

# VECTOR SURVEILLANCE IN NEW JERSEY

## EEE, WNV, SLE and LAC

CDC WEEK 29: July 18 to July 24, 2010  
Data Downloaded 1:29 pm 27 July 2010

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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	2.76	0.20	64	8	0	0
<b>Corbin City</b> (Atlantic County)	Coastal	0.96	0.68	272	9	0	0
<b>Dennisville</b> (Cape May County)	Coastal	4.20	0.18	495	15	1	2.02
<b>Winslow</b> (Camden County)	Inland	No history this week	1.68	1328	29	0	0
<b>Centerton</b> (Salem County)	Inland	2.33	1.26	1031	25	0	0
<b>Turkey Swamp</b> (Monmouth County)	Inland	1.45	1.06 <sup>‡</sup>	202	25	0	0
<b>Glassboro</b> (Gloucester County)	Inland	0.12 <sup>†</sup>	0.68	268	8	0	0

\*Including trial run last week in May. † mean from location < 1 mile away. ‡ results pending, will be included in next week's totals.

**Remarks:** There are **3 positive EEE pools** to report at this time. The latest positive was collected on the 19<sup>th</sup> of July in Burlington County at a county site in a CO<sub>2</sub> trap. All three positive pools continue to be from *Cs. melanura*. The first two positives were collected in Cape May County, one at the Dennisville traditional resting box site while the other came from a county-run resting box site. The expansion of EE detection to another county suggests dissemination of virus. To date, 3660 *Culiseta melanura* mosquitoes forming 119 pools from the seven traditional resting box sites have been tested, producing one positive pool. An additional 3574 *Cs. melanura* have been tested from multiple sites in Atlantic, Burlington, Cape May, Gloucester, Ocean and Sussex counties, producing two positive pools.

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

Species other than <i>Cs. melanura</i>	Pools	Mosquitoes	Positives	MFIR
<i>Aedes albopictus</i>	2	5		
<i>Aedes canadensis canadensis</i>	1	22		
<i>Aedes japonicus</i>	2	8		
<i>Aedes sollicitans</i>	1	75		
<i>Aedes taeniorhynchus</i>	1	7		
<i>Anopheles bradleyi</i>	4	41		
<i>Anopheles crucians</i>	1	47		

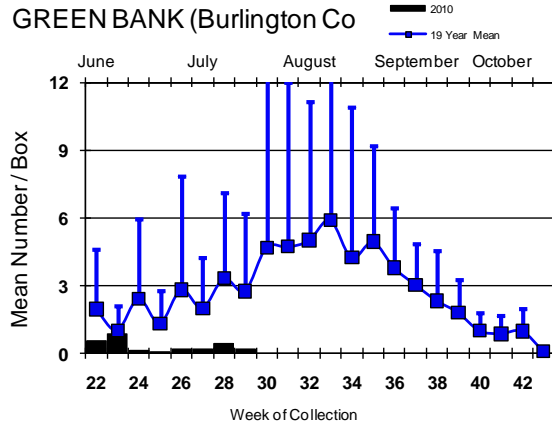
<i>Anopheles quadrimaculatus</i>	1	2		
<i>Coquillettidia perturbans</i>	17	515		
<i>Culex erraticus</i>	7	176		
<i>Culex pipiens</i>	93	1011		
<i>Culex restuans</i>	3	7		
<i>Culex salinarius</i>	7	97		
<i>Culex</i> spp.	69	1719		
<i>Culiseta minnesotae</i>	1	1		
<b>State Total</b>	<b>210</b>	<b>3733</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)

