VECTOR SURVEILLANCE IN NEW JERSEY

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

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CDC WEEK 38: 16 September to 22 September, 2018

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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**	0.97	0.00	3	2		
Green Bank (Burlington Co.)/25	**Coastal**	1.89	3.32	254‡ (337)‡	13 (15)		
Corbin City (Atlantic Co.)/25	**Coastal**	1.11	1.00	185 (202)‡	14 (15)		
Dennisville (Cape May Co.)/50	**Coastal**	3.21	0.04	293	17		
Winslow (Camden Co.)/50	**Inland**	0.65	1.60	2086	49	4	1.918
Centerton (Salem Co.)/50	**Inland**	2.29	0.26	336	17	2	5.952
Turkey Swamp (Monmouth Co.)/49	**Inland**	0.59	0.43	383‡ (456)‡	17 (18)	1	2.611
Glassboro (Gloucester Co.)/50	**Inland**	0.57	0.10	157	15		

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

Remarks: No new positive EEE pools were detected this past week. Currently for the 2018 season, there are 12 detections of EEE among submitted mosquito pools, seven at resting box sites (4 at Winslow, 2 at Centerton, 1 at Turkey Swamp) and five from county-set traps, the latest from Burlington County. 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, 7868 *Cs. melanura* from 459 pools have been tested, with 12 positive pools detected for an overall *Cs. melanura* MFIR of 1.525. 14970 specimens in 1382 pools from 20 other species have also been tested, with no positives detected. Overall MFIR for all species statewide is 0.525.

Traditional Resting Box Sites: 3697 *Cs. melanura* from 143 pools have been tested for EEE (plus four pools totaling 173 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	38	985	1	1.015
Bergen	RB	7	21		
Burlington	**CDCL**	53	2371	4	1.687
Cape May	GR, RB	156	415		
Cumberland	BGSCL, RB	13	74		
Middlesex	RB	2	21		
Monmouth	OTHER	1	2		
Morris	CDCL	1	1		
Ocean	CDCL, RB	28	153		
Passaic	RB	4	4		
Salem	CDCL	4	49		
Sussex	ABC	8	69		
Warren	CDCL	1	6		
TOTAL		**316**	**4171**	**5**	**1.206**

Additional County-set *Cs. melanura*: Counties maintain trap sites for *Cs. melanura* in other areas, using a variety of traps. A total of 5 county-trapped positive pools have been detected, one in Atlantic and four in Burlington County.

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.

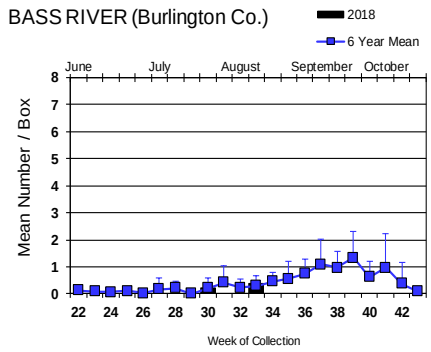
Horses and Vaccinations: The fate of unvaccinated equids reinforces the necessity of maintaining a vaccination schedule for arboviruses. For vaccination schedules recommended by the American Association of Equine Practices, see: http://www.aaep.org/vaccination_guidelines.htm

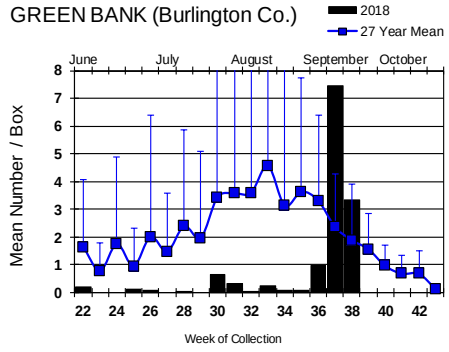
Additional Species: Twenty additional species were tested for EEE. No positives were detected.

