RUTGERS
New Jersey Agricultural Experiment Station

VECTOR SURVEILLANCE IN NEW JERSEY

EEE, WNV, SLE and LAC

CDC WEEK 23: June 6 to June 12, 2010

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Supported by funding from the NJ State Mosquito Control Commission.

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	1.01	0.84	16	2	0	0
Corbin City (Atlantic County)	Coastal	1.16	0.88	144	5	0	0
Dennisville (Cape May County)	Coastal	4.43	0.20	27	2	0	0
Winslow (Camden County)	Inland	No history this week	2.96	569	12	0	0
Centerton (Salem County)	Inland	2.24	0.54	99	3	0	0
Turkey Swamp (Monmouth County)	Inland	0.51	0.52	28	4	0	0
Glassboro (Gloucester County)	Inland	0.9†	0.80	60	2	0	0

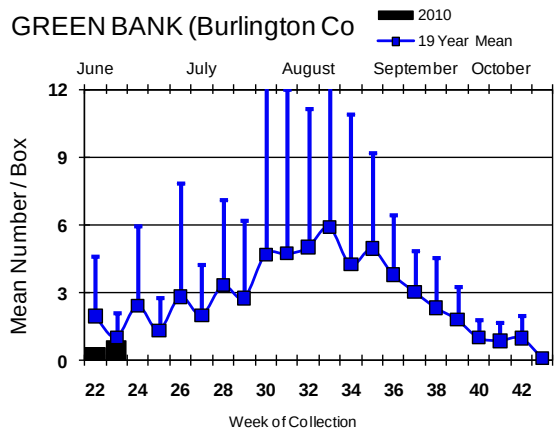
*Including trial run last week in May. † mean from location < 1 mile away.

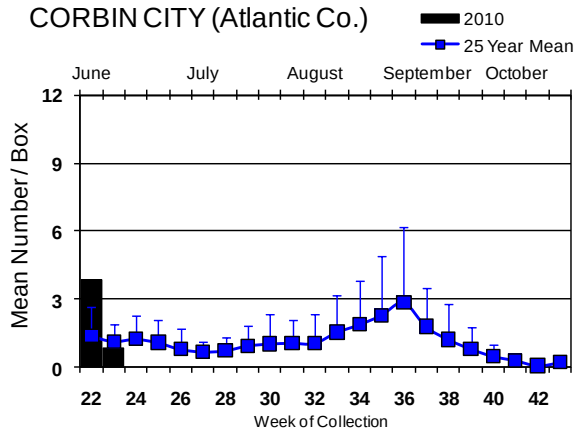
Remarks: There are no positive EEE pools to report at this time. To date, 943 *Culiseta melanura* mosquitoes forming 30 pools from the seven traditional resting box sites have been tested. An additional 217 *Cs. melanura* were tested from 5 sites in Gloucester and 2 sites in Ocean counties, all negative. Other ornithophilic species tested were 5 *Culex* spp. from the Corbin City site, which tested negative as well.

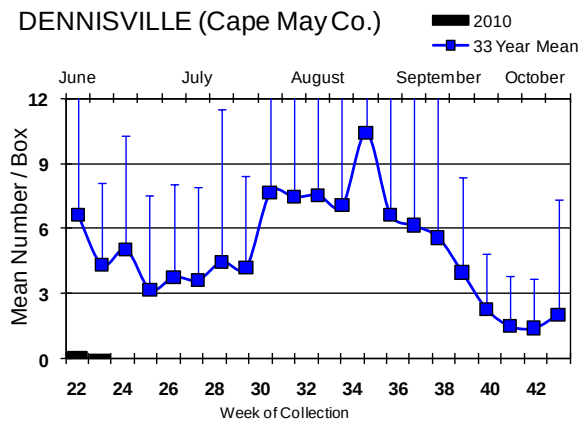
Horses and Vaccinations: The fate of unvaccinated equids reinforces the necessity of maintaining a vaccination schedule for arboviruses. For vaccination schedules recommended by the American Association of Equine Practices, see: http://www.aaep.org/vaccination_guidelines.htm

