

VECTOR SURVEILLANCE IN NEW JERSEY

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

Prepared by Lisa M. Reed and Mark Robson
 Center for Vector Biology, Rutgers University
 CDC WEEK 41: 9 October to 15 October, 2016



This New Jersey Agricultural Experiment Station report is supported by Rutgers University, Hatch funds, funding from the NJ State Mosquito Control Commission and with the participation of the Department of Health, Department of Agriculture and of the 21 county mosquito control agencies of New Jersey.

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	0.60	0.20	14 (15)	7 (8)	1	71.43
Green Bank (Burlington Co.)/25	Coastal	0.74	0.20	100 (105)	15 (16)		
Corbin City (Atlantic Co.)/25	Coastal	0.32	0.12	290 (293)	21 (22)	1	3.45
Dennisville (Cape May Co.)/50	Coastal	1.15	0.04	89	15		
Winslow (Camden Co.)/50	Inland	0.51	0.06	991	30	2	2.02
Centerton (Salem Co.)/50	Inland	0.80	0.08	294	19		
Turkey Swamp (Monmouth Co.)/50	Inland	0.14	0.02	153 (154)	19 (20)	1	6.54
Glassboro (Gloucester Co.)/50	Inland	0.21	0.00	107	18	1	9.35

*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 remain at 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: 2,038 *Cs. melanura* from 144 pools have been tested for EEE, with 4 pools of 10 *Cs. melanura* to be tested. No new positive pools were detected at the traditional resting box sites. Statewide, 5,295 *Cs. melanura* have been tested, with nine positive pools detected (six traditional, three county sites), for an overall *Cs. melanura* MFIR of 1.70, a decrease from 1.75 last week. 18,488 specimens from 23 other species have also been tested, with two positives *Culex pipiens* pools. Overall MFIR for all species statewide is 0.38.

		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	34	446		
Burlington	CO ₂	70	1571		
Cape May	CDC, CO ₂ , GR, RB	197	433		
Cumberland	BGS, CDC, GRA RB	20	100		
Middlesex	RB	53	614	3	4.89
Ocean	CO ₂ , GR, RB	26	56		
Passaic	EVS	1	1		
Sussex	CO ₂ , GR	10	13		
Union	LT	1	23		
TOTAL		412	3257	3	0.92

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

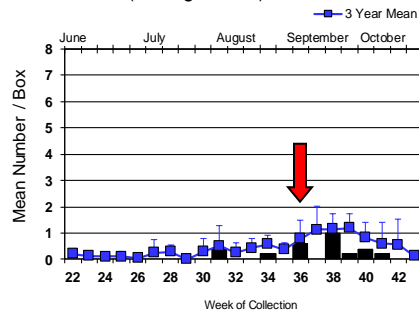
Species other than <i>Cs. melanura</i>	Pools	Mosquitoes	Positives	MFIR
<i>Aedes albopictus</i>	5	10		
<i>Aedes canadensis canadensis</i>	3	74		
<i>Aedes cantator</i>	25	52		
<i>Aedes japonicus</i>	1	4		
<i>Aedes mitchellae</i>	1	6		
<i>Aedes sollicitans</i>	34	1146		
<i>Aedes taeniorhynchus</i>	4	195		
<i>Aedes trivittatus</i>	2	2		
<i>Aedes vexans</i>	11	81		
<i>Anopheles bradleyi</i>	95	525		
<i>Anopheles crucians</i>	9	125		
<i>Anopheles punctipennis</i>	28	120		
<i>Anopheles quadrimaculatus</i>	6	14		
<i>Anopheles walkeri</i>	1	1		
<i>Coquillettidia perturbans</i>	109	1957		
<i>Culex erraticus</i>	153	1012		
<i>Culex pipiens</i>	860	9622	2	0.208
<i>Culex restuans</i>	3	6		
<i>Culex salinarius</i>	338	3049		
<i>Culex</i> sp.	73	452		
<i>Culex territans</i>	1	12		
<i>Orthopodomyia signifera</i>	1	1		
<i>Psorophora columbiae</i>	1	2		
<i>Psorophora ferox</i>	3	20		
State Total	1767	18488	2	0.108

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.

