VECTOR SURVEILLANCE IN NEW JERSEY

EEE, WNV, SLE and LAC

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CDC WEEK 27: July 1 to July 7, 2012

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This New Jersey Agricultural Experiment Station report is supported by Rutgers University, Hatch funds, funding from the NJ State Mosquito Control Commission and with the participation of the Department of Health and Senior Services, Department of Agriculture and of the 21 county mosquito control agencies of New Jersey.

Culiseta melanura and Eastern Equine Encephalitis

SITE/Boxes	Inland / Coastal	Historic Population Mean	Current Weekly Mean	Total (Collected) Tested*	Total Pools (Submitted) Tested	EEE Isolations	MFIR
Bass River (Burlington Co.)/10	**Coastal**	na	0	1	1	0	
Green Bank (Burlington Co.)/25	**Coastal**	1.82	0.04	7	3	0	
Corbin City (Atlantic Co.)/25	**Coastal**	0.67	0.36	(114) 95	(6) 5	0	
Dennisville (Cape May Co.)/50	**Coastal**	3.44	0.22	(44) 27	3	0	
Winslow (Camden Co.)/50	**Inland**	0.34	1.74	(1292) 710	15	0	
Centerton (Salem Co.)/50	**Inland**	2.42	0.28	226	6	0	
Turkey Swamp (Monmouth Co.)/48	**Inland**	0.68	No collection	400	(11) 9	0	
Glassboro (Gloucester Co.)/50	**Inland**	0.58	0.26	(142) 94	3	0	

*Including trial run last week in May. † No data. †† Results in the next week.

Remarks: Currently, there has been no detection of EEE in collected pools of *Culiseta melanura*, the primary enzootic vector for this disease. Testing of samples at the Cape May Labs are ongoing, likely to be up to date this week. Totals reflect this ongoing process: To date 1560 *Cs. melanura* from 47 pools have tested negative, with three pools in the system to be tested in addition to the earlier-collected pools at Cape May.

One hundred fifty-eight additional pools containing 4039 *Cs. melanura* have tested negative from other county trapping sites using other traps in addition to resting boxes. No detection of EEE has occurred.

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, Other	2704 (58)	0	
Cape May	Gravid, RB	283 (31)	0	
Cumberland	CO2, Gravid, RB	164 (11)	0	
Gloucester	RB	804 (41)	0	
Monmouth	Gravid	9 (2)	0	
Ocean	CO2, RB	72 (13)	0	
Salem	CO2	2 (2)	0	
TOTAL		**4039 (158)**	**0**	

Horses and Humans: A presumptive positive horse with an unusually early onset date of 25 May has been reported for Burlington County. The horse was reportedly vaccinated in early May. No positive EEE mosquito pools have been collected in Burlington County.

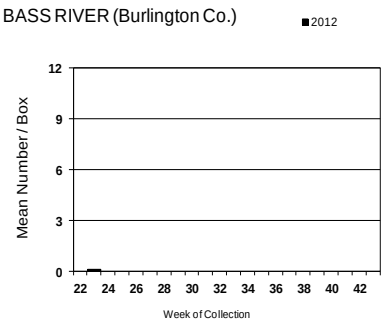
Horses and Vaccinations: The fate of unvaccinated equids reinforces the necessity of maintaining a vaccination schedule for arboviruses. For vaccination schedules recommended by the American Association of Equine Practices, see: http://www.aaep.org/vaccination_guidelines.htm

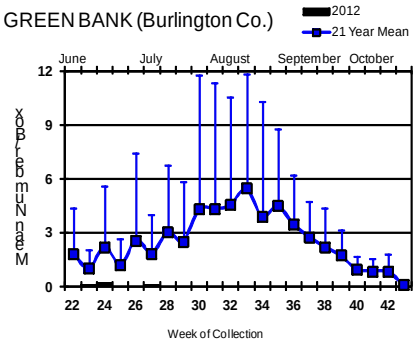
Species other than *Cs. melanura*	Pools	Mosquitoes	Positives	MFIR
Aedes albopictus	5	32		
Aedes canadensis canadensis	7	238		
Aedes cantator	18	196		
Aedes japonicus	18	72		
Aedes mitchellae	4	60		
Aedes sticticus	1	8		
Aedes triseriatus	4	4		
Aedes trivittatus	1	2		
Aedes vexans	4	65		
Anopheles bradleyi	5	10		
Anopheles crucians	3	37		
Anopheles punctipennis	9	48		
Anopheles quadrimaculatus	11	43		
Coquillettidia perturbans	51	1520		
Culex erraticus	15	337		
Culex pipiens	80	1084		
Culex restuans	3	55		
Culex salinarius	30	206		
Culex sp.	108	4343		
Psorophora columbiae	1	5		
State Total	378	8365		

