RUTGERS
New Jersey Agricultural Experiment Station

VECTOR SURVEILLANCE IN NEW JERSEY
EEE and WNV
CDC WEEK 40: September 28 to October 04, 2008

Prepared by Lisa M. Reed, Scott Crans Dina Fonseca and Marc Slaff at the Center for Vector Biology, Rutgers University.
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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	2.5	0.5	205	38		
Corbin City (Atlantic County)	Coastal	0.8	< 0.1	160	54		
Dennisville (Cape May County)	Coastal	2.3	0.5	548	57	(see remarks)	
Waterford (Camden County)	Inland	1.2	0.2	51	7	2	39.2
Centerton (Salem County)	Inland	1.8	1.5	419	52	1	2.39
Turkey Swamp (Monmouth County)	Inland	0.3	< 0.1	267	55		
Glassboro (Gloucester County)	Inland	no history	0.2	69	28		

*Including trial run last week in May.

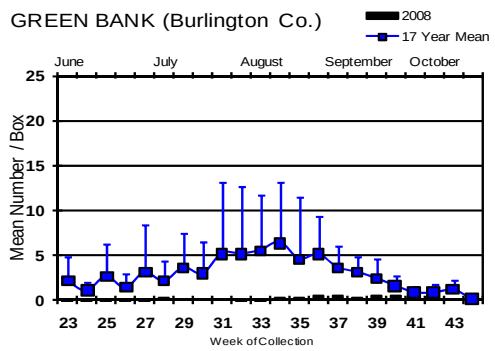
Remarks: Since last week's detection of two more EEE positive pools, no additional positive pools have been found. Historical populations of *Cs. melanura* have generally been on the decline at this point in the season. Overwintering larvae are in the crypts with older instars forming the first emergence of the spring. There is little indication of transovarial transmission of EEE directly from one generation of mosquitoes to the next (i.e., next year's amount of virus is not directly related by the degree that the previous generation is infected when virus is more likely being transmitted to mosquitoes by a long-lived avian host).

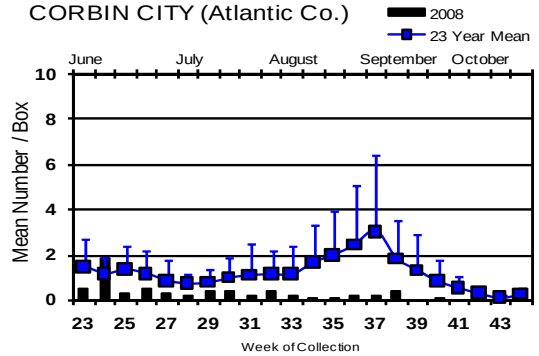
To date, 291 pools from 1719 *Cs. melanura* mosquitoes have been sent for EEE testing from the resting box collections. Previously, an additional EEE positive pool from Cape May had been detected by the Cape May Mosquito Control Department's lab, giving a statewide cumulative total of 4 positive EEE pools. No horse or human cases have been reported to date.

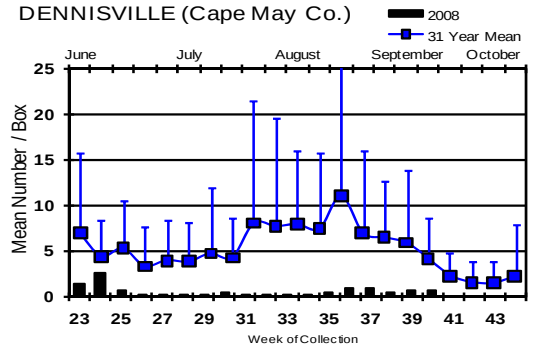
An additional 481 pools of 4176 individual mosquitoes from 31 species other than *Cs. melanura* have also been tested and all pools were found to be negative. These species include: *Aedes albopictus, Ae. canadensis canadensis, Ae. cantator, Ae. cinereus ,Ae. communis, Ae. grossbecki, Ae. japonicus, Ae. sollicitans, Ae. sticticus, Ae. taeniorhynchus, Ae. triseriatus, Ae. trivittatus, 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

