VECTOR SURVEILLANCE IN NEW JERSEY

EEE, WNV, SLE and LAC

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CDC WEEK 23: Beginning May to 7 June, 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**	0.10	0.00	1	1		
Green Bank (Burlington Co.)/25	**Coastal**	0.91	0.16	23	1		
Corbin City (Atlantic Co.)/25	**Coastal**	1.10	0.64*	16 (37)	1 (2)		
Dennisville (Cape May Co.)/50	**Coastal**	3.87	0.22	11	1		
Winslow (Camden Co.)/50	**Inland**	2.13	3.50	140	3		
Centerton (Salem Co.)/50	**Inland**	2.07	0.86	43	1		
Turkey Swamp (Monmouth Co.)/44	**Inland**	0.52	0.04	14	1		
Glassboro (Gloucester Co.)/50	**Inland**	0.52	0.42	21	1		

*Current week (in parentheses) results pending.

Remarks: The resting boxes at the traditional sites have been placed out in the beginning of May to condition and collections began the last week of May. Currently, sites are active with mosquitoes using the resting boxes (see population graphs page 3).

Traditional Resting Box Sites: To date, 263 *Cs. melanura* form 10 pools have been tested for EEE. No positive pools have been detected.

Additional *Cs. melanura* trapped by counties *traps with positives indicated in **BOLD.**				
County	**Trap types***	**Number collected (pools)**	**Number of positive pools**	**MFIR**
TOTAL				

Additional *Cs. melanura*: Counties submit additional pools of *Cs. melanura* caught in other trap types as well as resting boxes. These results will be reported when available.

Species other than *Cs. melanura*	**Pools**	**Mosquitoes**	**Positives**	**MFIR**
Aedes canadensis canadensis	1	4		
Culex erraticus	1	2		
Culex restuans	1	1		
State Total	**3**	**7**		

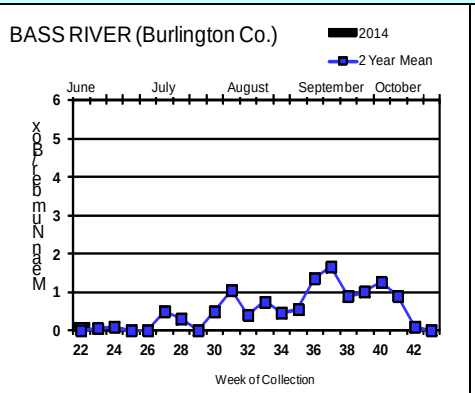
Additional Species: Counties submit additional pools of species other than *Cs. melanura* for EEE virus testing. Currently, no detection of EEE in other species has occurred.

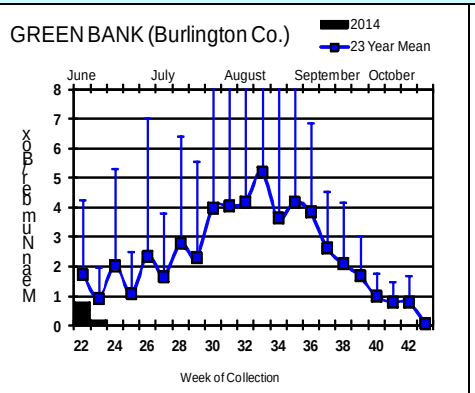
Horses and Humans: Currently there is no reported horse or human cases

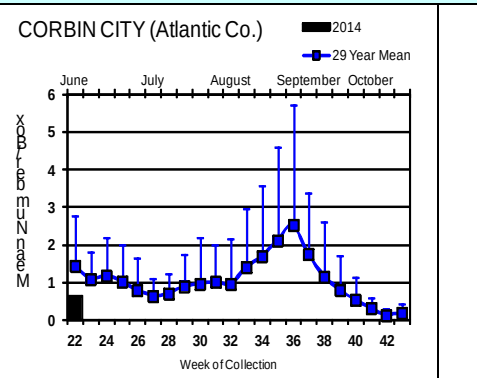
Horses and Vaccinations: The fate of unvaccinated equids reinforces the necessity of maintaining a vaccination schedule for arboviruses. For vaccination schedules recommended by the American Association of Equine Practices, see: http://www.aaep.org/vaccination_guidelines.htm