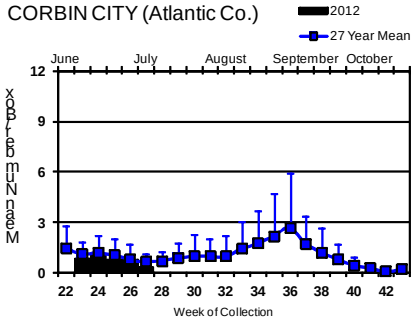
The table to the left indicates non-*Cs. melanura* mosquitoes tested for EEE. An additional 19 species of mosquitoes have been tested with no detection of EEE.

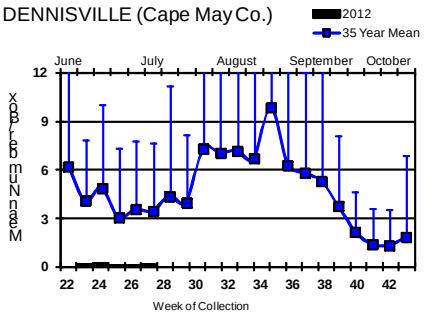
Culiseta melanura Population Graphs

Coastal

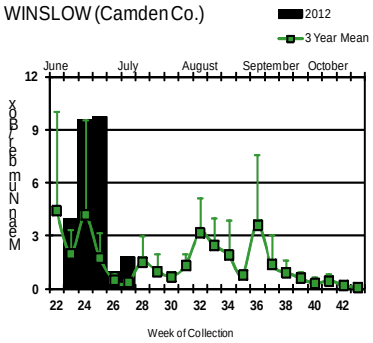


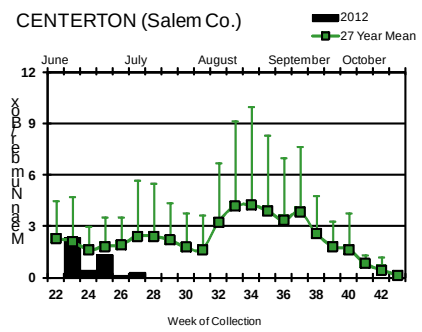


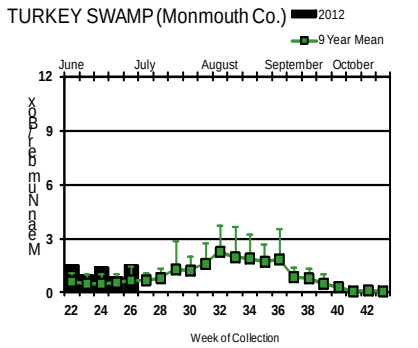


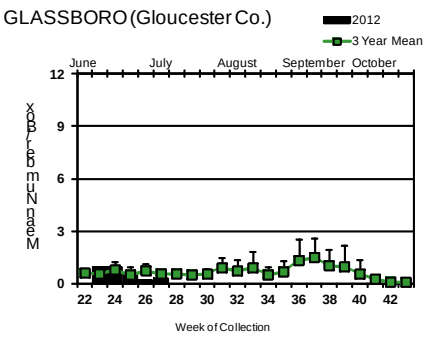


Inland









The inland Winslow site continues to show elevated numbers of *Culiseta melanura,* but these have decreased from the highs of two weeks ago. Populations at Turkey Swamp also remain elevated above historical trends while populations at Corbin City and Glassboro are trending around historical values. Numbers at Dennisville, Green Bank and Centerton remain well below the historical averages.

= Positive pool(s) detected.

