VECTOR SURVEILLANCE IN NEW JERSEY

EEE, WNV, SLE and LAC

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CDC WEEK 28: 6 July to 12 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**	0.30	0.20	3 (4)	2 (3)		
Green Bank (Burlington Co.)/25	**Coastal**	2.78	0.16	48 (52)	6 (7)		
Corbin City (Atlantic Co.)/25	**Coastal**	0.72	0.28	117 (124)	5		
Dennisville (Cape May Co.)/50	**Coastal**	4.14	0.00	83	5		
Winslow (Camden Co.)/40	**Inland**	2.34	0.92	567	14		
Centerton (Salem Co.)/48	**Inland**	2.34	0.12	219	8		
Turkey Swamp (Monmouth Co.)/50	**Inland**	0.80	0.42	37 (58)	6 (7)		
Glassboro (Gloucester Co.)/49	**Inland**	0.81	0.84	230	7		

*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, 1304 *Cs. melanura* from 53 pools have been tested for EEE. No positive pools have been detected. Three additional pools containing 26 *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	2086 (39)		
Cape May	RB	80 (4)		
Cumberland	RB	17 (2)		
Gloucester	RB	108 (17)		
Monmouth	Other	2 (1)		
Ocean	CO_2, RB	18 (5)		
Salem	CO_2	5 (2)		
TOTAL		**2316 (70)**		

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	8	109		
Anopheles quadrimaculatus	7	194		
Coquillettidia perturbans	13	293		
Culex erraticus	1	2		
Culex restuans	1	1		
Culex salinarius	3	29		
Culiseta morsitans	1	1		
State Total	**40**	**736**		

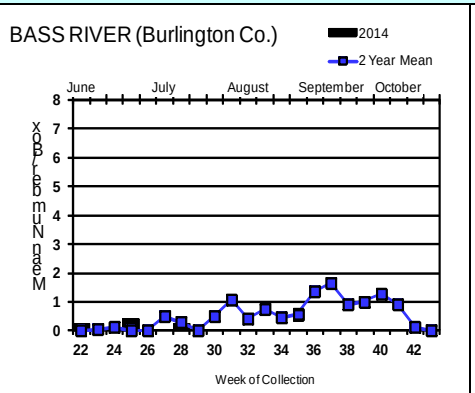
Additional Species: Counties submit additional pools of species other than *Cs. melanura* for EEE virus testing. Currently, no detection of EEE in other species has occurred.

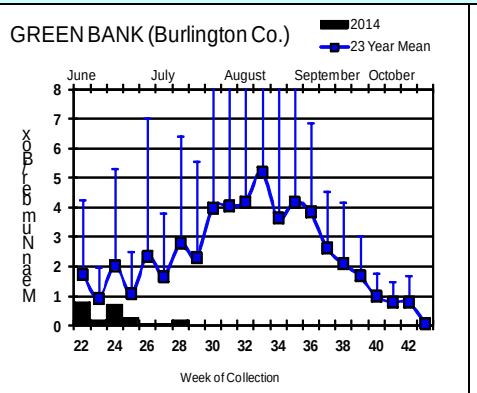
Horses and Humans: Currently there is no reported horse or human cases

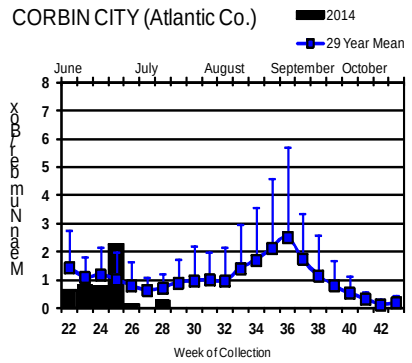
Horses and Vaccinations: The fate of unvaccinated equids reinforces the necessity of maintaining a vaccination schedule for arboviruses. For vaccination schedules recommended by the American Association of Equine Practices, see: http://www.aaep.org/vaccination_guidelines.htm

