# NEW JERSEY ADULT MOSQUITO SURVEILLANCE
Report for 8 June to 14 June 2014, CDC Week 24
Prepared by Lisa M. Reed, Scott Crans and Mark Robson
Center for Vector Biology

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 the 21 county mosquito control agencies of New Jersey.

## Summary Table – Week 24

<table>
<thead>
<tr>
<th>Region</th>
<th>Aedes vexans</th>
<th>Culex Mix</th>
<th>Coquillettidia perturbans</th>
<th>Aedes sollicitans</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>This Week</td>
<td>Average*</td>
<td>Increase</td>
<td>This Week</td>
</tr>
<tr>
<td>Agricultural</td>
<td>0.06</td>
<td>1.09</td>
<td>0</td>
<td>0.03</td>
</tr>
<tr>
<td>Coastal</td>
<td>0.20</td>
<td>2.03</td>
<td>0</td>
<td>0.54</td>
</tr>
<tr>
<td>Delaware Bayshore</td>
<td>nd</td>
<td>2.33</td>
<td>0</td>
<td>nd</td>
</tr>
<tr>
<td>Delaware River Basin</td>
<td>nd</td>
<td>7.23</td>
<td>0</td>
<td>nd</td>
</tr>
<tr>
<td>New York Metro</td>
<td>4.17</td>
<td>0.66</td>
<td>4</td>
<td>4.17</td>
</tr>
<tr>
<td>North Central Rural</td>
<td>0.69</td>
<td>0.23</td>
<td>4</td>
<td>1.10</td>
</tr>
<tr>
<td>Northwest Rural</td>
<td>nd</td>
<td>5.85</td>
<td>0</td>
<td>nd</td>
</tr>
<tr>
<td>Philadelphia Metro</td>
<td>nd</td>
<td>2.67</td>
<td>0</td>
<td>nd</td>
</tr>
<tr>
<td>Pinelands</td>
<td>0.05</td>
<td>0.70</td>
<td>0</td>
<td>0.09</td>
</tr>
<tr>
<td>Suburban Corridor</td>
<td>2.78</td>
<td>1.91</td>
<td>1</td>
<td>1.62</td>
</tr>
</tbody>
</table>

*Average: represents 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 in the increase column denote increases from an historic zero and thus no value can be appropriately given. nd=no data reported.

State Summary: Data should be considered provisional as counties continue to come online with their datasets. At this time, elevated populations are seen for *Aedes vexans* in the New York Metro and North Central Rural regions as well as for *Coquillettidia perturbans* in the North Central Rural region. Slightly elevated populations were also seen for *Aedes vexans* in the Suburban Corridor, *Culex Mix* in the North Central Rural and *Aedes sollicitans* in the New York Metropolitan regions.
The three figures show the interpolation of average maximum (°F) and minimum temperature (°F) and total precipitation (inches) for 31 days prior to 13 June 2014 in New Jersey. Data points are from about 41 weather stations maintained through the New Jersey Weather & Climate Network and the State Climatologist. Interpolation between points was performed using ArcMap 10.1.
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 this week are from Bergen, Essex, Monmouth, Morris, Ocean and Union counties. Data for the previous week(s) are from Atlantic, Bergen, Burlington, Cape May, Cumberland, Essex, Mercer, Middlesex, Monmouth, Morris, Ocean, Salem and Union counties.
**Aedes vexans** - Fresh Floodwater Species
Multivoltine Aedine (Ae. vexans Type)

