RUTGERS
New Jersey Agricultural Experiment Station

VECTOR SURVEILLANCE IN NEW JERSEY
EEE and WNV
CDC WEEK 36: August 31 to September 06, 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	5.1	0.4	100	25		
Corbin City (Atlantic County)	Coastal	2.4	0.2	143	46		
Dennisville (Cape May County)	Coastal	7.0	0.7	434	42		
Waterford (Camden County)	Inland	1.8	0	0	0		
Centerton (Salem County)	Inland	4.4	0.4	224	36	1	4.46
Turkey Swamp (Monmouth County)	Inland	1.9	0.5	240	46		
Glassboro (Gloucester County)	Inland	no history	0.1	25	14		

*Including trial run last week in May.

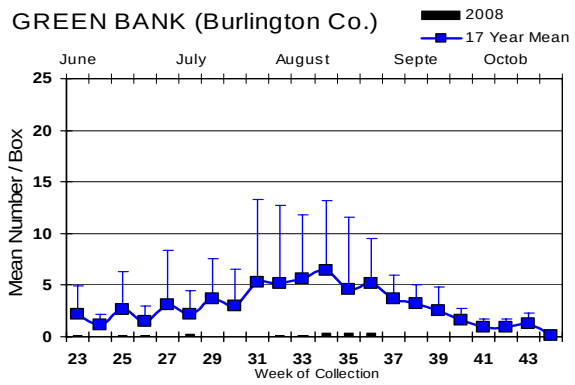
Remarks: PHEL announced that a pool positive for eastern equine encephalitis was detected at the Centerton resting box monitoring site in Salem County, collected on the 1st of September. A second positive pool was detected by the Cape May County Mosquito Control Division's lab in Cape May County, collected on the 29th of August. This second sample was not collected at the Dennisville monitoring site. Positive EEE pools are usually detected each year. Over the past several years, earlier detections (prior to the beginning of August) were associated with multiple horse cases. With mosquito populations a low levels, dissemination of EEE seems likely to spread slowly. Regardless, horse cases have occurred during low dissemination (i.e., 2006) and caution should be taken.

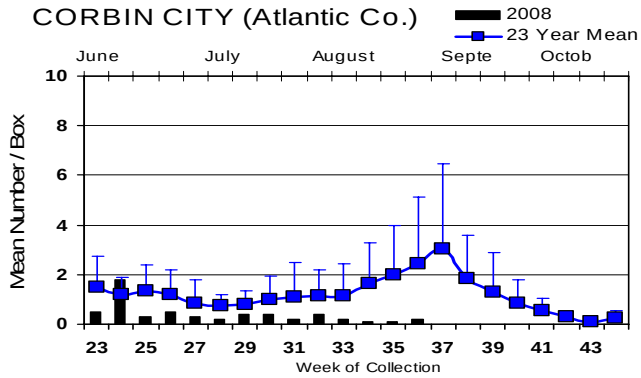
As horse cases can occur during periods of low dissemination, it is always prudent to be prepared. Horse cases often occur when horses have either no or an incomplete vaccination schedule. For inquiries on equine vaccinations, a guideline has been developed by the American Association of Equine Practitioners, and contains schedules for both EEE and WNV vaccinations: http://www.aaep.org/vaccination_guidelines.htm Horse owners should also seek the advise of their veterinarian.

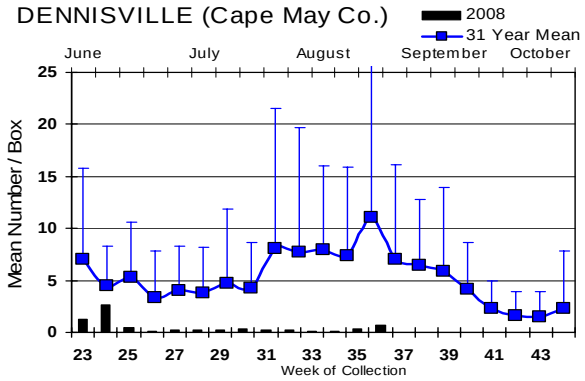
To date, 209 pools from 1166 *Cs. melanura* mosquitoes have been sent for EEE testing from the resting box collections. No positives have been detected from these pools or from pools submitted by the counties. An additional 317 pools of 2609 individual mosquitoes from 31 species other than *Cs. melanura* 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

