

VECTOR SURVEILLANCE IN NEW JERSEY

EEE, WNV, SLE and LAC

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CDC WEEK 26: June 24 to June 30, 2012

Data Downloaded 1:40 pm 2 July 2012



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Culiseta melanura and Eastern Equine Encephalitis

SITE/Boxes	Inland / Coastal	Historic Population Mean	Current Weekly Mean	Total Collected to Date*	Total Pools Submitted /Tested	EEE Isolations	MFIR
Bass River (Burlington Co.)/10	Coastal	na	0	1	1	0	
Green Bank (Burlington Co.)/25	Coastal	2.57	0	6	2	0	
Corbin City (Atlantic Co.)/25	Coastal	0.79	0.76	105	5/4	0	
Dennisville (Cape May Co.)/50	Coastal	3.55	0.12	33	**		
Winslow (Camden Co.)/50	Inland	0.46	0.92	1205	**		
Centerton (Salem Co.)/50	Inland	1.90	0.08	204	**		
Turkey Swamp (Monmouth Co.)/48	Inland	0.65	1.48	400	11/9	0	
Glassboro (Gloucester Co.)/50	Inland	0.73	0.16	128	**		

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

Remarks: Currently, testing of *Culiseta melanura*, the primary enzootic vector for eastern equine encephalitis, show no detectable EEE activity. The lab at Cape May is back online and testing of previously saved samples has begun and is being added to the state system, soon to appear in this report (**). To date 403 Cs. melanura from 15 pools have tested negative, with three pools to be tested.

One hundred six additional pools containing 3036 *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 <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	2024 (46)	0	
Cape May	Gravid, RB	243 (10)	0	
Cumberland	CO2, Gravid, RB	137 (8)	0	
Gloucester	RB	555 (27)	0	
Monmouth	Gravid	4 (1)	0	
Ocean	CO2, RB	72 (13)	0	
Salem	CO2	1 (1)	0	
TOTAL		3036 (106)	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

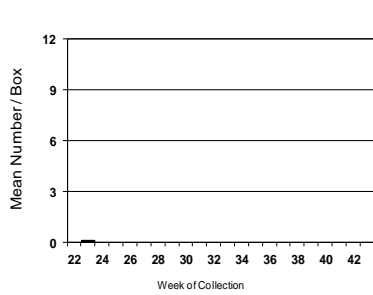
Species other than <i>Cs. melanura</i>	Pools	Mosquitoes	Positives	MFIR
<i>Aedes albopictus</i>	3	24		
<i>Aedes canadensis canadensis</i>	7	238		
<i>Aedes cantator</i>	6	178		
<i>Aedes japonicus</i>	14	47		
<i>Aedes mitchellae</i>	4	60		
<i>Aedes sticticus</i>	1	8		
<i>Aedes triseriatus</i>	3	3		
<i>Aedes trivittatus</i>	1	2		
<i>Aedes vexans</i>	4	65		
<i>Anopheles bradleyi</i>	1	4		
<i>Anopheles crucians</i>	2	29		
<i>Anopheles punctipennis</i>	8	37		
<i>Anopheles quadrimaculatus</i>	8	26		
<i>Coquillettidia perturbans</i>	37	1189		
<i>Culex erraticus</i>	7	154		
<i>Culex pipiens</i>	6	222		
<i>Culex restuans</i>	3	55		
<i>Culex salinarius</i>	10	182		
<i>Culex sp.</i>	90	3611		
<i>Psorophora columbiae</i>	1	5		
State Total	216	6139		

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.

