RUTGERS
New Jersey Agricultural Experiment Station

VECTOR SURVEILLANCE IN NEW JERSEY
EEE and WNV
CDC WEEK 35: August 24 to August 30, 2008

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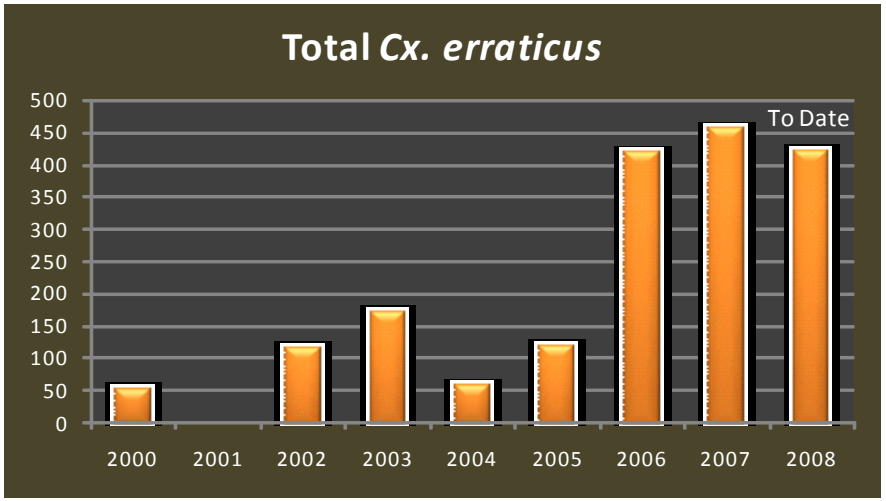
Culiseta melanura and Eastern Equine Encephalitis

SITE	Inland / Coastal	Historic Mean	Current Weekly Mean	Total Collected to Date*	Total Pools Submitted	EEE Isolations	MFIR
Green Bank (Burlington County)	Coastal	4.6	0.3	77	22		
Corbin City (Atlantic County)	Coastal	2.0	< 0.1	137	43		
Dennisville (Cape May County)	Coastal	11.1	0.4	400	38		
Waterford (Camden County)	Inland	3.5	0	0	0		
Centerton (Salem County)	Inland	4.8	0.1	204	33		
Turkey Swamp (Monmouth County)	Inland	2.4	1.0	217	42		
Glassboro (Gloucester County)	Inland	no history	0.1	18	11		

*Including trial run last week in May.

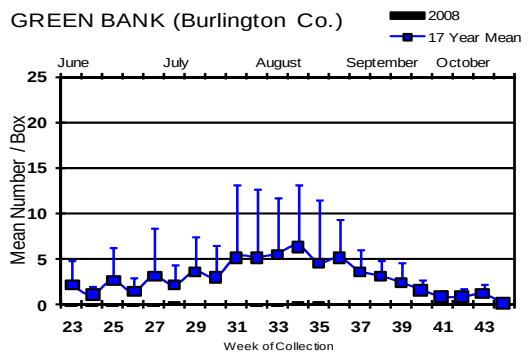
Remarks: Very small increases in *Culiseta melanura* populations are the only indications that the second generation of this typically bi-voltine mosquito species in southern New Jersey is making an appearance. This mosquito is scarce this year. However, *Culex erraticus*, a mosquito with a more southerly distribution that is often found infected with EEE, has been increasing its presence here in New Jersey after its first discovery in 1969. The graph to the right indicates total number of *Cx. erraticus* caught in light traps from the Adult Mosquito Surveillance program since 2000. With several weeks left of the 2008 season, this year may top previous recent year totals.

