

VECTOR SURVEILLANCE IN NEW JERSEY

EEE, WNV, SLE, LAC, DENV and CHIK

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CDC WEEK 23: 7 June to 13 June, 2015

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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	0.03	0.40	(3)	(2)		
Green Bank (Burlington Co.)/25	Coastal	0.88	0.16	(18)	(2)		
Corbin City (Atlantic Co.)/25	Coastal	1.09	0.92	(23)	(1)		
Dennisville (Cape May Co.)/50	Coastal	3.77	0.64	73	2		
Winslow (Camden Co.)/50	Inland	2.40	1.46	254	6		
Centerton (Salem Co.)/50	Inland	2.03	0.52	181	5		
Turkey Swamp (Monmouth Co.)/49	Inland	0.48	0.20	(37)	(1)		
Glassboro (Gloucester Co.)/50	Inland	0.50	0.24	56	2		

*Current week (in parentheses) results pending.

Remarks: Resting box collections and testing of arboviruses has commenced in New Jersey. Currently, there is no detection of EEE in the samples tested to date.

Traditional Resting Box Sites: No EEE positive *Cs. melanura* pools were detected at the state resting box sites since the season began. To date, 564 *Cs. melanura* from 15 pools have been tested for EEE at 4 of the traditional resting box sites. 6 additional pools containing 81 *Cs. melanura* remain to be tested from the other 4 traditional resting box sites.

Additional <i>Cs. melanura</i> trapped by counties				
*traps with positives indicated in BOLD .				
County	Trap types*	Number collected (pools)	Number of positive pools	MFIR
Cape May	RB	6 (1)		
TOTAL		6 (1)		

Additional *Cs. melanura*: Additional *Cs. melanura* pools tested were not positive.

Species other than <i>Cs. melanura</i>	Pools	Mosquitoes	Positives	MFIR
<i>Aedes cantator</i>	1	7		
<i>Coquillettidia perturbans</i>	5	154		
<i>Culex pipiens</i>	13	112		
<i>Culex salinarius</i>	1	2		
<i>Culex</i> sp.	1	2		
State Total	21	277		

Additional Species: Five (+) additional species were tested for EEE and no positives were detected.

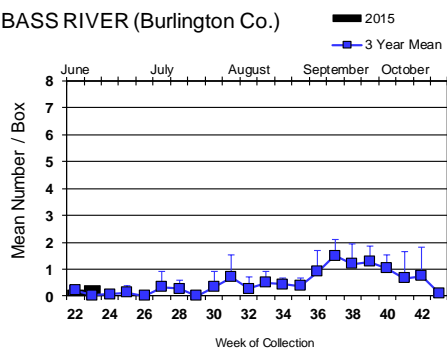
Horses and Humans: No horses or humans have been reported with EEE.

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

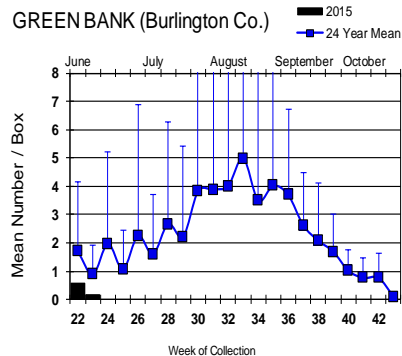
Culiseta melanura Population Graphs

Coastal

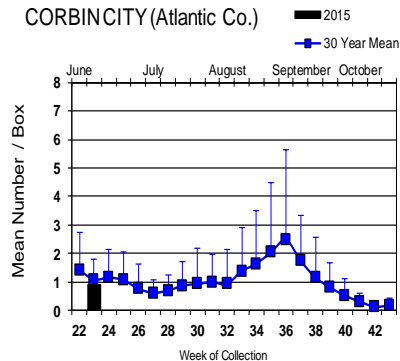
BASS RIVER (Burlington Co.)



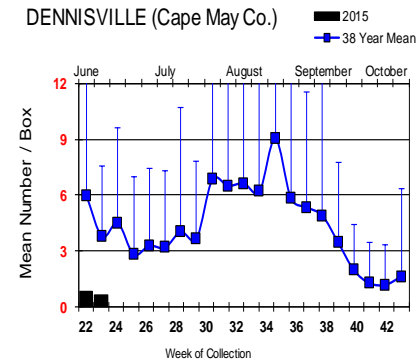
GREEN BANK (Burlington Co.)



CORBINCITY (Atlantic Co.)

