VECTOR SURVEILLANCE IN NEW JERSEY

EEE, WNV, SLE and LAC

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RUTGERS New Jersey Agricultural Experiment Station

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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 /Tested†	EEE Isolations	MFIR
Green Bank (Burlington County)	Coastal	2.32	0.08	3	2/1	0	
Corbin City (Atlantic County)	Coastal	1.26	0.04	27	2/1	0	
Dennisville (Cape May County)	Coastal	5.00	0.36	35	3	0	
Winslow (Camden County)	Inland	7.98	0.39	92	4	0	
Centerton (Salem County)	Inland	1.69	0.44	94	3	0	
Turkey Swamp (Monmouth County)	Inland	0.54	0.08	12	4/2	0	
Glassboro (Gloucester County)	Inland	1.09	0.44	71	3	0	

*Including trial run last week in May. † Some samples are noted in the system, but not yet tested.

Remarks: The 7 traditional resting box sites for the collection of *Culiseta melanura*, the primary enzootic vector, continue to show no detectable EEE activity. To date 333 *Cs. melanura* from 17 pools have tested negative, with 4 pools to be tested. Twenty-seven additional pools containing 303 *Cs. melanura* have tested negative from other county trapping sites. *Cs. melanura* populations appear to be lower than historical data.

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

County	Trap types*	Number collected	Number of positives	MFIR
Burlington	CO2	115	0	
Cape May	Gravid, RB	98	0	
Cumberland	RB	53	0	
Gloucester	RB	33	0	
Ocean	CO2, Gravid, RB	4	0	
TOTAL		**303**	**0**	

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

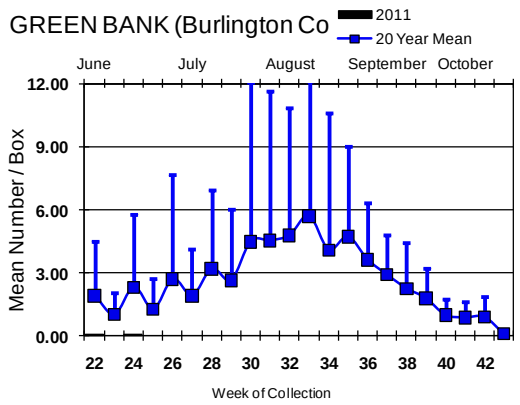
Species other than *Cs. melanura*	Pools	Mosquitoes	Positives	MFIR
Aedes albopictus	1	1		
Aedes canadensis canadensis	3	20		
Aedes cantator	5	54		
Aedes sollicitans	2	9		
Aedes sticticus	1	3		
Aedes taeniorhynchus	2	5		
Anopheles punctipennis	2	10		
Coquillettidia perturbans	14	194		
Culex erraticus	2	25		
Culex pipiens	34	192		
Culex restuans	3	3		
Culex salinarius	8	52		
Culex spp.	37	640		
State Total	**114**	**1208**		

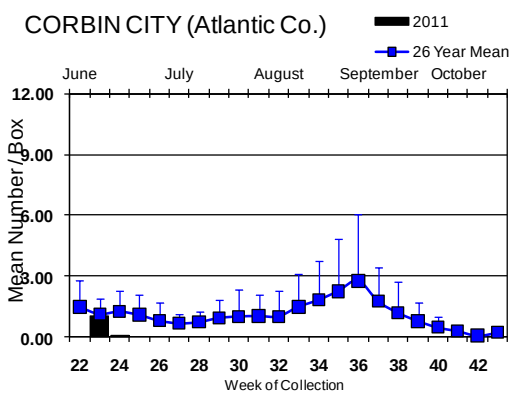
Horses and Humans: No positive horses or humans to date.

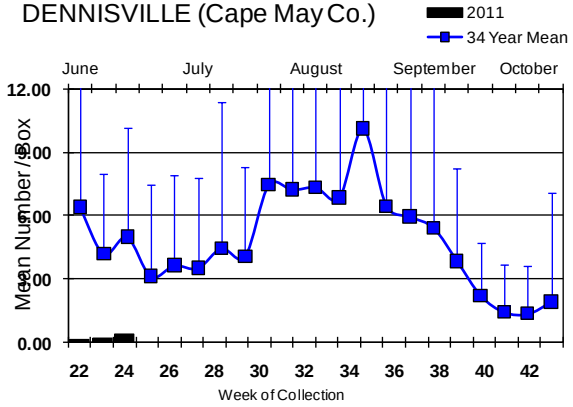
Horses and Vaccinations: The fate of unvaccinated equids reinforces the necessity of maintaining a vaccination schedule for arboviruses. For vaccination schedules recommended by the American Association of Equine Practices, see: http://www.aaep.org/vaccination_guidelines.htm

