VECTOR SURVEILLANCE IN NEW JERSEY

EEE, WNV, SLE and LAC

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CDC WEEK 29: 13 July to 20 July, 2014

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Culiseta melanura and Eastern Equine Encephalitis

SITE/Boxes	Inland or Coastal	Historic Population Mean	Current Weekly Mean	Total Tested* (Collected)	Total Pools Tested* (Submitted)	EEE Isolation Pools	MFIR
Bass River (Burlington Co.)/5	**Coastal**	0.00	0.00	4	3		
Green Bank (Burlington Co.)/25	**Coastal**	2.29	0.48	52 (64)	7 (8)		
Corbin City (Atlantic Co.)/25	**Coastal**	0.96	0.32	124 (132)	6 (7)		
Dennisville (Cape May Co.)/50	**Coastal**	3.75	0.48	107	6		
Winslow (Camden Co.)/40	**Inland**	1.94	0.95	605	15		
Centerton (Salem Co.)/48	**Inland**	2.15	0.79	257	9		
Turkey Swamp (Monmouth Co.)/50	**Inland**	1.16	0.16	58 (66)	7 (8)		
Glassboro (Gloucester Co.)/49	**Inland**	0.55	1.53	305	9		

*Current week (in parentheses) results pending.

Remarks: No EEE activity has been detected in any mosquitoes or vertebrates sampled to date in New Jersey. *Cs. melanura* activity continues to remain low to moderate in most areas (see page 3 population graphs).

Traditional Resting Box Sites: To date, 1512 *Cs. melanura* from 62 pools have been tested for EEE. No positive pools have been detected. Three additional pools containing 28 *Cs. melanura* remain to be tested.

Additional *Cs. melanura* trapped by counties *traps with positives indicated in **BOLD.**				
County	**Trap types***	**Number collected (pools)**	**Number of positive pools**	**MFIR**
Burlington	CO_2	2315 (44)		
Cape May	RB	83 (5)		
Cumberland	RB	34 (5)		
Gloucester	RB	276 (22)		
Monmouth	Other	2 (1)		
Ocean	CO_2, RB	18 (5)		
Salem	CO_2	6 (3)		
TOTAL		**2734 (85)**		

Additional *Cs. melanura*: Counties submit additional pools of *Cs. melanura* caught in other trap types as well as resting boxes. Currently, no detection of EEE has occurred in *Cs. melanura* sampled from additional traps.

Species other than *Cs. melanura*	**Pools**	**Mosquitoes**	**Positives**	**MFIR**
Aedes canadensis canadensis	3	81		
Aedes taeniorhynchus	1	5		
Aedes vexans	1	14		
Anopheles bradleyi	1	7		
Anopheles punctipennis	14	268		
Anopheles quadrimaculatus	8	198		
Coquillettidia perturbans	15	312		
Culex erraticus	2	14		
Culex restuans	1	1		
Culex salinarius	3	29		
Culex spp.	1	1		
Culiseta morsitans	1	1		
State Total	**51**	**931**		

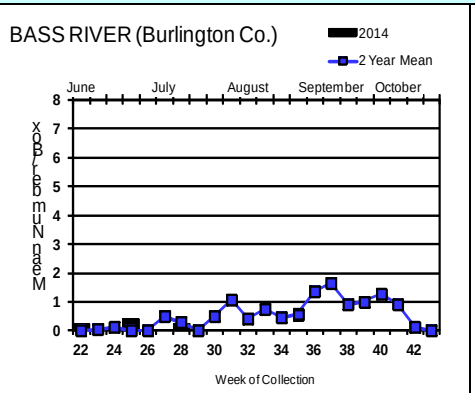
Additional Species: Counties submit additional pools of species other than *Cs. melanura* for EEE virus testing. Currently, no detection of EEE in other species has occurred.

