

VECTOR SURVEILLANCE IN NEW JERSEY
EEE and WNV
CDC WEEK 33: August 10 to August 16, 2008

Prepared by Lisa M. Reed, Scott Crans Dina
Fonseca and Marc Slaff at the Center for Vector
Biology, Rutgers University.
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 Collected to Date*	Total Pools Submitted	EEE Isolations	MFIR
Green Bank (Burlington County)	Coastal	5.6	0.1	40	18		
Corbin City (Atlantic County)	Coastal	1.1	0.2	134	40		
Dennisville (Cape May County)	Coastal	7.9	0.1	378	33		
Waterford (Camden County)	Inland	1.0	0	0	0		
Centerton (Salem County)	Inland	3.6	0	190	28		
Turkey Swamp (Monmouth County)	Inland	3.0	0.4	154	35		
Glassboro (Gloucester County)	Inland	no history	0	9	6		

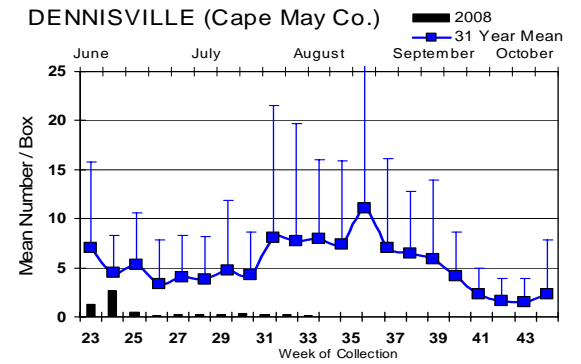
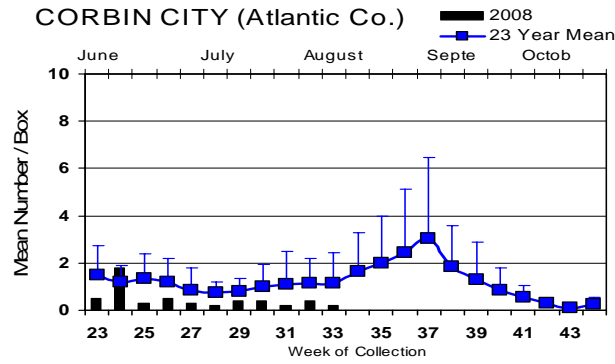
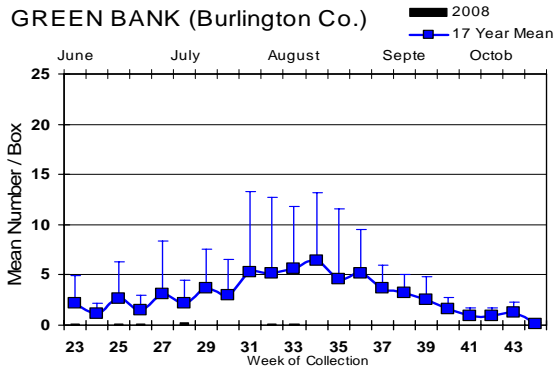
*Including trial run last week in May.

Remarks: Few *Culiseta melanura* are caught at the monitoring sites. Green Bank and Turkey Swamp did increase in the average number of *Cs. melanura* per box, but the overall rates continue to be substantially lower than historical trend indicated. At this time last year, the first positive EEE pool had been detected at the Green Bank monitoring site. But, at this same time last year, we had also collected thirty-four pools, consisting of 264 mosquitoes from this same site.

