VECTOR SURVEILLANCE IN NEW JERSEY

EEE, WNV, SLE and LAC

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CDC WEEK 28: July 0 to July 16, 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	3.17	0.12	5†	4	0	
Corbin City (Atlantic County)	Coastal	0.75	0.20	36†	5	0	
Dennisville (Cape May County)	Coastal	4.47	0.64	105	7	0	
Winslow (Camden County)	Inland	2.58	0.48	209	8	0	
Centerton (Salem County)	Inland	2.50	0.32	156	7	0	
Turkey Swamp (Monmouth County)	Inland	0.89	0.22	43†	16	0	
Glassboro (Gloucester County)	Inland	0.64	0.50	163	7	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. To date 717 *Cs. melanura* from 54 pools have tested negative. This reflects much of the current US picture with activity currently restricted to the US southeast.

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

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	510 (19)	0	
Cape May	CO2, Gravid, RB	159 (25)	0	
Cumberland	CO2, Gravid, RB	93 (16)	0	
Gloucester	RB	276 (42)	0	
Ocean	CO2, Gravid, RB	28 (14)	0	
Sussex	CO2	14 (1)	0	
TOTAL		**605 (87)**	**0**	

The table below indicates non-*melanura* species tested for EEE:

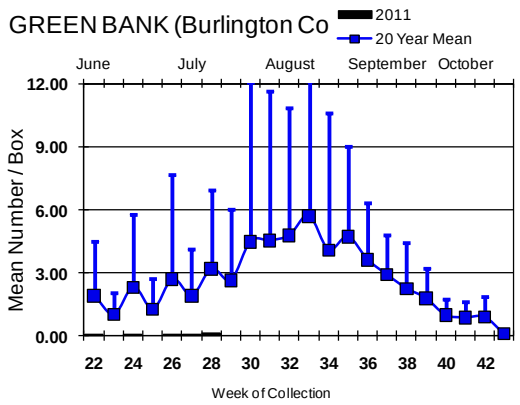
Species other than *Cs. melanura*	Pools	Mosquitoes	Positives	MFIR
Aedes albopictus	3	7		
Aedes atropalpus	1	1		
Aedes canadensis canadensis	8	295		
Aedes cantator	15	173		
Aedes grossbecki	1	3		
Aedes japonicus	4	24		
Aedes sollicitans	12	88		
Aedes sticticus	1	3		
Aedes taeniorhynchus	10	229		
Aedes thibaulti	1	1		
Aedes triseriatus	4	8		
Aedes vexans	4	122		
Anopheles barberi	1	1		
Anopheles bradleyi	6	82		
Anopheles punctipennis	12	153		
Anopheles quadrimaculatus	13	178		
Coquillettidia perturbans	52	1201		
Culex erraticus	25	1075		
Culex pipiens	139	1283		
Culex restuans	8	9		
Culex salinarius	36	442		
Culex spp.	127	4740		
Psorophora columbiae	1	2		
Psorophora howardii	1	2		
State Total	**485**	**10,122**		

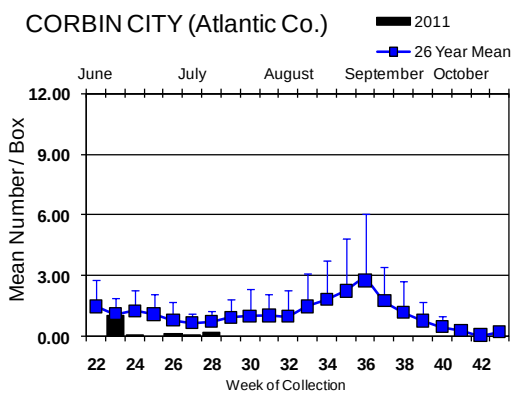
Horses and Humans: No positive horses or humans to date.

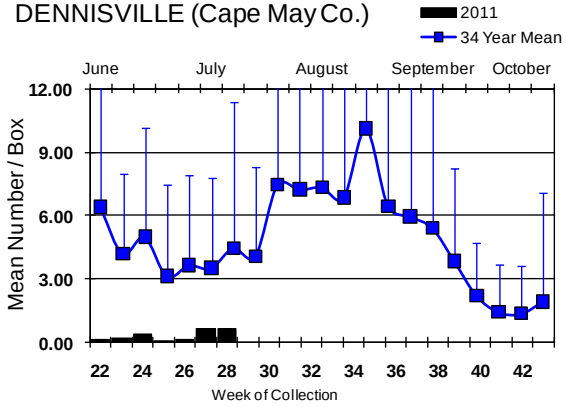
Horses and Vaccinations: The fate of unvaccinated equids reinforces the necessity of maintaining a vaccination schedule for arboviruses. For vaccination schedules recommended by the American Association of Equine Practices, see: http://www.aaep.org/vaccination_guidelines.htm

