RUTGERS
New Jersey Agricultural Experiment Station

VECTOR SURVEILLANCE IN NEW JERSEY
EEE, WNV, SLE and LAC
CDC WEEK 21/22: May 24 to June 5, 2010

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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	1.97	0.56	14	1	0	0
Corbin City (Atlantic County)	Coastal	1.39	3.88	97	2	0	0
Dennisville (Cape May County)	Coastal	6.62	0.34	17	1	0	0
Winslow (Camden County)	Inland	No history this week	8.42	421	9	0	0
Centerton (Salem County)	Inland	2.42	1.44	72	2	0	0
Turkey Swamp (Monmouth County)	Inland	0.73	0.56	28	4	0	0
Glassboro (Gloucester County)	Inland	0.3†	0.40	20	1	0	0

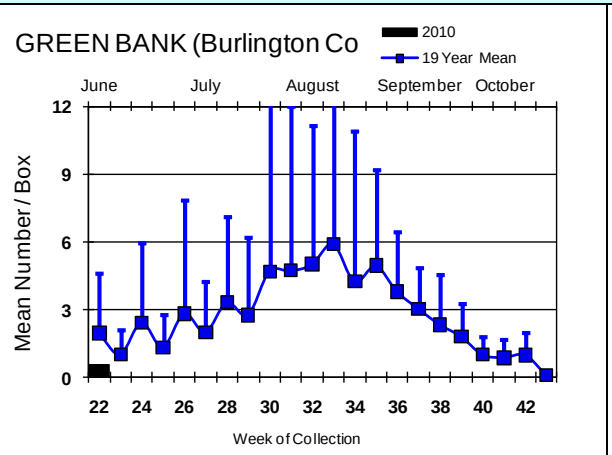
*Including trial run last week in May. † mean from location < 1 mile away.

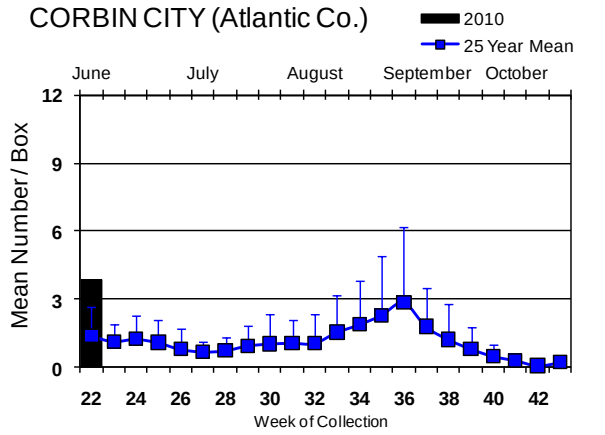
Remarks: Last year, eastern equine encephalitis activity was considerably higher than the previous several years, with more than 100 positive mosquito pools. Multiple species were positive, with about half coming from the enzootic vector, *Culiseta melanura. Culex erraticus* provided the second highest number of positive pools. New Jersey 2009 EEE activity reflected the activity seen along the eastern seaboard, with early season horse cases seen in Florida. This year, the first positive Florida equid came later than in the previous 3 years (in May rather than February), perhaps suggesting that their EEE activity might not be as high this year as in the previous 3 years. New Jersey has had low EEE activity until last year, but with higher *Culiseta melanura* populations seen recently, there is little to suggest that this year's activity levels will be low. Due vigilance should be exercised.

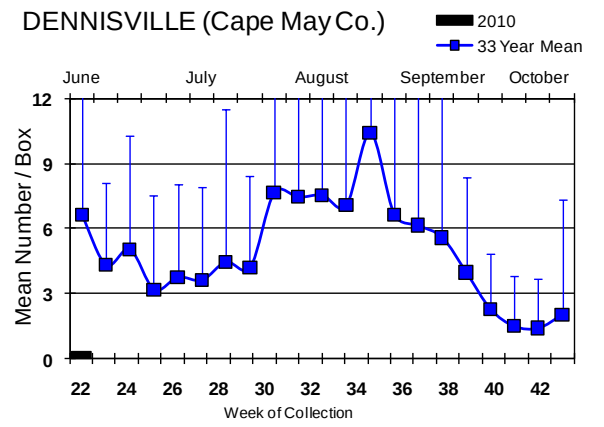
Horses and Vaccinations: The fate of unvaccinated equids reinforces the necessity of maintaining a vaccination schedule for arboviruses. For vaccination schedules recommended by the American Association of Equine Practices, see: http://www.aaep.org/vaccination_guidelines.htm