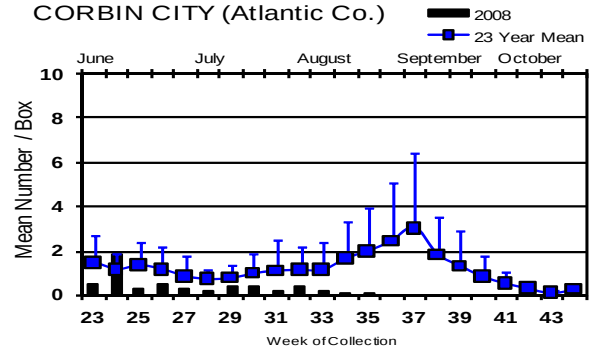


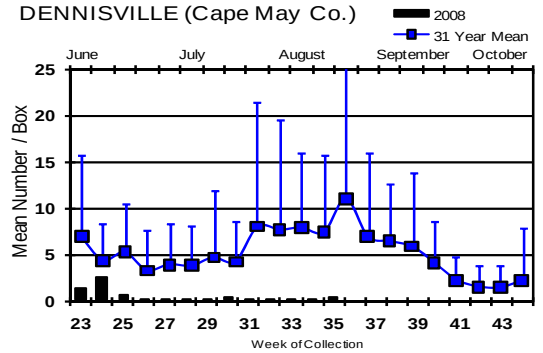
To date, 189 pools from 1053 *Cs. melanura* mosquitoes have been sent for EEE testing from the resting box collections. No positives have been detected from these pools or from pools submitted by the counties. An additional 288 pools of 2400 individual mosquitoes from 30 species other than *Cs. melanura* 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. cyanescens, Ps., ferox, Ps. howardii and Uranotaenia sapphirina.*

Culiseta melanura Population Graphs

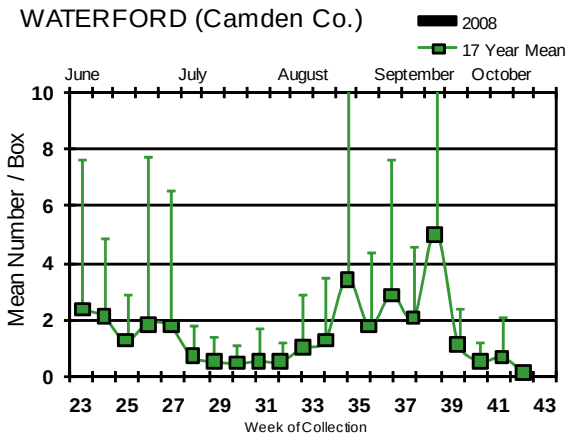
Coastal

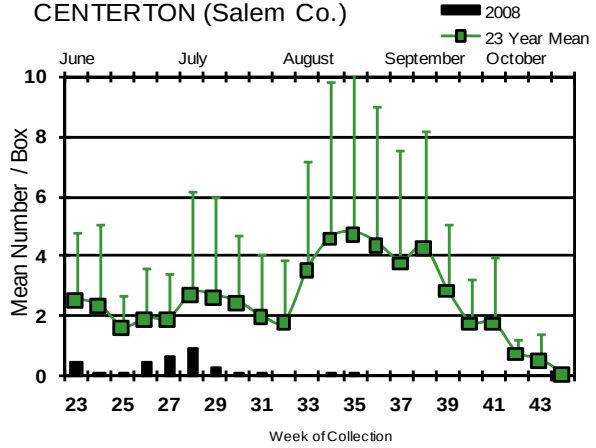


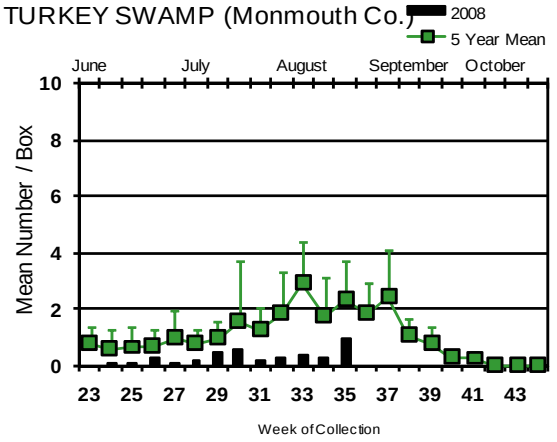




Inland



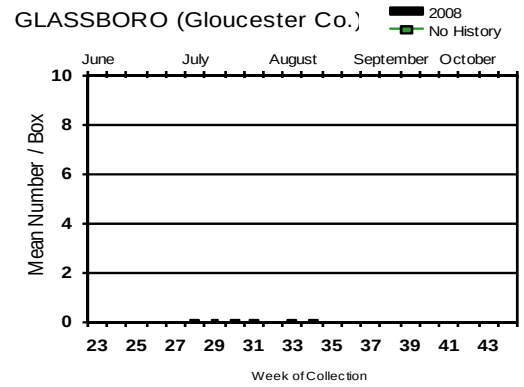




Figures: Inland and coastal resting box sites showing current weekly population levels (in bars) against historical trends (lines with standard deviation). The number of years for historical population levels varies by site.

