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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## Summary table – Week 31

<table>
<thead>
<tr>
<th>Region</th>
<th>Aedes vexans This Week</th>
<th>Aedes vexans Average*</th>
<th>Culex complex This Week</th>
<th>Culex complex Average*</th>
<th>Coquillettidia perturbans This Week</th>
<th>Coquillettidia perturbans Average*</th>
<th>Ochlerotatus sollicitans This Week</th>
<th>Ochlerotatus sollicitans Average*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural</td>
<td>1.76</td>
<td>8.57**</td>
<td>11.33</td>
<td>8.57**</td>
<td>0.12</td>
<td>0.30</td>
<td>6.83</td>
<td>2.82</td>
</tr>
<tr>
<td>Coastal</td>
<td>2.22</td>
<td>6.03</td>
<td>1.32</td>
<td>5.00</td>
<td>0.03</td>
<td>0.89</td>
<td>14.83</td>
<td>49.64</td>
</tr>
<tr>
<td>Delaware Bayshore</td>
<td>0.48</td>
<td>6.48</td>
<td>16.60</td>
<td>57.27</td>
<td>0.55</td>
<td>6.31</td>
<td>22.57</td>
<td>20.49</td>
</tr>
<tr>
<td>Delaware River Basin</td>
<td>10.00</td>
<td>30.77</td>
<td>2.29</td>
<td>18.31</td>
<td>0.00</td>
<td>0.26</td>
<td>1.14</td>
<td>0.04</td>
</tr>
<tr>
<td>New York Metro</td>
<td>2.99</td>
<td>2.68</td>
<td>3.13</td>
<td>5.81</td>
<td>0.01</td>
<td>0.08</td>
<td>0.07</td>
<td>2.22</td>
</tr>
<tr>
<td>North Central Rural</td>
<td>0.33</td>
<td>0.99</td>
<td>0.37</td>
<td>1.31</td>
<td>0.00</td>
<td>0.10</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Northwest Rural</td>
<td>2.74</td>
<td>3.34</td>
<td>0.43</td>
<td>6.89</td>
<td>0.00</td>
<td>0.11</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Philadelphia Metro</td>
<td>12.43</td>
<td>32.86</td>
<td>1.88</td>
<td>5.99</td>
<td>0.00</td>
<td>0.18</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Pinelands</td>
<td>0.40</td>
<td>2.56</td>
<td>0.43</td>
<td>5.21</td>
<td>0.18</td>
<td>0.86</td>
<td>0.00</td>
<td>0.21</td>
</tr>
<tr>
<td>Suburban Corridor</td>
<td>14.81</td>
<td>5.87</td>
<td>1.51</td>
<td>3.38</td>
<td>0.01</td>
<td>1.36</td>
<td>0.00</td>
<td>0.07</td>
</tr>
</tbody>
</table>

* 5-year running mean.
** Not a typo. Both values are the same.

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

15 of 21 counties in one or both weeks; 20 of 21 counties reporting.
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 state climatologist has an extensive amount of climatological historical data as well as stations reporting current conditions and forecasts:

http://climate.rutgers.edu/stateclim/
Recent rainfall activity has provided considerable habitat for *Aedes vexans* emergences. Most regions are showing robust populations after a rather innocuous seasonal beginning. Populations that have been knocked back after spectacular emergences (Delaware River Basin, Northwestern Rural and the Philadelphia Metro regions) are likely to continue having significant emergences until weather patterns stop creating optimal larval habitat.
West Nile positive mosquito pools of *Culex* continue to be found and general virus amplification is likely now ongoing through local juvenile bird populations. To date, no other genus has been found to be positive for WN virus. Population level in most regions will have peaked, and should now slowly decline in numbers. The Agricultural and the Delaware regions appear, at least historically, to have peak onset dates that occur later. However, there is considerable variation for peak dates in these sites, as compared to the rest of the regions.
Ochlerotatus sollicitans - Salt Marsh Floodwater Species

### Trends

**Agricultural**

**Coastal**

**Delaware Bayshore**

**Delaware River Basin**

**New York Metro**

**North Central Rural**

**Northwestern Rural**

**Philadelphia Metro**

**Pinelands**

**Suburban Corridor**

**Comments**

Ochlerotatus sollicitans populations are at the lower end of typical spectrum in the Coastal region and the cycle of lunar flooding events that trigger emergences is clearly visible. Even more evident is the migratory effects of host-seeking females traveling inland. Cohorts that emerged in large numbers in the Delaware Bayshore region during Week 27 have arrived in some inland sites (although those in the more southern Agricultural sites likely arrived from more local areas).
Culiseta melanura – Miscellaneous Group

Culiseta melanura populations continue in their unremarkable seasonal development. More significant is the lack of finding positive vector (EEE) surveillance pools of specimens caught in resting boxes. Although viral activity can occur at lowered vector population levels, amplification in avian hosts is likely reduced and as such, virus is less likely to cross over into the bridge vector populations. However, being only halfway through the mosquito season, vigilance is continued.

"Although the news is good, our biggest threat right now is complacency…. If we don't maintain our vigilance, it will come back and bite us." - Dr. Allison McGeer (who happened to be talking about antibiotic resistance, but is appropriate under most surveillance situations).
*Ochlerotatus trivittatus* in the Northwestern Rural region of New Jersey, August 2006.

*Oc. trivittatus* is an aggressive mosquito when meal-hunting and will deliver a rather painful bite and thus is a significant mosquito in the Northwestern Region of Warren and Sussex counties. Duryea (1990) indicated that light trap counts are not as representative as landing rate counts, and therefore, the position of *Oc. trivittatus* in the Top Ten lists should be taken into consideration (and as should any species that does not respond well to the trap types from which the data were taken).


The Psorophora, cont’d. And the Predator-Prey cycle peaks again.:
Top Ten species (cumulative) for each region to date, 2006.

**Agricultural**

- Ps. columbiae: 3000
- Culex Mix: 2000
- Ae. vexans: 1500
- Oc. cantator: 1000
- Oc. sollicitans: 500
- An. punctipennis: 200
- Ps. ciliata: 100
- Cq. perturbans: 50
- An. quadrimaculatus: 20
- Oc. canadensis: 10

**Coastal**

- Oc. sollicitans: 4500
- Ae. vexans: 3000
- Culex Mix: 2500
- Oc. cantator: 2000
- An. bradleyi: 1500
- Cq. perturbans: 1000
- An. quadrimaculatus: 500
- Oc. taeniorhynchus: 200
- Cs. melanura: 100
- Ps. columbiae: 50