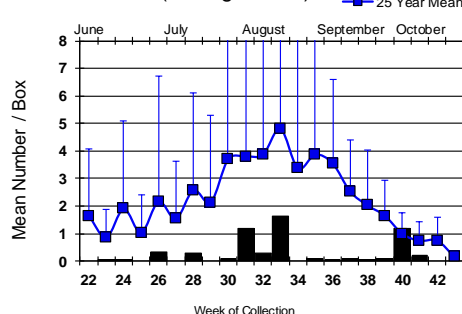
Culiseta melanura Population Graphs

Coastal

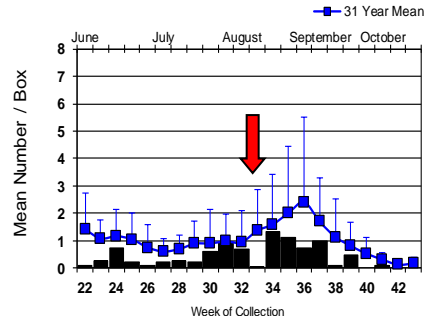
BASS RIVER (Burlington Co.)



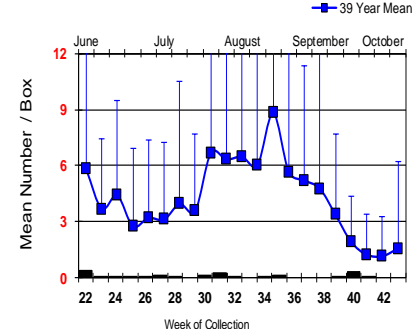
GREEN BANK (Burlington Co.)



CORBINCITY (Atlantic Co.)

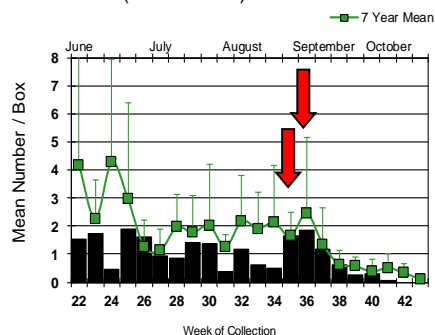


DENNISVILLE (Cape May Co.)

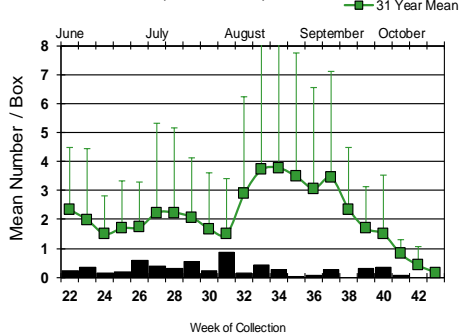


Inland

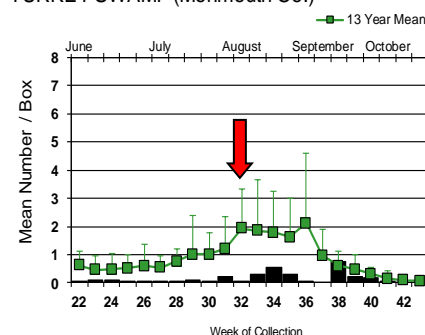
WINSLOW (Camden Co.)



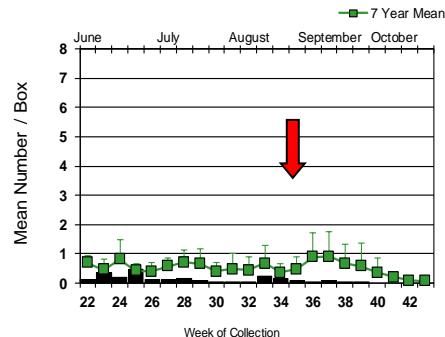
CENTERTON (Salem Co.)



TURKEY SWAMP (Monmouth Co.)



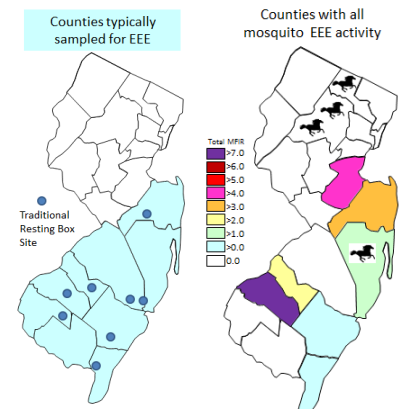
GLASSBORO (Gloucester Co.)



No new detection have occurred at the traditional resting box sites. Abundances at all sites are on the decline.