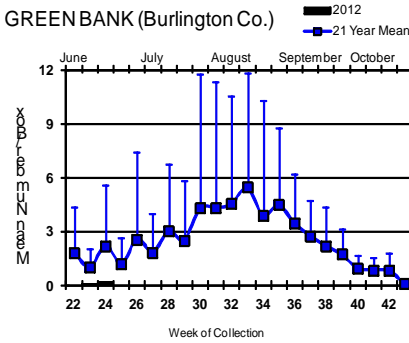
Culiseta melanura Population Graphs

Coastal

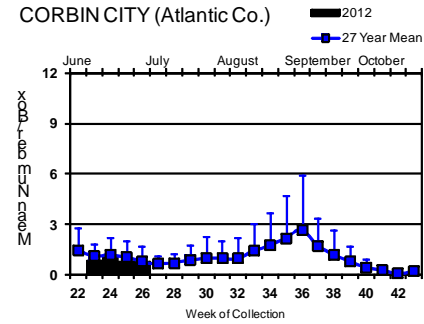
BASS RIVER (Burlington Co.)



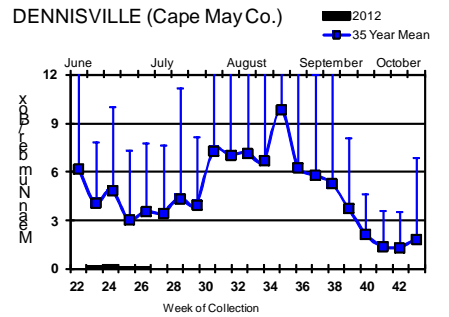
GREEN BANK (Burlington Co.)



CORBIN CITY (Atlantic Co.)

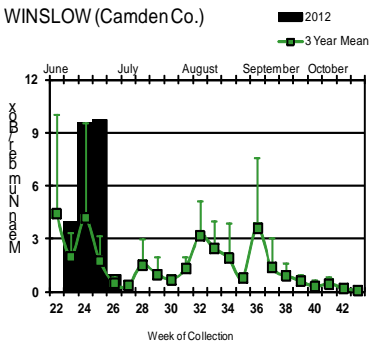


DENNISVILLE (Cape May Co.)

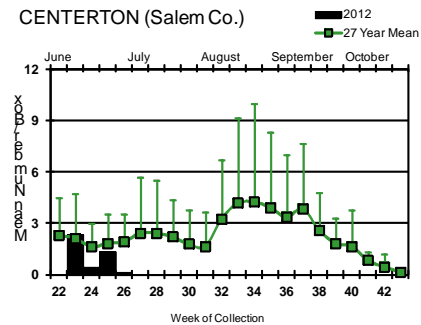


Inland

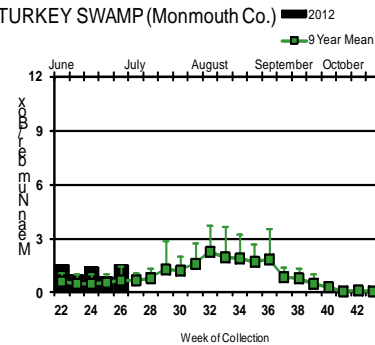
WINSLOW (Camden Co.)



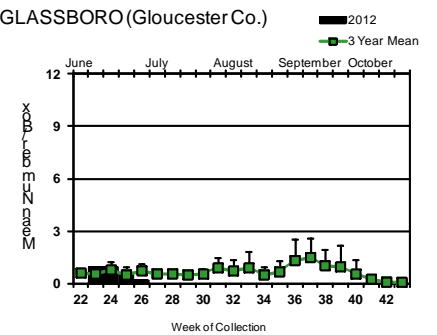
CENTERTON (Salem Co.)



TURKEY SWAMP (Monmouth Co.)



GLASSBORO (Gloucester Co.)



After considerable numbers at the inland Winslow site, *Culiseta melanura* populations decreased towards historical trends. Populations at Turkey Swamp remain elevated above historical trends while populations at Corbin City are trending around historical values. Numbers at Dennisville, Green Bank and Centerton are well below the historical averages.

↓ = Positive pool(s) detected.

