RUTGERS
New Jersey Agricultural Experiment Station

VECTOR SURVEILLANCE IN NEW JERSEY
EEE and WNV
CDC WEEK 38: September 14 to September 20, 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	3.2	0.2	148	30		
Corbin City (Atlantic County)	Coastal	1.8	0.4	158	53		
Dennisville (Cape May County)	Coastal	5.9	0.4	493	50	(see remarks)	
Waterford (Camden County)	Inland	2.1	0.7	34	4		
Centerton (Salem County)	Inland	4.3	0.6	280	44	1	3.57
Turkey Swamp (Monmouth County)	Inland	1.1	0.1	261	52		
Glassboro (Gloucester County)	Inland	no history	0.2	51	22		

*Including trial run last week in May.

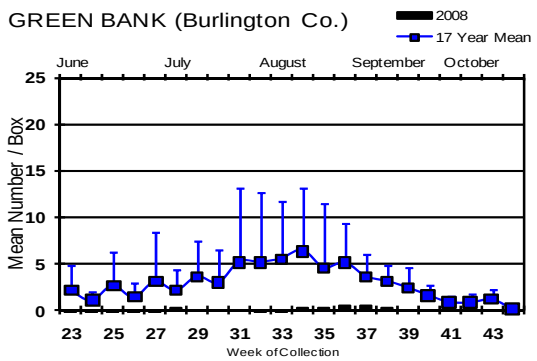
Remarks: No new detections of positive EEE pools occurred during the past week, although *Culiseta melanura* populations began to rebound at some of the resting box monitoring sites. Waterford recorded the first *Cs. melanura* mosquitoes to be found at the site this year – breaking an unusually long period with no signs of the enzootic vector of eastern equine encephalitis virus. Regardless, all sites continue to experience very low population levels of this mosquito.

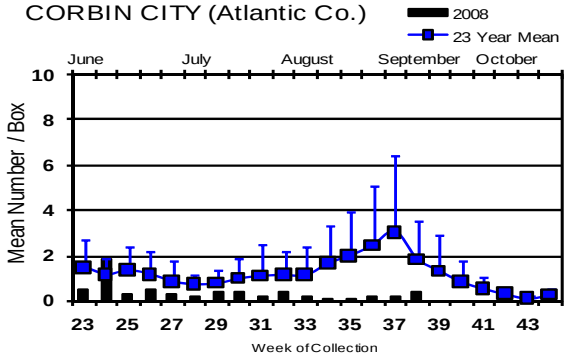
To date, 255 pools from 1425 *Cs. melanura* mosquitoes have been sent for EEE testing from the resting box collections. Previously, one EEE positive pool had been detected at the Centerton monitoring site in Salem County. An additional EEE positive pool from Cape May had been detected by the Cape May Mosquito Control Department's lab for a statewide cumulative total of 2 positive pools. No horse or human cases have been reported to date.

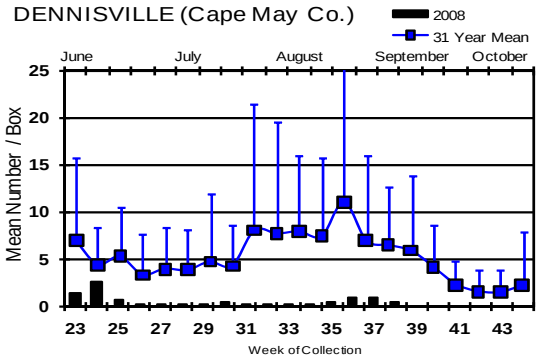
An additional 386 pools of 3168 individual mosquitoes from 31 species other than *Cs. melanura* have also been tested and all pools were found to be negative. These species include: *Aedes albopictus, Ae. canadensis canadensis, Ae. cantator, Ae. cinereus ,Ae. communis, Ae. grossbecki, Ae. japonicus, 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