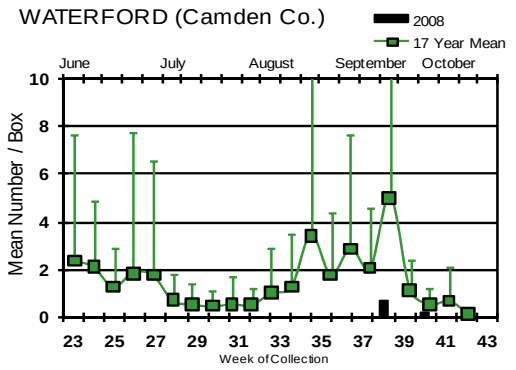
Coastal

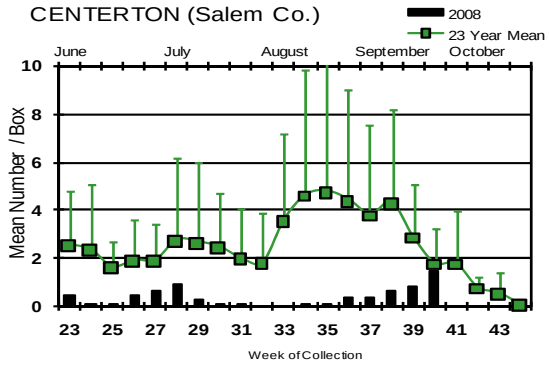


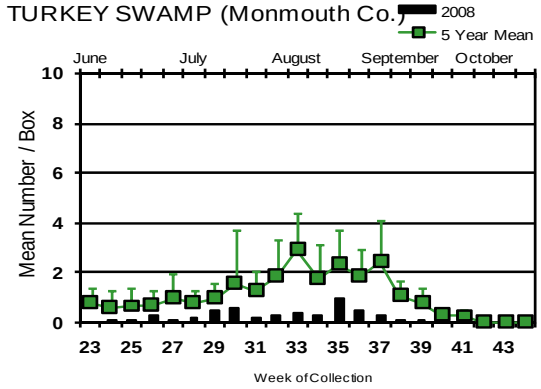




Inland



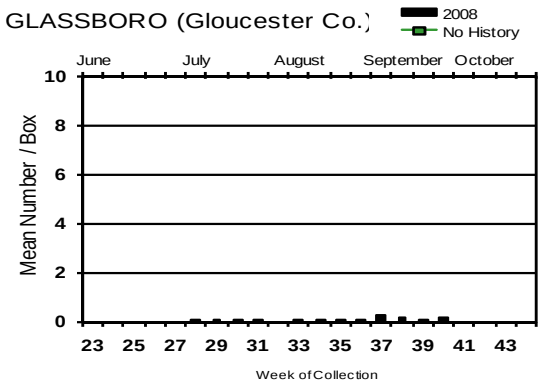




Figures: Inland and coastal resting box sites showing current weekly population levels (in bars) against historical trends (lines with standard deviation). The number of years for historical population levels varies by site.

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).

Cs. melanura at the first positive site (Centerton) are increasing to the historical average for this week. Most of the other monitoring sites have also increased, but remain either well below historical averages or at about the same level. This has occurred at the time of seasonal decline in the historical average.



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

- equine: 13(AL), 84(FL) 22(GA) 4(LA) 1(MA) 1(ME) 6(MS) 10(NC) 5(SC) 1(TN) 1(WI)
- mosquito: 1(AR) 3(FL) 2(GA) 5(LA) 13(MA) 4(MD) 3(NH) 4(NJ) 4(MD) 7(VA)
- sentinel: 3(AL) 91(FL74 wild) 16[2emu](NC) emu(NH) 2(VA)
- human: 1(AL) 1(FL)

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				1/4	7
Alaska					
Arizona	3	157/187	40		49/61
Arkansas	2	20		1	8
California	2232	1765/1805	301/421	21	278/295
Colorado	4	61		1	79
Connecticut		187			6/7
Delaware	2		5/13		1
DC		50			
Florida	3 live		9	1	3
Georgia	2	8/25			2
Hawaii					
Idaho	3	7 counties		1	34
Illinois	30	586		1	13
Indiana	5	154/174			3
Iowa	3	5	3	4/5	8
Kansas					12/16
Kentucky	2	11		3	1
Louisiana		600	9	1	7
Maine					
Maryland		5		1	9
Mass.	63	131			
Michigan	3/8	1		1?	7
Minnesota	7	22			20
Mississippi		3		3	96
Missouri	29	193/215		1	9
Montana		5		6	5
Nebraska	10	79		2	37/40