Culiseta melanura Population Graphs

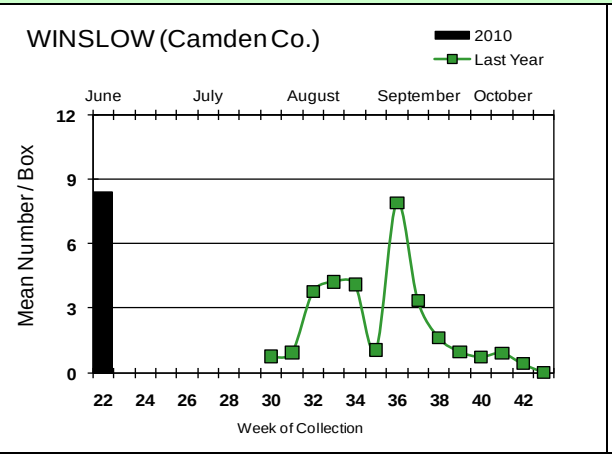
Coastal

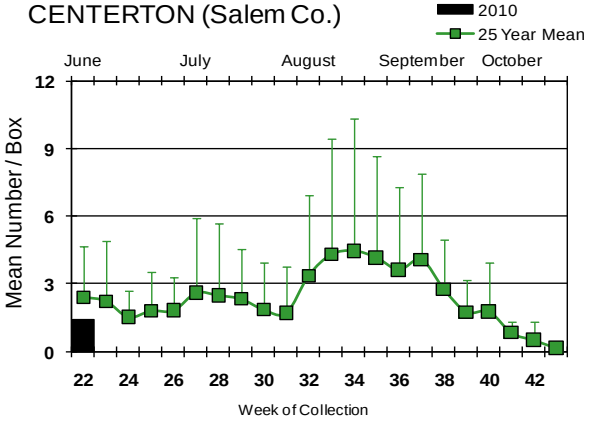


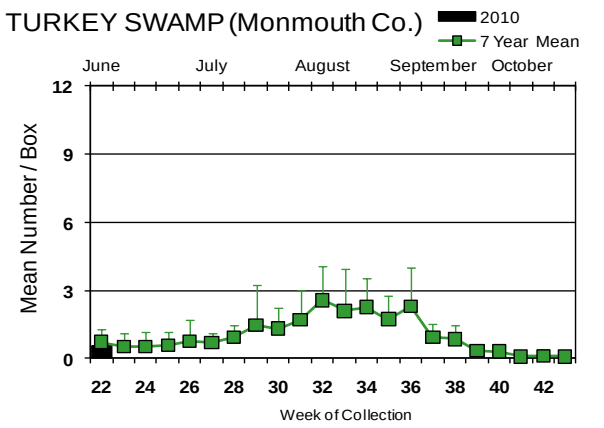




Inland

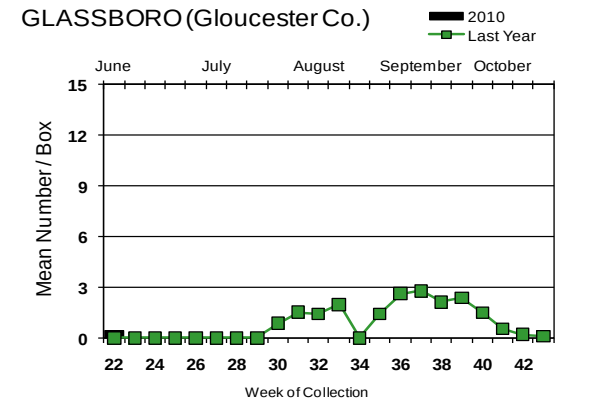






For two of the seven state monitoring sites, population levels were significantly higher than (assumed) historical values. For Corbin City, the average was higher than error, suggesting a significant difference. For Winslow, assuming that the highest peak in the fall is higher than any previous peak in the spring (a reasonable assumption given historical trends at all sites), then the 8.42 average is still higher than the 7.92 fall peak. This, along with the data from the high abundances seen in the adult mosquito light trap data (http://vectorbio.rutgers.edu/adult-vector.php) , suggests that *Cs. melanura* populations will higher than seen in the previous several years.

= Zero positive pool(s) detected.



