VECTOR SURVEILLANCE IN NEW JERSEY

EEE, WNV, SLE and LAC

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CDC WEEK 29: July 17 to July 23, 2011

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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 /Tested†	EEE Isolations	MFIR
Green Bank (Burlington County)	Coastal	2.64	0	8†	5/4	0	
Corbin City (Atlantic County)	Coastal	0.95	0	36	5	0	
Dennisville (Cape May County)	Coastal	4.08	0	105	7	0	
Winslow (Camden County)	Inland	1.68	0.30	226	9	0	
Centerton (Salem County)	Inland	2.29	0.12	162	8	0	
Turkey Swamp (Monmouth County)	Inland	1.41	0.20	53†	17/16	0	
Glassboro (Gloucester County)	Inland	0.68	0.36	181	8	0	

*Including trial run last week in May. † Adjusted.

Remarks: The 7 traditional resting box sites for the collection of *Culiseta melanura*, the primary enzootic vector, continue to show no detectable EEE activity, and low *Cs. melanura* populations. In fact, all three inland sites collected no *Cs. melanura.* This was during a week of exceptional high temperatures (Newark reaching 108°F and Atlantic City 104°F on 22 July). To date 761 *Cs. melanura* from 58 pools have tested negative.

Other mosquito species caught in the resting boxes include *Aedes thibaulti, Anopheles barberi, An. punctipennis, Culex pipiens* and *Cx. restuans,* all testing negative.

Additional *Cs. melanura* trapped by counties *traps with positives indicated in **BOLD**.				
County	**Trap types***	**Number collected (pools)**	**Number of positives pools**	**MFIR**
Burlington	CO2	592 (21)	0	
Cape May	CO2, Gravid, RB	168 (31)	0	
Cumberland	CO2, Gravid, RB	93 (16)	0	
Gloucester	RB	356 (49)	0	
Ocean	CO2, Gravid, RB	30 (15)	0	
Sussex	CO2	14 (1)	0	
TOTAL		**1253 (133)**	**0**	

One hundred seventeen additional pools containing 1,080 *Cs. melanura* have tested negative from other county trapping sites.

Species other than *Cs. melanura*	**Pools**	**Mosquitoes**	**Positives**	**MFIR**
Aedes albopictus	6	34		
Aedes atlanticus	1	1		
Aedes atropalpus	2	2		
Aedes canadensis canadensis	8	295		
Aedes cantator	22	186		
Aedes grossbecki	1	3		
Aedes japonicus	7	30		
Aedes sollicitans	17	129		
Aedes sticticus	1	3		
Aedes taeniorhynchus	11	246		
Aedes thibaulti	1	1		
Aedes triseriatus	4	8		
Aedes vexans	5	182		
Anopheles barberi	1	1		
Anopheles bradleyi	12	372		
Anopheles punctipennis	16	183		
Anopheles quadrimaculatus	16	184		
Coquillettidia perturbans	55	1234		
Culex erraticus	45	2115		
Culex pipiens	187	1643		
Culex restuans	13	16		
Culex salinarius	53	620		
Culex spp.	162	5974		
Psorophora columbiae	1	2		
Psorophora howardii	1	2		
State Total	**648**	**13,466**		

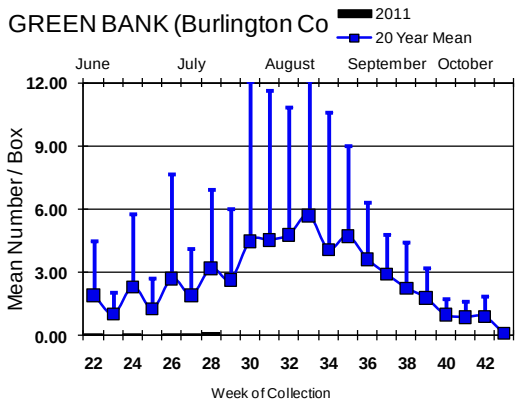
The table to the left indicates non-*melanura* species tested for EEE:

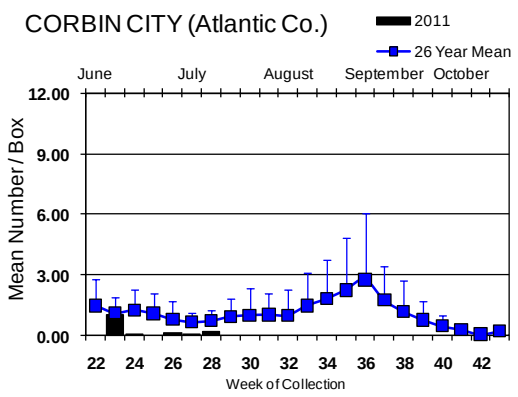
Horses and Humans: No positive horses or humans to date.