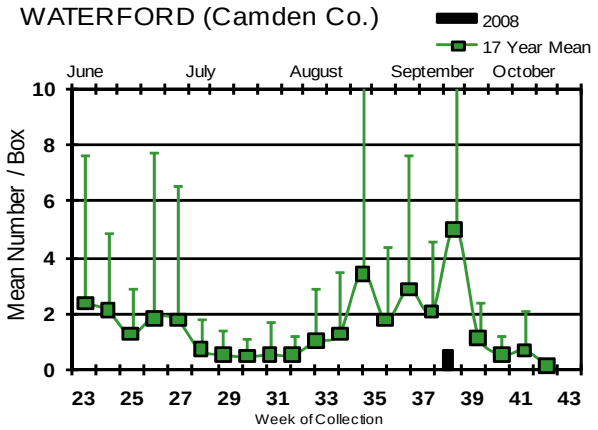
Coastal

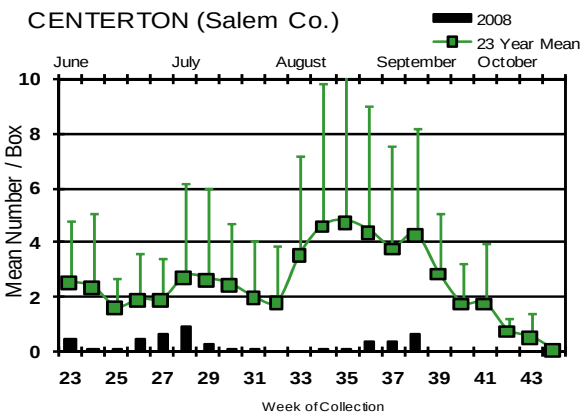


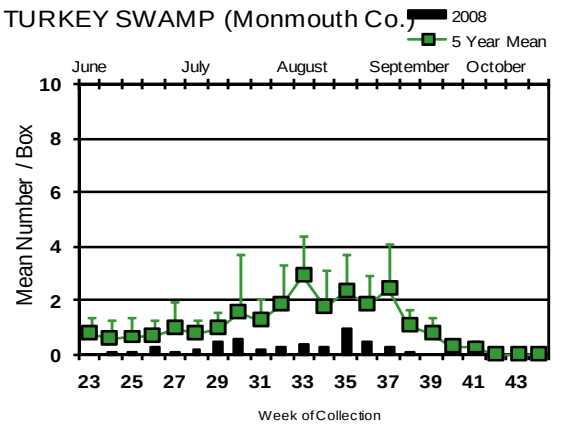




Inland



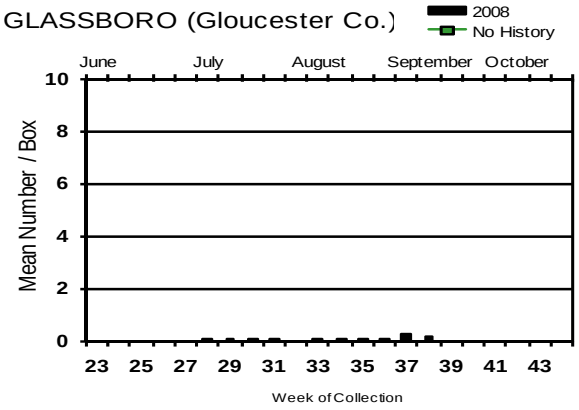




Figures: Inland and coastal resting box sites showing current weekly population levels (in bars) against historical trends (lines with standard deviation). The number of years for historical population levels varies by site.

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 were found in resting boxes at the inland Waterford site for the first time this season. Fifteen consecutive weeks with no *Cs. melanura* detection in these boxes are the longest to date at this site.



