VECTOR SURVEILLANCE IN NEW JERSEY

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

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CDC WEEK 42: 14 October to 20 October, 2018

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**	0.37	0.00	22‡	4‡		
Green Bank (Burlington Co.)/25	**Coastal**	0.68	0.12	480‡ (483)‡	20 (21)		
Corbin City (Atlantic Co.)/25	**Coastal**	0.14	0.32	246 (252)‡	18 (19)		
Dennisville (Cape May Co.)/50	**Coastal**	1.44	0.08	321	20		
Winslow (Camden Co.)/50	**Inland**	0.28	0.14	2184	52	4	1.826
Centerton (Salem Co.)/50	**Inland**	0.39	0.06	449	20	2	4.415
Turkey Swamp (Monmouth Co.)/49	**Inland**	0.08	nc	535	22	1	1.869
Glassboro (Gloucester Co.)/50	**Inland**	0.08	0.02	177	18		

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

Remarks: One new positive EEE pools were detected this past week in Cumberland County. Currently for the 2018 season, there are 14 detections of EEE among submitted mosquito pools, seven at resting box sites (4 at Winslow, 2 at Centerton, 1 at Turkey Swamp) and seven from county-set traps. All positive pools are in the enzootic vector, *Culiseta melanura.* Five horses have tested positive for EEE; all were not vaccinated and all were euthanized.

Statewide, 10,027 *Cs. melanura* from 593 pools have been tested, with 14 positive pools detected for an overall *Cs. melanura* MFIR of 1.396. 18150 specimens in 1777 pools from 25 other species have also been tested, with no positives detected. Overall MFIR for all species statewide is 0.497.

Traditional Resting Box Sites: 4436 *Cs. melanura* from 177 pools have been tested for EEE (plus one pool totaling 3 to be tested) in 2018. No additional positive pools were detected at the traditional resting box sites this past week. A total of 7 positive pools have been detected at the traditional resting box sites.

	Additional *Cs. melanura* trapped by counties *traps with positives indicated in **BOLD UNDERLINED.**				
County	**Trap types***	**Pools**	**Mosquitoes**	**Positives**	**MFIR**
Atlantic	CO2,**GR**, RB	52	1374	1	0.728
Bergen	RB	8	24		
Burlington	**CDCL**	68	2983	5	1.676
Cape May	GR, RB	199	478		
Cumberland	BGSCL, **RB**	22	160	1	6.250
Gloucester		6	223		
Middlesex	RB	2	21		
Monmouth	OTHER	1	2		
Morris	CDCL	1	1		
Ocean	CDCL, RB	37	192		
Passaic	RB	4	4		
Salem	CDCL	6	53		
Sussex	ABC	9	70		
Warren	CDCL	1	6		
TOTAL		**416**	**5591**	**7**	**1.252**

Additional County-set *Cs. melanura*: Counties maintain trap sites for *Cs. melanura* in other areas, using a variety of traps. A total of 6 county-trapped positive pools have been detected, one in Atlantic and four in Burlington County. The last came from Cumberland County, collected on 2 Oct.

Horses and Humans: Five horses have been reported with EEE. The fifth horse is a 12 year old gelding in Gloucester County. Symptom onset was 12 Sep and the unvaccinated horse was euthanized on the 13th Sep. The fourth horse was reported in Ocean County. This gelding of unknown age and unknown vaccination history showed symptoms on the 3rd of September and was euthanized on the 4th. A third EEE horse was been reported in Ocean County. This seven year old had an unknown vaccination history, but had apparently been purchased 2 months prior. Date of onset and euthanasia was 4 Sept. The second reported horse with EEE was euthanized on 27 Aug in Camden County. This 12 year old gelding had not been vaccinated this year. The first horse case of EEE was reported in a 5 year-old mare in Monmouth County. This horse was reportedly vaccinated last year, but was not current for 2018. She was euthanized on 18 Aug. Last year, there were 6 horses detected with EEE. EEE is nearly always fatal for those horses without a complete vaccination history. Horses in New Jersey that have gone down in the past with EEE have either an incomplete vaccination history or NO vaccination history. ***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 (see link below).*** Other sensitive species are non-native birds, such as Ostriches/Emus and Gallinaceous birds such as pheasants of Eurasian origins.

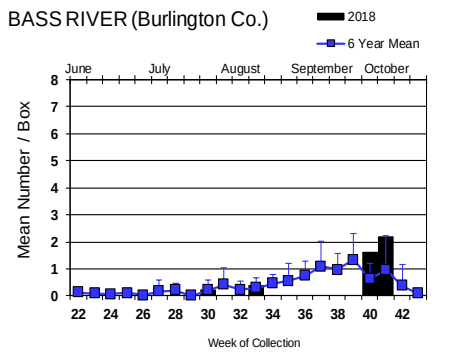
Horses and Vaccinations: The fate of unvaccinated equids reinforces the necessity of maintaining a vaccination schedule for arboviruses. For vaccination schedules recommended by the American Association of Equine Practices, see: http://www.aaep.org/vaccination_guidelines.htm

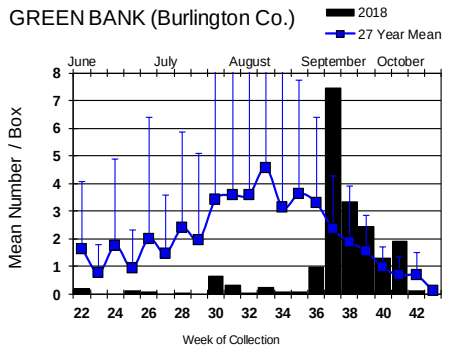
Additional Species: Twenty-five additional species were tested for EEE. No positives were detected.

