

**VECTOR SURVEILLANCE IN NEW JERSEY**  
**EEE, WNV and SLE**  
CDC WEEK 35: August 30 to September 5, 2009

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*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	4.9	6.12	433	29	2	4.62
<b>Corbin City</b> (Atlantic County)	Coastal	2.4	1.20	144	17	1	6.94
<b>Dennisville</b> (Cape May County)	Coastal	6.8	2.27	1534	49	16	10.43
<b>Winslow</b> † (Camden County)	Inland	No history	1.06	689	16	10	14.51
<b>Centerton</b> (Salem County)	Inland	4.3	1.60	327	29	1	3.06
<b>Turkey Swamp</b> (Monmouth County)	Inland	1.6	2.34	1056	102	10	9.47
<b>Glassboro</b> (Gloucester County)	Inland	No history	1.42	540	27	3	5.56

\*Including trial run last week in May. † Date of site change-over occurred during Week 30.

**Remarks:** Eastern equine encephalitis virus has been detected throughout southern New Jersey. The total number of positive EEE pools of mosquitoes is at 62. Most positive pools remain in the enzootic vector, *Culiseta melanura* (58 out of the 62 positive pools). Positive pools of *Cs. melanura* from the traditional resting box sites have increased to 42 from 32 since last week. Sixteen positive pools come from traps set by county agencies. To date, 269 pools from 4723 *Cs. melanura* mosquitoes have been sent for EEE testing from the seven resting box collections, and a total of 505 pools from 8285 *Cs. melanura* from all trap sites.

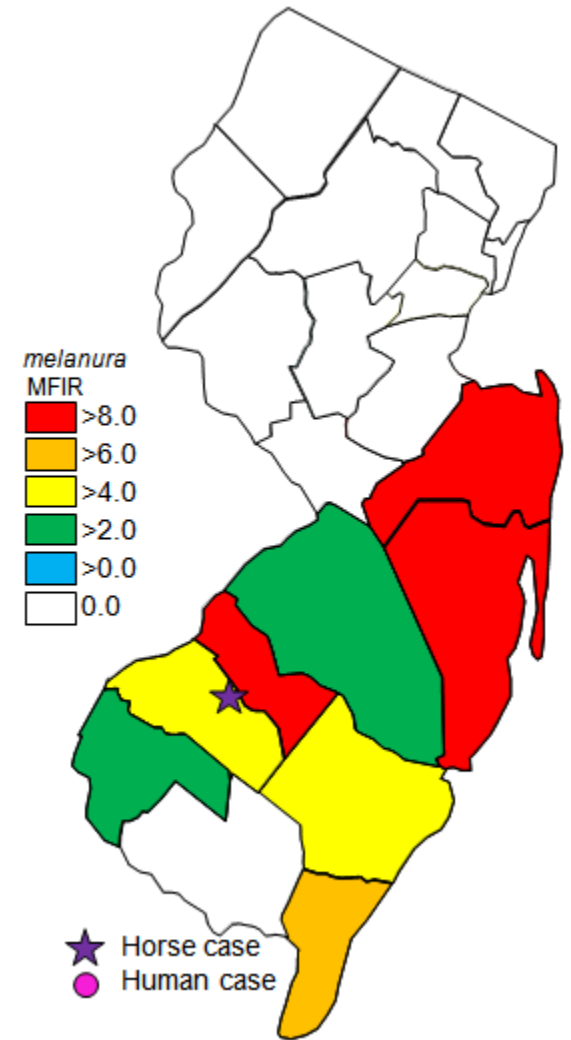
Positive species other than <i>Cs. melanura</i>	County(s)	Total Pools	Total Mosquitoes	Total Positive Pools	MFIR
Mixed <i>Culex</i> species	Atlantic	141	6197	2	0.32
<i>Culex erraticus</i>	Cape May	62	2804	1	0.36
<i>Culex salinarius</i>	Burlington	71	2810	1	0.36

**Additional Pools:** EEE was detected in a pool of *Culex erraticus* from Cape May County. This species is cosmopolitan in its bloodmeal hosts, and is often positive for EEE in the Southeast US where it is predominant. *Cx. erraticus* was first observed in southern New Jersey in the late 1960's. Since then it has been discovered throughout New Jersey as its populations have increased. Other *Culex* pools account for the remaining three

positives (table above, from previous week). Other species tested for EEE include *Aedes abserratus*,: *Ae. albopictus*, *Ae. atlanticus*, *Ae. atropalpus*, *Ae. canadensis*, *Ae. cantator*, *Ae. cinereus*,, *Ae. japonicus*, *Ae. sollicitans*, *Ae. sticticus*, *Ae. taeniorhynchus*, *Ae. thibaulti*, *Ae. triseriatus*, *Ae. trivittatus*, *Ae. vexans*, *Anopheles barberi*, *An. bradleyi*, *An. crucians*, *An. punctipennis*, *An. quadrimaculatus*, *An. walkeri*, *Coquillettidia perturbans*, *Culex erraticus*, *Cx. pipiens*, *Cx. restuans*, *Cx. salinarius*, Mixed *Culex* pools, *Cx. territans*, *Culiseta inornata*, *Psorophora ciliate*, *Ps. columbiae*, *Ps. ferox*, *Ps. howardii* and *Uranotaenia sappharina*.

