VECTOR SURVEILLANCE IN NEW JERSEY

EEE, WNV, SLE and LAC

Prepared by Lisa M. Reed, Scott Crans and Mark Robson
Center for Vector Biology, Rutgers University

CDC WEEK 22: Start to June 2, 2012

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Culiseta melanura and Eastern Equine Encephalitis

SITE	Inland / Coastal	Historic Population Mean	Current Weekly Mean	Total Tested to Date*	Total Pools Submitted /Tested	EEE Isolations	MFIR
Bass River (Burlington County)	**Coastal**						
Green Bank (Burlington County)	**Coastal**						
Corbin City (Atlantic County)	**Coastal**						
Dennisville (Cape May County)	**Coastal**						
Winslow (Camden County)	**Inland**						
Centerton (Salem County)	**Inland**						
Turkey Swamp (Monmouth County)	**Inland**	0.61	1.52	102	3	0	
Glassboro (Gloucester County)	**Inland**						

*Including trial run last week in May. † No data. †† No collection

Remarks: This is the first report for the 2012 season. One new resting box site has been added: Bass River will replace the Green Bank site as populations in the latter have dropped over the years, most likely due to the canopy opening up. Green Bank will also be sampled this year as the Bass River site becomes the replacement site. Currently, only samples from Turkey Swamp have been tested and the other sites are being collected.

In general for any given year, New Jersey finds activity in at least one mosquito pool, and usually this is in *Culiseta melanura*. Horse activity occurs also fairly frequently.

Nineteen additional pools containing 715 *Cs. melanura* have tested negative from other county trapping sites using other traps in addition to resting boxes. No detection of EEE has occurred.

Additional *Cs. melanura* trapped by counties *traps with positives indicated in BOLD.				
County	**Trap types***	**Number collected (pools)**	**Number of positives pools**	**MFIR**
Burlington	CO2, Other	404 (11)	0	
Cumberland	CO2	38 (1)	0	
Gloucester	RB	171 (7)	0	
TOTAL		**715 (19)**	**0**	

Horses and Humans: No cases to date.

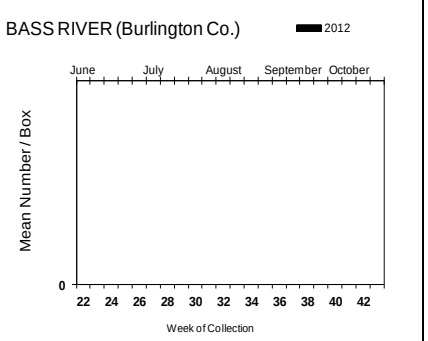
Horses and Vaccinations: The fate of unvaccinated equids reinforces the necessity of maintaining a vaccination schedule for arboviruses. For vaccination schedules recommended by the American Association of Equine Practices, see: http://www.aaep.org/vaccination_guidelines.htm

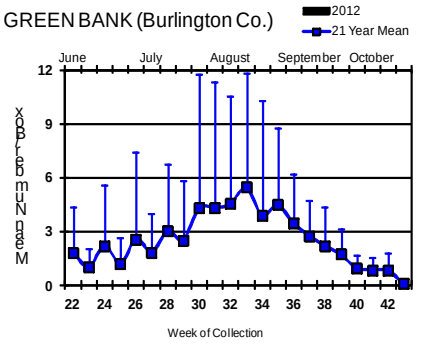
Species other than *Cs. melanura*	**Pools**	**Mosquitoes**	**Positives**	**MFIR**
Aedes canadensis canadensis	4	80		
Aedes cantator	4	153		
Aedes japonicus	3	7		
Aedes mitchellae	1	8		
Anopheles bradleyi	1	4		
Anopheles crucians	1	4		
Anopheles quadrimaculatus	2	7		
Coquillettidia perturbans	1	13		
Culex pipiens	3	162		
Culex restuans	1	27		
Culex salinarius	1	11		
Culex sp.	33	1672		
State Total	55	2148		

