

VECTOR SURVEILLANCE IN NEW JERSEY

EEE, WNV, SLE, LAC, DENV, CHIK and ZIKV

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 CDC WEEK 39: 25 September to 1 October, 2016



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Culiseta melanura and Eastern Equine Encephalitis

SITE/Boxes	Inland or Coastal	Historic Population Mean	Current Weekly Mean	Total Tested* (Collected)	Total Pools Tested* (Submitted)	EEE Isolation Pools	MFIR
Bass River (Burlington Co.)/5	Coastal	1.20	0.20	11 (12)	5 (6)	1	90.91
Green Bank (Burlington Co.)/25	Coastal	1.65	0.08	68 (70)	13 (14)		
Corbin City (Atlantic Co.)/25	Coastal	0.81	0.48	270 (282)	19 (20)	1	3.70
Dennisville (Cape May Co.)/50	Coastal	1.92	0.04	71	13		
Winslow (Camden Co.)/50	Inland	0.57	0.28	974	28	2	2.08
Centerton (Salem Co.)/50	Inland	1.69	0.32	273	17		
Turkey Swamp (Monmouth Co.)/50	Inland	0.47	0.20	134 (144)	17 (18)	1	7.46
Glassboro (Gloucester Co.)/50	Inland	0.57	0.02	107	18	1	9.43

*Current week (in parentheses) results pending. ‡ corrected NC=no collection

Remarks: No new positive EEE pools have been detected during the current week. Total positive EEE pools detected is 11, with 9 pools of *Cs. melanura* and 2 pools of *Culex pipiens*. A total of 4 horse cases have been found.

Traditional Resting Box Sites: 1,908 *Cs. melanura* from 130 pools have been tested for EEE, with 4 pools of 25 *Cs. melanura* to be tested. No new positive pools were detected at the traditional resting box sites. Statewide, 4,937 *Cs. melanura* have been tested, with nine positive pools detected (six traditional, three county sites), for an overall *Cs. melanura* MFIR of 1.82, an decrease from 1.96 last week. 17,803 specimens from 23 other species have also been tested, with two positives *Culex pipiens* pools. Overall MFIR for all species statewide is 0.48.

		Additional <i>Cs. melanura</i> trapped by counties *traps with positives indicated in BOLD .			
County	Trap types*	Pools	Mosquitoes	Positives	MFIR
Atlantic	CO ₂ , RB	28	404		
Burlington	CO ₂	58	1419		
Cape May	CDC, CO ₂ , GR, RB	184	417		
Cumberland	BGS, CDC, GRA RB	18	98		
Middlesex	RB	48	609	3	4.93
Ocean	CO ₂ , GR, RB	22	48		
Passaic	EVS	1	1		
Sussex	CO ₂ , GR	7	10		
Union	LT	1	23		
TOTAL		367	3029	3	0.99

Additional *Cs. melanura*: Counties maintain trap sites for *Cs. melanura* in other areas, using a variety of traps. Three positive pools were detected in Middlesex, the first on 25 July and the most recent at the same site on 20 Sep.

Horses and Humans: Four horses have been detected with EEE, two from Morris, one from Ocean and one from Passaic. All horses were not up to date with vaccinations. ***Horse owners are urged to make sure their horses are up to date on their vaccinations. Horse cases are known to occur through October and sometimes into November.*** Other sensitive species are non-native birds, such as Ostriches/Emus and Gallinaceous birds such as pheasants of Eurasian origins.

Horses and Vaccinations: The fate of unvaccinated equids reinforces the necessity of maintaining a vaccination schedule for arboviruses. For vaccination schedules recommended by the American Association of Equine Practices, see: http://www.aaep.org/vaccination_guidelines.htm

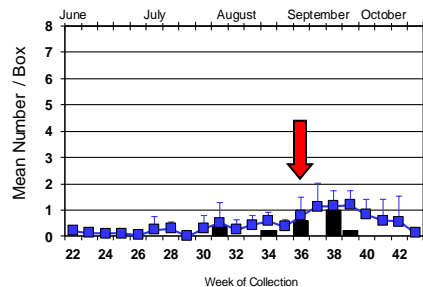
Species other than <i>Cs. melanura</i>	Pools	Mosquitoes	Positives	MFIR
<i>Aedes albopictus</i>	5	10		
<i>Aedes canadensis canadensis</i>	3	74		
<i>Aedes cantator</i>	25	52		
<i>Aedes japonicus</i>	1	4		
<i>Aedes mitchellae</i>	1	6		
<i>Aedes sollicitans</i>	27	1025		
<i>Aedes taeniorhynchus</i>	4	195		
<i>Aedes trivittatus</i>	2	2		
<i>Aedes vexans</i>	10	75		
<i>Anopheles bradleyi</i>	88	450		
<i>Anopheles crucians</i>	7	121		
<i>Anopheles punctipennis</i>	25	115		
<i>Anopheles quadrimaculatus</i>	5	13		
<i>Anopheles walkeri</i>	1	1		
<i>Coquillettidia perturbans</i>	108	1923		
<i>Culex erraticus</i>	121	922		
<i>Culex pipiens</i>	804	9406	2	0.213
<i>Culex restuans</i>	2	4		
<i>Culex salinarius</i>	327	2991		
<i>Culex sp.</i>	65	395		
<i>Culex territans</i>	1	12		
<i>Orthopodomyia signifera</i>	1	1		
<i>Psorophora columbiae</i>	1	2		
<i>Psorophora ferox</i>	2	4		
State Total	1636	17803	2	0.112

Additional Species: Twenty-three additional species were tested for EEE. First positive pools were detected in *Culex pipiens*, an ornithophilic species, in Cape May, collected on 6 July.