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).

A continuance of the very low *Cs. melanura* populations. Turkey Swamp numbers are climbing (as are Dennisville and Centerton, but these numbers are so small to begin with that changes are difficult to discern).



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

- equine: 2(AL), 80(FL), 20(GA) 3(LA) 6(MS) (2)NC 1(TN) 1(WI)
- mosquito: 3(FL), 2(GA), 2(LA), 2(MA), 3(VA)
- sentinel: 3(AL), 75(FL, 59 wild), 2,emu(NC), 2(VA)
- 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. ? denotes probable cases.

	Birds	Mosquito Pools	Sentinels	Horses	Humans
Alabama				1	1/3
Alaska					
Arizona	1	88	19		5/9
Arkansas		11/15		1	4/7
California	1295/1456	1101/1244	109/134	5/6	97/127
Colorado	3	27/43			31/40
Connecticut		104/126			1/2
Delaware		2+?			
Florida	3 live		2	1	
Georgia		8			
Hawaii					
Idaho	2	6 counties		1	16
Illinois	8/9	200/228		1	4
Indiana	1	21/66			1
Iowa		3/4	1	1	3/6
Kansas					7
Kentucky					
Louisiana		600	9	1	7
Maine					
Maryland		3			1?
Mass.	39/44	52/75			
Michigan	3	1			1/2
Minnesota	4/7	10			12/15
Mississippi		3		1	57/63
Missouri	29	167/184		1	3/5
Montana		3/5		3	1/2
Nebraska	3/4	44/59			10/13

	Birds	Mosquito Pools	Sentinels	Horses	Humans
Nevada	2	22/31		1	2/8
New Hampshire		1			
New Jersey	21/25	313/364			
New Mexico		1/3		1	1/3
New York	25/77	209/264		1	4/13
North Carolina				1	
North Dakota				1	18/23
Ohio	2	15/81			1/2
Oklahoma		12			5/6
Oregon	1	6			3/4
Pennsylvania	9/10	237/355			1
Rhode Island		1			
South Carolina	3	5			
South Dakota	1	30/38		1/3	11/28
Tennessee		342/393			8
Texas		82/89		1	16/19
Utah	2	89/110	1/2	2	5/8
Vermont		1			
Virginia		254/358			
Washington		18/22	1	9/11	
West Virginia	2	10		2	1
Wisconsin	14/19			2	1/2
Wyoming		10			2

Note: Some data reported by states are provisional and are subject to change. Sources for this table can be found here.

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 02 September 2008

Species	Pools	Mosquitoes	Positives	MFIR
Aedes abserratus	1	9		
Aedes albopictus	557	5106	2	0.39
Aedes atlanticus	1	4		
Aedes atropalpus	1	1		
Aedes canadensis canadensis	56	1243		
Aedes cantator	25	359		
Aedes cinereus	1	3		
Aedes communis	1	1		
Aedes grossbecki	3	4		
Aedes japonicus	268	1414	1	0.71
Aedes sollicitans	22	245		
Aedes sticticus	6	86		
Aedes stimulans	1	1		

Aedes taeniorhynchus	16	278		
Aedes thibaulti	5	13		
Aedes triseriatus	131	373		
Aedes trivittatus	7	28		
Aedes vexans	156	2647		
Anopheles barberi	3	3		
Anopheles bradleyi	42	776		
Anopheles crucians	5	6		
Anopheles punctipennis	106	609		
Anopheles quadrimaculatus	85	1154		
Coquillettidia perturbans	85	892		
Culex erraticus	49	321		
Culex pipiens	462	11517	52	4.52
Culex restuans	208	3432	1	0.29
Culex salinarius	140	4397	1	0.23
Culex spp.	1911	76636	307	4.01
Culex territans	42	105		
Culiseta inornata	2	4		
Culiseta melanura	226	1293		
Orthopodomyia signifera	9	18		
Psorophora ciliata	6	50		
Psorophora columbiae	20	69		
Psorophora cyanescens	1	1		
Psorophora ferox	22	127		
Psorophora howardii	4	11		
Uranotaenia sapphirina	14	73		
Grand Total	**4700**	**113309**	**364**	**3.21**

