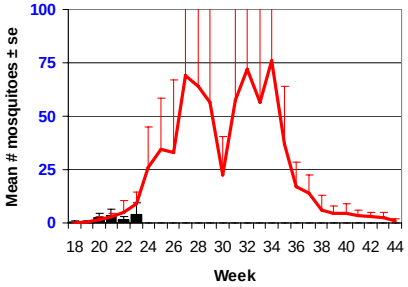
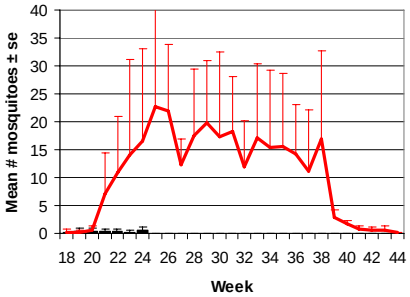
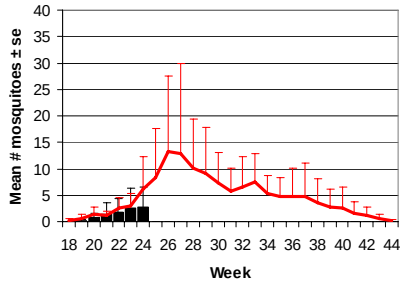
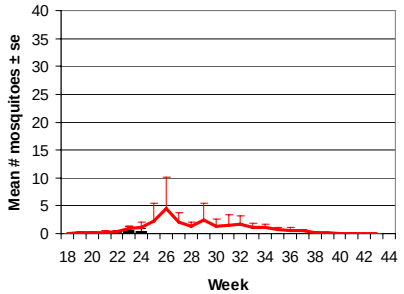
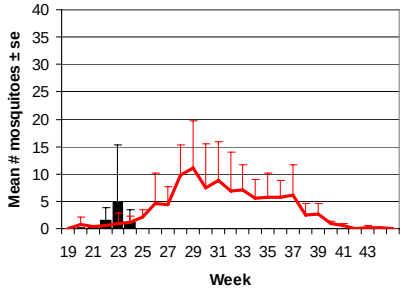
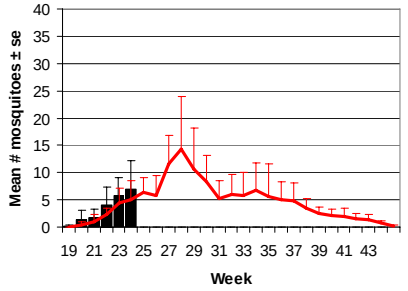
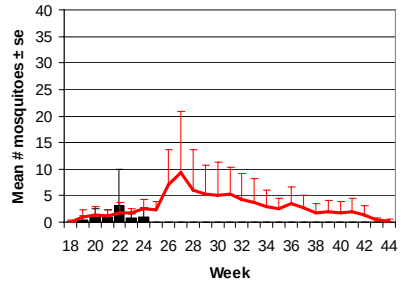
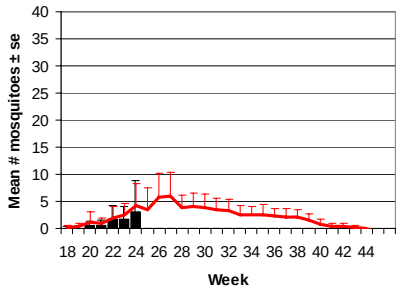


This figure shows historical average maximum and minimum temperatures and average precipitation recorded in the New Brunswick, NJ weather station over a recent 30 year period. Also graphed are the current year's minimum and maximum temperatures as recorded at the Hillsborough NJ weather station (a station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

