

VECTOR SURVEILLANCE IN NEW JERSEY

EEE, WNV, SLE and LAC

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CDC WEEK 28: July 8 to July 14, 2012

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Culiseta melanura and Eastern Equine Encephalitis

SITE/Boxes	Inland / Coastal	Historic Population Mean	Current Weekly Mean	Total (Collected) Tested*	Total Pools (Submitted) Tested	EEE Isolation Pools	MFIR
Bass River (Burlington Co.)/10	Coastal	na	0	1	1		
Green Bank (Burlington Co.)/25	Coastal	3.03	0	7	3		
Corbin City (Atlantic Co.)/25	Coastal	0.73	0.40	(124) 95	(7) 5		
Dennisville (Cape May Co.)/50	Coastal	4.36	0.50	69	6	1	14.49
Winslow (Camden Co.)/50	Inland	1.53	2.82	1434	21	3	2.09
Centerton (Salem Co.)/50	Inland	2.42	0.2	278	9	1	4.39
Turkey Swamp (Monmouth Co.)/48	Inland	0.81	0.81	(439) 400	(12) 11		
Glassboro (Gloucester Co.)/50	Inland	0.57	0.68	125	6		

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

Remarks: Eastern equine encephalitis virus has been detected in 5 pools collected from 3 sites in *Culiseta melanura*, the primary enzootic vector for this disease. Positive pools were collected on the 9th of July from Winslow and Dennisville and on the 10th from Centerton. These are relatively early dates and trends from the previous several years suggest that EEE positive mosquito pools detected prior to the beginning of August has resulted in multiple horse cases. Heightened vigilance is warranted.

To date 2409 *Cs. melanura* from 71 pools have been tested, with three pools in the system to be tested in addition to the earlier-collected pools at Cape May.

One hundred seventy-one additional pools containing 4077 *Cs. melanura* have tested negative from other county trapping sites using other traps in addition to resting boxes. No detection of EEE has occurred at these sites.

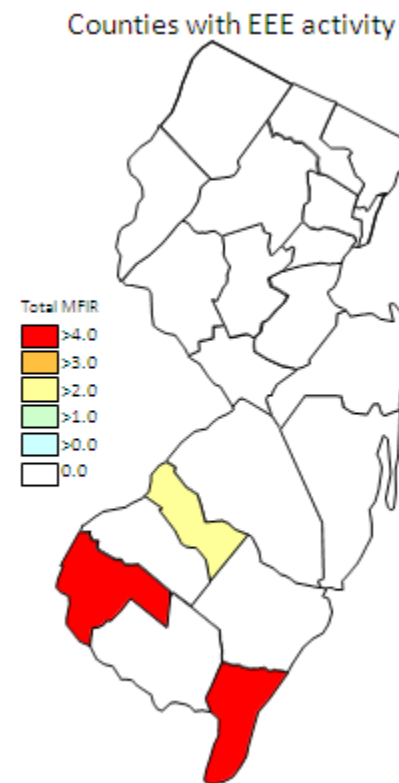
Additional <i>Cs. melanura</i> trapped by counties				
*traps with positives indicated in BOLD .				
County	Trap types*	Number collected (pools)	Number of positives pools	MFIR
Burlington	CO2, Other	2704 (58)	0	
Cape May	Gravid, RB	316 (42)	0	
Cumberland	CO2, Gravid, RB	164 (11)		
Gloucester	RB	804 (41)	0	
Monmouth	Gravid	9 (2)	0	
Ocean	CO2, RB	77 (15)	0	
Salem	CO2	2 (2)	0	
TOTAL		4077 (171)	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.aep.org/vaccination_guidelines.htm

