

# VECTOR SURVEILLANCE IN NEW JERSEY

## EEE, WNV, SLE and LAC

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 CDC WEEK 26: 22 June to 28 June, 2014

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This New Jersey Agricultural Experiment Station report is supported by Rutgers University, Hatch funds, funding from the NJ State Mosquito Control Commission and with the participation of the Department of Health, Department of Agriculture and of the 21 county mosquito control agencies of New Jersey.

### *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	0.0	0.00	3	2		
Green Bank (Burlington Co.)/25	Coastal	2.35	0.04	46 (47)	4 (5)		
Corbin City (Atlantic Co.)/25	Coastal	0.79	0.16	114 (118)	4 (5)		
Dennisville (Cape May Co.)/50	Coastal	3.36	0.36	68	4		
Winslow (Camden Co.)/39	Inland	0.79	3.02	464	11		
Centerton (Salem Co.)/47	Inland	1.78	1.19	192	6		
Turkey Swamp (Monmouth Co.)/50	Inland	0.70	0.22	32	5		
Glassboro (Gloucester Co.)/50	Inland	0.49	0.16	156	5		

\*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 moderate in most areas (see page 3 population graphs).

**Traditional Resting Box Sites:** To date, 1075 *Cs. melanura* from 41 pools have been tested for EEE. No positive pools have been detected. Two additional pools containing 5 *Cs. melanura* remain to be tested.

Additional <i>Cs. melanura</i> trapped by counties				
*traps with positives indicated in <b>BOLD</b> .				
County	Trap types*	Number collected (pools)	Number of positive pools	MFIR
Burlington	CO2	1454 (23)		
Cape May	RB	58 (2)		
Gloucester	RB	31 (6)		
Monmouth	Other	2 (1)		
Ocean	CO2	12 (2)		
Salem	CO2	2 (1)		
<b>TOTAL</b>		<b>1559 (35)</b>		

**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 <i>Cs. melanura</i>	Pools	Mosquitoes	Positives	MFIR
<i>Aedes canadensis canadensis</i>	2	79		
<i>Aedes taeniorhynchus</i>	1	5		
<i>Anopheles punctipennis</i>	1	18		
<i>Anopheles quadrimaculatus</i>	4	61		
<i>Coquillettidia perturbans</i>	7	148		
<i>Culex erraticus</i>	1	2		
<i>Culex restuans</i>	1	1		
<i>Culex salinarius</i>	1	4		
<i>Culiseta morsitans</i>	1	1		
State Total	<b>19</b>	<b>319</b>		

**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.

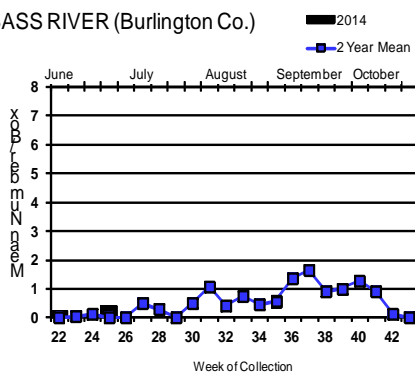
**Horses and Humans:** Currently there is no reported horse or human cases

**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](http://www.aaep.org/vaccination_guidelines.htm)

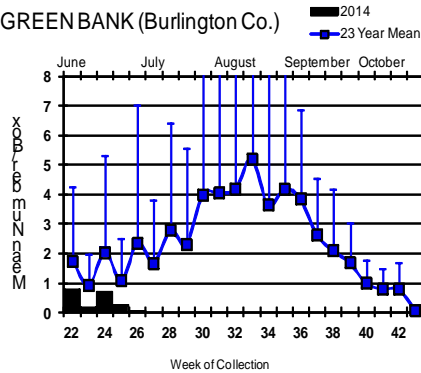
# Culiseta melanura Population Graphs

## Coastal

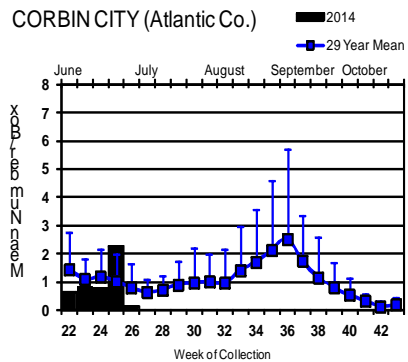
BASS RIVER (Burlington Co.)