Culiseta melanura Population Graphs

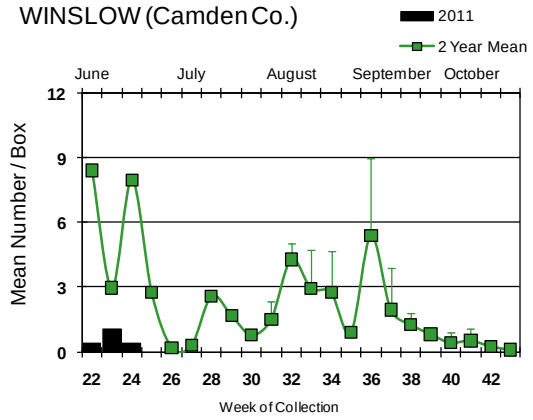
Coastal

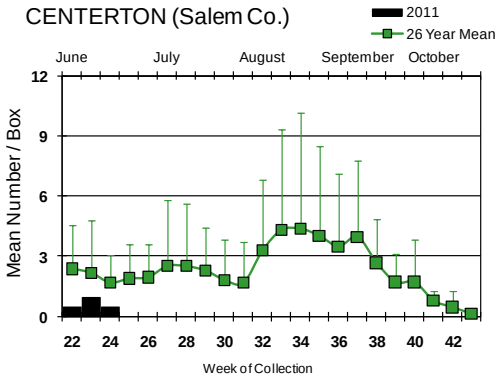


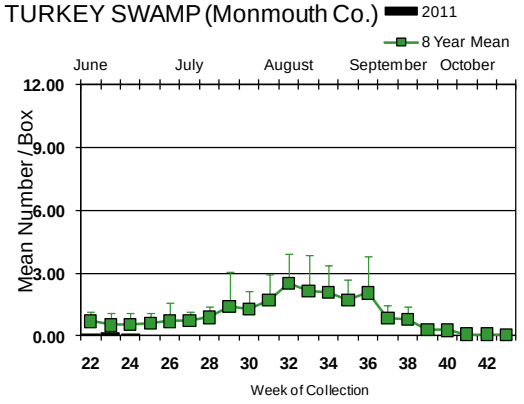




Inland



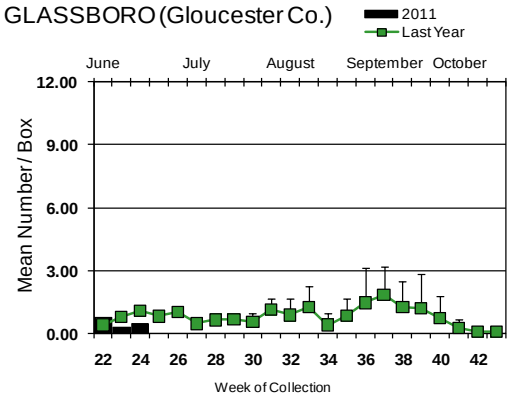




Populations of *Culiseta melanura* continue to remain well below historical values at all traditional resting box sites. Similar results are seen in light trap data in the adult mosquito surveillance reports.

= 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/17 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		2			
Arkansas					
California	11/12	5/6			
Colorado	0	0			0
Connecticut		0			0
Delaware					
DC					
Florida	1 flavi		27		
Georgia	0	0		1	0
Hawaii					
Idaho					
Illinois	2	1	0	0	0
Indiana	0	0		0	0
Iowa		0	0	0	0
Kansas					
Kentucky					
Louisiana					
Maine					
Maryland					
Mass.		0		0	0
Michigan	0	0	0	0	0
Minnesota					
Mississippi		1		0	1
Missouri	0	0		0	0

	Birds	Mosquito Pools	Sentinels	Horses	Humans
Montana				0	0
Nebraska	0	0		0	0
Nevada					0
New Hampshire		0		0	0
New Jersey	0	0		0	0
New Mexico					0
New York		0		0	0
North Carolina					
North Dakota	0	0		0*	0
Ohio		0		0	0
Oklahoma					
Oregon	0	0	0	0	0
Pennsylvania	0	1/2		0*	0
Rhode Island		0		0	0
South Carolina	0	0		0	0
South Dakota		0		0	0
Tennessee	0	2/3		0	0
Texas	0	3		0	0
Utah		0	0	0	0
Vermont	0	0		0	0
Virginia		0	0	0	0
Washington	0	0		0	0
West Virginia					
Wisconsin	0	0		0	0
Wyoming		0		0	0