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

- equine: 6(FL) 1(GA) 8(LA) 5(MS) 1(NJ) 2(SC)
- mosquito pools:
- sentinel: 14(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	1	0	2/3?
Arkansas					
California	169/223	222/282	2	0	1
Colorado					
Connecticut		0		0	0
Delaware					
DC					
Florida	0		50	0	0
Georgia	0	2	0	0	0
Hawaii					
Idaho					
Illinois	12/17	25/47		0	0
Indiana	0	5/10		0	0
Iowa		0	0	0	0
Kansas					
Kentucky				0	
Louisiana		170	8		
Maine					
Maryland					
Mass.		2		0	0
Michigan	0	1		0	0
Minnesota					
Mississippi		10			0
Missouri		0		0	0

	Birds	Mosquito Pools	Sentinels	Horses	Humans
Montana					
Nebraska	2				0
Nevada					
New Hampshire		0		0	0
New Jersey	3	20/39		0	0
New Mexico					0
New York		4			
North Carolina					
North Dakota	0	0		0	0
Ohio		2			
Oklahoma					
Oregon	0	0	0	0	0
Pennsylvania	2/3	89/117		1	
Rhode Island		0		0	
South Carolina	0	1		0	0
South Dakota					
Tennessee	0	45/59		0	0
Texas	2	78/95		1	1/5
Utah		0	0	0	0
Vermont					
Virginia					
Washington	0	0		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 2 July 2012

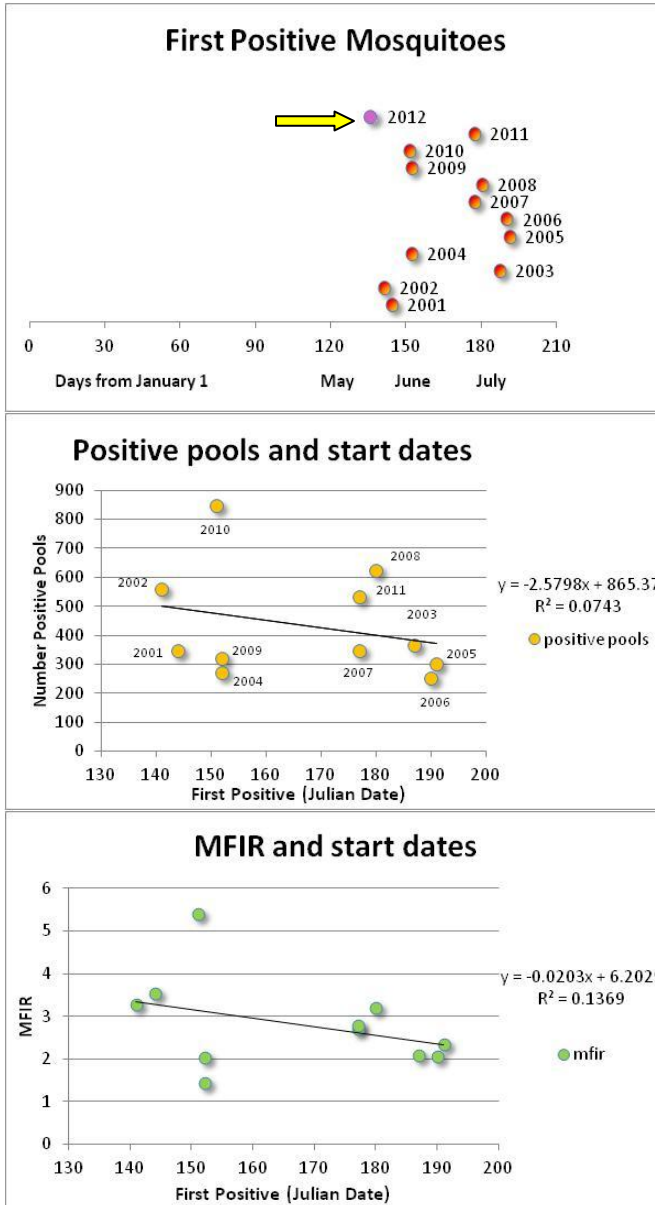
Species	Pools	Mosquitoes	Positives	MFIR
<i>Aedes albopictus</i>	92	603		
<i>Aedes canadensis canadensis</i>	52	1506		
<i>Aedes cantator</i>	27	550		
<i>Aedes grossbecki</i>	2	2		
<i>Aedes japonicus</i>	125	835	1	1.198
<i>Aedes mitchellae</i>	4	60		
<i>Aedes sollicitans</i>	2	2		
<i>Aedes sticticus</i>	7	124		
<i>Aedes taeniorhynchus</i>	1	1		
<i>Aedes triseriatus</i>	37	107		
<i>Aedes trivittatus</i>	3	6		
<i>Aedes vexans</i>	38	362		
<i>Anopheles bradleyi</i>	11	56		
<i>Anopheles crucians</i>	2	29		
<i>Anopheles punctipennis</i>	24	87		
<i>Anopheles quadrimaculatus</i>	11	39		
<i>Coquillettidia perturbans</i>	41	1239		
<i>Culex erraticus</i>	8	174		
<i>Culex pipiens</i>	244	10023	5	0.499
<i>Culex restuans</i>	45	773	1	1.294
<i>Culex salinarius</i>	24	250		
<i>Culex sp.</i>	946	36144	31	0.858
<i>Culex territans</i>	1	1		
<i>Culiseta melanura</i>	127	3456	1	0.289
<i>Culiseta minnesotae</i>	1	2		
<i>Psorophora columbiae</i>	2	6		
<i>Psorophora ferox</i>	5	27		
State Total	1882	56464	39	0.427