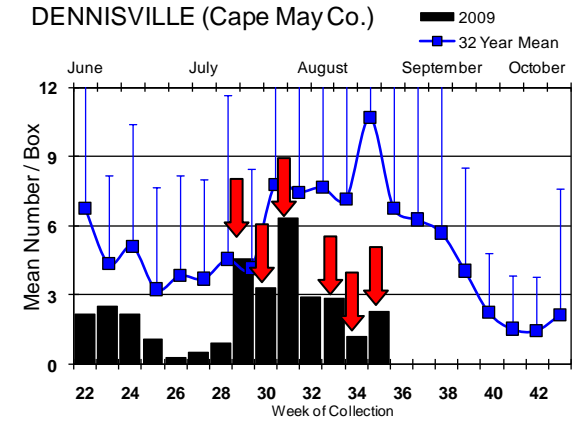
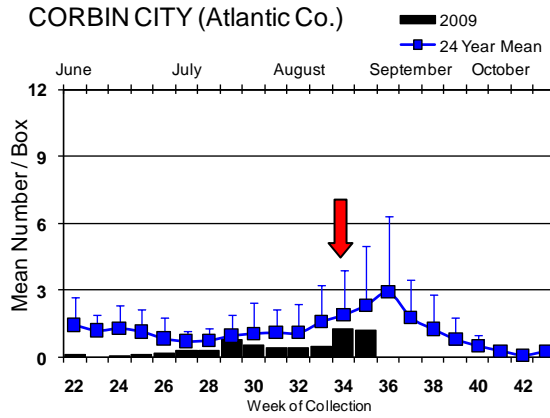
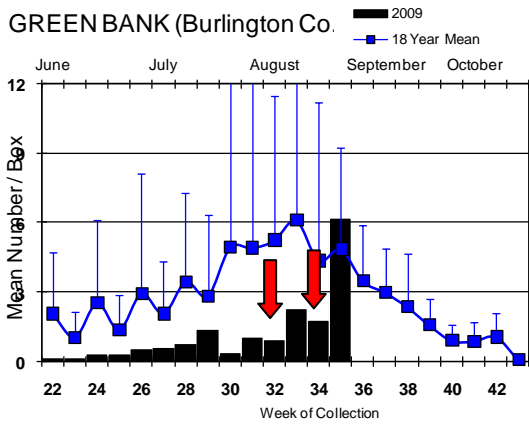
**MFIR values:** The MFIR values calculated for *Cs. melanura* appear moderately high. Previous vector surveillance reports (eg: <http://www.rci.rutgers.edu/~vbcenter/reports/vector/1987v12n5.pdf>) mention that even higher MFIR values (in the 20's) were also seen during times of human cases. Sustaining moderate MFIR values were also mentioned in association with horse cases. Due diligence is needed when EEE activity increases and is also detected in potential bridge vectors. Graph to the right is the MFIR values of *Cs. melanura* for counties with positive pools, including non-resting box pools.

**Horse and Humans:** One Gloucester County horse with no travel history was positive for both eastern equine encephalitis and West Nile virus infections, date of onset 18 Aug. The fate of this horse 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)

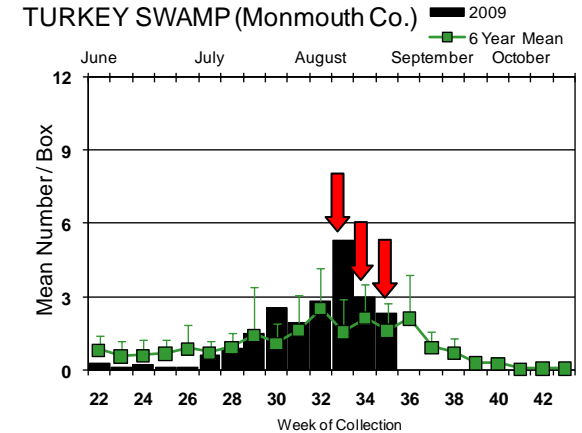
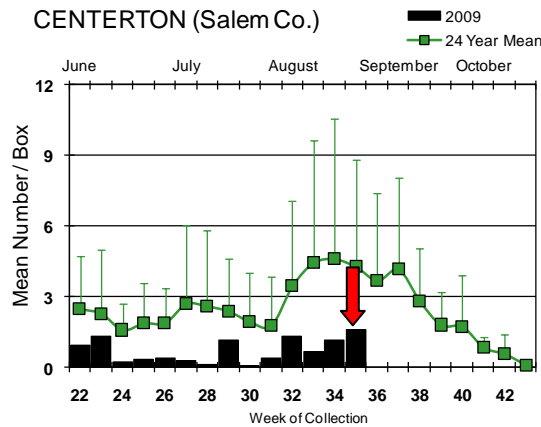
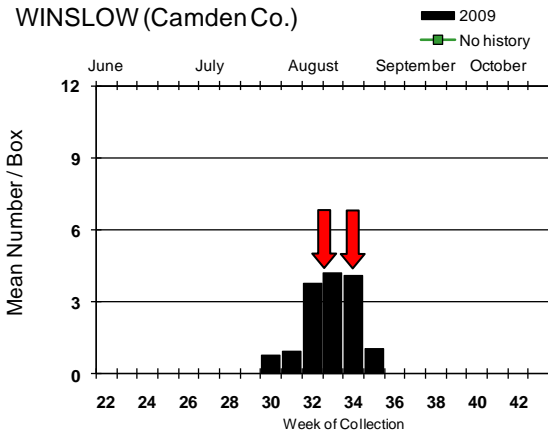


# Culiseta melanura Population Graphs

## Coastal

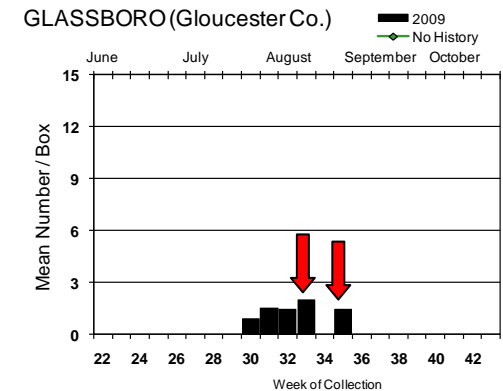


## Inland



The Turkey Swamp population of *Culiseta melanura* continued to show high abundance above historical data as did Green Bank. Detections of EEE occurred at Centerton, Dennisville, Glassboro and Turkey Swamp. Glassboro recovered quickly after treatment, with populations slightly lower than two weeks prior.

