RUTGERS
New Jersey Agricultural Experiment Station

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

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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 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		

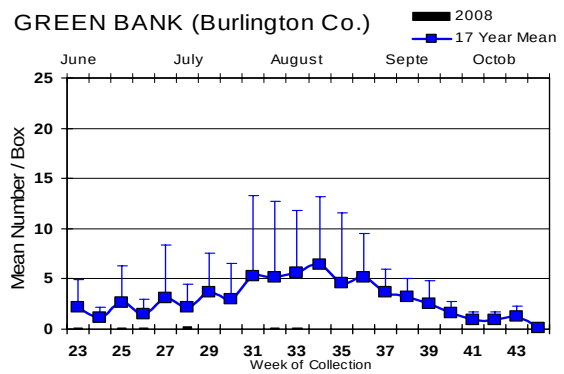
*Including trial run last week in May.

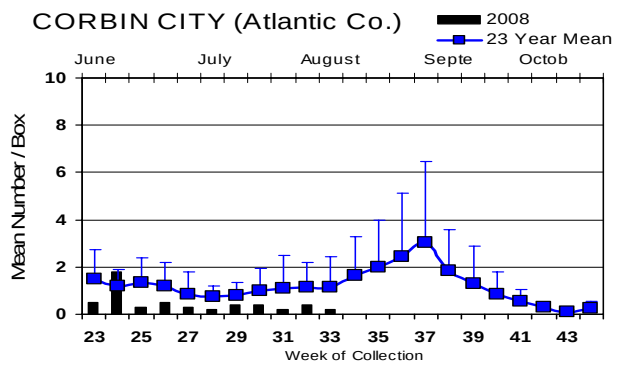
Remarks: Few *Culiseta melanura* are caught at the monitoring sites. Green Bank and Turkey Swamp did increase in the average number of *Cs. melanura* per box, but the overall rates continue to be substantially lower than historical trend indicated. At this time last year, the first positive EEE pool 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.

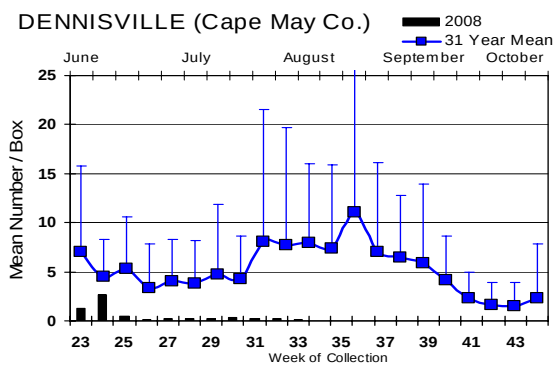
To date, 160 pools from 905 *Cs. melanura* mosquitoes have been sent for EEE testing from the resting box collections. No positives have been detected from these pools or from pools submitted by the counties. An additional 223 pools of 1798 individual mosquitoes from 29 species other than *Cs. melanura* 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

