# NEW JERSEY STATEWIDE SURVEILLANCE

## Week 23 Report for 04 June to 10 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.

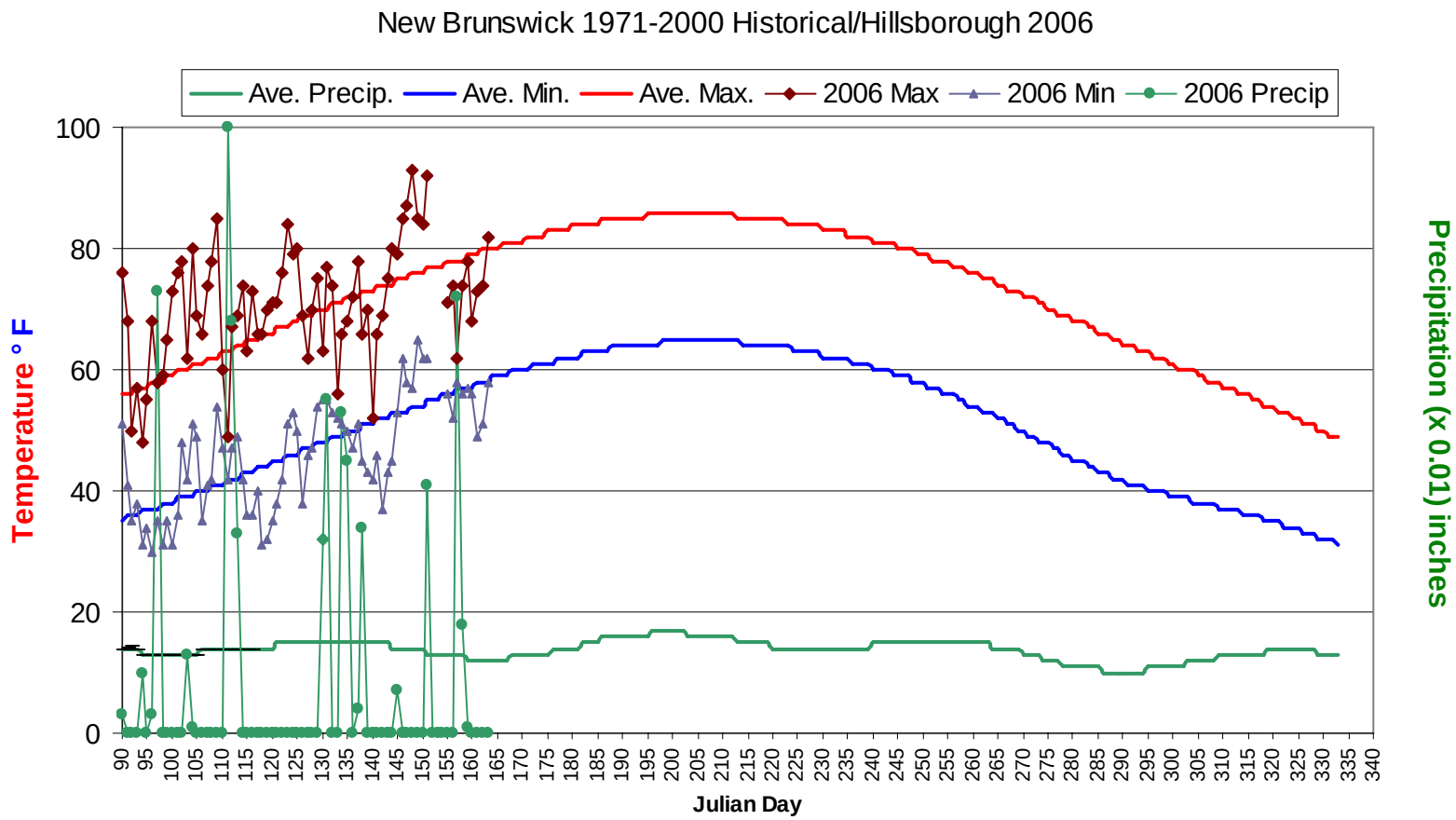
## Summary table – Week 23

| | *Aedes vexans* | | *Culex complex* | | *Coquillettidia perturbans* | | *Ochlerotatus sollicitans* | |
|---|---|---|---|---|---|---|---|---|
| **Region** | This Week | Average* | This Week | Average* | This Week | Average* | This Week | Average* |
| **Agricultural** | **0.00** | **1.46** | **1.62** | **3.78** | **0.00** | **0.05** | **0.05** | **0.08** |
| **Coastal** | **0.38** | **0.86** | **1.06** | **2.86** | **0.00** | **0.27** | **0.94** | **1.14** |
| **Delaware Bayshore** | **0.29** | **2.66** | **4.12** | **9.03** | **0.12** | **2.71** | **2.71** | **3.28** |
| **Delaware River Basin** | **0.00** | **14.70** | **0.25** | **14.09** | **0.00** | **0.23** | **0.00** | **0.16** |
| **New York Metro** | **0.44** | **0.59** | **2.59** | **3.05** | **0.04** | **0.01** | **0.16** | **0.04** |