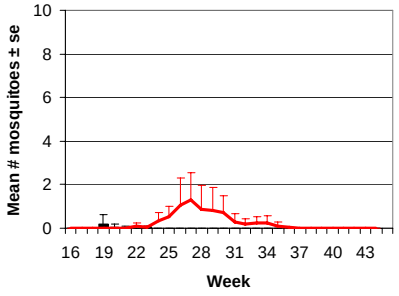
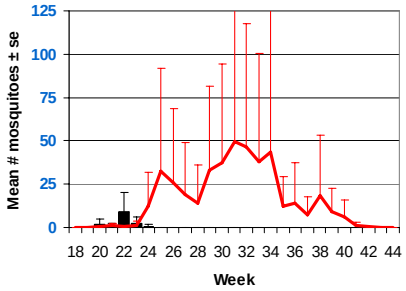
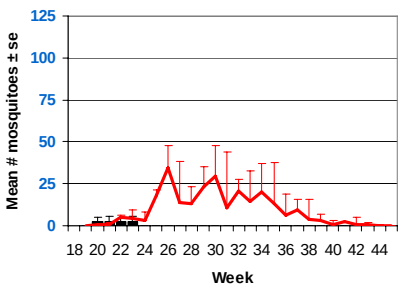
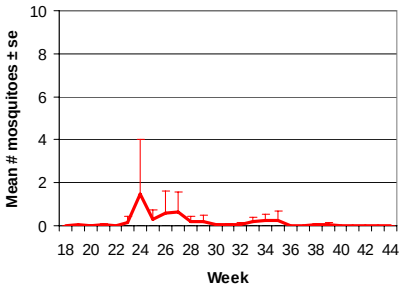
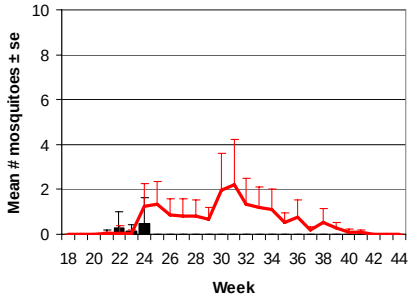
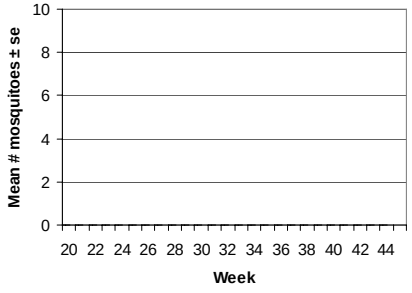
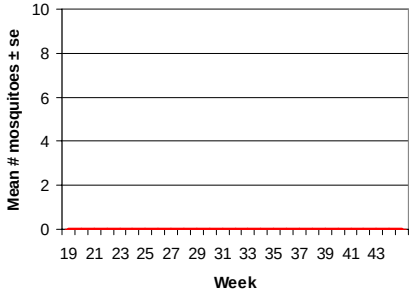
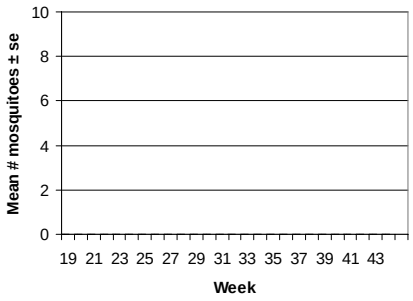
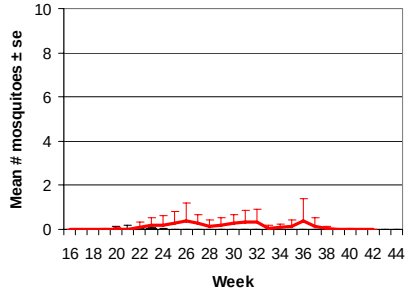
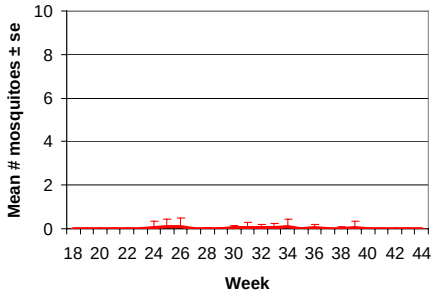
Aedes vexans - Fresh Floodwater Species

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes vexans* populations are showing the wide variation seen in floodwater species experiencing differing availability of habitat (i.e., different floodwater patterns). For many regions, population levels are about at what could be expected: the Coastal, New York Metro, North Central Rural, Philadelphia Metro and Suburban Corridor appear to be typical at this early point in the season. Northwest Rural populations, after a spectacular emergence, looks appear to be trending back toward historical values. Most noticeable is the Delaware River Basin: It should be noted that one of the sites is being reconsidered as it might not accurately reflect the Delaware River Basin region as recent trends suggest a bias coming from a close landfill. This site is no longer in the calculation.	