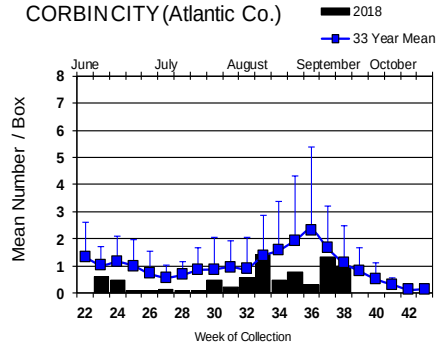
Species other than *Cs. melanura*	Pools	Mosquitoes	Positives	MFIR
Aedes albopictus	3	26		
Aedes atlanticus	1	7		
Aedes canadensis canadensis	1	10		
Aedes cantator	2	2		
Aedes infirmatus	1	1		
Aedes japonicus	1	1		
Aedes sollicitans	10	63		
Aedes taeniorhynchus	3	88		
Aedes triseriatus	1	1		
Aedes vexans	3	32		
Anopheles barberi	1	1		
Anopheles bradleyi	51	356		
Anopheles punctipennis	14	47		
Anopheles quadrimaculatus	1	1		
Coquillettidia perturbans	84	1775		
Culex erraticus	92	850		
Culex pipiens	756	9722		
Culex salinarius	298	1455		
Culex spp.	52	215		
Culiseta inornata	1	10		
Psorophora columbiae	2	7		
Psorophora ferox	4	300		
State Total	**1382**	**14970**		

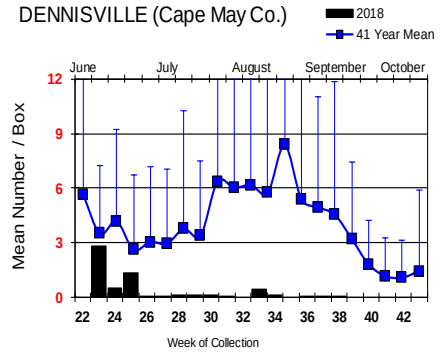
Culiseta melanura Populations

Coastal

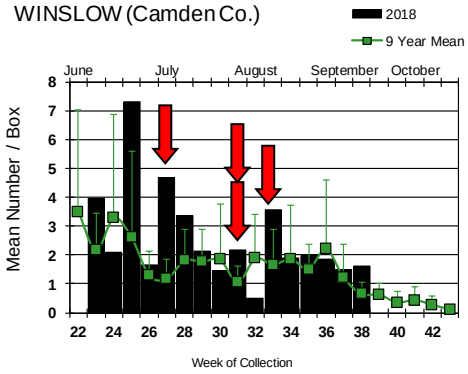


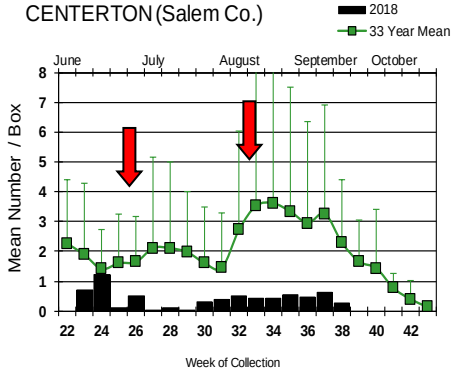


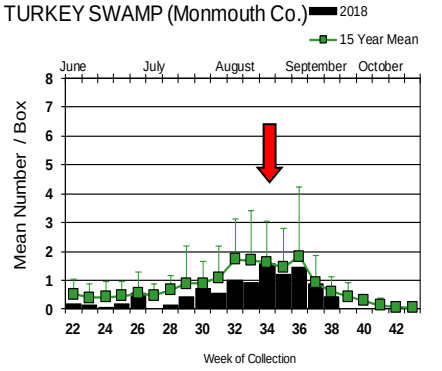


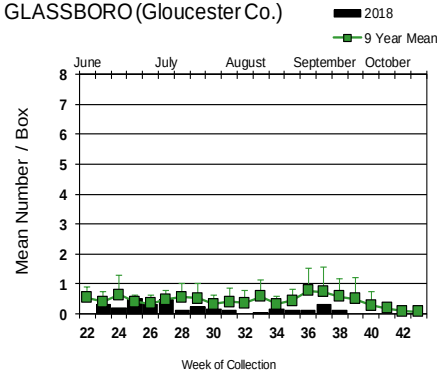


Inland









Populations continued to be well above the recent trend at Green Bank. Abundance at Winslow was also above historical averages while other sites were either at or below average.