Culiseta melanura Population Graphs

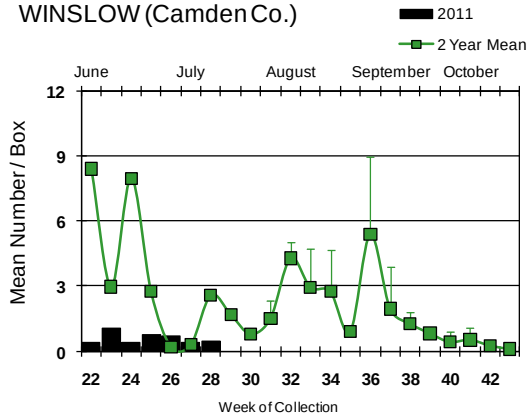
Coastal

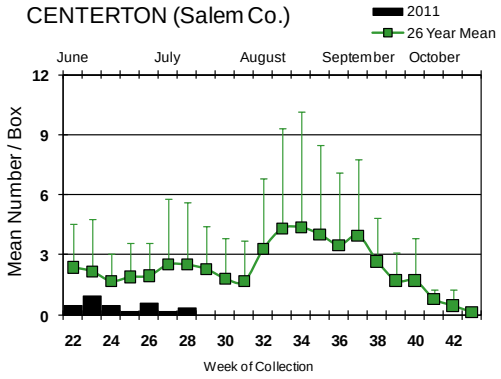


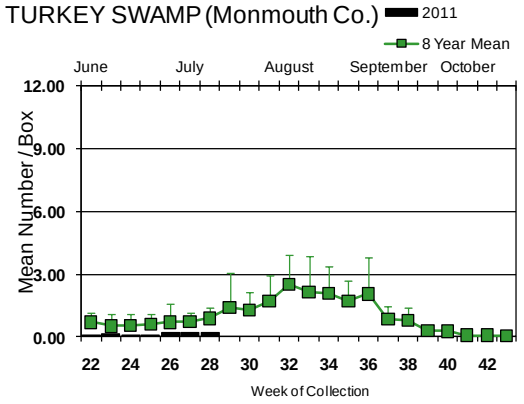




Inland



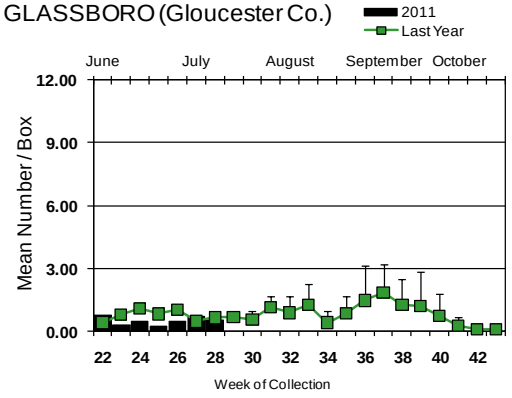




Populations of *Culiseta melanura* continue to remain considerably below historical trends at all of the seven traditional resting box sites.

= 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					
Alaska					
Arizona	0	19/37	0	0	1
Arkansas					
California	37/44	46/89	3		
Colorado	0	0			0
Connecticut		1/2			0
Delaware					
DC					
Florida	1 flavi		31/36		
Georgia	0	14		1	0
Hawaii					
Idaho					
Illinois	2	4/15	0	0	0
Indiana	0	0		0	0
Iowa		1	1	0	0
Kansas					
Kentucky					
Louisiana					
Maine		0		0	0
Maryland					
Mass.		2/7		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		0	0
Nevada					0
New Hampshire		0		0	0
New Jersey	0	9/11		0	0
New Mexico					0
New York		1		0	0
North Carolina					
North Dakota	0	0		3*	0
Ohio		3/4		0	0
Oklahoma					
Oregon	0	0	0	0	0
Pennsylvania	1/3	27/67		1*	0
Rhode Island		0		0	0
South Carolina	0	0		0	0
South Dakota		0		0	1
Tennessee	0	31/60		0	0
Texas	1	54		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		0	0