EEE in US (2012 cumulative cases): (Black or Red = previous + new reported cases occurring)

- equine: 9(FL) 4(GA) 8(LA) 8(MS) 1(NJ) 2(SC)
- mosquito pools:
- sentinel: 16(FL)
- human:

West Nile Virus

West Nile in US (2012 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	2/3	1	0	2
Arkansas					
California	223/315	282/370	2/5	0	1
Colorado					
Connecticut		1		0	0
Delaware					
DC					
Florida	0		50	0	0
Georgia	0	2/3	0	0	0
Hawaii					
Idaho					
Illinois	17	47/64		0	0
Indiana	0	10/21		0	0
Iowa		0	0	0	0
Kansas					
Kentucky				0	
Louisiana		170/337	8/21		
Maine					
Maryland					
Mass.		2/3		0	0
Michigan	0	1		0	0
Minnesota					
Mississippi		10/11			3
Missouri		17		0	0

	Birds	Mosquito Pools	Sentinels	Horses	Humans
Montana					
Nebraska	2				0
Nevada					
New Hampshire		0		0	0
New Jersey	3	39/79		0	0
New Mexico					0
New York		4/7			
North Carolina					
North Dakota	0	0		0	0
Ohio		2/15			
Oklahoma					
Oregon	0	0	0	0	0
Pennsylvania	3/5	133/164		1	
Rhode Island		0		0	0
South Carolina	0	1/2		0	0
South Dakota					
Tennessee	0	59/74		0	0
Texas	2/5	132/204		1/2	5/15
Utah		0	0	0	0
Vermont					
Virginia					
Washington	0	1		0	0
West Virginia		1			
Wisconsin	0	0		0	0
Wyoming		0		0	0

* Can include other species (e.g., dogs, cows) 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 and Tested for West Nile Virus Testing through 9 July 2012

Species	Pools	Mosquitoes	Positives	MFIR
Aedes albopictus	163	1065		
Aedes canadensis canadensis	54	1508		
Aedes cantator	40	574		
Aedes grossbecki	2	2		
Aedes japonicus	177	1124	2	1.779
Aedes mitchellae	4	60		
Aedes sollicitans	2	2		
Aedes sticticus	7	124		
Aedes taeniorhynchus	3	90		
Aedes triseriatus	79	184		
Aedes trivittatus	3	6		
Aedes vexans	43	424		
Anopheles bradleyi	17	67		
Anopheles crucians	3	37		
Anopheles punctipennis	32	109		
Anopheles quadrimaculatus	22	84		
Coquillettidia perturbans	55	1571		
Culex erraticus	16	357		
Culex pipiens	383	13469	15	1.114
Culex restuans	89	999	1	1.001
Culex salinarius	43	273		
Culex sp.	1231	47901	58	1.211
Culex territans	8	8		
Culiseta melanura	211	5614	3	0.534
Culiseta minnesotae	1	2		
Orthopodomyia signifera	1	1		
Psorophora columbiae	2	6		
Psorophora ferox	5	27		
State Total	**2696**	**75688**	**79**	**1.044**

Remarks: To date, there have been 75,688 mosquitoes tested in 2,696 pools from 27 species. Currently, 79 positive pools have been detected in *Aedes japonicus*, *Culex pipiens,* Mixed *Cx.* species, *Culiseta melanura* and *Culex restuans.* Mixed Culex pools again had a significant increase in number of positive pools (from 31 to 58), with MFIR values increasing from 0.858 to 1.211. As of last week, only portions of southern New Jersey were abnormally dry, but not in drought condition (http://droughtmonitor.unl.edu/DM_northeast.htm). Increases in positive pools occurred throughout New Jersey, in both dry and "not dry" areas. Positive pools have now been detected in Bergen, Burlington, Cape May, Camden, Essex, Gloucester, Hudson, Hunterdon, Mercer, Middlesex, Morris, Passaic, Somerset and Union counties.

Humans, Horses and Wild Birds: There is no reported horse or human cases to date. See http://www.state.nj.us/health/cd/westnile/techinfo.shtml for further information.

Bird testing began in mid-April. To date, WNV has been detected in four birds out of 53 tested. One additional bird (*Corvus*) was found positive for WNV, collected 26 June in Burlington County. WNV was first detected in an American Crow (*Corvus brachyrhynchos*) from Morris County, collected 9 April. To date, testing includes: American Crow (*Corvus brachyrhynchos* 1/4), Fish Crow (*Corvus ossifragus* 1/14), unidentified Crow (*Corvus* spp. 2/6), Blue Jay (*Cyanocitta cristata* 0/3), Hawk (0/2) and other avian species (0/23). Counties submitting birds are Atlantic, Bergen, Cape May, Hunterdon, Monmouth, Morris, Ocean, Sussex and Warren. County participation in submitting dead birds varies across the state.