= 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) LA(2) NC(7) NJ(5)NY(1) SC(1) VA(2) WI(1) Ontario Canada(10)**
- **mosquito pools: FL(2) NJ(12) NY(22) LA(1) MA(1) NC(1) RI(4)**
- **sentinel: FL(141/6 owl emus & 5 emu flocks) DE(6)**
- **human: FL(3) GA(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					18/21
Alaska					
Arizona		55			7
Arkansas					
California	422/430	1,456/1,606	104/112	6/7	56/79
Colorado	Present	Present			16/47
Connecticut		334/362			
Delaware	27		47	3	5
DC	1	14/21		1	6/10
Florida	1	25	212	2	8
Georgia		Present			7
Hawaii					
Idaho		39		2	9
Illinois	24/30	2,865/2,922		2/7	51/63
Indiana		429/490			4/9
Iowa		70/77		4/6	30/39
Kansas					2/6
Kentucky		Present			1/6
Louisiana	73/86	984/1012		2/4	72/79
Maine		1			2
Maryland(+DC)	1	23/30		3	12/26
Mass.		425/572		1	11/14
Michigan	93/129	144/150			37/54
Minnesota		Present		Present	4/5
Mississippi		108			32/37
Missouri	1	3		3	10/12

	Birds	Mosquito Pools	Sentinels	Horses	Humans
Montana		9		28/38	22/34
Nebraska	1	109/116			79/150
Nevada		Present			1/2
New Hampshire	4	16			
New Jersey		929/1,075		1	14/25
New Mexico					3
New York		1,066/1,261		2/4	12/24
North Carolina					3
North Dakota	12	88/102		4	108/148
Ohio		2,734/2,923		15/17	16/23
Oklahoma		19traps			2/7
Oregon	1	47			1
Pennsylvania	38	2,140		3	1
Rhode Island		8/10			
South Carolina					2/4
South Dakota		9counties			124/140
Tennessee	1	545/546			6/8
Texas	6	713/776		1/2	45
Utah		154/174			7/8
Vermont		120		1	
Virginia					17/21
Washington		48/49		2	1/2
West Virginia		24			
Wisconsin	44/52	79/83		1/2	2/6
Wyoming	2/3	10/11		6/11	1/3

* 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 21 September 2018

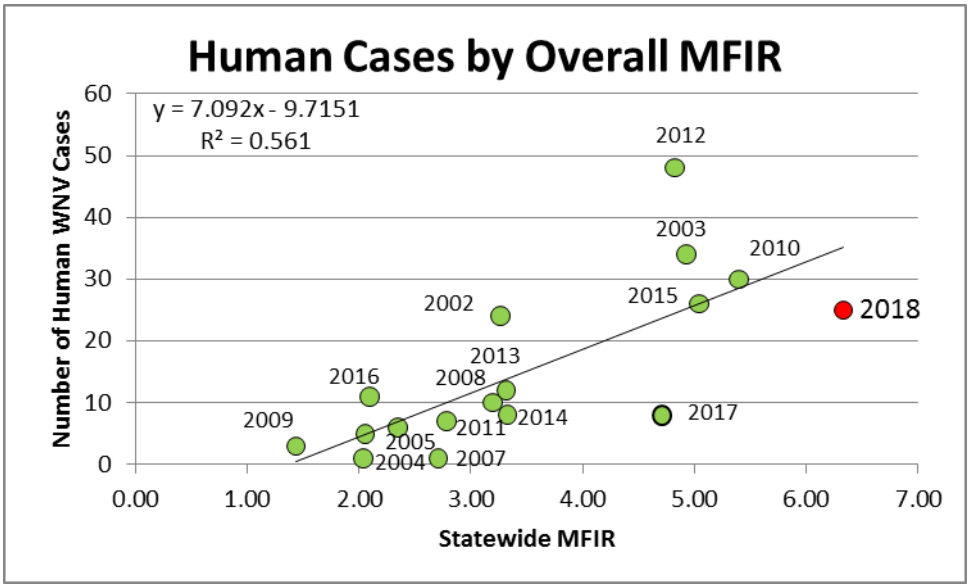
Species	Pools	Mosquitoes	Positives	MFIR
Aedes abserratus	1	11		
Aedes albopictus	1149	9735	31	3.184
Aedes atlanticus	6	29		
Aedes atropalpus	22	56		
Aedes canadensis canadensis	28	230		
Aedes cantator	7	52		
Aedes excrucians	1	2		
Aedes grossbecki	2	10		
Aedes infirmatus	2	2		
Aedes japonicus	602	3676	19	5.169
Aedes sollicitans	18	156		
Aedes sticticus	4	41		
Aedes taeniorhynchus	12	324	1	3.086
Aedes thibaulti	1	10		
Aedes triseriatus	239	625	3	4.800
Aedes trivittatus	16	155	1	6.452
Aedes vexans	108	1785	2	1.120
Anopheles barberi	2	8		
Anopheles bradleyi	58	527		
Anopheles crucians	1	2	1	500.00
Anopheles punctipennis	62	195	1	5.128
Anopheles quadrimaculatus	149	2419	1	0.413
Coquillettidia perturbans	110	2706	3	1.109
Culex erraticus	128	1068	6	5.618
Culex pipiens	837	11480	31	2.700
Culex restuans	504	4085	7	1.714
Culex salinarius	331	3079	2	0.650
Culex spp.	2895	118630	950	8.008
Culex territans	14	63		
Culiseta inornata	1	10		
Culiseta melanura	460	7770	14	1.802
Orthopodomyia signifera	2	3		
Psorophora ciliata	3	62		
Psorophora columbiae	20	115	1	8.696
Psorophora cyanescens	1	14		
Psorophora ferox	39	610		
Psorophora howardii	1	2	1	500.00
Uranotaenia sapphirina	3	13		
Grand Total	**7839**	**169760**	**1075**	**6.332**