	Birds	Mosquito Pools	Sentinels	Horses	Humans
Nevada	4	38		2	15
New Hampshire		1			
New Jersey	47/48	568/584			3/5
New Mexico		3		1	5/7
New York	136	348		2	32
North Carolina				1	1
North Dakota				1	42
Ohio	9/11	337/355			10/16
Oklahoma		15			8
Oregon	1/2	18			16
Pennsylvania	14	508/514		1	5
Rhode Island		10			
South Carolina	3	7			
South Dakota	1	38/39		3/4	35/36
Tennessee		592/608			8
Texas	2	111		2	51
Utah	2	140	16	7	26
Vermont		1			
Virginia		667	1		1
Washington	10/19	41		35/37	2
West Virginia	2	36		2	1
Wisconsin	34/38			4/5	5/6
Wyoming	5	14		1	7/8

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 06 October 2008

Species	Pools	Mosquitoes	Positives	MFIR
Aedes abserratus	1	9		
Aedes albopictus	966	8858	2	0.23
Aedes atlanticus	1	4		
Aedes atropalpus	1	1		
Aedes canadensis canadensis	58	1256		
Aedes cantator	27	362		
Aedes cinereus	3	5		
Aedes communis	1	1		
Aedes grossbecki	3	4		
Aedes japonicus	441	1956	1	0.51
Aedes sollicitans	48	862		
Aedes sticticus	7	87		

Aedes stimulans	1	1		
Aedes taeniorhynchus	30	593		
Aedes thibaulti	5	13		
Aedes triseriatus	212	626		
Aedes trivittatus	15	117		
Aedes vexans	244	3300		
Anopheles atropos	1	1		
Anopheles barberi	3	3		
Anopheles bradleyi	64	985		
Anopheles crucians	10	34		
Anopheles earlei	1	1		
Anopheles punctipennis	157	894		
Anopheles quadrimaculatus	158	1974		
Coquillettidia perturbans	103	934		
Culex erraticus	133	959		
Culex pipiens	873	19527	112	5.74
Culex restuans	414	4623	6	1.30
Culex salinarius	240	9237	2	0.22
Culex spp.	2737	100751	461	4.58
Culex territans	73	307		
Culiseta inornata	3	5		
Culiseta melanura	378	2189		
Orthopodomyia signifera	11	20		
Psorophora ciliata	9	54		
Psorophora columbiae	30	196		
Psorophora cyanescens	1	1		
Psorophora ferox	30	139		
Psorophora howardii	4	11		
Uranotaenia sapphirina	22	109		
State Total	**7519**	**161009**	**584**	**3.63**

Remarks: Submitted pools (7,519) comprised of 161,009 individual mosquitoes produced 584 positive pools from 19 different counties.

Humans, Horses and Wild Birds: Previously reported: a 58 year old female (onset 26 Aug) from Burlington County, bringing the total to 3 (2 cases in Burlington County and 1 in Middlesex County). PHEL reported two more cases, one including last week's probable in Camden (53 year old male) and the second occurring in Union County (38 year old male, onset early August). For more details, see the PHEL's summary sheet:
http://www.state.nj.us/health/cd/westnile/documents/wnv_summary_oct03_08.pdf
No confirmed horse cases have occurred.
To date, there have been 157 dead birds submitted for West Nile virus testing with 49 positives Last year, there were 41 positive birds from 178 submissions to this point in time.