= positive pool(s) detected.



**EEE in US (2009 cumulative cases):** (Red = new reported cases occurring)

- equine: 15(AL) 67(FL) 39(GA) 19(LA) 15(MA) 5(ME) 1(MO) 39(MS) 15(NC) 3[1alpaca](NH) 1(NJ) 2(NY) 2(SC) 4(TX) 10(VA)
- mosquito: 15(CT) 1(FL) 2(LA) 20(MA) 29(NH) 62(NJ) 45(NY) 1(RH) 136(VA)
- sentinel: 2(AL) 154/77wild(FL) 24(NC) 52[plus 1 emu 1 fairy bluebird (*Irena* sp)](VA)
- human: 1(LA)

## West Nile Virus

**West Nile in US (2009 cumulative cases):** Single black values indicate no change from previous week. Black values / red values equals previous week/**New totals.**

Note: Some data reported by states are provisional and are subject to change. Sources for this table can be found [here](#).

	Birds	Mosquito Pools	Sentinels	Horses	Humans
Alabama			1/2	1	
Alaska					
Arizona	1	70	4	0	13
Arkansas					1
California	385/405	744/845	139/171	4/6	26/29
Colorado		65		7	20/33
Connecticut	0	13/19	0	0	0
Delaware					
DC					
Florida	2 (flavi)		4/9	1	0
Georgia	0	4		2	2
Hawaii					
Idaho		9 co.		4	13
Illinois	13/17	247/271	0	2	1
Indiana	2	51/79		0	1
Iowa		5	3/5	1	1
Kansas		3+			4
Kentucky				3	
Louisiana		37		2	8
Maine					
Maryland	0	5		0	0
Mass.		10/17		0	0
Michigan		1/3	0	0	0
Minnesota	1	3/4			1
Mississippi		7		3	30/31
Missouri		238/293 flavi		1	1
Montana		4/5		8	3/5
Nebraska	10	22		2	8

	Birds	Mosquito Pools	Sentinels	Horses	Humans
Nevada		4+			12
New Hampshire		0		0	0
New Jersey	5/21	140/182	0	2	0
New Mexico		+		1	2/3
New York	7	43/62	0	0	1
North Carolina					
North Dakota	0	0		0	1
Ohio	0	49/187		0	1
Oklahoma	0	0	0	0	1/2
Oregon	12/15	193/258	0	3	6
Pennsylvania	3/8	131/175	0	0	1
Rhode Island					
South Carolina	2	0			1
South Dakota	0	18	0	3	11
Tennessee	1	274/382	0	0	1/2
Texas	7	250/293	0	2/4	14/24
Utah		225/230	1	5	0
Vermont	0	1	0	0	0
Virginia		26	1/4	10	0
Washington	12/16	326/326	0	32/43	1
West Virginia	1	7/72	0	1	0
Wisconsin	2/3	0	0	0	0
Wyoming		21/22			3/4

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

**Mosquito Species Submitted for West Nile Virus Testing through 9 September 2009**

<b>Species</b>	<b>Pools</b>	<b>Mosquitoes</b>	<b>Positives</b>	<b>MFIR</b>
<i>Aedes abserratus</i>	1	1		
<i>Aedes albopictus</i>	476	3259	1	0.307
<i>Aedes atlanticus</i>	11	24		
<i>Aedes atropalpus</i>	1	15		
<i>Aedes canadensis canadensis</i>	101	2294		
<i>Aedes cantator</i>	53	459		
<i>Aedes cinereus</i>	2	7		
<i>Aedes grossbecki</i>	3	35		
<i>Aedes japonicus</i>	620	4192		
<i>Aedes sollicitans</i>	30	335		
<i>Aedes sticticus</i>	12	115		
<i>Aedes taeniorhynchus</i>	15	136		
<i>Aedes thibaulti</i>	6	9		
<i>Aedes triseriatus</i>	198	742	1	1.348
<i>Aedes trivittatus</i>	31	434		
<i>Aedes vexans</i>	135	1996		
<i>Anopheles barberi</i>	4	15		
<i>Anopheles bradleyi</i>	36	711	1	1.406
<i>Anopheles crucians</i>	3	26		
<i>Anopheles punctipennis</i>	134	478		
<i>Anopheles quadrimaculatus</i>	111	1406		
<i>Anopheles walkeri</i>	1	19		
<i>Coquillettidia perturbans</i>	58	593		
<i>Culex erraticus</i>	73	2953		
<i>Culex pipiens</i>	838	19244	7	0.364
<i>Culex restuans</i>	521	6309	1	0.159
<i>Culex salinarius</i>	148	3464		
<i>Culex spp.</i>	2982	125713	170	1.352
<i>Culex territans</i>	31	111		
<i>Culiseta inornata</i>	1	2		
<i>Culiseta melanura</i>	455	6063	1	0.165
<i>Culiseta morsitans</i>	1	3		
<i>Orthopodomyia signifera</i>	3	3		
<i>Psorophora ciliata</i>	2	4		
<i>Psorophora columbiae</i>	6	12		
<i>Psorophora ferox</i>	31	284		
<i>Psorophora howardii</i>	1	6		
<i>Uranotaenia sapphirina</i>	1	14		
<b>State Total</b>	<b>7136</b>	<b>181486</b>	<b>182</b>	<b>1.003</b>

**Remarks:** The number of pools positive for West Nile virus has increased from 140 to 182. Infected pools continue to be primarily from ornithophilic species (179 pools). Increased activity is occurring in potential bridge vectors, with positive pools detected in *Aedes albopictus* and *Ae. triseriatus* (which are very or moderately competent vectors, respectively, of WNV). Despite an increase in activity, this season continues to be less active as compared to last year.

