VECTOR SURVEILLANCE IN NEW JERSEY

EEE, WNV, SLE and LAC

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CDC WEEK 24: June 10 to June 16, 2012

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Culiseta melanura and Eastern Equine Encephalitis

SITE/Boxes	Inland / Coastal	Historic Population Mean	Current Weekly Mean	Total Tested 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**	2.21	0.20	6	2/1	0	
Corbin City (Atlantic Co.)/25	**Coastal**	1.21	1.04	70	2/1	0	
Dennisville (Cape May Co.)/50	**Coastal**	4.86	0.24	21	**		
Winslow (Camden Co.)/50	**Inland**	4.18	9.56	674	**		
Centerton (Salem Co.)/50	**Inland**	1.64	0.42	136	**		
Turkey Swamp (Monmouth Co.)/48	**Inland**	0.48	1.40	288*	7/6	0	
Glassboro (Gloucester Co.)/50	**Inland**	0.77	0.94	95	**		

*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 and Turkey Swamp sites have grown considerably above historical levels. To date 245 Cs. melanura from 9 pools have tested negative, with three pools to be tested. Dennisville, Winslow, Centerton and Glassboro are currently being collected and will be tested at the Cape May within the month (**).

Fifty-eight additional pools containing 2501 *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	1436 (29)	0	
Cape May	RB	170 (3)	0	
Cumberland	CO2, Gravid, RB	118 (6)	0	
Gloucester	RB	299 (14)	0	
Monmouth	Gravid	4 (1)	0	
Ocean	CO2	24 (5)	0	
TOTAL		**2501 (58)**	**0**	

Horses and Humans: No cases to date.

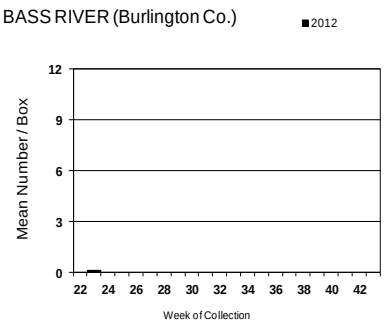
Horses and Vaccinations: The fate of unvaccinated equids reinforces the necessity of maintaining a vaccination schedule for arboviruses. For vaccination schedules recommended by the American Association of Equine Practices, see: http://www.aaep.org/vaccination_guidelines.htm

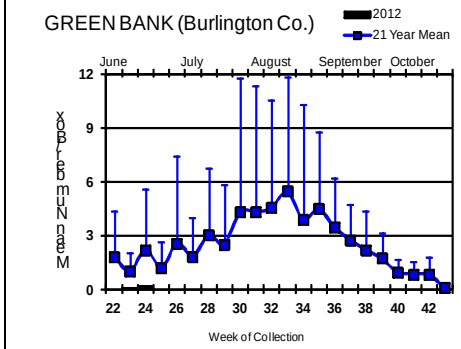
Species other than *Cs. melanura*	Pools	Mosquitoes	Positives	MFIR
Aedes canadensis canadensis	6	163		
Aedes cantator	4	153		
Aedes japonicus	11	27		
Aedes mitchellae	3	42		
Aedes sticticus	1	8		
Aedes trivittatus	1	2		
Aedes vexans	1	8		
Anopheles bradleyi	1	4		
Anopheles crucians	2	29		
Anopheles punctipennis	5	26		
Anopheles quadrimaculatus	4	11		
Coquillettidia perturbans	14	410		
Culex erraticus	2	4		
Culex pipiens	6	222		
Culex restuans	3	55		
Culex salinarius	5	86		
Culex sp.	63	2489		
State Total	132	3739		

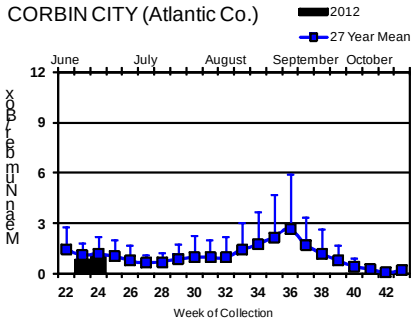
The table to the left indicates non-*Cs. melanura* mosquitoes tested for EEE. An additional 16 species of mosquitoes have been tested with no detection of EEE.