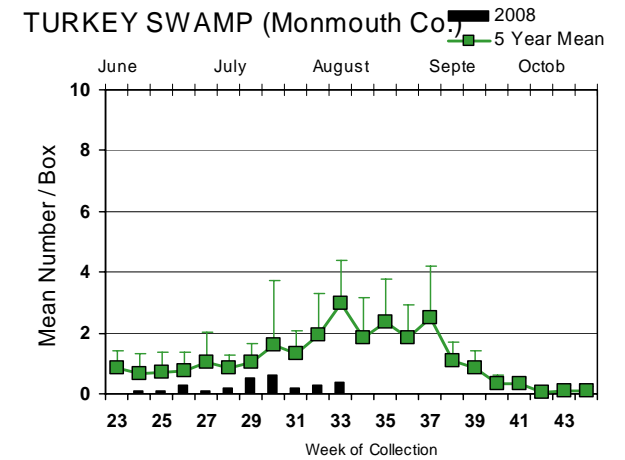
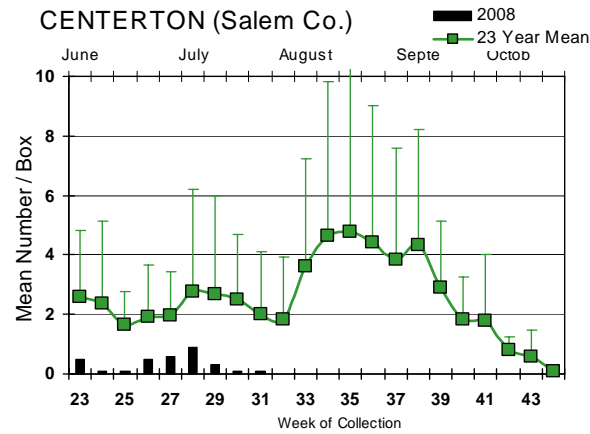
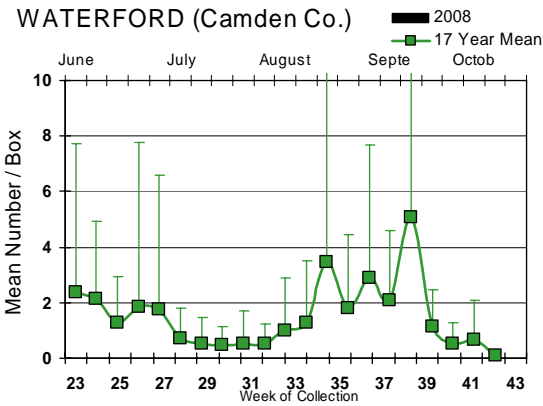
To date, 160 pools from 905 *Cs. melanura* mosquitoes have been sent for EEE testing from the resting box collections. No positives have been detected from these pools or from pools submitted by the counties. An additional 223 pools of 1798 individual mosquitoes from 29 species other than *Cs. melanura* have also been tested and all pools were found to be negative. These species include: *Aedes albopictus*, *Ae. canadensis canadensis*, *Ae. cantator*, *Ae. cinereus*, *Ae. communis*, *Ae. grossbecki*, *Ae. japonicus*, *Ae. sollicitans*, *Ae. sticticus*, *Ae. taeniorhynchus*, *Ae. triseriatus*, *Ae. vexans*, *Anopheles bradleyi*, *An. crucians*, *An. punctipennis*, *An. quadrimaculatus*, *Coquillettidia perturbans*, *Culex erraticus*, *Cx. pipiens*, *Cx. restuans*, *Cx.*, *salinarius*, *Mixed Culex*, *Cx. territans*, *Culiseta inornata*, *Orthopodomyia signifera*, *Psorophora ciliata*, *Ps. columbiae*, *Ps.*, *ferox*, *Ps. howardii* and *Uranotaenia sapphirina*.

Culiseta melanura Population Graphs

Coastal

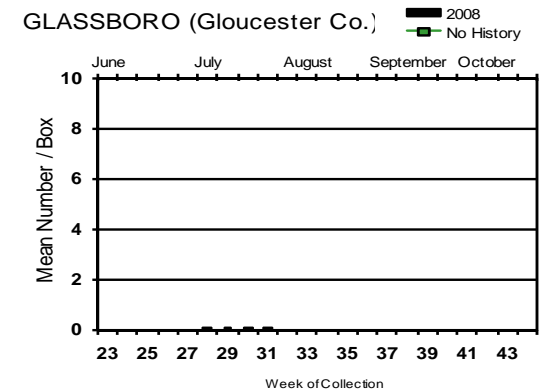


Inland



Figures: Inland and coastal resting box sites showing current weekly population levels (in bars) against historical trends (lines with standard deviation). The number of years for historical population levels varies by site.