**Humans, Horses and Wild Birds:** No humans have been reported positive for WNV by PHEL. For more details plus information about WNV, see the PHEL's West Nile Virus Alert and FAQ Sheets:

Two confirmed horse cases for WNV infection have occurred (one in Gloucester and one in Salem counties). The Gloucester horse was also positive for EEE. Both horses appear to have had an uncertain vaccination history. Fifteen positive Blue Jays (*Cyanocitta cristata*) mostly in Ocean County, two American Crows (*Corvus brachyrhynchos*), three unknown crow species (*Corvus*) and one unknown hawk have been detected with WNV infection to date.

2009 Positive Mosquito pools to date / Total Mosquito Pools Submitted	This time last year* * 2008 started later (at least one month) last year than in 2009
191* / 5838 (3.3%)	514 / 6155 (8.4%)
2009 Positive Birds to date / Total Birds Submitted	This time last year* * 2008 started later (at least one month) last year than in 2009
21 / 92 (22.8%)	34/ 137 (24.8%)

\*Data was obtained from the PHEL database after tables were constructed and includes more detected pools.

**WNV Results by County through 9 September 2009**

County	Species	Pools	Mosquitoes	Positives	MFIR
<b>Atlantic</b>		<b>208</b>	<b>5497</b>	<b>2</b>	<b>0.364</b>
	<i>Aedes albopictus</i>	15	244		
	<i>Aedes canadensis canadensis</i>	4	38		
	<i>Aedes cantator</i>	8	148		
	<i>Aedes grossbecki</i>	1	8		
	<i>Aedes japonicus</i>	9	72		
	<i>Aedes sollicitans</i>	4	16		
	<i>Aedes sticticus</i>	2	18		
	<i>Aedes taeniorhynchus</i>	6	39		
	<i>Aedes thibaulti</i>	3	3		
	<i>Aedes triseriatus</i>	4	11		
	<i>Aedes trivittatus</i>	1	4		
	<i>Aedes vexans</i>	17	468		
	<i>Anopheles bradleyi</i>	6	55	1	18.182
	<i>Anopheles punctipennis</i>	4	7		
	<i>Anopheles quadrimaculatus</i>	4	8		
	<i>Culex erraticus</i>	1	3		
	<i>Culex restuans</i>	2	5		
	<i>Culex salinarius</i>	2	37		
	<i>Culex spp.</i>	92	4097	1	0.244
	<i>Culex territans</i>	1	1		
	<i>Culiseta melanura</i>	20	212		
	<i>Psorophora columbiae</i>	2	3		
<b>Bergen</b>		<b>158</b>	<b>11021</b>	<b>47</b>	<b>4.265</b>
	<i>Aedes albopictus</i>	3	16		
	<i>Aedes japonicus</i>	6	26		
	<i>Anopheles punctipennis</i>	1	4		
	<i>Culex spp.</i>	148	10975	47	4.282
<b>Burlington</b>		<b>418</b>	<b>11355</b>	<b>19</b>	<b>1.673</b>
	<i>Aedes abserratus</i>	1	1		
	<i>Aedes albopictus</i>	39	279		
	<i>Aedes atlanticus</i>	2	12		
	<i>Aedes atropalpus</i>	1	15		
	<i>Aedes canadensis canadensis</i>	20	958		

<i>Aedes cantator</i>	6	67		
<i>Aedes cinereus</i>	1	6		
<i>Aedes grossbecki</i>	1	26		
<i>Aedes japonicus</i>	30	155		
<i>Aedes sollicitans</i>	5	71		
<i>Aedes sticticus</i>	2	85		
<i>Aedes taeniorhynchus</i>	4	57		
<i>Aedes triseriatus</i>	13	75		
<i>Aedes trivittatus</i>	2	9		
<i>Aedes vexans</i>	25	869		
<i>Anopheles barberi</i>	1	1		
<i>Anopheles bradleyi</i>	8	432		
<i>Anopheles crucians</i>	1	5		
<i>Anopheles punctipennis</i>	10	33		
<i>Anopheles quadrimaculatus</i>	4	12		
<i>Coquillettidia perturbans</i>	19	279		
<i>Culex erraticus</i>	6	22		
<i>Culex pipiens</i>	1	75		
<i>Culex restuans</i>	2	4		
<i>Culex salinarius</i>	13	440		
<i>Culex</i> spp.	122	5490	19	3.461
<i>Culex territans</i>	3	13		
<i>Culiseta inornata</i>	1	2		
<i>Culiseta melanura</i>	68	1788		
<i>Psorophora ciliate</i>	1	1		
<i>Psorophora columbiae</i>	1	4		
<i>Psorophora ferox</i>	3	49		
<i>Psorophora howardii</i>	1	6		
<i>Uranotaenia sapphirina</i>	1	14		
<b>Camden</b>	<b>231</b>	<b>6562</b>	<b>14</b>	<b>2.133</b>
<i>Aedes albopictus</i>	23	130		
<i>Aedes japonicus</i>	30	72		
<i>Aedes thibaulti</i>	1	1		
<i>Aedes triseriatus</i>	4	4		
<i>Aedes trivittatus</i>	2	2		
<i>Aedes vexans</i>	1	1		
<i>Anopheles punctipennis</i>	3	8		
<i>Anopheles quadrimaculatus</i>	3	4		
<i>Culex pipiens</i>	3	107		
<i>Culex restuans</i>	2	2		
<i>Culex</i> spp.	151	6216	14	2.252
<i>Culex territans</i>	1	1		
<i>Culiseta melanura</i>	4	11		
<i>Orthopodomyia signifera</i>	3	3		
<b>Cape May</b>	<b>1762</b>	<b>29805</b>	<b>8</b>	<b>0.268</b>
<i>Aedes albopictus</i>	94	375		
<i>Aedes canadensis canadensis</i>	5	51		
<i>Aedes cantator</i>	6	20		
<i>Aedes japonicus</i>	163	638		
<i>Aedes sollicitans</i>	10	111		
<i>Aedes taeniorhynchus</i>	3	20		

