

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 27: June 30 – July 6, 2013
 Data Downloaded 13:29 pm 8 July 2013



This New Jersey Agricultural Experiment Station report is supported by Rutgers University, Hatch funds, funding from the NJ State Mosquito Control Commission and with the participation of the Department of Health, Department of Agriculture and of the 21 county mosquito control agencies of New Jersey.

Culiseta melanura and Eastern Equine Encephalitis

SITE/Boxes	Inland / Coastal	Historic Population Mean	Current Weekly Mean	Total (Collected) Tested*	Total Pools (Submitted) Tested*	EEE Isolation Pools	MFIR
Bass River (Burlington Co.)/5	Coastal	0	1.00	3 (8)	2 (3)		
Green Bank (Burlington Co.)/25	Coastal	1.74	0.08	10 (12)	5 (6)		
Corbin City (Atlantic Co.)/25	Coastal	0.65	0.48	49	6		
Dennisville (Cape May Co.)/50	Coastal	3.35	0.14	30	4		
Winslow (Camden Co.)/50	Inland	0.81	0.66	292	8		
Centerton (Salem Co.)/50	Inland	2.35	2.06	168	6		
Turkey Swamp (Monmouth Co.)/44	Inland	0.68	0.18	98 (126)	6 (7)		
Glassboro (Gloucester Co.)/50	Inland	0.47	1.06	62	4		

*Current week (in parentheses) results pending.

Remarks: Currently, there are no positive EEE pools of *Cs. melanura* from any site in New Jersey.

For counties accessing the West Nile database: Results from samples recently tested at the Cape May labs will be entered soon (above table include some samples currently not in the system).

To date 712 *Cs. melanura* from 41 pools have been tested from the traditional resting box sites for an MFIR of 0 with an additional 3 pools of 35 mosquitoes to be tested. There has been no detection of EEE in any samples collected in the state.

Additional *Cs. melanura*: Seventy-two additional pools containing 1999 *Cs. melanura* have been tested from other sites using other traps in addition to resting boxes. No positive *Cs. melanura* pools from these sites have been detected.

Additional <i>Cs. melanura</i> trapped by counties				
*traps with positives indicated in BOLD .				
County	Trap types*	Number collected (pools)	Number of positives pools	MFIR
Burlington	CO ₂	1703 (28)		
Cape May	Gravid, RB	68 (12)		
Gloucester	RB	181 (15)		
Monmouth	CO ₂	14 (2)		
Ocean	CO ₂ , RB	19 (12)		
TOTAL		1999 (72)	0	0.00

Additional Species: The table below indicates non-*Cs. melanura* mosquitoes tested for EEE. Last year, *Culex erraticus*, a known enzootic vector and potential bridge vector, was found positive. Currently, no other species have been found positive.

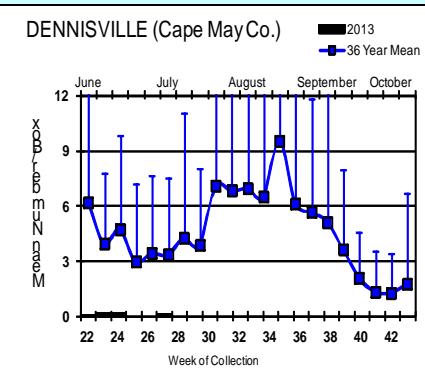
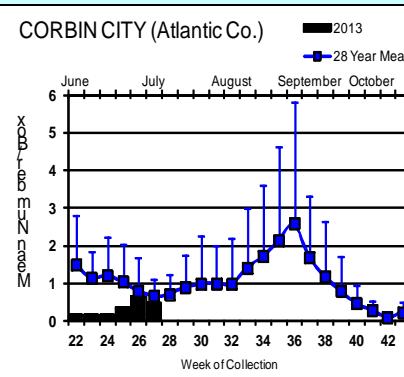
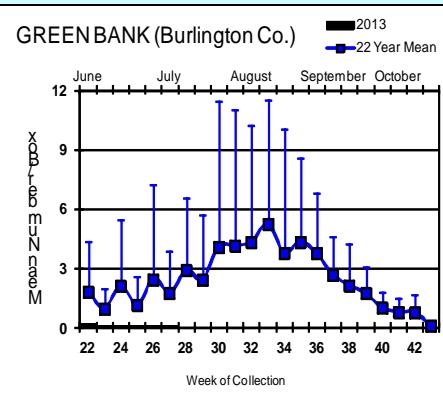
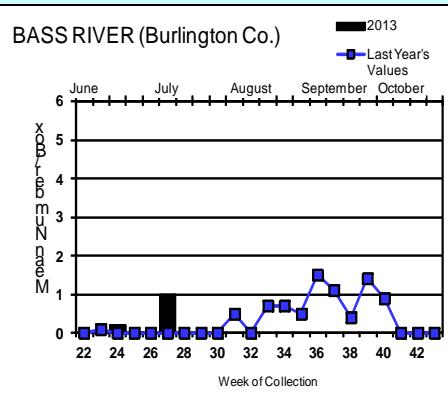
Species other than <i>Cs. melanura</i>	Pools	Mosquitoes	Positives	MFIR
<i>Aedes cantator</i>	4	4		
<i>Aedes sticticus</i>	2	3		
<i>Coquillettidia perturbans</i>	1	71		
<i>Culex erraticus</i>	1	15		
<i>Culex pipiens</i>	54	602		
<i>Culex restuans</i>	1	1		
<i>Culex salinarius</i>	2	52		
<i>Culex</i> spp.	20	62		
State Total	85	810	0	0.00

