

**VECTOR SURVEILLANCE IN NEW JERSEY**  
EEE, WNV, SLE and LAC  
CDC WEEK 28: July 11 to July 17, 2010  
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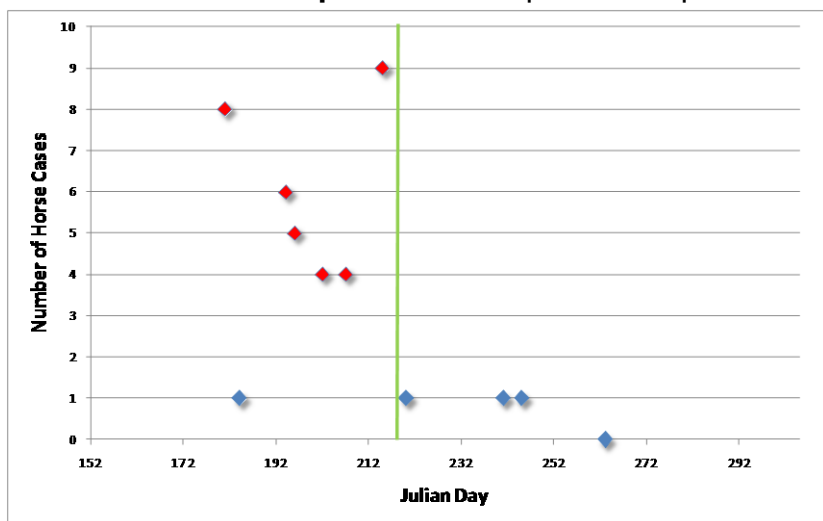
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Supported by funding from the NJ State  
Mosquito Control Commission.

*Culiseta melanura* and Eastern Equine Encephalitis

SITE	Inland / Coastal	Historic Mean	Current Weekly Mean	Total Tested to Date*	Total Pools Submitted	EEE Isolations	MFIR
<b>Green Bank</b> (Burlington County)	Coastal	3.30	0.44	59	7	0	0
<b>Corbin City</b> (Atlantic County)	Coastal	0.75	0.76	255	8	0	0
<b>Dennisville</b> (Cape May County)	Coastal	4.47	4.36	486	14	1	2.06
<b>Winslow</b> (Camden County)	Inland	No history this week	2.58	1244	27	0	0
<b>Centerton</b> (Salem County)	Inland	2.49	2.82	982	23	0	0
<b>Turkey Swamp</b> (Monmouth County)	Inland	0.92	0.64	170	21	0	0
<b>Glassboro</b> (Gloucester County)	Inland	0.74 <sup>†</sup>	0.64	234	7	0	0

\*Including trial run last week in May. † mean from location < 1 mile away.

**Remarks:** There are **2 positive** EEE pools to report at this time, both collected on the 12<sup>th</sup> of July. One positive came from the Dennisville traditional resting box site while the other came from a county-run resting box site, also in Cape May. This sign of EEE activity in this state before the first week in August may serve as an early warning for multiple horse cases (see graph to the left, explanation below). To date, 3430 *Culiseta melanura* mosquitoes forming 107 pools from the seven traditional resting box sites have been tested, producing one positive pool. An additional 2936 *Cs. melanura* have been tested from 1 site in Atlantic County, 3 sites in Burlington County, 21 sites in Cape May, 8 sites in Gloucester, 14 sites in Ocean and 8 sites in Sussex counties, producing one positive pool.



Graph shows the Julian Day (number of days from January 1) of the first positive EEE pool in New Jersey with the corresponding number of horse cases for years from 1998 to 2009. Red symbols = multiple horse case years and blue = one or zero horse cases. Green line is placed between the data point for 1998 (first positive = 3 August) and the data point for 2007 (8 August). To the left of that line are mostly multiple horse case years, except for 2001, which had only one horse

and a first infected pool of 3 July. One year, 2002, did not have any positive pools as well as no positive horses.