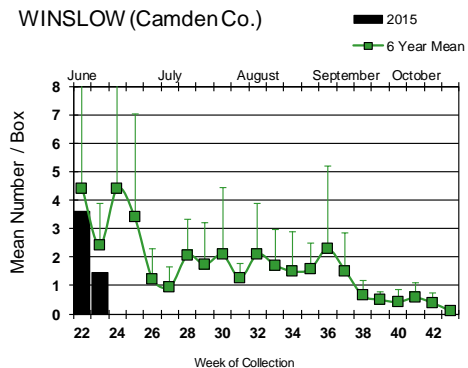


DENNISVILLE (Cape May Co.)

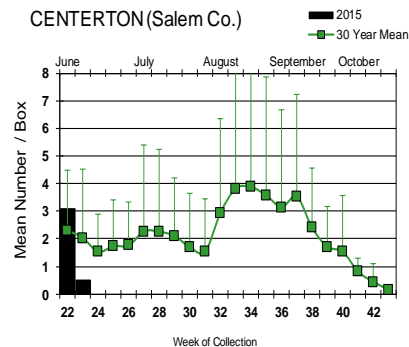


Inland

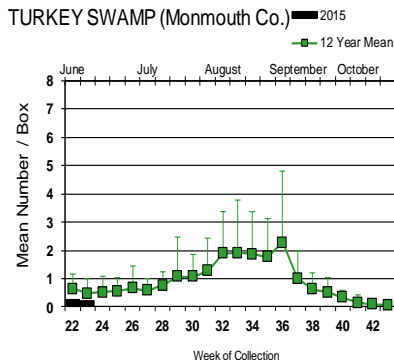
WINSLOW (Camden Co.)



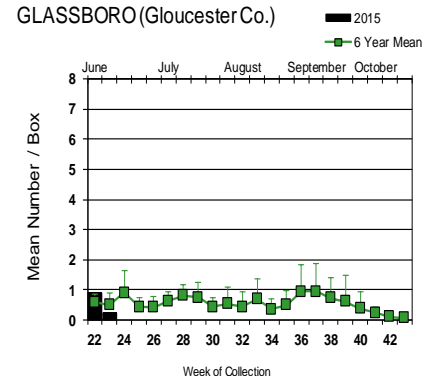
CENTERTON (Salem Co.)




TURKEY SWAMP (Monmouth Co.)



GLASSBORO (Gloucester Co.)



Cs. melanura has been on the wing for several weeks and populations at the traditional resting box sites are at or below historical averages. The numbers also reflect light trap activity.

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

EEE in US (2015 cumulative cases): (Black or Red = previous + new reported cases occurring)

- equine: FL(6)
- mosquito pools:
- sentinel: FL(22)
- human:

West Nile Virus Positive Organisms in US, 2015

West Nile in US (2015 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
Arkansas					0
California	61	84	1		0
Colorado		0			0
Connecticut		0			0
Delaware					0
DC					0
Florida			7		
Georgia	0	0		0	0
Hawaii					
Idaho	0	0		0	0
Illinois	0	1		0	0
Indiana	0	0			0
Iowa					
Kansas		0			0
Kentucky				0	
Louisiana					
Maine					
Maryland					
Mass.		0		0	0
Michigan	3				
Minnesota					
Mississippi		0		0	0
Missouri		0		0	0

	Birds	Mosquito Pools	Sentinels	Horses	Humans
Montana					
Nebraska	0	0		0	0
Nevada					
New Hampshire					
New Jersey	0	0		0	0
New Mexico					1
New York					
North Carolina					
North Dakota	0	0		0	0
Ohio		1			
Oklahoma					2
Oregon	0	0	0	0	0
Pennsylvania	1	2			
Rhode Island					
South Carolina					
South Dakota					
Tennessee		6			
Texas		7			1
Utah					
Vermont					
Virginia					
Washington	0	0		0	0
West Virginia					
Wisconsin	0	0		0	0
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 15 June 2015