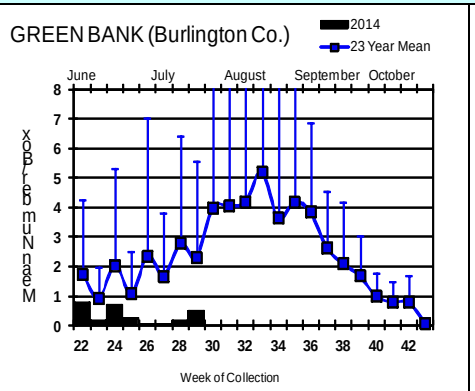
Horses and Humans: Currently there is no reported horse or human cases

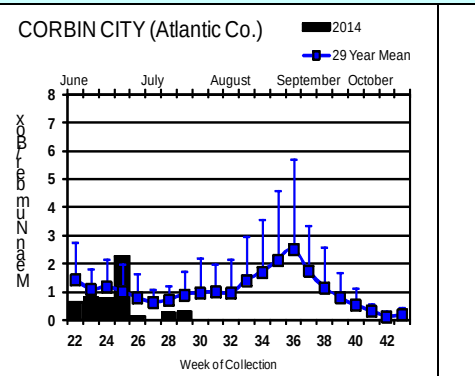
Horses and Vaccinations: The fate of unvaccinated equids reinforces the necessity of maintaining a vaccination schedule for arboviruses. For vaccination schedules recommended by the American Association of Equine Practices, see: http://www.aaep.org/vaccination_guidelines.htm

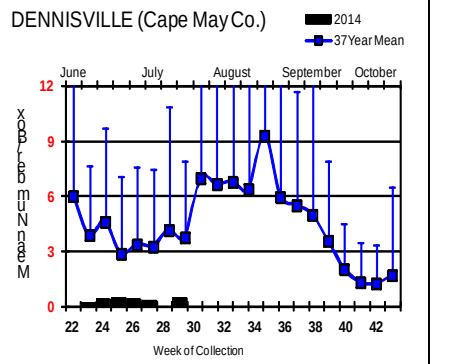
Culiseta melanura Population Graphs

Coastal

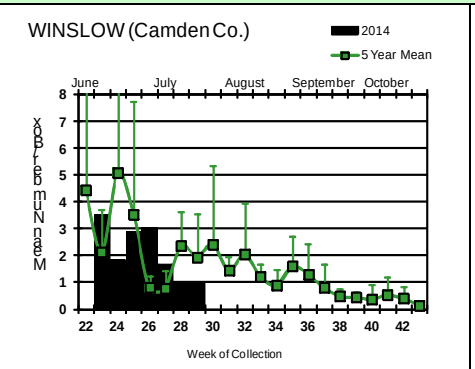


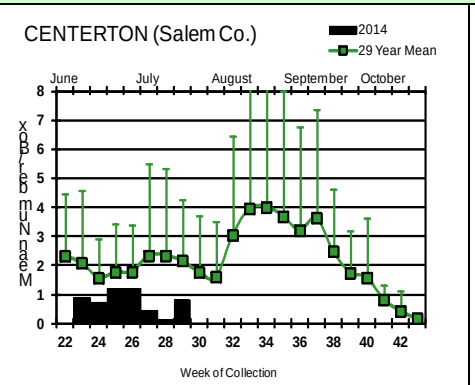


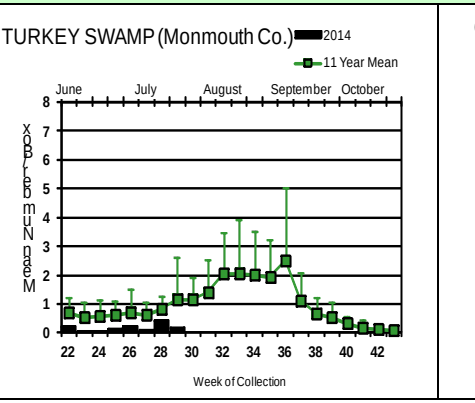


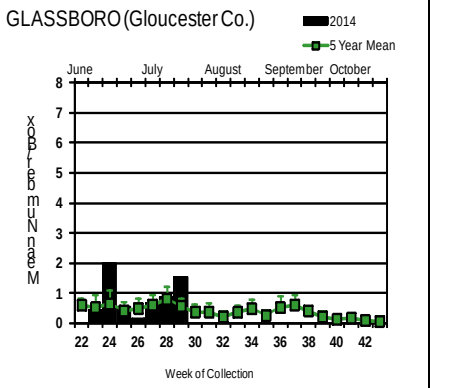


Inland









Culiseta melanura populations at Glassboro showed a significant increase from the previous week. Most other sites either maintained current activity levels or showed slight increases. Currently, there is no EEE activity in New Jersey, although detection in mosquitoes continues in states both to the south and to the north of NJ and positive horses continue to be seen in Florida.

= Positive pool(s) detected (red = melanura, purple = other).