* 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 15 July 2011

Species	Pools	Mosquitoes	Positives	MFIR
Aedes albopictus	98	355		
Aedes atropalpus	1	1		
Aedes aurifer	1	2		
Aedes canadensis canadensis	49	768		
Aedes cantator	27	200		
Aedes cinereus	2	4		
Aedes grossbecki	3	8		
Aedes japonicus	124	538		
*Aedes punctor**	1	1		
Aedes sollicitans	16	104		
Aedes sticticus	2	24		
Aedes stimulans	3	45		
Aedes taeniorhynchus	14	276		
Aedes thibaulti	1	1		
Aedes triseriatus	81	203		
Aedes trivittatus	8	147		
Aedes vexans	35	330		
Anopheles barberi	1	1		
Anopheles bradleyi	9	92		
Anopheles punctipennis	29	182		
Anopheles quadrimaculatus	29	277		
Coquillettidia perturbans	70	1315		
Culex erraticus	27	1078		
Culex pipiens	263	5325	5	0.939
Culex restuans	235	1661		
Culex salinarius	39	460		
Culex spp.	830	34984	6	0.172
Culiseta melanura	175	1822		
Psorophora ciliata	1	1		
Psorophora columbiae	1	2		
Psorophora ferox	9	77		
Psorophora howardii	1	2		
Uranotaenia sapphirina	1	8		
State Total	**2,186**	**50,294**	**11**	**0.219**

Remarks: To date, there have been 50,294 mosquitoes tested in 2,186 pools of 31 species (awaiting confirmation of the *Aedes punctor* sample as this has previously been mistakenly entered as this species and may be an *Anopheles punctipennis* sample [similar 3 letter code]). Currently, eleven positive pools have been detected last week in *Culex pipiens* or Mixed *Culex* pools from Bergen, Gloucester, Hunterdon, Middlesex and Warren County. Dates samples were collected were between 28 June and 7 July.

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

Bird testing began in mid-April. Twenty-four birds have been tested with no positives detected. Species include American Crow *Corvus brachyrhynchos* (1), Blue Jays *Cyanocitta cristata* (3), Fish Crows *Corvus ossifragus* (8) and Other (non-corvid) species (12). The birds were submitted from Atlantic, Burlington, Cape May, Cumberland, Gloucester, Monmouth, Ocean and Warren counties.

2011 Positive Mosquito pools to date / Total Mosquito Pools Submitted	This time last year
11 / 2186 (0.005%)	66 / 1646 (.025%)
2011 Positive Birds to date / Total Birds Submitted	This time last year
0 / 24 (0%)	5 / 49 (0.03%)

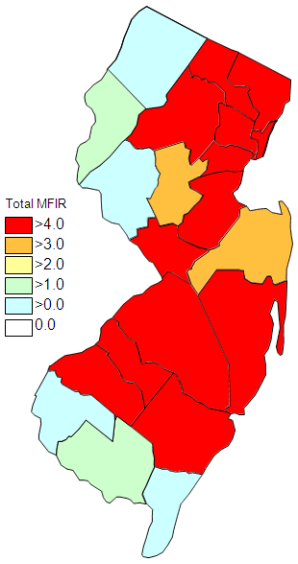
WNV Results by County through 15 July 2011

County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		**82**	**2676**		
	Aedes albopictus	4	53		
	Aedes canadensis canadensis	2	9		
	Aedes cantator	3	20		
	Aedes japonicus	2	8		
	Aedes sollicitans	1	7		
	Aedes taeniorhynchus	1	29		
	Aedes thibaulti	1	1		
	Aedes triseriatus	2	6		
	Aedes vexans	5	40		
	Anopheles bradleyi	1	5		
	Coquillettidia perturbans	4	57		
	Culex restuans	1	1		
	Culex spp.	48	2371		
	Culiseta melanura	6	58		
	Psorophora ferox	1	11		
Bergen		**15**	**1125**	**2**	**1.778**
	Culex spp.	15	1125	2	1.778
Burlington		**183**	**6542**		
	Aedes albopictus	3	7		
	Aedes atropalpus	1	1		
	Aedes canadensis canadensis	7	290		
	Aedes cantator	2	63		
	Aedes grossbecki	1	3		
	Aedes japonicus	4	24		
	Aedes sollicitans	4	64		
	Aedes sticticus	1	3		
	Aedes taeniorhynchus	4	14		
	Aedes triseriatus	3	6		
	Aedes vexans	4	122		
	Anopheles bradleyi	1	73		
	Anopheles punctipennis	2	13		
	Coquillettidia perturbans	21	701		
	Culex erraticus	1	3		
	Culex pipiens	3	24		
	Culex salinarius	10	80		
	Culex spp.	86	4532		
	Culiseta melanura	23	515		
	Psorophora columbiae	1	2		
	Psorophora howardii	1	2		
Camden		**78**	**1813**		
	Aedes albopictus	12	22		
	Aedes japonicus	12	37		
	*Aedes punctor**	1	1		
	Aedes triseriatus	2	5		
	Culex spp.	43	1539		
	Culiseta melanura	8	209		
Cape May		**653**	**6655**		
	Aedes albopictus	12	19		