EEE in US (2010 cumulative cases): (Black/Red = previous/new reported cases occurring)

- equine: 6(FL)
- mosquito: 1(FL)
- sentinel: 18/13(FL)

West Nile Virus

West Nile in US (2010 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		3/5			
Arkansas					
California	11	3			
Colorado					
Connecticut					
Delaware					
DC					
Florida			40		
Georgia					
Hawaii					
Idaho					
Illinois	7	1			
Indiana					
Iowa					
Kansas					
Kentucky					
Louisiana					
Maine					
Maryland					
Mass.					
Michigan					
Minnesota					
Mississippi					2
Missouri					
Montana					
Nebraska					
Nevada					
New Hampshire					
New Jersey					
New Mexico					
New York					
North Carolina					
North Dakota					
Ohio					
Oklahoma					
Oregon					
Pennsylvania		1			
Rhode Island					
South Carolina					
South Dakota					
Tennessee		1			
Texas		1			
Utah					
Vermont					
Virginia					
Washington					
West Virginia		5			
Wisconsin					
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 XX June 2010

Species	Pools	Mosquitoes	Positives	MFIR
Culex spp.	1	3		
Culiseta melanura	7	139		
State Total	**8**	**142**		

Remarks: The number of positive WNV mosquito pools to date is 0. Last year at this time, a positive pool of *Culex* was found in Mercer County.

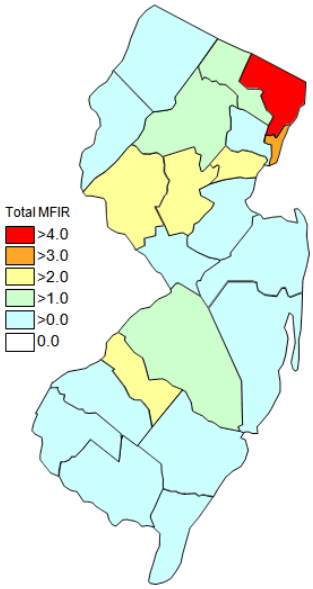
Humans, Horses and Wild Birds: No humans or horses have been found positive for WNV to date. For more details plus information about WNV, see the West Nile Virus Alert and FAQ Sheets from the NJ Department of Health and Senior Services, Communicable Disease Service, Infectious and Zoonotic Disease Program:
http://www.state.nj.us/health/cd/westnile/enceph.htm

Twelve birds have been tested and found negative for WNV. These include 5 *Corvus* (American, Fish and unidentified Crows), 3 Blue Jays (*Cyanocitta cristata*), 1 Hawk (unknown species) and 3 unknown species. This was similar as for 2009 to this date.

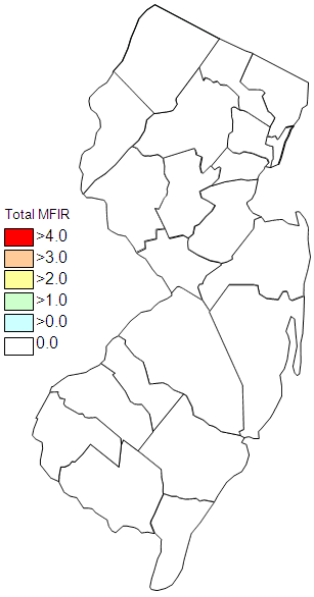
2010 Positive Mosquito pools to date / Total Mosquito Pools Submitted	This time last year
0 / 142 (0%)	1 / 452 (2.2%)
2010 Positive Birds to date / Total Birds Submitted	This time last year
0 / 12 (0%)	0 / 13 (0%)

WNV Results by County through xx June 2010

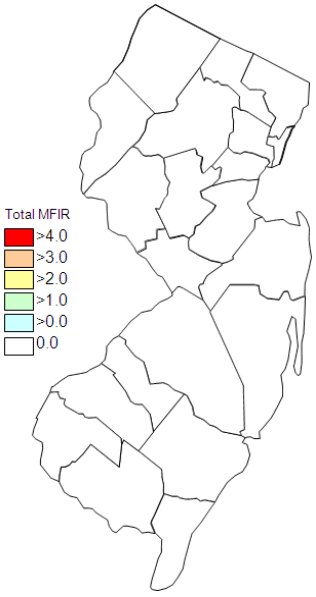
County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		**3**	**100**		
	Culex spp.	1	3		
	Culiseta melanura	2	97		
Burlington		**1**	**14**		
	Culiseta melanura	1	14		
Monmouth		**4**	**28**		
	Culiseta melanura	4	28		
Grand Total		**8**	**142**		



Cumulative WNV activity in 2009.



WNV activity to 5 June, 2010.



WNV activity last week, 2010.

Saint Louis Encephalitis (SLE) through 5 June 2010.

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, 2010.

La Crosse Encephalitis (LAC) through 5 June 2010.

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, 2010.