RUTGERS
New Jersey Agricultural Experiment Station

VECTOR SURVEILLANCE IN NEW JERSEY

EEE, WNV, SLE and LAC

CDC WEEK 22: May 29 to June 4, 2011

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Culiseta melanura and Eastern Equine Encephalitis

SITE	Inland / Coastal	Historic Mean	Current Weekly Mean	Total Tested to Date*	Total Pools Submitted	EEE Isolations	MFIR
Green Bank (Burlington County)	Coastal	1.90	0.04	1	1	0	
Corbin City (Atlantic County)	Coastal						
Dennisville (Cape May County)	Coastal	4.20	0.16	8	1	0	
Winslow (Camden County)	Inland	8.42	0.42	21	1	0	
Centerton (Salem County)	Inland	2.17	0.46	23	1	0	
Turkey Swamp (Monmouth County)	Inland	0.70	0.11	5	1	†	
Glassboro (Gloucester County)	Inland	0.40	0.77	34	1	0	

*Including trial run last week in May. † not yet tested.

Remarks: Collections have begun for Eastern Equine Encephalitis testing of mosquitoes. Here in New Jersey, we have 7 traditional resting box sites for the collection of *Culiseta melanura*, the primary enzootic vector. The above table refers to collections from those sites. Additional *Cs. melanura* caught in areas other than the traditional resting box sites are reported in the table below. Other species collected and tested for EEE are reported on the next page. To date 92 *Cs. melanura* from 5 pools have tested negative.

Two years ago, there were more than 100 positive pools detected in several species of mosquitoes. Last year, *Cs. melanura* populations decreased from the high abundances seen the previous year. The number of positive pools in 2010 decreased similarly. It is too early to predict what *Cs. melanura* populations will do, especially during the second half of the season, where amplification of virus appears more active.

Additional *Cs. melanura* trapped by counties
*traps with positives indicated in **BOLD**.

County	Trap types*	Number collected	Number of positives	MFIR
Ocean	RB	1	0	
TOTAL		**1**	**0**	

The table below indicates non-*melanura* species tested for EEE:

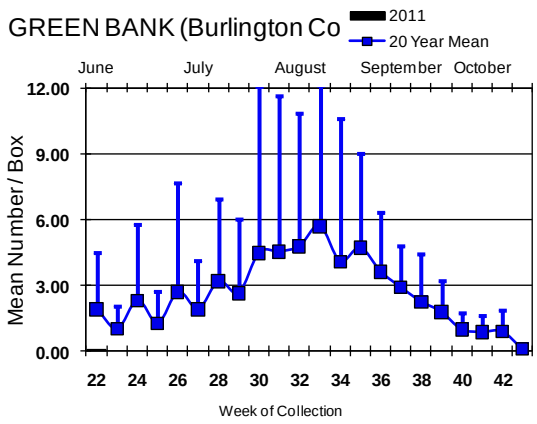
Species other than *Cs. melanura*	Pools	Mosquitoes	Positives	MFIR
None to date				
State Total				

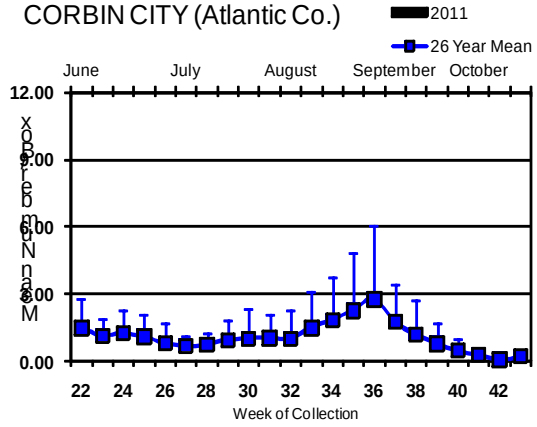
Horses and Humans: No positive horses or humans to date.