Remarks: To date, 7839 pools of 169,760 mosquitoes from 37 species have been tested. A total of 1075 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 also include *Aedes albopictus, 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 is 6.332.

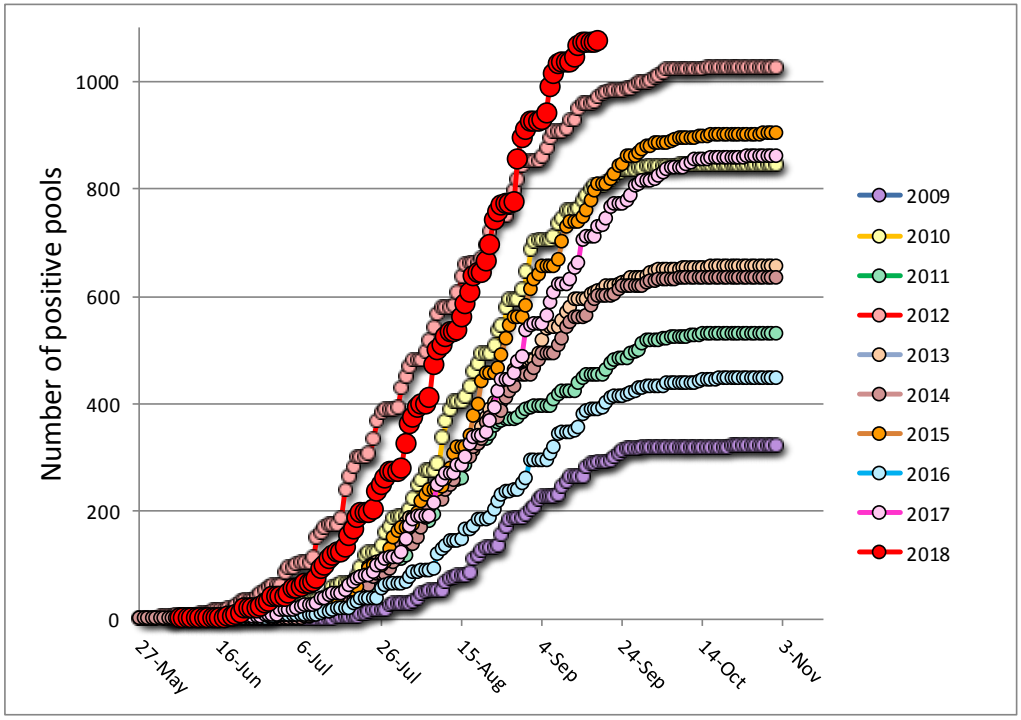
***NOTE* - *Additional* WNV pools have been reported to the counties, but are not yet in the database. This report should be considered up for revision as necessary.**

Humans, Horses and Wild Birds: Currently nineteen human cases of WNV have been detected in the following counties: Bergen 6, Burlington 1, Camden 2, Cape May 1, Essex 1, Hudson 2, Hunterdon 2, Middlesex 2, Monmouth 1, Morris 1, Ocean 1, Passaic 1, Somerset 2, Union 1, and Warren 1. Despite the significant increase in human cases, the relationship between overall MFIR values and human cases (graph to right) suggest we can reasonably expect more cases. This week, the estimate for 2018 rose toward the trend line.