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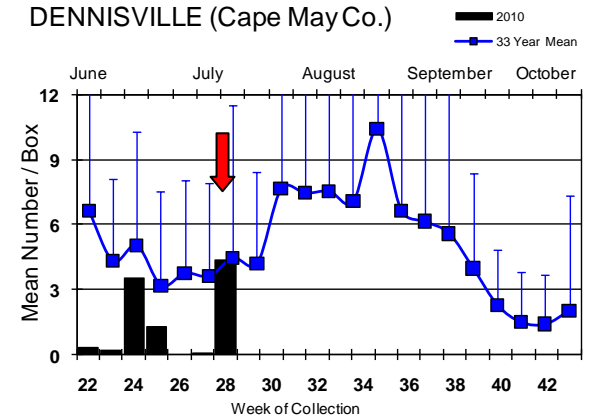
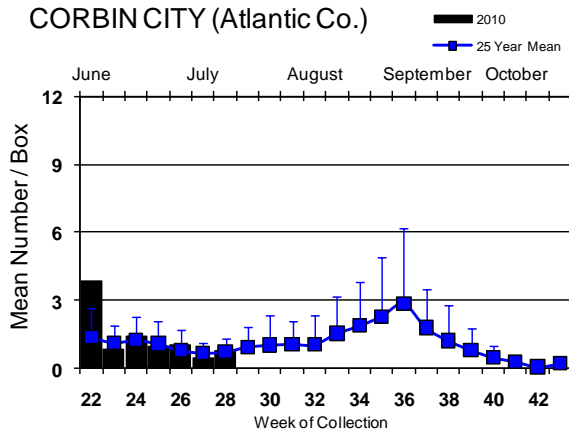
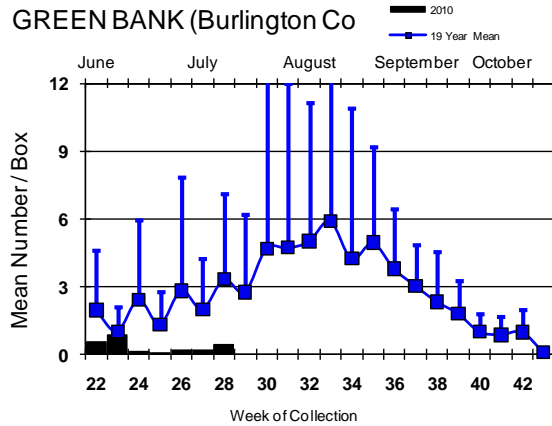
The table below indicates non-melanura species tested for EEE, all negative:

<b>Species other than <i>Cs. melanura</i></b>	<b>Pools</b>	<b>Mosquitoes</b>	<b>Positives</b>	<b>MFIR</b>
<i>Aedes albopictus</i>	1	3		
<i>Aedes canadensis canadensis</i>	1	22		
<i>Aedes japonicus</i>	2	8		
<i>Anopheles bradleyi</i>	2	29		
<i>Coquillettidia perturbans</i>	16	503		
<i>Culex erraticus</i>	6	167		
<i>Culex pipiens</i>	82	873		
<i>Culex restuans</i>	3	7		
<i>Culex salinarius</i>	6	47		
<i>Culex</i> spp.	58	1487		
<i>Culiseta minnesotae</i>	1	1		
<b>State Total</b>	<b>178</b>	<b>3147</b>	<b>0</b>	<b>0.00</b>