Horses and Humans: Currently there is no reported horse, other livestock or human cases.

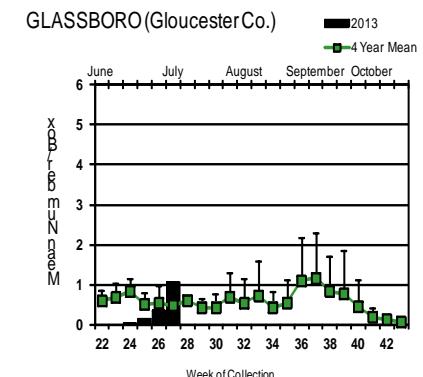
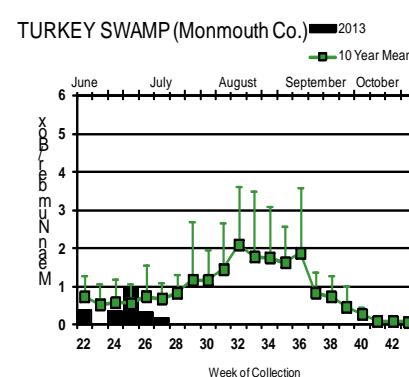
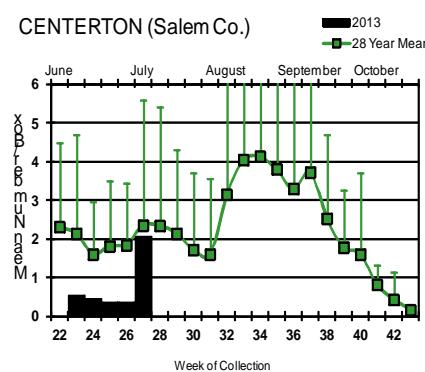
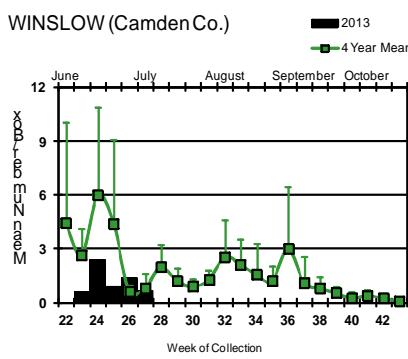
Horses and Vaccinations: The fate of unvaccinated equids reinforces the necessity of maintaining a vaccination schedule for arboviruses. For vaccination schedules recommended by the American Association of Equine Practices, see: http://www.aaep.org/vaccination_guidelines.htm

Culiseta melanura Population Graphs

Coastal



Inland



Cs. melanura numbers at Bass River, Centerton and Glassboro resting box sites increased from the previous week. The changes at Bass River and Centerton were sizeable. Cs. melanura also were trapped at Dennisville where the previous two weeks had no adults collected.

Note axis change (from 12 to 6) on Bass River, Corbin City, Centerton, Turkey Swamp and Glassboro sites.

  = Positive pool(s) detected (red = melanura, purple = other).