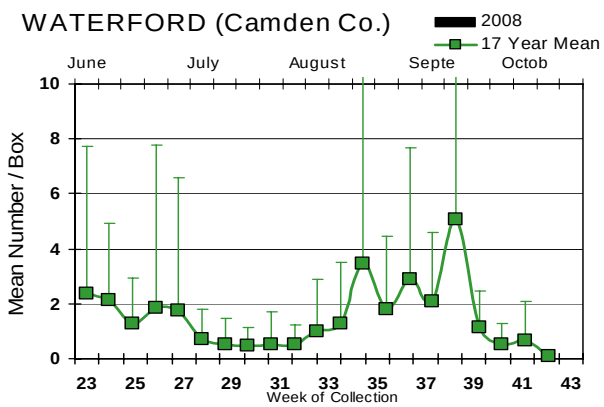
Coastal

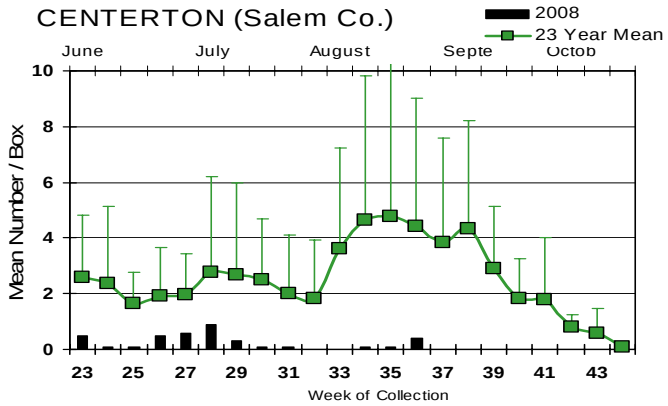


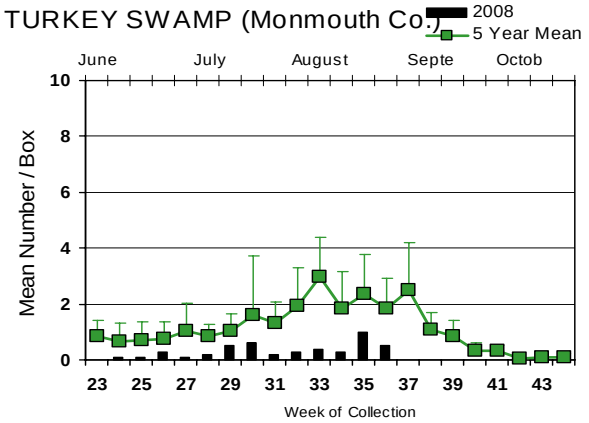




Inland

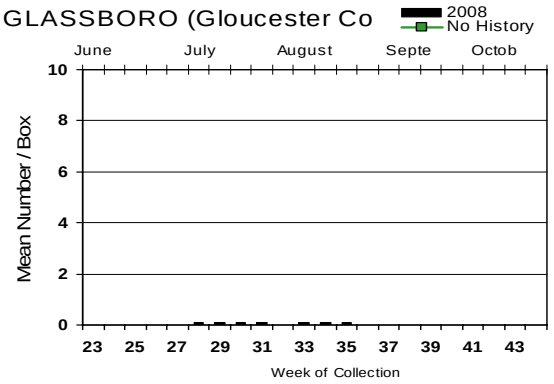






Figures: Inland and coastal resting box sites showing current weekly population levels (in bars) against historical trends (lines with standard deviation). The number of years for historical population levels varies by site.

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).



Low *Cs. melanura* populations continue. However, Green Bank, Corbin City, Dennisville and (most significant) Centerton numbers rose slightly from the previous week. A positive pool was detected at the Centerton site and also within Cape May County.