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

- equine: 2(AL), 84(FL) 22(GA) 4(LA) 6(MS) 6(NC) 1(NH) 4(SC) 1(TN) 1(WI)
- mosquito: 1(AR) 3(FL) 2(GA) 5(LA) 8(MA) 3(MD) 2(NJ) 2(MD) 4(VA)
- sentinel: 3(AL) 85(FL71 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	7
Alaska					
Arizona	3	145/151	39		29/43
Arkansas		15		1	7
California	1813/1965	1628/1723	196/255	15/18	198/236
Colorado	4	55			62/71
Connecticut		164/174			2/6
Delaware			5		
Florida	3 live		4/7	1	1/2
Georgia		8			
Hawaii					
Idaho	3	7 counties		1	32
Illinois	15/18	459/482		1	5/6
Indiana	3/4	87/152			1/2
Iowa	3	4	2	3/4	7/8
Kansas					12
Kentucky	1/2	4		1	
Louisiana		600	9	1	7
Maine					
Maryland		5		1	6
Mass.	50/57	116			
Michigan	3	1			2/5
Minnesota	7	18			17
Mississippi		3		2/3	84/86
Missouri	29	184/191		1	8
Montana		5		4	4
Nebraska	5/10	78/79		1	25/29

	Birds	Mosquito Pools	Sentinels	Horses	Humans
Nevada	3	31		2	11
New Hampshire		1			
New Jersey	34/39	477/528			2/3
New Mexico		3		1	3/4
New York	89/102	297/325		1	16/21
North Carolina				1	
North Dakota				1	36/40
Ohio	7/9	134/246			2/6
Oklahoma		12			8
Oregon	1	16			4
Pennsylvania	12	440/480			5
Rhode Island		3/10			
South Carolina	3	5			
South Dakota	1	38		3	34/35
Tennessee		523			8
Texas	1	100		1	34/41
Utah	2	129/140	11/15	3	18/20
Vermont		1			
Virginia		571	1		
Washington	6	41		22/27	2
West Virginia	2	10		2	1
Wisconsin	27/31			3	3/5
Wyoming	1	14		1	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.

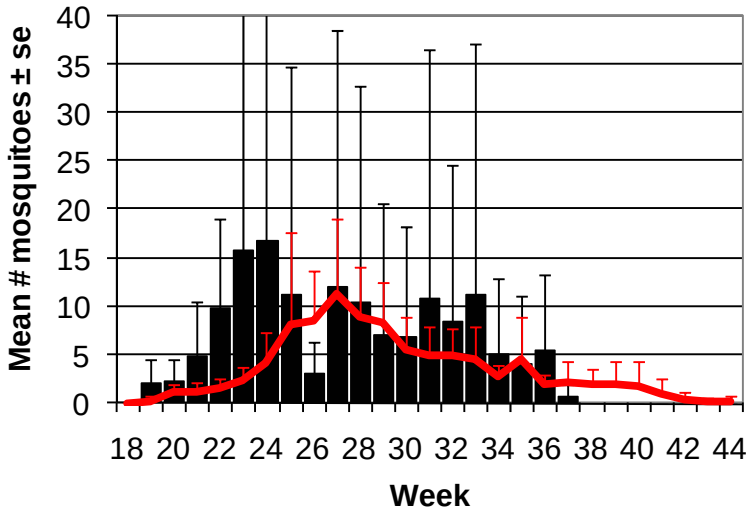
Mosquito Species Submitted for West Nile Virus Testing through 22 September 2008

Species	Pools	Mosquitoes	Positives	MFIR
Aedes abserratus	1	9		
Aedes albopictus	841	8026	2	0.25
Aedes atlanticus	1	4		
Aedes atropalpus	1	1		
Aedes canadensis canadensis	57	1253		
Aedes cantator	25	359		
Aedes cinereus	3	5		
Aedes communis	1	1		
Aedes grossbecki	3	4		
Aedes japonicus	370	1778	1	0.56
Aedes sollicitans	28	256		
Aedes sticticus	6	86		
Aedes stimulans	1	1		

Aedes taeniorhynchus	24	308		
Aedes thibaulti	5	13		
Aedes triseriatus	200	582		
Aedes trivittatus	11	58		
Aedes vexans	199	2939		
Anopheles barberi	3	3		
Anopheles bradleyi	54	921		
Anopheles crucians	8	25		
Anopheles earlei	1	1		
Anopheles punctipennis	138	823		
Anopheles quadrimaculatus	130	1707		
Coquillettidia perturbans	98	926		
Culex erraticus	103	717		
Culex pipiens	705	16776	94	5.60
Culex restuans	331	4140	2	0.48
Culex salinarius	215	8412	2	0.24
Culex spp.	2462	94082	428	4.55
Culex territans	66	287		
Culiseta inornata	3	5		
Culiseta melanura	324	1856		
Orthopodomyia signifera	11	20		
Psorophora ciliata	7	51		
Psorophora columbiae	23	73		
Psorophora cyanescens	1	1		
Psorophora ferox	24	129		
Psorophora howardii	4	11		
Uranotaenia sapphirina	20	85		
State Total	6508	146734	529	3.61