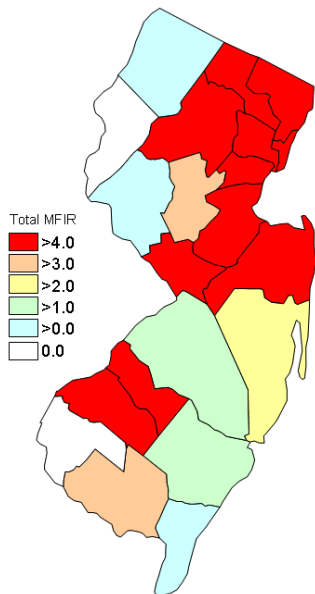
<i>Aedes triseriatus</i>	45	150		
<i>Aedes vexans</i>	1	1		
<i>Anopheles bradleyi</i>	10	127		
<i>Anopheles punctipennis</i>	5	19		
<i>Anopheles quadrimaculatus</i>	32	1068		
<i>Coquillettidia perturbans</i>	3	30		
<i>Culex erraticus</i>	43	2449		
<i>Culex pipiens</i>	412	7648	5	0.654
<i>Culex restuans</i>	322	4000	1	0.250
<i>Culex salinarius</i>	87	2665		
<i>Culex spp.</i>	379	8451	1	0.118
<i>Culex territans</i>	7	29		
<i>Culiseta melanura</i>	135	1953	1	0.512
<b>Cumberland</b>	<b>69</b>	<b>1572</b>		
<i>Aedes albopictus</i>	3	16		
<i>Aedes cantator</i>	1	15		
<i>Aedes japonicas</i>	8	56		
<i>Anopheles punctipennis</i>	1	1		
<i>Anopheles quadrimaculatus</i>	2	5		
<i>Culex erraticus</i>	2	10		
<i>Culex pipiens</i>	6	150		
<i>Culex restuans</i>	2	6		
<i>Culex spp.</i>	36	1227		
<i>Culex territans</i>	1	1		
<i>Culiseta melanura</i>	7	85		
<b>Essex</b>	<b>246</b>	<b>3630</b>	<b>1</b>	<b>0.275</b>
<i>Aedes albopictus</i>	21	128		
<i>Aedes japonicus</i>	25	150		
<i>Aedes sticticus</i>	1	1		
<i>Aedes triseriatus</i>	16	29		
<i>Aedes trivittatus</i>	4	28		
<i>Aedes vexans</i>	15	60		
<i>Anopheles punctipennis</i>	9	16		
<i>Anopheles quadrimaculatus</i>	6	13		
<i>Coquillettidia perturbans</i>	4	6		
<i>Culex spp.</i>	139	3152	1	0.317
<i>Psorophora ciliata</i>	1	3		
<i>Psorophora ferox</i>	5	44		
<b>Gloucester</b>	<b>568</b>	<b>12560</b>	<b>2</b>	<b>0.159</b>
<i>Aedes albopictus</i>	49	522		
<i>Aedes atlanticus</i>	1	1		
<i>Aedes canadensis canadensis</i>	2	2		
<i>Aedes japonicus</i>	53	467		
<i>Aedes thibaulti</i>	1	4		
<i>Aedes triseriatus</i>	7	32		
<i>Aedes trivittatus</i>	1	75		
<i>Aedes vexans</i>	12	79		
<i>Anopheles barberi</i>	2	13		
<i>Anopheles crucians</i>	2	21		
<i>Anopheles punctipennis</i>	30	182		



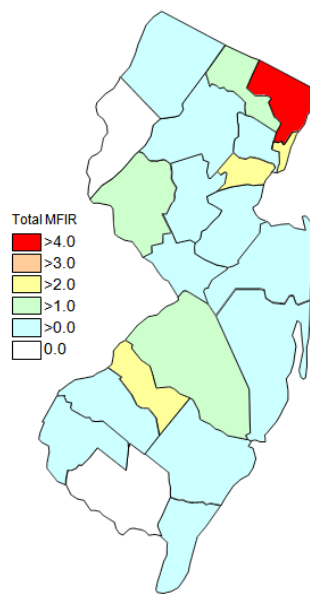
<i>Anopheles quadrimaculatus</i>	31	110		
<i>Anopheles walkeri</i>	1	19		
<i>Coquillettidia perturbans</i>	4	13		
<i>Culex pipiens</i>	293	10390	2	0.192
<i>Culex restuans</i>	20	142		
<i>Culex salinarius</i>	1	1		
<i>Culex territans</i>	4	9		
<i>Culiseta melanura</i>	54	478		
<b>Hudson</b>	<b>176</b>	<b>9815</b>	<b>28</b>	<b>2.835</b>
<i>Culex</i> spp.	176	9815	28	2.835
<b>Hunterdon</b>	<b>222</b>	<b>11026</b>	<b>12</b>	<b>1.088</b>
<i>Aedes albopictus</i>	1	45		
<i>Culex</i> spp.	221	10981	12	1.093
<b>Mercer</b>	<b>471</b>	<b>8063</b>	<b>3</b>	<b>0.372</b>
<i>Aedes albopictus</i>	52	153		
<i>Aedes japonicus</i>	69	176		
<i>Aedes triseriatus</i>	8	12		
<i>Culex erraticus</i>	1	1		
<i>Culex pipiens</i>	97	783		
<i>Culex restuans</i>	128	1820		
<i>Culex salinarius</i>	6	26		
<i>Culex</i> spp.	110	5092	3	0.589
<b>Middlesex</b>	<b>283</b>	<b>13333</b>	<b>11</b>	<b>0.825</b>
<i>Aedes albopictus</i>	9	81		
<i>Aedes japonicus</i>	24	325		
<i>Aedes triseriatus</i>	1	6		
<i>Culex</i> spp.	249	12921	11	0.851
<b>Monmouth</b>	<b>558</b>	<b>5512</b>	<b>2</b>	<b>0.363</b>
<i>Aedes albopictus</i>	59	278		
<i>Aedes atlanticus</i>	3	3		
<i>Aedes canadensis canadensis</i>	29	269		
<i>Aedes cantator</i>	11	52		
<i>Aedes japonicus</i>	41	248		
<i>Aedes sollicitans</i>	2	3		
<i>Aedes thibaulti</i>	1	1		
<i>Aedes triseriatus</i>	25	131		
<i>Aedes trivittatus</i>	8	20		
<i>Aedes vexans</i>	15	103		
<i>Anopheles barberi</i>	1	1		
<i>Anopheles punctipennis</i>	24	81		
<i>Anopheles quadrimaculatus</i>	10	19		
<i>Coquillettidia perturbans</i>	6	15		
<i>Culex erraticus</i>	7	101		
<i>Culex pipiens</i>	17	44		
<i>Culex restuans</i>	26	54		
<i>Culex salinarius</i>	1	5		
<i>Culex</i> spp.	147	2933	2	0.682
<i>Culex territans</i>	12	55		