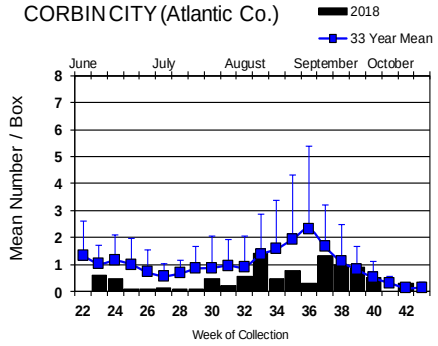
Species other than *Cs. melanura*	Pools	Mosquitoes	Positives	MFIR
Aedes albopictus	11	53		
Aedes atlanticus	3	45		
Aedes canadensis canadensis	2	14		
Aedes cantator	3	3		
Aedes infirmatus	3	6		
Aedes japonicus	2	11		
Aedes mitchellae	1	2		
Aedes sollicitans	15	94		
Aedes taeniorhynchus	3	88		
Aedes triseriatus	2	6		
Aedes vexans	7	99		
Anopheles barberi	2	17		
Anopheles bradleyi	72	443		
Anopheles crucians	1	1		
Anopheles punctipennis	23	95		
Anopheles quadrimaculatus	3	4		
Coquillettidia perturbans	90	1818		
Culex erraticus	159	1589		
Culex pipiens	942	11176		
Culex restuans	1	1		
Culex salinarius	350	1633		
Culex spp.	69	606		
Culiseta inornata	1	10		
Psorophora ciliata	2	9		
Psorophora columbiae	2	7		
Psorophora ferox	8	320		
State Total	**1777**	**18150**		

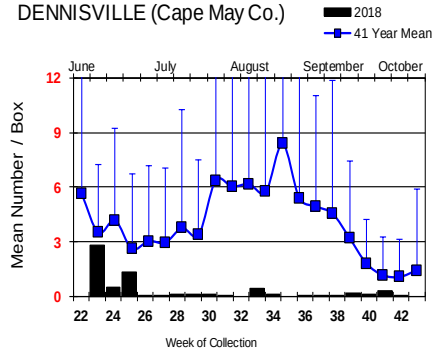
Culiseta melanura Populations

Coastal

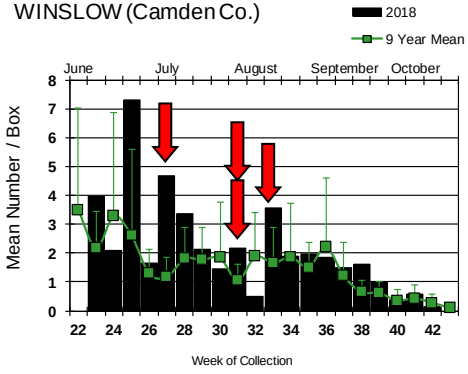


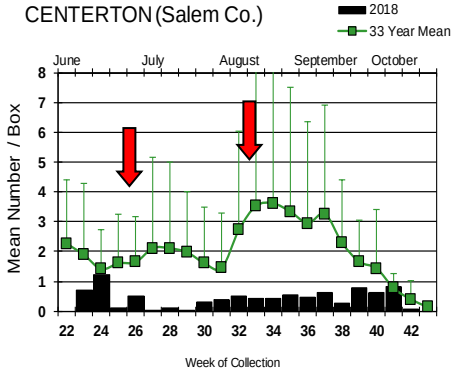


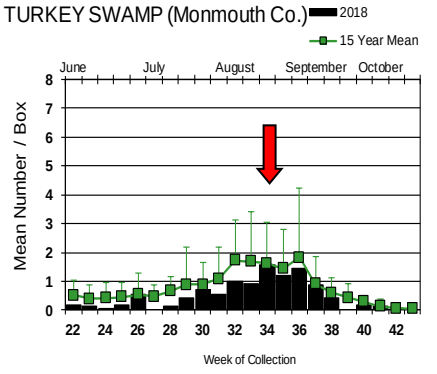


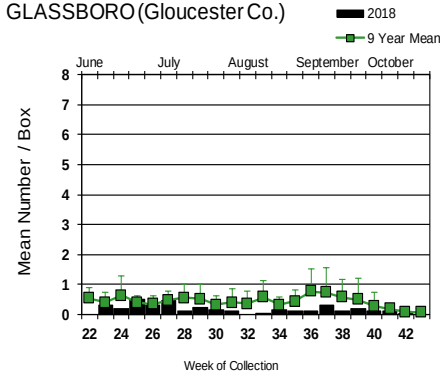


Inland









Populations have decreased significantly and below historical averages, except for Corbin City, where abundances were low, but more than twice the historical average (obscured by blue historical box but just barely above the positive error bar).