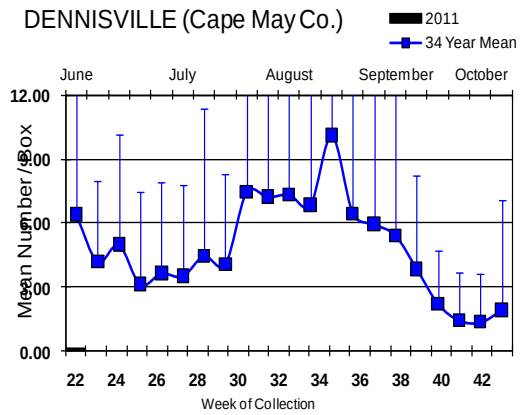
Horses and Vaccinations: The fate of unvaccinated equids reinforces the necessity of maintaining a vaccination schedule for arboviruses. For vaccination schedules recommended by the American Association of Equine Practices, see: http://www.aaep.org/vaccination_guidelines.htm

Culiseta melanura Population Graphs

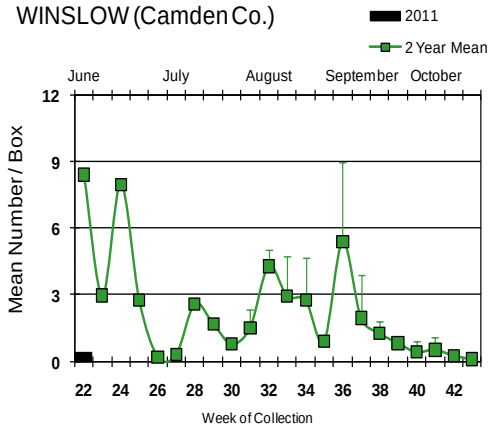
Coastal

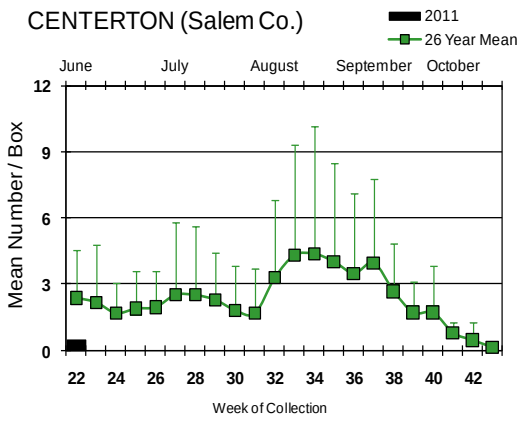


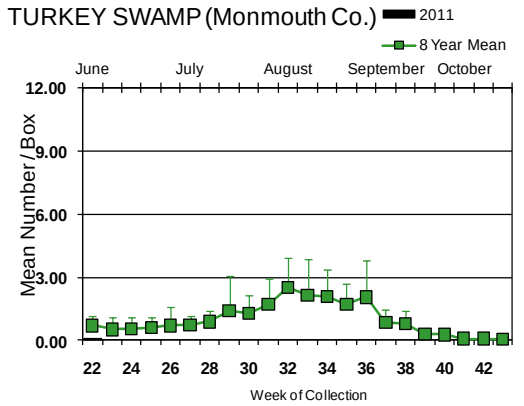




Inland



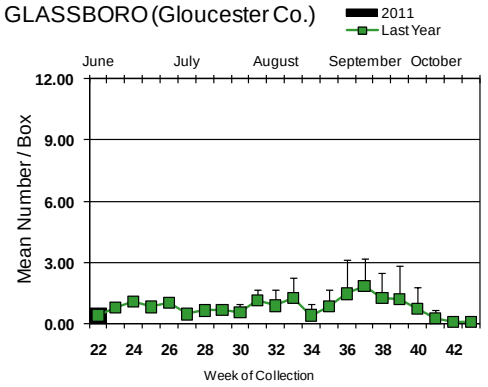




Populations of *Culiseta melanura* at all sites except for the Glassboro site are all below the historical levels. Last year, populations began the year with high abundances. A drought began in April, and by mid-season, *Cs. melanura* population levels had dropped to or below historical means.

= Positive pool(s) detected.

Note: Both Winslow and Glassboro have single point historical data (the previous year) for weeks 22 to 29.



EEE in US (2011 cumulative cases): (Black or Red = previous + new reported cases occurring)

- equine:
- mosquito pools:
- sentinel: 5 chickens/20 wild bird (FL)
- human:

West Nile Virus

West Nile in US (2011 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			
Arkansas					
California	7/8	4			
Colorado					
Connecticut					
Delaware					
DC					
Florida			27		
Georgia					
Hawaii					
Idaho					
Illinois	0	0	0	0	0
Indiana					
Iowa					
Kansas					
Kentucky					
Louisiana					
Maine					
Maryland					
Mass.					
Michigan	0	0	0	0	0
Minnesota					
Mississippi		0		0	1
Missouri					

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

Protocol: New Jersey Department of Health and Senior Services (NJDHSS Public Health and Environmental Laboratories, PHEL) and the Cape May County Division of Mosquito Control tests mosquito pools using RT-PCR Taqman techniques.