2012 Positive Mosquito pools to date / Total Mosquito Pools Submitted	This time last year
79 / 2696 (0.029)	14 / 1529 (0.009)
2012 Positive Birds to date / Total Birds Submitted	This time last year
4 / 53 (0.075)	0 / 20 (0.0)

WNV Results by County through 9 July 2012

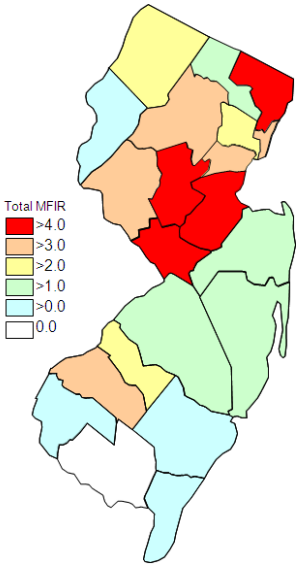
County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		**32**	**952**		
	Aedes albopictus	3	69		
	Aedes cantator	1	10		
	Aedes japonicus	1	1		
	Aedes taeniorhynchus	2	89		
	Aedes vexans	1	9		
	Anopheles bradleyi	1	3		
	Coquillettidia perturbans	2	3		
	Culex spp.	16	673		
	Culiseta melanura	5	95		
Bergen		**30**	**2250**	**8**	**3.556**
	Culex spp.	30	2250	8	3.556
Burlington		**274**	**9369**	**8**	**0.854**
	Aedes albopictus	5	32		
	Aedes canadensis canadensis	6	214		
	Aedes cantator	2	30		
	Aedes japonicus	19	78	1	12.821
	Aedes mitchellae	4	60		
	Aedes sticticus	1	8		
	Aedes triseriatus	3	3		
	Aedes trivittatus	1	2		
	Aedes vexans	4	65		
	Anopheles bradleyi	1	4		
	Anopheles crucians	3	37		
	Anopheles punctipennis	3	14		
	Anopheles quadrimaculatus	3	11		
	Coquillettidia perturbans	21	921		
	Culex erraticus	3	71		
	Culex pipiens	6	222		
	Culex restuans	3	55		
	Culex salinarius	10	182		
	Culex spp.	113	4643	6	1.292
	Culiseta melanura	62	2712	1	0.369
	Psorophora columbiae	1	5		
Camden		**96**	**3682**	**4**	**1.086**
	Aedes albopictus	5	12		
	Aedes japonicus	5	7		
	Aedes triseriatus	1	5		
	Aedes trivittatus	1	2		

	Anopheles punctipennis	1	2		
	Culex spp.	68	2944	4	1.359
	Culiseta melanura	15	710		
Cape May		**433**	**4882**	**1**	**0.205**
	Aedes albopictus	36	71		
	Aedes canadensis canadensis	2	25		
	Aedes cantator	15	159		
	Aedes japonicus	21	39		
	Aedes triseriatus	29	48		
	Anopheles bradleyi	4	6		
	Anopheles punctipennis	5	8		
	Anopheles quadrimaculatus	6	31		
	Culex erraticus	10	283		
	Culex pipiens	157	3567	1	0.280
	Culex restuans	54	200		
	Culex salinarius	19	23		
	Culex spp.	23	107		
	Culex territans	7	7		
	Culiseta melanura	33	307		
	Orthopodomyia signifera	1	1		
Cumberland		**64**	**674**		
	Aedes albopictus	4	7		
	Aedes canadensis canadensis	4	25		
	Aedes cantator	3	11		
	Aedes japonicus	5	19		
	Aedes triseriatus	4	8		
	Aedes vexans	2	6		
	Anopheles bradleyi	1	2		
	Anopheles punctipennis	4	10		
	Coquillettidia perturbans	2	74		
	Culex pipiens	9	217		
	Culex restuans	7	84		
	Culex salinarius	4	33		
	Culex spp.	3	13		
	Culex territans	1	1		
	Culiseta melanura	11	164		
Essex		**194**	**3761**	**4**	**1.064**
	Aedes albopictus	21	42		
	Aedes canadensis canadensis	2	2		
	Aedes grossbecki	2	2		
	Aedes japonicus	29	249	1	4.016
	Aedes sticticus	5	113		
	Aedes triseriatus	9	22		
	Aedes vexans	16	220		
	Culex spp.	109	3107	3	0.966
	Psorophora ferox	1	4		
Gloucester		**251**	**9551**	**13**	**1.361**
	Aedes albopictus	15	418		
	Aedes japonicus	5	75		
	Aedes triseriatus	1	7		
	Aedes vexans	1	2		