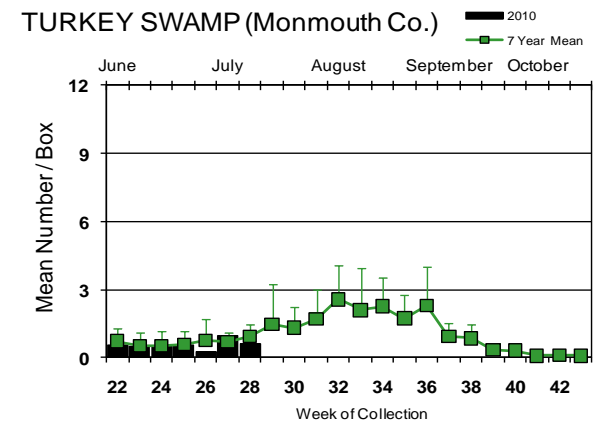
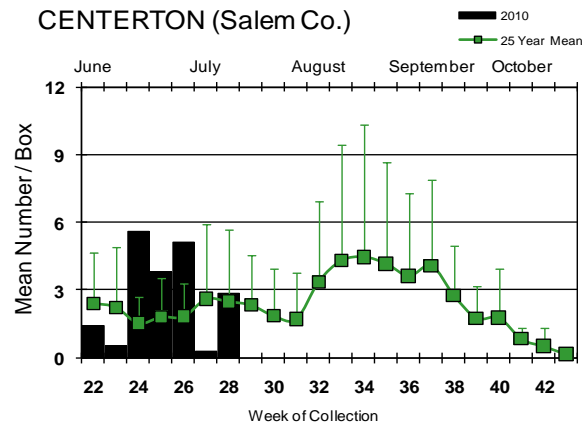
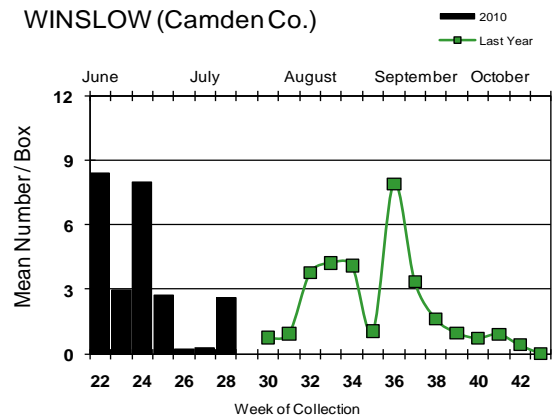
**Horses and Vaccinations:** The fate of unvaccinated equids reinforces the necessity of maintaining a vaccination schedule for arboviruses. For vaccination schedules recommended by the American Association of Equine Practices, see: [http://www.aaep.org/vaccination\\_guidelines.htm](http://www.aaep.org/vaccination_guidelines.htm)

# Culiseta melanura Population Graphs

## Coastal

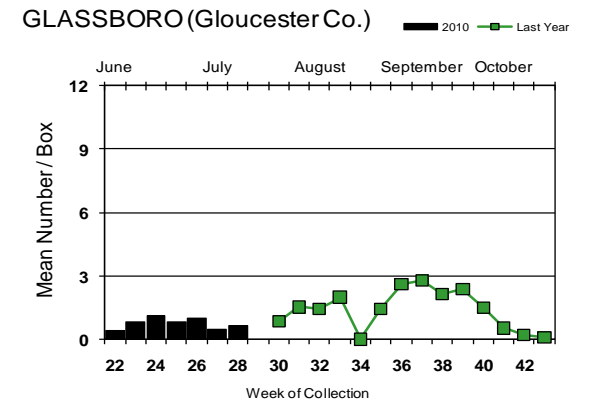


## Inland



*Cs. melanura* populations in resting boxes increased at six of the seven monitoring sites, possibly indicating the beginning emergence of overwintering early instars and the second generation. One positive pool of *Cs. melanura* was found at the Dennisville site, which had a strong increase of abundance after two weeks of few mosquitoes. Centerton *melanura* populations also increased considerably from the previous week.

↓ = Zero positive pool(s) detected.



**EEE in US (2010 cumulative cases):** (Black or Red = previous + new reported cases occurring)

- equine: 50(FL) 1(GA) 1(LA)
- mosquito: 3(FL) 2(NJ) 1(NY) 2(MA)
- sentinel: 71/18(FL chickens/wild)
- human: 1(TX-out of country acquired case)

## West Nile Virus

**West Nile in US (2010 cumulative cases):** Single black values indicate no change from previous week. Black values / red values equals previous week/**New totals**.

Note: Data reported by all states should be considered provisional and subject to change. Sources for this table can be found [here](#).