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) **AR(1)** FL(20) GA(5) LA(11) **MA(4)** MS(7) MI(3) NC(1) NJ(4) NY(1) SC(14) TN(1) TX(3) VA(6) WI(17)
- mosquito pools: CT(1) LA(3) MA(4) NJ(11) NY(5) RI(2)
- sentinel: FL(80) GA(2) TX(26)
- human: **MI(1?)**

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	62/68
Arkansas				0	3/4
California	1304/1322	3419/3438	314/323	20	310/327
Colorado	17	207		3	107/125
Connecticut		121/122			1
Delaware					
DC					1
Florida		5	133/142	1	6
Georgia		0			2
Hawaii					
Idaho	0	34		9/10	8
Illinois	70/73	2344/2425		1	101/115
Indiana	0	248		0	7/10
Iowa		45/46		12	23/25
Kansas	1	1		1	21/22
Kentucky				4	
Louisiana	50/57	184/185		5	29/30
Maine		0			0
Maryland		1			1
Mass.		189		0	9/12
Michigan	13	4		2	32/34
Minnesota		6		19	41
Mississippi		25			26
Missouri		8		2	2

	Birds	Mosquito Pools	Sentinels	Horses	Humans
Montana					5/6
Nebraska	2	110		1	60/76
Nevada				6	10/12
New Hampshire		1		0	0
New Jersey		426/436		0	5/7
New Mexico					5
New York		538/539		3	10/14
North Carolina					
North Dakota	8	15		6	75/79
Ohio		452		1	12/14
Oklahoma		7		2	20/24
Oregon	9	51	0	6	3
Pennsylvania	15	1453/1454		5/6	13
Rhode Island		1			
South Carolina		6			4/5
South Dakota		242		2	144/146
Tennessee					4/5
Texas	4	1633/1659	13	21/35	181/200
Utah		243		6/7	12/13
Vermont		19			3
Virginia					
Washington	2	95		27	9
West Virginia		5		1	
Wisconsin	57/59	11		7	2
Wyoming	1	23			9

* 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 15 October 2016

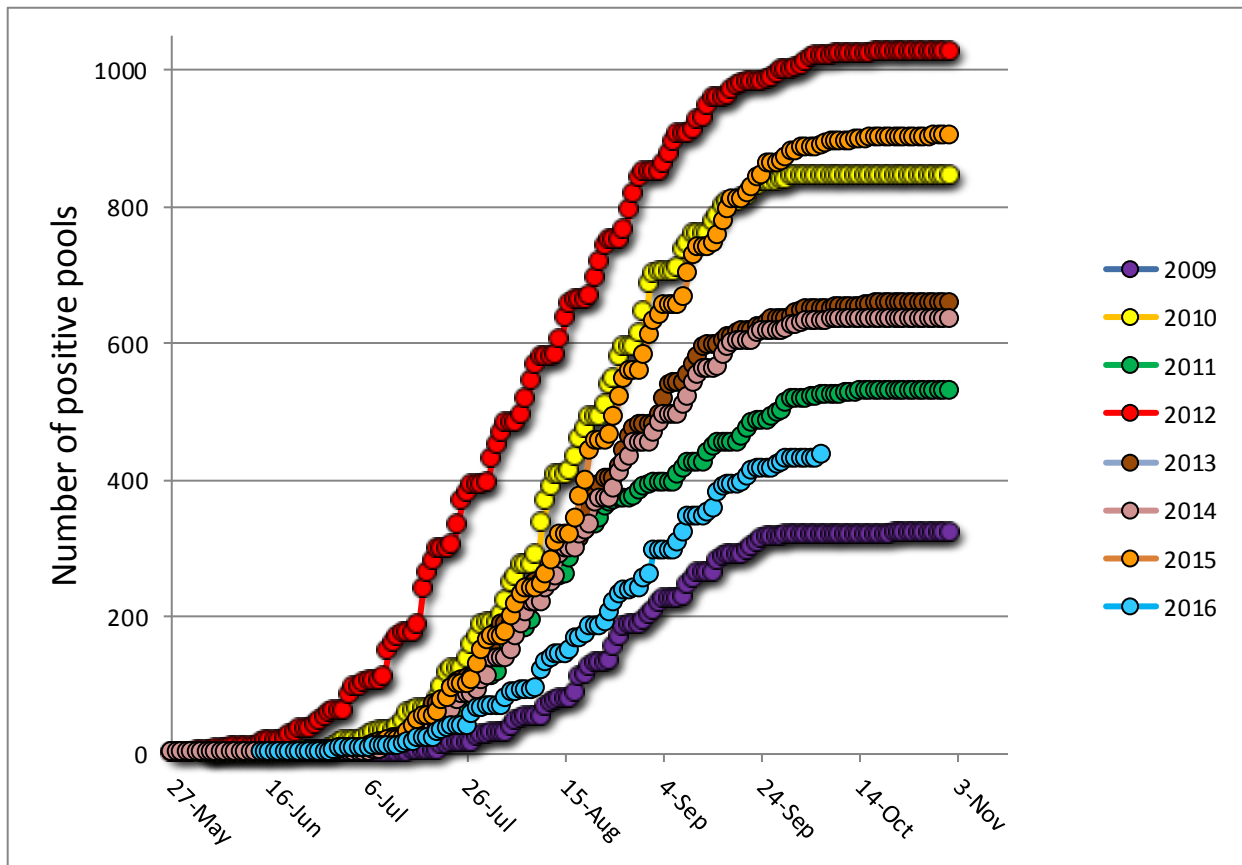
Species	Pools	Mosquitoes	Positives	MFIR
<i>Aedes albopictus</i>	2253	23063	5	0.217
<i>Aedes atlanticus</i>	16	44		
<i>Aedes atropalpus</i>	29	81		
<i>Aedes canadensis canadensis</i>	38	709		
<i>Aedes cantator</i>	36	246		
<i>Aedes grossbecki</i>	1	1		
<i>Aedes japonicus</i>	547	3053	2	0.655
<i>Aedes mitchellae</i>	1	6		
<i>Aedes sollicitans</i>	44	1322		
<i>Aedes sticticus</i>	1	6		
<i>Aedes taeniorhynchus</i>	29	698		
<i>Aedes triseriatus</i>	268	582		
<i>Aedes trivittatus</i>	4	36		
<i>Aedes vexans</i>	114	1333	1	0.750
<i>Anopheles atropos</i>	1	1		
<i>Anopheles barberi</i>	2	2		
<i>Anopheles bradleyi</i>	114	866		
<i>Anopheles crucians</i>	12	132		
<i>Anopheles punctipennis</i>	99	348		
<i>Anopheles quadrimaculatus</i>	169	1244		
<i>Anopheles walkeri</i>	1	1		
<i>Coquillettidia perturbans</i>	128	2884	1	0.347
<i>Culex erraticus</i>	208	1438	1	0.695
<i>Culex pipiens</i>	1331	33102	58	1.752
<i>Culex restuans</i>	868	8537	10	1.171
<i>Culex salinarius</i>	353	3400		
<i>Culex</i> spp.	3291	117251	355	3.028
<i>Culex territans</i>	43	366		
<i>Culiseta melanura</i>	558	5268	3	0.569
<i>Orthopodomyia signifera</i>	7	7		
<i>Psorophora ciliata</i>	1	1		
<i>Psorophora columbiae</i>	19	112		
<i>Psorophora ferox</i>	25	171		
<i>Uranotaenia sapphirina</i>	5	12		
Grand Total	10616	206323	436	2.113