Culiseta melanura Population Graphs

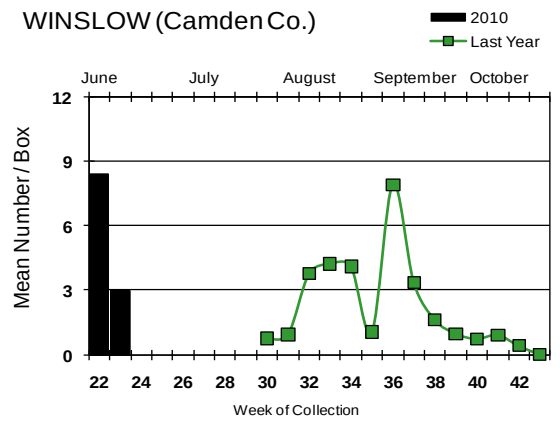
Coastal

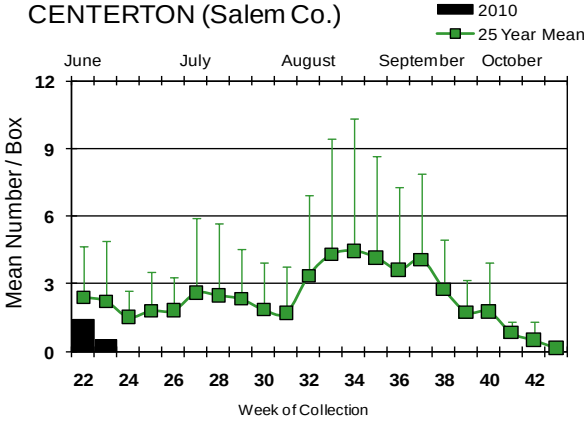


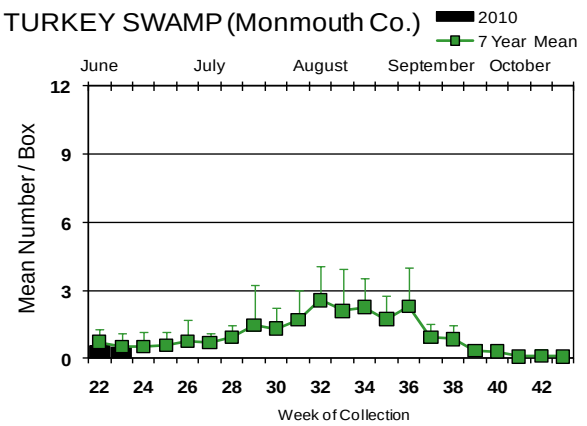




Inland



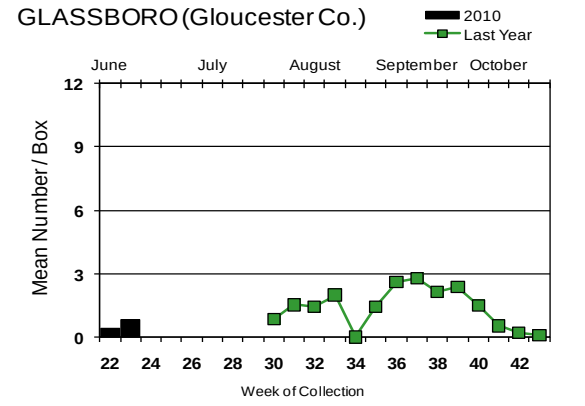




Only at Turkey Swamp are population levels found at or higher than historical trends (although Winslow data suggests that the early abundances seen there are also higher, given seasonal historical trend patterns). This might suggest that population levels for *Culiseta melanura* continue at the low levels we've seen for the past several years. However, data from the adult mosquito light trap data (http://vectorbio.rutgers.edu/adult-vector.php), suggests that *Cs. melanura* populations continue to be higher levels in the Pinelands and along the Coast.