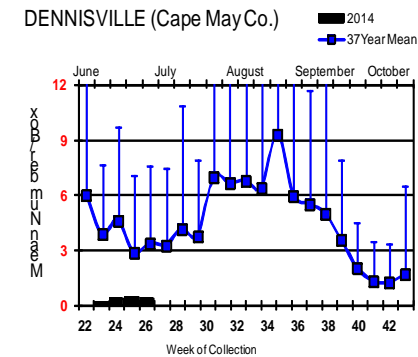
GREEN BANK (Burlington Co.)



CORBIN CITY (Atlantic Co.)

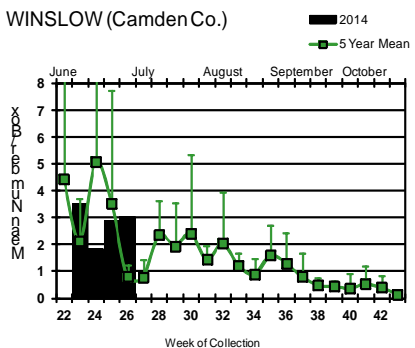


DENNISVILLE (Cape May Co.)

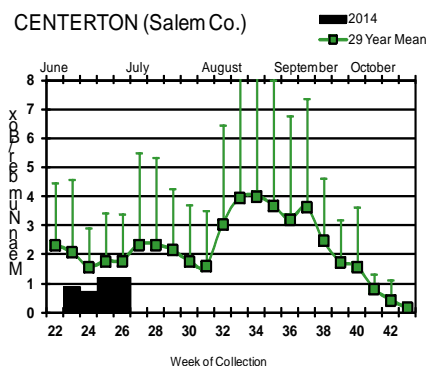


## Inland

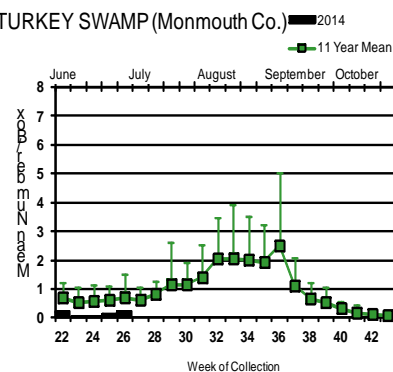
WINSLOW (Camden Co.)



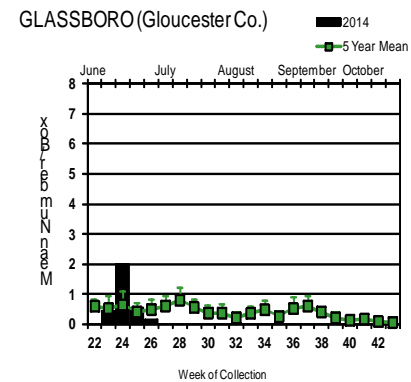
CENTERTON (Salem Co.)




TURKEY SWAMP (Monmouth Co.)



GLASSBORO (Gloucester Co.)



Populations either maintained previous values (most sites) or decreased (Corbin City) from earlier abundance levels. Currently, there is no EEE activity, although detection in mosquitoes has occurred in states to the south (Virginia).