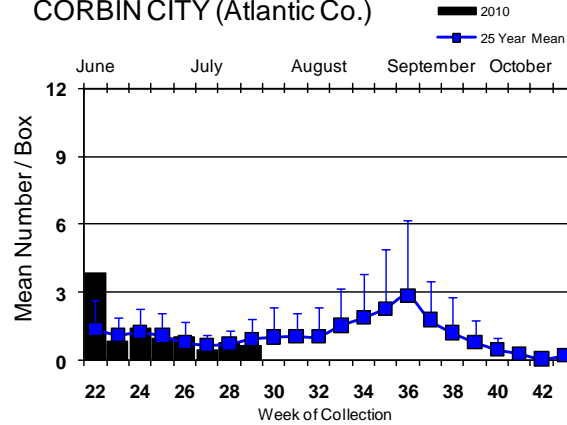
# Culiseta melanura Population Graphs

## Coastal

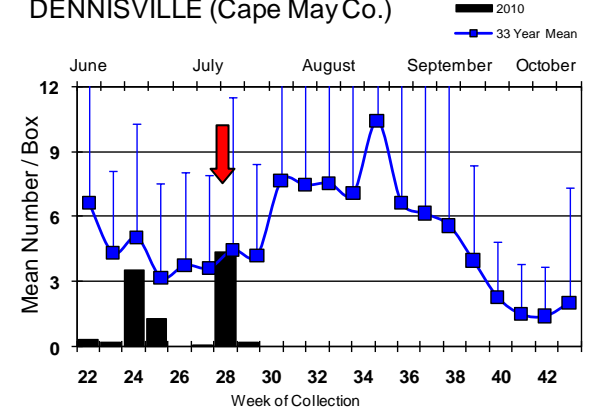
GREEN BANK (Burlington Co)



CORBIN CITY (Atlantic Co.)

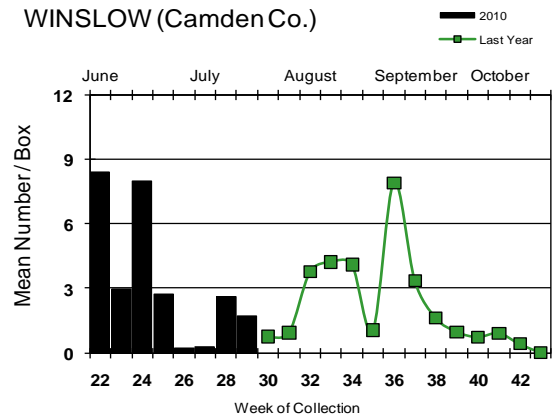


DENNISVILLE (Cape May Co.)

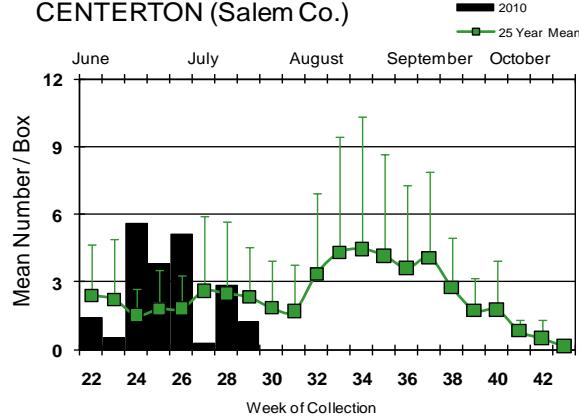


## Inland

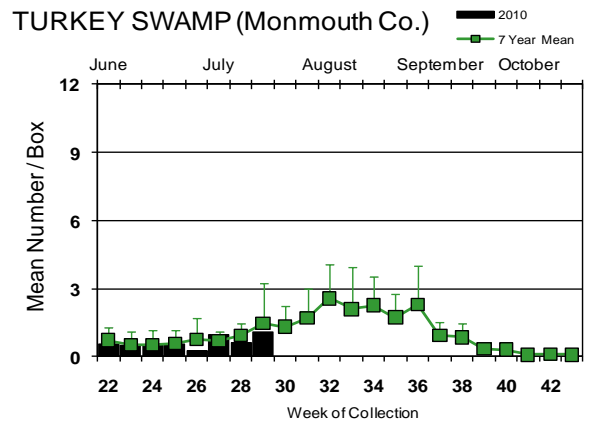
WINSLOW (Camden Co.)



CENTERTON (Salem Co.)