Remarks: To date, 10,616 pools of 206,323 mosquitoes from 33 species have been tested, with 436 positive pools detected. New positives were mostly in *Culex* pools, including a pool of *Culex erraticus* from Mercer County, collected 5 Oct. 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: A total of seven human cases have been detected. Currently, case count is Camden (1), Gloucester (1), Middlesex (1) Monmouth (1), Passaic (1), Somerset (1) and Union (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 from 2009-2016, with 2012 as the most active year and 2009 as the least active year. Positives are beginning to taper off as the season comes to a close, with numbers trending between low (2009) and moderate (2011) activity.



WNV Results by County through 15 October 2016

County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		317	8153	12	1.472
	<i>Aedes albopictus</i>	59	520		
	<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>	13	395		
	<i>Anopheles bradleyi</i>	9	154		
	<i>Anopheles punctipennis</i>	2	18		
	<i>Anopheles quadrimaculatus</i>	2	34		
	<i>Coquillettidia perturbans</i>	23	526		
	<i>Culex erraticus</i>	20	157		
	<i>Culex pipiens</i>	37	1769	9	5.088
	<i>Culex restuans</i>	4	105		
	<i>Culex salinarius</i>	6	220		
	<i>Culex spp.</i>	53	2145	2	0.932
	<i>Culiseta melanura</i>	55	736	1	1.359