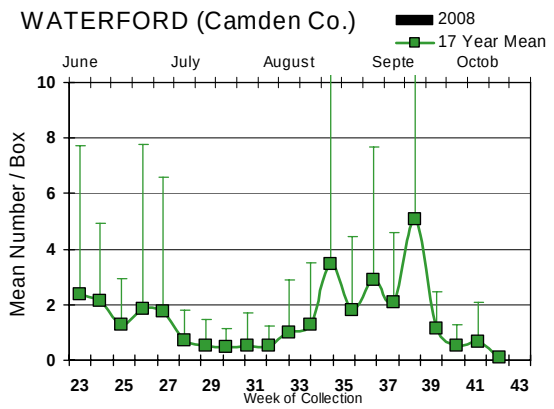
Coastal

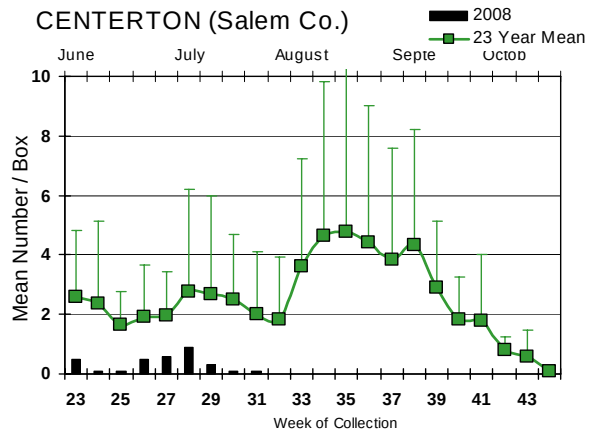


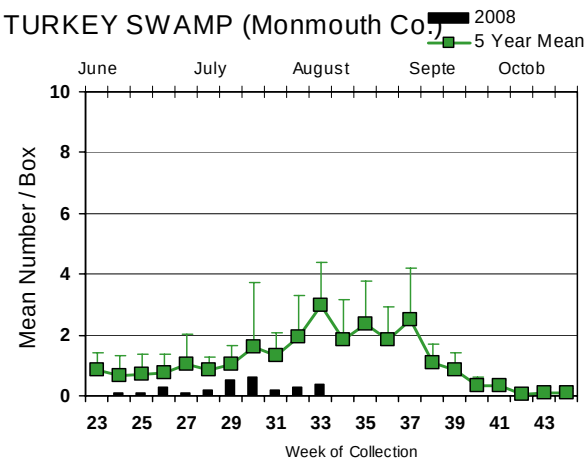




Inland

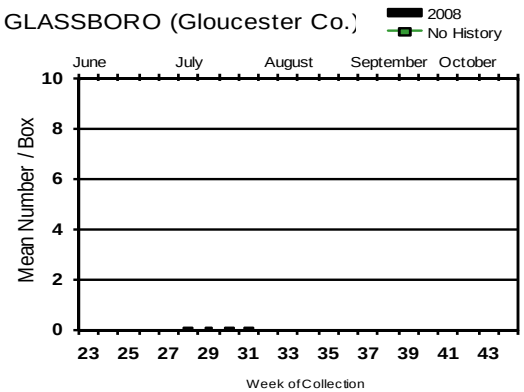






Figures: Inland and coastal resting box sites showing current weekly population levels (in bars) against historical trends (lines with standard deviation). The number of years for historical population levels varies by site.

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
Aedes abserratus	1	9		
Aedes albopictus	397	3480	1	0.287
Aedes atlanticus	1	4		
Aedes atropalpus	1	1		
Aedes canadensis canadensis	53	1231		
Aedes cantator	24	356		
Aedes cinereus	1	3		
Aedes communis	1	1		
Aedes grossbecki	3	4		
Aedes japonicus	216	1109	1	0.902
Aedes sollicitans	16	231		
Aedes sticticus	5	85		
Aedes taeniorhynchus	14	268		

Aedes thibaulti	5	13		
Aedes triseriatus	105	329		
Aedes trivittatus	2	2		
Aedes vexans	105	1876		
Anopheles barberi	1	1		
Anopheles bradleyi	35	736		
Anopheles crucians	3	4		
Anopheles punctipennis	87	554		
Anopheles quadrimaculatus	68	1047		
Coquillettidia perturbans	74	772		
Culex erraticus	38	215		
Culex pipiens	341	8834	34	3.849
Culex restuans	171	2931		
Culex salinarius	106	2831	1	0.353
Culex spp.	1500	62249	200	3.213
Culex territans	23	61		
Culiseta inornata	2	4		
Culiseta melanura	193	1182		
Orthopodomyia signifera	7	16		
Psorophora ciliata	2	2		
Psorophora columbiae	11	41		
Psorophora ferox	16	108		
Psorophora howardii	2	7		
Uranotaenia sapphirina	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**
	Aedes albopictus	18	533		
	Aedes canadensis canadensis	3	12		
	Aedes cantator	2	16		
	Aedes japonicus	2	3		