* Other species (e.g., dogs) 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 for West Nile Virus Testing through 20 June 2011

Species	Pools	Mosquitoes	Positives	MFIR
Aedes albopictus	18	49		
Aedes canadensis canadensis	20	353		
Aedes cantator	12	95		
Aedes japonicus	18	46		
Aedes sollicitans	4	19		
Aedes sticticus	1	3		
Aedes taeniorhynchus	3	21		
Aedes triseriatus	15	41		
Aedes trivittatus	1	2		
Aedes vexans	9	58		
Anopheles bradleyi	1	4		
Anopheles punctipennis	5	15		
Anopheles quadrimaculatus	4	52		
Coquillettidia perturbans	23	316		
Culex erraticus	3	84		
Culex pipiens	68	1324		
Culex restuans	95	819		
Culex salinarius	10	80		
Culex spp.	136	4212		
Culiseta melanura	58	739		
State Total	**504**	**8332**		

Remarks: To date, there have been 8,332 mosquitoes tested in 504 pools of 19 species tested with no positives detected. Last year at this time, there were three positive pools detected, but last year was a very active year, with drought conditions that had been persistent since April 2010. This year, there has been more precipitation (and possibly warmer). Neighboring Pennsylvania has reported a few positive pools to date, suggesting vigilance is necessary.

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

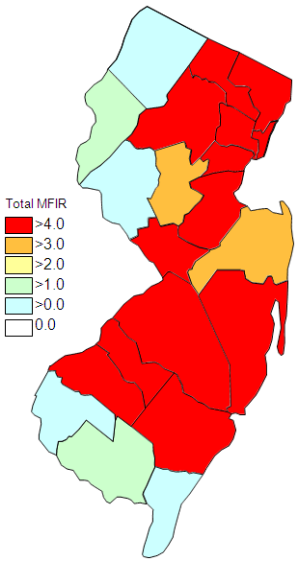
Bird testing began in mid-April. Eleven birds have been tested with no positives detected. Species include Blue Jays *Cyanocitta cristata* (2), Fish Crows *Corvus ossifragus* (2) and Other (non-corvid) species (6). The birds were submitted from Burlington, Cumberland, Gloucester, Monmouth, Ocean and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

2011 Positive Mosquito pools to date / Total Mosquito Pools Submitted	This time last year
0/504 (0%)	3 / 519 (.006%)
2011 Positive Birds to date / Total Birds Submitted	This time last year
0/ 11 (0%)	0/18 (0%)

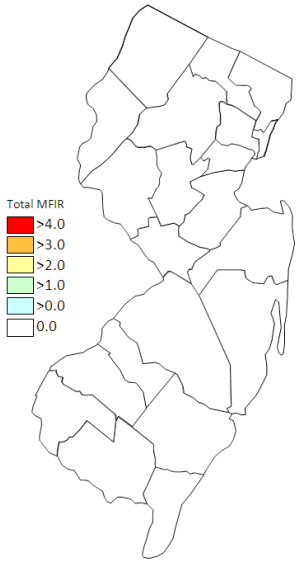
WNV Results by County through 20 June 2011

County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		**30**	**1139**		
	Aedes albopictus	2	14		
	Aedes cantator	1	8		
	Aedes vexans	1	8		
	Coquillettidia perturbans	1	4		
	Culex restuans	1	1		
	Culex spp.	22	1077		
	Culiseta melanura	2	27		
Burlington		**61**	**2056**		
	Aedes albopictus	1	1		
	Aedes canadensis canadensis	4	95		
	Aedes cantator	1	44		
	Aedes japonicus	1	2		
	Aedes sollicitans	1	7		
	Aedes sticticus	1	3		
	Aedes taeniorhynchus	1	3		
	Aedes vexans	1	29		
	Coquillettidia perturbans	9	207		
	Culex salinarius	3	22		
	Culex spp.	29	1443		
	Culiseta melanura	9	200		
Camden		**27**	**658**		
	Aedes albopictus	3	3		
	Aedes japonicus	4	12		
	Aedes triseriatus	1	2		
	Culex spp.	15	549		
	Culiseta melanura	4	92		
Cape May		**211**	**1867**		
	Aedes canadensis canadensis	7	167		
	Aedes cantator	4	30		
	Aedes japonicus	2	6		
	Aedes sollicitans	2	9		
	Aedes taeniorhynchus	2	18		
	Aedes triseriatus	4	9		
	Anopheles bradleyi	1	4		
	Anopheles punctipennis	1	2		
	Anopheles quadrimaculatus	2	31		
	Coquillettidia perturbans	8	95		
	Culex erraticus	3	84		
	Culex pipiens	39	325		
	Culex restuans	91	812		
	Culex salinarius	6	42		
	Culex spp.	26	100		
	Culiseta melanura	13	133		
Cumberland		**15**	**99**		
	Aedes canadensis canadensis	2	6		
	Aedes triseriatus	2	5		