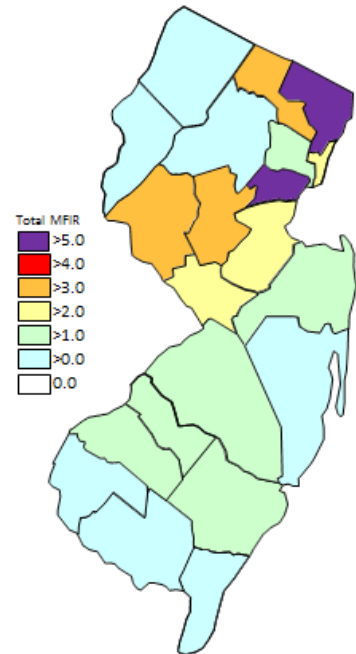
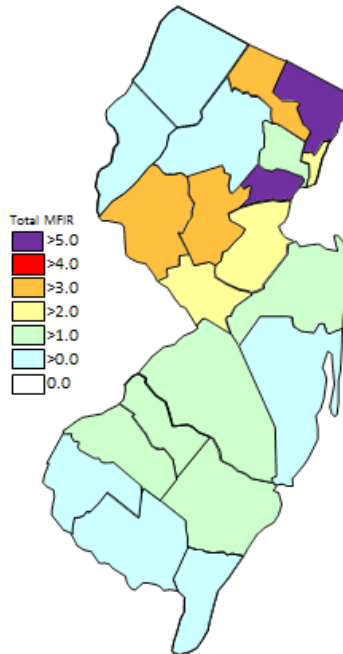
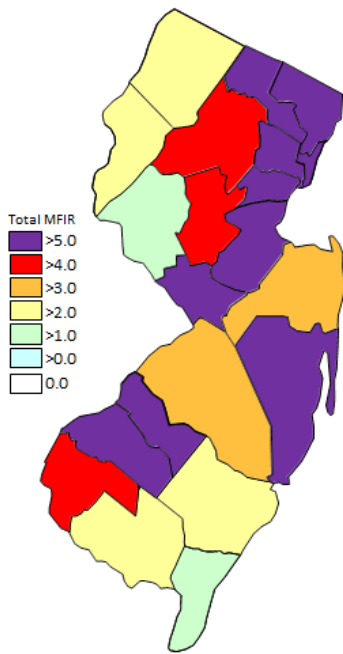
<i>Psorophora columbiae</i>	1	10		
<i>Psorophora ferox</i>	6	79		
Bergen	280	17283	88	5.092
<i>Aedes albopictus</i>	48	406		
<i>Aedes japonicus</i>	11	432		
<i>Culex</i> spp.	221	16445	88	5.351
Burlington	248	7338	8	1.090
<i>Aedes albopictus</i>	18	320		
<i>Aedes atropalpus</i>	3	18		
<i>Aedes canadensis 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>Aedes vexans</i>	1	6		
<i>Anopheles barberi</i>	1	1		
<i>Anopheles bradleyi</i>	5	181		
<i>Anopheles crucians</i>	6	97		
<i>Anopheles punctipennis</i>	1	11		
<i>Anopheles quadrimaculatus</i>	1	3		
<i>Coquillettidia perturbans</i>	6	337	1	2.967
<i>Culex erraticus</i>	5	110		
<i>Culex salinarius</i>	20	653		
<i>Culex</i> spp.	88	3585	7	1.953
<i>Culex territans</i>	1	12		
<i>Culiseta melanura</i>	66	1491		
Camden	234	4850	8	1.649
<i>Aedes albopictus</i>	50	200		
<i>Aedes japonicus</i>	24	82		
<i>Anopheles punctipennis</i>	1	4		
<i>Culex</i> spp.	129	3573	8	2.239
<i>Culiseta melanura</i>	30	991		
Cape May	3539	20354	5	0.246
<i>Aedes albopictus</i>	549	1164		
<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>	230	453		
<i>Aedes sollicitans</i>	5	7		
<i>Aedes taeniorhynchus</i>	5	6		
<i>Aedes triseriatus</i>	179	311		
<i>Aedes vexans</i>	12	17		
<i>Anopheles atropos</i>	1	1		
<i>Anopheles bradleyi</i>	90	344		
<i>Anopheles punctipennis</i>	11	12		
<i>Anopheles quadrimaculatus</i>	134	1117		
<i>Coquillettidia perturbans</i>	27	426		
<i>Culex erraticus</i>	50	113		
<i>Culex pipiens</i>	860	9616	1	0.104
<i>Culex restuans</i>	708	4529	3	0.662
<i>Culex salinarius</i>	282	809		