An additional inland resting box site has been added. This site is located near Glassboro, in Gloucester County. The location is in a wildlife management area, with box location in a mixed forest swamp (Red Maple/White Pine).



EEE in US (2008 cumulative cases): (Red = new reported cases occurring)

- equine: 2(AL), 68(FL), 16(GA) 3(LA) 5(MS) 1(TN) 1(WI)
- mosquito: 3(FL), 1(GA), 1(MA), 1(VA)
- sentinel: 3(AL), 67(FL, 41 wild), 2(NC)
- human: 1(AL)

West Nile Virus

West Nile in US (2008 cumulative cases): Single black values indicate no change from previous week. Black values / red values equals previous week/**New totals**.

	Birds	Mosquito Pools	Sentinels	Horses	Humans
Alabama				1	1
Alaska					
Arizona	1	56/65	16/17		5
Arkansas		11		1	2/4
California	981/1135	712/906	50/63	5	55/73
Colorado		7/17			18
Connecticut		73/80			1
Delaware					
Florida	2/3 live		2	1	
Georgia					
Hawaii					
Idaho	2	6 counties			9/12
Illinois	6/7	102/119		1	1
Indiana	1	21			
Iowa		1			1
Kansas					
Kentucky					
Louisiana		337/414		1	5
Maine					
Maryland		2/3			
Mass.	21/26	28/39			
Michigan	2	1			
Minnesota	4	3			8/9
Mississippi		1/3			35/42
Missouri	29	158		1	3
Montana					
Nebraska	3	18/44			3/5

	Birds	Mosquito Pools	Sentinels	Horses	Humans
Nevada		13			2
New Hampshire					
New Jersey	11/18	168/237			
New Mexico		1		1	
New York	25	135/273			2
North Carolina				1	
North Dakota				1	8/14
Ohio		15			1
Oklahoma		1			5
Oregon		4			3
Pennsylvania	3/4	144/193			1
Rhode Island					
South Carolina	3				
South Dakota	1	30		1	11
Tennessee		161/246			3/6
Texas		47/57			11/13
Utah	2	41/52			3/5
Vermont		1			
Virginia		97			
Washington		4/13		4/5	
West Virginia	2	10		2	1
Wisconsin	11			1	1
Wyoming		10			2

Note: Some data reported by states are provisional and are subject to change.

Protocol: New Jersey Department of Health and Senior Services (NJDHSS Public Health and Environmental Laboratories, PHEL) tests mosquito pools using RT-PCR Taqman techniques.

Mosquito Species Submitted for West Nile Virus Testing through 18 August 2008

Species	Pools	Mosquitoes	Positives	MFIR
<i>Aedes abserratus</i>	1	9		
<i>Aedes albopictus</i>	397	3480	1	0.287
<i>Aedes atlanticus</i>	1	4		
<i>Aedes atropalpus</i>	1	1		
<i>Aedes canadensis canadensis</i>	53	1231		
<i>Aedes cantator</i>	24	356		
<i>Aedes cinereus</i>	1	3		
<i>Aedes communis</i>	1	1		
<i>Aedes grossbecki</i>	3	4		
<i>Aedes japonicus</i>	216	1109	1	0.902
<i>Aedes sollicitans</i>	16	231		
<i>Aedes sticticus</i>	5	85		
<i>Aedes taeniorhynchus</i>	14	268		