EEE in US (2014 cumulative cases): (Black or Red = previous + new reported cases occurring)

- equine: AL(1) FL (27 +2 deer) GA(1)
- mosquito pools: GA(1) MA(4) NY(1) VA(1) VT(1)
- sentinel: AL(3) FL(100)
- human:

West Nile Virus Positive Organisms in US

West Nile in US (2014 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				1	
Alaska					
Arizona	1	1			1
Arkansas					
California	537/708	520/771	9/14		9/11
Colorado		12/16			2
Connecticut					0
Delaware					
DC					
Florida			6		
Georgia					1
Hawaii					
Idaho		7/11			
Illinois	2/7	40/58			
Indiana		5/6			
Iowa					1/2
Kansas		0			0
Kentucky					
Louisiana		23/119	1		1
Maine		0		0	0
Maryland					
Mass.		1/3		0	0
Michigan		1			
Minnesota	1	2			1
Mississippi		1		0	2
Missouri		0		0	1

	Birds	Mosquito Pools	Sentinels	Horses	Humans
Montana					
Nebraska	0	2		0	0
Nevada					
New Hampshire		0		0	0
New Jersey	1/2	3/16			
New Mexico					
New York		2/5			1
North Carolina					
North Dakota	0	1		0	0
Ohio					
Oklahoma					1
Oregon	0	0	0	0	0
Pennsylvania		41/118			
Rhode Island		0			
South Carolina					
South Dakota		2/7			6/8
Tennessee	0	9/14		0	1
Texas	14	156/266		0	1
Utah	1/2	3			
Vermont					
Virginia					
Washington	0	2		0	0
West Virginia					
Wisconsin	7/10	0		0	1
Wyoming		1			

* Can include other species (e.g., dogs, cows) reported positive.

Protocol: New Jersey Department of Health (NJDH Public Health Environmental and Agricultural Laboratories, PHEAL) and the Cape May County Department of Mosquito Control tests mosquito pools using RT-PCR Taqman techniques.

Mosquito Species Submitted and Tested for West Nile Virus Testing through 22 July 2014

Species	Pools	Mosquitoes	Positives	MFIR
Aedes albopictus	73	442		
Aedes canadensis canadensis	23	473		
Aedes cantator	8	183		
Aedes japonicus	145	788		
Aedes sollicitans	1	1		
Aedes sticticus	3	7		
Aedes taeniorhynchus	2	6		
Aedes triseriatus	49	225		
Aedes trivittatus	3	4		
Aedes vexans	20	101		
Anopheles bradleyi	2	9		
Anopheles punctipennis	23	284		
Anopheles quadrimaculatus	16	422		
Coquillettidia perturbans	38	647		
Culex erraticus	6	22		
Culex pipiens	208	6340		
Culex restuans	96	2582		
Culex salinarius	6	34		
Culex spp.	1093	45644	16	0.351
Culiseta melanura	165	4279		
Culiseta morsitans	1	1		
Psorophora columbiae	1	1		
Psorophora ferox	5	9		
State Total	**1987**	**62504**	**16**	**0.256**

Remarks: To date, 1987 pools of 62,504 mosquitoes from 22 species have been tested, with 16 positive pools detected, all *Culex*. First positive was detected in a Mixed *Culex* pool collected on 20 May in Camden County. Second positive in Mixed *Culex* collected on 25 June in Bergen County and third positive Mixed *Culex* pool collected 2 July in Camden County. Six counties have now detected positive pools, including Bergen, Burlington, Camden, Hudson, Middlesex and Union counties.

Humans, Horses and Wild Birds: To date, no human cases have been reported. For further information, see http://www.state.nj.us/health/cd/westnile/techinfo.shtml.

Bird testing began in mid-April. First positive bird (Fish Crow in Mercer County collected 8 July) has been reported. To date, 49 birds have been tested. Species includes: Fish Crow (*Corvus ossifragus* 2/16), Blue Jay (*Cyanocitta cristata* 0/3), Hawk/Raptor (0/3) and other avian species (0/27). Counties (positives) submitting birds are Atlantic, Bergen, Burlington, Cape May, Essex, Hunterdon, Mercer, Monmouth, Morris, Ocean, Salem, Sussex and Warren.