	<i>Culex</i> spp.	50	134		
	<i>Culex territans</i>	42	354		
	<i>Culiseta melanura</i>	212	522	1	1.916
	<i>Orthopodomyia signifera</i>	5	5		
	<i>Psorophora columbiae</i>	2	2		
	<i>Psorophora ferox</i>	4	9		
	<i>Uranotaenia sapphirina</i>	4	8		
Cumberland		296	4484	1	0.223
	<i>Aedes albopictus</i>	45	490		
	<i>Aedes cantator</i>	1	1		
	<i>Aedes japonicus</i>	10	19		
	<i>Aedes sollicitans</i>	18	427		
	<i>Aedes taeniorhynchus</i>	5	36		
	<i>Aedes triseriatus</i>	2	4		
	<i>Aedes vexans</i>	47	756	1	1.323
	<i>Anopheles bradleyi</i>	5	157		
	<i>Anopheles crucians</i>	1	5		
	<i>Anopheles punctipennis</i>	9	63		
	<i>Anopheles quadrimaculatus</i>	3	18		
	<i>Coquillettidia perturbans</i>	8	111		
	<i>Culex erraticus</i>	22	227		
	<i>Culex pipiens</i>	10	24		
	<i>Culex salinarius</i>	35	1518		
	<i>Culex</i> spp.	38	416		
	<i>Culiseta melanura</i>	20	100		
	<i>Orthopodomyia signifera</i>	1	1		
	<i>Psorophora ciliata</i>	1	1		
	<i>Psorophora columbiae</i>	12	92		
	<i>Psorophora ferox</i>	2	14		
	<i>Uranotaenia sapphirina</i>	1	4		
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		575	24936	44	1.765
	<i>Aedes albopictus</i>	176	3873	1	0.258
	<i>Aedes japonicus</i>	27	263		
	<i>Aedes triseriatus</i>	6	17		
	<i>Anopheles punctipennis</i>	7	20		
	<i>Culex pipiens</i>	341	20656	43	2.082
	<i>Culiseta melanura</i>	18	107		
Hudson		224	10169	27	2.655
	<i>Aedes albopictus</i>	50	2229	1	0.449
	<i>Culex</i> spp.	174	7940	26	3.275
Hunterdon		260	11178	39	3.489
	<i>Aedes albopictus</i>	6	234		
	<i>Culex</i> spp.	254	10944	39	3.564

Mercer	517	9133	24	2.628
<i>Aedes albopictus</i>	147	1522		
<i>Aedes japonicus</i>	37	122		
<i>Aedes triseriatus</i>	2	24		
<i>Aedes vexans</i>	3	12		
<i>Culex erraticus</i>	22	81	1	12.346
<i>Culex pipiens</i>	52	941	5	5.313
<i>Culex restuans</i>	136	3862	7	1.813
<i>Culex</i> spp.	118	2569	11	4.282
Middlesex	430	12899	29	2.248
<i>Aedes albopictus</i>	97	868		
<i>Coquillettidia perturbans</i>	1	2		
<i>Culex erraticus</i>	3	4		
<i>Culex</i> spp.	275	11410	29	2.542
<i>Culiseta melanura</i>	54	615		
Monmouth	853	9667	16	1.655
<i>Aedes albopictus</i>	498	5559	1	0.180
<i>Aedes atlanticus</i>	3	13		
<i>Aedes canadensis canadensis</i>	21	316		
<i>Aedes cantator</i>	10	193		
<i>Aedes grossbecki</i>	1	1		
<i>Aedes japonicus</i>	42	128		
<i>Aedes sollicitans</i>	7	17		
<i>Aedes taeniorhynchus</i>	7	71		
<i>Aedes triseriatus</i>	13	22		
<i>Aedes trivittatus</i>	1	1		
<i>Aedes vexans</i>	13	33		
<i>Anopheles barberi</i>	1	1		
<i>Anopheles crucians</i>	2	2		
<i>Anopheles punctipennis</i>	44	91		
<i>Anopheles quadrimaculatus</i>	8	8		
<i>Coquillettidia perturbans</i>	4	5		
<i>Culex erraticus</i>	10	44		
<i>Culex restuans</i>	3	6		
<i>Culex salinarius</i>	1	1		
<i>Culex</i> spp.	136	2966	15	5.057
<i>Culiseta melanura</i>	20	154		
<i>Psorophora columbiae</i>	3	7		
<i>Psorophora ferox</i>	5	28		
Morris	467	13645	12	0.879
<i>Aedes albopictus</i>	81	1020		
<i>Aedes japonicus</i>	4	19		
<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.	365	12505	12	0.960
<i>Psorophora ferox</i>	2	4		