<i>Aedes thibaulti</i>	5	13		
<i>Aedes triseriatus</i>	105	329		
<i>Aedes trivittatus</i>	2	2		
<i>Aedes vexans</i>	105	1876		
<i>Anopheles barberi</i>	1	1		
<i>Anopheles bradleyi</i>	35	736		
<i>Anopheles crucians</i>	3	4		
<i>Anopheles punctipennis</i>	87	554		
<i>Anopheles quadrimaculatus</i>	68	1047		
<i>Coquillettidia perturbans</i>	74	772		
<i>Culex erraticus</i>	38	215		
<i>Culex pipiens</i>	341	8834	34	3.849
<i>Culex restuans</i>	171	2931		
<i>Culex salinarius</i>	106	2831	1	0.353
<i>Culex spp.</i>	1500	62249	200	3.213
<i>Culex territans</i>	23	61		
<i>Culiseta inornata</i>	2	4		
<i>Culiseta melanura</i>	193	1182		
<i>Orthopodomyia signifera</i>	7	16		
<i>Psorophora ciliata</i>	2	2		
<i>Psorophora columbiae</i>	11	41		
<i>Psorophora ferox</i>	16	108		
<i>Psorophora howardii</i>	2	7		
<i>Uranotaenia sapphirina</i>	7	36		
Grand Total	3637	90633	237	2.615

Remarks: Submitted pools (3,637) comprised of 90,633 individual mosquitoes produced 237 positive pools from 12 different counties. Last week, the first non-*Culex* positive bridge vector (*Aedes japonicus*) was detected in Essex County. This week, two additional positive pools in potential bridge vectors have been detected: *Aedes albopictus* in Ocean County and *Culex salinarius* in Middlesex County. This is a pattern similar to what was seen last year, when initial positives turned up in these species. In addition, last year also had positive pools in *Culiseta melanura* (a bird feeder, and thus not surprising) and *Coquillettidia perturbans*. The latter is not a competent vector for West Nile. However, the involvement of *Ae. albopictus* and *Ae. japonicus* is of concern as they are both highly competent for transmission of West Nile virus. Also, general activity appears to have increased over last year. At this time last year, the overall MFIR value for *Culex spp.* was at 1.57 with 74 pools whereas with this report, the MFIR for the same pooled species is 3.213 with 200 pools. Additionally, the overall state MFIR to date is 2.61 versus last year's value at this time of 1.85.

Humans, Horses and Wild Birds: To date, there have been 115 dead birds submitted for West Nile virus testing with 18 positives. Although last year, the first positive bird showed up two days earlier than this year, to the same date last year, there were only 8 positive birds through 124 submissions.

2008 Positive Mosquito pools to date / Total Mosquito Pools Submitted	This time last year
237 / 4,058	166 / 3,343

WNV Results by County through 11 August 2008

County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		176	3925	7	1.783
	<i>Aedes albopictus</i>	18	533		
	<i>Aedes canadensis canadensis</i>	3	12		
	<i>Aedes cantator</i>	2	16		
	<i>Aedes japonicus</i>	2	3		

<i>Aedes sollicitans</i>	3	77		
<i>Aedes taeniorhynchus</i>	9	245		
<i>Aedes thibaulti</i>	4	8		
<i>Aedes triseriatus</i>	3	12		
<i>Aedes vexans</i>	8	148		
<i>Anopheles bradleyi</i>	5	22		
<i>Anopheles punctipennis</i>	2	2		
<i>Anopheles quadrimaculatus</i>	1	1		
<i>Coquillettidia perturbans</i>	4	41		
<i>Culex erraticus</i>	3	62		
<i>Culex restuans</i>	4	39		
<i>Culex salinarius</i>	2	2		
<i>Culex sp.</i>	57	2539	7	2.757
<i>Culex territans</i>	5	16		
<i>Culiseta melanura</i>	39	134		
<i>Psorophora ferox</i>	2	13		
Bergen	327	13024	56	4.300
<i>Aedes albopictus</i>	20	97		
<i>Aedes canadensis canadensis</i>	1	6		
<i>Aedes japonicus</i>	23	142		
<i>Aedes sollicitans</i>	1	1		
<i>Aedes triseriatus</i>	11	39		
<i>Aedes vexans</i>	11	81		
<i>Anopheles barberi</i>	1	1		
<i>Anopheles bradleyi</i>	1	3		
<i>Anopheles punctipennis</i>	4	31		
<i>Coquillettidia perturbans</i>	16	150		
<i>Culex pipiens</i>	60	2138	6	2.806
<i>Culex restuans</i>	25	307		
<i>Culex salinarius</i>	39	1710		
<i>Culex spp.</i>	112	8316	50	6.013
<i>Culex territans</i>	1	1		
<i>Orthopodomyia signifera</i>	1	1		
Burlington	237	2092		
<i>Aedes albopictus</i>	17	136		
<i>Aedes canadensis canadensis</i>	21	598		
<i>Aedes cantator</i>	4	148		
<i>Aedes cinereus</i>	1	3		
<i>Aedes grossbecki</i>	1	1		
<i>Aedes japonicus</i>	10	26		
<i>Aedes sollicitans</i>	1	18		
<i>Aedes sticticus</i>	2	5		
<i>Aedes taeniorhynchus</i>	1	2		
<i>Aedes triseriatus</i>	11	38		
<i>Aedes vexans</i>	29	285		
<i>Anopheles bradleyi</i>	2	6		
<i>Anopheles crucians</i>	3	4		
<i>Anopheles punctipennis</i>	13	29		
<i>Anopheles quadrimaculatus</i>	5	8		
<i>Coquillettidia perturbans</i>	19	232		
<i>Culex erraticus</i>	3	3		
<i>Culex pipiens</i>	2	18		
<i>Culex restuans</i>	4	27		
<i>Culex salinarius</i>	1	1		