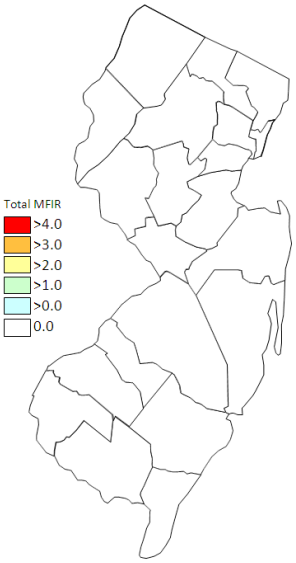
	Aedes vexans	1	2		
	Anopheles punctipennis	1	2		
	Coquillettidia perturbans	1	3		
	Culex pipiens	1	7		
	Culex restuans	2	5		
	Culex spp.	1	16		
	Culiseta melanura	4	53		
Gloucester		**50**	**1153**		
	Aedes japonicus	1	2		
	Aedes triseriatus	1	1		
	Anopheles punctipennis	2	10		
	Anopheles quadrimaculatus	2	21		
	Coquillettidia perturbans	1	1		
	Culex pipiens	28	992		
	Culiseta melanura	15	126		
Monmouth		**46**	**474**		
	Aedes albopictus	3	3		
	Aedes canadensis canadensis	4	82		
	Aedes cantator	2	8		
	Aedes japonicus	4	10		
	Aedes sollicitans	1	3		
	Aedes triseriatus	2	12		
	Aedes trivittatus	1	2		
	Aedes vexans	3	8		
	Anopheles punctipennis	1	1		
	Coquillettidia perturbans	2	3		
	Culex restuans	1	1		
	Culex salinarius	1	16		
	Culex spp.	17	315		
	Culiseta melanura	4	10		
Ocean		**46**	**280**		
	Aedes albopictus	9	28		
	Aedes canadensis canadensis	3	3		
	Aedes cantator	4	5		
	Aedes japonicus	6	14		
	Aedes triseriatus	5	12		
	Aedes vexans	3	11		
	Coquillettidia perturbans	1	3		
	Culex spp.	11	200		
	Culiseta melanura	4	4		
Salem		**3**	**94**		
	Culiseta melanura	3	94		
Warren		**15**	**512**		
	Culex spp.	15	512		
Grand Total		**504**	**8332**		



Cumulative WNV activity in 2010.



WNV activity to 20 June 2011.



WNV activity last week, 2011.

Saint Louis Encephalitis (SLE) through 20 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 have tested positive for SLE to date in 2011.

County	Species	Pools	Mosquitoes	Positives	MFIR
Burlington		**60**	**2055**		
	Aedes albopictus	1	1		
	Aedes canadensis canadensis	4	95		
	Aedes cantator	1	44		
	Aedes japonicus	1	2		
	Aedes sollicitans	1	7		
	Aedes sticticus	1	3		
	Aedes taeniorhynchus	1	3		
	Aedes vexans	1	29		
	Coquillettidia perturbans	9	207		
	Culex salinarius	3	22		
	Culex spp.	29	1443		
	Culiseta melanura	8	199		
Camden		**23**	**2621**		
	Aedes albopictus	3	3		
	Aedes japonicus	4	12		
	Aedes triseriatus	1	2		
	Culex spp.	15	549		
Grand Total		**83**	**2621**		

La Crosse Encephalitis (LAC) through 20 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
Cape May		**4**	**9**		
	Aedes triseriatus	4	9		
Cumberland		**2**	**5**		
	Aedes triseriatus	2	5		
Grand Total		**6**	**14**		