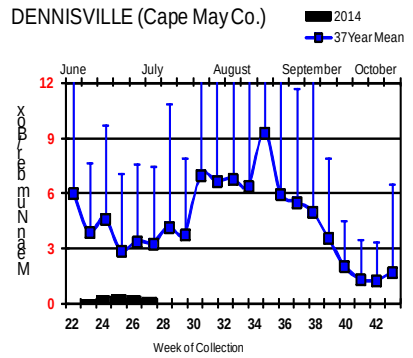
Culiseta melanura Population Graphs

Coastal

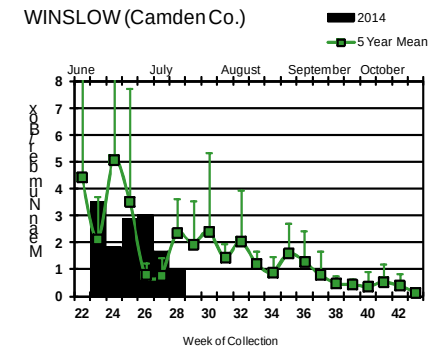


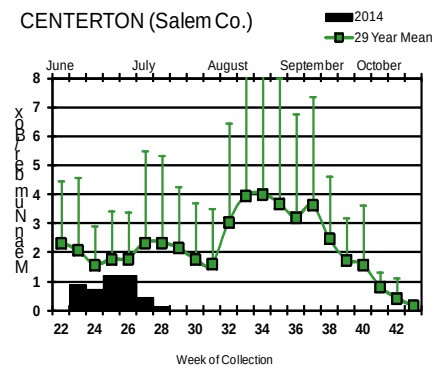


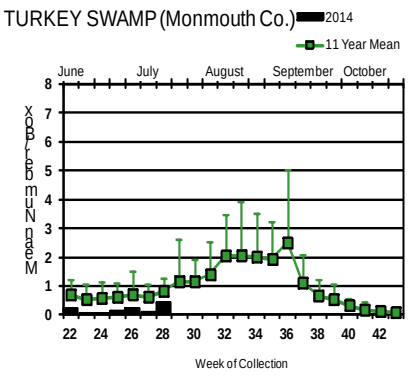


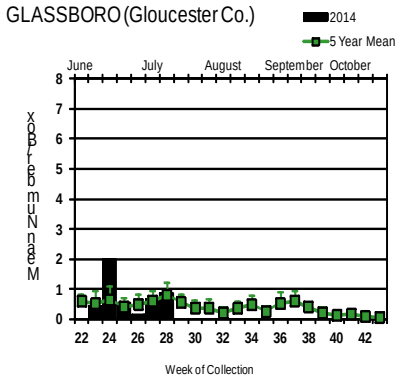


Inland









Populations at Winslow and Centerton appear to be decreasing over the past few weeks while other sites are fluctuating around or below historical values. Currently, there is no EEE activity in New Jersey, although detection in mosquitoes has occurred in states both to the south (Virginia) and to the north (Vermont), 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: FL (21) GA(1)
- mosquito pools: GA(1) VA(1) VT(1)
- sentinel: FL(77)
- 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	392/537	340/520	3/9		3/9
Colorado		5/12			
Connecticut					0
Delaware					
DC					
Florida			5/6		
Georgia					
Hawaii					
Idaho		2/7			
Illinois	2	32/40			
Indiana		2/5			
Iowa					1
Kansas		0			0
Kentucky					
Louisiana		23	1		
Maine					
Maryland					
Mass.		1		0	0
Michigan		1			
Minnesota		2			
Mississippi		0		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	1/3			
New Mexico					
New York		1/2			
North Carolina					
North Dakota	0	1		0	0
Ohio					
Oklahoma					
Oregon	0	0	0	0	0
Pennsylvania		22/41			
Rhode Island		0			
South Carolina					
South Dakota		2			1/6
Tennessee	0	4/9		0	1
Texas	5/14	96/156		0	1
Utah	1				
Vermont					
Virginia					
Washington	0	2		0	0
West Virginia					
Wisconsin	6/7	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 14 July 2014

Species	Pools	Mosquitoes	Positives	MFIR
Aedes albopictus	61	391		
Aedes canadensis canadensis	22	472		
Aedes cantator	8	183		
Aedes japonicus	109	568		
Aedes sollicitans	1	1		
Aedes sticticus	3	7		
Aedes taeniorhynchus	2	6		
Aedes triseriatus	33	138		
Aedes trivittatus	3	4		
Aedes vexans	17	82		
Anopheles bradleyi	1	7		
Anopheles punctipennis	13	117		
Anopheles quadrimaculatus	13	379		
Coquillettidia perturbans	27	365		
Culex erraticus	4	6		
Culex pipiens	178	5538		
Culex restuans	83	2370		
Culex salinarius	6	34		
Culex spp.	840	35255	3	0.085
Culiseta melanura	141	3653		
Culiseta morsitans	1	1		
Psorophora columbiae	1	1		
Psorophora ferox	3	7		
State Total	**1570**	**49585**	**3**	**0.061**

Remarks: To date, 1570 pools of 49,585 mosquitoes from 22 species have been tested, with 3 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.