	<i>Culiseta melanura</i>	106	1060		
	<i>Psorophora columbiae</i>	1	3		
	<i>Psorophora ferox</i>	6	33		
<b>Morris</b>		<b>154</b>	<b>6624</b>	<b>3</b>	<b>0.453</b>
	<i>Aedes japonicus</i>	21	340		
	<i>Aedes triseriatus</i>	3	26		
	<i>Culex spp.</i>	130	6258	3	0.479
<b>Ocean</b>		<b>529</b>	<b>9871</b>	<b>5</b>	<b>0.507</b>
	<i>Aedes albopictus</i>	65	861	1	1.161
	<i>Aedes atlanticus</i>	5	8		
	<i>Aedes canadensis canadensis</i>	38	948		
	<i>Aedes cantator</i>	21	157		
	<i>Aedes cinereus</i>	1	1		
	<i>Aedes grossbecki</i>	1	1		
	<i>Aedes japonicus</i>	56	376		
	<i>Aedes sollicitans</i>	8	133		
	<i>Aedes sticticus</i>	6	10		
	<i>Aedes taeniorhynchus</i>	2	20		
	<i>Aedes triseriatus</i>	29	93		
	<i>Aedes trivittatus</i>	5	15		
	<i>Aedes vexans</i>	39	185		
	<i>Anopheles bradleyi</i>	12	97		
	<i>Anopheles punctipennis</i>	22	31		
	<i>Anopheles quadrimaculatus</i>	5	7		
	<i>Coquillettidia perturbans</i>	11	23		
	<i>Culex restuans</i>	7	7		
	<i>Culex salinarius</i>	21	86		
	<i>Culex spp.</i>	136	6614	4	0.605
	<i>Culiseta melanura</i>	25	121		
	<i>Psorophora columbiae</i>	2	2		
	<i>Psorophora ferox</i>	12	75		
<b>Passaic</b>		<b>102</b>	<b>2030</b>	<b>4</b>	<b>1.970</b>
	<i>Aedes albopictus</i>	5	36		
	<i>Aedes canadensis canadensis</i>	1	20		
	<i>Aedes japonicus</i>	23	382		
	<i>Aedes triseriatus</i>	11	55	1	18.182
	<i>Anopheles punctipennis</i>	2	5		
	<i>Culex spp.</i>	60	1532	3	1.958
<b>Salem</b>		<b>165</b>	<b>4565</b>	<b>2</b>	<b>0.438</b>
	<i>Aedes albopictus</i>	10	36		
	<i>Aedes japonicus</i>	8	37		
	<i>Aedes triseriatus</i>	3	3		
	<i>Aedes vexans</i>	2	150		
	<i>Anopheles punctipennis</i>	11	57		
	<i>Anopheles quadrimaculatus</i>	10	152		
	<i>Coquillettidia perturbans</i>	4	128		
	<i>Culex erraticus</i>	13	367		
	<i>Culex restuans</i>	4	79		
	<i>Culex salinarius</i>	3	153		