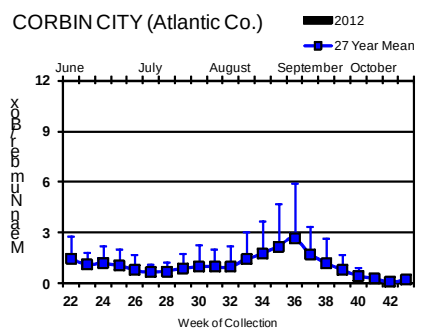
The table to the left indicates non-*Cs. melanura* mosquitoes tested for EEE. An additional 13 species of mosquitoes have been tested with no detection of EEE.

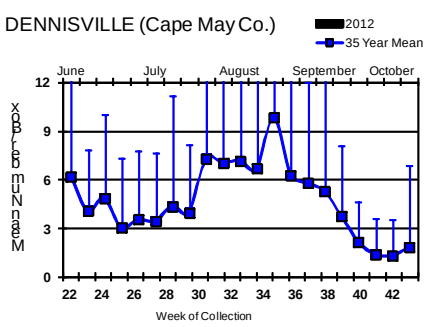
Culiseta melanura Population Graphs

Coastal

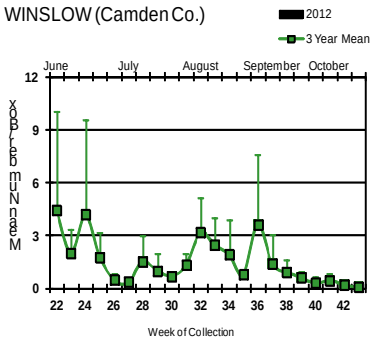


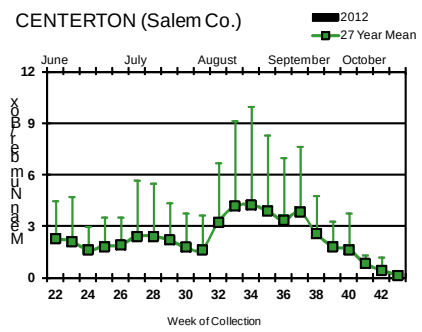


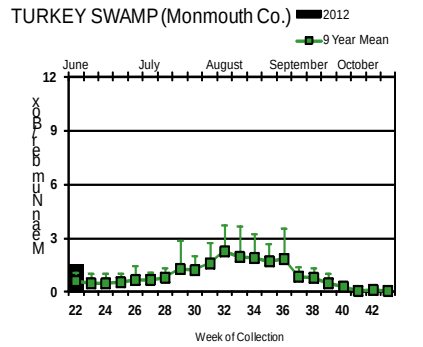


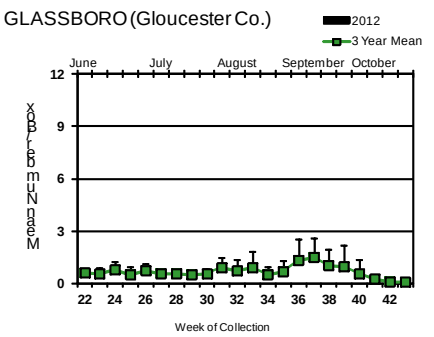


Inland









Collections have begun at the traditional resting box sites. The Bass River site is to replace the Green Bank site as populations at the latter site have been waning over the past several years. Areas in the Bass River have previously contributed to the EEE surveillance program many years ago.

The Turkey Swamp site reported populations higher than the historical trends. Other sites of currently being collected and population trends will begin next week.

= Positive pool(s) detected.