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

- equine: 2(AL), 82(FL) 22(GA) 3(LA) 6(MS) 6(NC) 3(SC) 1(TN) 1(WI)
- mosquito: 1(AR) 3(FL) 2(GA) 2(LA) 2(MA) 2(NJ) 2(MD) 4(VA)
- sentinel: 3(AL) 80(FL68 wild) 2/emu(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. ? denotes probable cases.

	Birds	Mosquito Pools	Sentinels	Horses	Humans
Alabama				1	3
Alaska					
Arizona	1/3	88/133	19/33		9/16
Arkansas		15		1	7
California	1456/1658	1244/1518	134/173	6/8	127/157
Colorado	3	43			40
Connecticut		126/147			2
Delaware		2+?	+		
Florida	3? live		2/4	1	1
Georgia		8			
Hawaii					
Idaho	2	6 counties		1	16/24
Illinois	9/15	228/336		1	4/5
Indiana	1	66			1
Iowa		4	1/2	1/2	6
Kansas					7
Kentucky		3			
Louisiana		600	9	1	7
Maine					
Maryland		3/5			1/2
Mass.	44/46	75/90			
Michigan	3	1			2
Minnesota	7	10			15
Mississippi		3		1/2	63/78
Missouri	29	184		1	5
Montana		5		3	2/4
Nebraska	4/5	59/67		1	13/23

	Birds	Mosquito Pools	Sentinels	Horses	Humans
Nevada	2	22/31		1	8/10
New Hampshire		1			
New Jersey	25/31	364/442			
New Mexico		1/3		1	3
New York	77	264		1	13
North Carolina				1	
North Dakota				1/4	23/34
Ohio	2/7	81/129			2
Oklahoma		12			6
Oregon	1	6/12			4
Pennsylvania	10/12	355/390			1/5
Rhode Island		1			
South Carolina	3	5			
South Dakota	1	38		3	28
Tennessee		393/463			8
Texas		89/90		1	19/23
Utah	2	110/117	2	2	8/14
Vermont		1			
Virginia		358/484	1		
Washington	4	22/23		11/17	
West Virginia	2	10		2	1
Wisconsin	19/23			2	2/3
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.

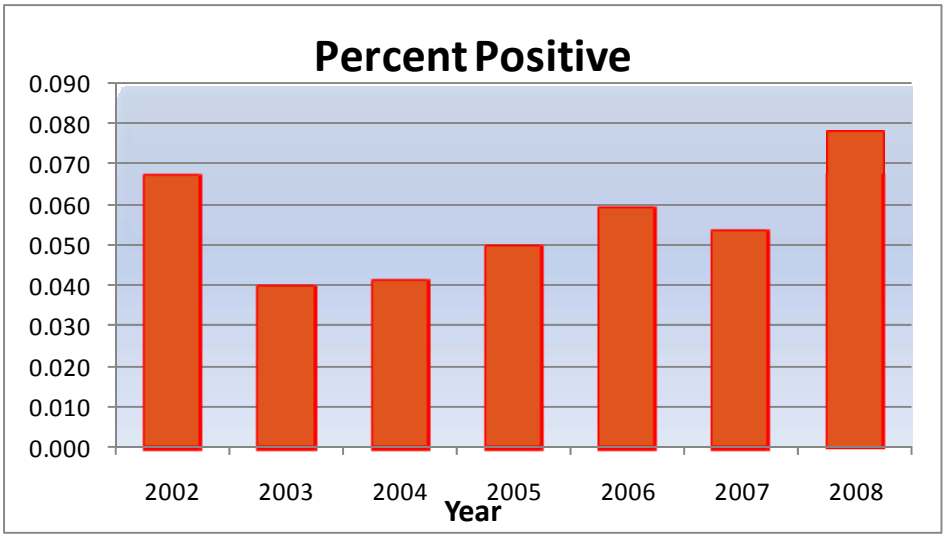
Mosquito Species Submitted for West Nile Virus Testing through 08 September 2008