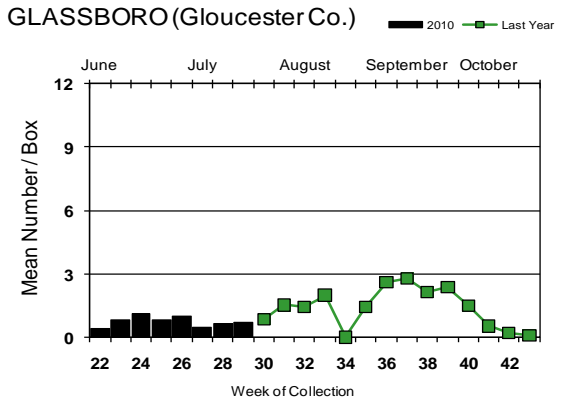
TURKEY SWAMP (Monmouth Co.)



*Cs. melanura* populations in resting boxes increased at Turkey Swamp and Glassboro, but decreased at the five other traditional resting box sites. Currently, traditional resting box sites have detected 1/3 positive EEE pools. This year, EEE was detected 9 days earlier than last year.

↓ = Zero positive pool(s) detected.

GLASSBORO (Gloucester Co.)



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

- equine: 3(AL) 50(FL) 2(GA) 1(LA) 1(MA)
- mosquito: 3(FL) 2(NJ) 1(NY) 6(MA)
- sentinel: 71/18(FL chickens/wild) 2(AL)
- 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					1
Alaska					
Arizona		85/109	9		6/11
Arkansas					
California	66/96	202/322	8/24	0	2/4
Colorado		2/3			3/4
Connecticut		4/9			
Delaware					
DC					
Florida	1Flavi		55		
Georgia	0	0		0	3
Hawaii					
Idaho					
Illinois	12/17	8/28			
Indiana	0	8/13		0	0
Iowa		0	1	0	0
Kansas					1?
Kentucky				0	
Louisiana		65			1/3
Maine					
Maryland		1			
Mass.		4/5			
Michigan					
Minnesota					
Mississippi		1/2			1
Missouri		25/35			1?
Montana					
Nebraska	0	3		0	0

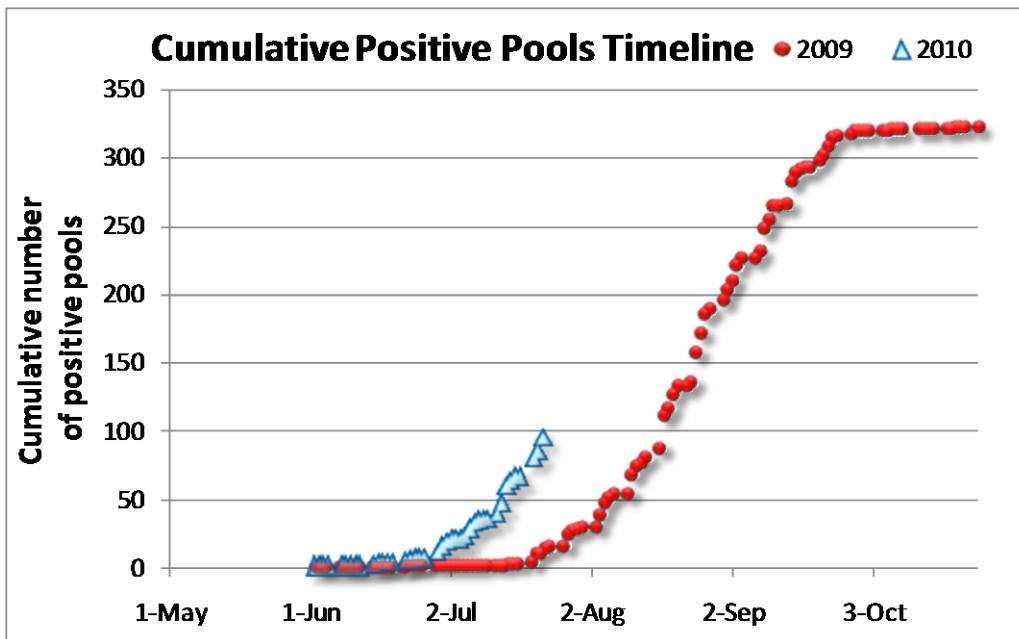
	Birds	Mosquito Pools	Sentinels	Horses	Humans
Nevada					
New Hampshire		0		0	0
New Jersey	2	40/94	0	0	0
New Mexico					0
New York	0	14/59		0	0
North Carolina					
North Dakota					1
Ohio		2		0	0
Oklahoma		2			
Oregon	0	0	0	0	0
Pennsylvania	1/3	50/99			
Rhode Island					
South Carolina					
South Dakota					1
Tennessee	0	10/17		0	0
Texas	0	11/15		0	0
Utah		1			
Vermont	0	0		0	0
Virginia					
Washington	0	12/17		0	0
West Virginia	0	18/22		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 27 July 2010**