| **North Central Rural** | **0.06** | **0.10** | **0.16** | **0.33** | **0.00** | **0.00** | **0.00** | **0.00** |
| **Northwest Rural** | **6.07** | **0.39** | **5.31** | **1.15** | **0.00** | **0.01** | **0.00** | **0.00** |
| **Philadelphia Metro** | **0.00** | **3.48** | **0.00** | **5.03** | **0.00** | **0.16** | **0.00** | **0.00** |
| **Pinelands** | **0.00** | **0.99** | **0.35** | **1.67** | **0.00** | **0.16** | **0.00** | **0.00** |
| **Suburban Corridor** | **0.27** | **1.95** | **0.64** | **2.50** | **0.00** | **0.27** | **0.00** | **0.00** |

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

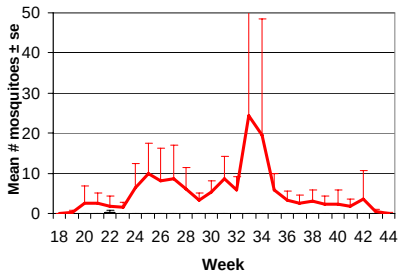
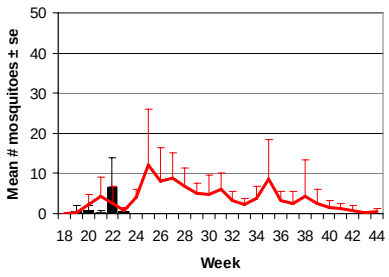
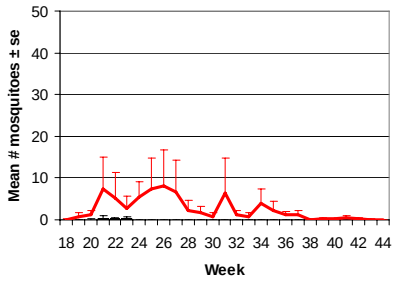
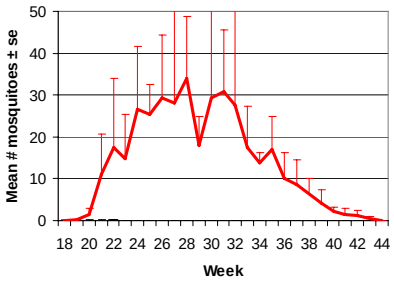
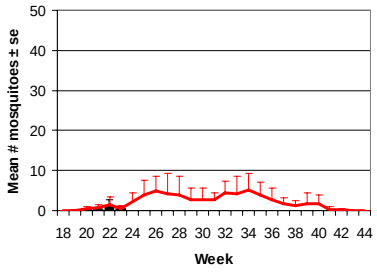
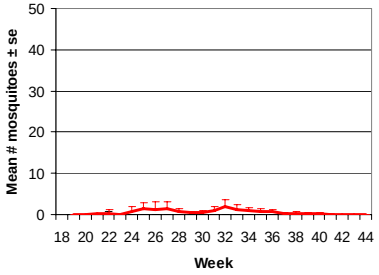
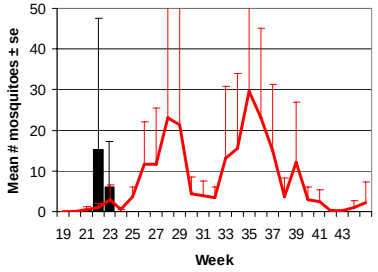
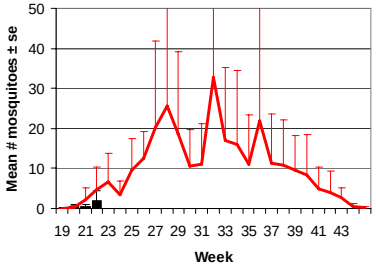
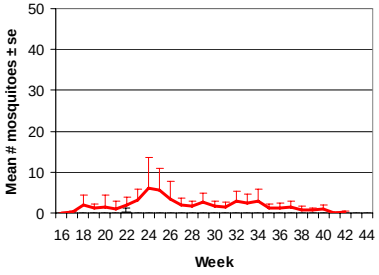
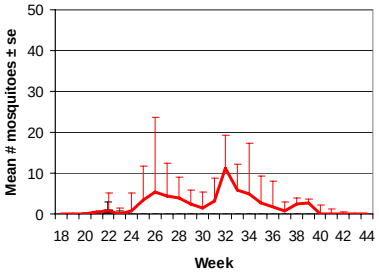
**15 of 21 counties in current week; 20 of 21 counties reporting**.