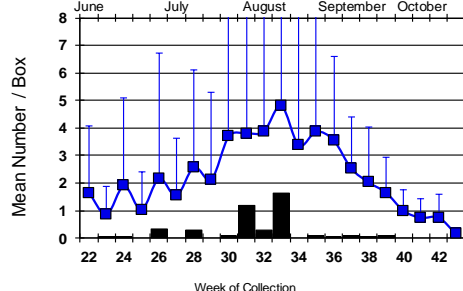
Culiseta melanura Population Graphs

Coastal

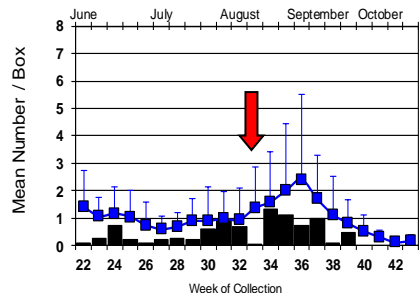
BASS RIVER (Burlington Co.) 2016
—■— 3 Year Mean



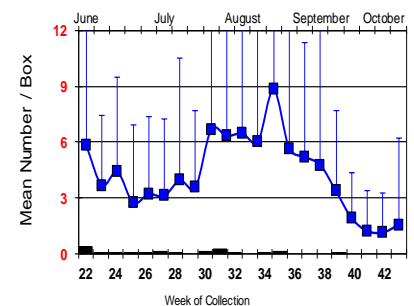
GREEN BANK (Burlington Co.) 2016
—■— 25 Year Mean



CORBINCITY (Atlantic Co.) 2016
—■— 31 Year Mean

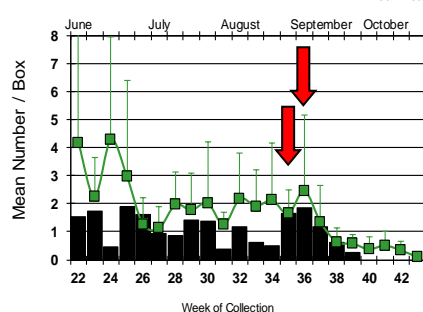


DENNISVILLE (Cape May Co.) 2016
—■— 39 Year Mean

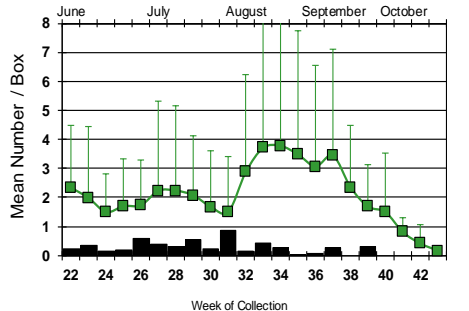


Inland

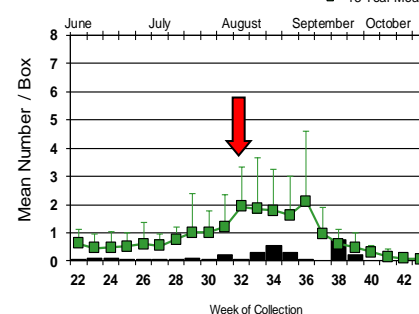
WINSLOW (Camden Co.) 2016
—■— 7 Year Mean



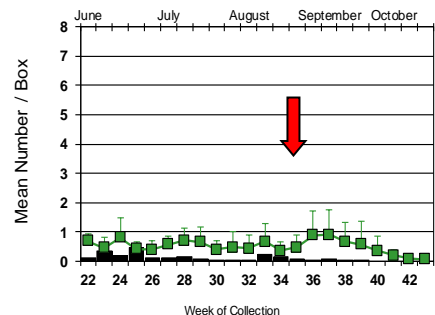
CENTERTON (Salem Co.) 2016
—■— 31 Year Mean



TURKEY SWAMP (Monmouth Co.) 2016
—■— 13 Year Mean



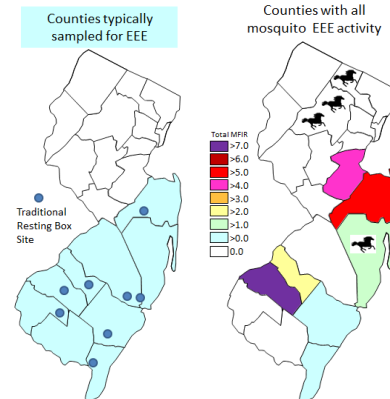
GLASSBORO (Gloucester Co.) 2016
—■— 7 Year Mean



No new detection have occurred at the traditional resting box sites.

Maps to right: Note that Middlesex County (in pink, far right) and Passaic and Morris County (with a total of three horse symbols, representing the positive horses – symbols do not point to location within the county of the horse cases) are north of the areas typically sampled for EEE (left map). Horse cases have occurred on occasion in the northern half of the state. (map to right up-to-date for all species mosquito MFIR).

= Positive pool(s) detected (red = melanura, purple = other species).



EEE in US (2016 cumulative cases): (Black or Red = previous + new reported cases occurring)

- equine: AL(7) FL(19) GA(5) LA(8) MS(7) MI(2) NC(1) NJ(4) NY(1) SC(14) TN(1) TX(2) VA(6) WI(4)
- mosquito pools: CT(1) LA(1) MA(4) NJ(11) NY(5) RI(1)
- sentinel: FL(75) GA(2) TX(26)
- human:

West Nile Virus Positive Organisms in US, 2016

West Nile in US (2016 cumulative cases): Single black values indicate no change from previous week. Black values / red values equals previous week/**New totals**. Note: Data reported by all states should be considered provisional and subject to change. Sources for this table can be found [here](#).