2008 Positive Mosquito pools to date / Total Mosquito Pools Submitted	This time last year
584 / 7,519	342 / 6,443

WNV Results by County through 06 October 2008

County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		**310**	**5974**	**9**	**1.51**
	Aedes albopictus	35	746		
	Aedes canadensis canadensis	3	12		

	Aedes cantator	3	18		
	Aedes japonicus	6	7		
	Aedes sollicitans	12	350		
	Aedes taeniorhynchus	20	479		
	Aedes thibaulti	4	8		
	Aedes triseriatus	8	19		
	Aedes vexans	17	311		
	Anopheles atropos	1	1		
	Anopheles bradleyi	9	35		
	Anopheles crucians	2	24		
	Anopheles punctipennis	7	13		
	Anopheles quadrimaculatus	2	4		
	Coquillettidia perturbans	6	44		
	Culex erraticus	10	133		
	Culex pipiens	1	17		
	Culex restuans	12	357	1	2.80
	Culex salinarius	3	3		
	Culex sp.	76	3188	8	2.51
	Culex territans	9	22		
	Culiseta melanura	58	166		
	Orthopodomyia signifera	2	2		
	Psorophora columbiae	1	1		
	Psorophora ferox	3	14		
Bergen		**612**	**29317**	**148**	**5.05**
	Aedes albopictus	24	119		
	Aedes canadensis candensis	1	6		
	Aedes japonicus	31	162		
	Aedes sollicitans	1	1		
	Aedes triseriatus	13	42		
	Aedes vexans	17	90		
	Anopheles barberi	1	1		
	Anopheles bradleyi	5	8		
	Anopheles punctipennis	6	35		
	Coquillettidia perturbans	27	185		
	Culex pipiens	97	3532	15	4.25
	Culex restuans	32	321		
	Culex salinarius	121	7583	1	0.13
	Culex spp.	234	17230	132	7.66
	Culex territans	1	1		
	Orthopodomyia signifera	1	1		
Burlington		**486**	**3773**	**5**	**1.33**
	Aedes albopictus	52	543		
	Aedes canadensis canadensis	22	608		
	Aedes cantator	4	148		
	Aedes cinereus	1	3		
	Aedes grossbecki	1	1		
	Aedes japonicus	22	67		
	Aedes sollicitans	2	22		
	Aedes sticticus	2	5		
	Aedes taeniorhynchus	2	9		
	Aedes triseriatus	17	44		
	Aedes trivittatus	1	2		
	Aedes vexans	55	505		
	Anopheles bradleyi	3	15		

	Anopheles crucians	8	10		
	Anopheles punctipennis	21	55		
	Anopheles quadrimaculatus	18	31		
	Coquillettidia perturbans	22	237		
	Culex erraticus	12	36		
	Culex pipiens	18	178	3	16.85
	Culex restuans	16	98	1	10.20
	Culex salinarius	6	6		
	Culex sp.	72	711	1	1.41
	Culex territans	12	23		
	Culiseta inornata	1	3		
	Culiseta melanura	62	336		
	Orthopodomyia signifera	3	11		
	Psorophora ciliata	6	10		
	Psorophora columbiae	11	36		
	Psorophora cyanescens	1	1		
	Psorophora ferox	4	5		
	Psorophora howardii	1	3		
	Uranotaenia sapphirina	8	11		
Camden		**205**	**3674**	**16**	**4.35**
	Aedes albopictus	42	300		
	Aedes canadensis canadensis	1	19		
	Aedes cantator	1	22		
	Aedes japonicus	15	32		
	Aedes triseriatus	2	2		
	Aedes trivittatus	1	1		
	Aedes vexans	7	144		
	Anopheles punctipennis	7	31		
	Anopheles quadrimaculatus	7	12		
	Coquillettidia perturbans	4	16		
	Culex erraticus	2	8		
	Culex pipiens	13	530		
	Culex restuans	21	522		
	Culex salinarius	4	15		
	Culex sp.	65	1963	16	8.15
	Culiseta inornata	1	1		
	Culiseta melanura	9	52		
	Orthopodomyia signifera	2	3		
	Psorophora columbiae	1	1		
Cape_May		**612**	**7836**	**2**	**0.26**
	Aedes albopictus	32	84		
	Aedes canadensis canadensis	4	71		
	Aedes cantator	8	82		
	Aedes japonicus	14	24		
	Aedes sollicitans	11	397		
	Aedes taeniorhynchus	4	80		
	Aedes triseriatus	2	4		
	Aedes vexans	3	14		
	Anopheles bradleyi	23	609		
	Anopheles punctipennis	10	105		
	Anopheles quadrimaculatus	25	659		
	Coquillettidia perturbans	4	28		
	Culex erraticus	13	203		
	Culex pipiens	156	2201	1	0.45