## *Climate Data*

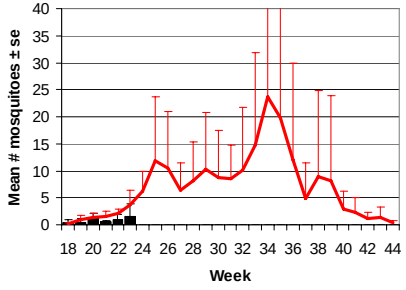
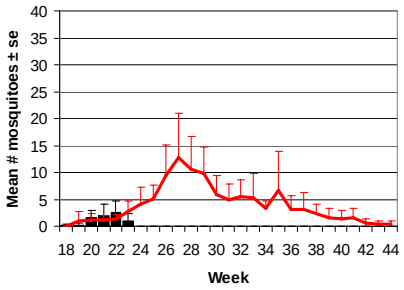
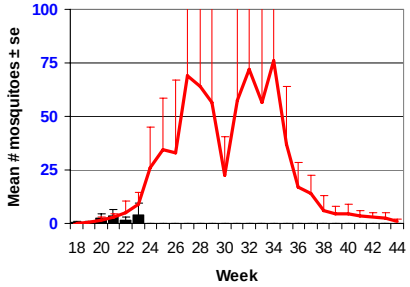
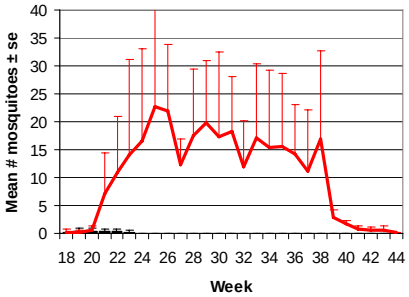
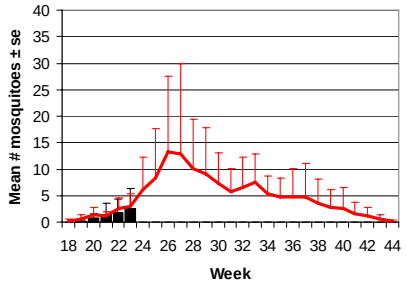
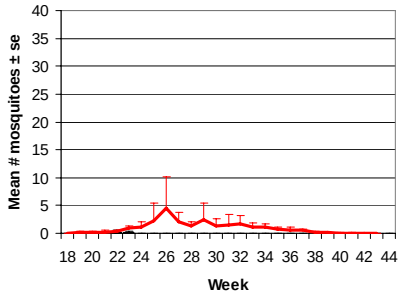
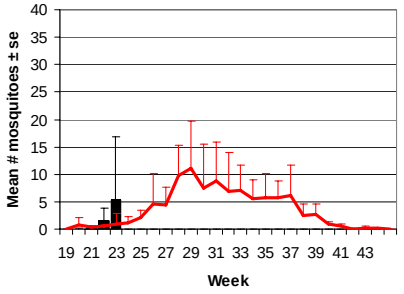
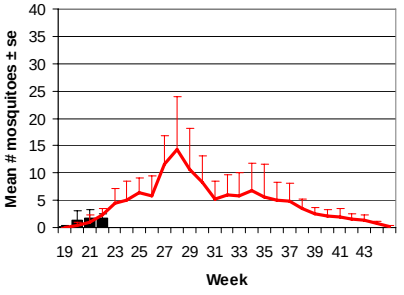
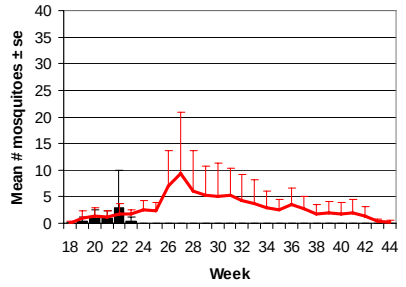
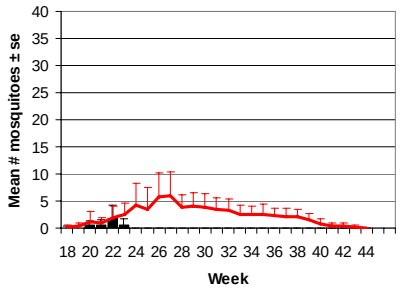