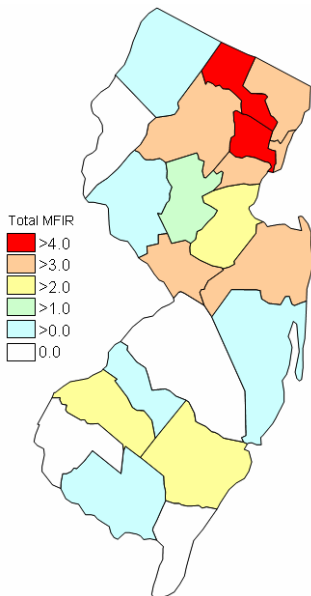
<i>Culex sp.</i>	34	314		
<i>Culex territans</i>	3	6		
<i>Culiseta inornata</i>	1	3		
<i>Culiseta melanura</i>	31	145		
<i>Orthopodomyia signifera</i>	3	11		
<i>Psorophora ciliata</i>	2	2		
<i>Psorophora columbiae</i>	5	10		
<i>Psorophora ferox</i>	4	5		
<i>Psorophora howardii</i>	1	3		
<i>Uranotaenia sapphirina</i>	3	5		
Camden	123	2394	5	2.089
<i>Aedes albopictus</i>	22	193		
<i>Aedes canadensis canadensis</i>	1	19		
<i>Aedes cantator</i>	1	22		
<i>Aedes japonicus</i>	11	27		
<i>Aedes triseriatus</i>	1	1		
<i>Aedes trivittatus</i>	1	1		
<i>Aedes vexans</i>	4	46		
<i>Anopheles punctipennis</i>	7	31		
<i>Anopheles quadrimaculatus</i>	4	5		
<i>Coquillettidia perturbans</i>	4	16		
<i>Culex erraticus</i>	1	1		
<i>Culex pipiens</i>	11	495		
<i>Culex restuans</i>	16	479		
<i>Culex salinarius</i>	3	14		
<i>Culex sp.</i>	32	1039	5	4.812
<i>Culiseta melanura</i>	1	1		
<i>Orthopodomyia signifera</i>	2	3		
<i>Psorophora columbiae</i>	1	1		
Cape_May	211	4017		
<i>Aedes canadensis canadensis</i>	4	71		
<i>Aedes cantator</i>	8	82		
<i>Aedes japonicus</i>	5	13		
<i>Aedes sollicitans</i>	3	81		
<i>Aedes taeniorhynchus</i>	2	8		
<i>Aedes triseriatus</i>	1	1		
<i>Aedes vexans</i>	2	13		
<i>Anopheles bradleyi</i>	15	442		
<i>Anopheles punctipennis</i>	6	101		
<i>Anopheles quadrimaculatus</i>	13	493		
<i>Coquillettidia perturbans</i>	3	27		
<i>Culex erraticus</i>	3	15		
<i>Culex pipiens</i>	38	724		
<i>Culex restuans</i>	45	824		
<i>Culex salinarius</i>	11	425		
<i>Culex sp.</i>	18	317		
<i>Culex territans</i>	1	2		
<i>Culiseta melanura</i>	33	378		
Cumberland	114	1535	3	1.954
<i>Aedes albopictus</i>	22	98		
<i>Aedes japonicus</i>	9	10		
<i>Aedes triseriatus</i>	6	6		