EEE in US (2012 cumulative cases): (Black or Red = previous + new reported cases occurring)

- equine: 6(FL)
- mosquito pools:
- sentinel: 12(FL)
- human:

West Nile Virus

West Nile in US (2012 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		2			2?
Arkansas					
California	33	30			
Colorado					
Connecticut					
Delaware					
DC					
Florida			35/40		
Georgia					
Hawaii					
Idaho					
Illinois	1	8			
Indiana		1			
Iowa					
Kansas					
Kentucky					
Louisiana					
Maine					
Maryland					
Mass.					
Michigan					
Minnesota					
Mississippi					
Missouri					

	Birds	Mosquito Pools	Sentinels	Horses	Humans
Montana					
Nebraska					
Nevada					
New Hampshire					
New Jersey	1	3			
New Mexico					
New York					
North Carolina					
North Dakota					
Ohio					
Oklahoma					
Oregon					
Pennsylvania	1	16		1	
Rhode Island					
South Carolina					
South Dakota					
Tennessee		19			
Texas		11		1	1
Utah					
Vermont					
Virginia					
Washington					
West Virginia					
Wisconsin					
Wyoming					

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

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 and Tested for West Nile Virus Testing through 4 June 2012

Species	Pools	Mosquitoes	Positives	MFIR
Aedes albopictus	5	48		
Aedes canadensis canadensis	7	89		
Aedes cantator	6	155		
Aedes japonicus	8	45		
Aedes mitchellae	1	8		
Aedes sticticus	1	3		
Aedes vexans	6	32		
Anopheles bradleyi	2	13		
Anopheles crucians	1	4		
Anopheles punctipennis	4	13		
Anopheles quadrimaculatus	3	9		
Coquillettidia perturbans	2	16		
Culex pipiens	100	4847	1	0.206
Culex restuans	9	195		
Culex salinarius	2	12		
Culex sp.	119	4528	1	0.221
Culex territans	1	1		
Culiseta melanura	22	719	1	1.391
Culiseta minnesotae	1	2		
Psorophora ferox	2	21		
State Total	**302**	**10,760**	**3**	**0.279**

Remarks: To date, there have been 10,760 mosquitoes tested in 302 pools from 19 species. Currently, 3 positive pools have been detected in *Culex pipiens,* Mixed *Cx.* species and *Culiseta melanura*, collected in Gloucester County on 17 May, Burlington County on 22 May and Gloucester County on 31 May, respectively.

Humans, Horses and Wild Birds: There is no reported horse or human cases to date. See http://www.state.nj.us/health/cd/westnile/techinfo.shtml for further information.

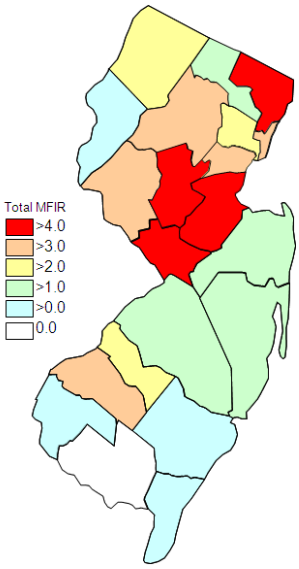
Bird testing began in mid-April. WNV has been detected in an American Crow (*Corvus brachyrhynchos*) from Morris County, collected 9 April. Counties submitting birds are Atlantic, Cape May, Hunterdon, Morris, Ocean, Sussex and Warren. County participation in submitting dead birds varies across the state.

2012 Positive Mosquito pools to date / Total Mosquito Pools Submitted	This time last year
3 / 302 (0.010)	0 / 95 (0.0)
2012 Positive Birds to date / Total Birds Submitted	This time last year
1 / 16 (0.062)	0 / 8 (0.0)

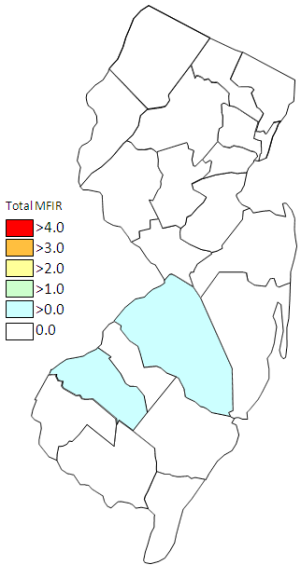
WNV Results by County through 4 June 2012