This figure shows historical average maximum and minimum temperatures and average precipitation recorded in the New Brunswick, NJ weather station over a recent 30 year period. Also graphed are the current year's minimum and maximum temperatures as recorded at the Hillsborough NJ weather station (a station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

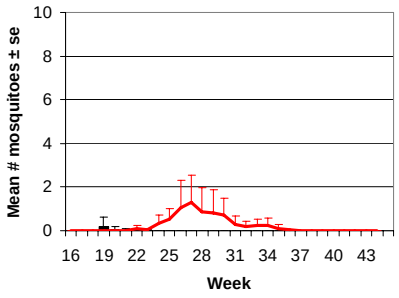
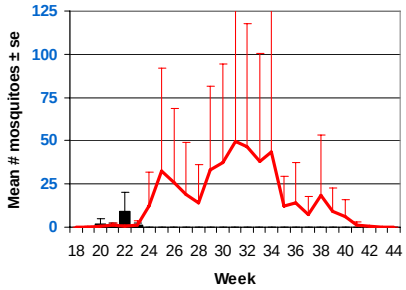
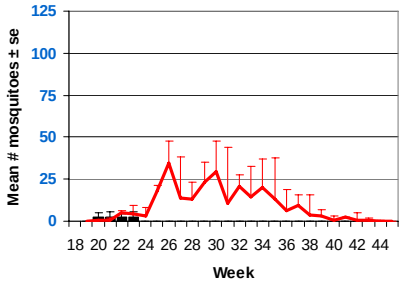
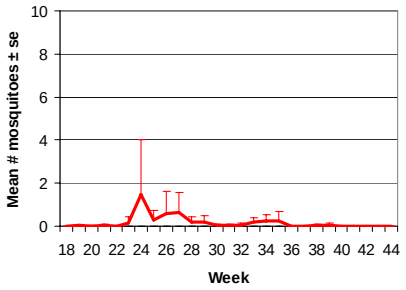
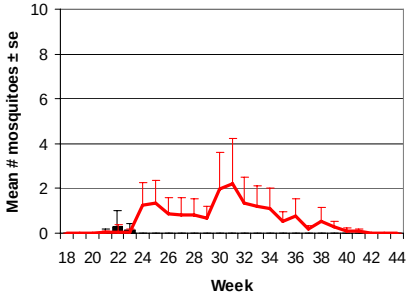
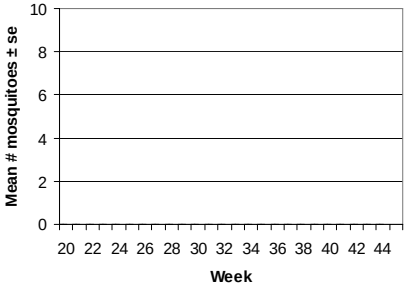
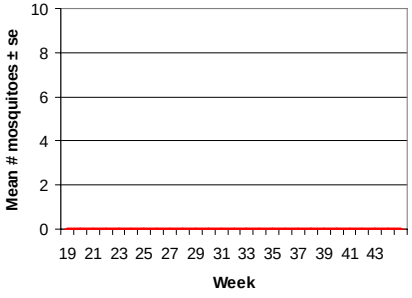
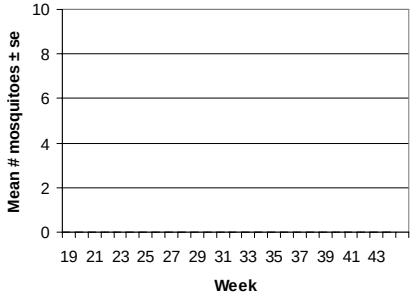
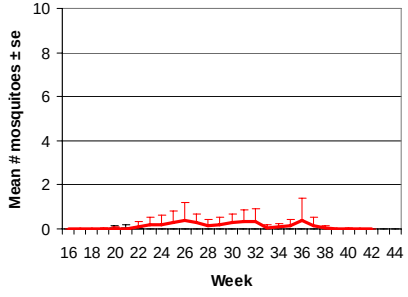
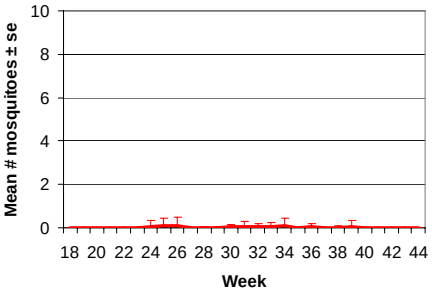
# *Aedes vexans* - Fresh Floodwater Species