Culex Complex - Multivoltine Culex Species

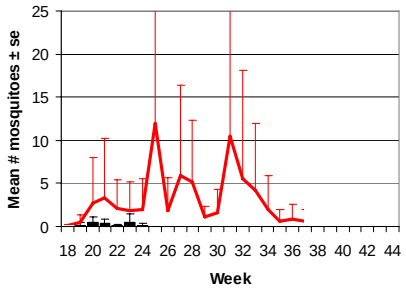
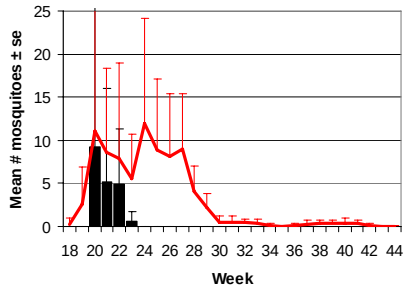
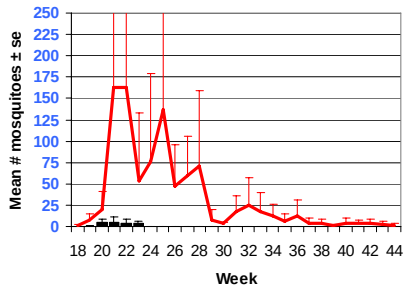
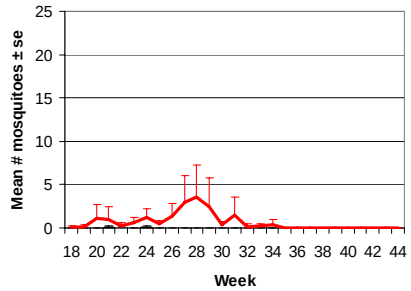
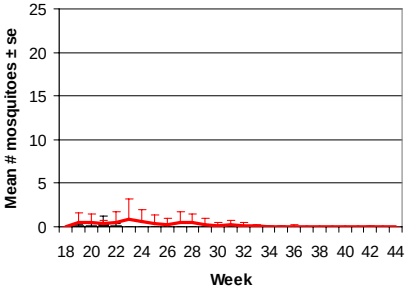
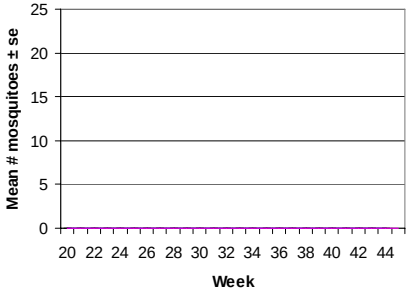
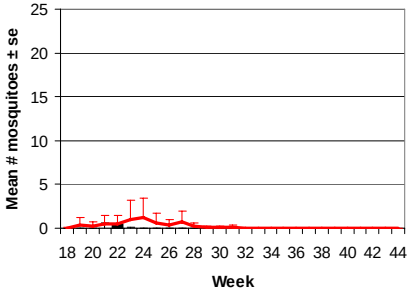
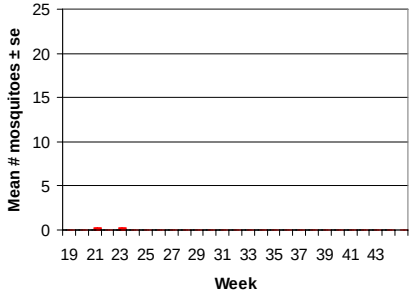
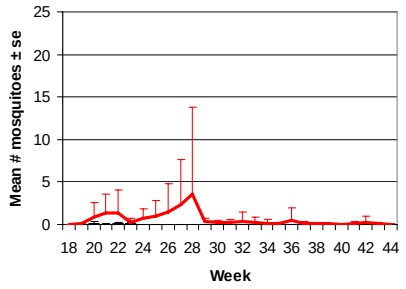
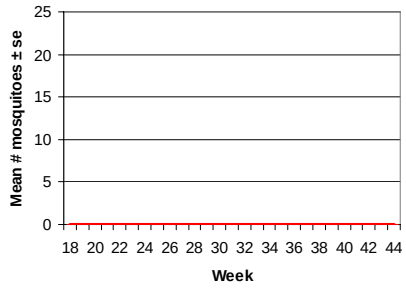
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Culex* species continue to exhibit the slow and steady progressive buildup of populations expected from this species for the majority of regions. This predictability is also reflected in the smaller standard errors shown in a number of the regions – each year, a similar pattern would be expected. The Delaware River Basin, as mentioned in the previous species' write-up, is under scrutiny due to the effects of one trap's vicinity to a landfill, and trends may actually be lower than the historical levels would suggest.	

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* has been on the wing in small numbers, but the large pestiferous emergences of note should begin shortly, if not already underway. 11 June was the last full moon, pulling water high into the saltmarsh where the eggs of this species have been laid. Due to the potential of habitat drying up quickly and thus disappearing before emergence to adulthood is over, *Oc. sollicitans* can develop fast, and with warm conditions, as has been this past weekend, emergence can occur within 4 to 5 days (O'Meara 1992).	

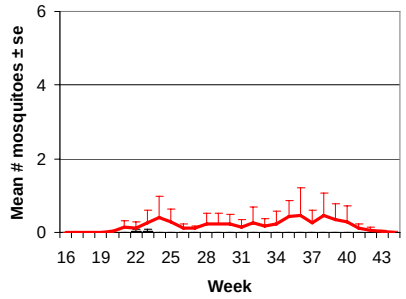
O'Meara, G. F. 1992. The eastern saltmarsh mosquito *Aedes sollicitans*. Wing Beats, Vol. 3(4):5

Ochlerotatus cantator – Multivoltine Aedine, sollicitans type

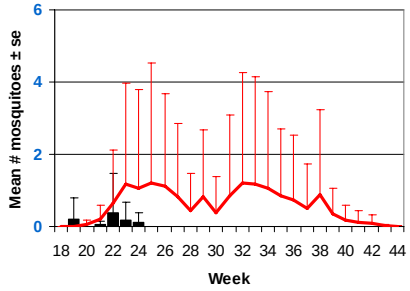
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Ochlerotatus cantator*, often found in association with *Oc. sollicitans*, is beginning its seasonal decline while the latter is just getting started. The large numbers seen in the Delaware Bayshore in recent historical trends have yet to occur.	