WNV Results by County through 22 July 2014

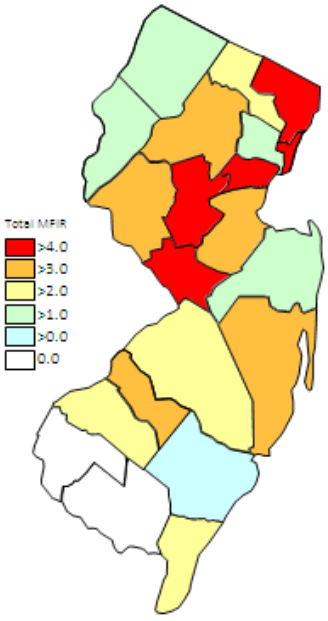
County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		**39**	**938**		
	Aedes albopictus	2	8		
	Aedes canadensis canadensis	3	26		
	Aedes cantator	2	5		
	Aedes japonicus	1	13		
	Aedes sticticus	1	1		

	Aedes taeniorhynchus	1	1		
	Aedes vexans	3	21		
	Anopheles punctipennis	1	1		
	Coquillettidia perturbans	2	17		
	Culex spp.	15	714		
	Culiseta melanura	7	127		
	Psorophora ferox	1	4		
Bergen		**60**	**4500**	**3**	**0.667**
	Culex spp.	60	4500	3	0.667
Burlington		**120**	**4593**	**3**	**0.653**
	Aedes canadensis canadensis	1	75		
	Aedes japonicus	6	103		
	Aedes taeniorhynchus	1	5		
	Aedes triseriatus	2	28		
	Anopheles punctipennis	1	1		
	Coquillettidia perturbans	1	64		
	Culex salinarius	2	25		
	Culex spp.	52	1921	3	1.562
	Culiseta melanura	54	2371		
Camden		**162**	**5167**	**2**	**0.387**
	Aedes albopictus	8	10		
	Aedes japonicus	35	91		
	Culex spp.	104	4461	2	0.448
	Culiseta melanura	15	605		
Cape May		**114**	**1435**		
	Aedes triseriatus	5	29		
	Anopheles bradleyi	1	7		
	Anopheles quadrimaculatus	8	224		
	Culex erraticus	1	12		
	Culex pipiens	61	669		
	Culex restuans	26	300		
	Culex salinarius	1	4		
	Culiseta melanura	11	190		
Cumberland		**28**	**302**		
	Aedes canadensis canadensis	1	2		
	Aedes japonicus	1	1		
	Aedes vexans	3	35		
	Anopheles bradleyi	1	2		
	Anopheles punctipennis	2	13		
	Coquillettidia perturbans	3	74		
	Culex spp.	10	136		
	Culiseta melanura	6	38		
	Psorophora ferox	1	1		
Essex		**120**	**1461**		
	Aedes albopictus	4	7		
	Aedes japonicus	14	24		
	Aedes triseriatus	1	3		
	Aedes vexans	1	4		
	Culex spp.	98	1421		

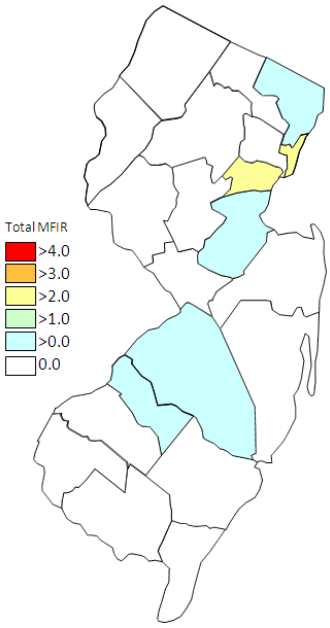
	Psorophora ferox	2	2		
Gloucester		**189**	**6640**		
	Aedes albopictus	7	132		
	Aedes japonicus	5	78		
	Aedes triseriatus	4	45		
	Anopheles punctipennis	11	255		
	Anopheles quadrimaculatus	7	197		
	Culex pipiens	124	5352		
	Culiseta melanura	31	581		
Hudson		**15**	**729**	**2**	**2.743**
	Culex spp.	15	729	2	2.743
Hunterdon		**120**	**5949**		
	Culex spp.	120	5949		
Mercer		**133**	**3161**		
	Aedes albopictus	11	50		
	Aedes canadensis canadensis	1	3		
	Aedes japonicus	14	50		
	Aedes triseriatus	8	18		
	Aedes vexans	1	5		
	Culex pipiens	21	315		
	Culex restuans	68	2279		
	Culex salinarius	1	2		
	Culex spp.	8	439		
Middlesex		**103**	**5678**	**3**	**0.528**
	Aedes triseriatus	2	14		
	Culex spp.	101	5664	3	0.530
Monmouth		**146**	**2474**		
	Aedes albopictus	12	39		
	Aedes canadensis canadensis	13	268		
	Aedes cantator	3	43		
	Aedes japonicus	19	83		
	Aedes sollicitans	1	1		
	Aedes triseriatus	8	32		
	Aedes trivitattus	3	4		
	Aedes vexans	5	10		
	Anopheles punctipennis	4	5		
	Anopheles quadrimaculatus	1	1		
	Coquillettidia perturbans	2	2		
	Culex erraticus	2	6		
	Culex restuans	1	1		
	Culex salinarius	1	1		
	Culex spp.	61	1916		
	Culiseta melanura	8	60		
	Culiseta morsitans	1	1		
	Psorophora columbiae	1	1		
Morris		**80**	**3568**		
	Aedes albopictus	1	39		
	Coquillettidia perturbans	4	200		