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

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

- equine: FL (11) GA(1)
- mosquito pools: VA(1)
- sentinel: FL(48)
- 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	196/324	123/234	1		1/2
Colorado		5			
Connecticut		0			0
Delaware					
DC					
Florida			5		
Georgia					
Hawaii					
Idaho		1/2			
Illinois	2	11/21			
Indiana		1			
Iowa					1
Kansas					
Kentucky					
Louisiana					
Maine					
Maryland					
Mass.		0		0	0
Michigan		0			
Minnesota					
Mississippi		0		0	2
Missouri		0		0	1

	Birds	Mosquito Pools	Sentinels	Horses	Humans
Montana					
Nebraska	0	0		0	0
Nevada					
New Hampshire					
New Jersey		1			
New Mexico					
New York					
North Carolina					
North Dakota	0	0		0	0
Ohio					
Oklahoma					
Oregon	0	0	0	0	0
Pennsylvania		12/18			
Rhode Island		0			
South Carolina					
South Dakota					1
Tennessee	0	1		0	1
Texas	0	39		0	0
Utah	1				
Vermont					
Virginia					
Washington	0	0		0	0
West Virginia					
Wisconsin	3	0		0	1
Wyoming					

\* 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 30 June 2014

Species	Pools	Mosquitoes	Positives	MFIR
<i>Aedes albopictus</i>	28	136		
<i>Aedes canadensis canadensis</i>	17	392		
<i>Aedes cantator</i>	5	174		
<i>Aedes japonicus</i>	64	319		
<i>Aedes sollicitans</i>	1	1		
<i>Aedes sticticus</i>	2	6		
<i>Aedes taeniorhynchus</i>	1	5		
<i>Aedes triseriatus</i>	12	53		
<i>Aedes trivittatus</i>	1	1		
<i>Aedes vexans</i>	10	52		
<i>Anopheles punctipennis</i>	4	21		
<i>Anopheles quadrimaculatus</i>	7	139		
<i>Coquillettidia perturbans</i>	10	163		
<i>Culex erraticus</i>	3	5		
<i>Culex pipiens</i>	116	3739		
<i>Culex restuans</i>	64	1935		
<i>Culex salinarius</i>	2	6		
<i>Culex spp.</i>	522	21439	1	0.047
<i>Culiseta melanura</i>	91	2660		
<i>Culiseta morsitans</i>	1	1		
<i>Psorophora ferox</i>	2	6		
<b>State Total</b>	<b>963</b>	<b>31253</b>	<b>1</b>	<b>0.032</b>

**Remarks:** To date, 963 pools of 31,265 mosquitoes from 20 species have been tested, with 1 positive pool detected. First positive was detected in a Mixed *Culex* pool collected on 20 May 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. No positive birds have been reported. To date, 32 birds have been tested. Species includes: Fish Crow (*Corvus ossifragus* 0/8), Blue Jay (*Cyanocitta cristata*), Hawk/Raptor (0/2) and other avian species (0/21). Counties (**positives**) submitting birds are Atlantic, Bergen, Burlington, Essex, Mercer, Monmouth, Morris, Ocean, Salem, Sussex and Warren.

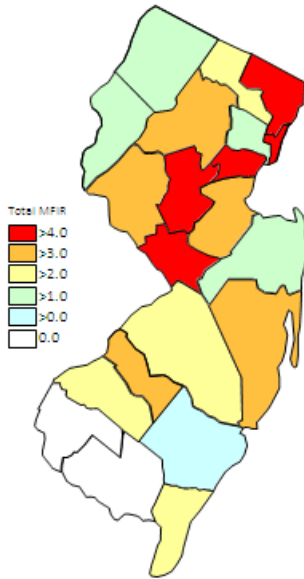
### WNV Results by County through 30 June 2014

County	Species	Pools	Mosquitoes	Positives	MFIR
<b>Atlantic</b>		<b>18</b>	<b>393</b>		
	<i>Aedes canadensis canadensis</i>	2	20		
	<i>Aedes cantator</i>	1	3		
	<i>Aedes vexans</i>	1	17		
	<i>Anopheles punctipennis</i>	1	1		
	<i>Coquillettidia perturbans</i>	1	13		
	<i>Culex spp.</i>	6	218		
	<i>Culiseta melanura</i>	5	117		
	<i>Psorophora ferox</i>	1	4		
<b>Bergen</b>		<b>15</b>	<b>1125</b>		