The first 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 surpassed 2012 in activity.

WNV Results by County through 21 September 2018.

County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		**220**	**5896**	**23**	**3.901**
	Aedes albopictus	41	879	1	1.138
	Aedes atlanticus	1	13		
	Aedes canadensis canadensis	3	54		
	Aedes japonicus	6	64		
	Aedes sollicitans	3	85		
	Aedes sticticus	1	35		
	Aedes taeniorhynchus	5	271		
	Aedes vexans	12	209	1	4.785
	Anopheles bradleyi	4	165		
	Coquillettidia perturbans	13	320	1	3.125
	Culex erraticus	11	188	1	5.319
	Culex pipiens	17	706	6	8.499
	Culex restuans	1	23		
	Culex salinarius	1	24		
	Culex spp.	39	1239	11	8.878
	Culiseta melanura	53	1170	2	1.709
	Psorophora ferox	9	451		
Bergen		**244**	**15533**	**118**	**7.597**
	Aedes albopictus	20	494		
	Aedes japonicus	5	20	1	50.000
	Coquillettidia perturbans	4	50		
	Culex spp.	207	14946	116	7.761
	Culiseta melanura	7	21		
	Psorophora howardii	1	2	1	500.000
Burlington		**211**	**6797**	**31**	**4.561**
	Aedes albopictus	15	163		
	Aedes atlanticus	1	7		
	Aedes canadensis canadensis	1	10		
	Aedes infirmatus	1	1		
	Aedes japonicus	12	148	2	13.514
	Aedes taeniorhynchus	1	42		
	Aedes triseriatus	2	7		
	Aedes vexans	3	32		
	Anopheles bradleyi	2	76		
	Coquillettidia perturbans	2	127		
	Culex erraticus	6	141		
	Culex pipiens	2	2		
	Culex salinarius	9	323		
	Culex spp.	88	3292	23	6.987
	Culiseta melanura	65	2420	6	2.479
	Psorophora columbiae	1	6		
Camden		**178**	**6069**	**35**	**5.767**
	Aedes albopictus	27	83	3	36.145
	Aedes excrucians	1	2		
	Aedes japonicus	26	135	1	7.407
	Aedes triseriatus	1	2		
	Anopheles punctipennis	2	3		

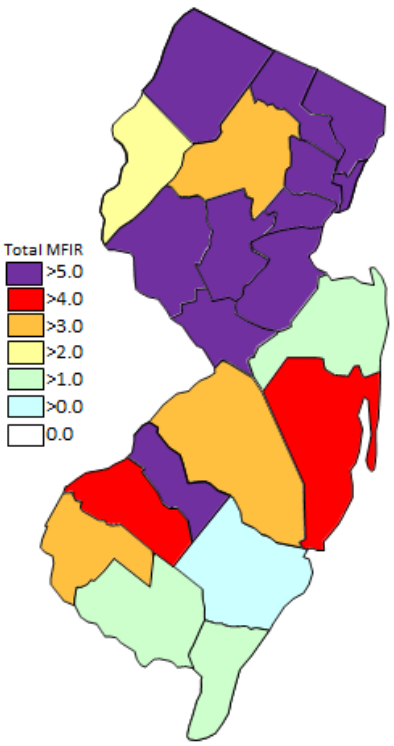
	Culex spp.	71	3756	29	7.721
	Culiseta melanura	49	2086	2	0.959
	Psorophora ferox	1	2		
Cape May		**2838**	**18651**	**17**	**0.911**
	Aedes albopictus	506	1108		
	Aedes atlanticus	2	3		
	Aedes atropalpus	22	56		
	Aedes canadensis canadensis	7	11		
	Aedes cantator	2	2		
	Aedes infirmatus	1	1		
	Aedes japonicus	223	497		
	Aedes sollicitans	7	7		
	Aedes sticticus	1	1		
	Aedes taeniorhynchus	2	2		
	Aedes triseriatus	121	230		
	Aedes vexans	17	33		
	Anopheles bradleyi	49	280		
	Anopheles punctipennis	7	15		
	Anopheles quadrimaculatus	127	2145		
	Coquillettidia perturbans	10	33		
	Culex erraticus	36	318		
	Culex pipiens	756	9722	16	1.646
	Culex restuans	416	2129	1	0.470
	Culex salinarius	286	1122		
	Culex spp.	39	133		
	Culex territans	14	63		
	Culiseta melanura	173	708		
	Orthopodomyia signifera	2	3		
	Psorophora columbiae	5	10		
	Psorophora ferox	4	6		
	Uranotaenia sapphirina	3	13		
Cumberland		**195**	**1977**	**10**	**5.058**
	Aedes albopictus	47	646	3	4.644
	Aedes japonicus	12	47		
	Aedes sollicitans	1	3		
	Aedes sticticus	1	1		
	Aedes triseriatus	8	16		
	Aedes trivittatus	1	8		
	Aedes vexans	19	277		
	Anopheles punctipennis	10	43		
	Anopheles quadrimaculatus	11	252		
	Coquillettidia perturbans	3	3		
	Culex erraticus	14	124	2	16.129
	Culex pipiens	4	39		
	Culex restuans	1	1		
	Culex salinarius	3	10		
	Culex spp.	35	344	3	8.721
	Culiseta melanura	13	74	2	27.027
	Psorophora columbiae	6	67		
	Psorophora ferox	6	22		
Essex		**140**	**760**	**12**	**15.789**
	Aedes albopictus	38	117		
	Aedes japonicus	21	36	3	83.333