	Culex spp.	75	3329		
Ocean		**127**	**1643**		
	Aedes albopictus	21	115		
	Aedes canadensis canadensis	3	96		
	Aedes cantator	3	135		
	Aedes japonicus	16	63		
	Aedes sticticus	2	6		
	Aedes triseriatus	4	18		
	Aedes vexans	6	23		
	Coquillettidia perturbans	10	46		
	Culex erraticus	2	3		
	Culex salinarius	1	2		
	Culex spp.	37	1090		
	Culiseta melanura	21	44		
	Psorophora ferox	1	2		
Passaic		**36**	**1160**		
	Aedes albopictus	1	1		
	Aedes japonicus	10	120		
	Aedes triseriatus	2	5		
	Aedes vexans	1	3		
	Culex spp.	22	1031		
Salem		**97**	**1175**		
	Aedes albopictus	4	12		
	Aedes japonicus	11	29		
	Aedes triseriatus	10	24		
	Anopheles punctipennis	3	7		
	Coquillettidia perturbans	16	244		
	Culex erraticus	1	1		
	Culex pipiens	2	4		
	Culex restuans	1	2		
	Culex spp.	37	589		
	Culiseta melanura	12	263		
Somerset		**105**	**2589**		
	Aedes canadensis canadensis	1	3		
	Aedes japonicus	9	88		
	Aedes triseriatus	3	9		
	Anopheles punctipennis	1	2		
	Culex spp.	91	2487		
Sussex		**39**	**1533**		
	Culex spp.	39	1533		
Union		**30**	**1421**	**3**	**2.111**
	Aedes albopictus	1	12		
	Aedes japonicus	2	14		
	Culex spp.	27	1395	3	2.151
Warren		**124**	**6388**		
	Aedes albopictus	1	17		
	Aedes japonicus	2	31		
	Culex spp.	121	6340		

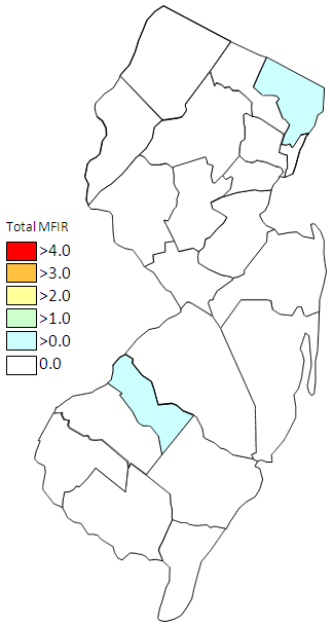
Grand Total		**1987**	**62504**	**16**	**0.256**



Cumulative WNV activity in 2013.



WNV activity to 22 July 2014.



WNV activity last week, 2014.

Saint Louis Encephalitis (SLE) to 22 July 2014.

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 been detected positive for SLE in 2014.

County	Species	Pools	Mosquitoes	Positives	MFIR
Burlington		**55**	**1993**		
	Aedes japonicus	5	93		
	Culex spp.	50	1900		
Grand Total		**55**	**1993**		

La Crosse Encephalitis (LAC) through 22 July 2014.

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 have been detected positive for LAC in 2014.

County	Species	Pools	Mosquitoes	Positives	MFIR

Burlington		**2**	**28**		
	Aedes triseriatus	2	28		
Cape May		**5**	**29**		
	Aedes triseriatus	5	29		
Salem		**3**	**5**		
	Aedes triseriatus	3	5		
Grand Total		**10**	**63**		