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

EEE in US (2018 cumulative cases): (Black or Red = previous + new reported cases occurring)

- **equine: AL(3) FL(51/2 mule & donkey) GA(6) IN(2) LA(6) MI(4) NC(7) NJ(5) NY(1) SC(1) VA(2) WI(2) Ontario Canada(10)**
- **mosquito pools: CT(6) FL(2) GA(3) LA(1) MA(2) NC(1) NH(6) NJ(14) NY(25) RI(4)**
- **sentinel: FL(143/6 owl emus & 5 emu flocks) DE(6)**
- **human: FL(3) GA(1) MI(1)**

West Nile Virus Positive Organisms in US, 2018

West Nile in US (2017 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					24/25
Alaska					
Arizona	1	84	1	4	11/16
Arkansas				2	6/7
California	483	1,947	150	10	132
Colorado	Present	Present		5	82/84
Connecticut		391/393			15/19
Delaware	27		47	3	5/6
DC	1	21		2	14
Florida	1	25/27	362/434	3/5	14/16
Georgia		Present			20/24
Hawaii					
Idaho		39		4	13
Illinois	34	3,003/3,011		11	103/117
Indiana		654/665		1/18	22/26
Iowa		100		13	77
Kansas					11/19
Kentucky		Present		1/2	9
Louisiana	98	1055/1063		4/5	85/87
Maine		4		1	3
Maryland(+DC)	1	30		6	39
Mass.		579		3	42
Michigan	165/166	154		2	84/90
Minnesota		Present		Present	37/38
Mississippi		111			42/43
Missouri	1	3		5	13/14

	Birds	Mosquito Pools	Sentinels	Horses*	Humans
Montana		9		42	43/44
Nebraska	1	122			212/225
Nevada		Present			6/7
New Hampshire	4	30/35			
New Jersey		1,299/		1	50/
New Mexico					4/5
New York		1,480/1,490		12/14	56/66
North Carolina					3/5
North Dakota	12	102		4	184
Ohio		3,262/3,264		38/43	44/49
Oklahoma		21traps		1	10/14
Oregon	1	47			1/2
Pennsylvania	106/107	4,680/4,729		70/90	72/87
Rhode Island		10			
South Carolina				3	5/9
South Dakota		9counties			161
Tennessee	1	850/891			10/11
Texas	6	922/946		8/9	76/89
Utah		180		9	10/11
Vermont		151		1	
Virginia				1	35/40
Washington		49		2	2
West Virginia		24			
Wisconsin	54/55	83		3	11
Wyoming	3	17		15	4

* 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 through 19 October 2018

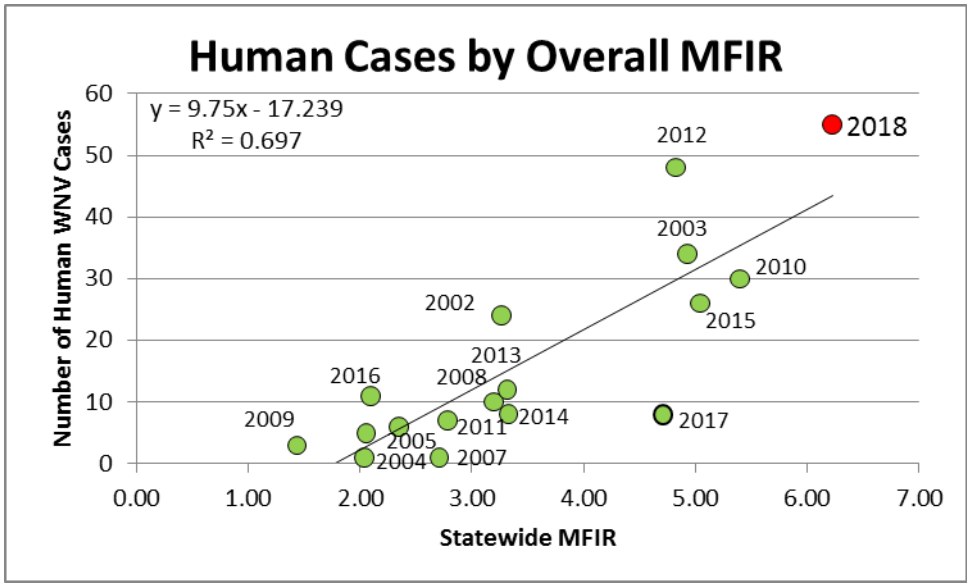
Species	Pools	Mosquitoes	Positives	MFIR
Aedes abserratus	1	11		
Aedes albopictus	1615	14479	34	2.348
Aedes atlanticus	26	167		
Aedes atropalpus	26	61		
Aedes canadensis canadensis	35	251		
Aedes cantator	9	111		
Aedes cinereus	1	18		
Aedes excrucians	1	2		
Aedes grossbecki	2	10		
Aedes infirmatus	5	9		
Aedes japonicus	786	4451	19	4.269
Aedes mitchellae	1	2		
Aedes sollicitans	29	363		
Aedes sticticus	5	53		
Aedes taeniorhynchus	18	379	1	2.639
Aedes thibaulti	1	10		
Aedes triseriatus	289	723	3	4.149
Aedes trivittatus	34	505	1	1.980
Aedes vexans	239	4941	2	0.405
Anopheles barberi	3	24		
Anopheles bradleyi	85	858		
Anopheles crucians	2	3	1	333.333
Anopheles punctipennis	95	346	1	2.890
Anopheles quadrimaculatus	186	2633	1	0.380
Anopheles walkeri	1	35		
Coquillettidia perturbans	118	2761	3	1.087
Culex erraticus	216	1880	6	3.191
Culex pipiens	1043	13046	32	2.453
Culex restuans	686	4729	9	1.903
Culex salinarius	403	3835	1	0.261
Culex spp.	3710	144000	1193	8.285
Culex territans	16	70		
Culiseta inornata	1	10		
Culiseta melanura	596	10066	15	1.490
Orthopodomyia signifera	4	5		
Psorophora ciliata	8	74		
Psorophora columbiae	32	242	1	4.132
Psorophora cyanescens	2	19		
Psorophora ferox	80	1473		
Psorophora howardii	2	14	1	71.429
Uranotaenia sapphirina	10	39		
Grand Total	**10422**	**212708**	**1324**	**6.224**