County	Species	Pools	Mosquitoes	Positives	MFIR
Burlington		**60**	**2378**	**1**	**0.421**
	Aedes canadensis canadensis	3	56		
	Aedes cantator	1	10		
	Aedes japonicus	3	7		
	Aedes mitchellae	1	8		
	Anopheles bradleyi	1	4		
	Anopheles crucians	1	4		
	Coquillettidia perturbans	1	13		
	Culex pipiens	3	163		
	Culex restuans	1	27		
	Culex salinarius	1	11		
	Culex spp.	32	1672	1	0.598
	Culiseta melanura	11	404		
Cape May		**34**	**1297**		
	Aedes canadensis canadensis	1	24		
	Aedes cantator	3	143		
	Culex pipiens	27	1093		
	Culex restuans	3	37		
Cumberland		**7**	**56**		
	Aedes vexans	1	3		
	Anopheles punctipennis	2	6		
	Culex pipiens	1	1		
	Culex spp.	1	7		
	Culex territans	1	1		
	Culiseta melanura	1	38		
Gloucester		**82**	**3815**	**2**	**0.524**
	Aedes albopictus	3	46		
	Aedes japonicus	4	34		
	Anopheles quadrimaculatus	2	7		
	Culex pipiens	66	3496	1	0.281
	Culiseta melanura	6	165	1	5.848
Hunterdon		**15**	**750**		
	Culex spp.	15	750		
Monmouth		**15**	**302**		
	Aedes canadensis canadensis	1	3		
	Aedes cantator	2	2		
	Aedes japonicus	1	4		
	Aedes vexans	1	3		
	Culex salinarius	1	1		
	Culex spp.	6	187		
	Culiseta melanura	3	102		
Morris		**20**	**666**		
	Culex spp.	20	666		
Salem		**20**	**113**		

	Aedes albopictus	2	2		
	Aedes canadensis canadensis	2	6		
	Aedes sticticus	1	3		
	Aedes vexans	4	26		
	Anopheles bradleyi	1	9		
	Anopheles punctipennis	1	2		
	Anopheles quadrimaculatus	1	2		
	Coquillettidia perturbans	1	3		
	Culex pipiens	2	22		
	Culex restuans	2	15		
	Culiseta minnesotae	1	2		
	Psorophora ferox	2	21		
Sussex		**21**	**621**		
	Culex pipiens	2	12		
	Culex restuans	3	116		
	Culex spp.	15	489		
	Culiseta melanura	1	4		
Warren		**31**	**762**		
	Anopheles punctipennis	1	5		
	Culex spp.	30	757		
Grand Total		**305**	**10760**	**3**	**0.279**



Cumulative WNV activity in 2011.



WNV activity to 4 June 2012.

WNV activity last week, 2012.

Saint Louis Encephalitis (SLE) through 4 June 2012.

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 tested positive for SLE to date in 2012.

County	Species	Pools	Mosquitoes	Positives	MFIR
Burlington		**60**	**2378**		
	Aedes canadensis canadensis	3	56		
	Aedes cantator	1	10		
	Aedes japonicus	3	7		
	Aedes mitchellae	1	6		
	Anopheles bradleyi	1	4		
	Anopheles crucians	1	4		
	Coquillettidia perturbans	1	13		
	Culex pipiens	3	162		
	Culex restuans	1	27		
	Culex salinarius	1	11		
	Culex spp.	33	1672		
	Culiseta melanura	11	404		
Grand Total		**60**	**2378**		

La Crosse Encephalitis (LAC) through 31 October 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 positive to date for 2012.

County	Species	Pools	Mosquitoes	Positives	MFIR
Grand Total					