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, 42 birds have been tested. Species includes: Fish Crow (*Corvus ossifragus* 1/12), Blue Jay (*Cyanocitta cristata* 0/3), Hawk/Raptor (0/2) and other avian species (0/25). Counties (positives) submitting birds are Atlantic, Bergen, Burlington, Cape May, Essex, Hunterdon, Mercer, Monmouth, Morris, Ocean, Salem, Sussex and Warren.

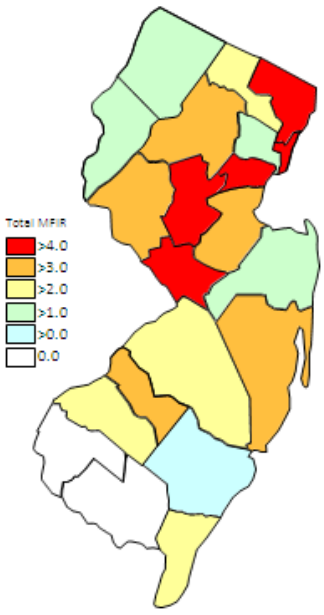
WNV Results by County through 14 July 2014

County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		**38**	**931**		
	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		

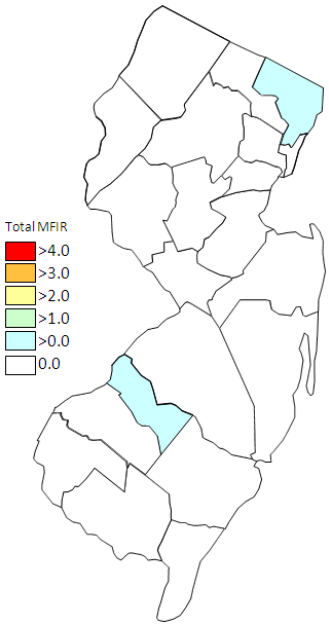
	Anopheles punctipennis	1	1		
	Coquillettidia perturbans	2	17		
	Culex spp.	15	714		
	Culiseta melanura	6	120		
	Psorophora ferox	1	4		
Bergen		**45**	**3375**	**1**	**0.296**
	Culex spp.	45	3375	1	0.296
Burlington		**96**	**3642**		
	Aedes canadensis canadensis	1	75		
	Aedes japonicus	4	52		
	Aedes taeniorhynchus	1	5		
	Anopheles punctipennis	1	1		
	Coquillettidia perturbans	1	64		
	Culex salinarius	2	25		
	Culex spp.	39	1283		
	Culiseta melanura	47	2137		
Camden		**136**	**4464**	**2**	**0.448**
	Aedes albopictus	7	9		
	Aedes japonicus	26	68		
	Culex spp.	89	3820	2	0.524
	Culiseta melanura	14	567		
Cape May		**96**	**1247**		
	Aedes triseriatus	4	24		
	Anopheles bradleyi	1	7		
	Anopheles quadrimaculatus	6	185		
	Culex pipiens	50	569		
	Culex restuans	25	295		
	Culex salinarius	1	4		
	Culiseta melanura	9	163		
Cumberland		**13**	**210**		
	Aedes canadensis canadensis	1	2		
	Aedes japonicus	1	1		
	Aedes vexans	2	20		
	Coquillettidia perturbans	2	59		
	Culex spp.	4	107		
	Culiseta melanura	3	21		
Essex		**100**	**1293**		
	Aedes albopictus	2	5		
	Aedes japonicus	10	16		
	Aedes triseriatus	1	3		
	Aedes vexans	1	4		
	Culex spp.	85	1264		
	Psorophora ferox	1	1		
Gloucester		**157**	**5536**		
	Aedes albopictus	7	132		
	Aedes japonicus	4	61		
	Aedes triseriatus	2	21		
	Anopheles punctipennis	7	108		