EEE in US (2013 cumulative cases): (Black or Red = previous + new reported cases occurring)

- equine: 4(GA) 11(FL) 1(SC)
- mosquito pools:
- sentinel: 1(AL) 39/3 wild(FL)
- human: 2(FL)

West Nile Virus in US

West Nile in US (2013 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	0	1	0	0	0
Arkansas				0	0
California	87/106	124/237	1/7	0	1
Colorado		12			
Connecticut		0			
Delaware					
DC					
Florida			49		
Georgia	0	0		0	0
Hawaii					
Idaho		2			
Illinois	0	10/21		0	0
Indiana	0	1/2		0	0
Iowa		0	1		1
Kansas		0			0
Kentucky					
Louisiana		6			
Maine		0		0	0
Maryland					
Mass.		1		0	0
Michigan	3			0	
Minnesota					
Mississippi		1/2		0	5/6
Missouri		0		0	0

	Birds	Mosquito Pools	Sentinels	Horses	Humans
Montana					
Nebraska		4			0
Nevada		1			2
New Hampshire					
New Jersey	0	2		0	0
New Mexico					0
New York					
North Carolina					
North Dakota	0	0		0	0
Ohio					1
Oklahoma					
Oregon	0	9	0	0	0
Pennsylvania	1	2		0	0
Rhode Island					
South Carolina					
South Dakota		3			1
Tennessee	0	59/69		0	1
Texas		13/15		1	2
Utah		8/9	0	0	0
Vermont					
Virginia					
Washington	0	2		0	0
West Virginia		6			
Wisconsin	1	0		0	0
Wyoming					

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

**Mosquito Species Submitted and Tested
for West Nile Virus Testing through 8 July 2013**

Species	Pools	Mosquitoes	Positives	MFIR
<i>Aedes albopictus</i>	84	379		
<i>Aedes atlanticus</i>	2	3		
<i>Aedes canadensis canadensis</i>	24	629		
<i>Aedes cantator</i>	12	45		
<i>Aedes grossbecki</i>	1	1		
<i>Aedes japonicus</i>	111	618		
<i>Aedes sticticus</i>	3	5		
<i>Aedes taeniorhynchus</i>	1	3		
<i>Aedes triseriatus</i>	18	83		
<i>Aedes trivittatus</i>	2	5		
<i>Aedes vexans</i>	13	217		
<i>Anopheles bradleyi</i>	1	1		
<i>Anopheles punctipennis</i>	8	49		
<i>Anopheles quadrimaculatus</i>	7	51		
<i>Coquillettidia perturbans</i>	7	132		
<i>Culex erraticus</i>	3	19		
<i>Culex pipiens</i>	205	6140		
<i>Culex restuans</i>	155	1614		
<i>Culex salinarius</i>	2	52		
<i>Culex spp.</i>	854	33669	2	0.059
<i>Culiseta melanura</i>	118	2570		
<i>Psorophora ciliata</i>	1	1		
<i>Psorophora ferox</i>	9	215		
<i>Psorophora howardii</i>	1	10		
State Total	1642	46511	2	0.043

Remarks: To date, 1642 pools of 46511 mosquitoes from 23 species have been tested. First positive was detected in a pool collected on 26 June in Middlesex County. All positive pools are from *Culex* Mixed (*Culex pipiens*, *Cx. restuans*, *Cx. salinarius*). Currently, positive pools are from two counties (Middlesex, Sussex). This is the earliest date for WNV detection in mosquito pools from Sussex County.

Humans, Horses and Wild Birds: No human cases have been reported. See <http://www.state.nj.us/health/cd/westnile/techinfo.shtml> for further information.

Last year the first horse was detected in mid July. No horse or other livestock have been reported positive in 2013 to date.

Bird testing began in mid-April. No positive birds have been reported. To date, 42 birds have been tested, all negative. Testing includes: American Crow (*Corvus brachyrhynchos* 0/3), Fish Crow (*C. ossifragus* 0/2), Blue Jay (*Cyanocitta cristata* 0/1), Hawk/Raptor (0/4) and other avian species (0/32). Counties submitting birds are Bergen, Burlington, Cumberland, Gloucester, Hunterdon, Monmouth, Morris, Ocean, Sussex, Union and Warren.