	Birds	Mosquito Pools	Sentinels	Horses	Humans
Alabama					5
Alaska					
Arizona	1	87	0	1	53/58
Arkansas				0	3
California	1276/1288	3249/3360	295/301	19	234/276
Colorado	17	207		3	98/107
Connecticut		106/120			1
Delaware					
DC					1
Florida		5	113	1	4
Georgia		0			1
Hawaii					
Idaho	0	34		9	8
Illinois	61/63	2271/2326		1	30/64
Indiana	0	213/232		0	6/7
Iowa		19/28		9/12	7/18
Kansas	1	0		1	15/18
Kentucky				4	
Louisiana	31/42	168/173		3	26
Maine		0			0
Maryland		1			
Mass.		185/188		0	5/6
Michigan	13	4		2	22/32
Minnesota		6		12/18	24
Mississippi		24/25			22/26
Missouri		8		2	2

	Birds	Mosquito Pools	Sentinels	Horses	Humans
Montana					5
Nebraska	2	90/110		1	52/60
Nevada				6	7/9
New Hampshire		1		0	0
New Jersey		384/412		0	5
New Mexico					2
New York		447/497		3	1
North Carolina					
North Dakota	8	15		4/6	69/70
Ohio		8/452		1	4/12
Oklahoma		7		2	14/19
Oregon	9	51	0	6	3
Pennsylvania	12/14	1352/1448		3/4	7/12
Rhode Island		1			
South Carolina		6			4
South Dakota		242		2	127/134
Tennessee					4/5
Texas	4	1457/1575	2/13	15/21	144/164
Utah		203/243		3/6	8/12
Vermont		17/19			3
Virginia					
Washington	1	95		25	9
West Virginia				1	
Wisconsin	44	8		6/7	2
Wyoming	1	23			1

* Can include other species (e.g., dogs, cows) reported positive.

Protocol: New Jersey Department of Health (NJDH Public Health Environmental and Agricultural Laboratories, PHEAL) and the Cape May County Department of Mosquito Control tests mosquito pools using RT-PCR Taqman techniques.

Mosquito Species Submitted and Tested for West Nile Virus Testing through 2 October 2016

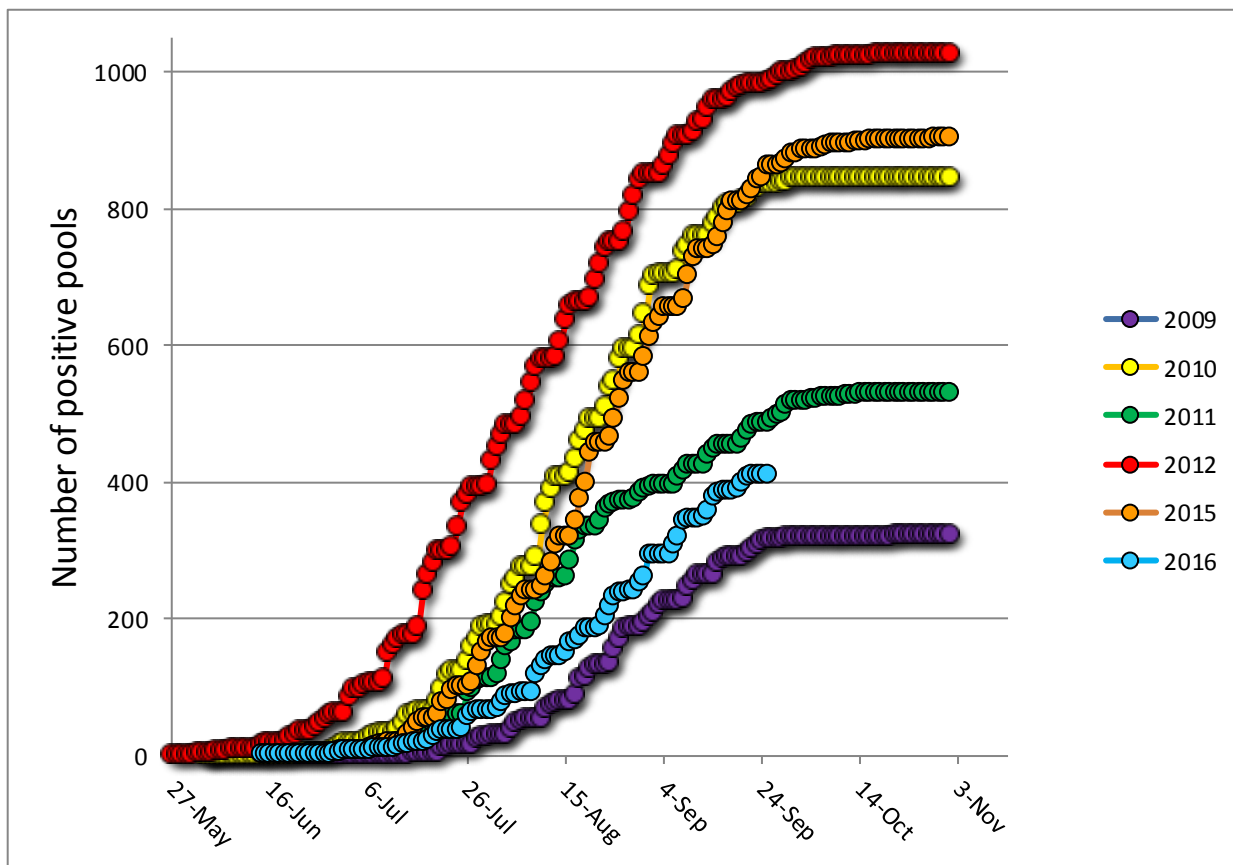
Species	Pools	Mosquitoes	Positives	MFIR
<i>Aedes albopictus</i>	2027	21918	5	0.228
<i>Aedes atlanticus</i>	16	44		
<i>Aedes atropalpus</i>	29	81		
<i>Aedes canadensis canadensis</i>	37	707		
<i>Aedes cantator</i>	36	246		
<i>Aedes grossbecki</i>	1	1		
<i>Aedes japonicus</i>	502	2884	2	0.693
<i>Aedes mitchellae</i>	1	6		
<i>Aedes sollicitans</i>	35	1195		
<i>Aedes sticticus</i>	1	6		
<i>Aedes taeniorhynchus</i>	26	687		
<i>Aedes triseriatus</i>	254	566		
<i>Aedes trivittatus</i>	4	36		
<i>Aedes vexans</i>	101	1164	1	0.859
<i>Anopheles atropos</i>	1	1		
<i>Anopheles barberi</i>	2	2		
<i>Anopheles bradleyi</i>	103	775		
<i>Anopheles crucians</i>	10	128		
<i>Anopheles punctipennis</i>	87	329		
<i>Anopheles quadrimaculatus</i>	155	1208		
<i>Anopheles walkeri</i>	1	1		
<i>Coquillettidia perturbans</i>	127	2850	1	0.351
<i>Culex erraticus</i>	160	1271		
<i>Culex pipiens</i>	1187	29530	53	1.795
<i>Culex restuans</i>	799	8317	9	1.082
<i>Culex salinarius</i>	341	3341		
<i>Culex</i> spp.	3067	113654	339	2.983
<i>Culex territans</i>	42	365		
<i>Culiseta melanura</i>	499	4910	2	0.407
<i>Orthopodomyia signifera</i>	5	5		
<i>Psorophora ciliata</i>	1	1		
<i>Psorophora columbiae</i>	18	108		
<i>Psorophora ferox</i>	19	137		
<i>Uranotaenia sapphirina</i>	2	6		
Grand Total	9696	196480	412	2.097