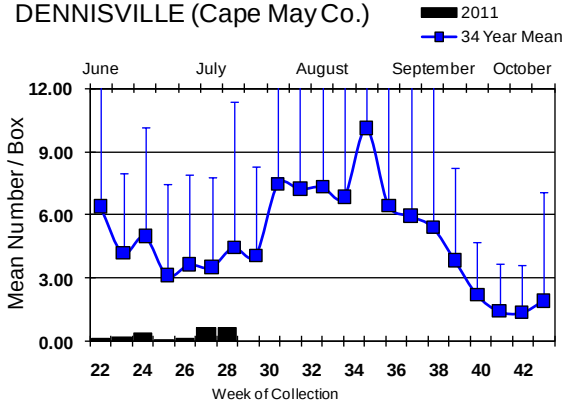
Horses and Vaccinations: The fate of unvaccinated equids reinforces the necessity of maintaining a vaccination schedule for arboviruses. For vaccination schedules recommended by the American Association of Equine Practices, see: http://www.aaep.org/vaccination_guidelines.htm

Culiseta melanura Population Graphs

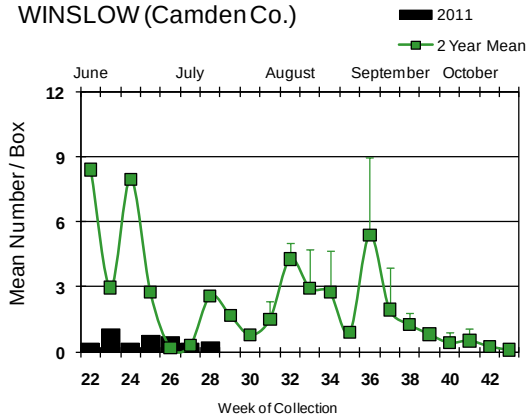
Coastal

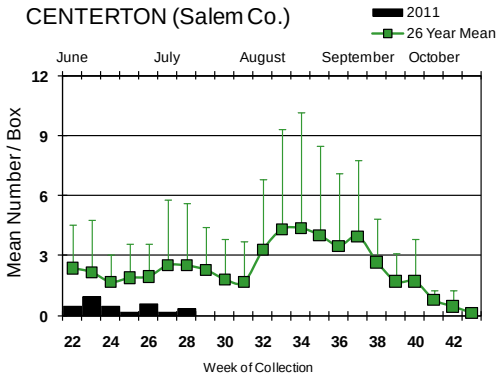


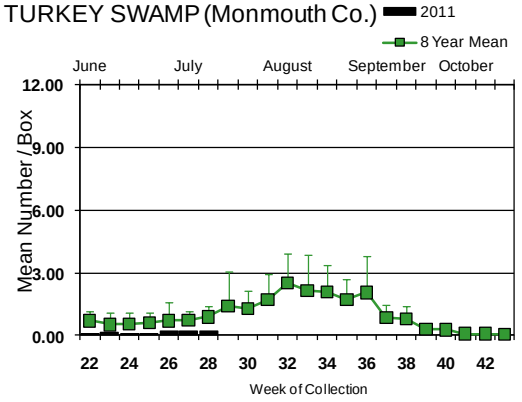




Inland



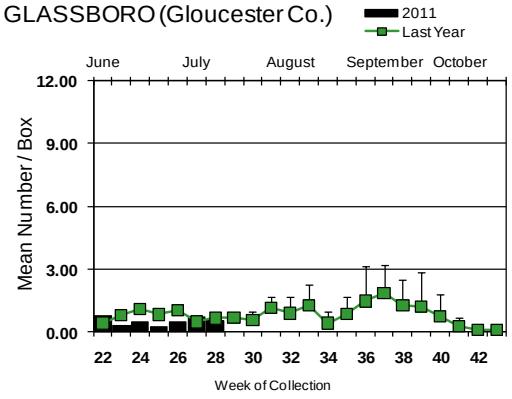




Populations of *Culiseta melanura* are below historical trends at all of the seven traditional resting box sites. All inland sites (Green Bank, Corbin City and Dennisville) had no adults *Cs.* melanura caught during a heat wave week.