	Birds	Mosquito Pools	Sentinels	Horses	Humans
Alabama					
Alaska					
Arizona		65/85	9		6
Arkansas					
California	52/66	107/202	6/8	0	2
Colorado		2			3
Connecticut		3/4			
Delaware					
DC					
Florida	1Flavi		47/55		
Georgia	0	0		0	2/3
Hawaii					
Idaho					
Illinois	12	8			
Indiana	0	8		0	0
Iowa		0	0	0	0
Kansas					
Kentucky				0	
Louisiana					1
Maine					
Maryland					
Mass.		2/4			
Michigan					
Minnesota					
Mississippi		1			1
Missouri		17/25			
Montana					
Nebraska	0	3		0	0

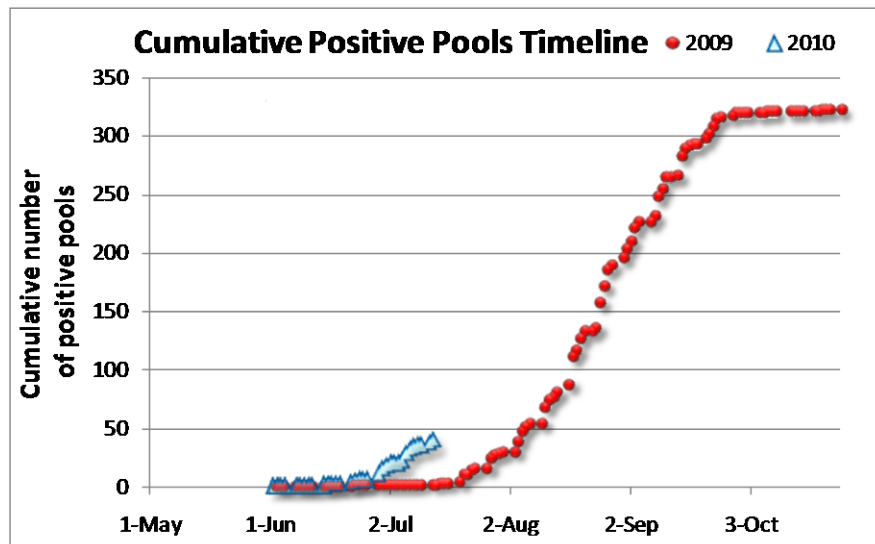
	Birds	Mosquito Pools	Sentinels	Horses	Humans
Nevada					
New Hampshire		0		0	0
New Jersey	2	14/40	0	0	0
New Mexico					0
New York	0	5/14		0	0
North Carolina					
North Dakota					1
Ohio		2		0	0
Oklahoma		2			
Oregon	0	0	0	0	0
Pennsylvania	1	20/50			
Rhode Island					
South Carolina					
South Dakota					1
Tennessee	0	4/10		0	0
Texas	0	11		0	0
Utah		1			
Vermont	0	0		0	0
Virginia					
Washington	0	5/12		0	0
West Virginia	0	8/18		0	0
Wisconsin	0			0	0
Wyoming		4			

**Protocol:** New Jersey Department of Health and Senior Services (NJDHSS Public Health and Environmental Laboratories, PHEL) and the Cape May County Division of Mosquito Control tests mosquito pools using RT-PCR Taqman techniques.

**Mosquito Species Submitted for West Nile Virus Testing through 19 July 2010**

Species	Pools	Mosquitoes	Positives	MFIR
<i>Aedes albopictus</i>	67	241		
<i>Aedes canadensis canadensis</i>	21	389		
<i>Aedes cantator</i>	7	21		
<i>Aedes japonicus</i>	114	594		
<i>Aedes sticticus</i>	1	1		
<i>Aedes triseriatus</i>	49	130		
<i>Aedes trivittatus</i>	2	24		
<i>Aedes vexans</i>	11	91		
<i>Anopheles bradleyi</i>	3	32		
<i>Anopheles punctipennis</i>	12	127		
<i>Anopheles quadrimaculatus</i>	9	104		
<i>Anopheles walkeri</i>	2	2		
<i>Coquilleltidia perturbans</i>	46	1170		
<i>Culex erraticus</i>	7	176		
<i>Culex pipiens</i>	244	5835	7	1.200
<i>Culex restuans</i>	90	603		
<i>Culex salinarius</i>	11	55		
<i>Culex spp.</i>	835	31992	32	1.000
<i>Culiseta melanura</i>	219	4797	1	0.208
<i>Culiseta minnesotae</i>	1	1		
<i>Orthopodomyia signifera</i>	1	1		
State Total	<b>1752</b>	<b>46386</b>	<b>40</b>	<b>0.862</b>