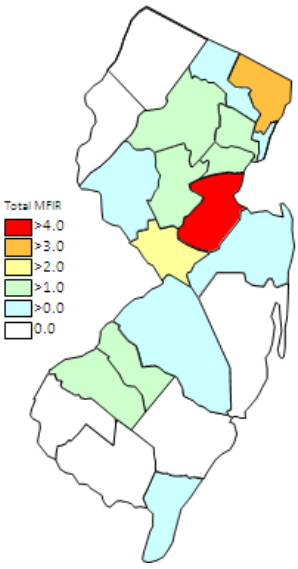
	Anopheles punctipennis	7	56		
	Anopheles quadrimaculatus	9	34		
	Culex pipiens	169	8060	11	1.365
	Culiseta melanura	44	899	2	2.225
Hudson		**74**	**4966**	**3**	**0.604**
	Culex spp.	74	4966	3	0.604
Hunterdon		**90**	**4500**	**4**	**0.889**
	Culex spp.	90	4500	4	0.889
Mercer		**83**	**1863**	**4**	**2.147**
	Aedes albopictus	13	21		
	Aedes japonicus	16	60		
	Aedes triseriatus	3	3		
	Aedes vexans	1	3		
	Culex pipiens	34	1318	3	2.276
	Culex restuans	16	458	1	2.183
Middlesex		**78**	**3962**	**12**	**4.051**
	Aedes albopictus	5	53		
	Aedes japonicus	9	61		
	Aedes triseriatus	2	10		
	Culex spp.	62	2838	12	4.228
Monmouth		**136**	**2552**	**1**	**0.392**
	Aedes albopictus	14	61		
	Aedes canadensis canadensis	8	121		
	Aedes cantator	7	36		
	Aedes japonicus	20	78		
	Aedes triseriatus	8	11		
	Aedes vexans	2	4		
	Anopheles punctipennis	3	3		
	Coquillettidia perturbans	1	2		
	Culex salinarius	2	6		
	Culex spp.	55	1811	1	0.552
	Culiseta melanura	14	61		
Morris		**146**	**5853**	**6**	**1.025**
	Aedes japonicus	6	92		
	Aedes triseriatus	2	7		
	Culex spp.	138	5754	6	1.043
Ocean		**179**	**2992**		
	Aedes albopictus	24	209		
	Aedes canadensis canadensis	29	1112		
	Aedes cantator	11	327		
	Aedes japonicus	16	82		
	Aedes sollicitans	2	2		
	Aedes taeniorhynchus	1	1		
	Aedes triseriatus	7	17		
	Aedes trivittatus	1	2		
	Aedes vexans	6	27		
	Anopheles bradleyi	7	39		
	Anopheles punctipennis	2	2		