= Positive pool(s) detected.

Note: Both Winslow and Glassboro have single point historical data (the previous year) for weeks 22 to 29.



EEE in US (2011 cumulative cases): (Black or Red = previous + new reported cases occurring)

- equine: 2(FL)
- mosquito pools:
- sentinel: 13 chickens/19 wild bird (FL)
- human:

West Nile Virus

West Nile in US (2011 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	0	37	0	0	1/4
Arkansas					
California	44/69	89/147	3/6		1
Colorado		0			0
Connecticut		2			0
Delaware					
DC					
Florida	1 flavi		36		
Georgia	0	14		1	0
Hawaii					
Idaho					
Illinois	2	15/18	0	0	0
Indiana	0	1		0	0
Iowa		1	1/3	0	0
Kansas					
Kentucky					
Louisiana					
Maine		0		0	0
Maryland					
Mass.		7/16		0	0
Michigan	0	0	0	0	0
Minnesota	1				
Mississippi		3		0	1
Missouri		22/34		0	0

	Birds	Mosquito Pools	Sentinels	Horses	Humans
Montana				0	0
Nebraska	1	3/4		0	0
Nevada					0
New Hampshire		0		0	0
New Jersey	0	11/29		0	0
New Mexico					0
New York		1		0	0
North Carolina					
North Dakota	0	0		3*	0
Ohio		4/21		0	0
Oklahoma					
Oregon	0	0	0	0	0
Pennsylvania	3	67/117		1*	0
Rhode Island		0		0	0
South Carolina	0	0		0	0
South Dakota		0		0	1
Tennessee	0	60/102		0	0
Texas	1	54/115		0	2
Utah		0	0	0	0
Vermont	0	0		0	0
Virginia		0	0	0	0
Washington	0	0		0	0
West Virginia					
Wisconsin	0	0		0	0
Wyoming		2/3		0	1

* Other species (e.g., dogs) reported positive.

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 21 July 2011

Species	Pools	Mosquitoes	Positives	MFIR
Aedes albopictus	148	692		
Aedes atlanticus	1	1		
Aedes atropalpus	2	2		
Aedes aurifer	1	2		
Aedes canadensis canadensis	50	770		
Aedes cantator	38	219		
Aedes cinereus	2	4		
Aedes grossbecki	3	8		
Aedes japonicus	183	1241		
Aedes sollicitans	25	172		
Aedes sticticus	2	24		
Aedes stimulans	4	46		
Aedes taeniorhynchus	19	335		
Aedes thibaulti	1	1		
Aedes triseriatus	99	252		
Aedes trivittatus	10	149		
Aedes vexans	51	422		
Anopheles barberi	4	4		
Anopheles bradleyi	17	385		
Anopheles punctipennis	38	220		
Anopheles quadrimaculatus	44	344		
Coquillettidia perturbans	75	1351		
Culex erraticus	50	2136		
Culex pipiens	352	7218	8	1.108
Culex restuans	287	2083	1	0.480
Culex salinarius	57	639		
Culex spp.	1075	45521	20	0.439
Culiseta inornata	1	2		
Culiseta melanura	196	1978		
Psorophora ciliata	1	1		
Psorophora columbiae	4	15		
Psorophora ferox	10	78		
Psorophora howardii	1	2		
Uranotaenia sapphirina	1	8		
State Total	**2,852**	**66,325**	**29**	**0.437**

Remarks: To date, there have been 66,325 mosquitoes tested in 2,852 pools of 33 species. Currently, 29 positive pools have been detected last week in *Culex pipiens, Cx. restuans* or Mixed *Culex* pools from Bergen, Essex, Gloucester, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean and Warren County. Dates samples were collected were between 28 June and 15 July. The *Aedes punctor* reported last week was, in actuality, *Anopheles punctipennis* (error in entry, not identification).

Humans, Horses and Wild Birds: There are no positive human or horse cases reported.

Bird testing began in mid-April. 31 birds have been tested with no positives detected. Species include American Crow *Corvus brachyrhynchos* (1), Blue Jays *Cyanocitta cristata* (5), Fish Crows *Corvus ossifragus* (9) unknown Corvus (1) and Other (non-corvid) species (15). The birds were submitted from Atlantic, Burlington, Cape May, Cumberland, Gloucester, Monmouth, Morris, Ocean and Warren counties.