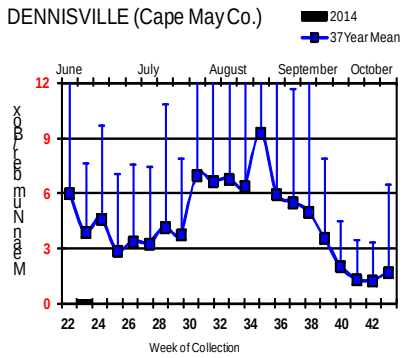
Culiseta melanura Population Graphs

Coastal

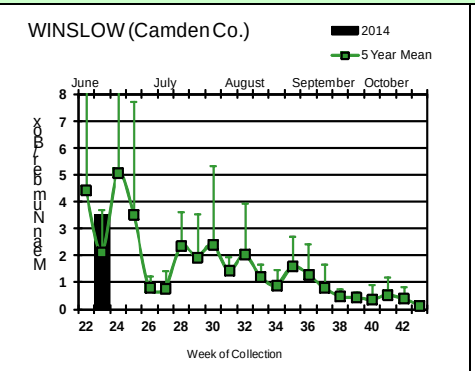


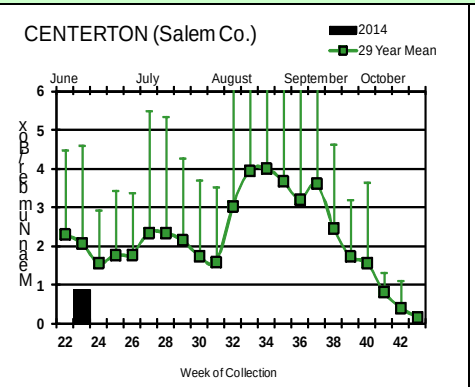


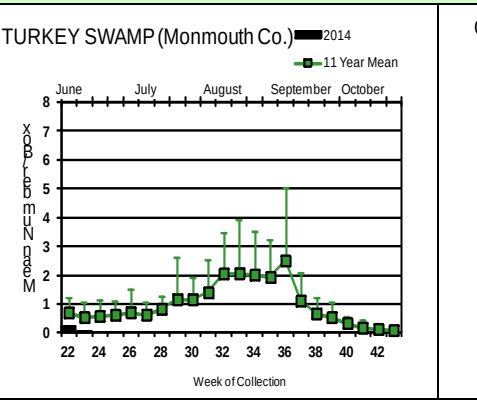


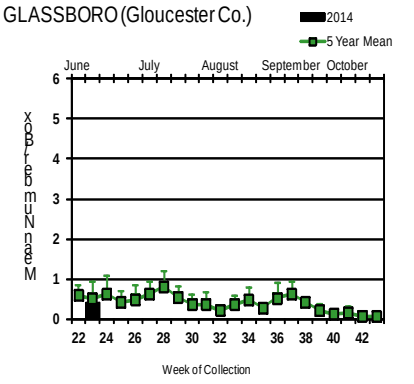


Inland









The traditional resting box sites monitoring indicate *Cs. melanura* activity at all sites. Activity is mostly reflective of what is happening in the NJ light trap surveillance of adult mosquitoes (http://vectorbio.rutgers.edu/reports/mosquito/) with abundance around historical levels, within standard error.

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

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

- equine: 7(FL)
- mosquito pools:
- sentinel: 21(FL)
- 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					
Alaska					
Arizona	1	1			
Arkansas					
California	65/74	23/37	1		
Colorado					
Connecticut					
Delaware					
DC					
Florida			4		
Georgia					
Hawaii					
Idaho					
Illinois	1	1/5			
Indiana					
Iowa					
Kansas					
Kentucky					
Louisiana					
Maine					
Maryland					
Mass.					
Michigan					
Minnesota					
Mississippi					2
Missouri					

	Birds	Mosquito Pools	Sentinels	Horses	Humans
Montana					
Nebraska					
Nevada					
New Hampshire					
New Jersey		1			
New Mexico					
New York					
North Carolina					
North Dakota					
Ohio					
Oklahoma					
Oregon					
Pennsylvania		5			
Rhode Island					
South Carolina					
South Dakota					
Tennessee		1			
Texas					
Utah					
Vermont					
Virginia					
Washington					
West Virginia					
Wisconsin	2				
Wyoming					

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

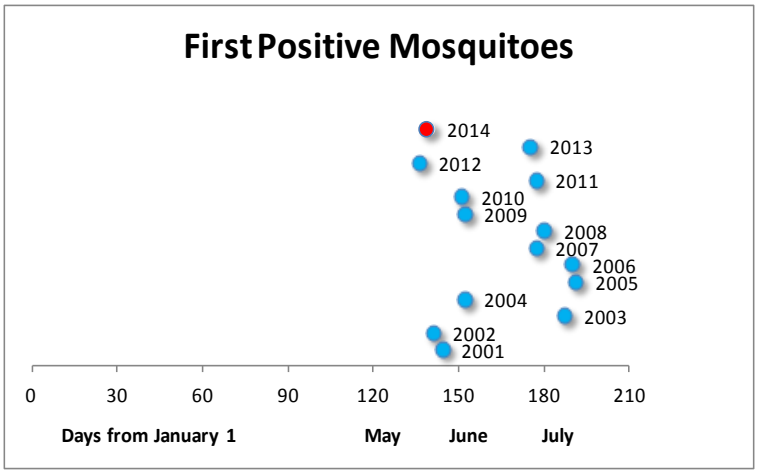
Protocol: New Jersey Department of Health (NJDH Public Health Environmental and Agricultural Laboratories, PHEAL) and the Cape May County Department of Mosquito Control tests mosquito pools using RT-PCR Taqman techniques.