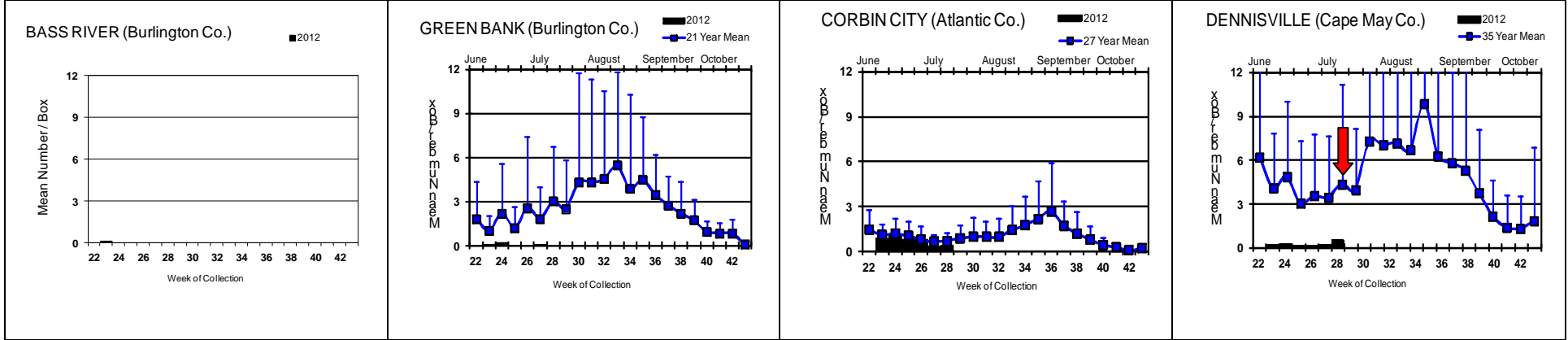
Species other than <i>Cs. melanura</i>	Pools	Mosquitoes	Positives	MFIR
<i>Aedes albopictus</i>	6	34		
<i>Aedes canadensis canadensis</i>	7	238		
<i>Aedes cantator</i>	28	407		
<i>Aedes japonicus</i>	18	72		
<i>Aedes mitchellae</i>	4	60		
<i>Aedes sollicitans</i>	1	2		
<i>Aedes sticticus</i>	1	8		
<i>Aedes triseriatus</i>	4	4		
<i>Aedes trivittatus</i>	1	2		
<i>Aedes vexans</i>	4	65		
<i>Anopheles bradleyi</i>	9	18		
<i>Anopheles crucians</i>	3	37		
<i>Anopheles punctipennis</i>	9	48		
<i>Anopheles quadrimaculatus</i>	11	43		
<i>Coquillettidia perturbans</i>	53	1538		
<i>Culex erraticus</i>	28	795		
<i>Culex pipiens</i>	156	1817		
<i>Culex restuans</i>	3	55		
<i>Culex salinarius</i>	43	227		
<i>Culex sp.</i>	108	4343		
<i>Psorophora columbiae</i>	1	5		
State Total	498	9818		

The table to the left indicates non-*Cs. melanura* mosquitoes tested for EEE. An additional 20 species of mosquitoes have been tested with no detection of EEE.