Remarks: Submitted pools (4,700) comprised of 113,309 individual mosquitoes produced 364 positive pools from 17 different counties. All of the positives were either *Cx. pipiens* or mixed *Culex* pools. No additional species were found positive. It should be noted that at this time, *Cx. pipiens* MFIR rate is 4.52. Last year during this week, the MFIR value for *Cx. pipiens* was 7.80. There was greater involvement with *Cx. restuans* and *Cx. salinarius*. However, the overall state MFIR value was lower at 2.20 as compared to this year's current value of 3.21. At this point in time, the same species are involved (*Culex* species and *Aedes albopictus* and *Ae. japonicus*).

Humans, Horses and Wild Birds: To date, there have been 128 dead birds submitted for West Nile virus testing with 25 positives Last year, there were 16 positive birds from 143 submissions to this point in time.

2008 Positive Mosquito pools to date / Total Mosquito Pools Submitted	This time last year
364 / 4,700	214 / 4,181

WNV Results by County through 02 September 2008

County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		**223**	**4726**	**7**	**1.48**
	Aedes albopictus	23	613		
	Aedes canadensis canadensis	3	12		
	Aedes cantator	2	16		
	Aedes japonicus	5	6		
	Aedes sollicitans	5	84		
	Aedes taeniorhynchus	11	255		
	Aedes thibaulti	4	8		
	Aedes triseriatus	5	14		
	Aedes vexans	12	228		

	Anopheles bradleyi	6	26		
	Anopheles punctipennis	3	3		
	Anopheles quadrimaculatus	1	1		
	Coquillettidia perturbans	5	42		
	Culex erraticus	5	100		
	Culex pipiens	1	17		
	Culex restuans	9	343		
	Culex salinarius	3	3		
	Culex sp.	63	2778	7	2.52
	Culex territans	8	21		
	Culiseta melanura	46	142		
	Orthopodomyia signifera	1	1		
	Psorophora ferox	2	13		
Bergen		**407**	**17450**	**84**	**4.81**
	Aedes albopictus	23	118		
	Aedes canadensis candensis	1	6		
	Aedes japonicus	24	144		
	Aedes sollicitans	1	1		
	Aedes triseriatus	11	39		
	Aedes vexans	14	85		
	Anopheles barberi	1	1		
	Anopheles bradleyi	2	4		
	Anopheles punctipennis	4	31		
	Coquillettidia perturbans	19	158		
	Culex pipiens	68	2373	9	3.79
	Culex restuans	28	314		
	Culex salinarius	60	3139		
	Culex spp.	149	11035	75	6.80
	Culex territans	1	1		
	Orthopodomyia signifera	1	1		
Burlington		**293**	**2508**		
	Aedes albopictus	25	261		
	Aedes canadensis canadensis	21	598		
	Aedes cantator	4	148		
	Aedes cinereus	1	3		
	Aedes grossbecki	1	1		
	Aedes japonicus	11	28		
	Aedes sollicitans	1	18		
	Aedes sticticus	2	5		
	Aedes taeniorhynchus	1	2		
	Aedes triseriatus	12	39		
	Aedes trivittatus	1	2		
	Aedes vexans	36	371		
	Anopheles bradleyi	2	6		
	Anopheles crucians	5	6		
	Anopheles punctipennis	15	35		
	Anopheles quadrimaculatus	8	11		
	Coquillettidia perturbans	20	234		
	Culex erraticus	3	3		
	Culex pipiens	3	20		
	Culex restuans	5	29		
	Culex salinarius	1	1		
	Culex sp.	45	444		
	Culex territans	5	8		