Remarks: To date, there have been 56,464 mosquitoes tested in 1,843 pools from 26 species. Currently, 39 positive pools have been detected in *Aedes japonicus*, *Culex pipiens*, Mixed Cx. species, *Culiseta melanura* and, most recently, *Culex restuans*. Mixed Culex pools had a significant increase in number of positive pools, with MFIR values increasing from 0.468 to 0.858. The positive *Cx. restuans* pool was collected on 20 June in Mercer County. Positive pools have now been detected in Bergen, Burlington, Camden, Essex, Gloucester, Hudson, Hunterdon, Mercer, Middlesex, Morris, 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 three birds out of 41 tested. Two additional birds, one Fish and one unidentified Crow have been found positive for WNV, collected 12 June and 18 June respectively. Both were collected from Monmouth County. WNV was first detected in an American Crow (*Corvus brachyrhynchus*) from Morris County, collected 9 April. To date, testing includes: American Crow (*Corvus brachyrhynchus* 1/4), Fish Crow (*Corvus ossifragus* 1/12), unidentified Crow (*Corvus* spp. 1/4), Blue Jay (*Cyanocitta cristata* 0/1), Hawk (0/1) and other avian species (0/19). 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
39 / 1843 (0.022)	7 / 1210 (0.006)
2012 Positive Birds to date / Total Birds Submitted	This time last year
3 / 41 (0.073)	0 / 18 (0.0)



In New Jersey, detection of positive mosquito pools in 2012 appears to have begun earlier than other years.

But start dates are not highly correlated with number of positive pools detected.

Nor does start date correlate well with the intensity of the season as measured by MFIR value (overall for the state for the season).

WNV Results by County through 2 July 2012

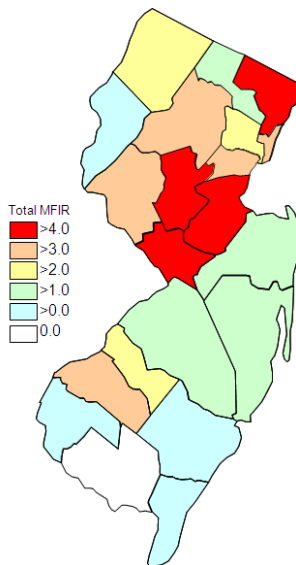
County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		12	482		
	<i>Aedes albopictus</i>	1	7		
	<i>Culex</i> spp.	9	408		
	<i>Culiseta melanura</i>	3	67		