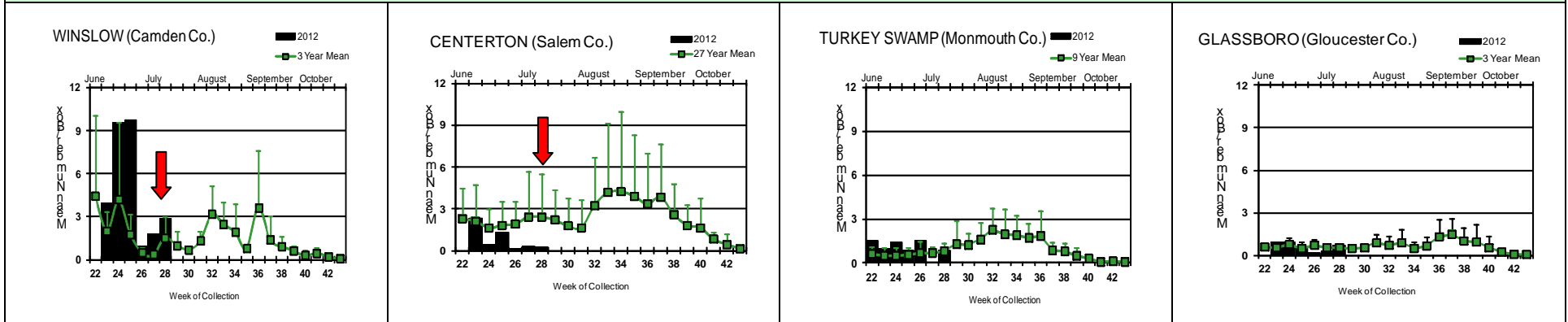


Culiseta melanura Population Graphs

Coastal



Inland



The inland Winslow site continues to show elevated numbers of *Culiseta melanura*. Populations at Turkey Swamp decreased to match historical trends while populations at Glassboro are trending slightly above historical values. Numbers at Dennisville, Green Bank and Centerton remain well below the historical averages. The positive pools came from sites with both high and with low population numbers.

= Positive pool(s) detected.

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

- equine: 11(FL) 4(GA) 8(LA) 10(MS) 1(NJ) 2(SC)
- mosquito pools: 6(MA) 5(NJ)
- sentinel: 25(FL)
- human: 1(FL)

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	3	1	0	2
Arkansas					
California	315/353	370/448	5	0	1
Colorado		10			
Connecticut		1/2		0	0
Delaware					
DC					
Florida	0		50/51	0	0
Georgia	0	3	0	0	0
Hawaii					
Idaho					
Illinois	17	64/106		0	0
Indiana	0	21/25		0	0
Iowa		0	0	0	0
Kansas					
Kentucky				0	
Louisiana		337/499	8/21		10
Maine					
Maryland					
Mass.		3/5		0	0
Michigan	0	1		0	0
Minnesota					1
Mississippi		11			3/4
Missouri		17		0	0

	Birds	Mosquito Pools	Sentinels	Horses	Humans
Montana					
Nebraska	2	2			0
Nevada					
New Hampshire		0		0	0
New Jersey	3	79/120		0	0
New Mexico					0
New York		7/24			
North Carolina					
North Dakota	0	0		0	0
Ohio		15/62			
Oklahoma		1			1
Oregon	0	0	0	0	0
Pennsylvania	5/7	164/290		1	
Rhode Island		0		0	0
South Carolina	0	2		1	0
South Dakota		7			
Tennessee	0	74/123		0	0
Texas	5	204		2	15/28
Utah		0	0	0	0
Vermont					
Virginia					
Washington	0	1		0	0
West Virginia		1			
Wisconsin	0	0		0	0
Wyoming		2		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 16 July 2012

Species	Pools	Mosquitoes	Positives	MFIR
<i>Aedes albopictus</i>	226	1465		
<i>Aedes canadensis canadensis</i>	56	1545		
<i>Aedes cantator</i>	53	795		
<i>Aedes grossbecki</i>	2	2		
<i>Aedes japonicus</i>	211	1314	3	2.283
<i>Aedes mitchellae</i>	4	60		
<i>Aedes sollicitans</i>	3	4		
<i>Aedes sticticus</i>	7	124		
<i>Aedes taeniorhynchus</i>	6	159		
<i>Aedes triseriatus</i>	108	263		
<i>Aedes trivittatus</i>	3	6		
<i>Aedes vexans</i>	47	450		
<i>Anopheles bradleyi</i>	21	75		
<i>Anopheles crucians</i>	3	37		
<i>Anopheles punctipennis</i>	38	115		
<i>Anopheles quadrimaculatus</i>	35	126		
<i>Coquillettidia perturbans</i>	57	1589		
<i>Culex erraticus</i>	29	815		
<i>Culex pipiens</i>	472	14645	18	1.229
<i>Culex restuans</i>	131	1066	1	0.938
<i>Culex salinarius</i>	63	339		
<i>Culex sp.</i>	1408	55971	94	1.679
<i>Culex territans</i>	14	30		
<i>Culiseta melanura</i>	256	6513	4	0.614
<i>Culiseta minnesotae</i>	1	2		
<i>Orthopodomyia signifera</i>	1	1		
<i>Psorophora columbiae</i>	2	6		
<i>Psorophora ferox</i>	5	27		
State Total	3262	87544	120	1.371