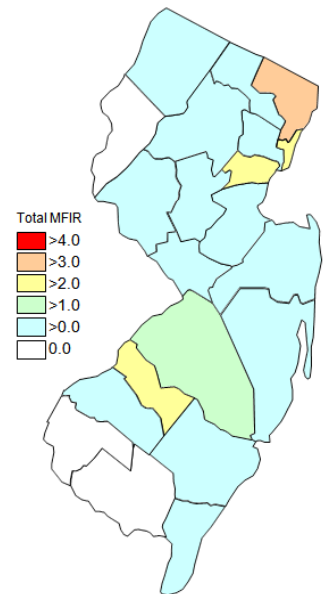
	<i>Culex</i> spp.	61	3056	2	0.654
	<i>Culex territans</i>	2	2		
	<i>Culiseta melanura</i>	34	345		
<b>Somerset</b>		<b>230</b>	<b>5091</b>	<b>3</b>	<b>0.589</b>
	<i>Aedes albopictus</i>	13	39		
	<i>Aedes canadensis canadensis</i>	2	8		
	<i>Aedes japonicus</i>	30	462		
	<i>Aedes sticticus</i>	1	1		
	<i>Aedes triseriatus</i>	26	102		
	<i>Aedes trivittatus</i>	8	281		
	<i>Aedes vexans</i>	2	12		
	<i>Anopheles punctipennis</i>	10	28		
	<i>Anopheles quadrimaculatus</i>	4	8		
	<i>Coquillettidia perturbans</i>	3	4		
	<i>Culex</i> spp.	129	4137	3	0.725
	<i>Psorophora ferox</i>	2	9		
<b>Sussex</b>		<b>221</b>	<b>6634</b>	<b>3</b>	<b>0.452</b>
	<i>Aedes japonicus</i>	3	3		
	<i>Coquillettidia perturbans</i>	3	94		
	<i>Culex pipiens</i>	9	47		
	<i>Culex restuans</i>	6	190		
	<i>Culex salinarius</i>	14	51		
	<i>Culex</i> spp.	183	6236	3	0.481
	<i>Culiseta melanura</i>	2	10		
	<i>Culiseta morsitans</i>	1	3		
<b>Union</b>		<b>142</b>	<b>4210</b>	<b>12</b>	<b>2.850</b>
	<i>Aedes albopictus</i>	16	65		
	<i>Aedes japonicus</i>	17	122		
	<i>Aedes sollicitans</i>	1	1		
	<i>Aedes triseriatus</i>	2	2		
	<i>Aedes vexans</i>	6	68		
	<i>Anopheles punctipennis</i>	2	6		
	<i>Coquillettidia perturbans</i>	1	1		
	<i>Culex</i> spp.	94	3871	12	3.100
	<i>Psorophora ferox</i>	3	74		
<b>Warren</b>		<b>203</b>	<b>11918</b>		
	<i>Culex</i> spp.	203	11918		
<b>Grand Total</b>		<b>7136</b>	<b>181,486</b>	<b>182</b>	<b>1.003</b>



Cumulative activity in 2008



Activity this year to 9 Sept 2009



Activity last week, 2009.

### Risk Assessment

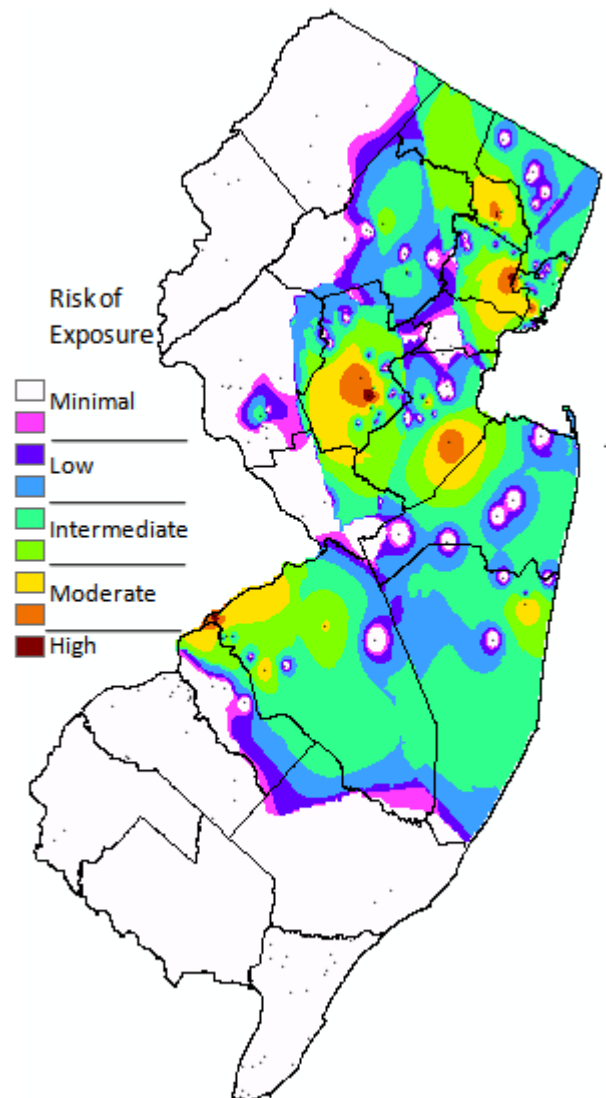
This is our first implementation of a multivariate model for the assessment of risk of human WNV cases. This model was developed using both climatic and biotic variables in predicting the number of weekly New Jersey human cases from 2002-2006 data. We began by using greater than 30 variables, eliminating those that did not have an explanatory value toward predicting risk of human cases. Five variables ultimately emerged, including *Culex* MFIR, Spring Rainfall, temperature variations from average, non-*Culex* MFIR values and the percent of dead birds. We were able to account for greater than 75 percent of the variability. The model features variables that are lagged to include the time from being bitten by an infected mosquito to showing symptoms (i.e., incubation time up to 14 days).

GIS Application: Data for all five variables used in the model were retrieved and prepared for GIS use. Estimates of the 5 variables at pool collection points were obtained through interpolation of each variable and extraction. The extracted variables were then used in the multivariate equation to estimate human cases, and finally plotted through interpolation in ArcMap 9.2.

The scale representing risk of exposure was heavily weighted by the many values representing less than 1 person (i.e., a potential human case), and the risk for a single case is represented by the lime-green category right before Moderate risk of exposure. Thus, most risk in the state lies well below the potential occurrence of a single case. The highest level of risk represents the potential of 10 or more cases and was characterized by extremely large *Culex* MFIR values for week 33. These areas are extremely contained.

Areas that did not have positive MFIR pools may be a color other than white (potentially zero risk) due to the influence of other variables, including the (estimated) presence of dead birds. These areas tend to have low risk.

NOTE: These maps are presented as an additional early warning tool available for counties to use as part of their decision-making processes for controlling public-health mosquitoes. It should be understood that minimal risk does not mean no risk and that everyone should always use [personal protection](#) to avoid mosquito bites.