Remarks: Submitted pools (6,508) comprised of 146,734 individual mosquitoes produced 529 positive pools from 17 different counties. Note: Last week (week 37) contained species MFIR values that were off by a factor of 10. The corrected report has been posted.

It should be noted that we are approaching the end of the season and the primary enzootic vector, *Culex pipiens* is seeking protective overwintering places (hibernaculae). Their populations are declining, as indicated by the graph of Mixed *Culex* trapped in county light traps along the coast. Black bars indicate this year's population while the red line is the average population size of the past five years. The figure on recent activity (shown after the county table) also indicate a decline in WNV activity in areas that have been very active until recently.



Humans, Horses and Wild Birds: PHEL reported an additional human case, 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). For more details, see the PHEL's summary sheet: http://www.state.nj.us/health/cd/westnile/documents/wnv_summary_sep19_08.pdf To date, there have been 146 dead birds submitted for West Nile virus testing with 39 positives Last year, there were 32 positive birds from 167 submissions to this point in time. There have been no positive horses.

2008 Positive Mosquito pools to date / Total Mosquito Pools Submitted	This time last year
529 / 6,508	303 / 5,517

WNV Results by County through 22 September 2008

County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		**274**	**5319**	**7**	**1.32**
	Aedes albopictus	33	735		
	Aedes canadensis canadensis	3	12		
	Aedes cantator	2	16		
	Aedes japonicus	5	6		
	Aedes sollicitans	6	86		
	Aedes taeniorhynchus	15	265		
	Aedes thibaulti	4	8		
	Aedes triseriatus	8	19		
	Aedes vexans	13	235		
	Anopheles bradleyi	7	29		
	Anopheles crucians	1	16		
	Anopheles punctipennis	4	4		
	Anopheles quadrimaculatus	2	4		
	Coquillettidia perturbans	6	44		
	Culex erraticus	8	131		
	Culex pipiens	1	17		
	Culex restuans	11	356		
	Culex salinarius	3	3		
	Culex sp.	72	3132	7	2.23
	Culex territans	9	22		
	Culiseta melanura	57	164		
	Orthopodomyia signifera	2	2		
	Psorophora ferox	2	13		
Bergen		**552**	**26377**	**132**	**5.00**
	Aedes albopictus	24	119		
	Aedes canadensis candensis	1	6		
	Aedes japonicus	26	154		
	Aedes sollicitans	1	1		
	Aedes triseriatus	12	41		
	Aedes vexans	15	86		
	Anopheles barberi	1	1		
	Anopheles bradleyi	3	5		
	Anopheles punctipennis	6	35		
	Coquillettidia perturbans	25	183		
	Culex pipiens	90	3375	15	4.44
	Culex restuans	31	318		
	Culex salinarius	111	6891	1	0.15
	Culex spp.	204	15160	116	7.65
	Culex territans	1	1		
	Orthopodomyia signifera	1	1		
Burlington		**428**	**3416**	**1**	**0.29**
	Aedes albopictus	45	517		
	Aedes canadensis canadensis	22	608		
	Aedes cantator	4	148		
	Aedes cinereus	1	3		