Culiseta melanura – Miscellaneous Group

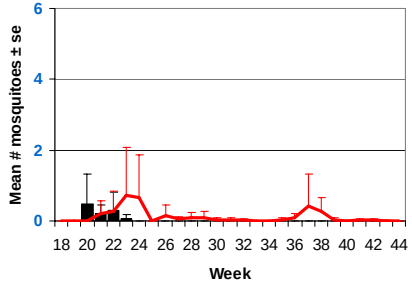
Agricultural



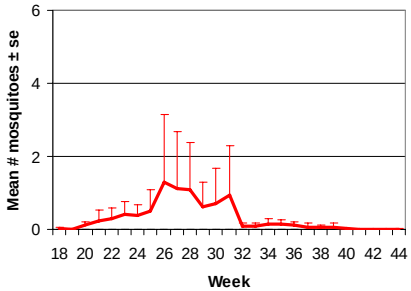
Coastal



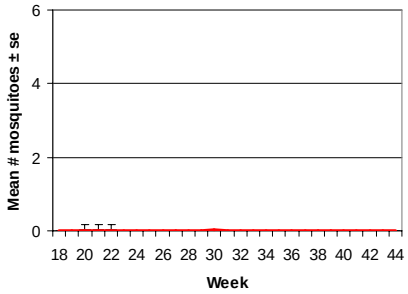
Delaware Bayshore



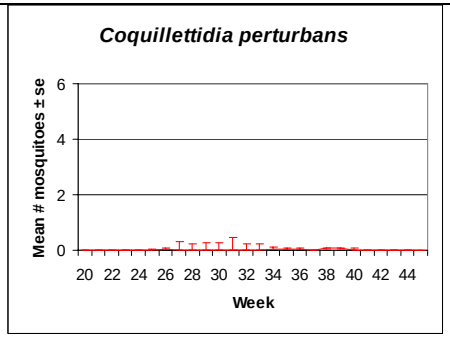
Delaware River Basin



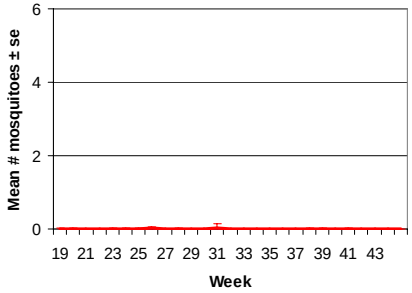
New York Metro



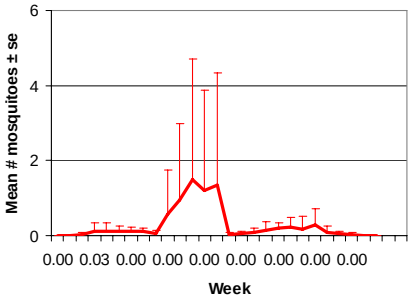
North Central Rural



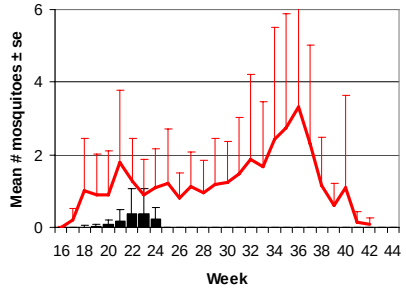
Northwestern Rural



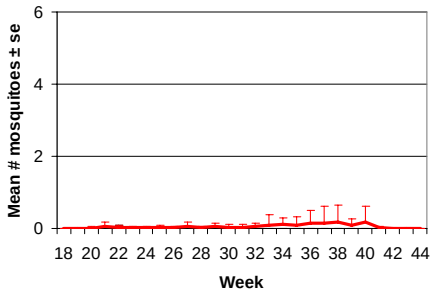
Philadelphia Metro



Pinelands



Suburban Corridor



Comments

The Delaware Bayshore may have actually had *Culiseta melanura* on the wing before the beginning of this light trap season, and thus the early bars in that region represent the first set of cohorts from this multivoltine species. These would have been the overwintering fourth instars, emerging in at least mid May. The next emergence, likely at the end of June or beginning of July, will represent the 3rd instar that overwintered. These individuals hatched later in the previous fall than the first group to emerge. Dropping fall temperatures determined which instar an individual would be overwintering as: earlier-laid eggs developed farther along while later-laid eggs overwintered as younger (and hence later emerging) instars.