Remarks: To date, there have been 87,544 mosquitoes tested in 3,262 pools from 27 species. Currently, 120 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 58 to 94), with MFIR values increasing from 1.211 to 1.679. Most of the increased activity occurred in Bergen or Union counties. Positive pools have now been detected in Bergen, Burlington, Camden, Cape May, Essex, Gloucester, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Union and Warren 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* 1/5), Fish Crow (*Corvus ossifragus* 2/17), 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, Burlington, Cape May, Gloucester, 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
120 / 3262 (0.037)	29 / 1976 (0.015)
2012 Positive Birds to date / Total Birds Submitted	This time last year
5 / 56 (0.089)	0 / 25 (0.0)

WNV Results by County through 16 July 2012

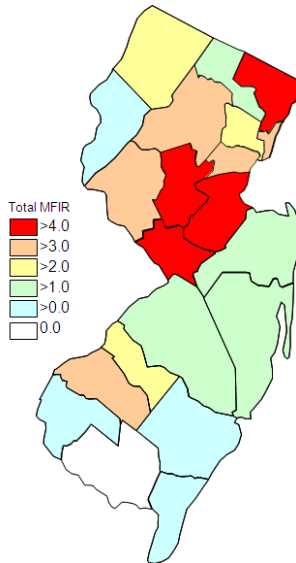
County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		32	952		
	<i>Aedes albopictus</i>	3	69		
	<i>Aedes cantator</i>	1	10		
	<i>Aedes japonicus</i>	1	1		
	<i>Aedes taeniorhynchus</i>	2	89		
	<i>Aedes vexans</i>	1	9		
	<i>Anopheles bradleyi</i>	1	3		
	<i>Coquillettidia perturbans</i>	2	3		
	<i>Culex</i> spp.	16	673		
	<i>Culiseta melanura</i>	5	95		
Bergen		45	3375	15	4.444
	<i>Culex</i> spp.	45	3375	15	4.444
Burlington		274	9369	8	0.854
	<i>Aedes albopictus</i>	5	32		
	<i>Aedes canadensis canadensis</i>	6	214		
	<i>Aedes cantator</i>	2	30		
	<i>Aedes japonicus</i>	19	78	1	12.821
	<i>Aedes mitchellae</i>	4	60		
	<i>Aedes sticticus</i>	1	8		
	<i>Aedes triseriatus</i>	3	3		
	<i>Aedes trivittatus</i>	1	2		
	<i>Aedes vexans</i>	4	65		
	<i>Anopheles bradleyi</i>	1	4		
	<i>Anopheles crucians</i>	3	37		
	<i>Anopheles punctipennis</i>	3	14		
	<i>Anopheles quadrimaculatus</i>	3	11		
	<i>Coquillettidia perturbans</i>	21	921		
	<i>Culex erraticus</i>	3	71		
	<i>Culex pipiens</i>	6	222		
	<i>Culex restuans</i>	3	55		
	<i>Culex salinarius</i>	10	182		
	<i>Culex</i> spp.	113	4643	6	1.292
	<i>Culiseta melanura</i>	62	2712	1	0.369
	<i>Psorophora columbiae</i>	1	5		
Camden		113	4459	5	1.121
	<i>Aedes albopictus</i>	5	12		
	<i>Aedes japonicus</i>	6	10	1	100.000
	<i>Aedes triseriatus</i>	1	5		
	<i>Aedes trivittatus</i>	1	2		

