VECTOR SURVEILLANCE IN NEW JERSEY

EEE, WNV, SLE and LAC

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CDC WEEK 25: June 17 to June 23, 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**	1.20	0	6	2	0	
Corbin City (Atlantic Co.)/25	**Coastal**	1.06	0.76	86	4/3	0	
Dennisville (Cape May Co.)/50	**Coastal**	3.05	0.12	27	**		
Winslow (Camden Co.)/50	**Inland**	1.75	9.70	1159	**		
Centerton (Salem Co.)/50	**Inland**	1.83	1.28	200	**		
Turkey Swamp (Monmouth Co.)/48	**Inland**	0.53	0.85	329	9/8	0	
Glassboro (Gloucester Co.)/50	**Inland**	0.51	0.50	120	**		

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

Remarks: Currently, the 8 traditional resting box sites for the collection of *Culiseta melanura*, the primary enzootic vector, show no detectable EEE activity. Populations at the Winslow remain considerably above historical levels. To date 362 Cs. melanura from 14 pools have tested negative, with two pools to be tested. Dennisville, Winslow, Centerton and Glassboro are currently being collected and will be tested at the Cape May within the month (**).

One hundred four additional pools containing 3034 *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	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	70 (11)	0	
Salem	CO2	1 (1)	0	
TOTAL		**3034 (104)**	**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.

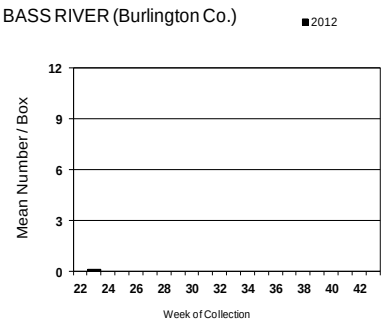
Horses and Vaccinations: The fate of unvaccinated equids reinforces the necessity of maintaining a vaccination schedule for arboviruses. For vaccination schedules recommended by the American Association of Equine Practices, see: http://www.aaep.org/vaccination_guidelines.htm

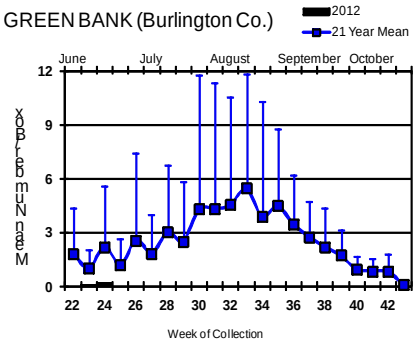
Species other than *Cs. melanura*	Pools	Mosquitoes	Positives	MFIR
Aedes albopictus	3	24		
Aedes canadensis canadensis	7	238		
Aedes cantator	6	178		
Aedes japonicus	14	47		
Aedes mitchellae	4	60		
Aedes sticticus	1	8		
Aedes triseriatus	3	3		
Aedes trivittatus	1	2		
Aedes vexans	4	65		
Anopheles bradleyi	1	4		
Anopheles crucians	2	29		
Anopheles punctipennis	8	37		
Anopheles quadrimaculatus	8	26		
Coquillettidia perturbans	32	1174		
Culex erraticus	7	154		
Culex pipiens	6	222		
Culex restuans	3	55		
Culex salinarius	10	182		
Culex sp.	90	3611		
Psorophora columbiae	1	5		
State Total	211	6124		

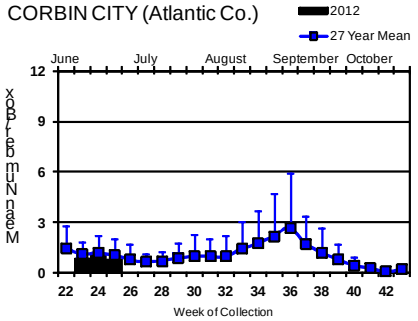
The table to the left indicates non-*Cs. melanura* mosquitoes tested for EEE. An additional 19 species of mosquitoes have been tested with no detection of EEE.