Bergen	15	1125	3	2.667
<i>Culex</i> spp.	15	1125	3	2.667
Burlington	224	7420	1	0.135
<i>Aedes albopictus</i>	3	24		
<i>Aedes canadensis canadensis</i>	6	214		
<i>Aedes cantator</i>	2	30		
<i>Aedes japonicus</i>	14	47		
<i>Aedes mitchellae</i>	4	60		
<i>Aedes sticticus</i>	1	8		
<i>Aedes triseriatus</i>	2	2		
<i>Aedes trivittatus</i>	1	2		
<i>Aedes vexans</i>	4	65		
<i>Anopheles bradleyi</i>	1	4		
<i>Anopheles crucians</i>	2	29		
<i>Anopheles punctipennis</i>	3	14		
<i>Anopheles quadrimaculatus</i>	3	11		
<i>Coquillettidia perturbans</i>	16	733		
<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.	90	3611	1	0.277
<i>Culiseta melanura</i>	49	2031		
<i>Psorophora columbiae</i>	1	5		
Camden	53	1870	2	1.070
<i>Aedes albopictus</i>	5	12		
<i>Aedes japonicus</i>	3	4		
<i>Aedes triseriatus</i>	1	5		
<i>Aedes trivittatus</i>	1	2		
<i>Anopheles punctipennis</i>	1	2		
<i>Culex</i> spp.	42	1845	2	1.084
Cape May	109	2974		
<i>Aedes albopictus</i>	1	8		
<i>Aedes canadensis canadensis</i>	1	24		
<i>Aedes cantator</i>	4	148		
<i>Anopheles quadrimaculatus</i>	1	10		
<i>Culex erraticus</i>	3	101		
<i>Culex pipiens</i>	67	2273		
<i>Culex restuans</i>	16	125		
<i>Culex</i> spp.	6	42		
<i>Culiseta melanura</i>	10	243		
Cumberland	50	495		
<i>Aedes albopictus</i>	3	5		
<i>Aedes canadensis canadensis</i>	4	25		
<i>Aedes cantator</i>	2	8		
<i>Aedes japonicus</i>	4	9		
<i>Aedes triseriatus</i>	2	4		
<i>Aedes vexans</i>	2	6		
<i>Anopheles bradleyi</i>	1	2		
<i>Anopheles punctipennis</i>	4	10		
<i>Coquillettidia perturbans</i>	1	33		