## Saint Louis Encephalitis (SLE) through 9 September 2009.

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 year's activity being the initiative for the program from which these surveillance reports are generated. SLE is a flavivirus and has a similar transmission pattern to West Nile, with *Culex* species as the predominant vectors.

<b>County</b>	<b>Species</b>	<b>Pools</b>	<b>Mosquitoes</b>	<b>Positives</b>	<b>MFIR</b>
<b>Burlington</b>		<b>360</b>	<b>9841</b>		
	<i>Aedes abserratus</i>	1	1		
	<i>Aedes albopictus</i>	39	279		
	<i>Aedes atlanticus</i>	2	12		
	<i>Aedes atropalpus</i>	1	15		
	<i>Aedes canadensis canadensis</i>	8	217		
	<i>Aedes cantator</i>	5	66		
	<i>Aedes cinereus</i>	1	6		
	<i>Aedes japonicus</i>	29	154		
	<i>Aedes sollicitans</i>	5	71		
	<i>Aedes sticticus</i>	1	41		
	<i>Aedes taeniorhynchus</i>	4	57		
	<i>Aedes triseriatus</i>	12	74		
	<i>Aedes trivittatus</i>	2	9		
	<i>Aedes vexans</i>	20	625		
	<i>Anopheles barberi</i>	1	1		
	<i>Anopheles bradleyi</i>	8	432		
	<i>Anopheles crucians</i>	1	5		
	<i>Anopheles punctipennis</i>	8	27		
	<i>Anopheles quadrimaculatus</i>	3	11		
	<i>Coquillettidia perturbans</i>	19	279		
	<i>Culex erraticus</i>	6	22		
	<i>Culex pipiens</i>	1	75		
	<i>Culex restuans</i>	1	3		
	<i>Culex salinarius</i>	13	440		
	<i>Culex spp.</i>	120	5481		
	<i>Culex territans</i>	2	7		
	<i>Culiseta inornata</i>	1	2		
	<i>Culiseta melanura</i>	39	1355		
	<i>Psorophora ciliate</i>	1	1		
	<i>Psorophora columbiae</i>	1	4		
	<i>Psorophora ferox</i>	3	49		
	<i>Psorophora howardii</i>	1	6		
	<i>Uranotaenia sapphirina</i>	1	14		
<b>Camden</b>		<b>150</b>	<b>4375</b>		
	<i>Aedes albopictus</i>	21	122		
	<i>Aedes japonicus</i>	18	49		
	<i>Aedes triseriatus</i>	4	4		
	<i>Aedes vexans</i>	1	1		
	<i>Culex pipiens</i>	2	95		
	<i>Culex spp.</i>	101	4101		
	<i>Orthopodomyia signifera</i>	3	3		
<b>Cape May</b>		<b>862</b>	<b>16386</b>		

<i>Aedes albopictus</i>	18	88		
<i>Aedes cantator</i>	1	2		
<i>Aedes japonicus</i>	6	34		
<i>Aedes triseriatus</i>	3	14		
<i>Anopheles quadrimaculatus</i>	1	1		
<i>Coquillettidia perturbans</i>	2	22		
<i>Culex erraticus</i>	2	78		
<i>Culex pipiens</i>	304	6120		
<i>Culex restuans</i>	154	1651		
<i>Culex salinarius</i>	20	164		
<i>Culex spp.</i>	338	8061		
<i>Culiseta melanura</i>	13	151		
<b>Essex</b>	<b>200</b>	<b>3432</b>		
<i>Aedes albopictus</i>	21	128		
<i>Aedes japonicus</i>	17	107		
<i>Aedes sticticus</i>	1	1		
<i>Aedes triseriatus</i>	9	14		
<i>Aedes vexans</i>	9	25		
<i>Anopheles punctipennis</i>	1	1		
<i>Coquillettidia perturbans</i>	1	1		
<i>Culex spp.</i>	139	3152		
<i>Psorophora ferox</i>	2	3		
<b>Hunterdon</b>	<b>58</b>	<b>2900</b>		
<i>Culex spp.</i>	58	2900		
<b>Mercer</b>	<b>453</b>	<b>7961</b>		
<i>Aedes albopictus</i>	52	153		
<i>Aedes japonicus</i>	65	172		
<i>Aedes triseriatus</i>	8	12		
<i>Culex pipiens</i>	94	772		
<i>Culex restuans</i>	124	1777		
<i>Culex salinarius</i>	4	24		
<i>Culex spp.</i>	106	5051		
<b>Ocean</b>	<b>2</b>	<b>3</b>		
<i>Aedes albopictus</i>	1	1		
<i>Culex spp.</i>	1	2		
<b>Somerset</b>	<b>22</b>	<b>557</b>		
<i>Aedes albopictus</i>	1	4		
<i>Culex spp.</i>	21	553		
<b>Grand Total</b>	<b>2107</b>	<b>45455</b>		

Specimens submitted by the counties continue to be negative for SLE.

## La Crosse Encephalitis (LAC) through 9 September 2009.

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).

County	Species	Pools	Mosquitoes	Positives	MFIR
<b>Cape May</b>		<b>257</b>	<b>1215</b>		
	<i>Aedes albopictus</i>	82	334		
	<i>Aedes japonicus</i>	122	518		
	<i>Aedes sollicitans</i>	1	2		
	<i>Aedes triseriatus</i>	42	138		
	<i>Anopheles bradleyi</i>	1	34		
	<i>Culex pipiens</i>	1	41		
	<i>Culex restuans</i>	1	8		
	<i>Culex salinarius</i>	2	77		
	<i>Culex spp.</i>	5	63		
<b>Passaic</b>		<b>2</b>	<b>17</b>		
	<i>Aedes triseriatus</i>	2	17		
<b>Grand Total</b>		<b>259</b>	<b>1232</b>		