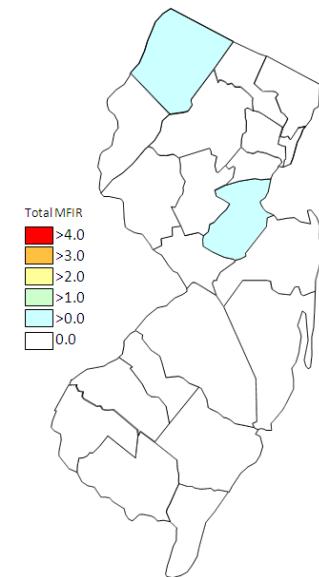
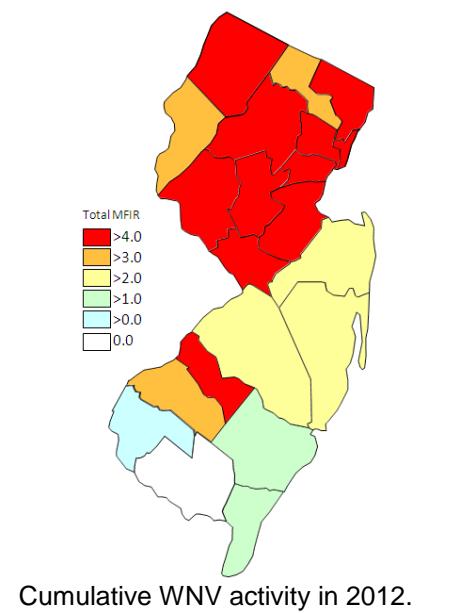
2013 Positive Mosquito pools to date / Total Mosquito Pools Submitted	This time last year
2 / 1642 (0.001)	103 / 2648 (0.039)
2013 Positive Birds to date / Total Birds Submitted	This time last year
0 / 42 (0.0)	4 / 55 (0.073)

WNV Results by County through 1 July 2013

County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		47	681		
	<i>Aedes albopictus</i>	3	9		
	<i>Aedes canadensis canadensis</i>	3	73		
	<i>Aedes cantator</i>	1	21		
	<i>Aedes grossbecki</i>	1	1		
	<i>Aedes japonicus</i>	3	12		
	<i>Aedes sticticus</i>	2	3		
	<i>Aedes taeniorhynchus</i>	1	3		
	<i>Aedes triseriatus</i>	2	8		
	<i>Aedes vexans</i>	3	104		
	<i>Anopheles bradleyi</i>	1	1		
	<i>Anopheles punctipennis</i>	1	11		
	<i>Coquillettidia perturbans</i>	3	25		
	<i>Culex</i> spp.	10	198		
	<i>Culiseta melanura</i>	9	81		
	<i>Psorophora ciliata</i>	1	1		
	<i>Psorophora ferox</i>	2	120		
	<i>Psorophora howardii</i>	1	10		
Bergen		30	2250		
	<i>Culex</i> spp.	30	2250		
Burlington		76	3423		
	<i>Aedes japonicus</i>	2	13		
	<i>Coquillettidia perturbans</i>	1	71		
	<i>Culex pipiens</i>	2	15		
	<i>Culex salinarius</i>	1	51		
	<i>Culex</i> spp.	35	1557		
	<i>Culiseta melanura</i>	35	1716		
Camden		66	2369		
	<i>Aedes albopictus</i>	9	16		
	<i>Aedes japonicus</i>	4	23		
	<i>Culex</i> spp.	48	2148		
	<i>Culiseta melanura</i>	5	182		
Cape May		345	3029		
	<i>Aedes albopictus</i>	9	14		
	<i>Aedes cantator</i>	5	5		
	<i>Aedes japonicus</i>	32	59		
	<i>Aedes triseriatus</i>	3	3		
	<i>Aedes vexans</i>	1	1		
	<i>Anopheles punctipennis</i>	1	1		
	<i>Anopheles quadrimaculatus</i>	5	45		
	<i>Culex erraticus</i>	2	18		
	<i>Culex pipiens</i>	102	1125		
	<i>Culex restuans</i>	147	1590		
	<i>Culex salinarius</i>	1	1		
	<i>Culex</i> spp.	22	76		
	<i>Culiseta melanura</i>	15	91		
Essex		35	670		