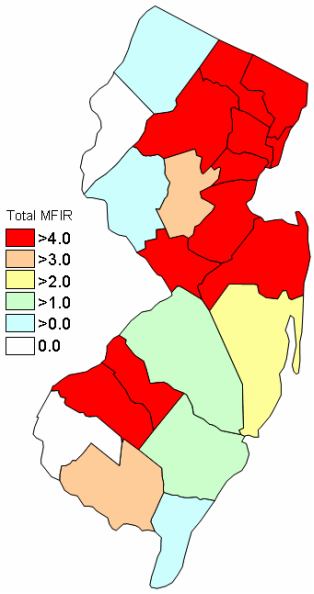
	Culex restuans	147	1539		
	Culex salinarius	12	426		
	Culex sp.	67	694	1	1.44
	Culex territans	7	21		
	Culiseta melanura	70	595		
Cumberland		**244**	**2170**	**7**	**3.23**
	Aedes albopictus	50	166		
	Aedes japonicus	17	39		
	Aedes sticticus	1	1		
	Aedes triseriatus	8	12		
	Aedes vexans	5	41		
	Anopheles bradleyi	2	2		
	Anopheles punctipennis	5	14		
	Anopheles quadrimaculatus	2	4		
	Coquillettidia perturbans	1	1		
	Culex erraticus	21	67		
	Culex pipiens	32	242	3	12.40
	Culex restuans	10	84	1	11.90
	Culex salinarius	3	3		
	Culex spp.	74	1384	3	2.17
	Culex territans	2	5		
	Culiseta melanura	7	100		
	Psorophora columbiae	1	2		
	Psorophora ferox	1	1		
	Psorophora howardii	1	1		
	Uranotaenia sapphirina	1	1		
Essex		**300**	**3827**	**34**	**8.88**
	Aedes albopictus	78	489		
	Aedes japonicus	25	111	1	9.01
	Aedes triseriatus	21	36		
	Aedes trivittatus	1	1		
	Aedes vexans	11	39		
	Anopheles punctipennis	6	6		
	Anopheles quadrimaculatus	4	11		
	Coquillettidia perturbans	2	2		
	Culex pipiens	1	75	1	13.33
	Culex restuans	1	14		
	Culex spp.	143	3032	32	10.55
	Culex territans	6	10		
	Psorophora columbiae	1	1		
Gloucester		**625**	**12100**	**53**	**4.38**
	Aedes abserratus	1	9		
	Aedes albopictus	63	470		
	Aedes canadensis canadensis	7	245		
	Aedes communis	1	1		
	Aedes japonicus	32	136		
	Aedes sollicitans	1	2		

	Aedes thibaulti	1	5		
	Aedes triseriatus	9	19		
	Aedes vexans	9	269		
	Anopheles bradleyi	4	86		
	Anopheles earlei	1	1		
	Anopheles punctipennis	23	81		
	Anopheles quadrimaculatus	26	54		
	Coquillettidia perturbans	8	38		
	Culex erraticus	7	47		
	Culex pipiens	341	9634	53	5.50
	Culex restuans	19	591		
	Culex salinarius	6	34		
	Culex territans	9	81		
	Culiseta melanura	47	150		
	Psorophora columbiae	4	113		
	Psorophora ferox	3	9		
	Uranotaenia sapphirina	3	25		
Hudson		**194**	**9269**	**63**	**6.80**
	Culex spp.	194	9269	63	6.80
Hunterdon		**270**	**12654**	**5**	**0.40**
	Aedes albopictus	4	40		
	Aedes japonicus	1	6		
	Aedes trivittatus	1	18		
	Aedes vexans	3	105		
	Anopheles punctipennis	1	50		
	Anopheles quadrimaculatus	2	25		
	Culex erraticus	1	10		
	Culex spp.	256	12399	5	0.40
	Culiseta inornata	1	1		
Mercer		**498**	**5399**	**41**	**7.59**
	Aedes albopictus	212	2594	1	0.39
	Aedes atropalpus	1	1		
	Aedes japonicus	62	108		
	Aedes stimulans	1	1		
	Aedes triseriatus	25	50		
	Aedes vexans	5	15		
	Anopheles punctipennis	1	1		
	Culex erraticus	16	44		
	Culex pipiens	96	1922	33	17.17
	Culex restuans	52	229	3	13.10
	Culex salinarius	13	162		
	Culex spp.	11	267	4	14.98
	Culex territans	1	1		
	Orthopodomyia signifera	1	1		
	Psorophora columbiae	1	3		
Middlesex		**337**	**7949**	**44**	**5.44**
	Aedes albopictus	33	382		
	Aedes japonicus	12	57		
	Aedes triseriatus	5	22		
	Aedes trivittatus	1	1		
	Aedes vexans	21	512		