Species	Pools	Mosquitoes	Positives	MFIR
Aedes abserratus	1	9		
Aedes albopictus	675	6609	2	0.30
Aedes atlanticus	1	4		
Aedes atropalpus	1	1		
Aedes canadensis canadensis	56	1243		
Aedes cantator	25	359		
Aedes cinereus	3	5		
Aedes communis	1	1		
Aedes grossbecki	3	4		
Aedes japonicus	300	1507	1	0.66
Aedes sollicitans	22	245		
Aedes sticticus	6	86		
Aedes stimulans	1	1		

Aedes taeniorhynchus	18	284		
Aedes thibaulti	5	13		
Aedes triseriatus	152	420		
Aedes trivittatus	10	57		
Aedes vexans	179	2809		
Anopheles barberi	3	3		
Anopheles bradleyi	46	854		
Anopheles crucians	5	6		
Anopheles earlei	1	1		
Anopheles punctipennis	117	726		
Anopheles quadrimaculatus	103	1401		
Coquillettidia perturbans	91	909		
Culex erraticus	61	367		
Culex pipiens	544	13683	72	5.26
Culex restuans	244	3698	1	0.27
Culex salinarius	173	6071	2	0.33
Culex spp.	2124	83865	364	4.34
Culex territans	54	183		
Culiseta inornata	2	4		
Culiseta melanura	260	1496		
Orthopodomyia signifera	11	20		
Psorophora ciliata	6	50		
Psorophora columbiae	21	70		
Psorophora cyanescens	1	1		
Psorophora ferox	24	129		
Psorophora howardii	4	11		
Uranotaenia sapphirina	15	74		
Grand Total	**5369**	**127279**	**442**	**3.47**

Remarks: Submitted pools (5,369) comprised of 127,279 individual mosquitoes produced 442 positive pools from 17 different counties.

Recently, we have noticed a significant upswing in WNV positive pools. The graph to the right indicates the proportion of positive pools to the total number of mosquitoes submitted to PHEL (ie, amount of virus versus effort) over the past seven years. Previously our most significant year was 2002, when there was a wide diversity in the number of species that were positive (17) plus significant virus activity. This year, to this point in time (week 36), there is more activity than in the previous six years, but this is confined largely to the *Culex* species.



Humans, Horses and Wild Birds: To date, there have been 137 dead birds submitted for West Nile virus testing with 33 positives Last year, there were 23 positive birds from 153 submissions to this point in time.

2008 Positive Mosquito pools to date / Total Mosquito Pools Submitted	This time last year
442 / 5,369	246 / 4,623

WNV Results by County through 08 September 2008

County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		**239**	**4993**	**7**	**1.40**
	Aedes albopictus	27	685		
	Aedes canadensis canadensis	3	12		
	Aedes cantator	2	16		
	Aedes japonicus	5	6		
	Aedes sollicitans	5	84		
	Aedes taeniorhynchus	12	260		
	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	10	353		
	Culex salinarius	3	3		
	Culex sp.	67	2949	7	2.37
	Culex territans	9	22		
	Culiseta melanura	50	149		
	Orthopodomyia signifera	2	2		
	Psorophora ferox	2	13		
Bergen		**466**	**21051**	**108**	**5.13**
	Aedes albopictus	23	118		
	Aedes canadensis candensis	1	6		
	Aedes japonicus	25	150		
	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	22	171		
	Culex pipiens	79	2873	14	4.87
	Culex restuans	30	317		
	Culex salinarius	83	4793	1	0.21
	Culex spp.	168	12460	93	7.46
	Culex territans	1	1		
	Orthopodomyia signifera	1	1		
Burlington		**328**	**2763**		
	Aedes albopictus	30	368		
	Aedes canadensis canadensis	21	598		
	Aedes cantator	4	148		
	Aedes cinereus	1	3		
	Aedes grossbecki	1	1		
	Aedes japonicus	15	39		
	Aedes sollicitans	1	18		
	Aedes sticticus	2	5		
	Aedes taeniorhynchus	1	2		