**Remarks:** The number of positive WNV mosquito pools to date is 40. Positives continue to remain in the ornithophilic species. The graph below displays the cumulative positive pools found over time between 2009 (red) and 2010 (blue), indicating an increased activity over last year. It is possible that the extended dry conditions New Jersey has experienced of late have created conditions where interaction among the hosts and vectors is amplified. Currently, New Jersey is experiencing some rainfall, and floodwater species many begin to show up in earnest as well as *Culex* species, which have decreased somewhat over the past several weeks.



**Humans, Horses and Wild Birds:** No humans or horses have been found positive for WNV to date. For more details plus information about WNV, see the West Nile Virus Alert and FAQ Sheets from the NJ Department of Health and Senior Services, Communicable Disease Service, Infectious and Zoonotic Disease Program:  
<http://www.state.nj.us/health/cd/westnile/enceph.htm>

A second WNV positive bird (species unknown) out of 45 birds tested to date was found in Ocean County, collected July 13th. Like the first positive bird (an American Crow), this second bird was found considerably ahead of the first positive bird from 2009 (a Blue Jay, testing positive the beginning of August, also from Ocean County). This year's tested birds include 8 *Corvus* (3 American, 8 Fish and 6 unidentified Crows), 8 Blue Jays (*Cyanocitta cristata*), 2 Hawk (unknown species) and 15 unknown species.

2010 Positive Mosquito pools to date / Total Mosquito Pools Submitted	This time last year
40/ 1372 (0.029%)	4/ 2971 (0.001%)
2010 Positive Birds to date / Total Birds Submitted	This time last year
2/ 45 (0.04%)	0/ 32 (0%)

**WNV Results by County through 19 July 2010**

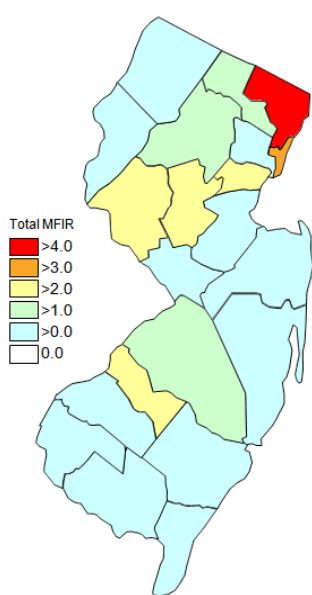
County	Species	Pools	Mosquitoes	Positives	MFIR
<b>Atlantic</b>		<b>72</b>	<b>2061</b>	<b>3</b>	<b>1.456</b>
	<i>Aedes albopictus</i>	3	9		
	<i>Aedes canadensis canadensis</i>	3	56		
	<i>Aedes cantator</i>	3	14		
	<i>Aedes japonicus</i>	3	5		
	<i>Aedes trivittatus</i>	2	24		
	<i>Aedes vexans</i>	3	68		
	<i>Anopheles bradleyi</i>	2	4		
	<i>Anopheles punctipennis</i>	1	37		
	<i>Anopheles quadrimaculatus</i>	1	2		
	<i>Coquillettidia perturbans</i>	4	20		
	<i>Culex</i> spp.	34	1526	3	1.966
	<i>Culiseta melanura</i>	12	295		
	<i>Orthopodomyia signifera</i>	1	1		
<b>Bergen</b>		<b>60</b>	<b>4412</b>	<b>4</b>	<b>0.907</b>
	<i>Aedes albopictus</i>	1	2		
	<i>Culex</i> spp.	59	4410	4	0.907
<b>Burlington</b>		<b>44</b>	<b>2341</b>	<b>3</b>	<b>1.282</b>
	<i>Aedes albopictus</i>	1	3		
	<i>Aedes canadensis canadensis</i>	1	22		
	<i>Aedes japonicus</i>	1	4		
	<i>Coquillettidia perturbans</i>	2	125		
	<i>Culex</i> spp.	16	992	3	3.024
	<i>Culiseta melanura</i>	23	1195		
<b>Camden</b>		<b>40</b>	<b>1008</b>	<b>3</b>	<b>2.976</b>
	<i>Aedes albopictus</i>	4	10		
	<i>Aedes canadensis canadensis</i>	1	1		
	<i>Aedes japonicus</i>	4	4		
	<i>Aedes triseriatus</i>	2	2		
	<i>Anopheles punctipennis</i>	1	1		
	<i>Culex</i> spp.	25	861	3	3.484