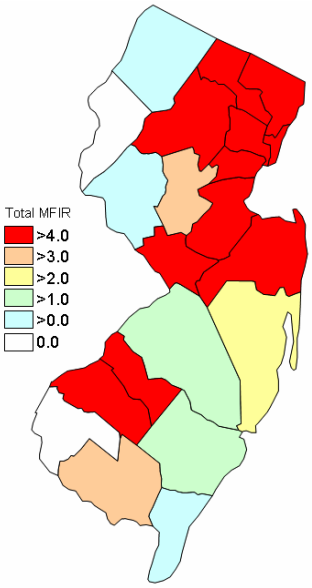
	Culex erraticus	1	1		
	Culex pipiens	23	215	1	4.65
	Culex restuans	11	137		
	Culex salinarius	14	324	1	3.09
	Culex spp.	205	6228	42	6.74
	Culex territans	3	10		
	Psorophora ciliata	3	44		
	Psorophora columbiae	1	4		
	Psorophora ferox	1	1		
	Psorophora howardii	1	3		
	Uranotaenia sapphirina	2	8		
Monmouth		**559**	**5547**	**26**	**4.69**
	Aedes albopictus	101	643		
	Aedes canadensis canadensis	3	18		
	Aedes cantator	4	5		
	Aedes japonicus	22	60		
	Aedes sollicitans	12	43		
	Aedes taeniorhynchus	4	25		
	Aedes triseriatus	9	19		
	Aedes trivittatus	3	4		
	Aedes vexans	27	125		
	Anopheles barberi	1	1		
	Anopheles punctipennis	17	31		
	Anopheles quadrimaculatus	10	20		
	Coquillettidia perturbans	4	5		
	Culex erraticus	9	86		
	Culex pipiens	60	581	1	1.72
	Culex restuans	42	254		
	Culex salinarius	17	51		
	Culex spp.	143	3200	25	7.81
	Culex territans	13	104		
	Culiseta melanura	55	265		
	Psorophora ferox	1	1		
	Uranotaenia sapphirina	2	6		
Morris		**220**	**6865**	**31**	**4.52**
	Aedes albopictus	1	3		
	Aedes japonicus	10	41		
	Aedes triseriatus	2	4		
	Anopheles punctipennis	1	4		
	Coquillettidia perturbans	1	50		
	Culex spp.	205	6763	31	4.58
Ocean		**363**	**5804**	**13**	**2.24**
	Aedes albopictus	97	1376	1	0.73
	Aedes canadensis canadensis	7	83		
	Aedes cantator	1	9		
	Aedes japonicus	24	52		
	Aedes sollicitans	6	43		
	Aedes triseriatus	11	23		
	Aedes trivittatus	1	1		
	Aedes vexans	17	81		
	Anopheles bradleyi	2	2		
	Anopheles punctipennis	6	10		
	Anopheles quadrimaculatus	5	15		