	Aedes triseriatus	13	40		
	Aedes trivittatus	1	2		
	Aedes vexans	40	386		
	Anopheles bradleyi	2	6		
	Anopheles crucians	5	6		
	Anopheles punctipennis	16	38		
	Anopheles quadrimaculatus	11	20		
	Coquillettidia perturbans	21	236		
	Culex erraticus	4	4		
	Culex pipiens	3	20		
	Culex restuans	5	29		
	Culex salinarius	2	2		
	Culex sp.	52	499		
	Culex territans	6	12		
	Culiseta inornata	1	3		
	Culiseta melanura	43	216		
	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	6	9		
Camden		**163**	**2959**	**11**	**3.72**
	Aedes albopictus	32	270		
	Aedes canadensis canadensis	1	19		
	Aedes cantator	1	22		
	Aedes japonicus	14	31		
	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	19	519		
	Culex salinarius	4	15		
	Culex sp.	45	1334	11	8.25
	Culiseta melanura	1	1		
	Orthopodomyia signifera	2	3		
	Psorophora columbiae	1	1		
Cape_May		**280**	**4825**		
	Aedes albopictus	3	7		
	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	19	527		
	Anopheles punctipennis	8	103		
	Anopheles quadrimaculatus	17	559		

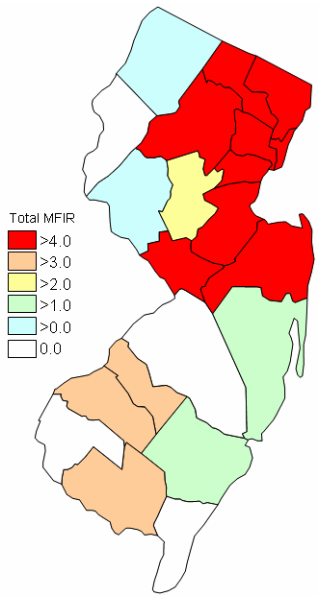
	Coquillettidia perturbans	4	28		
	Culex erraticus	5	18		
	Culex pipiens	54	1107		
	Culex restuans	62	992		
	Culex salinarius	12	426		
	Culex sp.	23	335		
	Culex territans	3	11		
	Culiseta melanura	44	441		
Cumberland		**165**	**1862**	**6**	**3.22**
	Aedes albopictus	30	120		
	Aedes japonicus	15	37		
	Aedes triseriatus	8	12		
	Aedes vexans	3	38		
	Anopheles bradleyi	1	1		
	Anopheles punctipennis	4	10		
	Anopheles quadrimaculatus	1	1		
	Coquillettidia perturbans	1	1		
	Culex erraticus	7	19		
	Culex pipiens	11	139	2	14.39
	Culex restuans	4	52	1	19.23
	Culex salinarius	2	2		
	Culex spp.	69	1358	3	2.21
	Culex territans	2	5		
	Culiseta melanura	3	62		
	Psorophora columbiae	1	2		
	Psorophora ferox	1	1		
	Psorophora howardii	1	1		
	Uranotaenia sapphirina	1	1		
Essex		**267**	**3645**	**30**	**8.23**
	Aedes albopictus	71	465		
	Aedes japonicus	20	77	1	12.99
	Aedes triseriatus	19	33		
	Aedes trivittatus	1	1		
	Aedes vexans	10	38		
	Anopheles punctipennis	5	5		
	Anopheles quadrimaculatus	4	11		
	Coquillettidia perturbans	2	2		
	Culex pipiens	1	75	1	13.33
	Culex restuans	1	14		
	Culex spp.	126	2913	28	9.61
	Culex territans	6	10		
	Psorophora columbiae	1	1		
Gloucester		**440**	**8776**	**36**	**4.10**
	Aedes abserratus	1	9		
	Aedes albopictus	39	341		
	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 earlei	1	1		
	Anopheles punctipennis	17	63		
	Anopheles quadrimaculatus	19	42		
	Coquillettidia perturbans	6	36		
	Culex erraticus	3	39		
	Culex pipiens	242	6725	36	5.35
	Culex restuans	17	584		
	Culex salinarius	6	34		
	Culex territans	7	49		
	Culiseta melanura	29	91		
	Psorophora ferox	3	9		
	Uranotaenia sapphirina	2	22		
Hudson		**143**	**6945**	**45**	**6.48**
	Culex spp.	143	6945	45	6.48
Hunterdon		**190**	**9112**	**3**	**0.33**
	Aedes albopictus	2	11		
	Aedes japonicus	1	6		
	Aedes trivittatus	1	18		
	Aedes vexans	1	50		
	Anopheles punctipennis	1	50		
	Anopheles quadrimaculatus	2	25		
	Culex erraticus	1	10		
	Culex spp.	180	8941	3	0.34
	Culiseta inornata	1	1		
Mercer		**337**	**3524**	**22**	**6.24**
	Aedes albopictus	148	1580	1	0.63
	Aedes atropalpus	1	1		
	Aedes japonicus	47	88		
	Aedes stimulans	1	1		
	Aedes triseriatus	17	37		
	Aedes vexans	3	13		
	Culex erraticus	14	40		
	Culex pipiens	58	1229	17	13.83
	Culex restuans	22	102		
	Culex salinarius	12	161		
	Culex spp.	11	267	4	14.98
	Culex territans	1	1		
	Orthopodomyia signifera	1	1		
	Psorophora columbiae	1	3		
Middlesex		**294**	**7118**	**42**	**5.90**
	Aedes albopictus	28	276		
	Aedes japonicus	11	52		
	Aedes triseriatus	4	16		
	Aedes trivittatus	1	1		
	Aedes vexans	21	512		