	<i>Aedes albopictus</i>	8	17		
	<i>Aedes japonicus</i>	5	27		
	<i>Culex</i> spp.	22	626		
Gloucester		140	5571		
	<i>Aedes albopictus</i>	7	92		
	<i>Aedes japonicus</i>	12	173		
	<i>Aedes triseriatus</i>	1	30		
	<i>Aedes vexans</i>	2	87		
	<i>Anopheles punctipennis</i>	2	32		
	<i>Coquillettidia perturbans</i>	1	29		
	<i>Culex pipiens</i>	92	4847		
	<i>Culiseta melanura</i>	21	220		
	<i>Psorophora ferox</i>	2	61		
Hudson		31	874		
	<i>Culex</i> spp.	31	874		
Hunterdon		90	4007		
	<i>Culex</i> spp.	90	4007		
Mercer		20	208		
	<i>Aedes albopictus</i>	7	35		
	<i>Aedes japonicus</i>	1	1		
	<i>Culex pipiens</i>	7	151		
	<i>Culex restuans</i>	5	21		
Middlesex		56	1148	1	0.871
	<i>Aedes albopictus</i>	2	12		
	<i>Aedes japonicus</i>	4	20		
	<i>Culex</i> spp.	50	1116	1	0.896
Monmouth		110	1331		
	<i>Aedes albopictus</i>	14	57		
	<i>Aedes atlanticus</i>	2	3		
	<i>Aedes canadensis canadensis</i>	12	205		
	<i>Aedes cantator</i>	5	9		
	<i>Aedes japonicus</i>	11	41		
	<i>Aedes triseriatus</i>	4	22		
	<i>Aedes trivittatus</i>	2	5		
	<i>Aedes vexans</i>	3	7		
	<i>Anopheles punctipennis</i>	2	2		
	<i>Coquillettidia perturbans</i>	1	5		
	<i>Culex restuans</i>	2	2		
	<i>Culex</i> spp.	35	789		
	<i>Culiseta melanura</i>	14	152		
	<i>Psorophora ferox</i>	3	32		
Morris		107	4703		
	<i>Culex</i> spp.	107	4703		
Ocean		88	1166		
	<i>Aedes albopictus</i>	16	78		
	<i>Aedes canadensis canadensis</i>	9	351		
	<i>Aedes cantator</i>	1	10		

<i>Aedes japonicus</i>	13	52		
<i>Aedes triseriatus</i>	1	2		
<i>Aedes vexans</i>	2	2		
<i>Anopheles punctipennis</i>	2	3		
<i>Coquillettidia perturbans</i>	1	2		
<i>Culex</i> spp.	31	647		
<i>Culiseta melanura</i>	12	19		
Passaic	55	2223		
<i>Aedes albopictus</i>	2	5		
<i>Aedes japonicus</i>	6	62		
<i>Aedes triseriatus</i>	1	3		
<i>Culex</i> spp.	46	2153		
Salem	48	355		
<i>Aedes albopictus</i>	7	44		
<i>Aedes japonicus</i>	9	45		
<i>Aedes sticticus</i>	1	2		
<i>Aedes triseriatus</i>	6	15		
<i>Anopheles quadrimaculatus</i>	2	6		
<i>Culex erraticus</i>	1	1		
<i>Culex pipiens</i>	2	2		
<i>Culex restuans</i>	1	1		
<i>Culex</i> spp.	11	158		
<i>Culiseta melanura</i>	6	79		
<i>Psorophora ferox</i>	2	2		
Somerset	90	2542		
<i>Aedes japonicus</i>	9	90		
<i>Aedes vexans</i>	2	16		
<i>Culex</i> spp.	79	2436		
Sussex	63	2514	1	0.398
<i>Culex</i> spp.	62	2484	1	0.403
<i>Culiseta melanura</i>	1	30		
Union	50	2714		
<i>Culex</i> spp.	50	2714		
Warren	95	4733		
<i>Culex</i> spp.	95	4733		
Grand Total	1642	46511	2	0.043



No activity

WNV activity last week, 2013.

Saint Louis Encephalitis (SLE) to 8 July 2013.

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 been detected positive for SLE in 2013.

County	Species	Pools	Mosquitoes	Positives	MFIR
Cape May		50	584		
	<i>Culex pipiens</i>	50	584		
Grand Total		50	584		

La Crosse Encephalitis (LAC) through 8 July 2013.

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 have been detected positive for LAC in 2013.

County	Species	Pools	Mosquitoes	Positives	MFIR
Salem		5	14		
	<i>Aedes triseriatus</i>	5	14		
Grand Total		5	14		