	Culiseta inornata	1	3		
	Culiseta melanura	38	171		
	Orthopodomyia signifera	3	11		
	Psorophora ciliata	3	6		
	Psorophora columbiae	9	27		
	Psorophora cyanescens	1	1		
	Psorophora ferox	4	5		
	Psorophora howardii	1	3		
	Uranotaenia sapphirina	5	8		
Camden		**140**	**2665**	**9**	**3.38**
	Aedes albopictus	27	212		
	Aedes canadensis canadensis	1	19		
	Aedes cantator	1	22		
	Aedes japonicus	11	27		
	Aedes triseriatus	2	2		
	Aedes trivittatus	1	1		
	Aedes vexans	4	46		
	Anopheles punctipennis	7	31		
	Anopheles quadrimaculatus	5	6		
	Coquillettidia perturbans	4	16		
	Culex erraticus	1	1		
	Culex pipiens	11	495		
	Culex restuans	17	481		
	Culex salinarius	3	14		
	Culex sp.	41	1287	9	6.99
	Culiseta melanura	1	1		
	Orthopodomyia signifera	2	3		
	Psorophora columbiae	1	1		
Cape_May		**244**	**4390**		
	Aedes albopictus	1	2		
	Aedes canadensis canadensis	4	71		
	Aedes cantator	8	82		
	Aedes japonicus	6	15		
	Aedes sollicitans	3	81		
	Aedes taeniorhynchus	2	8		
	Aedes triseriatus	1	1		
	Aedes vexans	2	13		
	Anopheles bradleyi	17	457		
	Anopheles punctipennis	7	102		
	Anopheles quadrimaculatus	15	507		
	Coquillettidia perturbans	3	27		
	Culex erraticus	3	15		
	Culex pipiens	49	964		
	Culex restuans	54	905		
	Culex salinarius	11	425		
	Culex sp.	21	327		
	Culex territans	1	2		
	Culiseta melanura	36	386		
Cumberland		**171**	**1921**	**6**	**3.12**
	Aedes albopictus	30	120		
	Aedes japonicus	15	37		
	Aedes triseriatus	8	12		

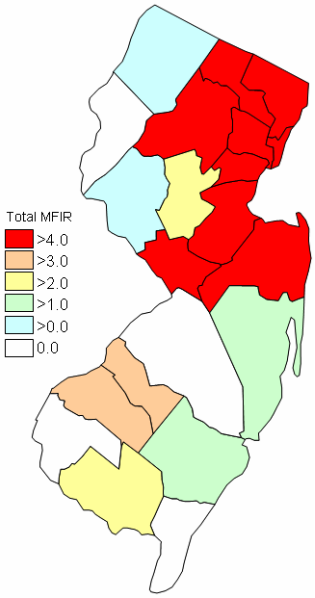
	Aedes vexans	3	38		
	Anopheles bradleyi	1	1		
	Anopheles punctipennis	4	10		
	Anopheles quadrimaculatus	2	2		
	Coquillettidia perturbans	2	2		
	Culex erraticus	8	21		
	Culex pipiens	11	139	2	14.39
	Culex restuans	4	52	1	19.23
	Culex salinarius	2	2		
	Culex spp.	70	1359	3	2.21
	Culex territans	2	5		
	Culiseta melanura	5	116		
	Psorophora columbiae	1	2		
	Psorophora ferox	1	1		
	Psorophora howardii	1	1		
	Uranotaenia sapphirina	1	1		
Essex		**218**	**3246**	**28**	**8.63**
	Aedes albopictus	56	380		
	Aedes japonicus	18	74	1	13.51
	Aedes triseriatus	13	18		
	Aedes trivittatus	1	1		
	Aedes vexans	4	5		
	Anopheles punctipennis	3	3		
	Anopheles quadrimaculatus	3	10		
	Coquillettidia perturbans	2	2		
	Culex spp.	115	2748	27	9.83
	Culex territans	3	5		
Gloucester		**388**	**7943**	**30**	**3.78**
	Aedes abserratus	1	9		
	Aedes albopictus	32	319		
	Aedes canadensis canadensis	7	245		
	Aedes communis	1	1		
	Aedes japonicus	20	117		
	Aedes sollicitans	1	2		
	Aedes thibaulti	1	5		
	Aedes triseriatus	6	16		
	Aedes vexans	8	259		
	Anopheles bradleyi	4	86		
	Anopheles punctipennis	16	62		
	Anopheles quadrimaculatus	17	40		
	Coquillettidia perturbans	5	35		
	Culex erraticus	1	37		
	Culex pipiens	212	5957	30	5.04
	Culex restuans	16	583		
	Culex salinarius	6	34		
	Culex territans	5	25		
	Culiseta melanura	24	80		
	Psorophora ferox	3	9		
	Uranotaenia sapphirina	2	22		