	Coquillettidia perturbans	5	16		
	Culex pipiens	9	249	1	4.02
	Culex restuans	19	249		
	Culex salinarius	14	94		
	Culex sp.	114	3363	11	3.27
	Culex territans	2	2		
	Culiseta melanura	15	94		
	Psorophora ferox	7	19		
	Uranotaenia sapphirina	1	23		
Passaic		**121**	**3859**	**32**	**8.29**
	Aedes albopictus	17	97		
	Aedes japonicus	8	89		
	Aedes triseriatus	1	2		
	Anopheles punctipennis	1	5		
	Culex spp.	94	3666	32	8.73
Salem		**410**	**5055**		
	Aedes albopictus	34	127		
	Aedes atlanticus	1	4		
	Aedes canadensis canadensis	7	181		
	Aedes cantator	6	78		
	Aedes grossbecki	2	3		
	Aedes japonicus	12	29		
	Aedes sollicitans	1	1		
	Aedes sticticus	3	80		
	Aedes triseriatus	15	31		
	Aedes vexans	22	876		
	Anopheles bradleyi	16	228		
	Anopheles punctipennis	31	431		
	Anopheles quadrimaculatus	48	1130		
	Coquillettidia perturbans	9	93		
	Culex erraticus	41	324		
	Culex pipiens	15	64		
	Culex restuans	12	37		
	Culex salinarius	23	528		
	Culex spp.	36	233		
	Culex territans	8	27		
	Culiseta melanura	55	431		
	Psorophora columbiae	4	27		
	Psorophora ferox	6	83		
	Psorophora howardii	1	4		
	Uranotaenia sapphirina	2	5		
Somerset		**274**	**3962**	**14**	**3.53**
	Aedes albopictus	16	58		
	Aedes canadensis canadensis	1	2		
	Aedes japonicus	43	308		
	Aedes triseriatus	37	153		
	Aedes trivittatus	2	57		
	Aedes vexans	1	50		
	Anopheles barberi	1	1		
	Anopheles punctipennis	8	9		
	Anopheles quadrimaculatus	7	7		

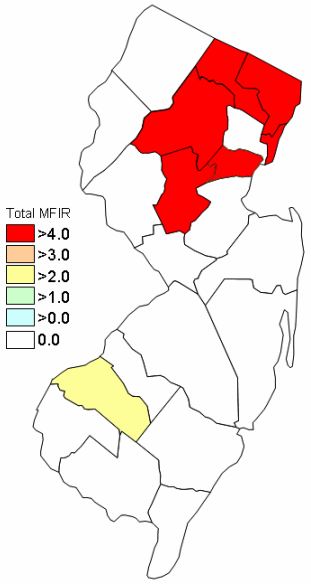
	Culex pipiens	2	22		
	Culex restuans	2	19		
	Culex spp.	149	3269	14	4.28
	Orthopodomyia signifera	2	2		
	Psorophora ferox	2	4		
	Uranotaenia sapphirina	1	1		
Sussex		**406**	**11945**	**7**	**0.59**
	Aedes canadensis canadensis	2	11		
	Aedes cinereus	2	2		
	Aedes japonicus	74	565		
	Aedes sticticus	1	1		
	Aedes triseriatus	24	141		
	Aedes trivittatus	4	32		
	Aedes vexans	5	35		
	Anopheles punctipennis	3	8		
	Anopheles quadrimaculatus	1	1		
	Coquillettidia perturbans	10	219		
	Culex pipiens	6	54		
	Culex restuans	11	143		
	Culex salinarius	2	5		
	Culex spp.	258	10698	7	0.65
	Psorophora ferox	1	1		
	Uranotaenia sapphirina	2	29		
Union		**247**	**4727**	**34**	**7.19**
	Aedes albopictus	75	621		
	Aedes japonicus	9	14		
	Aedes sollicitans	2	3		
	Aedes triseriatus	3	3		
	Aedes vexans	19	88		
	Anopheles punctipennis	3	5		
	Anopheles quadrimaculatus	1	1		
	Culex pipiens	3	11		
	Culex restuans	7	29		
	Culex salinarius	2	3		
	Culex spp.	117	3940	34	8.63
	Psorophora columbiae	5	8		
	Psorophora ferox	1	1		
Warren		**226**	**9303**		
	Aedes japonicus	2	49		
	Culex spp.	224	9254		
Grand Total		**7519**	**161009**	**584**	**3.63**



Cumulative activity to last week



Cumulative activity to this week



Recent Activity 9/21 to 10/06)

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 06 October 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**