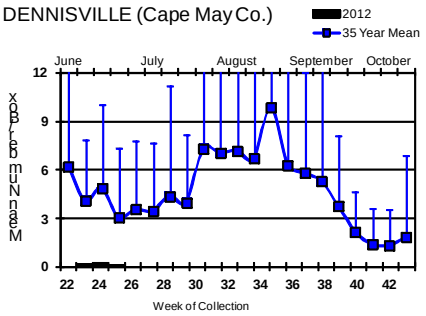
Culiseta melanura Population Graphs

Coastal

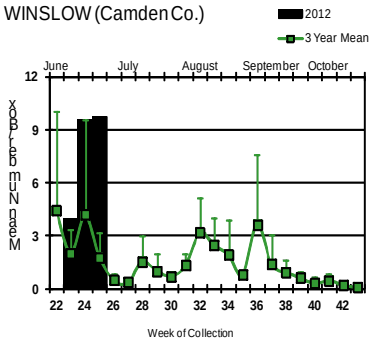


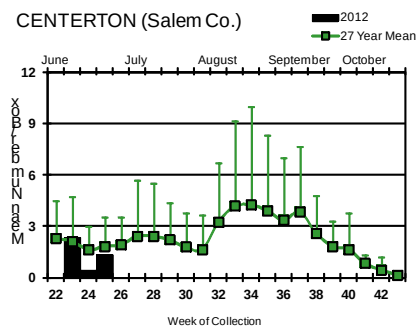


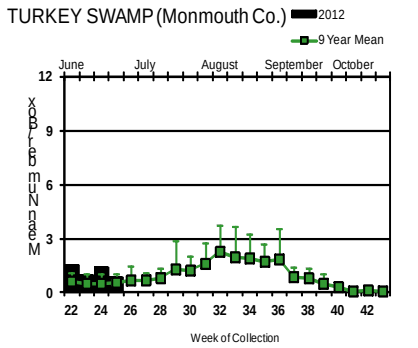


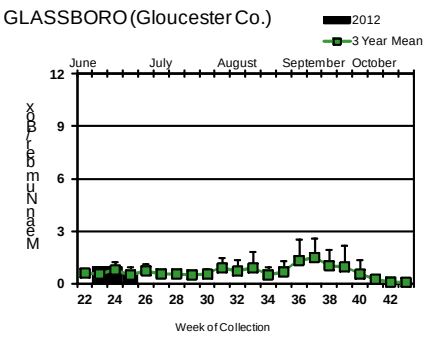


Inland









Culiseta melanura populations at the inland sites of Winslow continue to remain significantly above historical values. Populations at Corbin City, Centerton, Turkey Swamp and Glassboro are trending around historical values while numbers at Dennisville and Green Bank 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: 6(FL) 1(GA) 8(LA) 5(MS) 1(NJ)
- 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	2/3	1	0	2/4?
Arkansas					
California	98/169	124/222	1/2	0	1
Colorado					
Connecticut		0		0	0
Delaware					
DC					
Florida	0		48/50	0	0
Georgia	0	½	0	0	0
Hawaii					
Idaho					
Illinois	6/12	17/25			
Indiana	0	2/5		0	0
Iowa		0	0	0	0
Kansas					
Kentucky				0	
Louisiana		14/170	1/8		
Maine					
Maryland					
Mass.		0		0	0
Michigan	0	0		0	0
Minnesota					
Mississippi		10			0
Missouri		0		0	0

	Birds	Mosquito Pools	Sentinels	Horses	Humans
Montana					
Nebraska					
Nevada					
New Hampshire		0		0	0
New Jersey	1/3	12/20			
New Mexico					0
New York		1/4			
North Carolina					
North Dakota	0	0		0	0
Ohio		2			
Oklahoma					
Oregon	0	0	0	0	0
Pennsylvania	2	40/89		1	
Rhode Island		0		0	
South Carolina	0	0		0	0
South Dakota					
Tennessee	0	34/45		0	0
Texas	2	50/78		1	1
Utah					
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 25 June 2012