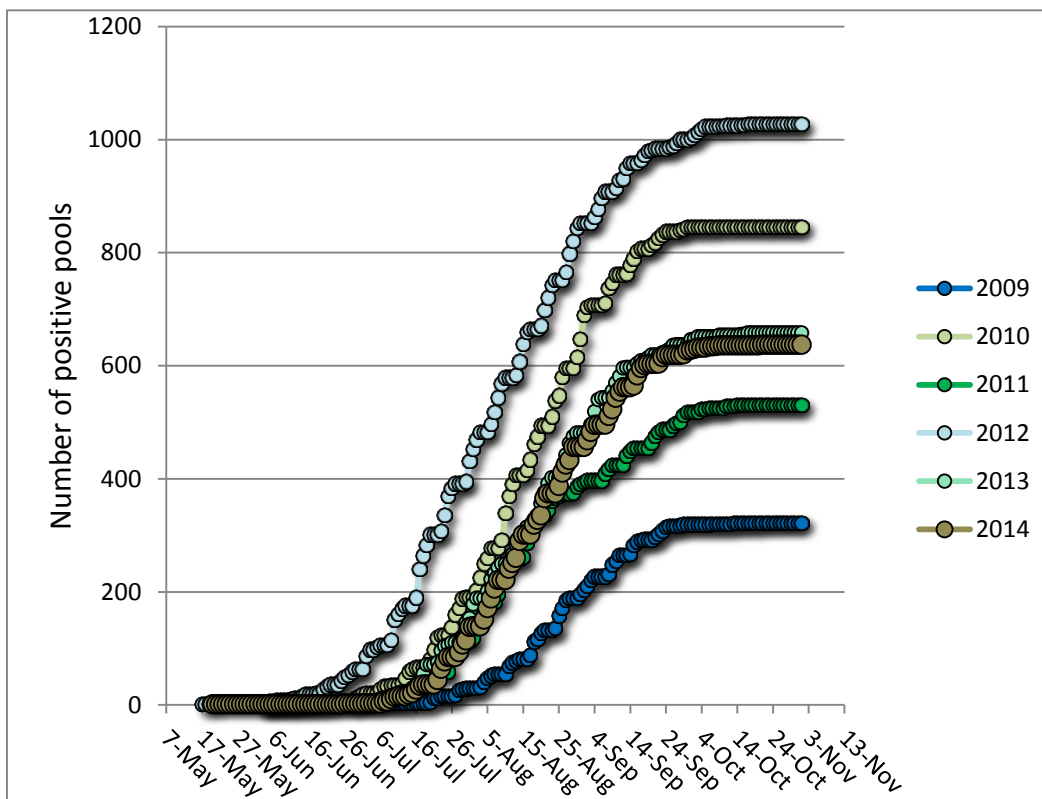
Species	Pools	Mosquitoes	Positives	MFIR
<i>Aedes canadensis canadensis</i>	2	2		
<i>Aedes cantator</i>	1	7		
<i>Aedes japonicus</i>	12	42		
<i>Anopheles quadrimaculatus</i>	3	74		
<i>Coquillettidia perturbans</i>	5	154		
<i>Culex pipiens</i>	13	112		
<i>Culex restuans</i>	20	92		
<i>Culex salinarius</i>	1	2		
<i>Culex</i> sp.	1	2		
<i>Culiseta melanura</i>	16	570		
Grand Total	74	1057		

Remarks: To date, 74 pools of 1,057 mosquitoes from 9 species have been tested, with no positive pools detected..

Humans, Horses and Wild Birds: No human cases of WNV have occurred. For further information, see <http://www.state.nj.us/health/cd/westnile/techinfo.shtml>.

No horse cases have been detected.

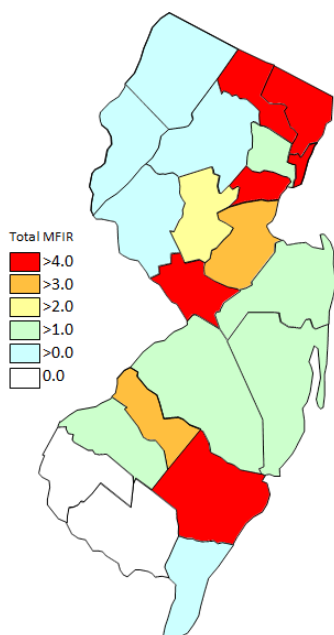
Bird testing began in mid-April. No positive birds have been reported. To date, 9 birds have been tested. Species includes: American Crow (*Corvus brachyrhynchos* 0/1) Fish Crow (*Corvus ossifragus* 0/3), Blue Jay (*Cyanocitta cristata* 0/1), Hawk/Raptor (0/1) and other avian species (0/1). Counties (positives) submitting birds are Atlantic, Essex, Hunterdon, Morris, Ocean, Salem and Warren.