Hudson	**128**	**6214**	**44**	**7.08**
Culex spp.	128	6214	44	7.08
Hunterdon	**170**	**8224**	**3**	**0.36**
Aedes albopictus	2	11		
Aedes vexans	1	50		
Anopheles punctipennis	1	50		
Anopheles quadrimaculatus	1	11		
Culex erraticus	1	10		
Culex spp.	163	8091	3	0.37
Culiseta inornata	1	1		0.00
Mercer	**243**	**2072**	**11**	**5.31**
Aedes albopictus	114	959	1	1.04
Aedes atropalpus	1	1		
Aedes japonicus	38	76		
Aedes stimulans	1	1		
Aedes triseriatus	13	27		
Aedes vexans	2	12		
Culex erraticus	11	35		
Culex pipiens	36	646	10	15.48
Culex restuans	8	41		
Culex salinarius	10	157		
Culex spp.	6	112		
Orthopodomyia signifera	1	1		
Psorophora columbiae	1	1		
Middlesex	**250**	**5736**	**26**	**4.53**
Aedes albopictus	20	165		
Aedes japonicus	11	52		
Aedes triseriatus	3	11		
Aedes trivittatus	1	1		
Aedes vexans	21	512		
Culex erraticus	1	1		
Culex pipiens	20	203		
Culex restuans	8	117		
Culex salinarius	12	322	1	3.11
Culex spp.	142	4282	25	5.84
Culex territans	3	10		
Psorophora ciliata	3	44		
Psorophora columbiae	1	4		
Psorophora ferox	1	1		
Psorophora howardii	1	3		
Uranotaenia sapphirina	2	8		
Monmouth	**350**	**4174**	**21**	**5.03**
Aedes albopictus	56	258		
Aedes canadensis canadensis	3	18		
Aedes cantator	4	5		
Aedes japonicus	14	26		
Aedes sollicitans	8	36		
Aedes taeniorhynchus	2	13		
Aedes triseriatus	6	11		
Aedes trivittatus	1	2		

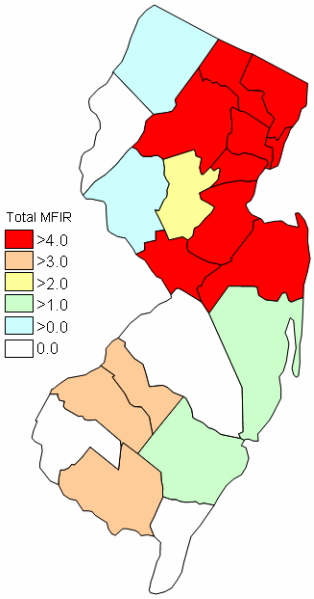
	Aedes vexans	13	105		
	Anopheles barberi	1	1		
	Anopheles punctipennis	9	12		
	Anopheles quadrimaculatus	2	3		
	Coquillettidia perturbans	4	5		
	Culex erraticus	3	27		
	Culex pipiens	38	425		
	Culex restuans	30	188		
	Culex salinarius	9	25		
	Culex spp.	102	2827	21	7.43
	Culex territans	7	19		
	Culiseta melanura	38	168		
Morris		**160**	**6061**	**28**	**4.62**
	Aedes japonicus	4	25		
	Aedes triseriatus	1	3		
	Coquillettidia perturbans	1	50		
	Culex spp.	154	5983	28	4.68
Ocean		**253**	**4738**	**8**	**1.69**
	Aedes albopictus	64	1110	1	0.90
	Aedes canadensis canadensis	6	80		
	Aedes cantator	1	9		
	Aedes japonicus	19	44		
	Aedes sollicitans	2	22		
	Aedes triseriatus	8	20		
	Aedes vexans	11	44		
	Anopheles bradleyi	2	2		
	Anopheles punctipennis	4	7		
	Anopheles quadrimaculatus	1	1		
	Coquillettidia perturbans	4	15		
	Culex pipiens	7	247	1	4.05
	Culex restuans	15	245		
	Culex salinarius	13	92		
	Culex sp.	81	2703	6	2.22
	Culex territans	1	1		
	Culiseta melanura	9	81		
	Psorophora ferox	5	15		
Passaic		**74**	**3012**	**24**	**7.97**
	Aedes albopictus	2	16		
	Aedes japonicus	4	50		
	Aedes triseriatus	1	2		
	Anopheles punctipennis	1	5		
	Culex spp.	66	2939	24	8.17
Salem		**262**	**3203**		
	Aedes albopictus	21	78		
	Aedes atlanticus	1	4		
	Aedes canadensis canadensis	7	181		
	Aedes cantator	5	77		
	Aedes grossbecki	2	3		
	Aedes japonicus	11	27		
	Aedes sollicitans	1	1		
	Aedes sticticus	3	80		