	Aedes trivittatus	14	21	1	47.619
	Aedes vexans	2	3		
	Anopheles quadrimaculatus	2	2	1	500.000
	Culex spp.	63	581	7	12.048
Gloucester		**352**	**10074**	**81**	**8.041**
	Aedes albopictus	80	645	5	7.752
	Aedes japonicus	63	775	9	11.613
	Aedes triseriatus	13	64		
	Aedes vexans	1	24		
	Anopheles barberi	1	7		
	Anopheles punctipennis	8	32	1	31.250
	Anopheles quadrimaculatus	1	3		
	Coquillettidia perturbans	1	1		
	Culex pipiens	21	351	5	14.245
	Culex restuans	1	3		
	Culex spp.	146	7947	61	7.676
	Culiseta melanura	15	157		
	Psorophora ferox	1	65		
Hudson		**169**	**8231**	**59**	**7.168**
	Culex spp.	169	8231	59	7.168
Hunterdon		**284**	**13563**	**108**	**7.963**
	Culex spp.	284	13563	108	7.963
Mercer		**264**	**5114**	**42**	**8.213**
	Aedes albopictus	59	734	3	4.087
	Aedes canadensis canadensis	1	6		0.000
	Aedes japonicus	62	288	1	3.472
	Aedes triseriatus	2	7		
	Aedes vexans	15	157	1	6.369
	Coquillettidia perturbans	1	3	1	333.333
	Culex erraticus	1	6		
	Culex pipiens	5	59	1	16.949
	Culex restuans	37	1100	6	5.455
	Culex spp.	81	2754	29	10.530
Middlesex		**203**	**6063**	**53**	**8.742**
	Aedes albopictus	5	59		
	Aedes japonicus	1	64		
	Anopheles punctipennis	1	1		
	Coquillettidia perturbans	3	9		
	Culex spp.	192	5920	53	8.953
	Culiseta inornata	1	10		
Monmouth		**426**	**8743**	**55**	**6.291**
	Aedes albopictus	92	2130	5	2.347
	Aedes atlanticus	1	5		
	Aedes canadensis canadensis	13	105		
	Aedes cantator	5	50		
	Aedes grossbecki	2	10		
	Aedes japonicus	17	47		
	Aedes sollicitans	5	37		
	Aedes taeniorhynchus	3	5		