<b>Species</b>	<b>Pools</b>	<b>Mosquitoes</b>	<b>Positives</b>	<b>MFIR</b>
<i>Aedes albopictus</i>	102	508	1	1.969
<i>Aedes canadensis canadensis</i>	21	389		
<i>Aedes cantator</i>	7	21		
<i>Aedes japonicus</i>	136	659		
<i>Aedes sollicitans</i>	2	84		
<i>Aedes sticticus</i>	1	1		
<i>Aedes taeniorhynchus</i>	2	31		
<i>Aedes triseriatus</i>	54	138		
<i>Aedes trivittatus</i>	2	24		
<i>Aedes vexans</i>	16	103		
<i>Anopheles bradleyi</i>	6	48		
<i>Anopheles crucians</i>	1	47		
<i>Anopheles punctipennis</i>	15	134		
<i>Anopheles quadrimaculatus</i>	14	164		
<i>Anopheles walkeri</i>	3	4		
<i>Coquillettidia perturbans</i>	51	1205		
<i>Culex erraticus</i>	8	185		
<i>Culex pipiens</i>	320	7624	29	3.804
<i>Culex restuans</i>	101	657		
<i>Culex salinarius</i>	14	192		
<i>Culex spp.</i>	1026	39248	64	1.631
<i>Culiseta melanura</i>	251	5687	1	0.176
<i>Culiseta minnesotae</i>	1	1		
<i>Orthopodomyia signifera</i>	1	1		
State Total	<b>2155</b>	<b>57155</b>	<b>95</b>	<b>1.662</b>

**Remarks:** The number of positive WNV mosquito pools to date is 95. The bulk of the new positives continue to be in the ornithophilic species, but one positive was found in *Aedes albopictus*. Numerous positive pools were detected in the southern counties (see maps at end of county tables below). The cumulative positive pool timeline continues to show earlier activity this year than in 2009.



**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 significant increase in the number of positive WNV birds has occurred with eleven additional birds. At this point last year, fewer birds were also submitted, but none had been found positive at this point in time. This year's positive birds include 8 *Corvus* (6 positives/11 tested American, 1/10 Fish and 1/8 unidentified Crows), 2/11 Blue Jays (*Cyanocitta cristata*), 2 negative Hawks (unknown species) and 3/20 unknown species (one possible grackle).

2010 Positive Mosquito pools to date / Total Mosquito Pools Submitted	This time last year
95/ 2155 (0.044%)	17/ 3444 (0.005%)
2010 Positive Birds to date / Total Birds Submitted	This time last year
13/ 62 (0.21%)	0/ 41 (0%)

#### WNV Results by County through 27 July 2010

County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		90	2690	12	4.461
	<i>Aedes albopictus</i>	6	76	1	13.158
	<i>Aedes canadensis canadensis</i>	3	56		
	<i>Aedes cantator</i>	3	14		
	<i>Aedes japonicus</i>	3	5		
	<i>Aedes sollicitans</i>	1	9		
	<i>Aedes taeniorhynchus</i>	1	24		
	<i>Aedes trivittatus</i>	2	24		
	<i>Aedes vexans</i>	4	72		
	<i>Anopheles bradleyi</i>	3	8		
	<i>Anopheles punctipennis</i>	1	37		
	<i>Anopheles quadrimaculatus</i>	1	2		
	<i>Coquillettidia perturbans</i>	4	20		
	<i>Culex</i> spp.	44	2030	11	5.419
	<i>Culiseta melanura</i>	13	312		
	<i>Orthopodomyia signifera</i>	1	1		