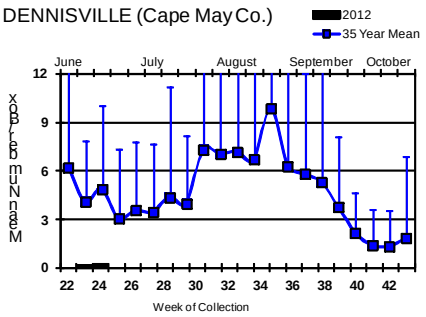
Culiseta melanura Population Graphs

Coastal

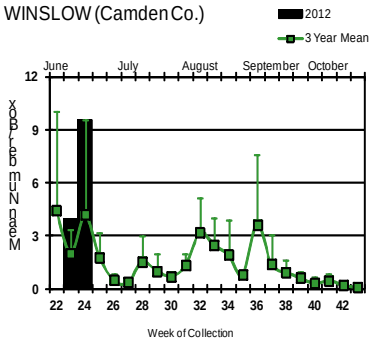


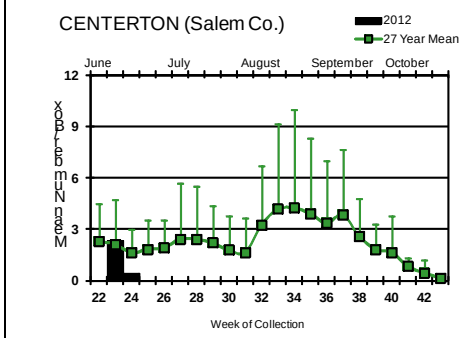


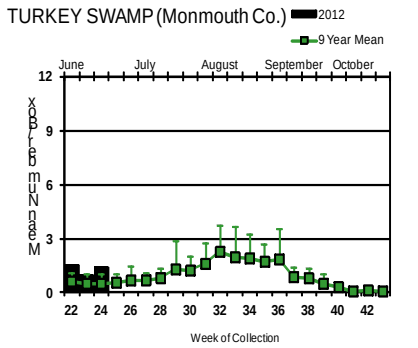


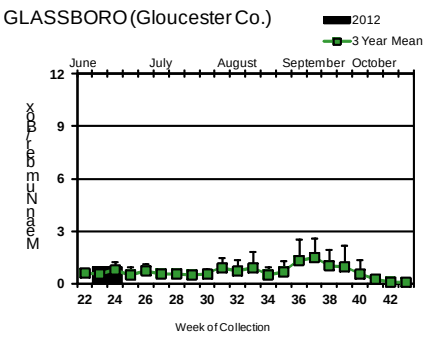


Inland









Culiseta melanura populations at the inland sites of Winslow and Turkey Swamp increased significantly above historical trends this past week. While these numbers are larger than normal, population growth during this period is not unusual as overwintering 4th stage larvae emerge. As the season progresses, earlier stages of larvae (that took longer to develop) continue to emerge. The adult population is eventually joined by the second generation produced by those that emerged during the spring (the overwintering 4th stage). It is this second generation where amplification of EEE is thought to be most significant. Large populations of the first generation can potentially contribute toward a large second population.

Corbin City and Glassboro populations appear within historical ranges while the Dennisville site appears to have numbers well below historical trends.

= Positive pool(s) detected.