Remarks: To date, 9,696 pools of 196,480 mosquitoes from 33 species have been tested, with 412 positive pools detected. New positives were mostly in *Culex* pools. First non-*Culex* detection occurred in *Aedes albopictus*, collected in Hudson County on 19 July. The first positive pool of *Culex* Mix was collected on 14 June in Monmouth County.

Humans, Horses and Wild Birds: *Note* Last week a potential blood donor was reported as part of the total number of human cases. We do not consider blood donors as we do not know when they became infected. A total of five human cases have been detected. Currently, case count is Camden (1), Gloucester (1), Middlesex (1) Monmouth (1) and Passaic (1). No horse cases are currently reported. Last year 26 humans and one horse were positive. Onset in 2015 for humans began in early August and the onset for the horse case began in September. For further information, see <http://www.state.nj.us/health/cd/westnile/techinfo.shtml>.

Birds are no longer routinely tested in New Jersey.

The graph below shows cumulative positive pools for several years, with 2012 as the most active year and 2009 as the least active year. A slight increase in activity from the previous week has occurred, with numbers trending between low (2009) and moderate (2011) activity.



WNV Results by County through 2 October 2016

County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		280	7774	12	1.544
	<i>Aedes albopictus</i>	52	505		
	<i>Aedes japonicus</i>	4	18		
	<i>Aedes sollicitans</i>	14	871		
	<i>Aedes sticticus</i>	1	6		
	<i>Aedes taeniorhynchus</i>	8	390		
	<i>Aedes vexans</i>	10	332		
	<i>Anopheles bradleyi</i>	6	146		
	<i>Anopheles punctipennis</i>	2	18		
	<i>Anopheles quadrimaculatus</i>	2	34		
	<i>Coquillettidia perturbans</i>	23	526		
	<i>Culex erraticus</i>	16	140		
	<i>Culex pipiens</i>	31	1653	9	5.445
	<i>Culex restuans</i>	3	52		
	<i>Culex salinarius</i>	6	220		
	<i>Culex spp.</i>	50	2108	2	0.949
	<i>Culiseta melanura</i>	47	674	1	1.484