<i>Culiseta melanura</i>	3	129		
<b>Cape May</b>	<b>457</b>	<b>6226</b>		
<i>Aedes albopictus</i>	3	10		
<i>Aedes japonicus</i>	18	41		
<i>Aedes triseriatus</i>	8	29		
<i>Anopheles bradleyi</i>	1	28		
<i>Anopheles quadrimaculatus</i>	1	10		
<i>Coquillettidia perturbans</i>	7	128		
<i>Culex erraticus</i>	7	176		
<i>Culex pipiens</i>	148	2216		
<i>Culex restuans</i>	71	467		
<i>Culex salinarius</i>	7	49		
<i>Culex</i> spp.	82	833		
<i>Culiseta melanura</i>	104	2239		
<b>Essex</b>	<b>12</b>	<b>88</b>		
<i>Aedes japonicus</i>	3	5		
<i>Aedes triseriatus</i>	1	1		
<i>Aedes vexans</i>	1	1		
<i>Culex</i> spp.	7	81		
<b>Gloucester</b>	<b>95</b>	<b>3768</b>	<b>8</b>	<b>2.123</b>
<i>Aedes albopictus</i>	2	7		
<i>Aedes japonicus</i>	1	8		
<i>Culex pipiens</i>	75	3293	7	2.126
<i>Culiseta melanura</i>	17	460	1	2.174
<b>Hudson</b>	<b>70</b>	<b>2707</b>	<b>6</b>	<b>2.216</b>
<i>Culex</i> spp.	70	2707	6	2.216
<b>Hunterdon</b>	<b>75</b>	<b>3720</b>	<b>1</b>	<b>0.269</b>
<i>Culex</i> spp.	75	3720	1	0.269
<b>Mercer</b>	<b>23</b>	<b>309</b>		
<i>Aedes albopictus</i>	2	4		
<i>Aedes japonicus</i>	4	8		
<i>Aedes triseriatus</i>	4	5		
<i>Culex pipiens</i>	7	266		
<i>Culex restuans</i>	6	26		
<b>Middlesex</b>	<b>99</b>	<b>5060</b>	<b>7</b>	<b>1.383</b>
<i>Aedes albopictus</i>	1	7		
<i>Aedes japonicus</i>	3	21		
<i>Aedes triseriatus</i>	1	6		
<i>Culex</i> spp.	94	5026	7	1.393
<b>Monmouth</b>	<b>123</b>	<b>942</b>		
<i>Aedes albopictus</i>	12	21		
<i>Aedes canadensis canadensis</i>	9	88		
<i>Aedes cantator</i>	3	6		
<i>Aedes japonicus</i>	19	64		
<i>Aedes triseriatus</i>	7	8		
<i>Anopheles punctipennis</i>	1	1		
<i>Anopheles quadrimaculatus</i>	1	1		