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

- equine: 6(FL) 1(GA) 3(LA) 5(MS)
- mosquito pools:
- sentinel: 13(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	0	0	2?
Arkansas					
California	47/98	91/124	1	0	0
Colorado					
Connecticut		0		0	0
Delaware					
DC					
Florida	0		48	0	0
Georgia	0	1	0	0	0
Hawaii					
Idaho					
Illinois	3/6	11/17			
Indiana	0	1/2		0	0
Iowa		0	0	0	0
Kansas					
Kentucky				0	
Louisiana		14	1		
Maine					
Maryland					
Mass.		0		0	0
Michigan	0	0		0	0
Minnesota					
Mississippi					
Missouri		0		0	0

	Birds	Mosquito Pools	Sentinels	Horses	Humans
Montana					
Nebraska					
Nevada					
New Hampshire		0		0	0
New Jersey	1	4/12			
New Mexico		1			0
New York		1			
North Carolina					
North Dakota	0	0		0	0
Ohio					
Oklahoma					
Oregon	0	0	0	0	0
Pennsylvania	1/2	27/40		1	
Rhode Island		0		0	
South Carolina	0	0		0	0
South Dakota					
Tennessee	0	26/34		0	0
Texas		19/50		1	1
Utah					
Vermont					
Virginia					
Washington	0	0		0	0
West Virginia					
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 18 June 2012

Species	Pools	Mosquitoes	Positives	MFIR
Aedes albopictus	36	163		
Aedes canadensis canadensis	38	1315		
Aedes cantator	15	273		
Aedes grossbecki	2	2		
Aedes japonicus	56	298		
Aedes mitchellae	3	42		
Aedes sticticus	7	124		
Aedes triseriatus	8	17		
Aedes trivittatus	3	6		
Aedes vexans	29	295		
Anopheles bradleyi	3	15		
Anopheles crucians	2	29		
Anopheles punctipennis	14	67		
Anopheles quadrimaculatus	7	24		
Coquillettidia perturbans	16	415		
Culex erraticus	3	24		
Culex pipiens	155	6285	1	0.159
Culex restuans	25	388		
Culex salinarius	9	103		
Culex sp.	479	17841	10	0.561
Culex territans	1	1		
Culiseta melanura	69	2307	1	0.433
Culiseta minnesotae	1	2		
Psorophora ferox	3	25		
State Total	**984**	**30,061**	**12**	**0.399**

Remarks: To date, there have been 30,061 mosquitoes tested in 984 pools from 23 species. Currently, 12 positive pools have been detected in *Culex pipiens,* Mixed *Cx.* species and *Culiseta melanura*, the latest pools being *Culex* spp. collected in Union County on the 14th of June. Positive pools have now been detected in Burlington, Essex, Gloucester, Hudson, 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. No new birds have been submitted this past week. WNV has been 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* 0/3), unidentified Crow (*Corvus* spp. 0/3) and other avian species (0/11). Counties submitting birds are Atlantic, Cape May, Hunterdon, 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
12 / 984 (0.012)	0 / 533 (0.0)
2012 Positive Birds to date / Total Birds Submitted	This time last year
1 / 21 (0.048)	0 / 13 (0.0)

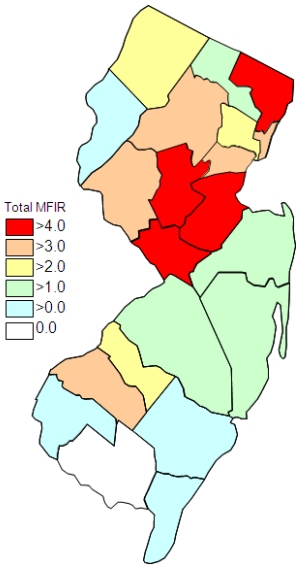
WNV Results by County through 18 June 2012