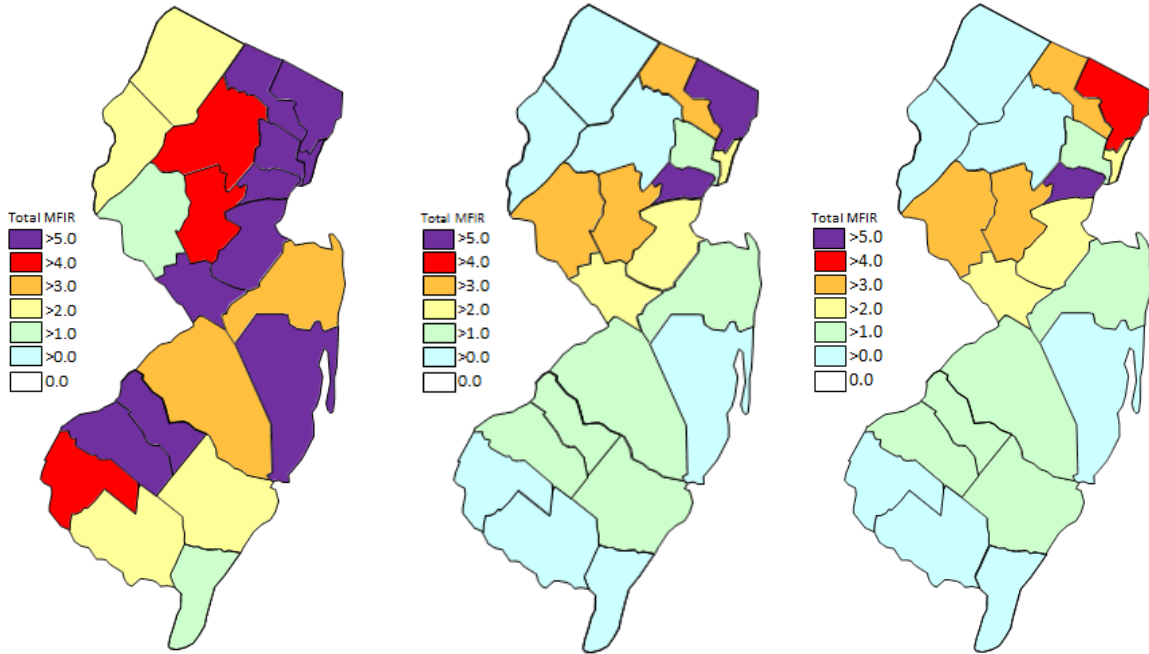
<i>Psorophora columbiae</i>	1	10		
<i>Psorophora ferox</i>	4	71		
Bergen	269	16762	88	5.250
<i>Aedes albopictus</i>	47	398		
<i>Aedes japonicus</i>	9	419		
<i>Culex</i> spp.	213	15945	88	5.519
Burlington	211	6802	8	1.176
<i>Aedes albopictus</i>	11	267		
<i>Aedes atropalpus</i>	3	18		
<i>Aedes canadensis canadensis</i>	3	74		
<i>Aedes japonicus</i>	9	203		
<i>Aedes mitchellae</i>	1	6		
<i>Aedes taeniorhynchus</i>	4	195		
<i>Aedes triseriatus</i>	9	35		
<i>Anopheles barberi</i>	1	1		
<i>Anopheles bradleyi</i>	4	114		
<i>Anopheles crucians</i>	5	94		
<i>Anopheles punctipennis</i>	1	11		
<i>Anopheles quadrimaculatus</i>	1	3		
<i>Coquillettidia perturbans</i>	5	303	1	3.300
<i>Culex erraticus</i>	5	110		
<i>Culex salinarius</i>	17	613		
<i>Culex</i> spp.	77	3404	7	2.056
<i>Culex territans</i>	1	12		
<i>Culiseta melanura</i>	54	1339		
Camden	217	4728	7	1.481
<i>Aedes albopictus</i>	44	181		
<i>Aedes japonicus</i>	24	82		
<i>Anopheles punctipennis</i>	1	4		
<i>Culex</i> spp.	120	3487	7	2.007
<i>Culiseta melanura</i>	28	974		
Cape May	3275	19706	4	0.203
<i>Aedes albopictus</i>	488	1025		
<i>Aedes atlanticus</i>	13	31		
<i>Aedes atropalpus</i>	26	63		
<i>Aedes canadensis canadensis</i>	13	249		
<i>Aedes cantator</i>	25	52		
<i>Aedes japonicus</i>	216	420		
<i>Aedes sollicitans</i>	4	6		
<i>Aedes taeniorhynchus</i>	4	5		
<i>Aedes triseriatus</i>	170	302		
<i>Aedes vexans</i>	12	17		
<i>Anopheles atropos</i>	1	1		
<i>Anopheles bradleyi</i>	84	336		
<i>Anopheles punctipennis</i>	10	11		
<i>Anopheles quadrimaculatus</i>	124	1097		
<i>Coquillettidia perturbans</i>	27	426		
<i>Culex erraticus</i>	31	85		
<i>Culex pipiens</i>	804	9400	1	0.106
<i>Culex restuans</i>	650	4386	2	0.456
<i>Culex salinarius</i>	277	804		
<i>Culex</i> spp.	47	129		

<i>Culex territans</i>	41	353		
<i>Culiseta melanura</i>	197	488	1	2.049
<i>Orthopodomyia signifera</i>	3	3		
<i>Psorophora columbiae</i>	2	2		
<i>Psorophora ferox</i>	4	9		
<i>Uranotaenia sapphirina</i>	2	6		
Cumberland	252	4114	1	0.243
<i>Aedes albopictus</i>	33	392		
<i>Aedes cantator</i>	1	1		
<i>Aedes japonicus</i>	10	19		
<i>Aedes sollicitans</i>	12	307		
<i>Aedes taeniorhynchus</i>	3	26		
<i>Aedes triseriatus</i>	2	4		
<i>Aedes vexans</i>	41	660	1	1.515
<i>Anopheles bradleyi</i>	5	157		
<i>Anopheles crucians</i>	1	5		
<i>Anopheles punctipennis</i>	8	61		
<i>Anopheles quadrimaculatus</i>	3	18		
<i>Coquillettidia perturbans</i>	8	111		
<i>Culex erraticus</i>	22	227		
<i>Culex pipiens</i>	3	10		
<i>Culex salinarius</i>	32	1505		
<i>Culex</i> spp.	35	406		
<i>Culiseta melanura</i>	18	98		
<i>Orthopodomyia signifera</i>	1	1		
<i>Psorophora ciliata</i>	1	1		
<i>Psorophora columbiae</i>	12	92		
<i>Psorophora ferox</i>	1	13		
Essex	268	1541	2	1.298
<i>Aedes albopictus</i>	116	599		
<i>Aedes japonicus</i>	7	14		
<i>Aedes triseriatus</i>	2	2		
<i>Anopheles punctipennis</i>	1	1		
<i>Anopheles quadrimaculatus</i>	1	1		
<i>Culex</i> spp.	141	924	2	2.165
Gloucester	515	21759	39	1.792
<i>Aedes albopictus</i>	176	3873	1	0.258
<i>Aedes japonicus</i>	24	254		
<i>Aedes triseriatus</i>	5	15		
<i>Anopheles punctipennis</i>	6	16		
<i>Culex pipiens</i>	286	17494	38	2.172
<i>Culiseta melanura</i>	18	107		
Hudson	211	9776	25	2.557
<i>Aedes albopictus</i>	49	2194	1	0.456
<i>Culex</i> spp.	162	7582	24	3.165
Hunterdon	230	10437	35	3.353
<i>Aedes albopictus</i>	6	234		
<i>Culex</i> spp.	224	10203	35	3.430
Mercer	449	8737	20	2.289