Ocean	389	4558	1	0.219
<i>Aedes albopictus</i>	129	1554		
<i>Aedes canadensis canadensis</i>	1	70		
<i>Aedes japonicus</i>	28	89		
<i>Aedes triseriatus</i>	13	21		
<i>Aedes vexans</i>	2	2		
<i>Anopheles crucians</i>	3	28		
<i>Anopheles punctipennis</i>	6	8		
<i>Coquillettidia perturbans</i>	25	463		
<i>Culex erraticus</i>	19	93		
<i>Culex restuans</i>	1	2		
<i>Culex</i> spp.	109	2020	1	0.495
<i>Culiseta melanura</i>	50	175		
<i>Psorophora ferox</i>	3	33		
Passaic	303	7173	23	3.206
<i>Aedes albopictus</i>	15	55		
<i>Aedes japonicus</i>	63	427	2	4.684
<i>Aedes triseriatus</i>	7	11		
<i>Aedes vexans</i>	13	37		
<i>Coquillettidia perturbans</i>	2	5		
<i>Culex</i> spp.	202	6637	21	3.164
<i>Culiseta melanura</i>	1	1		
Salem	308	2013	1	0.497
<i>Aedes albopictus</i>	74	336	1	2.976
<i>Aedes japonicus</i>	15	35		
<i>Aedes triseriatus</i>	25	35		
<i>Anopheles bradleyi</i>	5	30		
<i>Anopheles punctipennis</i>	7	7		
<i>Anopheles quadrimaculatus</i>	18	55		
<i>Coquillettidia perturbans</i>	12	85		
<i>Culex erraticus</i>	42	483		
<i>Culex pipiens</i>	4	4		
<i>Culex restuans</i>	10	11		
<i>Culex</i> spp.	72	632		
<i>Culiseta melanura</i>	19	294		
<i>Orthopodomyia signifera</i>	1	1		
<i>Psorophora columbiae</i>	1	1		
<i>Psorophora ferox</i>	3	4		
Somerset	233	3932	14	3.561
<i>Aedes albopictus</i>	19	87		
<i>Aedes japonicus</i>	5	38		
<i>Aedes triseriatus</i>	5	28		
<i>Anopheles punctipennis</i>	3	8		
<i>Culex</i> spp.	201	3771	14	3.713
Sussex	419	10232	6	0.586
<i>Aedes albopictus</i>	20	66		
<i>Aedes japonicus</i>	30	709		
<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>	6	15		
<i>Culex pipiens</i>	27	92		
<i>Culex restuans</i>	6	22		
<i>Culex salinarius</i>	9	199		
<i>Culex</i> spp.	278	7993	5	0.626
<i>Culiseta melanura</i>	10	13	1	76.923
Union	227	12416	74	5.960
<i>Aedes albopictus</i>	56	1961	1	0.510
<i>Culex erraticus</i>	9	111		
<i>Culex</i> spp.	159	10275	73	7.105
<i>Culiseta melanura</i>	3	69		
Warren	229	10369	2	0.193
<i>Aedes japonicus</i>	1	2		
<i>Culex</i> spp.	228	10367	2	0.193
Grand Total	10616	206323	436	2.113



Cumulative WNV activity in 2015. WNV activity to 15 October 2016. WNV activity last week, 2016.

Saint Louis Encephalitis (SLE) to 15 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		93	3677		
	<i>Anopheles barberi</i>	1	1		
	<i>Culex erraticus</i>	4	91		
	<i>Culex</i> spp.	88	3585		
Cape May		909	9753		
	<i>Culex pipiens</i>	860	9622		
	<i>Culex</i> spp.	49	131		
Grand Total		1002	13430		

La Crosse Encephalitis (LAC) to 15 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		35	548		
	<i>Aedes albopictus</i>	14	292		
	<i>Aedes atropalpus</i>	3	18		
	<i>Aedes japonicus</i>	9	203		
	<i>Aedes triseriatus</i>	9	35		
Grand Total		35	548		

Dengue (DENV) to 15 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		59	520	59	520	59	520	59	520		
	<i>Aedes albopictus</i>	59	520	59	520	59	520	59	520		
Bergen		48	406	48	406	48	406	48	406		
	<i>Aedes albopictus</i>	48	406	48	406	48	406	48	406		
Burlington		4	28	4	28	4	28	4	28		
	<i>Aedes albopictus</i>	4	28	4	28	4	28	4	28		
Camden		50	200	50	200	50	200	50	200		
	<i>Aedes albopictus</i>	50	200	50	200	50	200	50	200		
Cumberland		45	490	45	490	45	490	45	490		
	<i>Aedes albopictus</i>	45	490	45	490	45	490	45	490		
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		50	2229	50	2229	50	2229	50	2229		
	<i>Aedes albopictus</i>	50	2229	50	2229	50	2229	50	2229		
Hunterdon		6	234	6	234	6	234	6	234		
	<i>Aedes albopictus</i>	6	234	6	234	6	234	6	234		
Mercer		147	1522	147	1522	147	1522	147	1522		
	<i>Aedes albopictus</i>	147	1522	147	1522	147	1522	147	1522		
Middlesex		99	888	99	888	99	888	99	888		
	<i>Aedes albopictus</i>	97	868	97	868	97	868	97	868		
	<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		415	5081	415	5081	415	5081	415	5081		
	<i>Aedes albopictus</i>	415	5081	415	5081	415	5081	415	5081		
Morris		79	1019	79	1019	79	1019	79	1019		
	<i>Aedes albopictus</i>	77	1016	77	1016	77	1016	77	1016		
	<i>Culex spp.</i>	2	3	2	3	2	3	2	3		
Ocean		38	294	38	294	38	294	38	294		
	<i>Aedes albopictus</i>	38	294	38	294	38	294	38	294		
Passaic		6	15	6	15	6	15	6	15		
	<i>Aedes albopictus</i>	6	15	6	15	6	15	6	15		
Salem		74	336	74	336	74	336	74	336		
	<i>Aedes albopictus</i>	74	336	74	336	74	336	74	336		
Somerset		15	71	15	71	15	71	15	71		
	<i>Aedes albopictus</i>	15	71	15	71	15	71	15	71		
Sussex		20	66	20	66	20	66	20	66		
	<i>Aedes albopictus</i>	20	66	20	66	20	66	20	66		
Union		49	1828	49	1828	49	1828	49	1828		
	<i>Aedes albopictus</i>	49	1828	49	1828	49	1828	49	1828		
Grand Total		1480	19500	1480	19500	1480	19500	1480	19500		