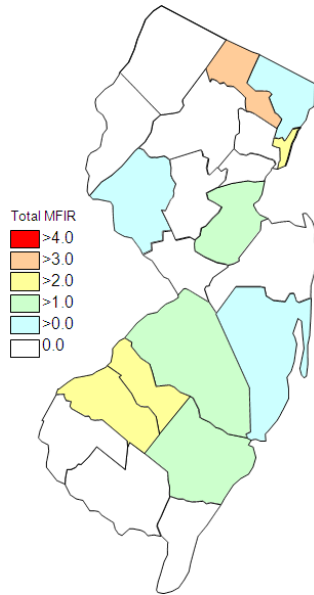
	<i>Coquillettidia perturbans</i>	5	8		
	<i>Culex pipiens</i>	1	1		
	<i>Culex restuans</i>	1	1		
	<i>Culex salinarius</i>	2	2		
	<i>Culex</i> spp.	37	564		
	<i>Culiseta melanura</i>	25	177		
<b>Morris</b>		<b>55</b>	<b>1763</b>		
	<i>Aedes japonicus</i>	6	58		
	<i>Aedes vexans</i>	1	5		
	<i>Anopheles punctipennis</i>	2	6		
	<i>Anopheles quadrimaculatus</i>	3	82		
	<i>Coquillettidia perturbans</i>	5	203		
	<i>Culex</i> spp.	38	1409		
<b>Ocean</b>		<b>111</b>	<b>1908</b>	<b>1</b>	<b>0.524</b>
	<i>Aedes albopictus</i>	18	117		
	<i>Aedes canadensis canadensis</i>	7	222		
	<i>Aedes japonicus</i>	17	75		
	<i>Aedes sticticus</i>	1	1		
	<i>Aedes triseriatus</i>	6	21		
	<i>Aedes vexans</i>	2	6		
	<i>Coquillettidia perturbans</i>	6	85		
	<i>Culex</i> spp.	37	1248	1	0.801
	<i>Culiseta melanura</i>	17	133		
<b>Passaic</b>		<b>55</b>	<b>1014</b>	<b>4</b>	<b>3.945</b>
	<i>Aedes albopictus</i>	5	26		
	<i>Aedes japonicus</i>	10	109		
	<i>Aedes triseriatus</i>	7	17		
	<i>Coquillettidia perturbans</i>	2	27		
	<i>Culex</i> spp.	31	835	4	4.790
<b>Salem</b>		<b>52</b>	<b>307</b>		
	<i>Aedes albopictus</i>	6	9		
	<i>Aedes cantator</i>	1	1		
	<i>Aedes japonicus</i>	6	9		
	<i>Aedes triseriatus</i>	1	1		
	<i>Aedes vexans</i>	4	11		
	<i>Anopheles punctipennis</i>	2	2		
	<i>Anopheles quadrimaculatus</i>	3	9		
	<i>Anopheles walkeri</i>	2	2		
	<i>Coquillettidia perturbans</i>	2	2		
	<i>Culex pipiens</i>	2	2		
	<i>Culex restuans</i>	4	6		
	<i>Culex</i> spp.	16	112		
	<i>Culiseta melanura</i>	3	141		
<b>Somerset</b>		<b>75</b>	<b>956</b>		
	<i>Aedes albopictus</i>	7	13		
	<i>Aedes japonicus</i>	10	73		
	<i>Aedes triseriatus</i>	8	24		
	<i>Anopheles punctipennis</i>	4	5		



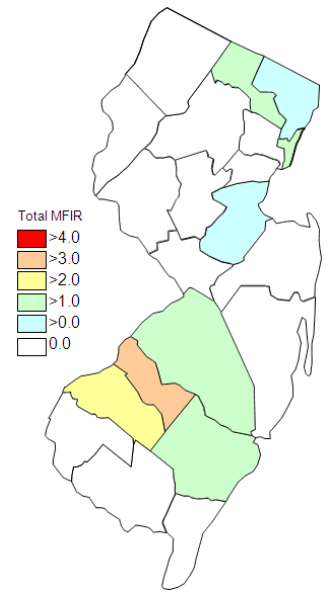
<i>Culex</i> spp.	46	841		
<b>Sussex</b>	<b>109</b>	<b>2833</b>		
<i>Aedes japonicus</i>	1	38		
<i>Coquillettidia perturbans</i>	4	201		
<i>Culex pipiens</i>	11	57		
<i>Culex restuans</i>	8	103		
<i>Culex salinarius</i>	2	4		
<i>Culex</i> spp.	67	2401		
<i>Culiseta melanura</i>	15	28		
<i>Culiseta minnesotae</i>	1	1		
<b>Union</b>	<b>67</b>	<b>2547</b>		
<i>Aedes albopictus</i>	2	3		
<i>Aedes japonicus</i>	8	72		
<i>Coquillettidia perturbans</i>	1	9		
<i>Culex</i> spp.	56	2463		
<b>Warren</b>	<b>58</b>	<b>2416</b>		
<i>Aedes triseriatus</i>	4	16		
<i>Anopheles punctipennis</i>	1	75		
<i>Coquillettidia perturbans</i>	8	362		
<i>Culex</i> spp.	45	1963		
<b>Grand Total</b>	<b>1752</b>	<b>46386</b>	<b>40</b>	<b>0.862</b>