<i>Aedes albopictus</i>	119	1389		
<i>Aedes japonicus</i>	30	112		
<i>Aedes triseriatus</i>	2	24		
<i>Aedes vexans</i>	3	12		
<i>Culex erraticus</i>	14	48		
<i>Culex pipiens</i>	51	939	5	5.325
<i>Culex restuans</i>	132	3846	7	1.820
<i>Culex</i> spp.	98	2367	8	3.380
Middlesex	396	12726	28	2.200
<i>Aedes albopictus</i>	89	798		
<i>Coquillettidia perturbans</i>	1	2		
<i>Culex erraticus</i>	3	4		
<i>Culex</i> spp.	254	11312	28	2.475
<i>Culiseta melanura</i>	49	610		
Monmouth	758	9058	16	1.766
<i>Aedes albopictus</i>	439	5112	1	0.196
<i>Aedes atlanticus</i>	3	13		
<i>Aedes canadensis canadensis</i>	20	314		
<i>Aedes cantator</i>	10	193		
<i>Aedes grossbecki</i>	1	1		
<i>Aedes japonicus</i>	38	117		
<i>Aedes sollicitans</i>	5	11		
<i>Aedes taeniorhynchus</i>	7	71		
<i>Aedes triseriatus</i>	12	21		
<i>Aedes trivittatus</i>	1	1		
<i>Aedes vexans</i>	11	30		
<i>Anopheles barberi</i>	1	1		
<i>Anopheles crucians</i>	2	2		
<i>Anopheles punctipennis</i>	40	86		
<i>Anopheles quadrimaculatus</i>	7	7		
<i>Coquillettidia perturbans</i>	4	5		
<i>Culex erraticus</i>	7	18		
<i>Culex restuans</i>	2	4		
<i>Culex</i> spp.	124	2886	15	5.198
<i>Culiseta melanura</i>	18	135		
<i>Psorophora columbiae</i>	2	3		
<i>Psorophora ferox</i>	4	27		
Morris	416	13222	10	0.756
<i>Aedes albopictus</i>	70	987		
<i>Aedes trivittatus</i>	2	2		
<i>Aedes vexans</i>	2	5		
<i>Anopheles punctipennis</i>	6	61		
<i>Anopheles quadrimaculatus</i>	2	8		
<i>Anopheles walkeri</i>	1	1		
<i>Coquillettidia perturbans</i>	2	20		
<i>Culex</i> spp.	329	12134	10	0.824
<i>Psorophora ferox</i>	2	4		
Ocean	355	4412	1	0.227
<i>Aedes albopictus</i>	118	1511		
<i>Aedes canadensis canadensis</i>	1	70		
<i>Aedes japonicus</i>	28	89		
<i>Aedes triseriatus</i>	13	21		

<i>Aedes vexans</i>	1	1		
<i>Anopheles crucians</i>	2	27		
<i>Anopheles punctipennis</i>	4	5		
<i>Coquillettidia perturbans</i>	25	463		
<i>Culex erraticus</i>	16	78		
<i>Culex restuans</i>	1	2		
<i>Culex</i> spp.	103	2004	1	0.499
<i>Culiseta melanura</i>	42	132		
<i>Psorophora ferox</i>	1	9		
Passaic	287	7010	22	3.138
<i>Aedes albopictus</i>	13	53		
<i>Aedes japonicus</i>	62	423	2	4.728
<i>Aedes triseriatus</i>	7	11		
<i>Aedes vexans</i>	13	37		
<i>Coquillettidia perturbans</i>	2	5		
<i>Culex</i> spp.	189	6480	20	3.086
<i>Culiseta melanura</i>	1	1		
Salem	283	1896	1	0.527
<i>Aedes albopictus</i>	71	329	1	3.040
<i>Aedes japonicus</i>	15	35		
<i>Aedes triseriatus</i>	23	33		
<i>Anopheles bradleyi</i>	4	22		
<i>Anopheles punctipennis</i>	6	6		
<i>Anopheles quadrimaculatus</i>	15	40		
<i>Coquillettidia perturbans</i>	12	85		
<i>Culex erraticus</i>	35	441		
<i>Culex pipiens</i>	4	4		
<i>Culex restuans</i>	7	8		
<i>Culex</i> spp.	69	614		
<i>Culiseta melanura</i>	17	273		
<i>Orthopodomyia signifera</i>	1	1		
<i>Psorophora columbiae</i>	1	1		
<i>Psorophora ferox</i>	3	4		
Somerset	219	3885	14	3.604
<i>Aedes albopictus</i>	19	87		
<i>Aedes japonicus</i>	4	35		
<i>Aedes triseriatus</i>	4	26		
<i>Anopheles punctipennis</i>	1	5		
<i>Culex</i> spp.	191	3732	14	3.751
Sussex	367	9907	5	0.505
<i>Aedes albopictus</i>	15	58		
<i>Aedes japonicus</i>	22	644		
<i>Aedes triseriatus</i>	5	72		
<i>Aedes trivittatus</i>	1	33		
<i>Aedes vexans</i>	8	70		
<i>Anopheles punctipennis</i>	1	44		
<i>Coquillettidia perturbans</i>	18	904		
<i>Culex erraticus</i>	2	9		
<i>Culex pipiens</i>	8	30		
<i>Culex restuans</i>	4	19		
<i>Culex salinarius</i>	9	199		
<i>Culex</i> spp.	267	7815	5	0.640

<i>Culiseta melanura</i>	7	10		
Union	215	11911	72	6.045
<i>Aedes albopictus</i>	52	1926	1	0.519
<i>Culex erraticus</i>	9	111		
<i>Culex</i> spp.	151	9805	71	7.241
<i>Culiseta melanura</i>	3	69		
Warren	223	10317	2	0.194
<i>Culex</i> spp.	223	10317	2	0.194
Grand Total	9696	196480	412	2.097



Cumulative WNV activity in 2015. WNV activity to 2 October 2016. WNV activity last week, 2016.