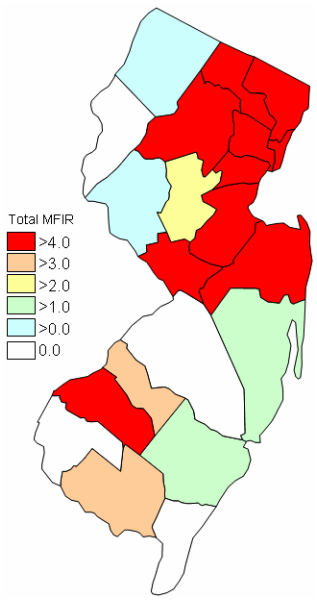
	Culex erraticus	1	1		
	Culex pipiens	22	214	1	4.67
	Culex restuans	10	135		
	Culex salinarius	14	324	1	3.09
	Culex spp.	171	5517	40	7.25
	Culex territans	3	10		
	Psorophora ciliata	3	44		
	Psorophora columbiae	1	4		
	Psorophora ferox	1	1		
	Psorophora howardii	1	3		
	Uranotaenia sapphirina	2	8		
Monmouth		**419**	**4740**	**24**	**5.06**
	Aedes albopictus	73	450		
	Aedes canadensis canadensis	3	18		
	Aedes cantator	4	5		
	Aedes japonicus	16	28		
	Aedes sollicitans	8	36		
	Aedes taeniorhynchus	3	14		
	Aedes triseriatus	7	14		
	Aedes trivittatus	2	3		
	Aedes vexans	18	110		
	Anopheles barberi	1	1		
	Anopheles punctipennis	10	13		
	Anopheles quadrimaculatus	5	6		
	Coquillettidia perturbans	4	5		
	Culex erraticus	4	31		
	Culex pipiens	46	475		
	Culex restuans	33	218		
	Culex salinarius	12	36		
	Culex spp.	120	3020	24	7.95
	Culex territans	8	40		
	Culiseta melanura	42	217		
Morris		**175**	**6413**	**30**	**4.68**
	Aedes japonicus	4	25		
	Aedes triseriatus	1	3		
	Coquillettidia perturbans	1	50		
	Culex spp.	169	6335	30	4.74
Ocean		**274**	**5087**	**9**	**1.77**
	Aedes albopictus	71	1202	1	0.83
	Aedes canadensis canadensis	6	80		
	Aedes cantator	1	9		
	Aedes japonicus	20	45		
	Aedes sollicitans	2	22		
	Aedes triseriatus	10	22		
	Aedes vexans	12	45		
	Anopheles bradleyi	2	2		
	Anopheles punctipennis	6	10		
	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.	88	2950	7	2.37