	Aedes triseriatus	13	29		
	Aedes vexans	17	839		
	Anopheles bradleyi	8	194		
	Anopheles punctipennis	24	248		
	Anopheles quadrimaculatus	29	561		
	Coquillettidia perturbans	8	92		
	Culex erraticus	13	73		
	Culex pipiens	2	5		
	Culex restuans	7	17		
	Culex salinarius	9	179		
	Culex spp.	32	187		
	Culex territans	5	7		
	Culiseta melanura	31	202		
	Psorophora columbiae	4	27		
	Psorophora ferox	6	83		
	Psorophora howardii	1	4		
	Uranotaenia sapphirina	2	5		
Somerset		**174**	**3276**	**9**	**2.75**
	Aedes albopictus	13	52		
	Aedes canadensis canadensis	1	2		
	Aedes japonicus	30	263		
	Aedes triseriatus	26	121		
	Anopheles barberi	1	1		
	Anopheles punctipennis	5	5		
	Anopheles quadrimaculatus	1	1		
	Culex pipiens	2	22		
	Culex restuans	2	19		
	Culex spp.	92	2789	9	3.23
	Orthopodomyia signifera	1	1		
Sussex		**236**	**10049**	**3**	**0.30**
	Aedes canadensis canadensis	2	11		
	Aedes japonicus	18	343		
	Aedes sticticus	1	1		
	Aedes triseriatus	1	7		
	Aedes trivittatus	2	21		
	Aedes vexans	2	24		
	Anopheles punctipennis	2	3		
	Anopheles quadrimaculatus	1	1		
	Coquillettidia perturbans	9	215		
	Culex pipiens	2	4		
	Culex restuans	4	96		
	Culex salinarius	1	4		
	Culex spp.	189	9290	3	0.32
	Uranotaenia sapphirina	2	29		
Union		**147**	**3528**	**23**	**6.52**
	Aedes albopictus	48	432		
	Aedes japonicus	7	11		
	Aedes triseriatus	1	1		

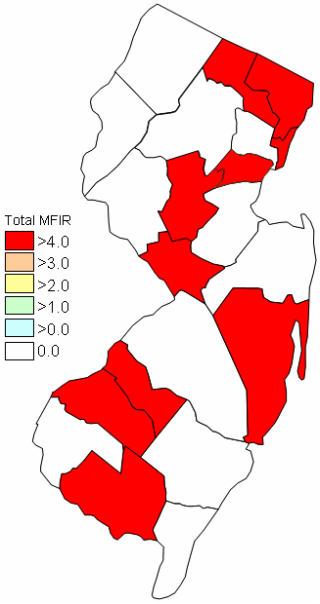
	Aedes vexans	6	16		
	Anopheles punctipennis	1	2		
	Culex restuans	1	2		
	Culex spp.	80	3059	23	7.52
	Psorophora columbiae	3	5		
Warren		**175**	**8232**		
	Aedes japonicus	2	49		
	Culex spp.	173	8183		
Grand Total		**4700**	**113309**	**364**	**3.21**



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.

Note: PHEL reported additional positive RAMP pools for data not currently in the database. This table will be updated to include those positives when the database is up to date.

RAMP Results for 02 September 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**