2011 Positive Mosquito pools to date / Total Mosquito Pools Submitted	This time last year
29 / 2852 (0.010)	123 / 1955 (.063)
2011 Positive Birds to date / Total Birds Submitted	This time last year
0 / 32 (0)	13 / 61 (0.213)

WNV Results by County through 21 July 2011

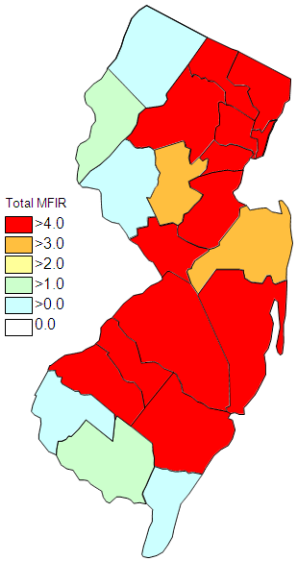
County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		**91**	**2937**		
	Aedes albopictus	5	58		
	Aedes canadensis canadensis	2	9		
	Aedes cantator	3	20		
	Aedes japonicus	2	8		
	Aedes sollicitans	2	29		
	Aedes taeniorhynchus	2	51		
	Aedes thibaulti	1	1		
	Aedes triseriatus	2	6		
	Aedes vexans	6	45		
	Anopheles bradleyi	1	5		
	Anopheles punctipennis	1	1		
	Anopheles quadrimaculatus	4	57		
	Coquillettidia perturbans	1	1		
	Culex restuans	52	2577		
	Culex spp.	6	58		
	Culiseta melanura	1	11		
	Psorophora ferox	5	58		
Bergen		**30**	**2250**	**7**	**3.111**
	Culex spp.	30	2250	7	3.111
Burlington		**213**	**7784**		
	Aedes albopictus	4	32		
	Aedes atlanticus	1	1		
	Aedes atropalpus	2	2		
	Aedes canadensis canadensis	7	290		
	Aedes cantator	2	63		
	Aedes grossbecki	1	3		
	Aedes japonicus	5	27		
	Aedes sollicitans	5	97		
	Aedes sticticus	1	3		
	Aedes taeniorhynchus	5	31		
	Aedes triseriatus	3	6		
	Aedes vexans	5	182		
	Anopheles bradleyi	1	73		
	Anopheles punctipennis	2	13		
	Coquillettidia perturbans	22	724		
	Culex erraticus	2	9		
	Culex pipiens	4	29		
	Culex salinarius	11	121		
	Culex spp.	103	5549		
	Culiseta melanura	25	525		
	Psorophora columbiae	1	2		

	Psorophora howardii	1	2		
Camden		**90**	**1912**		
	Aedes albopictus	16	31		
	Aedes japonicus	13	38		
	Aedes triseriatus	2	5		
	Anopheles punctipennis	2	2		
	Anopheles quadrimaculatus	1	2		
	Culex spp.	47	1608		
	Culiseta melanura	9	226		
Cape May		**868**	**9039**		
	Aedes albopictus	22	30		
	Aedes canadensis canadensis	16	332		
	Aedes cantator	19	99		
	Aedes japonicus	41	97		
	Aedes sollicitans	12	32		
	Aedes taeniorhynchus	10	251		
	Aedes triseriatus	28	53		
	Aedes vexans	3	3		
	Anopheles bradleyi	12	303		
	Anopheles punctipennis	4	5		
	Anopheles quadrimaculatus	24	145		
	Coquillettidia perturbans	18	308		
	Culex erraticus	43	2116		
	Culex pipiens	220	2435		
	Culex restuans	255	1799		
	Culex salinarius	42	499		
	Culex spp.	61	259		
	Culiseta melanura	38	273		
Cumberland		**58**	**625**		
	Aedes albopictus	4	4		
	Aedes canadensis canadensis	2	6		
	Aedes japonicus	1	7		
	Aedes triseriatus	7	14		
	Aedes vexans	1	2		
	Anopheles punctipennis	1	2		
	Coquillettidia perturbans	8	136		
	Culex erraticus	1	1		
	Culex pipiens	1	7		
	Culex restuans	2	5		
	Culex spp.	14	348		
	Culiseta melanura	16	93		
Essex		**225**	**5703**	**1**	**0.175**
	Aedes albopictus	17	56		
	Aedes canadensis canadensis	2	8		
	Aedes grossbecki	2	5		
	Aedes japonicus	31	545		
	Aedes sticticus	1	21		
	Aedes stimulans	4	46		
	Aedes triseriatus	19	63		
	Aedes vexans	15	87		
	Culex spp.	133	4858	1	0.206
	Psorophora ferox	1	14		