<i>Anopheles punctipennis</i>	1	2		
<i>Culex</i> spp.	69	2994	4	1.336
<i>Culiseta melanura</i>	30	1434		
Cape May	734	6917	2	0.289
<i>Aedes albopictus</i>	76	162		
<i>Aedes canadensis canadensis</i>	4	62		
<i>Aedes cantator</i>	27	373		
<i>Aedes japonicus</i>	36	68		
<i>Aedes sollicitans</i>	1	2		
<i>Aedes taeniorhynchus</i>	3	69		
<i>Aedes triseriatus</i>	55	96		
<i>Aedes vexans</i>	4	26		
<i>Anopheles bradleyi</i>	8	14		
<i>Anopheles punctipennis</i>	11	14		
<i>Anopheles quadrimaculatus</i>	19	73		
<i>Coquillettidia perturbans</i>	2	18		
<i>Culex erraticus</i>	23	741		
<i>Culex pipiens</i>	235	4304	2	0.465
<i>Culex restuans</i>	94	261		
<i>Culex salinarius</i>	39	89		
<i>Culex</i> spp.	29	123		
<i>Culex territans</i>	13	29		
<i>Culiseta melanura</i>	54	392		
<i>Orthopodomyia signifera</i>	1	1		
Cumberland	64	674		
<i>Aedes albopictus</i>	4	7		
<i>Aedes canadensis canadensis</i>	4	25		
<i>Aedes cantator</i>	3	11		
<i>Aedes japonicus</i>	5	19		
<i>Aedes triseriatus</i>	4	8		
<i>Aedes vexans</i>	2	6		
<i>Anopheles bradleyi</i>	1	2		
<i>Anopheles punctipennis</i>	4	10		
<i>Coquillettidia perturbans</i>	2	74		
<i>Culex pipiens</i>	9	217		
<i>Culex restuans</i>	7	84		
<i>Culex salinarius</i>	4	33		
<i>Culex</i> spp.	3	13		
<i>Culex territans</i>	1	1		
<i>Culiseta melanura</i>	11	164		
Essex	210	4096	4	0.983
<i>Aedes albopictus</i>	26	56		
<i>Aedes canadensis canadensis</i>	2	2		
<i>Aedes grossbecki</i>	2	2		
<i>Aedes japonicus</i>	32	303	1	3.300
<i>Aedes sticticus</i>	5	113		
<i>Aedes triseriatus</i>	9	22		
<i>Aedes vexans</i>	16	220		
<i>Culex</i> spp.	117	3347	3	0.896
<i>Psorophora ferox</i>	1	4		
Gloucester	254	9582	14	1.461