Remarks: To date, 10,422 pools of 212,708 mosquitoes from 40 species have been tested. A total of 1,324 positive WNV pools have been detected throughout the state. The bulk of new positives continue to be in the enzootic vector(s) *Culex* spp. First positive WNV pool detected has been revised from 7 June 2018 in Warren County to 5 June in Gloucester County, in *Culex pipiens*. Last year, the first positive *Culex* Mix pool was detected in Sussex County on 12 June and the first non-*Culex* positive was collected in *Aedes albopictus* on 14 July in Gloucester County. This year, the first non-*Culex* positive species was *Aedes japonicus*, also collected in Gloucester County on 7 JUNE, more than one month earlier. Positive non-*Culex* species continue to include *Aedes albopictus, Ae. japonicus, Ae. taeniorhynchus, Ae. triseriatus, Ae. trivittatus, Ae. vexans, Anopheles crucians, An. punctipennis, An. quadrimaculatus, Coquillettidia perturbans, Culex erraticus, Culiseta melanura, Psorophora columbiae* and *Ps. howardii*. The statewide MFIR rate for all mosquitoes has finally decreased to 6.224 from last week's 6.400.

***NOTE* - A*dditional* WNV pools have been reported to the counties, but are not yet in the database. This report should be considered up for revision as necessary.**

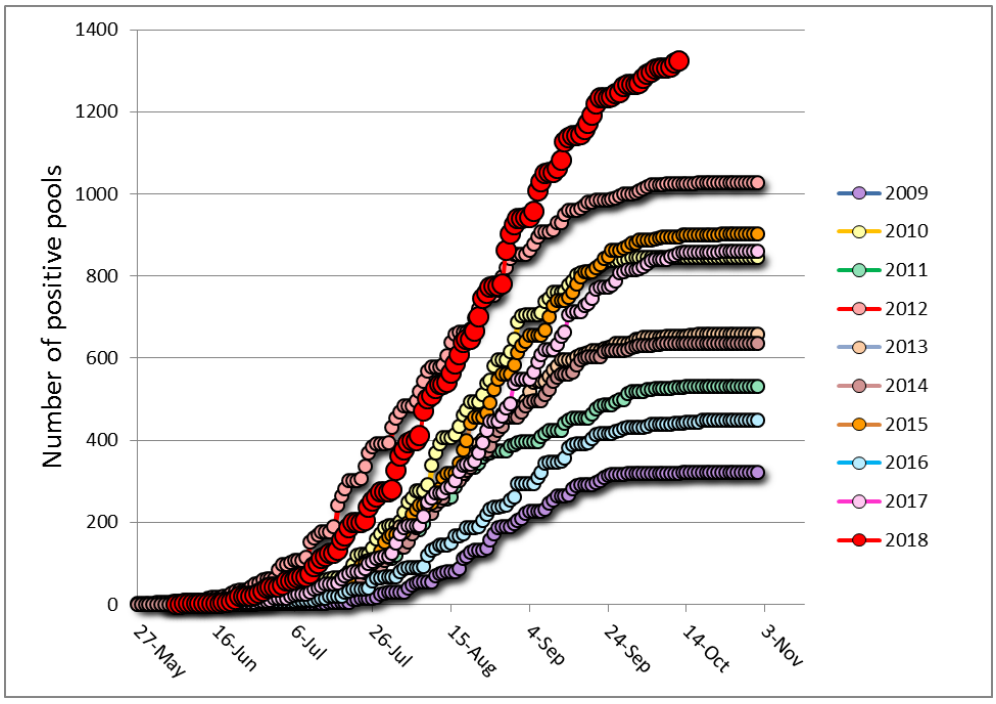
Humans, Horses and Wild Birds: Currently 55 human cases of WNV have been detected in the following counties: Atlantic 1, Bergen 7, Burlington 3, Camden 3, Cape May 2, Cumberland 2, Essex 1, Gloucester 1, Hudson 4, Hunterdon 3, Mercer 1 Middlesex 5, Monmouth 3, Morris 4, Ocean 2, Passaic 3, Somerset 4, Sussex 1, Union 1, and Warren 4.

The graph to the right shows the relationship between statewide overall endpoint MFIR and human cases since the beginning of the outbreak. This week, the estimate for 2018 continued to rise above the trend line, consistent with higher than normal activity.



One WNV horse case has been reported, occurring in Burlington County. The 10 year old mare is currently being treated. For further information, see http://www.nj.gov/health/cd/statistics/arboviral-stats/.

Birds are no longer routinely tested in New Jersey.