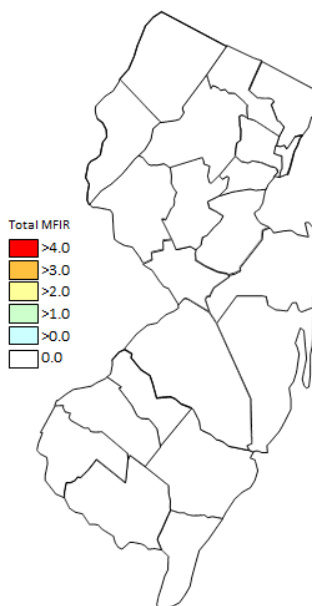
Graph above shows cumulative positive WNV pools over the season from the six preceding years, 2009-2014.

WNV Results by County through 30 May 2015

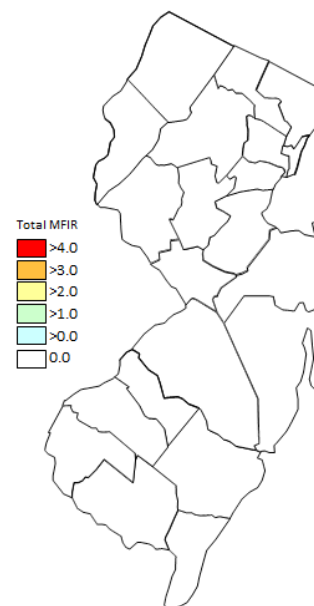
County	Species	Pools	Mosquitoes	Positives	MFIR
Camden		6	254		
	<i>Culiseta melanura</i>	6	254		
Cape May		61	566		
	<i>Aedes canadensis canadensis</i>	2	2		
	<i>Aedes cantator</i>	1	7		
	<i>Aedes japonicus</i>	12	42		
	<i>Anopheles quadrimaculatus</i>	3	74		
	<i>Coquillettidia perturbans</i>	5	154		
	<i>Culex pipiens</i>	13	112		
	<i>Culex restuans</i>	20	92		
	<i>Culex salinarius</i>	1	2		
	<i>Culex</i> spp.	1	2		
	<i>Culiseta melanura</i>	3	79		
Gloucester		2	56		
	<i>Culiseta melanura</i>	2	56		
Salem		5	181		
	<i>Culiseta melanura</i>	5	181		
Grand Total		74	1057		



Cumulative WNV activity in 2014.



WNV activity to 15 June 2015.



WNV activity last week, 2015.

Saint Louis Encephalitis (SLE) 2015.

New Jersey will be testing for SLE this year only when adjacent states show human activity. 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.

County	Species	Pools	Mosquitoes	Positives	MFIR
Grand Total					

La Crosse Encephalitis (LAC) 2015.

New Jersey will be testing for LAC this year only when adjacent states show human activity. 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).

County	Species	Pools	Mosquitoes	Positives	MFIR
Grand Total					

Dengue (DENV) to 15 June 2015.

New Jersey will be selectively testing for DENV (including serotypes) this year. Dengue has not had a history of local transmission here in New Jersey, but each year, travelers can bring virus back from areas in the world with virus activity. This is significant as humans are NOT dead-end hosts and thus there is the potential for local transmission (i.e., New Jersey mosquitoes biting a sick person and then biting and transmitting the disease to someone else) to be established. DENV is a flavivirus but unlike WNV, *Aedes* mosquitoes are predominant vectors. In New Jersey, *Aedes albopictus* is a candidate for local transmission. There are 4 serotypes tested for Dengue. There are currently 40 imported human cases in New Jersey, no local transmission.

Note Same pools of *Ae. albopictus* are tested for the four serotypes of Dengue as well as Chikungunya.

No pools have been tested for DENV in 2015.

County	Species	DENV1		DENV2		DENV3		DENV4		Positives	MFIR
		Pool	Mos.	Pool	Mos.	Pool	Mos.	Pool	Mos.		
Grand Total											

Chikungunya (CHIK) to 15 June 2015.

New Jersey will be selectively testing for CHIK this year. Chikungunya is similar in symptoms to Dengue, a "breakbone" fever and has a low mortality rate. But this virus has had recent worldwide activity, and in the past year has come to the Western Hemisphere. As with Dengue, transmission can occur when a mosquito bites an

infected human, then bites an uninfected human who subsequently becomes ill. CHIK is an alphavirus with *Aedes* mosquitoes as potential vectors. In New Jersey, *Aedes albopictus* is the mosquito of interest.

No pools have been tested for CHIK in 2015. Currently, there are 9 imported human cases reported in New Jersey.

County	Species	Pools	Mosquitoes	Positives	MFIR
Grand Total					