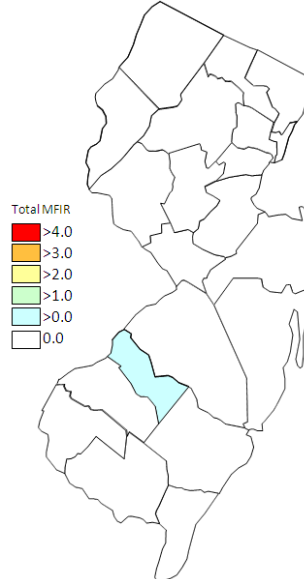
<i>Culex</i> spp.	15	1125		
<b>Burlington</b>	<b>58</b>	<b>2448</b>		
<i>Aedes canadensis canadensis</i>	1	75		
<i>Aedes japonicus</i>	3	34		
<i>Aedes taeniorhynchus</i>	1	5		
<i>Anopheles punctipennis</i>	1	1		
<i>Coquillettidia perturbans</i>	1	64		
<i>Culex</i> spp.	22	766		
<i>Culiseta melanura</i>	29	1503		
<b>Camden</b>	<b>101</b>	<b>3444</b>	<b>1</b>	<b>0.290</b>
<i>Aedes albopictus</i>	4	4		
<i>Aedes japonicus</i>	17	37		
<i>Culex</i> spp.	69	2939	1	0.340
<i>Culiseta melanura</i>	11	464		
<b>Cape May</b>	<b>62</b>	<b>809</b>		
<i>Aedes triseriatus</i>	2	11		
<i>Anopheles quadrimaculatus</i>	3	78		
<i>Culex pipiens</i>	28	317		
<i>Culex restuans</i>	22	273		
<i>Culex salinarius</i>	1	4		
<i>Culiseta melanura</i>	6	126		
<b>Essex</b>	<b>60</b>	<b>980</b>		
<i>Aedes albopictus</i>	1	2		
<i>Aedes japonicus</i>	3	4		
<i>Culex</i> spp.	56	974		
<b>Gloucester</b>	<b>95</b>	<b>3554</b>		
<i>Aedes albopictus</i>	3	50		
<i>Aedes japonicus</i>	3	46		
<i>Aedes triseriatus</i>	1	12		
<i>Anopheles punctipennis</i>	1	18		
<i>Anopheles quadrimaculatus</i>	3	60		
<i>Culex pipiens</i>	73	3181		
<i>Culiseta melanura</i>	11	187		
<b>Hunterdon</b>	<b>75</b>	<b>3713</b>		
<i>Culex</i> spp.	75	3713		
<b>Mercer</b>	<b>72</b>	<b>1991</b>		
<i>Aedes albopictus</i>	5	13		
<i>Aedes canadensis canadensis</i>	1	3		
<i>Aedes japonicus</i>	8	38		
<i>Aedes triseriatus</i>	2	4		
<i>Aedes vexans</i>	1	5		
<i>Culex pipiens</i>	14	239		
<i>Culex restuans</i>	40	1659		
<i>Culex</i> spp.	1	30		
<b>Middlesex</b>	<b>44</b>	<b>2688</b>		
<i>Aedes triseriatus</i>	2	14		
<i>Culex</i> spp.	42	2674		