Above is a graph showing cumulative number of positive pools for the previous 9 years, inclusive of the most active (2012) and least active (2009) years. The red series represents this year and currently has well surpassed other recent years in activity.

WNV Results by County through 19 October 2018.

County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		**312**	**7650**	**23**	**3.007**
	Aedes albopictus	53	1034	1	0.967
	Aedes atlanticus	4	85		
	Aedes canadensis canadensis	6	65		
	Aedes japonicus	7	67		
	Aedes sollicitans	5	105		
	Aedes sticticus	1	35		
	Aedes taeniorhynchus	5	271		
	Aedes triseriatus	1	2		
	Aedes vexans	20	331	1	3.021
	Anopheles bradleyi	6	242		
	Coquillettidia perturbans	13	320	1	3.125
	Culex erraticus	21	224	1	4.464
	Culex pipiens	22	766	6	7.833
	Culex restuans	1	23		
	Culex salinarius	1	24		
	Culex spp.	55	1536	11	7.161
	Culiseta melanura	71	1626	2	1.230
	Psorophora ciliata	1	1		
	Psorophora columbiae	1	1		
	Psorophora ferox	18	892		
Bergen		**405**	**23170**	**161**	**6.949**
	Aedes albopictus	39	928	1	1.078
	Aedes japonicus	6	25	1	40.00
	Aedes sollicitans	3	146		
	Aedes trivittatus	2	29		
	Aedes vexans	24	1134		
	Anopheles bradleyi	1	4		
	Coquillettidia perturbans	4	50		
	Culex salinarius	9	270		
	Culex spp.	306	20476	158	7.716
	Culiseta melanura	8	24		
	Psorophora ferox	2	82		
	Psorophora howardii	1	2	1	500.00
Burlington		**296**	**9230**	**35**	**3.792**
	Aedes albopictus	25	397		
	Aedes atlanticus	3	45		
	Aedes canadensis canadensis	1	10		
	Aedes infirmatus	3	6		
	Aedes japonicus	15	159	2	12.579
	Aedes mitchellae	1	2		
	Aedes taeniorhynchus	1	42		
	Aedes triseriatus	4	27		
	Aedes vexans	10	369		
	Anopheles bradleyi	3	101		
	Anopheles punctipennis	1	1		
	Anopheles quadrimaculatus	1	3		

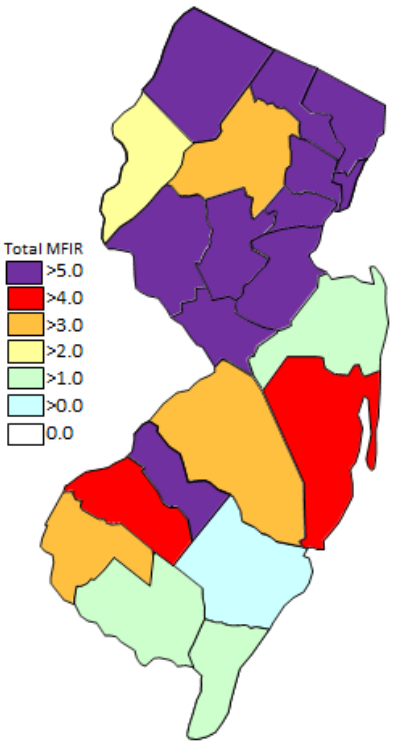
	Coquillettidia perturbans	2	127		
	Culex erraticus	10	146		
	Culex pipiens	6	6		
	Culex salinarius	10	398		
	Culex spp.	106	3882	27	6.955
	Culiseta melanura	90	3486	6	1.721
	Psorophora ciliata	1	8		
	Psorophora columbiae	2	14		
	Psorophora ferox	1	1		
Camden		**201**	**6423**	**39**	**6.072**
	Aedes albopictus	31	90	3	33.333
	Aedes excrucians	1	2		
	Aedes japonicus	29	138	1	7.246
	Aedes triseriatus	2	4		
	Anopheles punctipennis	2	3		
	Culex spp.	82	3993	33	8.264
	Culiseta melanura	53	2191	2	0.913
	Psorophora ferox	1	2		
Cape May		**3653**	**21609**	**20**	**0.926**
	Aedes albopictus	680	1452		
	Aedes atlanticus	16	30		
	Aedes atropalpus	26	61		
	Aedes canadensis canadensis	8	12		
	Aedes cantator	3	3		
	Aedes infirmatus	2	3		
	Aedes japonicus	266	558		
	Aedes sollicitans	8	8		
	Aedes sticticus	1	1		
	Aedes taeniorhynchus	5	5		
	Aedes triseriatus	141	253		
	Aedes vexans	31	50		
	Anopheles barberi	1	16		
	Anopheles bradleyi	69	342		
	Anopheles punctipennis	9	17		
	Anopheles quadrimaculatus	146	2258		
	Coquillettidia perturbans	10	33		
	Culex erraticus	66	414		
	Culex pipiens	942	11176	17	1.521
	Culex restuans	582	2643	3	1.135
	Culex salinarius	335	1198		
	Culex spp.	46	147		
	Culex territans	16	70		
	Culiseta melanura	220	803		
	Orthopodomyia signifera	2	3		
	Psorophora columbiae	6	11		
	Psorophora ferox	9	14		
	Uranotaenia sapphirina	7	28		
Cumberland		**307**	**3882**	**10**	**2.576**
	Aedes albopictus	68	1176	3	2.551
	Aedes japonicus	14	49		
	Aedes sollicitans	3	13		
	Aedes sticticus	1	1		
	Aedes triseriatus	8	16		