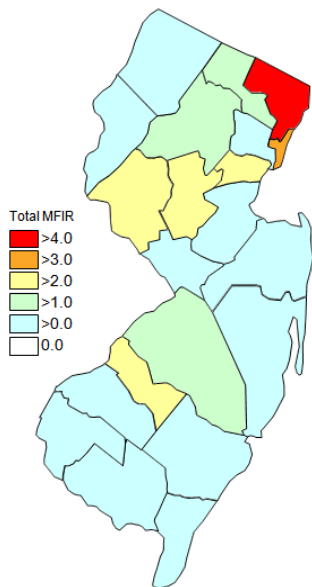
<b>Bergen</b>	<b>75</b>	<b>5468</b>	<b>10</b>	<b>1.829</b>
<i>Aedes albopictus</i>	1	2		
<i>Aedes japonicus</i>	1	6		
<i>Culex</i> spp.	73	5460	10	1.832
<b>Burlington</b>	<b>64</b>	<b>3221</b>	<b>6</b>	<b>1.863</b>
<i>Aedes albopictus</i>	2	5		
<i>Aedes canadensis canadensis</i>	1	22		
<i>Aedes japonicus</i>	1	4		
<i>Aedes sollicitans</i>	1	75		
<i>Aedes taeniorhynchus</i>	1	7		
<i>Anopheles crucians</i>	1	47		
<i>Coquillettidia perturbans</i>	2	125		
<i>Culex</i> spp.	27	1436	6	4.178
<i>Culiseta melanura</i>	28	1500		
<b>Camden</b>	<b>51</b>	<b>1261</b>	<b>6</b>	<b>4.758</b>
<i>Aedes albopictus</i>	7	19		
<i>Aedes canadensis canadensis</i>	1	1		
<i>Aedes japonicus</i>	5	5		
<i>Aedes triseriatus</i>	2	2		
<i>Anopheles punctipennis</i>	1	1		
<i>Culex</i> spp.	30	1020	6	5.882
<i>Culiseta melanura</i>	5	213		
<b>Cape May</b>	<b>512</b>	<b>7057</b>		
<i>Aedes albopictus</i>	3	10		
<i>Aedes japonicus</i>	18	41		
<i>Aedes triseriatus</i>	9	31		
<i>Anopheles bradleyi</i>	2	38		
<i>Anopheles quadrimaculatus</i>	2	62		
<i>Coquillettidia perturbans</i>	8	140		
<i>Culex erraticus</i>	8	185		
<i>Culex pipiens</i>	179	2637		
<i>Culex restuans</i>	72	470		
<i>Culex salinarius</i>	10	186		
<i>Culex</i> spp.	90	893		
<i>Culiseta melanura</i>	111	2364		
<b>Cumberland</b>	<b>4</b>	<b>58</b>		
<i>Anopheles bradleyi</i>	1	2		
<i>Anopheles quadrimaculatus</i>	1	2		
<i>Culiseta melanura</i>	2	54		
<b>Essex</b>	<b>28</b>	<b>325</b>		
<i>Aedes albopictus</i>	1	1		
<i>Aedes japonicus</i>	4	10		
<i>Aedes triseriatus</i>	2	3		
<i>Aedes vexans</i>	2	3		
<i>Culex</i> spp.	19	308		
<b>Gloucester</b>	<b>145</b>	<b>5096</b>	<b>28</b>	<b>5.495</b>
<i>Aedes albopictus</i>	11	116		
<i>Aedes japonicus</i>	2	15		