<b>Monmouth</b>	<b>80</b>	<b>1589</b>		
<i>Aedes albopictus</i>	3	7		
<i>Aedes canadensis canadensis</i>	9	195		
<i>Aedes cantator</i>	1	36		
<i>Aedes japonicus</i>	9	16		
<i>Aedes sollicitans</i>	1	1		
<i>Aedes triseriatus</i>	1	1		
<i>Aedes trivitattus</i>	1	1		
<i>Aedes vexans</i>	3	8		
<i>Anopheles punctipennis</i>	1	1		
<i>Anopheles quadrimaculatus</i>	1	1		
<i>Coquillettidia perturbans</i>	1	1		
<i>Culex erraticus</i>	1	2		
<i>Culex restuans</i>	1	1		
<i>Culex</i> spp.	40	1283		
<i>Culiseta melanura</i>	6	34		
<i>Culiseta morsitans</i>	1	1		
<b>Morris</b>	<b>20</b>	<b>978</b>		
<i>Culex</i> spp.	20	978		
<b>Ocean</b>	<b>76</b>	<b>1262</b>		
<i>Aedes albopictus</i>	10	42		
<i>Aedes canadensis canadensis</i>	3	96		
<i>Aedes cantator</i>	3	135		
<i>Aedes japonicus</i>	7	29		
<i>Aedes sticticus</i>	2	6		
<i>Aedes triseriatus</i>	1	1		
<i>Aedes vexans</i>	5	22		
<i>Coquillettidia perturbans</i>	1	2		
<i>Culex erraticus</i>	2	3		
<i>Culex salinarius</i>	1	2		
<i>Culex</i> spp.	24	887		
<i>Culiseta melanura</i>	16	35		
<i>Psorophora ferox</i>	1	2		
<b>Passaic</b>	<b>18</b>	<b>800</b>		
<i>Aedes japonicus</i>	3	70		
<i>Culex</i> spp.	15	730		
<b>Salem</b>	<b>39</b>	<b>552</b>		
<i>Aedes albopictus</i>	1	1		
<i>Aedes japonicus</i>	6	14		
<i>Aedes triseriatus</i>	3	10		
<i>Coquillettidia perturbans</i>	6	83		
<i>Culex pipiens</i>	1	2		
<i>Culex restuans</i>	1	2		
<i>Culex</i> spp.	14	246		
<i>Culiseta melanura</i>	7	194		
<b>Somerset</b>	<b>60</b>	<b>1522</b>		
<i>Aedes canadensis canadensis</i>	1	3		
<i>Aedes japonicus</i>	4	29		
<i>Culex</i> spp.	55	1490		

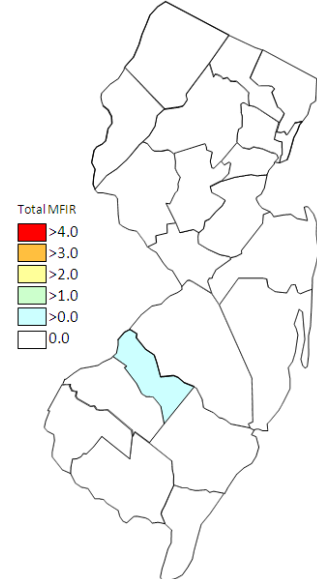
<b>Warren</b>	<b>70</b>	<b>3405</b>		
<i>Aedes albopictus</i>	1	17		
<i>Aedes japonicus</i>	1	2		
<i>Culex</i> spp.	68	3386		
<b>Grand Total</b>	<b>963</b>	<b>31253</b>	<b>1</b>	<b>0.032</b>



Cumulative WNV activity in 2013.



WNV activity to 30 June 2014.



WNV activity last week, 2014.

### Saint Louis Encephalitis (SLE) to 30 June 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
<b>Burlington</b>		<b>22</b>	<b>769</b>		
	<i>Aedes japonicus</i>	2	24		
	<i>Culex</i> spp.	20	745		
<b>Grand Total</b>		<b>22</b>	<b>769</b>		

### La Crosse Encephalitis (LAC) through 30 June 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.

<b>County</b>	<b>Species</b>	<b>Pools</b>	<b>Mosquitoes</b>	<b>Positives</b>	<b>MFIR</b>
<b>Cape May</b>		<b>2</b>	<b>11</b>		
	<i>Aedes triseriatus</i>	2	11		
<b>Salem</b>		<b>1</b>	<b>1</b>		
	<i>Aedes triseriatus</i>	1	1		
<b>Grand Total</b>		<b>3</b>	<b>12</b>		