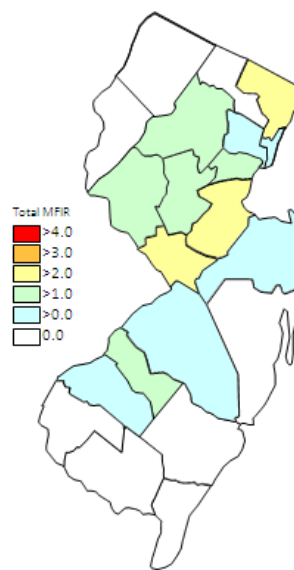
	<i>Culex pipiens</i>	7	173		
	<i>Culex restuans</i>	5	39		
	<i>Culex salinarius</i>	4	33		
	<i>Culex</i> spp.	2	10		
	<i>Culex territans</i>	1	1		
	<i>Culiseta melanura</i>	8	137		
Essex		164	3247	4	1.232
	<i>Aedes albopictus</i>	13	29		
	<i>Aedes canadensis canadensis</i>	2	2		
	<i>Aedes grossbecki</i>	2	2		
	<i>Aedes japonicus</i>	24	220	1	4.545
	<i>Aedes sticticus</i>	5	113		
	<i>Aedes triseriatus</i>	9	22		
	<i>Aedes vexans</i>	16	220		
	<i>Culex</i> spp.	92	2635	3	1.139
	<i>Psorophora ferox</i>	1	4		
Gloucester		184	7243	4	0.552
	<i>Aedes albopictus</i>	8	240		
	<i>Aedes japonicus</i>	5	75		
	<i>Aedes triseriatus</i>	1	7		
	<i>Aedes vexans</i>	1	2		
	<i>Anopheles punctipennis</i>	6	45		
	<i>Anopheles quadrimaculatus</i>	5	15		
	<i>Culex pipiens</i>	131	6304	3	0.476
	<i>Culiseta melanura</i>	27	555	1	1.802
Hudson		59	3841	1	0.260
	<i>Culex</i> spp.	59	3841	1	0.260
Hunterdon		75	3750	4	1.067
	<i>Culex</i> spp.	75	3750	4	1.067
Mercer		63	1486	3	2.019
	<i>Aedes albopictus</i>	10	16		
	<i>Aedes japonicus</i>	11	49		
	<i>Aedes triseriatus</i>	2	2		
	<i>Aedes vexans</i>	1	3		
	<i>Culex pipiens</i>	26	996	2	2.008
	<i>Culex restuans</i>	13	420	1	2.381
Middlesex		58	1835	4	2.180
	<i>Aedes albopictus</i>	5	53		
	<i>Aedes japonicus</i>	8	54		
	<i>Aedes triseriatus</i>	2	10		
	<i>Culex</i> spp.	43	1718	4	2.328
Monmouth		114	2077	1	0.481
	<i>Aedes albopictus</i>	12	59		
	<i>Aedes canadensis canadensis</i>	7	120		
	<i>Aedes cantator</i>	7	36		
	<i>Aedes japonicus</i>	18	72		
	<i>Aedes triseriatus</i>	5	8		
	<i>Aedes vexans</i>	2	4		

	<i>Anopheles punctipennis</i>	2	2		
	<i>Coquillettidia perturbans</i>	1	2		
	<i>Culex salinarius</i>	2	6		
	<i>Culex</i> spp.	45	1425	1	0.702
	<i>Culiseta melanura</i>	13	343		
Morris		121	4618	4	0.886
	<i>Aedes japonicus</i>	5	48		
	<i>Aedes triseriatus</i>	2	7		
	<i>Culex</i> spp.	114	4563	4	0.877
Ocean		159	2596		
	<i>Aedes albopictus</i>	18	105		
	<i>Aedes canadensis canadensis</i>	29	1112		
	<i>Aedes cantator</i>	11	327		
	<i>Aedes japonicus</i>	13	63		
	<i>Aedes sollicitans</i>	2	2		
	<i>Aedes taeniorhynchus</i>	1	1		
	<i>Aedes triseriatus</i>	4	7		
	<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.	24	387		
	<i>Culiseta melanura</i>	13	72		
	<i>Psorophora ferox</i>	2	2		
Passaic		46	1345		
	<i>Aedes albopictus</i>	4	8		
	<i>Aedes japonicus</i>	8	132		
	<i>Aedes triseriatus</i>	3	9		
	<i>Anopheles punctipennis</i>	1	2		
	<i>Coquillettidia perturbans</i>	1	2		
	<i>Culex</i> spp.	29	1192		
Salem		66	364		
	<i>Aedes albopictus</i>	5	6		
	<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>	5	27		
	<i>Anopheles bradleyi</i>	2	11		
	<i>Anopheles punctipennis</i>	4	5		
	<i>Anopheles quadrimaculatus</i>	2	3		
	<i>Coquillettidia perturbans</i>	4	8		
	<i>Culex erraticus</i>	2	2		
	<i>Culex pipiens</i>	4	26		
	<i>Culex restuans</i>	2	15		
	<i>Culex</i> spp.	22	217		
	<i>Culiseta melanura</i>	1	1		