	<i>Coquillettidia perturbans</i>	1	1		
	<i>Culex erraticus</i>	5	16		
	<i>Culex spp.</i>	69	1358	3	2.209
	<i>Culiseta melanura</i>	2	46		
Essex		154	2849	22	7.722
	<i>Aedes albopictus</i>	31	198		
	<i>Aedes japonicus</i>	15	71	1	14.085
	<i>Aedes triseriatus</i>	8	12		
	<i>Aedes trivittatus</i>	1	1		
	<i>Aedes vexans</i>	1	1		
	<i>Anopheles punctipennis</i>	2	2		
	<i>Anopheles quadrimaculatus</i>	3	10		
	<i>Coquillettidia perturbans</i>	2	2		
	<i>Culex spp.</i>	91	2552	21	8.229
Gloucester		293	6181	20	3.236
	<i>Aedes abserratus</i>	1	9		
	<i>Aedes albopictus</i>	20	220		
	<i>Aedes canadensis canadensis</i>	7	245		
	<i>Aedes communis</i>	1	1		
	<i>Aedes japonicus</i>	16	97		
	<i>Aedes sollicitans</i>	1	2		
	<i>Aedes thibaulti</i>	1	5		
	<i>Aedes triseriatus</i>	5	14		
	<i>Aedes vexans</i>	7	252		
	<i>Anopheles bradleyi</i>	4	86		
	<i>Anopheles punctipennis</i>	16	62		
	<i>Anopheles quadrimaculatus</i>	13	34		
	<i>Coquillettidia perturbans</i>	4	34		
	<i>Culex erraticus</i>	1	37		
	<i>Culex pipiens</i>	150	4366	20	4.581
	<i>Culex restuans</i>	14	581		
	<i>Culex salinarius</i>	6	34		
	<i>Culex territans</i>	4	11		
	<i>Culiseta melanura</i>	18	62		
	<i>Psorophora ferox</i>	2	7		
	<i>Uranotaenia sapphirina</i>	2	22		
Hudson		98	4955	26	5.247
	<i>Culex spp.</i>	98	4955	26	5.247
Hunterdon		130	6311	3	0.475
	<i>Aedes albopictus</i>	1	2		
	<i>Aedes vexans</i>	1	50		
	<i>Anopheles punctipennis</i>	1	50		
	<i>Anopheles quadrimaculatus</i>	1	11		
	<i>Culex erraticus</i>	1	10		
	<i>Culex spp.</i>	124	6187	3	0.485
	<i>Culiseta inornata</i>	1	1		
Mercer		209	1580	7	4.430
	<i>Aedes albopictus</i>	101	695		