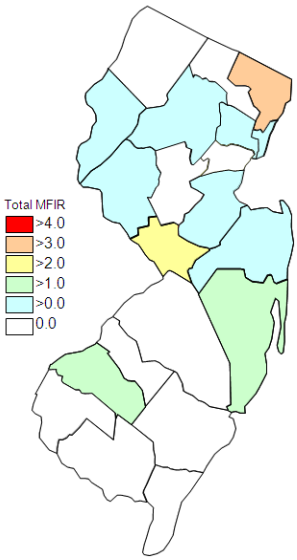
Gloucester		**202**	**5246**	**7**	**1.334**
	Aedes albopictus	6	28		
	Aedes japonicus	9	68		
	Aedes triseriatus	3	8		
	Anopheles punctipennis	8	159		
	Anopheles quadrimaculatus	9	166		
	Coquillettidia perturbans	1	1		
	Culex pipiens	109	4279	7	1.636
	Culiseta melanura	57	537		
Hudson		**45**	**3123**	**1**	**0.320**
	Culex spp.	45	3123	1	0.320
Hunterdon		**50**	**2500**	**1**	**0.400**
	Culex spp.	50	2500	1	0.400
Mercer		**43**	**785**	**2**	**2.548**
	Aedes albopictus	8	48		
	Aedes japonicus	9	29		
	Culex erraticus	1	2		
	Culex pipiens	13	460	1	2.174
	Culex restuans	10	244	1	4.098
	Culex salinarius	1	1		
	Psorophora ferox	1	1		
Middlesex		**62**	**2222**	**2**	**0.900**
	Aedes albopictus	3	22		
	Aedes japonicus	9	106		
	Culex spp.	50	2094	2	0.955
Monmouth		**183**	**1794**	**1**	**0.557**
	Aedes albopictus	15	38		
	Aedes canadensis canadensis	12	98		
	Aedes cantator	7	28		
	Aedes japonicus	20	78		
	Aedes sollicitans	3	9		
	Aedes taeniorhynchus	2	2		
	Aedes triseriatus	14	38		
	Aedes trivittatus	3	4		
	Aedes vexans	6	14		
	Anopheles barberi	4	4		
	Anopheles punctipennis	7	16		
	Anopheles quadrimaculatus	1	1		
	Coquillettidia perturbans	6	29		
	Culex pipiens	2	3		
	Culex restuans	3	3		
	Culex salinarius	1	16		
	Culex spp.	54	1317	1	0.759
	Culiseta melanura	18	45		
	Psorophora ciliata	1	1		
	Psorophora columbiae	1	6		
	Psorophora ferox	3	44		
Morris		**50**	**2328**	**2**	**0.859**

	Culex spp.	50	2328	2	0.859
Ocean		**157**	**1099**	**2**	**1.820**
	Aedes albopictus	32	240		
	Aedes canadensis canadensis	5	5		
	Aedes cantator	6	7		
	Aedes japonicus	16	39		
	Aedes sollicitans	1	1		
	Aedes triseriatus	7	14		
	Aedes trivittatus	2	2		
	Aedes vexans	7	17		
	Anopheles bradleyi	2	3		
	Anopheles punctipennis	4	4		
	Coquillettidia perturbans	8	73		
	Culex erraticus	1	1		
	Culex restuans	6	7		
	Culex salinarius	2	2		
	Culex spp.	40	650	2	3.077
	Culiseta melanura	15	30		
	Psorophora ferox	3	4		
Passaic		**45**	**1305**		
	Aedes canadensis canadensis	1	3		
	Aedes japonicus	6	80		
	Aedes triseriatus	4	20		
	Aedes trivittatus	1	19		
	Anopheles punctipennis	1	1		
	Coquillettidia perturbans	1	3		
	Culex spp.	31	1179		
Salem		**108**	**1318**		
	Aedes albopictus	3	4		
	Aedes aurifer	1	2		
	Aedes canadensis canadensis	3	19		
	Aedes cantator	1	2		
	Aedes japonicus	13	38		
	Aedes sollicitans	2	4		
	Aedes triseriatus	7	16		
	Aedes vexans	6	31		
	Anopheles bradleyi	1	1		
	Anopheles punctipennis	6	8		
	Anopheles quadrimaculatus	7	15		
	Coquillettidia perturbans	5	18		
	Culex erraticus	2	7		
	Culex pipiens	3	5		
	Culex restuans	7	17		
	Culex spp.	30	960		
	Culiseta inornata	1	2		
	Culiseta melanura	8	162		
	Psorophora columbiae	2	7		
Somerset		**49**	**766**		
	Aedes albopictus	3	9		
	Aedes japonicus	6	72		
	Aedes triseriatus	3	9		