County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		**1**	**22**		
	Culiseta melanura	1	22		
Burlington		**149**	**4903**	**1**	**0.204**
	Aedes canadensis canadensis	5	139		
	Aedes cantator	1	10		
	Aedes japonicus	11	27		
	Aedes mitchellae	3	42		
	Aedes sticticus	1	8		
	Aedes trivittatus	1	2		
	Aedes vexans	1	8		
	Anopheles bradleyi	1	4		
	Anopheles crucians	2	29		
	Anopheles punctipennis	3	14		
	Anopheles quadrimaculatus	2	4		
	Coquillettidia perturbans	9	323		
	Culex erraticus	1	3		
	Culex pipiens	6	222		
	Culex restuans	3	55		
	Culex salinarius	5	86		
	Culex spp.	63	2489	1	0.402
	Culiseta melanura	31	1438		
Camden		**14**	**501**		
	Aedes albopictus	1	1		
	Aedes japonicus	1	1		
	Aedes trivittatus	1	2		
	Culex spp.	11	497		
Cape May		**59**	**2093**		
	Aedes canadensis canadensis	1	24		
	Aedes cantator	3	143		
	Anopheles quadrimaculatus	1	10		
	Culex erraticus	1	20		
	Culex pipiens	41	1616		
	Culex restuans	8	93		
	Culex spp.	1	17		
	Culiseta melanura	3	170		
Cumberland		**36**	**280**		
	Aedes albopictus	1	3		
	Aedes canadensis canadensis	2	8		
	Aedes cantator	2	8		
	Aedes japonicus	2	4		
	Aedes triseriatus	1	3		
	Aedes vexans	2	6		
	Anopheles bradleyi	1	2		
	Anopheles punctipennis	3	9		
	Coquillettidia perturbans	1	33		
	Culex pipiens	4	20		
	Culex restuans	5	39		
	Culex salinarius	3	16		
	Culex spp.	2	10		

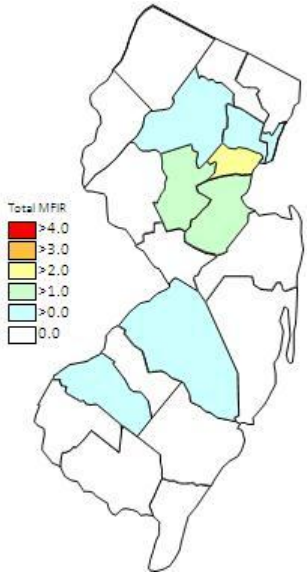
	Culex territans	1	1		
	Culiseta melanura	6	118		
Essex		**82**	**1403**	**1**	**0.713**
	Aedes albopictus	4	5		
	Aedes canadensis canadensis	2	2		
	Aedes grossbecki	2	2		
	Aedes japonicus	9	17		
	Aedes sticticus	5	113		
	Aedes vexans	15	219		
	Culex spp.	44	1041	1	0.961
	Psorophora ferox	1	4		
Gloucester		**115**	**4632**	**2**	**0.432**
	Aedes albopictus	4	56		
	Aedes japonicus	4	34		
	Aedes vexans	1	2		
	Anopheles punctipennis	3	34		
	Anopheles quadrimaculatus	2	7		
	Culex pipiens	87	4200	1	0.238
	Culiseta melanura	14	299	1	3.344
Hudson		**30**	**2029**	**1**	**0.493**
	Culex spp.	30	2029	1	0.493
Hunterdon		**45**	**2250**		
	Culex spp.	45	2250		
Mercer		**18**	**265**		
	Aedes albopictus	4	7		
	Culex pipiens	11	189		
	Culex spp.	3	69		
Middlesex		**10**	**524**	**1**	**1.908**
	Aedes albopictus	1	5		
	Aedes triseriatus	1	5		
	Culex spp.	8	514	1	1.946
Monmouth		**65**	**1197**		
	Aedes albopictus	4	6		
	Aedes canadensis canadensis	5	111		
	Aedes cantator	5	8		
	Aedes japonicus	9	26		
	Aedes triseriatus	1	1		
	Aedes vexans	2	4		
	Anopheles punctipennis	2	2		
	Coquillettidia perturbans	1	2		
	Culex salinarius	1	1		
	Culex spp.	27	804		
	Culiseta melanura	8	232		
Morris		**65**	**2191**	**1**	**0.456**
	Aedes japonicus	2	18		
	Aedes triseriatus	1	2		
	Culex spp.	62	2171	1	0.461