Species	Pools	Mosquitoes	Positives	MFIR
Aedes albopictus	69	459		
Aedes canadensis canadensis	48	1427		
Aedes cantator	18	299		
Aedes grossbecki	2	2		
Aedes japonicus	94	615	1	1.626
Aedes mitchellae	4	60		
Aedes sticticus	7	124		
Aedes triseriatus	23	49		
Aedes trivittatus	3	6		
Aedes vexans	35	355		
Anopheles bradleyi	7	21		
Anopheles crucians	2	29		
Anopheles punctipennis	23	86		
Anopheles quadrimaculatus	11	39		
Coquillettidia perturbans	35	1181		
Culex erraticus	8	174		
Culex pipiens	240	9913	5	0.504
Culex restuans	40	588		
Culex salinarius	19	233		
Culex sp.	752	27767	13	0.468
Culex territans	1	1		
Culiseta melanura	121	3409	1	0.293
Culiseta minnesotae	1	2		
Psorophora columbiae	2	6		
Psorophora ferox	5	27		
State Total	**1570**	**46872**	**20**	**0.427**

Remarks: To date, there have been 46,872 mosquitoes tested in 1,570 pools from 24 species. Currently, 20 positive pools have been detected in *Aedes japonicus*, *Culex pipiens,* Mixed *Cx.* species and *Culiseta melanura.* The positive *Ae. japonicus* pool was collected on 18 June in Essex County. Positive pools have now been detected in Burlington, Camden, Essex, Gloucester, Hudson, 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. 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 brachyrhynchos*) from Morris County, collected 9 April. To date, testing includes: American Crow (*Corvus brachyrhynchos* 1/4), Fish Crow (*Corvus ossifragus* 1/10), unidentified Crow (*Corvus* spp. 1/4), Blue Jay (*Cyanocitta cristata* 0/1), Hawk (0/1) and other avian species (0/11). 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
20 / 1570 (0.013)	0 / 806 (0.0)

2012 Positive Birds to date / Total Birds Submitted	This time last year
3 / 35 (0.086)	0 / 17 (0.0)

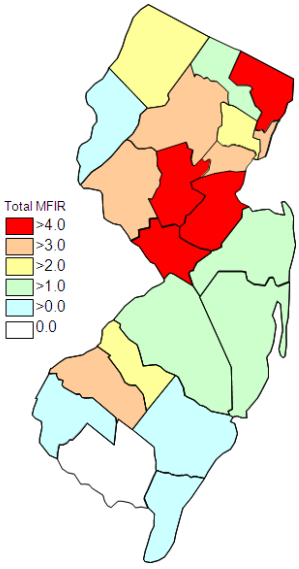
WNV Results by County through 25 June 2012

County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		**12**	**432**		
	Aedes albopictus	1	7		
	Culex spp.	8	358		
	Culiseta melanura	3	67		
Burlington		**224**	**7420**	**1**	**0.135**
	Aedes albopictus	3	24		
	Aedes canadensis canadensis	6	214		
	Aedes cantator	2	30		
	Aedes japonicus	14	47		
	Aedes mitchellae	4	60		
	Aedes sticticus	1	8		
	Aedes triseriatus	2	2		
	Aedes trivittatus	1	2		
	Aedes vexans	4	65		
	Anopheles bradleyi	1	4		
	Anopheles crucians	2	29		
	Anopheles punctipennis	3	14		
	Anopheles quadrimaculatus	3	11		
	Coquillettidia perturbans	16	733		
	Culex erraticus	3	71		
	Culex pipiens	6	222		
	Culex restuans	3	55		
	Culex salinarius	10	182		
	Culex spp.	90	3611	1	0.277
	Culiseta melanura	49	2031		
	Psorophora columbiae	1	5		
Camden		**53**	**1870**	**2**	**1.070**
	Aedes albopictus	5	12		
	Aedes japonicus	3	4		
	Aedes triseriatus	1	5		
	Aedes trivittatus	1	2		
	Anopheles punctipennis	1	2		
	Culex spp.	42	1845	2	1.084
Cape May		**109**	**2974**		
	Aedes albopictus	1	8		
	Aedes canadensis canadensis	1	24		
	Aedes cantator	4	148		
	Anopheles quadrimaculatus	1	10		
	Culex erraticus	3	101		
	Culex pipiens	67	2273		
	Culex restuans	16	125		
	Culex spp.	6	42		
	Culiseta melanura	10	243		
Cumberland		**50**	**495**		