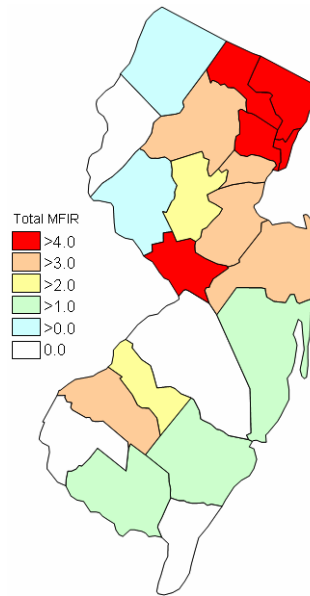
<i>Aedes atropalpus</i>	1	1		
<i>Aedes japonicus</i>	36	74		
<i>Aedes triseriatus</i>	11	25		
<i>Aedes vexans</i>	1	10		
<i>Culex erraticus</i>	11	35		
<i>Culex pipiens</i>	26	446	7	15.695
<i>Culex restuans</i>	5	22		
<i>Culex salinarius</i>	10	157		
<i>Culex spp.</i>	6	112		
<i>Psorophora columbiae</i>	1	3		
Middlesex	165	3602	14	3.887
<i>Aedes albopictus</i>	15	120		
<i>Aedes japonicus</i>	10	51		
<i>Aedes triseriatus</i>	2	7		
<i>Aedes vexans</i>	5	152		
<i>Culex erraticus</i>	1	1		
<i>Culex pipiens</i>	12	121		
<i>Culex restuans</i>	6	108		
<i>Culex salinarius</i>	6	199	1	5.025
<i>Culex spp.</i>	106	2828	13	4.597
<i>Culex territans</i>	1	8		
<i>Uranotaenia sapphirina</i>	1	7		
Monmouth	257	2988	11	3.681
<i>Aedes albopictus</i>	32	106		
<i>Aedes canadensis canadensis</i>	3	18		
<i>Aedes cantator</i>	4	5		
<i>Aedes japonicus</i>	10	21		
<i>Aedes sollicitans</i>	5	30		
<i>Aedes taeniorhynchus</i>	2	13		
<i>Aedes triseriatus</i>	5	10		
<i>Aedes vexans</i>	12	104		
<i>Anopheles punctipennis</i>	7	10		
<i>Anopheles quadrimaculatus</i>	1	1		
<i>Coquillettidia perturbans</i>	4	5		
<i>Culex pipiens</i>	31	252		
<i>Culex restuans</i>	25	170		
<i>Culex salinarius</i>	8	24		
<i>Culex spp.</i>	71	2070	11	5.314
<i>Culex territans</i>	5	13		
<i>Culiseta melanura</i>	32	136		
Morris	120	5194	19	3.658
<i>Aedes japonicus</i>	2	12		
<i>Aedes triseriatus</i>	1	3		
<i>Coquillettidia perturbans</i>	1	50		
<i>Culex spp.</i>	116	5129	19	3.704
Ocean	221	4261	5	1.173
<i>Aedes albopictus</i>	52	814	1	1.229
<i>Aedes canadensis canadensis</i>	6	80		
<i>Aedes cantator</i>	1	9		
<i>Aedes japonicus</i>	17	40		
<i>Aedes sollicitans</i>	1	21		

<i>Aedes triseriatus</i>	6	18		
<i>Aedes vexans</i>	9	39		
<i>Anopheles bradleyi</i>	2	2		
<i>Anopheles punctipennis</i>	4	7		
<i>Anopheles quadrimaculatus</i>	1	1		
<i>Coquillettidia perturbans</i>	4	15		
<i>Culex pipiens</i>	7	247	1	4.049
<i>Culex restuans</i>	15	245		
<i>Culex salinarius</i>	13	92		
<i>Culex sp.</i>	70	2538	3	1.182
<i>Culex territans</i>	1	1		
<i>Culiseta melanura</i>	8	80		
<i>Psorophora ferox</i>	4	12		
Passaic	67	2824	23	8.144
<i>Aedes albopictus</i>	1	11		
<i>Aedes japonicus</i>	4	50		
<i>Aedes triseriatus</i>	1	2		
<i>Culex spp.</i>	61	2761	23	8.330
Salem	207	2632		
<i>Aedes albopictus</i>	15	40		
<i>Aedes atlanticus</i>	1	4		
<i>Aedes canadensis canadensis</i>	6	180		
<i>Aedes cantator</i>	4	74		
<i>Aedes grossbecki</i>	2	3		
<i>Aedes japonicus</i>	9	22		
<i>Aedes sollicitans</i>	1	1		
<i>Aedes sticticus</i>	3	80		
<i>Aedes triseriatus</i>	11	26		
<i>Aedes vexans</i>	14	688		
<i>Anopheles bradleyi</i>	6	175		
<i>Anopheles punctipennis</i>	19	221		
<i>Anopheles quadrimaculatus</i>	25	482		
<i>Coquillettidia perturbans</i>	6	33		
<i>Culex erraticus</i>	9	35		
<i>Culex pipiens</i>	2	5		
<i>Culex restuans</i>	5	12		
<i>Culex salinarius</i>	6	169		
<i>Culex spp.</i>	22	75		
<i>Culex territans</i>	2	3		
<i>Culiseta melanura</i>	29	200		
<i>Psorophora columbiae</i>	4	27		
<i>Psorophora ferox</i>	4	71		
<i>Psorophora howardii</i>	1	4		
<i>Uranotaenia sapphirina</i>	1	2		
Somerset	143	2858	6	2.099
<i>Aedes albopictus</i>	12	43		
<i>Aedes canadensis canadensis</i>	1	2		
<i>Aedes japonicus</i>	24	233		
<i>Aedes triseriatus</i>	22	115		
<i>Anopheles punctipennis</i>	4	4		
<i>Anopheles quadrimaculatus</i>	1	1		