Mosquito Species Submitted and Tested for West Nile Virus Testing through 9 June 2014

Species	Pools	Mosquitoes	Positives	MFIR
Aedes canadensis canadensis	5	119		
Aedes cantator	3	135		
Aedes japonicus	9	19		
Aedes sticticus	2	6		
Aedes vexans	4	23		
Culex erraticus	1	2		
Culex pipiens	27	853		
Culex restuans	7	46		
Culex spp.	85	2912	1	0.343
Culiseta melanura	13	269		
State Total	**156**	**4384**	**1**	**0.228**

Remarks: To date, 156 pools of 4384 mosquitoes from 9 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.

Early start? The first WNV positive mosquitoes in NJ were detected on 20 May, making this the second earliest detection date (see graph to right – y axis is year, to separate any overlapping data points). But conclusions are made difficult by the fact that for certain years, start dates were set later in the year (July 1).



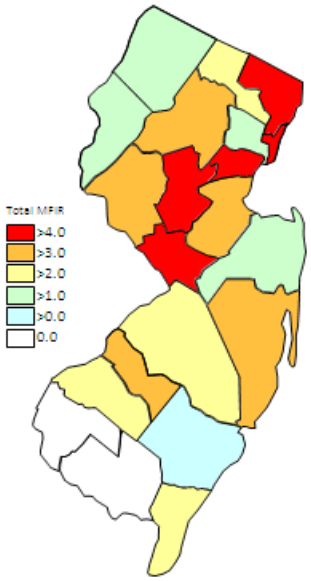
Humans, Horses and Wild Birds: To date, no human cases have been reported. For further information, see http://www.state.nj.us/health/cd/westnile/techinfo.shtml.

Bird testing began in mid-April. No positive birds have been reported. To date, 24 birds have been tested. Species includes: Fish Crow (*C. ossifragus* 0/6), Hawk/Raptor (0/2) and other avian species (0/16). Counties (positives) submitting birds are Atlantic, Bergen, Burlington, Essex, Mercer, Monmouth, Morris, Ocean, Salem, Sussex and Warren.

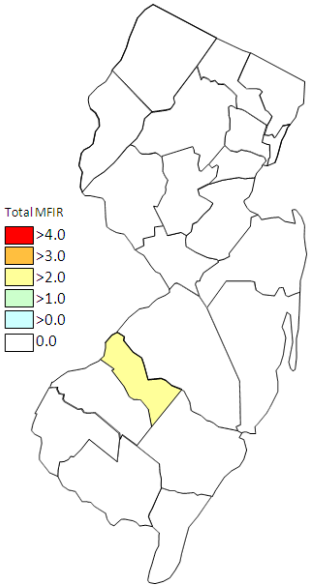
WNV Results by County through 9 June 2014

County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		**2**	**20**		
	Aedes canadensis canadensis	1	4		
	Culiseta melanura	1	16		
Burlington		**2**	**20**		
	Culiseta melanura	2	20		
Camden		**19**	**453**	**1**	**2.208**
	Aedes japonicus	4	7		
	Culex spp.	12	306	1	3.268
	Culiseta melanura	3	140		
Cape May		**1**	**11**		
	Culiseta melanura	1	11		

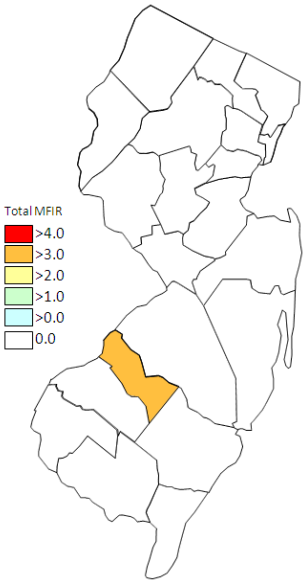
Gloucester		**21**	**753**		
	Culex pipiens	20	732		
	Culiseta melanura	1	21		
Hunterdon		**30**	**1463**		
	Culex spp.	30	1463		
Mercer		**13**	**166**		
	Culex pipiens	7	121		
	Culex restuans	6	45		
Monmouth		**19**	**339**		
	Aedes canadensis canadensis	1	19		
	Aedes japonicus	3	6		
	Aedes vexans	1	4		
	Culex erraticus	1	2		
	Culex restuans	1	1		
	Culex spp.	11	295		
	Culiseta melanura	1	12		
Ocean		**20**	**465**		
	Aedes canadensis canadensis	3	96		
	Aedes cantator	3	135		
	Aedes sticticus	2	6		
	Aedes vexans	3	19		
	Culex spp.	6	203		
	Culiseta melanura	3	6		
Salem		**1**	**43**		
	Culiseta melanura	1	43		
Somerset		**1**	**273**		
	Aedes japonicus	1	4		
	Culex spp.	14	269		
Warren		**13**	**378**		
	Aedes japonicus	1	2		
	Culex spp.	12	376		
Grand Total		**156**	**4384**	**1**	**0.228**



Cumulative WNV activity in 2013.



WNV activity to 7 June 2014.



WNV activity last week, 2014.

Saint Louis Encephalitis (SLE) to 9 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 reported for SLE in 2014.

County	Species	Pools	Mosquitoes	Positives	MFIR
Grand Total					

La Crosse Encephalitis (LAC) through 9 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 reported for LAC in 2014.

County	Species	Pools	Mosquitoes	Positives	MFIR
Grand Total					