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<tr>
<td><img src="image1.png" alt="Graph" /></td>
<td><img src="image2.png" alt="Graph" /></td>
<td><img src="image3.png" alt="Graph" /></td>
<td><img src="image4.png" alt="Graph" /></td>
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<table>
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<th>North Central Rural</th>
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<th>Philadelphia Metro</th>
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<tr>
<td><img src="image5.png" alt="Graph" /></td>
<td><img src="image6.png" alt="Graph" /></td>
<td><img src="image7.png" alt="Graph" /></td>
<td><img src="image8.png" alt="Graph" /></td>
</tr>
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**Comments**
Aedes vexans populations have continue to respond to warming weather and precipitation with notable emergences in Week21/22 for the New York Metropolitan region and to a lesser extent, in the Suburban Corridor, generating significant nuisance calls. This species has been implicated in the transmission of dog heartworm, and due to its significant abundance in New Jersey, is always in the top 10 species of activity.
**Culex Mix – Permanent Water Species**

**Multivoltine *Culex/Anopheles (Cx. pipiens)* Type**

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<td><em>Culex Mix</em> is composed of <em>Culex pipiens</em>, <em>Cx. restuans</em> and <em>Cx. salinarius</em>. These three species (especially <em>pipiens</em> and <em>restuans</em>) are often difficult to tell apart after encountering the damaging blades of the New Jersey light trap. <em>Culex</em> populations are modestly elevated in the North Central Rural, but not significantly over historical populations. Elsewhere, population levels are within historical variances, with the possible exception of the Delaware Bayshore region. This species is the enzootic vector for WNV in New Jersey with possible bridge vector activity.</td>
</tr>
</tbody>
</table>
Culiseta melanura – Miscellaneous Group
Unique (Cs. melanura Type)

Culiseta melanura is the enzootic ornithophilic vector of eastern equine encephalitis. Currently Cs. melanura populations appear at or close to historical values for regions in which larval habitat is commonly found (Coastal, Delaware Bayshore and the Pinelands), with minor activity in the Agricultural and Suburban Corridor.
**Aedes sollicitans** - Salt Floodwater Species
Multivoltine Aedine (*Ae. sollicitans* Type)

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<td><img src="image9.png" alt="Graph" /></td>
<td><img src="image10.png" alt="Graph" /></td>
<td><em>Aedes sollicitans</em> is a salt floodwater species and responds to both lunar tidal patterns as well as rainfall. Populations in the New York Metropolitan region appear slightly higher than historical values (but are not likely significantly different). After two years of low abundance in the Coastal regions, numbers for this year appear to be closely tracking recent historical values (which also are lower by representing the last 5 years, including two years of very low <em>Ae. sollicitans</em> numbers). The Delaware Bayshore region, however, appears to continue the low trend in <em>Ae. sollicitans</em> activity.</td>
</tr>
</tbody>
</table>
**Coquillettidia perturbans**

Monotypic (*Coquillettidia perturbans* Type)

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**Agricultural**

**Coastal**

**Delaware Bayshore**

**Delaware River Basin**

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**New York Metro**

**North Central Rural**

**Northwestern Rural**

**Philadelphia Metro**

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**Pinelands**

**Suburban Corridor**

**Comments**

*Coquillettidia perturbans* populations are located in cattail swamps and other wetlands with emergent vegetation, often making control of their numbers dependent on controlling water depth. Adults continue to appear in the Agricultural, Coastal, Delaware Bayshore, Pinelands and the Suburban Corridor. However, abundances have not been significant in the light traps for these regions. This species is a potential inland vector for EEE and should always be considered when determining arboviral control.
**Aedes cantator**

Multivoltine Aedine (*Ae. sollicitans* Type)

*Aedes cantator* is a salt floodwater species. Occupying similar habitat, *Ae. cantator* finds its niche by emerging earlier than *Ae. sollicitans*. This species showed significant abundance in the Coastal, Delaware Bayshore, and the New York Metropolitan regions early in the season. Numbers may continue to be significant in those regions for a few more weeks, but begin to decline mid-season. This species is notably attracted to light traps, and true populations should be assessed with other trap types as well.
Top Ten Mosquito Species/Region - Ae. albopictus, Ae. japonicus (invasives); Cs. melanura or Cx. erraticus Coq. perturbans

Note: In early season when fewer species are caught, graphs may show less than ten species/region or 25 statewide.