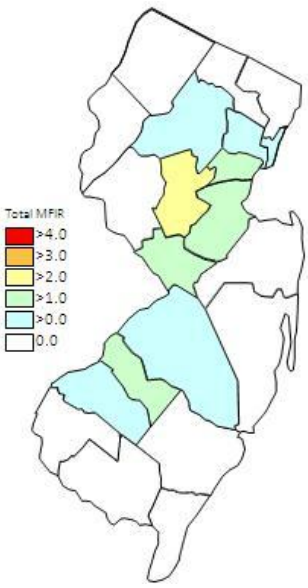
	Aedes albopictus	3	5		
	Aedes canadensis canadensis	4	25		
	Aedes cantator	2	8		
	Aedes japonicus	4	9		
	Aedes triseriatus	2	4		
	Aedes vexans	2	6		
	Anopheles bradleyi	1	2		
	Anopheles punctipennis	4	10		
	Coquillettidia perturbans	1	33		
	Culex pipiens	7	173		
	Culex restuans	5	39		
	Culex salinarius	4	33		
	Culex spp.	2	10		
	Culex territans	1	1		
	Culiseta melanura	8	137		
Essex		**118**	**2288**	**2**	**0.874**
	Aedes albopictus	8	14		
	Aedes canadensis canadensis	2	2		
	Aedes grossbecki	2	2		
	Aedes japonicus	14	124	1	8.065
	Aedes sticticus	5	113		
	Aedes triseriatus	5	8		
	Aedes vexans	16	220		
	Culex spp.	65	1801	1	0.555
	Psorophora ferox	1	4		
Gloucester		**184**	**7243**	**4**	**0.552**
	Aedes albopictus	8	240		
	Aedes japonicus	5	75		
	Aedes triseriatus	1	7		
	Aedes vexans	1	2		
	Anopheles punctipennis	6	45		
	Anopheles quadrimaculatus	5	15		
	Culex pipiens	131	6304	3	0.476
	Culiseta melanura	27	555	1	1.802
Hudson		**45**	**2796**	**1**	**0.358**
	Culex spp.	45	2796	1	0.358
Hunterdon		**60**	**3000**		
	Culex spp.	60	3000		
Mercer		**47**	**1173**	**2**	**1.705**
	Aedes albopictus	8	14		
	Aedes japonicus	7	36		
	Aedes triseriatus	1	1		
	Culex pipiens	22	886	2	2.257
	Culex spp.	9	236		
Middlesex		**30**	**982**	**1**	**1.018**
	Aedes albopictus	3	29		
	Aedes japonicus	2	11		
	Aedes triseriatus	1	5		
	Culex spp.	24	937	1	1.067

Monmouth		**92**	**1683**		
	Aedes albopictus	8	17		
	Aedes canadensis canadensis	7	120		
	Aedes cantator	5	8		
	Aedes japonicus	13	46		
	Aedes triseriatus	3	3		
	Aedes vexans	2	4		
	Anopheles punctipennis	2	2		
	Coquillettidia perturbans	1	2		
	Culex salinarius	2	6		
	Culex spp.	38	1174		
	Culiseta melanura	11	301		
Morris		**96**	**3444**	**1**	**0.290**
	Aedes japonicus	4	41		
	Aedes triseriatus	2	7		
	Culex spp.	90	3396	1	0.294
Ocean		**108**	**2036**		
	Aedes albopictus	12	72		
	Aedes canadensis canadensis	25	1033		
	Aedes cantator	4	104		
	Aedes japonicus	10	40		
	Aedes triseriatus	1	1		
	Aedes trivittatus	1	2		
	Aedes vexans	4	23		
	Anopheles bradleyi	3	4		
	Anopheles punctipennis	1	1		
	Coquillettidia perturbans	12	403		
	Culex restuans	1	1		
	Culex salinarius	3	12		
	Culex spp.	18	268		
	Culiseta melanura	11	70		
	Psorophora ferox	2	2		
Passaic		**38**	**1211**		
	Aedes albopictus	2	3		
	Aedes japonicus	7	126		
	Aedes triseriatus	2	4		
	Anopheles punctipennis	1	2		
	Coquillettidia perturbans	1	2		
	Culex spp.	25	1074		
Salem		**66**	**364**		
	Aedes albopictus	5	6		
	Aedes canadensis canadensis	2	6		
	Aedes cantator	1	1		
	Aedes japonicus	3	7		
	Aedes sticticus	1	3		
	Aedes triseriatus	2	2		
	Aedes vexans	5	27		
	Anopheles bradleyi	2	11		
	Anopheles punctipennis	4	5		
	Anopheles quadrimaculatus	2	3		