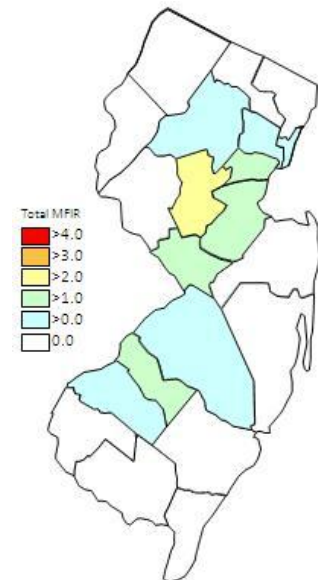
	<i>Culiseta minnesotae</i>	1	2		
	<i>Psorophora columbiae</i>	1	1		
	<i>Psorophora ferox</i>	2	21		
Somerset		57	1142	2	1.751
	<i>Aedes albopictus</i>	3	15		
	<i>Aedes canadensis canadensis</i>	1	3		
	<i>Aedes japonicus</i>	8	41		
	<i>Aedes triseriatus</i>	1	7		
	<i>Aedes vexans</i>	1	8		
	<i>Culex</i> spp.	43	1068	2	1.873
Sussex		79	2172		
	<i>Coquillettidia perturbans</i>	1	43		
	<i>Culex pipiens</i>	3	29		
	<i>Culex restuans</i>	5	118		
	<i>Culex</i> spp.	67	1975		
	<i>Culiseta melanura</i>	3	7		
Union		86	4109	6	1.460
	<i>Aedes albopictus</i>	1	16		
	<i>Aedes japonicus</i>	1	14		
	<i>Aedes triseriatus</i>	1	15		
	<i>Culex</i> spp.	83	4064	6	1.476
Warren		87	2273		
	<i>Anopheles punctipennis</i>	1	5		
	<i>Culex</i> spp.	86	2268		
Grand Total		1882	56464	39	0.691



Cumulative WNV activity in 2011.



WNV activity to 2 July 2012.



WNV activity last week, 2012.

Saint Louis Encephalitis (SLE) through 2 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		220	74212		
	<i>Aedes albopictus</i>	3	24		
	<i>Aedes canadensis canadensis</i>	6	214		
	<i>Aedes cantator</i>	2	30		
	<i>Aedes japonicus</i>	14	47		
	<i>Aedes mitchellae</i>	4	60		
	<i>Aedes sticticus</i>	1	8		
	<i>Aedes triseriatus</i>	2	2		
	<i>Aedes trivittatus</i>	1	2		
	<i>Aedes vexans</i>	4	65		
	<i>Anopheles bradleyi</i>	1	4		
	<i>Anopheles crucians</i>	2	29		
	<i>Anopheles punctipennis</i>	2	13		
	<i>Anopheles quadrimaculatus</i>	3	11		
	<i>Coquillettidia perturbans</i>	16	733		
	<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.	90	3611		
	<i>Culiseta melanura</i>	46	2024		
	<i>Psorophora columbiae</i>	1	5		
Camden		39	1369		
	<i>Aedes albopictus</i>	4	11		
	<i>Aedes japonicus</i>	2	3		
	<i>Aedes triseriatus</i>	1	5		
	<i>Anopheles punctipennis</i>	1	2		
	<i>Culex</i> spp.	31	1348		
Essex		164	3247		
	<i>Aedes albopictus</i>	13	29		
	<i>Aedes canadensis canadensis</i>	2	2		
	<i>Aedes grossbecki</i>	2	2		
	<i>Aedes japonicus</i>	24	220		
	<i>Aedes sticticus</i>	5	113		
	<i>Aedes triseriatus</i>	9	22		
	<i>Aedes vexans</i>	16	220		
	<i>Culex</i> spp.	92	2635		
	<i>Psorophora ferox</i>	1	4		
Hudson		59	3841		
	<i>Aedes canadensis canadensis</i>	59	3841		
Grand Total		482	15869		

La Crosse Encephalitis (LAC) through 2 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		2	4		
	<i>Aedes triseriatus</i>	2	4		
Salem		1	1		
	<i>Aedes triseriatus</i>	1	1		
Union		1	15		
	<i>Aedes triseriatus</i>	1	15		
Grand Total		4	20		