	Aedes grossbecki	1	1		
	Aedes japonicus	20	64		
	Aedes sollicitans	2	22		
	Aedes sticticus	2	5		
	Aedes taeniorhynchus	2	9		
	Aedes triseriatus	16	43		
	Aedes trivittatus	1	2		
	Aedes vexans	49	440		
	Anopheles bradleyi	3	15		
	Anopheles crucians	7	9		
	Anopheles punctipennis	19	53		
	Anopheles quadrimaculatus	17	29		
	Coquillettidia perturbans	22	237		
	Culex erraticus	11	35		
	Culex pipiens	11	77		
	Culex restuans	14	86		
	Culex salinarius	4	4		
	Culex sp.	64	653	1	1.53
	Culex territans	10	16		
	Culiseta inornata	1	3		
	Culiseta melanura	51	273		
	Orthopodomyia signifera	3	11		
	Psorophora ciliata	4	7		
	Psorophora columbiae	9	27		
	Psorophora cyanescens	1	1		
	Psorophora ferox	4	5		
	Psorophora howardii	1	3		
	Uranotaenia sapphirina	7	10		
Camden		**190**	**3539**	**16**	**4.52**
	Aedes albopictus	39	295		
	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	20	521		
	Culex salinarius	4	15		
	Culex sp.	59	1852	16	8.64
	Culiseta inornata	1	1		
	Culiseta melanura	5	35		
	Orthopodomyia signifera	2	3		
	Psorophora columbiae	1	1		
Cape_May		**393**	**5786**	**1**	**0.17**
	Aedes albopictus	4	10		
	Aedes canadensis canadensis	4	71		
	Aedes cantator	8	82		
	Aedes japonicus	6	15		
	Aedes sollicitans	4	82		

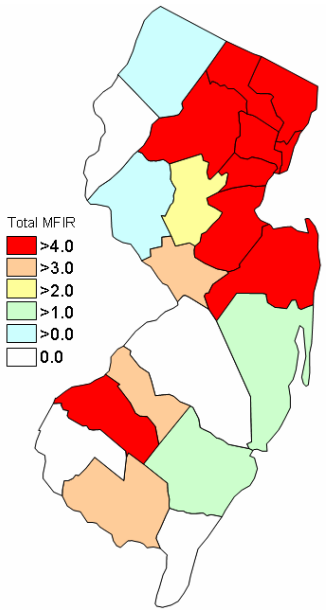
	Aedes taeniorhynchus	3	9		
	Aedes triseriatus	1	1		
	Aedes vexans	2	13		
	Anopheles bradleyi	21	560		
	Anopheles punctipennis	9	104		
	Anopheles quadrimaculatus	19	566		
	Coquillettidia perturbans	4	28		
	Culex erraticus	9	73		
	Culex pipiens	101	1670	1	0.60
	Culex restuans	95	1175		
	Culex salinarius	12	426		
	Culex sp.	30	356		
	Culex territans	5	18		
	Culiseta melanura	56	527		
Cumberland		**205**	**2051**	**7**	**3.41**
	Aedes albopictus	39	143		
	Aedes japonicus	16	38		
	Aedes triseriatus	8	12		
	Aedes vexans	3	38		
	Anopheles bradleyi	1	1		
	Anopheles punctipennis	4	10		
	Anopheles quadrimaculatus	2	4		
	Coquillettidia perturbans	1	1		
	Culex erraticus	14	47		
	Culex pipiens	21	183	3	16.39
	Culex restuans	8	79	1	12.66
	Culex salinarius	2	2		
	Culex spp.	73	1383	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		**532**	**10246**	**44**	**4.29**
	Aedes abserratus	1	9		
	Aedes albopictus	59	448		
	Aedes canadensis canadensis	7	245		
	Aedes communis	1	1		
	Aedes japonicus	27	127		
	Aedes sollicitans	1	2		
	Aedes thibaulti	1	5		
	Aedes triseriatus	8	18		
	Aedes vexans	8	259		
	Anopheles bradleyi	4	86		
	Anopheles earlei	1	1		
	Anopheles punctipennis	20	72		
	Anopheles quadrimaculatus	21	45		
	Coquillettidia perturbans	8	38		
	Culex erraticus	5	44		
	Culex pipiens	283	7989	44	5.51
	Culex restuans	19	591		
	Culex salinarius	6	34		
	Culex territans	9	81		
	Culiseta melanura	37	117		
	Psorophora ferox	3	9		
	Uranotaenia sapphirina	3	25		
Hudson		**168**	**8283**	**60**	**7.24**
	Culex spp.	168	8283	60	7.24
Hunterdon		**230**	**10996**	**3**	**0.27**
	Aedes albopictus	3	23		
	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.	217	10758	3	0.28
	Culiseta inornata	1	1		
Mercer		**439**	**4674**	**33**	**7.06**
	Aedes albopictus	183	2101	1	0.48
	Aedes atropalpus	1	1		
	Aedes japonicus	57	99		
	Aedes stimulans	1	1		
	Aedes triseriatus	24	49		
	Aedes vexans	3	13		
	Anopheles punctipennis	1	1		
	Culex erraticus	16	44		
	Culex pipiens	82	1746	27	15.46
	Culex restuans	45	186	1	5.38
	Culex salinarius	12	161		
	Culex spp.	11	267	4	14.98
	Culex territans	1	1		
	Orthopodomyia signifera	1	1		
	Psorophora columbiae	1	3		