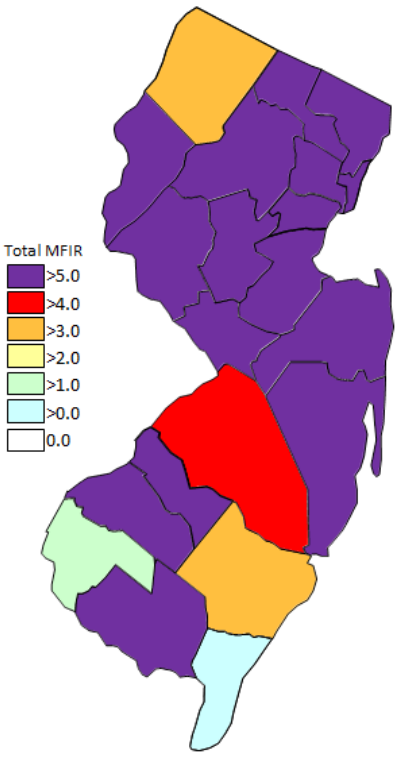
	Aedes triseriatus	16	131		
	Aedes trivittatus	6	55		
	Aedes vexans	16	84		
	Anopheles barberi	1	1		
	Anopheles bradleyi	1	1		
	Anopheles punctipennis	1	2	1	500.000
	Anopheles crucians	26	87		
	Anopheles quadrimaculatus	1	1		
	Coquillettidia perturbans	4	5		
	Culex erraticus	8	32	2	62.500
	Culex salinarius	7	243		
	Culex spp.	160	5182	46	8.877
	Culiseta melanura	21	460		
	Psorophora ciliata	1	1		
	Psorophora columbiae	4	17	1	58.824
	Psorophora ferox	15	52		
Morris		**374**	**14772**	**141**	**9.545**
	Aedes albopictus	6	39		
	Aedes japonicus	7	80		
	Coquillettidia perturbans	6	300		
	Culex spp	354	14352	141	9.824
	Culiseta melanura	1	1		
Ocean		**278**	**2332**	**26**	**11.149**
	Aedes albopictus	82	679	5	7.364
	Aedes japonicus	33	86		
	Aedes triseriatus	25	65	2	30.769
	Aedes vexans	1	2		
	Anopheles punctipennis	2	2		
	Anopheles quadrimaculatus	3	6		
	Coquillettidia perturbans	21	168	1	5.952
	Culex erraticus	10	23		
	Culex salinarius	2	3		
	Culex spp.	70	1144	17	14.860
	Culiseta melanura	28	153	1	6.536
	Psorophora ferox	1	1		
Passaic		**177**	**1627**	**13**	**7.990**
	Aedes abserratus	1	11		
	Aedes albopictus	17	82		
	Aedes japonicus	38	260	1	3.846
	Aedes thibaulti	1	10		
	Aedes triseriatus	4	14		
	Aedes vexans	1	34		
	Coquillettidia perturbans	5	40		
	Culex erraticus	10	17		
	Culex pipiens	11	202		
	Culex restuans	9	95		
	Culex spp.	75	844	12	14.218
	Culiseta melanura	4	4		
	Psorophora cyanescens	1	14		
Salem		**351**	**7003**	**9**	**1.285**
	Aedes albopictus	67	887		
	Aedes atlanticus	1	1		

	Aedes canadensis canadensis	1	1		
	Aedes japonicus	32	155		
	Aedes sollicitans	2	24		
	Aedes taeniorhynchus	1	4	1	250.000
	Aedes triseriatus	26	34		
	Aedes trivittatus	2	3		
	Aedes vexans	2	79		
	Anopheles bradleyi	2	5		
	Anopheles punctipennis	3	3		
	Anopheles quadrimaculatus	3	7		
	Coquillettidia perturbans	20	550		
	Culex erraticus	32	219	1	4.566
	Culex pipiens	11	14		
	Culex restuans	3	14		
	Culex salinarius	11	759	1	1.318
	Culex spp.	105	3836	5	1.303
	Culiseta melanura	21	385	1	2.597
	Psorophora ciliate	1	6		
	Psorophora columbiae	3	6		
	Psorophora ferox	2	11		
Somerset		**229**	**8181**	**78**	**9.534**
	Aedes albopictus	1	2		
	Aedes canadensis canadensis	1	12		
	Aedes japonicus	12	150		
	Aedes triseriatus	3	5		
	Anopheles punctipennis	2	4		
	Culex spp.	210	8008	78	9.740
Sussex		**251**	**8075**	**30**	**3.715**
	Aedes albopictus	1	3		
	Aedes canadensis canadensis	1	31		
	Aedes japonicus	3	126		
	Aedes triseriatus	3	27		
	Aedes vexans	9	600		
	Coquillettidia perturbans	15	1008		
	Culex pipiens	10	385	3	7.792
	Culex restuans	36	720		
	Culex salinarius	12	595	1	1.681
	Culex spp.	153	4511	26	5.764
	Culiseta melanura	8	69		
Union		**136**	**7567**	**69**	**9.119**
	Aedes albopictus	26	619	5	8.078
	Culex spp	110	6948	64	9.211
Warren		**319**	**12732**	**65**	**5.105**
	Aedes albopictus	19	366	1	2.732
	Aedes japonicus	29	698	1	1.433
	Aedes sticticus	1	4		
	Aedes triseriatus	1	2		
	Aedes trivittatus	7	89	1	11.236
	Aedes vexans	10	251		
	Anopheles punctipennis	1	5		
	Anopheles quadrimaculatus	1	3		
	Coquillettidia perturbans	2	89		