Ocean		**65**	**1571**		
	Aedes albopictus	10	69		
	Aedes canadensis canadensis	20	1022		
	Aedes cantator	4	104		
	Aedes japonicus	6	33		
	Aedes triseriatus	1	1		
	Aedes trivittatus	1	2		
	Aedes vexans	3	22		
	Coquillettidia perturbans	3	53		
	Culex spp.	12	241		
	Culiseta melanura	5	24		
Passaic		**25**	**809**		
	Aedes albopictus	2	3		
	Aedes japonicus	5	103		
	Aedes triseriatus	2	4		
	Culex spp.	16	699		
Salem		**34**	**192**		
	Aedes albopictus	4	5		
	Aedes canadensis canadensis	2	6		
	Aedes sticticus	1	3		
	Aedes triseriatus	1	1		
	Aedes vexans	4	26		
	Anopheles bradleyi	1	9		
	Anopheles punctipennis	2	3		
	Anopheles quadrimaculatus	2	3		
	Coquillettidia perturbans	2	4		
	Culex erraticus	1	1		
	Culex pipiens	4	26		
	Culex restuans	2	15		
	Culex spp.	5	67		
	Culiseta minnesotae	1	2		
	Psorophora ferox	2	21		
Somerset		**27**	**513**	**1**	**1.949**
	Aedes albopictus	2	8		
	Aedes canadensis canadensis	1	3		
	Aedes japonicus	6	30		
	Aedes vexans	1	8		
	Culex spp.	17	464	1	2.155
Sussex		**52**	**1511**		
	Culex pipiens	2	12		
	Culex restuans	4	117		
	Culex spp.	45	1378		
	Culiseta melanura	1	4		
Union		**35**	**1702**	**4**	**2.350**
	Culex spp.	35	1702	4	2.350
Warren		**57**	**1473**		
	Anopheles punctipennis	1	5		
	Culex spp.	56	1468		

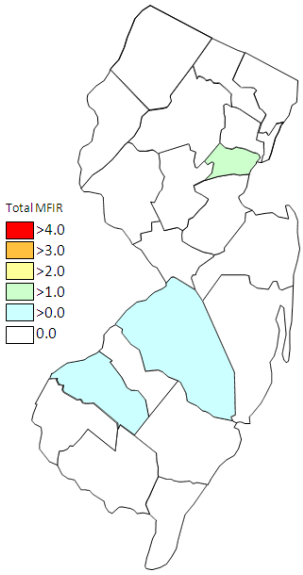
Grand Total		**984**	**30061**	**12**	**0.399**



Cumulative WNV activity in 2011.



WNV activity to 18 June 2012.



WNV activity last week, 2012.

Saint Louis Encephalitis (SLE) through 18 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		**146**	**4900**		
	Aedes canadensis canadensis	5	139		
	Aedes cantator	1	10		
	Aedes japonicus	11	27		
	Aedes mitchellae	3	42		
	Aedes sticticus	1	8		
	Aedes trivittatus	1	2		
	Aedes vexans	1	8		
	Anopheles bradleyi	1	4		
	Anopheles crucians	2	29		
	Anopheles punctipennis	2	13		
	Anopheles quadrimaculatus	2	4		
	Coquillettidia perturbans	9	323		
	Culex erraticus	1	3		
	Culex pipiens	6	222		
	Culex restuans	3	55		
	Culex salinarius	5	86		
	Culex spp.	63	2489		
	Culiseta melanura	29	1436		

Essex		**82**	**1403**		
	Aedes albopictus	4	5		
	Aedes canadensis canadensis	2	2		
	Aedes grossbecki	2	2		
	Aedes japonicus	9	17		
	Aedes sticticus	5	113		
	Aedes vexans	15	219		
	Culex spp.	44	1041		
	Psorophora ferox	1	4		
Hudson		**30**	**2029**		
	Aedes canadensis canadensis	30	2029		
Grand Total		**258**	**8332**		

La Crosse Encephalitis (LAC) through 18 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		**1**	**3**		
	Aedes triseriatus	1	3		
Salem		**1**	**1**		
	Aedes triseriatus	1	1		
Grand Total		**2**	**4**		