| Agricultural | Coastal | Delaware Bayshore | Delaware River Basin |
|---|---|---|---|
|  |  |  |  |
| **New York Metro** | **North Central Rural** | **Northwestern Rural** | **Philadelphia Metro** |
|  |  |  |  |
| **Pinelands** | **Suburban Corridor** | **Comments** | |
|  |  | *Aedes vexans* is active in all regions (including the Delaware River Basin, despite at a very low level in comparison to historical trends). This fresh floodwater species may respond very differently throughout the state, dependent on recent rains bringing a sustainable floodwater source. Thus, the Coastal, Northwest Rural and, to an extent, the New York Metro Regions exhibit a noticeable emergence of this opportunistic species. | |

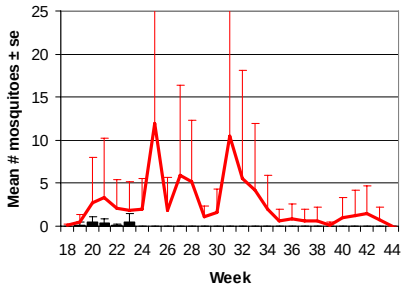
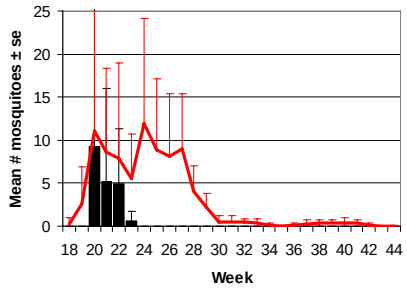
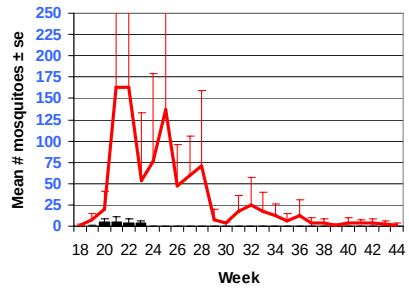
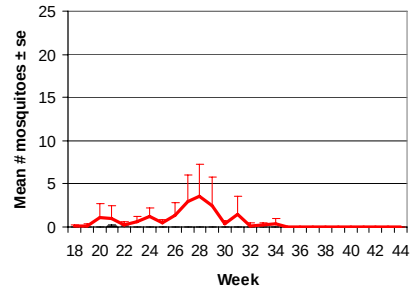
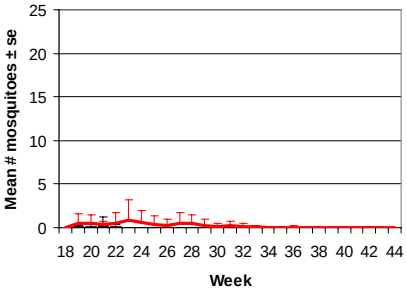
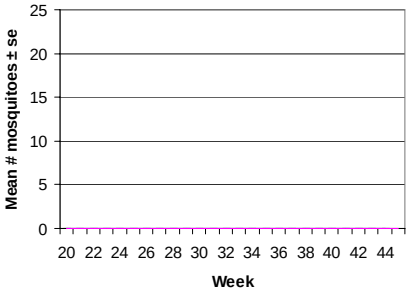
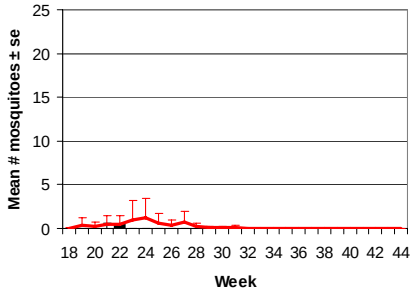
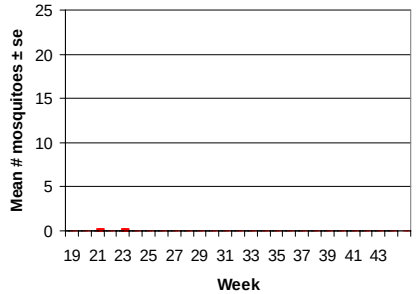
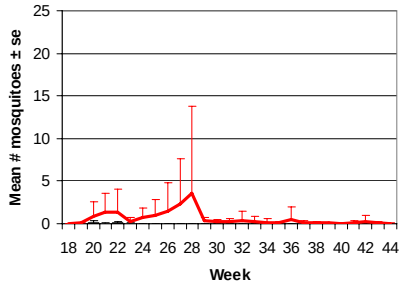
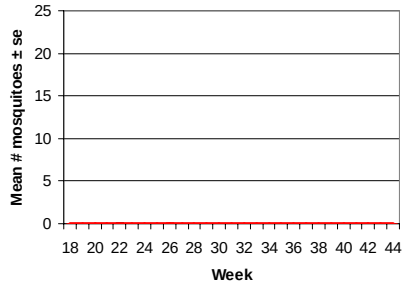
# *Culex Complex - Multivoltine Culex Species*