Cumulative WNV activity in 2009.



WNV activity to 12 July, 2010.



WNV activity last week, 2010.

## Saint Louis Encephalitis (SLE) through 19 July 2010.

New Jersey will be selectively testing for SLE this year. SLE has had previous activity in New Jersey, most notably in 1964 and 1975 (CDC's [SLE website](#)), the latter prompting the surveillance reporting by Rutgers. SLE is a flavivirus and has a similar transmission pattern to West Nile, with *Culex* species as the predominant vectors.

No pools tested positive to date for 2010.

County	Species	Pools	Mosquitoes	Positives	MFIR
<b>Burlington</b>		<b>40</b>	<b>2507</b>		
	<i>Aedes albopictus</i>	1	3		
	<i>Aedes canadensis canadensis</i>	1	22		
	<i>Aedes japonicus</i>	1	4		
	<i>Coquillettidia perturbans</i>	2	125		
	<i>Culex</i> spp.	19	1217		
	<i>Culiseta melanura</i>	16	1136		
<b>Camden</b>		<b>37</b>	<b>879</b>		
	<i>Aedes albopictus</i>	4	10		
	<i>Aedes canadensis canadensis</i>	1	1		
	<i>Aedes japonicus</i>	4	4		
	<i>Aedes triseriatus</i>	2	2		
	<i>Anopheles punctipennis</i>	1	1		
	<i>Culex</i> spp.	25	861		
<b>Essex</b>		<b>7</b>	<b>81</b>		
	<i>Culex</i> spp.	7	81		
<b>Hudson</b>		<b>40</b>	<b>1674</b>		
	<i>Culex</i> spp.	40	1674		
<b>Salem</b>		<b>1</b>	<b>7</b>		
	<i>Culex</i> spp.	1	7		
<b>Grand Total</b>		<b>125</b>	<b>5148</b>		

### La Crosse Encephalitis (LAC) through 19 July 2010.

New Jersey will be selectively testing for La Crosse (LAC) virus this year. New Jersey has had 3 cases of this encephalitic disease since 1964 (see CDC's LAC [website](#)). The mortality is low but like other encephalitides, LAC can have both personal (lasting neurological sequelae) and economic impacts. LAC is a bunyavirus with a transmission cycle involving mosquitoes such as *Aedes triseriatus* and small mammals such as squirrels and chipmunks. LAC can not only infect *Aedes albopictus* but transovarial transmission was also demonstrated (Tesh and Gubler 1975 Laboratory studies of transovarial transmission of La Crosse and other arboviruses by *Aedes albopictus* and *Culex fatigans*. American Journal of Tropical Medicine and Hygiene 24(5):876-880).

No pools tested positive to date for 2010.

County	Species	Pools	Mosquitoes	Positives	MFIR
<b>Cape May</b>		<b>7</b>	<b>19</b>		
	<i>Aedes triseriatus</i>	7	19		
<b>Warren</b>		<b>10</b>	<b>106</b>		
	<i>Aedes canadensis canadensis</i>	4	86		
	<i>Aedes triseriatus</i>	6	20		
<b>Grand Total</b>		<b>17</b>	<b>125</b>		