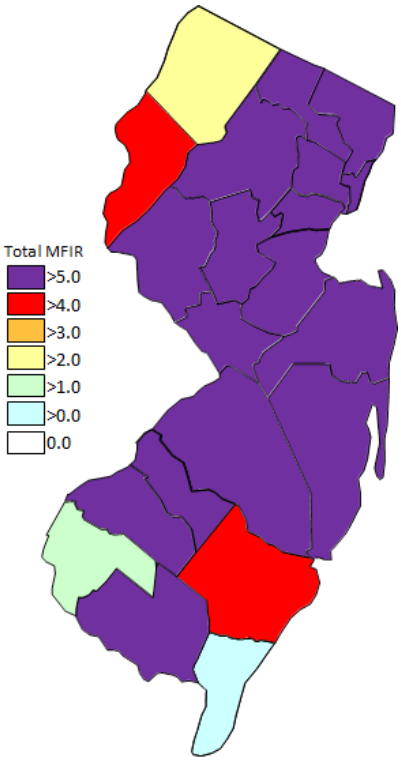
	Culex spp.	244	11099	62	5.586
	Culiseta melanura	2	62		
	Psorophora ciliata	1	55		
	Psorophora columbiae	1	9		
Grand Total		**7213**	**154126**	**929**	**6.028**



Cumulative WNV activity in 2017.



WNV activity to 21 September 2018.



WNV activity last week, 2018

Saint Louis Encephalitis (SLE) to 21 September 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		**794**	**9853**		
	Culex pipiens	756	9722		
	Culex spp.	38	131		

Grand Total		830	11840		

La Crosse Encephalitis (LAC) to 21 September 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		**12**	**197**		
	Aedes albopictus	4	73		
	Aedes japonicus	6	117		
	Aedes triseriatus	2	7		
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		**22**	**237**		

Dengue (DENV) to 21 September 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 6 travel-related human cases in NJ.

County	Species	DENV1		DENV2		DENV3		DENV4		Pos.	MFIR
		Pool	Mos.	Pool	Mos.	Pool	Mos.	Pool	Mos.		

Atlantic		**41**	**879**	**41**	**879**	**41**	**879**	**41**	**879**		
	Aedes albopictus	41	879	41	879	41	879	41	879		
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		
Ocean		**49**	**527**	**49**	**527**	**49**	**527**	**49**	**527**		
	Aedes albopictus	49	527	49	527	49	527	49	527		
Sussex		**1**	**3**	**1**	**3**	**1**	**3**	**1**	**3**		
	Aedes albopictus	1	3	1	3	1	3	1	3		
Grand Total		**101**	**1455**	**101**	**1455**	**101**	**1455**	**101**	**1455**		

Chikungunya (CHIK) to 21 September 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 6 travel-related human cases in NJ.

County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		**41**	**879**		
	Aedes albopictus	41	879		
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		
Ocean		**49**	**527**		
	Aedes albopictus	49	527		
Sussex		**1**	**3**		
	Aedes albopictus	1	3		
Grand Total		**101**	**1455**		

Zika (ZIKV) to 21 September 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		**41**	**879**		
	Aedes albopictus	41	879		
Bergen		**1**	**14**		
	Aedes albopictus	1	14		
Cape May		**492**	**1069**		
	Aedes albopictus	492	1069		
Gloucester		**7**	**20**		
	Aedes albopictus	5	18		
	Aedes japonicus	2	2		
Middlesex		**2**	**12**		
	Aedes albopictus	2	12		
Ocean		**49**	**527**		
	Aedes albopictus	49	527		
Sussex		**1**	**3**		
	Aedes albopictus	1	3		
Grand Total		**593**	**2524**		