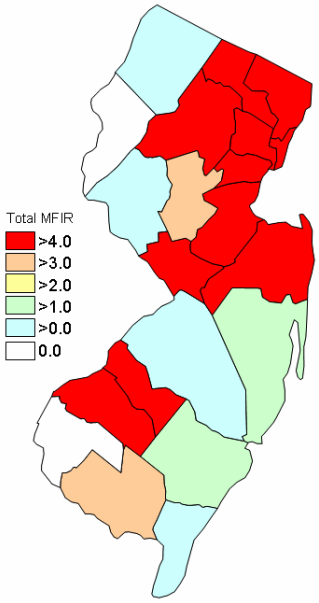
Middlesex		**321**	**7700**	**44**	**5.71**
	Aedes albopictus	32	374		
	Aedes japonicus	12	57		
	Aedes triseriatus	5	22		
	Aedes trivittatus	1	1		
	Aedes vexans	21	512		
	Culex erraticus	1	1		
	Culex pipiens	23	215	1	4.65
	Culex restuans	11	137		
	Culex salinarius	14	324	1	3.09
	Culex spp.	190	5987	42	7.02
	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		**499**	**5286**	**25**	**4.73**
	Aedes albopictus	92	595		
	Aedes canadensis canadensis	3	18		
	Aedes cantator	4	5		
	Aedes japonicus	19	37		
	Aedes sollicitans	9	37		
	Aedes taeniorhynchus	4	25		
	Aedes triseriatus	9	19		
	Aedes trivittatus	2	3		
	Aedes vexans	19	111		
	Anopheles barberi	1	1		
	Anopheles punctipennis	14	24		
	Anopheles quadrimaculatus	8	15		
	Coquillettidia perturbans	4	5		
	Culex erraticus	8	80		
	Culex pipiens	52	518	1	1.93
	Culex restuans	37	245		
	Culex salinarius	14	40		
	Culex spp.	135	3146	24	7.63
	Culex territans	11	95		
	Culiseta melanura	52	261		
	Uranotaenia sapphirina	2	6		
Morris		**209**	**6786**	**30**	**4.42**
	Aedes albopictus	1	3		
	Aedes japonicus	7	31		
	Aedes triseriatus	2	4		
	Anopheles punctipennis	1	4		
	Coquillettidia perturbans	1	50		
	Culex spp.	197	6694	30	4.48
Ocean		**313**	**5519**	**11**	**1.99**
	Aedes albopictus	86	1335	1	0.75
	Aedes canadensis canadensis	6	80		
	Aedes cantator	1	9		
	Aedes japonicus	23	51		