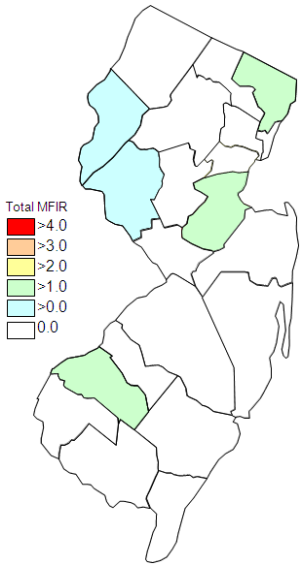
	Coquillettidia perturbans	1	1		
	Culex spp.	36	675		
Sussex		**68**	**2854**		
	Culex restuans	3	7		
	Culex spp.	62	2819		
	Culiseta melanura	3	28		
Union		**40**	**1340**		
	Aedes albopictus	10	92		
	Aedes japonicus	2	9		
	Culex spp.	28	1239		
Warren		**175**	**9395**	**3**	**0.319**
	Aedes cinereus	2	4		
	Aedes trivittatus	4	124		
	Aedes vexans	2	41		
	Anopheles punctipennis	2	9		
	Anopheles quadrimaculatus	2	15		
	Coquillettidia perturbans	1	1		
	Culex spp.	159	9188	3	0.327
	Culiseta melanura	1	1		
	Psorophora ferox	1	4		
	Uranotaenia sapphirina	1	8		
Grand Total		**2,852**	**66,325**	**29**	**0.437**



Cumulative WNV activity in 2010.



WNV activity to 21 July 2011.



WNV activity last week, 2011.

Saint Louis Encephalitis (SLE) through 21 July 2011.

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 have tested positive for SLE to date in 2011.

County	Species	Pools	Mosquitoes	Positives	MFIR
Burlington		**213**	**8151**		
	Aedes albopictus	4	32		
	Aedes atlanticus	1	1		
	Aedes atropalpus	2	2		
	Aedes canadensis canadensis	7	290		
	Aedes cantator	2	63		
	Aedes grossbecki	1	3		
	Aedes japonicus	5	27		
	Aedes sollicitans	5	97		
	Aedes sticticus	1	3		
	Aedes taeniorhynchus	5	31		
	Aedes triseriatus	3	6		
	Aedes vexans	5	182		
	Anopheles bradleyi	1	73		
	Anopheles punctipennis	2	13		
	Coquillettidia perturbans	22	724		
	Culex erraticus	2	9		
	Culex pipiens	4	29		
	Culex salinarius	11	121		
	Culex spp.	107	5849		
	Culiseta melanura	21	592		
	Psorophora columbiae	1	2		
	Psorophora howardii	1	2		
Camden		**82**	**1723**		
	Aedes albopictus	16	31		
	Aedes japonicus	13	38		
	Aedes triseriatus	2	5		
	Anopheles punctipennis	2	2		
	Anopheles quadrimaculatus	1	2		
	Culex spp.	48	1645		
Essex		**225**	**5703**		
	Aedes albopictus	17	56		
	Aedes canadensis canadensis	2	8		
	Aedes grossbecki	2	5		
	Aedes japonicus	31	545		
	Aedes sticticus	1	21		
	Aedes stimulans	4	46		
	Aedes triseriatus	19	63		
	Aedes vexans	15	87		
	Culex spp.	133	4858		

	Psorophora ferox	1	14		
Hudson		**45**	**3123**		
	Culex spp.	45	3123		
Grand Total		**565**	**18,700**		

La Crosse Encephalitis (LAC) through 21 July 2011.

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 2011.

County	Species	Pools	Mosquitoes	Positives	MFIR
Cape May		**28**	**53**		
	Aedes japonicus	1	1		
	Aedes triseriatus	27	52		
Cumberland		**9**	**18**		
	Aedes triseriatus	9	18		
Salem		**7**	**16**		
	Aedes triseriatus	7	16		
Grand Total		**44**	**87**		