	Aedes trivittatus	3	11		
	Aedes vexans	34	585		
	Anopheles bradleyi	1	24		
	Anopheles punctipennis	13	59		
	Anopheles quadrimaculatus	18	323		
	Coquillettidia perturbans	6	6		
	Culex erraticus	31	715	2	2.797
	Culex pipiens	7	43		
	Culex restuans	2	2		
	Culex salinarius	7	58		
	Culex spp.	50	445	3	6.742
	Culiseta melanura	22	160	2	12.500
	Psorophora ciliata	1	1		
	Psorophora columbiae	9	89		
	Psorophora ferox	7	97		
	Uranotaenia sapphirina	2	9		
Essex		**174**	**939**	**14**	**14.909**
	Aedes albopictus	48	174		
	Aedes japonicus	28	54	3	55.556
	Aedes trivittatus	19	36	1	27.778
	Aedes vexans	3	4		
	Anopheles quadrimaculatus	3	3	1	333.333
	Culex spp.	73	668	9	13.473
Gloucester		**565**	**14705**	**117**	**7.956**
	Aedes albopictus	125	923	6	6.501
	Aedes canadensis canadensis	1	4		
	Aedes japonicus	93	924	9	9.740
	Aedes triseriatus	17	73		
	Aedes vexans	8	64		
	Anopheles barberi	1	7		
	Anopheles punctipennis	17	80	1	12.500
	Anopheles quadrimaculatus	5	13		
	Coquillettidia perturbans	5	19		
	Culex pipiens	28	394	5	12.690
	Culex restuans	1	3		
	Culex spp.	229	11623	96	8.259
	Culiseta melanura	25	401		
	Psorophora ciliata	1	1		
	Psorophora columbiae	1	8		
	Psorophora ferox	8	168		
Hudson		**220**	**9701**	**68**	**7.010**
	Aedes albopictus	13	178		
	Culex spp.	207	9523	68	7.141
Hunterdon		**384**	**16976**	**159**	**9.366**
	Culex spp.	384	16976	159	9.366
Mercer		**335**	**5802**	**43**	**7.411**
	Aedes albopictus	80	888	3	3.378
	Aedes canadensis canadensis	1	6		
	Aedes japonicus	72	314	1	3.185
	Aedes triseriatus	2	7		

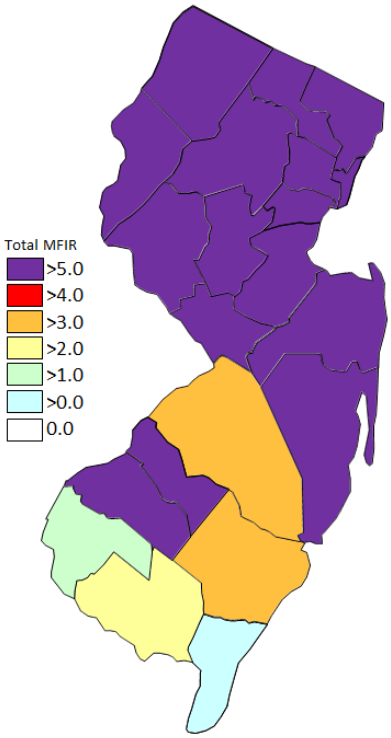
	Aedes trivittatus	1	1		
	Aedes vexans	25	351	1	2.849
	Coquillettidia perturbans	2	37	1	27.027
	Culex erraticus	7	17		
	Culex pipiens	6	60	1	16.667
	Culex restuans	44	1176	6	5.102
	Culex spp.	94	2944	30	10.190
	Culiseta melanura	1	1		
Middlesex		**245**	**6617**	**56**	**8.463**
	Aedes albopictus	14	148		
	Aedes japonicus	1	64		
	Aedes vexans	3	105		
	Anopheles punctipennis	1	1		
	Coquillettidia perturbans	3	9		
	Culex spp.	222	6280	56	8.917
	Culiseta inornata	1	10		
Monmouth		**561**	**11357**	**63**	**5.547**
	Aedes albopictus	127	3453	6	1.738
	Aedes atlanticus	1	5		
	Aedes canadensis canadensis	15	110		
	Aedes cantator	5	50		
	Aedes grossbecki	2	10		
	Aedes japonicus	24	77		
	Aedes sollicitans	5	37		
	Aedes taeniorhynchus	4	7		
	Aedes triseriatus	20	136		
	Aedes trivittatus	7	56		
	Aedes vexans	29	154		
	Anopheles barberi	1	1		
	Anopheles bradleyi	1	1		
	Anopheles crucians	2	3	1	333.333
	Anopheles punctipennis	35	102		
	Anopheles quadrimaculatus	3	4		
	Coquillettidia perturbans	4	5		
	Culex erraticus	14	54	2	37.037
	Culex salinarius	9	263		
	Culex spp.	202	6174	52	8.422
	Culiseta melanura	25	539	1	1.855
	Orthopodomyia signifera	2	2		
	Psorophora ciliata	1	1		
	Psorophora columbiae	6	58	1	17.241
	Psorophora ferox	17	55		
Morris		**473**	**17101**	**166**	**9.707**
	Aedes albopictus	17	104		
	Aedes japonicus	22	185		
	Aedes sollicitans	1	1		
	Aedes vexans	7	190		
	Anopheles punctipennis	2	7		
	Anopheles quadrimaculatus	1	3		
	Coquillettidia perturbans	6	300		
	Culex spp	412	16273	166	10.201
	Culiseta melanura	1	1		
	Psorophora ferox	4	37		