| Agricultural | Coastal | Delaware Bayshore | Delaware River Basin |
|---|---|---|---|
|  |  |  |  |
| **New York Metro** | **North Central Rural** | **Northwestern Rural** | **Philadelphia Metro** |
|  |  |  |  |
| **Pinelands** | **Suburban Corridor** | **Comments** | |
|  |  | With the exception of the Delaware River Basin, which appears to be experiencing less than normal populations sizes (*) *Culex* species continue their slow population buildup. All other regions appear to be on track to a typical season. | |

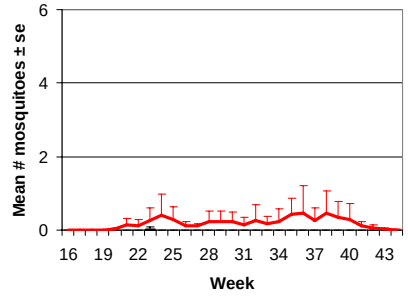
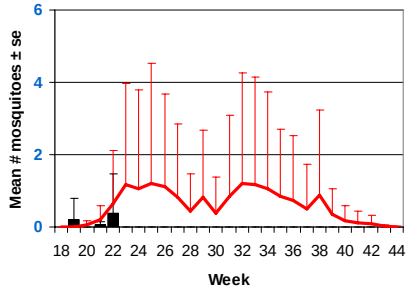
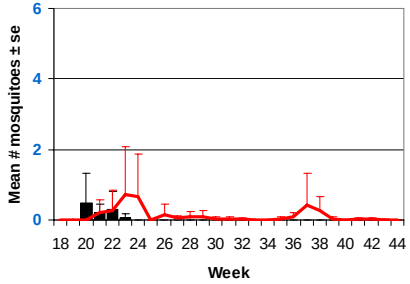
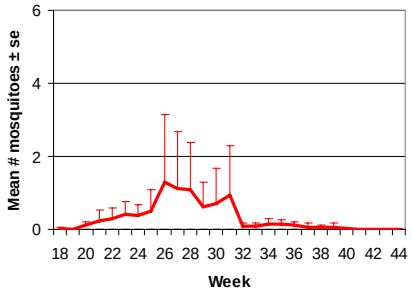
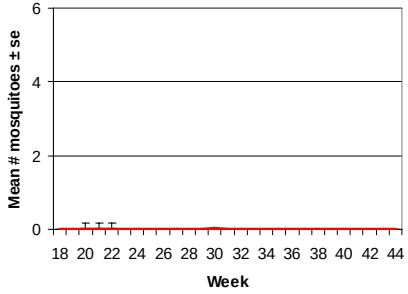
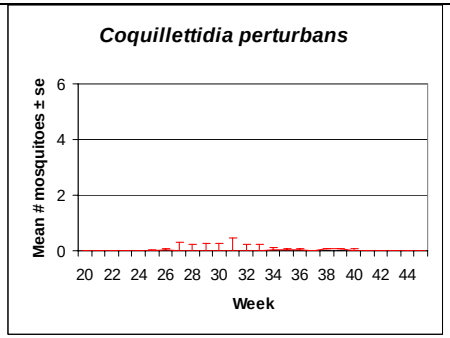
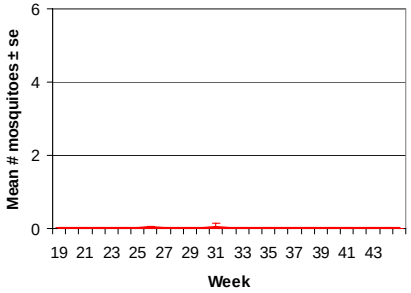
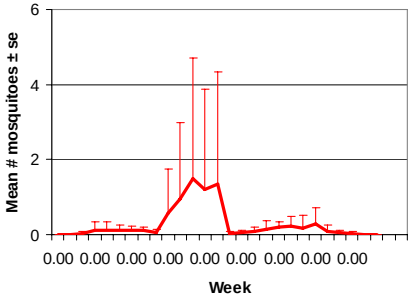
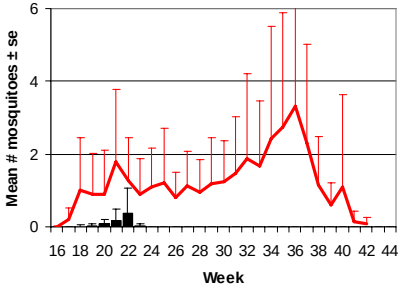
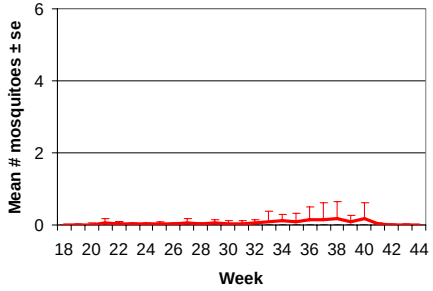
# *Ochlerotatus sollicitans - Salt Marsh Floodwater Species*

| Agricultural | Coastal | Delaware Bayshore | Delaware River Basin |
|---|---|---|---|
|  |  |  |  |
| **New York Metro** | **North Central Rural** | **Northwestern Rural** | **Philadelphia Metro** |
|  |  |  |  |
| **Pinelands** | **Suburban Corridor** | **Comments** | |
|  |  | Activity of *Ochlerotatus sollicitans* may have begun slightly ahead of usual recent trends, with a minor emergence appearing during Week 22 in the Coastal Region. Two years ago, a minor May emergence of *Oc. sollicitans* occurred on the Delaware Bayshore, before activity in the Coastal region. This year, activities appear to have begun in a wider range of habitat including the New York Metro, and were at high enough population levels to show up at inland sites (Agricultural and Pinelands) – typically migration end points. | |

# *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* populations have varied widely, with highest numbers in the Coastal and the Delaware Bayshore (difficult to see due to forced high Y-axis numbers set by historical trends, but current year values are comparable). This species can show up in most regions in New Jersey, even the Northwest Rural region, to take advantage of anthropogenic salt sources (in this case, a dye factory). Agricultural sources may include salts of fertilizers and other agricultural applications. This early-season species tends to become more widespread as the season progresses while concurrently decreasing in abundance. | |

# *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* remain low in the Pinelands, but this vector of Eastern Equine Encephalitis continues to appear in a variety of habitats including the New York Metro, albeit at very low numbers. On the other hand, this species are more attracted to resting boxes than to light traps, and the Vector Surveillance reports will better reflect the true abundance of this species.<br><br>Regardless of its apparent low numbers in this report, *Cs. melanura* is a superb vector of EEE and virus populations may build up to levels that transmit easily to bridge vectors. This is a species that always deserves surveillance. | |