Chikungunya (CHIK) to 15 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 6 imported human case of Chikungunya.

County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		59	520		
	<i>Aedes albopictus</i>	59	520		
Bergen		48	406		
	<i>Aedes albopictus</i>	48	406		
Burlington		4	28		
	<i>Aedes albopictus</i>	4	28		
Camden		50	200		
	<i>Aedes albopictus</i>	50	200		
Cape May		548	1163		
	<i>Aedes albopictus</i>	548	1163		
Cumberland		45	490		
	<i>Aedes albopictus</i>	45	490		
Essex		116	599		
	<i>Aedes albopictus</i>	116	599		
Gloucester		160	3674		
	<i>Aedes albopictus</i>	160	3674		
Hudson		50	2229		
	<i>Aedes albopictus</i>	50	2229		
Hunterdon		6	234		
	<i>Aedes albopictus</i>	6	234		
Mercer		147	1522		
	<i>Aedes albopictus</i>	147	1522		
Middlesex		99	888		
	<i>Aedes albopictus</i>	97	868		
	<i>Culex</i> spp.	1	19		
	<i>Culiseta melanura</i>	1	1		
Monmouth		415	5081		
	<i>Aedes albopictus</i>	415	5081		
Morris		79	1019		
	<i>Aedes albopictus</i>	77	1016		
	<i>Culex</i> spp.	2	3		
Ocean		38	294		
	<i>Aedes albopictus</i>	38	294		
Passaic		6	15		
	<i>Aedes albopictus</i>	6	15		
Salem		74	336		
	<i>Aedes albopictus</i>	74	336		
Somerset		15	71		

	<i>Aedes albopictus</i>	15	71		
Sussex		20	66		
	<i>Aedes albopictus</i>	20	66		
Union		49	1828		
	<i>Aedes albopictus</i>	49	1828		
Grand Total		2028	20663		

Zika (ZIKV) to 15 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 149 imported human cases of Zika.

County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		46	363		
	<i>Aedes albopictus</i>	46	363		
Bergen		33	334		
	<i>Aedes albopictus</i>	33	334		
Burlington		4	28		
	<i>Aedes albopictus</i>	4	28		
Camden		34	134		
	<i>Aedes albopictus</i>	34	134		
Cape May		548	1163		
	<i>Aedes albopictus</i>	548	1163		
Cumberland		39	403		
	<i>Aedes albopictus</i>	39	403		
Essex		77	434		
	<i>Aedes albopictus</i>	77	434		
Gloucester		160	3674		
	<i>Aedes albopictus</i>	160	3674		
Hudson		32	1806		
	<i>Aedes albopictus</i>	32	1806		
Hunterdon		6	234		
	<i>Aedes albopictus</i>	6	234		
Mercer		309	3473		
	<i>Aedes albopictus</i>	309	3473		
Middlesex		65	670		
	<i>Aedes albopictus</i>	64	651		
	<i>Culex</i> spp.	1	19		
Monmouth		245	3507		
	<i>Aedes albopictus</i>	245	3507		
Morris		64	964		
	<i>Aedes albopictus</i>	64	964		
Ocean		38	294		
	<i>Aedes albopictus</i>	38	294		
Passaic		4	12		
	<i>Aedes albopictus</i>	4	12		
Salem		40	210		

	<i>Aedes albopictus</i>	40	210		
Somerset		15	71		
	<i>Aedes albopictus</i>	15	71		
Sussex		20	66		
	<i>Aedes albopictus</i>	20	66		
Union		49	1828		
	<i>Aedes albopictus</i>	49	1828		
Grand Total		1828	19668		