Ocean		**369**	**3244**	**26**	**8.015**
	Aedes albopictus	108	898	5	5.568
	Aedes cantator	1	58		
	Aedes japonicus	42	100		
	Aedes taeniorhynchus	2	50		
	Aedes triseriatus	29	72	2	27.778
	Aedes vexans	5	50		
	Anopheles bradleyi	2	139		
	Anopheles punctipennis	2	2		
	Anopheles quadrimaculatus	3	6		
	Coquillettidia perturbans	21	168	1	5.952
	Culex erraticus	15	32		
	Culex restuans	1	1		
	Culex salinarius	4	86		
	Culex spp.	93	1380	17	12.319
	Culiseta melanura	37	192	1	5.208
	Psorophora ferox	4	10		
Passaic		**250**	**2084**	**16**	**7.678**
	Aedes abserratus	1	11		
	Aedes albopictus	33	162		
	Aedes japonicus	61	365	1	2.740
	Aedes thibaulti	1	10		
	Aedes triseriatus	4	14		
	Aedes vexans	1	34		
	Coquillettidia perturbans	5	40		
	Culex erraticus	11	20		
	Culex pipiens	11	202		
	Culex restuans	9	95		
	Culex spp.	107	1108	15	13.538
	Culiseta melanura	4	4		
	Psorophora cyanescens	2	19		
Salem		**406**	**7453**	**9**	**1.208**
	Aedes albopictus	75	918		
	Aedes atlanticus	2	2		
	Aedes canadensis canadensis	1	1		
	Aedes japonicus	36	160		
	Aedes sollicitans	2	24		
	Aedes taeniorhynchus	1	4	1	250.000
	Aedes triseriatus	30	40		
	Aedes trivittatus	3	4		
	Aedes vexans	5	182		
	Anopheles bradleyi	2	5		
	Anopheles punctipennis	4	10		
	Anopheles quadrimaculatus	5	17		
	Coquillettidia perturbans	20	550		
	Culex erraticus	41	258	1	3.876
	Culex pipiens	11	14		
	Culex restuans	5	16		
	Culex salinarius	12	760	1	1.316
	Culex spp.	113	3925	5	1.274
	Culiseta melanura	27	505	1	1.980
	Psorophora ciliate	1	6		
	Psorophora columbiae	4	13		

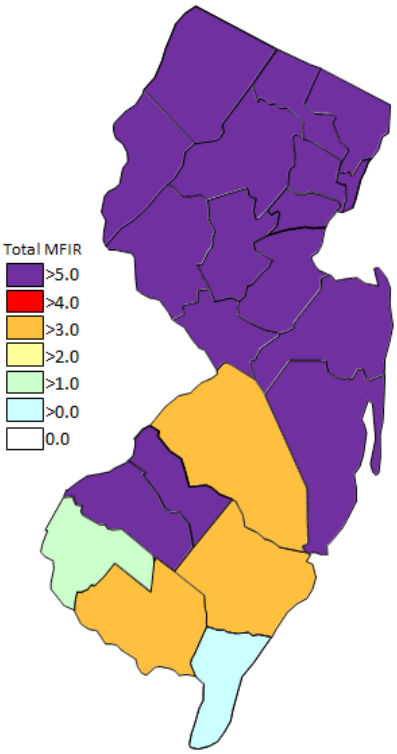
	Psorophora ferox	4	25		
	Psorophora howardii	1	12		
	Uranotaenia sapphirina	1	2		
Somerset		**289**	**8811**	**84**	**9.534**
	Aedes albopictus	5	17		
	Aedes canadensis canadensis	1	12		
	Aedes japonicus	15	159		
	Aedes triseriatus	5	9		
	Aedes trivittatus	2	2		
	Anopheles punctipennis	3	5		
	Culex spp.	257	8606	84	9.761
	Psorophora ferox	1	1		
Sussex		**350**	**10401**	**55**	**5.288**
	Aedes albopictus	3	5		
	Aedes canadensis canadensis	1	31		
	Aedes japonicus	8	225		
	Aedes triseriatus	3	27		
	Aedes trivittatus	2	129		
	Aedes vexans	16	944		
	Anopheles punctipennis	1	24		
	Coquillettidia perturbans	15	1008		
	Culex pipiens	10	385	3	7.792
	Culex restuans	41	770		
	Culex salinarius	13	670		
	Culex spp.	227	6038	52	8.612
	Culiseta melanura	9	70		
	Psorophora ferox	1	75		
Union		**196**	**10534**	**78**	**7.405**
	Aedes albopictus	37	822	5	6.083
	Aedes sollicitans	2	29		
	Culex salinarius	3	108		
	Culex spp	154	9575	73	7.624
Warren		**431**	**15019**	**82**	**5.460**
	Aedes albopictus	34	712	1	1.404
	Aedes cinereus	1	18		
	Aedes japonicus	47	828	1	1.208
	Aedes sticticus	2	16		
	Aedes triseriatus	4	7		
	Aedes trivittatus	14	273	1	3.663
	Aedes vexans	18	394		
	Anopheles punctipennis	5	35		
	Anopheles quadrimaculatus	1	3		
	Anopheles walkeri	1	35		
	Coquillettidia perturbans	2	89		
	Culex spp.	291	12428	79	6.357
	Culiseta melanura	3	63		
	Psorophora ciliata	2	56		
	Psorophora columbiae	3	48		
	Psorophora ferox	3	14		
Grand Total		**10422**	**212708**	**1324**	**6.224**



Cumulative WNV activity in 2017.