	<i>Culex pipiens</i>	107	4298	27	6.282
	<i>Culiseta melanura</i>	25	667	1	1.499
<b>Hudson</b>		<b>85</b>	<b>3762</b>	<b>11</b>	<b>2.924</b>
	<i>Culex</i> spp.	85	3762	11	2.924
<b>Hunterdon</b>		<b>90</b>	<b>4470</b>	<b>1</b>	<b>0.224</b>
	<i>Culex</i> spp.	90	4470	1	0.224
<b>Mercer</b>		<b>62</b>	<b>763</b>	<b>2</b>	<b>2.621</b>
	<i>Aedes albopictus</i>	8	23		
	<i>Aedes japonicus</i>	13	22		
	<i>Aedes triseriatus</i>	4	5		
	<i>Culex pipiens</i>	20	629	2	3.180
	<i>Culex restuans</i>	16	77		
	<i>Culex</i> spp.	1	7		
<b>Middlesex</b>		<b>119</b>	<b>6066</b>	<b>8</b>	<b>1.319</b>
	<i>Aedes albopictus</i>	1	7		
	<i>Aedes japonicus</i>	3	21		
	<i>Aedes triseriatus</i>	1	6		
	<i>Culex</i> spp.	114	6032	8	1.326
<b>Monmouth</b>		<b>138</b>	<b>999</b>		
	<i>Aedes albopictus</i>	14	25		
	<i>Aedes canadensis canadensis</i>	9	88		
	<i>Aedes cantator</i>	3	6		
	<i>Aedes japonicus</i>	20	65		
	<i>Aedes triseriatus</i>	9	10		
	<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.	44	588		
	<i>Culiseta melanura</i>	28	203		
<b>Morris</b>		<b>71</b>	<b>2291</b>	<b>1</b>	<b>0.436</b>
	<i>Aedes japonicus</i>	7	67		
	<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.	53	1928	1	0.519
<b>Ocean</b>		<b>128</b>	<b>2119</b>	<b>3</b>	<b>1.416</b>
	<i>Aedes albopictus</i>	24	162		
	<i>Aedes canadensis canadensis</i>	7	222		
	<i>Aedes japonicus</i>	19	79		
	<i>Aedes sticticus</i>	1	1		
	<i>Aedes triseriatus</i>	6	21		
	<i>Aedes vexans</i>	2	6		
	<i>Coquillettidia perturbans</i>	7	90		