	Anopheles quadrimaculatus	6	193		
	Culex pipiens	107	4683		
	Culiseta melanura	24	338		
Hunterdon		**105**	**5199**		
	Culex spp.	105	5199		
Mercer		**113**	**2799**		
	Aedes albopictus	11	50		
	Aedes canadensis canadensis	1	3		
	Aedes japonicus	12	46		
	Aedes triseriatus	6	14		
	Aedes vexans	1	5		
	Culex pipiens	19	282		
	Culex restuans	56	2072		
	Culex salinarius	1	2		
	Culex spp.	6	325		
Middlesex		**67**	**3998**		
	Aedes triseriatus	2	14		
	Culex spp.	65	3984		
Monmouth		**123**	**2165**		
	Aedes albopictus	9	26		
	Aedes canadensis canadensis	12	267		
	Aedes cantator	3	43		
	Aedes japonicus	15	54		
	Aedes sollicitans	1	1		
	Aedes triseriatus	5	25		
	Aedes trivitattus	3	4		
	Aedes vexans	5	10		
	Anopheles punctipennis	2	2		
	Anopheles quadrimaculatus	1	1		
	Coquillettidia perturbans	2	2		
	Culex erraticus	1	2		
	Culex restuans	1	1		
	Culex salinarius	1	1		
	Culex spp.	53	1685		
	Culiseta melanura	7	39		
	Culiseta morsitans	1	1		
	Psorophora columbiae	1	1		
Morris		**60**	**2649**		
	Aedes albopictus	1	39		
	Culex spp.	59	2610		
Ocean		**110**	**1571**		
	Aedes albopictus	17	93		
	Aedes canadensis canadensis	3	96		
	Aedes cantator	3	135		
	Aedes japonicus	12	52		
	Aedes sticticus	2	6		
	Aedes triseriatus	2	11		
	Aedes vexans	5	22		
	Coquillettidia perturbans	9	42		

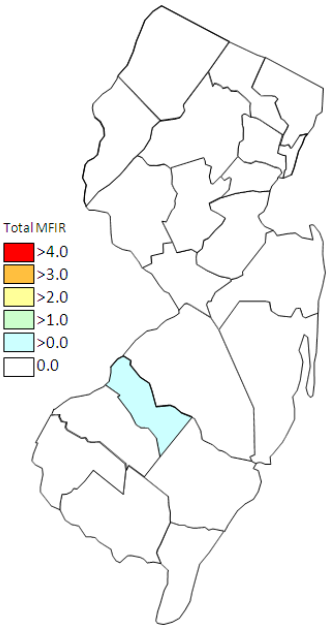
	Culex erraticus	2	3		
	Culex salinarius	1	2		
	Culex spp.	32	1063		
	Culiseta melanura	21	44		
	Psorophora ferox	1	2		
Passaic		**18**	**800**		
	Aedes japonicus	3	70		
	Culex spp.	15	730		
Salem		**77**	**962**		
	Aedes albopictus	4	12		
	Aedes japonicus	10	28		
	Aedes triseriatus	10	24		
	Anopheles punctipennis	2	5		
	Coquillettidia perturbans	11	181		
	Culex erraticus	1	1		
	Culex pipiens	2	4		
	Culex restuans	1	2		
	Culex spp.	26	481		
	Culiseta melanura	10	224		
Somerset		**90**	**2263**		
	Aedes canadensis canadensis	1	3		
	Aedes japonicus	7	62		
	Aedes triseriatus	1	2		
	Culex spp.	81	2196		
Union		**16**	**782**		
	Aedes japonicus	2	14		
	Culex spp.	14	768		
Warren		**110**	**5699**		
	Aedes albopictus	1	17		
	Aedes japonicus	2	31		
	Culex spp.	107	5651		
Grand Total		**1570**	**49585**	**3**	**0.061**



Cumulative WNV activity in 2013.



WNV activity to 14 July 2014.



WNV activity last week, 2014.

Saint Louis Encephalitis (SLE) to 14 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		**40**	**1304**		
	Aedes japonicus	3	42		
	Culex spp.	37	1262		
Grand Total		**40**	**1304**		

La Crosse Encephalitis (LAC) through 14 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
Cape May		**4**	**24**		
	Aedes triseriatus	4	24		
Salem		**3**	**5**		

	Aedes triseriatus	3	5		
Grand Total		**7**	**29**		