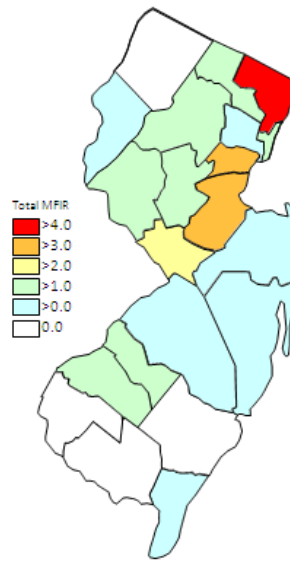
<i>Aedes albopictus</i>	15	418		
<i>Aedes japonicus</i>	5	75		
<i>Aedes triseriatus</i>	1	7		
<i>Aedes vexans</i>	1	2		
<i>Anopheles punctipennis</i>	7	56		
<i>Anopheles quadrimaculatus</i>	9	34		
<i>Culex pipiens</i>	169	8060	11	1.365
<i>Culiseta melanura</i>	47	930	3	3.226
Hudson	88	6016	8	1.330
<i>Culex</i> spp.	88	6016	8	1.330
Hunterdon	105	5250	6	1.143
<i>Culex</i> spp.	105	5250	6	1.143
Mercer	102	2323	6	2.583
<i>Aedes albopictus</i>	16	25		
<i>Aedes japonicus</i>	18	67		
<i>Aedes triseriatus</i>	4	7		
<i>Aedes vexans</i>	1	3		
<i>Culex pipiens</i>	45	1757	5	2.846
<i>Culex restuans</i>	18	464	1	2.155
Middlesex	101	3746	13	3.470
<i>Aedes albopictus</i>	8	100		
<i>Aedes japonicus</i>	12	96		
<i>Aedes triseriatus</i>	2	10		
<i>Culex</i> spp.	79	3540	13	3.672
Monmouth	148	2781	1	0.360
<i>Aedes albopictus</i>	17	78		
<i>Aedes canadensis canadensis</i>	8	121		
<i>Aedes cantator</i>	8	43		
<i>Aedes japonicus</i>	23	92		
<i>Aedes triseriatus</i>	8	11		
<i>Aedes vexans</i>	2	4		
<i>Anopheles punctipennis</i>	3	3		
<i>Coquillettidia perturbans</i>	1	2		
<i>Culex salinarius</i>	2	6		
<i>Culex</i> spp.	60	2002	1	0.500
<i>Culiseta melanura</i>	16	419		
Morris	165	6783	10	1.474
<i>Aedes japonicus</i>	6	92		
<i>Aedes triseriatus</i>	2	7		
<i>Culex</i> spp.	157	6684	10	1.496
Ocean	197	3545	1	0.282
<i>Aedes albopictus</i>	30	424		
<i>Aedes canadensis canadensis</i>	29	1112		
<i>Aedes cantator</i>	11	327		
<i>Aedes japonicus</i>	18	87		
<i>Aedes sollicitans</i>	2	2		
<i>Aedes taeniorhynchus</i>	1	1		
<i>Aedes triseriatus</i>	7	17		

	<i>Aedes trivittatus</i>	1	2		
	<i>Aedes vexans</i>	6	27		
	<i>Anopheles bradleyi</i>	7	39		
	<i>Anopheles punctipennis</i>	2	2		
	<i>Coquillettidia perturbans</i>	17	418		
	<i>Culex restuans</i>	1	1		
	<i>Culex salinarius</i>	8	29		
	<i>Culex</i> spp.	40	978	1	1.022
	<i>Culiseta melanura</i>	15	77		
	<i>Psorophora ferox</i>	2	2		
Passaic		75	1902	2	1.052
	<i>Aedes albopictus</i>	7	20		
	<i>Aedes japonicus</i>	16	239		
	<i>Aedes triseriatus</i>	6	14		
	<i>Anopheles punctipennis</i>	2	4		
	<i>Coquillettidia perturbans</i>	1	2		
	<i>Culex</i> spp.	43	1623	2	1.232
Salem		106	1118		
	<i>Aedes albopictus</i>	8	9		
	<i>Aedes canadensis canadensis</i>	2	6		
	<i>Aedes cantator</i>	1	1		
	<i>Aedes japonicus</i>	3	7		
	<i>Aedes sticticus</i>	1	3		
	<i>Aedes triseriatus</i>	2	2		
	<i>Aedes vexans</i>	9	80		
	<i>Anopheles bradleyi</i>	3	13		
	<i>Anopheles punctipennis</i>	4	5		
	<i>Anopheles quadrimaculatus</i>	4	8		
	<i>Coquillettidia perturbans</i>	10	108		
	<i>Culex erraticus</i>	3	3		
	<i>Culex pipiens</i>	4	26		
	<i>Culex restuans</i>	2	15		
	<i>Culex</i> spp.	35	528		
	<i>Culiseta melanura</i>	11	280		
	<i>Culiseta minnesotae</i>	1	2		
	<i>Psorophora columbiae</i>	1	1		
	<i>Psorophora ferox</i>	2	21		
Somerset		88	2082	3	1.441
	<i>Aedes albopictus</i>	3	15		
	<i>Aedes canadensis canadensis</i>	1	3		
	<i>Aedes japonicus</i>	10	66		
	<i>Aedes triseriatus</i>	3	39		
	<i>Aedes vexans</i>	1	8		
	<i>Culex</i> spp.	70	1951	3	1.538
Sussex		127	3841		
	<i>Coquillettidia perturbans</i>	1	43		
	<i>Culex pipiens</i>	4	59		
	<i>Culex restuans</i>	6	186		
	<i>Culex</i> spp.	111	3543		
	<i>Culiseta melanura</i>	5	10		