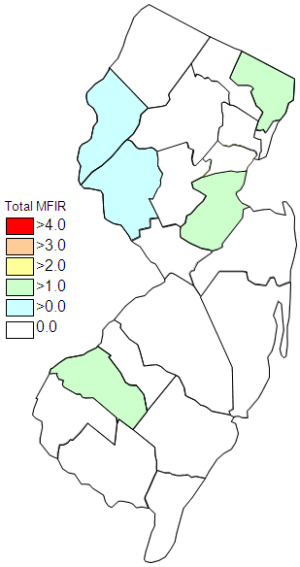
	Aedes canadensis canadensis	15	330		
	Aedes cantator	12	86		
	Aedes japonicus	27	78		
	Aedes sollicitans	8	24		
	Aedes taeniorhynchus	8	232		
	Aedes triseriatus	21	44		
	Anopheles bradleyi	6	13		
	Anopheles punctipennis	3	4		
	Anopheles quadrimaculatus	15	94		
	Coquillettidia perturbans	16	298		
	Culex erraticus	23	1071		
	Culex pipiens	166	1899		
	Culex restuans	218	1635		
	Culex salinarius	26	362		
	Culex spp.	45	202		
	Culiseta melanura	32	264		
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		**158**	**3862**		
	Aedes albopictus	11	41		
	Aedes canadensis canadensis	2	8		
	Aedes grossbecki	2	5		
	Aedes japonicus	17	90		
	Aedes sticticus	1	21		
	Aedes stimulans	3	45		
	Aedes triseriatus	14	37		
	Aedes vexans	9	76		
	Culex spp.	98	3525		
	Psorophora ferox	1	14		
Gloucester		**167**	**4184**	**5**	**1.195**
	Aedes albopictus	5	22		
	Aedes japonicus	7	33		
	Aedes triseriatus	3	8		
	Anopheles punctipennis	6	131		
	Anopheles quadrimaculatus	8	163		
	Coquillettidia perturbans	1	1		
	Culex pipiens	88	3387	5	1.476
	Culiseta melanura	49	439		
Hudson		**30**	**1998**		
	Culex spp.	30	1998		

Hunterdon		**30**	**1500**	**1**	**0.667**
	Culex spp.	30	1500	1	0.667
Middlesex		**41**	**1727**	**2**	**1.158**
	Aedes albopictus	2	15		
	Aedes japonicus	5	63		
	Culex spp.	34	1649	2	1.213
Monmouth		**158**	**1612**		
	Aedes albopictus	12	13		
	Aedes canadensis canadensis	12	98		
	Aedes cantator	6	26		
	Aedes japonicus	17	63		
	Aedes sollicitans	3	9		
	Aedes taeniorhynchus	1	1		
	Aedes triseriatus	10	29		
	Aedes trivittatus	2	3		
	Aedes vexans	5	13		
	Anopheles barberi	1	1		
	Anopheles punctipennis	6	12		
	Coquillettidia perturbans	6	29		
	Culex pipiens	2	3		
	Culex restuans	3	3		
	Culex salinarius	1	16		
	Culex spp.	49	1203		
	Culiseta melanura	18	45		
	Psorophora ciliata	1	1		
	Psorophora ferox	3	44		
Morris		**30**	**1350**		
	Culex spp.	30	1350		
Ocean		**133**	**819**		
	Aedes albopictus	26	128		
	Aedes canadensis canadensis	5	5		
	Aedes cantator	4	5		
	Aedes japonicus	14	32		
	Aedes triseriatus	7	14		
	Aedes trivittatus	1	1		
	Aedes vexans	6	15		
	Anopheles bradleyi	1	1		
	Anopheles punctipennis	2	2		
	Coquillettidia perturbans	8	73		
	Culex erraticus	1	1		
	Culex restuans	5	6		
	Culex salinarius	2	2		
	Culex spp.	34	502		
	Culiseta melanura	14	28		
	Psorophora ferox	3	4		
Passaic		**30**	**947**		
	Aedes canadensis canadensis	1	3		
	Aedes japonicus	2	19		
	Aedes triseriatus	2	15		