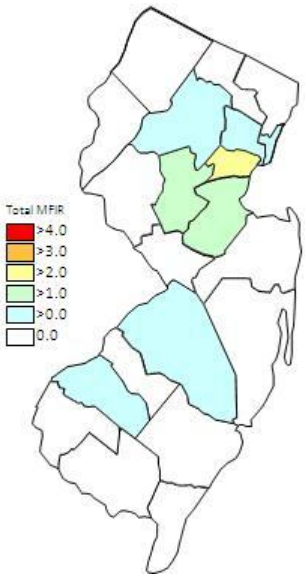
	Coquillettidia perturbans	4	8		
	Culex erraticus	2	2		
	Culex pipiens	4	26		
	Culex restuans	2	15		
	Culex spp.	22	217		
	Culiseta melanura	1	1		
	Culiseta minnesotae	1	2		
	Psorophora columbiae	1	1		
	Psorophora ferox	2	21		
Somerset		**42**	**803**	**2**	**2.491**
	Aedes albopictus	2	8		
	Aedes canadensis canadensis	1	3		
	Aedes japonicus	7	35		
	Aedes vexans	1	8		
	Culex spp.	31	749	2	2.670
Sussex		**65**	**1927**		
	Culex pipiens	3	29		
	Culex restuans	4	117		
	Culex spp.	57	1777		
	Culiseta melanura	1	4		
Union		**63**	**3030**	**4**	**1.320**
	Aedes japonicus	1	14		
	Culex spp.	62	3016	4	1.326
Warren		**68**	**1701**		
	Anopheles punctipennis	1	5		
	Culex spp.	67	1696		
Grand Total		**1570**	**46872**	**20**	**0.427**



Cumulative WNV activity in 2011.



WNV activity to 25 June 2012.



WNV activity last week, 2012.

Saint Louis Encephalitis (SLE) through 25 June 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**		
	Aedes albopictus	3	24		
	Aedes canadensis canadensis	6	214		
	Aedes cantator	2	30		
	Aedes japonicus	14	47		
	Aedes mitchellae	4	60		
	Aedes sticticus	1	8		
	Aedes triseriatus	2	2		
	Aedes trivittatus	1	2		
	Aedes vexans	4	65		
	Anopheles bradleyi	1	4		
	Anopheles crucians	2	29		
	Anopheles punctipennis	2	13		
	Anopheles quadrimaculatus	3	11		
	Coquillettidia perturbans	16	733		
	Culex erraticus	3	71		
	Culex pipiens	6	222		
	Culex restuans	3	55		
	Culex salinarius	10	182		
	Culex spp.	90	3611		
	Culiseta melanura	46	2024		
	Psorophora columbiae	1	5		
Camden		**39**	**1369**		
	Aedes albopictus	4	11		
	Aedes japonicus	2	3		
	Aedes triseriatus	1	5		
	Anopheles punctipennis	1	2		
	Culex spp.	31	1348		
Essex		**118**	**2288**		
	Aedes albopictus	8	14		
	Aedes canadensis canadensis	2	2		
	Aedes grossbecki	2	2		
	Aedes japonicus	14	124		
	Aedes sticticus	5	113		
	Aedes triseriatus	5	8		
	Aedes vexans	16	220		
	Culex spp.	65	1801		
	Psorophora ferox	1	4		
Hudson		**45**	**2796**		
	Aedes canadensis canadensis	45	2796		

Grand Total		**422**	**13865**		

La Crosse Encephalitis (LAC) through 25 June 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**		
	Aedes triseriatus	2	4		
Salem		**1**	**1**		
	Aedes triseriatus	1	1		
Grand Total		**3**	**5**		