Saint Louis Encephalitis (SLE) to 2 October 2016.

New Jersey will be primarily testing for SLE this year only when adjacent states show human activity (Cape May tests mosquitoes in the Cape May lab independently). SLE has had previous activity in New Jersey, most notably in 1964 and 1975 (CDC's SLE [website](#)), the latter prompting the surveillance reporting by Rutgers. SLE is a flavivirus and has a similar transmission pattern to West Nile, with *Culex* species as the predominant vectors.

Currently, there are no reported positive pools of SLE for 2016. There are no human cases reported.

County	Species	Pools	Mosquitoes	Positives	MFIR
Burlington		82	3496		
	<i>Anopheles barberi</i>	1	1		
	<i>Culex erraticus</i>	4	91		
	<i>Culex</i> spp.	77	3404		
Cape May		850	9532		
	<i>Culex pipiens</i>	804	9406		
	<i>Culex</i> spp.	46	126		
Grand Total		932	13028		

La Crosse Encephalitis (LAC) to 2 October 2016.

New Jersey will be primarily testing for LAC this year only when adjacent states show human activity (Cape May tests mosquitoes in the Cape May lab independently). New Jersey has had 3 cases of this encephalitic disease since 1964 (see CDC's LAC [website](#)). The mortality is low but like other encephalitides, LAC can have both personal (lasting neurological sequelae) and economic impacts. LAC is a bunyavirus with a transmission cycle involving mosquitoes such as *Aedes triseriatus* and small mammals such as squirrels and chipmunks. LAC can not only infect *Aedes albopictus* but transovarial transmission was also demonstrated.

(Tesh and Gubler 1975 Laboratory studies of transovarial transmission of La Crosse and other arboviruses by *Aedes albopictus* and *Culex fatigans*. American Journal of Tropical Medicine and Hygiene 24(5):876-880).

Currently, there are no reported positive pools of LAC for 2016. There are no human cases reported.

County	Species	Pools	Mosquitoes	Positives	MFIR
Burlington		32	523		
	<i>Aedes albopictus</i>	11	267		
	<i>Aedes atropalpus</i>	3	18		
	<i>Aedes japonicus</i>	9	203		
	<i>Aedes triseriatus</i>	9	35		
Grand Total		32	523		

Dengue (DENV) to 2 October 2016.

New Jersey will be selectively testing for DENV (including serotypes) this year. Dengue has not had a history of local transmission here in New Jersey, but each year, travelers can bring virus back from areas in the world with virus activity. This is significant as humans are NOT dead-end hosts and thus there is the potential for local transmission (i.e., New Jersey mosquitoes biting a sick person and then biting and transmitting the disease to someone else) to be established. DENV is a flavivirus but unlike WNV, *Aedes* mosquitoes are predominant vectors. In New Jersey, *Aedes albopictus* is a candidate for local transmission. There are 4 serotypes tested for Dengue.

Note Same pools of *Ae. albopictus* are tested for the four serotypes of Dengue as well as Chikungunya.

No pools have tested positive in 2016. Currently, New Jersey has 55 imported human cases of Dengue.

County	Species	DENV1		DENV2		DENV3		DENV4		Pos.	MFIR
		Pool	Mos.	Pool	Mos.	Pool	Mos.	Pool	Mos.		
Atlantic		52	505	52	505	52	505	52	505		
	<i>Aedes albopictus</i>	52	505	52	505	52	505	52	505		
Bergen		47	398	47	398	47	398	47	398		
	<i>Aedes albopictus</i>	47	398	47	398	47	398	47	398		
Camden		44	181	44	181	44	181	44	181		
	<i>Aedes albopictus</i>	44	181	44	181	44	181	44	181		
Cumberland		33	392	33	392	33	392	33	392		
	<i>Aedes albopictus</i>	33	392	33	392	33	392	33	392		
Essex		116	599	116	599	116	599	116	599		
	<i>Aedes albopictus</i>	116	599	116	599	116	599	116	599		
Gloucester		160	3674	160	3674	160	3674	160	3674		
	<i>Aedes albopictus</i>	160	3674	160	3674	160	3674	160	3674		
Hudson		49	2194	49	2194	49	2194	49	2194		
	<i>Aedes albopictus</i>	49	2194	49	2194	49	2194	49	2194		
Hunterdon		6	234	6	234	6	234	6	234		
	<i>Aedes albopictus</i>	6	234	6	234	6	234	6	234		
Mercer		119	1389	119	1389	119	1389	119	1389		
	<i>Aedes albopictus</i>	119	1389	119	1389	119	1389	119	1389		
Middlesex		91	818	91	818	91	818	91	818		
	<i>Aedes albopictus</i>	89	798	89	798	89	798	89	798		
	<i>Culex spp.</i>	1	19	1	19	1	19	1	19		
	<i>Culiseta melanura</i>	1	1	1	1	1	1	1	1		
Monmouth		367	4673	367	4673	367	4673	367	4673		
	<i>Aedes albopictus</i>	367	4673	367	4673	367	4673	367	4673		
Morris		68	986	68	986	68	986	68	986		
	<i>Aedes albopictus</i>	66	983	66	983	66	983	66	983		
	<i>Culex spp.</i>	2	3	2	3	2	3	2	3		
Ocean		27	251	27	251	27	251	27	251		
	<i>Aedes albopictus</i>	27	251	27	251	27	251	27	251		
Passaic		4	13	4	13	4	13	4	13		
	<i>Aedes albopictus</i>	4	13	4	13	4	13	4	13		
Salem		71	329	71	329	71	329	71	329		
	<i>Aedes albopictus</i>	71	329	71	329	71	329	71	329		
Somerset		15	71	15	71	15	71	15	71		
	<i>Aedes albopictus</i>	15	71	15	71	15	71	15	71		
Sussex		15	58	15	58	15	58	15	58		
	<i>Aedes albopictus</i>	15	58	15	58	15	58	15	58		
Union		45	1793	45	1793	45	1793	45	1793		
	<i>Aedes albopictus</i>	45	1793	45	1793	45	1793	45	1793		
Grand Total		1329	18558	1329	18558	1329	18558	1329	18558		