	Coquillettidia perturbans	17	418		
	Culex restuans	1	1		
	Culex salinarius	8	29		
	Culex spp.	32	650		
	Culiseta melanura	13	72		
	Psorophora ferox	2	2		
Passaic		**60**	**1683**	**1**	**0.594**
	Aedes albopictus	4	8		
	Aedes japonicus	12	210		
	Aedes triseriatus	5	12		
	Anopheles punctipennis	2	4		
	Coquillettidia perturbans	1	2		
	Culex spp.	36	1447	1	0.691
Salem		**103**	**1066**		
	Aedes albopictus	8	9		
	Aedes canadensis canadensis	2	6		
	Aedes cantator	1	1		
	Aedes japonicus	3	7		
	Aedes sticticus	1	3		
	Aedes triseriatus	2	2		
	Aedes vexans	9	80		
	Anopheles bradleyi	3	13		
	Anopheles punctipennis	4	5		
	Anopheles quadrimaculatus	4	8		
	Coquillettidia perturbans	10	108		
	Culex erraticus	3	3		
	Culex pipiens	4	26		
	Culex restuans	2	15		
	Culex spp.	35	528		
	Culiseta melanura	8	228		
	Culiseta minnesotae	1	2		
	Psorophora columbiae	1	1		
	Psorophora ferox	2	21		
Somerset		**72**	**1421**	**2**	**1.407**
	Aedes albopictus	3	15		
	Aedes canadensis canadensis	1	3		
	Aedes japonicus	9	52		
	Aedes triseriatus	2	14		
	Aedes vexans	1	8		
	Culex spp.	56	1329	2	1.505
Sussex		**107**	**3179**		
	Coquillettidia perturbans	1	43		
	Culex pipiens	4	59		
	Culex restuans	6	186		
	Culex spp.	92	2883		
	Culiseta melanura	4	8		
Union		**103**	**4876**	**8**	**1.641**
	Aedes albopictus	3	38		
	Aedes japonicus	1	14		
	Aedes triseriatus	1	15		

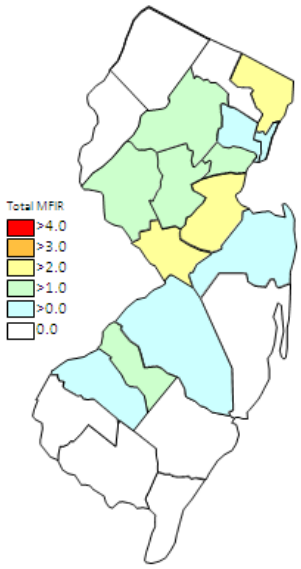
	Culex spp.	98	4809	8	1.664
Warren		**102**	**2654**		
	Anopheles punctipennis	1	5		
	Culex spp.	101	2649		
Grand Total		**2696**	**78688**	**79**	**1.044**



Cumulative WNV activity in 2011.



WNV activity to 9 July 2012.



WNV activity last week, 2012.

Saint Louis Encephalitis (SLE) through 9 July 2012.

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 2012.

County	Species	Pools	Mosquitoes	Positives	MFIR
Burlington		**260**	**8961**		
	Aedes albopictus	5	32		
	Aedes canadensis canadensis	6	214		
	Aedes cantator	2	30		
	Aedes japonicus	18	72		
	Aedes mitchellae	4	60		
	Aedes sticticus	1	8		
	Aedes triseriatus	3	3		
	Aedes trivittatus	1	2		
	Aedes vexans	4	65		
	Anopheles bradleyi	1	4		
	Anopheles crucians	3	37		
	Anopheles punctipennis	2	13		
	Anopheles quadrimaculatus	3	11		

	Coquillettidia perturbans	20	892		
	Culex erraticus	3	71		
	Culex pipiens	6	222		
	Culex restuans	3	55		
	Culex salinarius	10	182		
	Culex spp.	109	4436		
	Culiseta melanura	55	2547		
	Psorophora columbiae	1	5		
Camden		**50**	**1713**		
	Aedes albopictus	4	11		
	Aedes japonicus	4	6		
	Aedes triseriatus	1	5		
	Anopheles punctipennis	1	2		
	Culex spp.	40	1689		
Essex		**194**	**3761**		
	Aedes albopictus	21	42		
	Aedes canadensis canadensis	2	2		
	Aedes grossbecki	2	2		
	Aedes japonicus	29	249		
	Aedes sticticus	5	113		
	Aedes triseriatus	9	22		
	Aedes vexans	16	220		
	Culex spp.	109	3107		
	Psorophora ferox	1	4		
Hudson		**74**	**4966**		
	Aedes canadensis canadensis	74	4966		
Grand Total		**578**	**19401**		

La Crosse Encephalitis (LAC) through 9 July 2012.

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 2012.

County	Species	Pools	Mosquitoes	Positives	MFIR
Cumberland		**4**	**8**		
	Aedes triseriatus	4	8		
Salem		**1**	**1**		
	Aedes triseriatus	1	1		
Union		**1**	**15**		

	Aedes triseriatus	1	15		
Grand Total		**6**	**24**		