Mosquito Species Submitted for West Nile Virus Testing through 9 June 2011

Species	Pools	Mosquitoes	Positives	MFIR
Aedes albopictus	8	15		
Aedes canadensis canadensis	6	84		
Aedes cantator	4	5		
Aedes japonicus	4	10		
Aedes sollicitans	1	3		
Aedes triseriatus	3	3		
Aedes vexans	1	4		
Coquillettidia perturbans	1	2		
Culex salinarius	1	16		
Culex spp.	12	231		
Culiseta melanura	3	3		
State Total	44	376		

Remarks: The season for West Nile testing has begun, with 44 pools of 376 mosquitoes in 11 species tested with no positives detected. Last year, there was one positive mosquito detected. 2010 was a highly active year with the highest number and percentage of positive pools detected since monitoring for West Nile virus began. This coincided with a significant drought that New Jersey experienced last year.

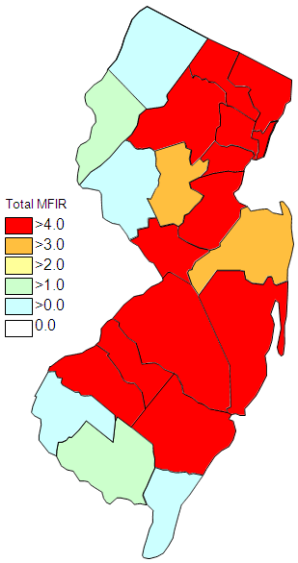
Humans, Horses and Wild Birds: There are no positive human or horse cases reported.

Bird testing began in mid-April. Nine birds have been tested with no positives detected. Species include Blue Jays *Cyanocitta cristata* (2), Fish Crows *Corvus ossifragus* (1) and Other(non-corvid) species (6). The birds were submitted from Burlington, Cumberland, Gloucester, Monmouth Ocean and Warren counties.

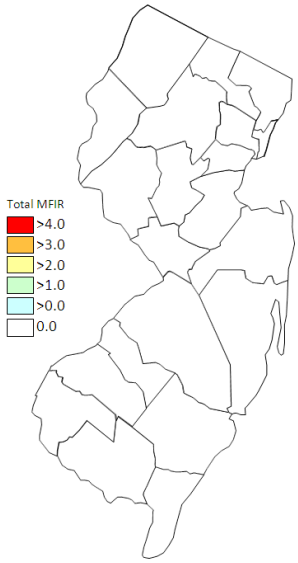
2011 Positive Mosquito pools to date / Total Mosquito Pools Submitted	This time last year
0/376 (0%)	1 / 225 (.004%)
2011 Positive Birds to date / Total Birds Submitted	This time last year
0/ 9 (0%)	0/13 (0%)

WNV Results by County through 9 June 2011

County	Species	Pools	Mosquitoes	Positives	MFIR
Burlington		**1**	**1**		
	Culiseta melanura	1	1		
Monmouth		**18**	**216**		
	Aedes albopictus	2	2		
	Aedes canadensis canadensis	3	81		
	Aedes japonicus	2	5		
	Aedes sollicitans	1	3		
	Aedes triseriatus	1	1		
	Coquillettidia perturbans	1	2		
	Culex salinarius	1	16		
	Culex spp.	6	105		
	Culiseta melanura	1	1		
Ocean		**25**	**159**		
	Aedes albopictus	6	13		
	Aedes canadensis canadensis	3	3		
	Aedes cantator	4	5		
	Aedes japonicus	2	5		
	Aedes triseriatus	2	2		
	Aedes vexans	1	4		
	Culex spp.	6	126		
	Culiseta melanura	1	1		
Grand Total		**44**	**376**		



Cumulative WNV activity in 2010.



WNV activity to 4 June 2011.

WNV activity last week, 2011.

Saint Louis Encephalitis (SLE) through 9 June 2011.

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 tested to date for 2011.

County	Species	Pools	Mosquitoes	Positives	MFIR
Grand Total					

La Crosse Encephalitis (LAC) through 9 June 2011.

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 tested to date for 2011.

County	Species	Pools	Mosquitoes	Positives	MFIR
Grand Total					