	Aedes sollicitans	3	23		
	Aedes triseriatus	10	22		
	Aedes vexans	13	48		
	Anopheles bradleyi	2	2		
	Anopheles punctipennis	6	10		
	Anopheles quadrimaculatus	2	2		
	Coquillettidia perturbans	4	15		
	Culex pipiens	8	248	1	4.03
	Culex restuans	17	247		
	Culex salinarius	13	92		
	Culex sp.	101	3232	9	2.78
	Culex territans	1	1		
	Culiseta melanura	12	87		
	Psorophora ferox	5	15		
Passaic		**106**	**3569**	**30**	**8.41**
	Aedes albopictus	13	78		
	Aedes japonicus	7	86		
	Aedes triseriatus	1	2		
	Anopheles punctipennis	1	5		
	Culex spp.	84	3398	30	8.83
Salem		**350**	**4469**		
	Aedes albopictus	30	120		
	Aedes atlanticus	1	4		
	Aedes canadensis canadensis	7	181		
	Aedes cantator	5	77		
	Aedes grossbecki	2	3		
	Aedes japonicus	12	29		
	Aedes sollicitans	1	1		
	Aedes sticticus	3	80		
	Aedes triseriatus	13	29		
	Aedes vexans	17	839		
	Anopheles bradleyi	13	223		
	Anopheles punctipennis	28	396		
	Anopheles quadrimaculatus	39	987		
	Coquillettidia perturbans	8	92		
	Culex erraticus	28	244		
	Culex pipiens	12	61		
	Culex restuans	10	22		
	Culex salinarius	18	415		
	Culex spp.	35	228		
	Culex territans	8	27		
	Culiseta melanura	47	292		
	Psorophora columbiae	4	27		
	Psorophora ferox	6	83		
	Psorophora howardii	1	4		
	Uranotaenia sapphirina	2	5		
Somerset		**234**	**3667**	**12**	**3.27**
	Aedes albopictus	14	53		
	Aedes canadensis canadensis	1	2		
	Aedes japonicus	37	289		
	Aedes triseriatus	35	145		
	Anopheles barberi	1	1		

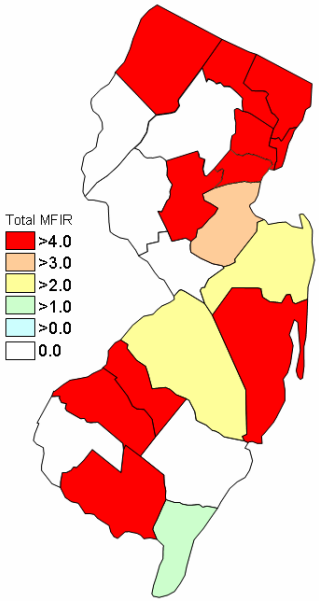
	Anopheles punctipennis	7	8		
	Anopheles quadrimaculatus	5	5		
	Culex pipiens	2	22		
	Culex restuans	2	19		
	Culex spp.	127	3120	12	3.85
	Orthopodomyia signifera	2	2		
	Uranotaenia sapphirina	1	1		
Sussex		**344**	**11553**	**6**	**0.52**
	Aedes canadensis canadensis	2	11		
	Aedes cinereus	2	2		
	Aedes japonicus	46	485		
	Aedes sticticus	1	1		
	Aedes triseriatus	22	115		
	Aedes trivittatus	4	32		
	Aedes vexans	5	35		
	Anopheles punctipennis	3	8		
	Anopheles quadrimaculatus	1	1		
	Coquillettidia perturbans	9	215		
	Culex pipiens	5	50		
	Culex restuans	7	137		
	Culex salinarius	2	5		
	Culex spp.	232	10426	6	0.58
	Psorophora ferox	1	1		
	Uranotaenia sapphirina	2	29		
Union		**209**	**4536**	**33**	**7.28**
	Aedes albopictus	66	588		
	Aedes japonicus	8	13		
	Aedes sollicitans	1	2		
	Aedes triseriatus	3	3		
	Aedes vexans	10	22		
	Anopheles punctipennis	1	2		
	Anopheles quadrimaculatus	1	1		
	Culex restuans	3	7		
	Culex spp.	110	3889	33	8.49
	Psorophora columbiae	5	8		
	Psorophora ferox	1	1		
Warren		**212**	**9135**		
	Aedes japonicus	2	49		
	Culex spp.	210	9086		
Grand Total		**6508**	**146734**	**529**	**3.61**



Cumulative activity to last week



Cumulative activity to this week



Recent Activity 9/07 to 9/20)

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 22 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**