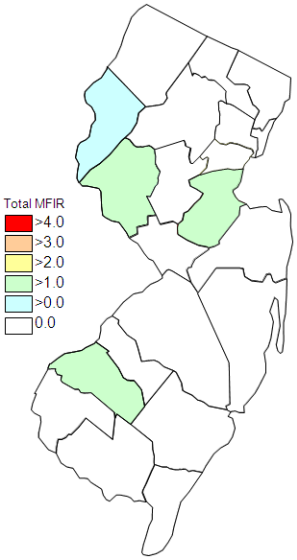
	Aedes trivittatus	1	19		
	Anopheles punctipennis	1	1		
	Coquillettidia perturbans	1	3		
	Culex spp.	22	887		
Salem		**75**	**775**		
	Aedes albopictus	1	1		
	Aedes aurifer	1	2		
	Aedes canadensis canadensis	3	19		
	Aedes japonicus	11	35		
	Aedes triseriatus	7	16		
	Aedes vexans	3	21		
	Anopheles punctipennis	6	8		
	Anopheles quadrimaculatus	4	5		
	Coquillettidia perturbans	3	15		
	Culex erraticus	1	2		
	Culex pipiens	3	5		
	Culex restuans	3	4		
	Culex spp.	22	486		
	Culiseta melanura	7	156		
Somerset		**30**	**549**		
	Aedes albopictus	2	5		
	Aedes japonicus	3	40		
	Aedes triseriatus	3	9		
	Coquillettidia perturbans	1	1		
	Culex spp.	21	494		
Sussex		**55**	**2423**		
	Culex restuans	3	7		
	Culex spp.	51	2402		
	Culiseta melanura	1	14		
Union		**25**	**897**		
	Aedes albopictus	4	25		
	Aedes japonicus	2	9		
	Culex spp.	19	863		
Warren		**155**	**8215**	**1**	**0.122**
	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.	139	8008	1	0.125
	Culiseta melanura	1	1		
	Psorophora ferox	1	4		
	Uranotaenia sapphirina	1	8		
Grand Total		**2,186**	**50,294**	**11**	**0.219**



Cumulative WNV activity in 2010.



WNV activity to 15 July 2011.



WNV activity last week, 2011.

Saint Louis Encephalitis (SLE) through 15 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		**180**	**6602**		
	Aedes albopictus	3	7		
	Aedes atropalpus	1	1		
	Aedes canadensis canadensis	7	290		
	Aedes cantator	2	63		
	Aedes grossbecki	1	3		
	Aedes japonicus	4	24		
	Aedes sollicitans	4	64		
	Aedes sticticus	1	3		
	Aedes taeniorhynchus	4	14		
	Aedes triseriatus	3	6		
	Aedes vexans	4	122		
	Anopheles bradleyi	1	73		
	Anopheles punctipennis	2	13		
	Coquillettidia perturbans	21	701		
	Culex erraticus	1	3		
	Culex pipiens	3	24		
	Culex salinarius	10	80		
	Culex spp.	87	4597		
	Culiseta melanura	19	510		
	Psorophora columbiae	1	2		
	Psorophora howardii	1	2		
Camden		**70**	**1604**		
	Aedes albopictus	12	22		
	Aedes japonicus	12	37		
	*Aedes punctor**	1	1		
	Aedes triseriatus	2	5		
	Culex spp.	43	1539		
Essex		**12058**	**3862**		
	Aedes albopictus	11	41		
	Aedes canadensis canadensis	2	8		
	Aedes grossbecki	2	5		
	Aedes japonicus	17	90		
	Aedes sticticus	1	21		
	Aedes stimulans	3	45		
	Aedes triseriatus	14	37		
	Aedes vexans	9	76		
	Culex spp.	98	3525		
	Psorophora ferox	1	14		

Hudson		**30**	**1998**		
	Culex spp.	30	1998		
Grand Total		**438**	**14,066**		

La Crosse Encephalitis (LAC) through 15 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		**22**	**45**		
	Aedes japonicus	1	1		
	Aedes triseriatus	21	44		
Cumberland		**9**	**18**		
	Aedes triseriatus	9	18		
Salem		**7**	**16**		
	Aedes triseriatus	7	16		
Grand Total		**38**	**79**		