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

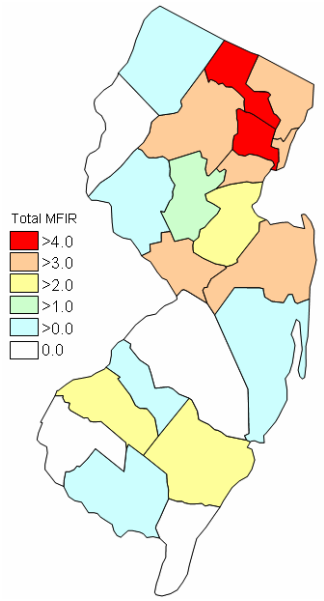
	Culex sp.	34	314		
	Culex territans	3	6		
	Culiseta inornata	1	3		
	Culiseta melanura	31	145		
	Orthopodomyia signifera	3	11		
	Psorophora ciliata	2	2		
	Psorophora columbiae	5	10		
	Psorophora ferox	4	5		
	Psorophora howardii	1	3		
	Uranotaenia sapphirina	3	5		
Camden		**123**	**2394**	**5**	**2.089**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

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

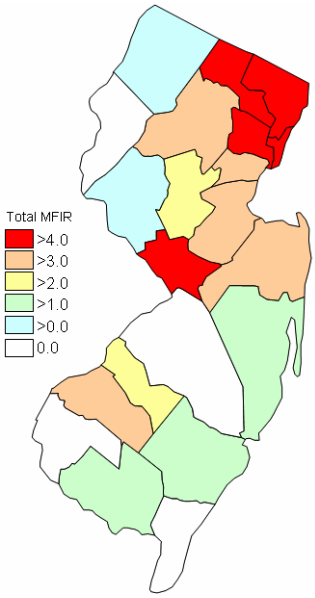
	Aedes atropalpus	1	1		
	Aedes japonicus	36	74		
	Aedes triseriatus	11	25		
	Aedes vexans	1	10		
	Culex erraticus	11	35		
	Culex pipiens	26	446	7	15.695
	Culex restuans	5	22		
	Culex salinarius	10	157		
	Culex spp.	6	112		
	Psorophora columbiae	1	3		
Middlesex		**165**	**3602**	**14**	**3.887**
	Aedes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

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

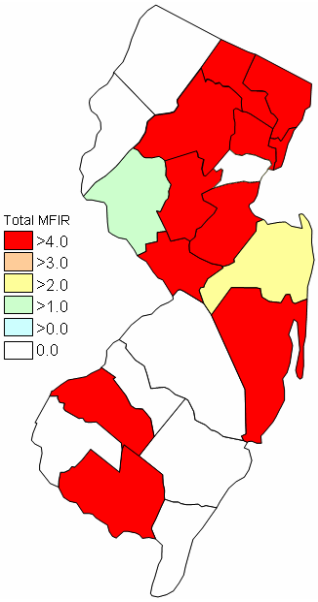
	Culex pipiens	2	22		
	Culex restuans	2	19		
	Culex spp.	74	2418	6	2.481
	Orthopodomyia signifera	1	1		
Sussex		**168**	**8106**	**1**	**0.123**
	Aedes japonicus	7	162		
	Anopheles punctipennis	1	2		
	Coquillettidia perturbans	6	166		
	Culex restuans	4	96		
	Culex salinarius	1	4		
	Culex spp.	149	7676	1	0.130
Union		**78**	**2543**	**9**	**3.539**
	Aedes albopictus	18	174		
	Aedes japonicus	4	6		
	Aedes vexans	1	7		
	Anopheles punctipennis	1	2		
	Culex restuans	1	2		
	Culex spp.	53	2352	9	3.827
Warren		**139**	**6762**		
	Aedes japonicus	2	49		
	Culex spp.	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**		
	Aedes albopictus	4	11		
	Aedes canadensis	8	38		
	Aedes cantator	3	13		
	Aedes japonicus	11	42		
	Aedes triseriatus	1	1		
	Anopheles punctipennis	3	6		
	Coquillettidia perturbans	1	1		
	Culex spp.	2	2		
	Culiseta melanura	1	1		
Warren		**51**	**1968**		
	Aedes japonicus	3	33		
	Aedes triseriatus	1	1		
	Aedes vexans	1	2		
	Culex restuans	1	4		
	Culex spp.	45	1928	**2**	**9/0/2**