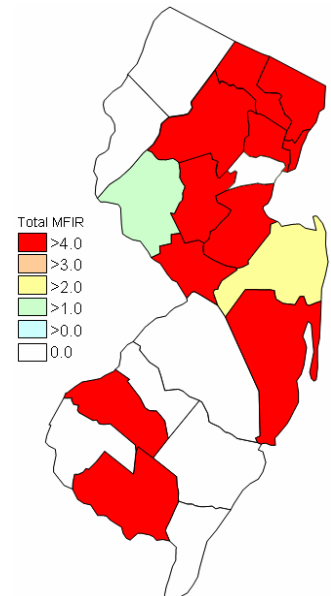
<i>Culex pipiens</i>	2	22		
<i>Culex restuans</i>	2	19		
<i>Culex spp.</i>	74	2418	6	2.481
<i>Orthopodomyia signifera</i>	1	1		
Sussex	168	8106	1	0.123
<i>Aedes japonicus</i>	7	162		
<i>Anopheles punctipennis</i>	1	2		
<i>Coquillettidia perturbans</i>	6	166		
<i>Culex restuans</i>	4	96		
<i>Culex salinarius</i>	1	4		
<i>Culex spp.</i>	149	7676	1	0.130
Union	78	2543	9	3.539
<i>Aedes albopictus</i>	18	174		
<i>Aedes japonicus</i>	4	6		
<i>Aedes vexans</i>	1	7		
<i>Anopheles punctipennis</i>	1	2		
<i>Culex restuans</i>	1	2		
<i>Culex spp.</i>	53	2352	9	3.827
Warren	139	6762		
<i>Aedes japonicus</i>	2	49		
<i>Culex spp.</i>	137	6713		
Grand Total	3637	90633	237	2.615



Cumulative activity to last week



Cumulative activity to this week



Recent Activity 8/05 to 8/15)

RAMP (Rapid Analyte Measurement Platform). More than half of the counties in New Jersey are incorporating the use of RAMP results in their vector surveillance programs. Counties participate with the PHEL Lab in monitoring the efficacy and sensitivity of the RAMP results by sending in samples to be confirmed. Note that not all samples done by the counties are sent in to PHEL and therefore the number of pools submitted can differ from the number of pools reported by the counties.

RAMP Results for 18 August 2008

County	Species	Pools	Mosquitoes	Positives	PHEL (pools submitted/+/-)
Monmouth		75	671		
	<i>Aedes albopictus</i>	4	11		
	<i>Aedes canadensis</i>	8	38		
	<i>Aedes cantator</i>	3	13		
	<i>Aedes japonicus</i>	11	42		
	<i>Aedes triseriatus</i>	1	1		
	<i>Anopheles punctipennis</i>	3	6		
	<i>Coquillettidia perturbans</i>	1	1		
	<i>Culex spp.</i>	2	2		
	<i>Culiseta melanura</i>	1	1		
Warren		51	1968		
	<i>Aedes japonicus</i>	3	33		
	<i>Aedes triseriatus</i>	1	1		
	<i>Aedes vexans</i>	1	2		
	<i>Culex restuans</i>	1	4		
	<i>Culex spp.</i>	45	1928	2	9/0/2