Potential consequence of higher first generation abundances is the greater number of individuals contributing to the second generation – the generation that contributes the greatest to the amplification of EEE virus.

= 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.

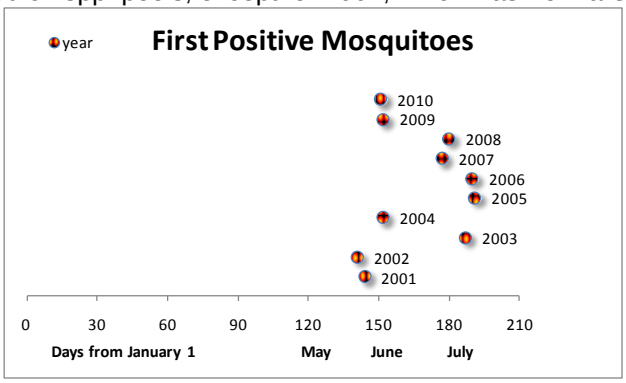
	Birds	Mosquito Pools	Sentinels	Horses	Humans
Alabama					
Alaska					
Arizona		5			
Arkansas					
California	11/18	3/6			
Colorado					
Connecticut					
Delaware					
DC					
Florida			40		
Georgia					
Hawaii					
Idaho					
Illinois	7/8	1/3			
Indiana					
Iowa					
Kansas					
Kentucky					
Louisiana					
Maine					
Maryland					
Mass.					
Michigan					
Minnesota					
Mississippi					2
Missouri					
Montana					
Nebraska					
Nevada					
New Hampshire					
New Jersey	0	1	0	0	0
New Mexico					
New York					
North Carolina					
North Dakota					
Ohio					
Oklahoma					
Oregon					
Pennsylvania		1/2			
Rhode Island					
South Carolina					
South Dakota					
Tennessee		1			
Texas		1			
Utah					
Vermont					
Virginia					
Washington					
West Virginia		5/7			
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 12 June 2010

Species	Pools	Mosquitoes	Positives	MFIR
Aedes albopictus	5	10		
Aedes canadensis canadensis	1	186		
Aedes cantator	2	4		
Aedes japonicus	3	25		
Aedes sticticus	8	1		
Aedes triseriatus	3	2		
Aedes trivittatus	1	1		
Aedes vexans	31	31		
Anopheles punctipennis	19	38		
Coquillettidia perturbans	9	4		
Culex pipiens	2	195		
Culex restuans	9	21		
Culex salinarius	1	1		
Culex spp.	1	727	1	1.376
Culiseta melanura	1	420		
Orthopodomyia signifera	1	1		
State Total	97	1667	1	0.600

Remarks: The number of positive WNV mosquito pools to date is 1, found in a single *Culex* spp. from Camden County. Last year at this time, the first positive pool [of *Culex*] was found in Mercer County at about the same time. The range of date for the first positive mosquito pools for WNV is depicted in the graph below, indicating that this positive appears at about the middle range of dates, with initial years of disease emergence found earlier in the year than later years. It should be noted that a few years (e.g., 2008) might not be the true first positive due to fiscal restrictions on the beginning of testing pools. All first positives were from *Culex* spp. pools, except for 2004, which was from a *Culex restuans* pool.



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

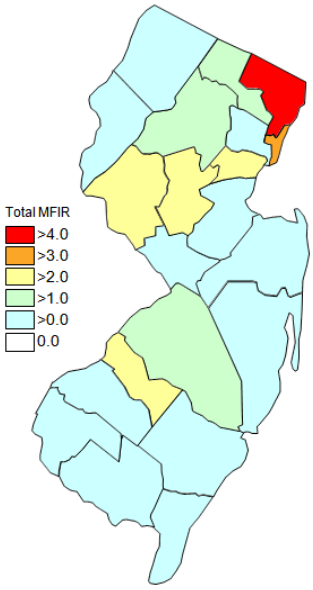
Seventeen birds have been tested and found negative for WNV. These include 5 *Corvus* (American, Fish and unidentified Crows), 4 Blue Jays (*Cyanocitta cristata*), 1 Hawk (unknown species) and 7 unknown species. This was similar as for 2009 to this date.