	Culex territans	1	1		
	Culiseta melanura	10	84		
	Psorophora ferox	5	15		
Passaic		**87**	**3272**	**27**	**8.25**
	Aedes albopictus	6	40		
	Aedes japonicus	6	70		
	Aedes triseriatus	1	2		
	Anopheles punctipennis	1	5		
	Culex spp.	73	3155	27	8.56
Salem		**283**	**3547**		
	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	10	202		
	Anopheles punctipennis	26	349		
	Anopheles quadrimaculatus	32	720		
	Coquillettidia perturbans	8	92		
	Culex erraticus	15	97		
	Culex pipiens	3	6		
	Culex restuans	9	21		
	Culex salinarius	9	179		
	Culex spp.	32	187		
	Culex territans	7	21		
	Culiseta melanura	38	235		
	Psorophora columbiae	4	27		
	Psorophora ferox	6	83		
	Psorophora howardii	1	4		
	Uranotaenia sapphirina	2	5		
Somerset		**194**	**3411**	**10**	**2.93**
	Aedes albopictus	13	52		
	Aedes canadensis canadensis	1	2		
	Aedes japonicus	32	272		
	Aedes triseriatus	29	125		
	Anopheles barberi	1	1		
	Anopheles punctipennis	5	5		
	Anopheles quadrimaculatus	2	2		
	Culex pipiens	2	22		
	Culex restuans	2	19		
	Culex spp.	105	2909	10	3.44
	Orthopodomyia signifera	2	2		
Sussex		**258**	**10324**	**3**	**0.29**
	Aedes canadensis canadensis	2	11		

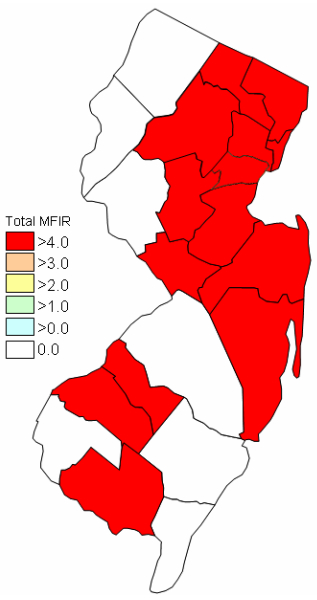
	Aedes cinereus	2	2		
	Aedes japonicus	23	362		
	Aedes sticticus	1	1		
	Aedes triseriatus	3	13		
	Aedes trivittatus	3	31		
	Aedes vexans	4	32		
	Anopheles punctipennis	3	8		
	Anopheles quadrimaculatus	1	1		
	Coquillettidia perturbans	9	215		
	Culex pipiens	2	4		
	Culex restuans	4	96		
	Culex salinarius	1	4		
	Culex spp.	197	9514	3	0.32
	Psorophora ferox	1	1		
	Uranotaenia sapphirina	2	29		
Union		**174**	**4102**	**29**	**7.07**
	Aedes albopictus	58	546		
	Aedes japonicus	7	11		
	Aedes triseriatus	2	2		
	Aedes vexans	7	17		
	Anopheles punctipennis	1	2		
	Culex restuans	1	2		
	Culex spp.	94	3516	29	8.25
	Psorophora columbiae	3	5		
	Psorophora ferox	1	1		
Warren		**193**	**8810**		
	Aedes japonicus	2	49		
	Culex spp.	191	8761		
Grand Total		**5369**	**127279**	**442**	**3.47**



Cumulative activity to last week



Cumulative activity to this week



Recent Activity 8/17 to 9/08)

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 08 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**