Chikungunya (CHIK) to 2 October 2016.

New Jersey will be selectively testing for CHIK this year. Chikungunya is similar in symptoms to Dengue, a “breakbone” fever and has a low mortality rate. But this virus has had recent worldwide activity, and in the past year has come to the Western Hemisphere. As with Dengue, transmission can occur when a mosquito bites an infected human, then bites an uninfected human who subsequently becomes ill. CHIK is an alphavirus with *Aedes* mosquitoes as potential vectors. In New Jersey, *Aedes albopictus* is the mosquito of interest.

No pools have tested positive in 2016. Currently, New Jersey has 5 imported human case of Chikungunya.

County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		52	505		
	<i>Aedes albopictus</i>	52	505		
Bergen		47	398		
	<i>Aedes albopictus</i>	47	398		
Camden		44	181		
	<i>Aedes albopictus</i>	44	181		
Cape May		488	1025		
	<i>Aedes albopictus</i>	488	1025		
Cumberland		33	392		
	<i>Aedes albopictus</i>	33	392		
Essex		116	599		
	<i>Aedes albopictus</i>	116	599		
Gloucester		160	3674		
	<i>Aedes albopictus</i>	160	3674		
Hudson		49	2194		
	<i>Aedes albopictus</i>	49	2194		
Hunterdon		6	234		
	<i>Aedes albopictus</i>	6	234		
Mercer		119	1389		
	<i>Aedes albopictus</i>	119	1389		
Middlesex		91	818		
	<i>Aedes albopictus</i>	89	798		
	<i>Culex</i> spp.	1	19		
	<i>Culiseta melanura</i>	1	1		
Monmouth		367	4673		
	<i>Aedes albopictus</i>	367	4673		
Morris		68	986		
	<i>Aedes albopictus</i>	66	983		
	<i>Culex</i> spp.	2	3		
Ocean		27	251		
	<i>Aedes albopictus</i>	27	251		
Passaic		4	13		
	<i>Aedes albopictus</i>	4	13		
Salem		71	329		
	<i>Aedes albopictus</i>	71	329		
Somerset		15	71		
	<i>Aedes albopictus</i>	15	71		
Sussex		15	58		
	<i>Aedes albopictus</i>	15	58		

Union	45	1793		
<i>Aedes albopictus</i>	45	1793		
Grand Total	1817	19583		

Zika (ZIKV) to 2 October 2016.

New Jersey will be selectively testing for ZIKV this year. Zika is an emerging arboviral threat with significant health consequences for fetuses and recent activity in the Western Hemisphere. Humans are potential hosts that can transmit through sexual activity. ZIKV is a flavivirus with *Aedes* mosquitoes as potential vectors. In New Jersey, *Aedes albopictus* is the mosquito of interest.

No pools have tested positive in 2016. Currently, New Jersey has 146 imported human cases of Zika.

County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		39	348		
	<i>Aedes albopictus</i>	39	348		
Bergen		32	326		
	<i>Aedes albopictus</i>	32	326		
Camden		28	115		
	<i>Aedes albopictus</i>	28	115		
Cape May		488	1025		
	<i>Aedes albopictus</i>	488	1025		
Cumberland		27	305		
	<i>Aedes albopictus</i>	27	305		
Essex		77	434		
	<i>Aedes albopictus</i>	77	434		
Gloucester		160	3674		
	<i>Aedes albopictus</i>	160	3674		
Hudson		31	1771		
	<i>Aedes albopictus</i>	31	1771		
Hunterdon		6	234		
	<i>Aedes albopictus</i>	6	234		
Mercer		248	3197		
	<i>Aedes albopictus</i>	248	3197		
Middlesex		57	600		
	<i>Aedes albopictus</i>	56	581		
	<i>Culex</i> spp.	1	19		
Monmouth		197	3099		
	<i>Aedes albopictus</i>	197	3099		
Morris		53	931		
	<i>Aedes albopictus</i>	53	931		
Ocean		27	251		
	<i>Aedes albopictus</i>	27	251		
Passaic		2	10		
	<i>Aedes albopictus</i>	2	10		
Salem		37	203		
	<i>Aedes albopictus</i>	37	203		
Somerset		15	71		
	<i>Aedes albopictus</i>	15	71		
Sussex		15	58		
	<i>Aedes albopictus</i>	15	58		

Union		45	1793		
	<i>Aedes albopictus</i>	45	1793		
Grand Total		1584	18445		