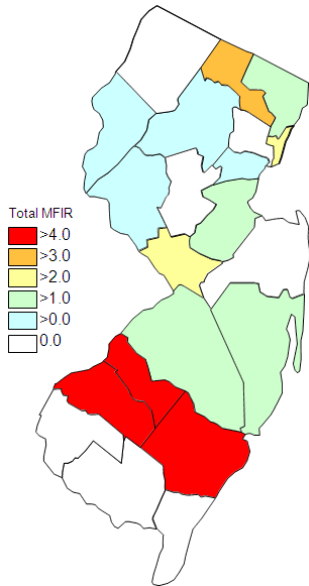


	<i>Culex</i> spp.	44	1397	3	2.147
	<i>Culiseta melanura</i>	18	141		
<b>Passaic</b>		<b>66</b>	<b>1074</b>	<b>4</b>	<b>3.724</b>
	<i>Aedes albopictus</i>	8	35		
	<i>Aedes japonicus</i>	10	109		
	<i>Aedes triseriatus</i>	7	17		
	<i>Anopheles punctipennis</i>	2	3		
	<i>Anopheles quadrimaculatus</i>	1	2		
	<i>Coquillettidia perturbans</i>	4	44		
	<i>Culex</i> spp.	34	864	4	4.630
<b>Salem</b>		<b>68</b>	<b>424</b>		
	<i>Aedes albopictus</i>	6	9		
	<i>Aedes cantator</i>	1	1		
	<i>Aedes japonicus</i>	9	12		
	<i>Aedes triseriatus</i>	1	1		
	<i>Aedes vexans</i>	7	17		
	<i>Anopheles punctipennis</i>	2	2		
	<i>Anopheles quadrimaculatus</i>	4	11		
	<i>Anopheles walkeri</i>	3	4		
	<i>Coquillettidia perturbans</i>	3	3		
	<i>Culex pipiens</i>	2	2		
	<i>Culex restuans</i>	4	6		
	<i>Culex</i> spp.	20	151		
	<i>Culiseta melanura</i>	6	205		
<b>Somerset</b>		<b>90</b>	<b>1079</b>		
	<i>Aedes albopictus</i>	8	15		
	<i>Aedes japonicus</i>	11	79		
	<i>Aedes triseriatus</i>	9	26		
	<i>Anopheles punctipennis</i>	5	9		
	<i>Anopheles quadrimaculatus</i>	1	2		
	<i>Culex</i> spp.	56	948		
<b>Sussex</b>		<b>123</b>	<b>3036</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.	81	2604		
	<i>Culiseta melanura</i>	15	28		
	<i>Culiseta minnesotae</i>	1	1		
<b>Union</b>		<b>80</b>	<b>3082</b>	<b>2</b>	<b>0.649</b>
	<i>Aedes albopictus</i>	2	3		
	<i>Aedes japonicus</i>	9	81		
	<i>Coquillettidia perturbans</i>	1	9		
	<i>Culex</i> spp.	68	2989	2	0.669
<b>Warren</b>		<b>66</b>	<b>2814</b>	<b>1</b>	<b>0.355</b>
	<i>Aedes triseriatus</i>	4	16		
	<i>Anopheles punctipennis</i>	1	75		

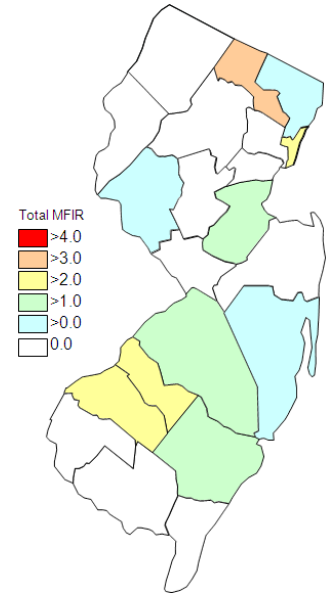
<i>Coquillettidia perturbans</i>	8	362		
<i>Culex</i> spp.	53	2361	1	0.424
<b>Grand Total</b>	<b>2155</b>	<b>57155</b>	<b>95</b>	<b>1.662</b>



Cumulative WNV activity in 2009.



WNV activity to 27 July, 2010.



WNV activity last week, 2010.

## Saint Louis Encephalitis (SLE) through 27 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>56</b>	<b>3157</b>		
	<i>Aedes albopictus</i>	2	5		
	<i>Aedes canadensis canadensis</i>	1	22		
	<i>Aedes japonicus</i>	1	4		
	<i>Aedes sollicitans</i>	1	75		
	<i>Aedes taeniorhynchus</i>	1	7		
	<i>Anopheles crucians</i>	1	47		
	<i>Coquillettidia perturbans</i>	2	125		
	<i>Culex</i> spp.	27	1436		
	<i>Culiseta melanura</i>	20	1436		
<b>Camden</b>		<b>46</b>	<b>1048</b>		
	<i>Aedes albopictus</i>	7	19		
	<i>Aedes canadensis canadensis</i>	1	1		
	<i>Aedes japonicus</i>	5	5		
	<i>Aedes triseriatus</i>	2	2		
	<i>Anopheles punctipennis</i>	1	1		
	<i>Culex</i> spp.	30	1020		

<b>Essex</b>		<b>19</b>	<b>308</b>		
	<i>Culex</i> spp.	19	308		
<b>Hudson</b>		<b>55</b>	<b>2729</b>		
	<i>Culex</i> spp.	55	2729		
<b>Salem</b>		<b>1</b>	<b>7</b>		
	<i>Culex</i> spp.	1	7		
<b>Grand Total</b>		<b>177</b>	<b>7249</b>		

## La Crosse Encephalitis (LAC) through 27 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>		