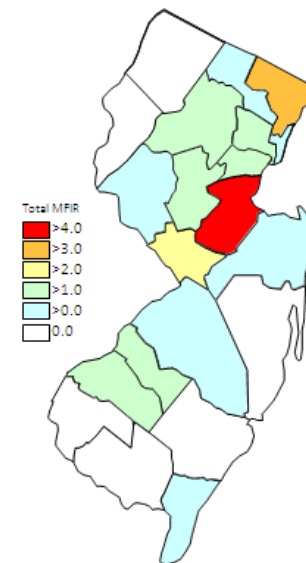
Union	121	5853	21	3.650
<i>Aedes albopictus</i>	3	38		
<i>Aedes japonicus</i>	1	14		
<i>Aedes triseriatus</i>	1	15		
<i>Culex</i> spp.	116	5686	21	3.693
Warren	113	3007	1	0.333
<i>Anopheles punctipennis</i>	1	5		
<i>Culex</i> spp.	112	3002	1	0.333
Grand Total	3262	87544	120	1.371



Cumulative WNV activity in 2011.



WNV activity to 16 July 2012.



WNV activity last week, 2012.

Saint Louis Encephalitis (SLE) through 16 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		
	<i>Aedes albopictus</i>	5	32		
	<i>Aedes canadensis canadensis</i>	6	214		
	<i>Aedes cantator</i>	2	30		
	<i>Aedes japonicus</i>	18	72		
	<i>Aedes mitchellae</i>	4	60		
	<i>Aedes sticticus</i>	1	8		
	<i>Aedes triseriatus</i>	3	3		
	<i>Aedes trivittatus</i>	1	2		
	<i>Aedes vexans</i>	4	65		

	<i>Anopheles bradleyi</i>	1	4		
	<i>Anopheles crucians</i>	3	37		
	<i>Anopheles punctipennis</i>	2	13		
	<i>Anopheles quadrimaculatus</i>	3	11		
	<i>Coquillettidia perturbans</i>	20	892		
	<i>Culex erraticus</i>	3	71		
	<i>Culex pipiens</i>	6	222		
	<i>Culex restuans</i>	3	55		
	<i>Culex salinarius</i>	10	182		
	<i>Culex</i> spp.	109	4436		
	<i>Culiseta melanura</i>	55	2547		
	<i>Psorophora columbiae</i>	1	5		
Camden		50	1713		
	<i>Aedes albopictus</i>	4	11		
	<i>Aedes japonicus</i>	4	6		
	<i>Aedes triseriatus</i>	1	5		
	<i>Anopheles punctipennis</i>	1	2		
	<i>Culex</i> spp.	40	1689		
Essex		200	3900		
	<i>Aedes albopictus</i>	23	48		
	<i>Aedes canadensis canadensis</i>	2	2		
	<i>Aedes grossbecki</i>	2	2		
	<i>Aedes japonicus</i>	30	251		
	<i>Aedes sticticus</i>	5	113		
	<i>Aedes triseriatus</i>	9	22		
	<i>Aedes vexans</i>	16	220		
	<i>Culex</i> spp.	112	3238		
	<i>Psorophora ferox</i>	1	4		
Hudson		74	4966		
	<i>Aedes canadensis canadensis</i>	74	4966		
Grand Total		584	19540		

La Crosse Encephalitis (LAC) through 16 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		
	<i>Aedes triseriatus</i>	4	8		

Salem		1	1		
	<i>Aedes triseriatus</i>	1	1		
Union		1	15		
	<i>Aedes triseriatus</i>	1	15		
Grand Total		6	24		