WNV activity to 19 October 2018.



WNV activity last week, 2018

Saint Louis Encephalitis (SLE) to 19 October 2018.

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.

No pools of SLE have tested positive for 2018. No human cases have been reported.

County	Species	Pools	Mosquitoes	Positives	MFIR
Burlington		**36**	**1987**		
	Culex spp	36	1987		
Cape May		**987**	**11321**		
	Culex pipiens	942	11176		
	Culex spp.	45	145		
Grand Total		**1023**	**13308**		

La Crosse Encephalitis (LAC) to 19 October 2018.

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).

No pools of LAC have been tested yet for 2018. No human cases have been reported.

County	Species	Pools	Mosquitoes	Positives	MFIR
Burlington		**16**	**226**		
	Aedes albopictus	5	79		
	Aedes japonicus	7	120		
	Aedes triseriatus	4	27		
Ocean		**4**	**9**		
	Aedes albopictus	2	3		
	Aedes japonicus	1	1		
	Aedes triseriatus	1	5		
Salem		**3**	**4**		
	Aedes triseriatus	3	4		
Sussex		**3**	**27**		
	Aedes triseriatus	3	27		
Grand Total		**26**	**266**		

Dengue (DENV) to 19 October 2018.

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 of Dengue have been tested yet in 2018. There are currently 14 travel-related human cases in NJ.

County	Species	DENV1		DENV2		DENV3		DENV4		Pos.	MFIR
		Pool	Mos.	Pool	Mos.	Pool	Mos.	Pool	Mos.		
Atlantic		**53**	**1034**	**53**	**1034**	**53**	**1034**	**53**	**1034**		
	Aedes albopictus	53	1034	53	1034	53	1034	53	1034		
Bergen		**1**	**14**	**1**	**14**	**1**	**14**	**1**	**14**		
	Aedes albopictus	1	14	1	14	1	14	1	14		
Gloucester		**7**	**20**	**7**	**20**	**7**	**20**	**7**	**20**		

	Aedes albopictus	5	18	5	18	5	18	5	18		
	Aedes japonicus	2	2	2	2	2	2	2	2		
Middlesex		**2**	**12**	**2**	**12**	**2**	**12**	**2**	**12**		
	Aedes albopictus	2	12	2	12	2	12	2	12		
Monmouth		**2**	**67**	**2**	**67**	**2**	**67**	**2**	**67**		
	Aedes albopictus	2	67	2	67	2	67	2	67		
Morris		**1**	**12**	**1**	**12**	**1**	**12**	**1**	**12**		
	Aedes albopictus	1	12	1	12	1	12	1	12		
Ocean		**67**	**709**	**67**	**709**	**67**	**709**	**67**	**709**		
	Aedes albopictus	67	709	67	709	67	709	67	709		
Sussex		**3**	**5**	**3**	**5**	**3**	**5**	**3**	**5**		
	Aedes albopictus	3	5	3	5	3	5	3	5		
Grand Total		**136**	**1873**	**136**	**1873**	**136**	**1873**	**136**	**1873**		

Chikungunya (CHIK) to 19 October 2018.

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 of CHIK have been tested yet in 2018. There are currently 7 travel-related human cases in NJ.

County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		**53**	**1034**		
	Aedes albopictus	53	1034		
Bergen		**1**	**14**		
	Aedes albopictus	1	14		
Gloucester		**7**	**20**		
	Aedes albopictus	5	18		
	Aedes japonicus	2	2		
Middlesex		**2**	**12**		
	Aedes albopictus	2	12		
Monmouth		**2**	**67**		
	Aedes albopictus	2	67		
Ocean		**67**	**709**		
	Aedes albopictus	67	709		
Somerset		**1**	**1**		
	Aedes albopictus	1	1		
Sussex		**3**	**5**		
	Aedes albopictus	3	5		
Grand Total		**136**	**1862**		

Zika (ZIKV) to 19 October 2018.

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 2018. There are currently 7 travel-related human cases in NJ.

County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		**53**	**1034**		
	Aedes albopictus	53	1034		
Bergen		**1**	**14**		
	Aedes albopictus	1	14		
Cape May		**665**	**1412**		
	Aedes albopictus	665	1412		
Gloucester		**7**	**20**		
	Aedes albopictus	5	18		
	Aedes japonicus	2	2		
Middlesex		**2**	**12**		
	Aedes albopictus	2	12		
Monmouth		**2**	**67**		
	Aedes albopictus	2	67		
Ocean		**67**	**709**		
	Aedes albopictus	67	709		
Somerset		**1**	**1**		
	Anopheles punctipennis	1	1		
Sussex		**3**	**5**		
	Aedes albopictus	3	5		
Grand Total		**801**	**3274**		