2010 Positive Mosquito pools to date / Total Mosquito Pools Submitted	This time last year
1 / 97 (0.01%)	1 / 701 (0.001%)

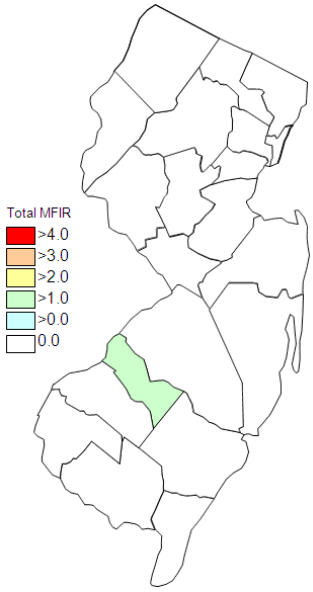
2010 Positive Birds to date / Total Birds Submitted	This time last year
0 / 17 (0%)	0 / 16 (0%)

WNV Results by County through 12 June 2010

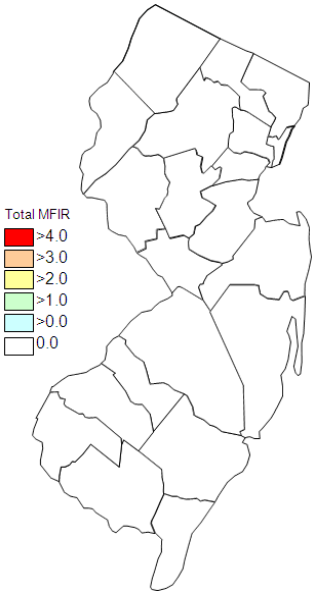
County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		**14**	**239**		
	Aedes canadensis canadensis	1	2		
	Aedes cantator	1	3		
	Aedes trivittatus	1	1		
	Aedes vexans	1	31		
	Anopheles punctipennis	1	37		
	Coquillettidia perturbans	1	2		
	Culex spp.	3	7		
	Culiseta melanura	4	155		
	Orthopodomyia signifera	1	1		
Burlington		**2**	**16**		
	Culiseta melanura	2	16		
Camden		16	557	1	1.795
	Aedes canadensis canadensis	1	1		
	Aedes japonicus	2	2		
	Culex spp.	13	554	1.000	1.805
Gloucester		5	197		
	Culiseta melanura	5	197		
Monmouth		**29**	**154**		
	Aedes albopictus	4	8		
	Aedes canadensis canadensis	3	10		
	Aedes cantator	1	1		
	Aedes japonicus	5	19		
	Anopheles punctipennis	1	1		
	Coquillettidia perturbans	1	1		
	Culex salinarius	1	1		
	Culex spp.	7	81		
	Culiseta melanura	6	32		
Ocean		**18**	**277**		
	Aedes albopictus	1	2		
	Aedes canadensis canadensis	4	173		
	Aedes japonicus	2	4		
	Aedes sticticus	1	1		
	Aedes triseriatus	1	2		
	Coquillettidia perturbans	1	1		
	Culex spp.	6	74		
	Culiseta melanura	2	20		
Grand Total		**97**	**1667**	**1**	**0.600**



Cumulative WNV activity in 2009.



WNV activity to 12 June, 2010.



WNV activity last week, 2010.

Saint Louis Encephalitis (SLE) through 12 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 positive to date for 2010.

County	Species	Pools	Mosquitoes	Positives	MFIR
Camden		**16**	**557**		
	Aedes canadensis canadensis	1	1		
	Aedes cantator	2	2		
	Aedes trivittatus	13	554		

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.