VECTOR SURVEILLANCE IN NEW JERSEY

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

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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	nc	0.00	22	4		
Green Bank (Burlington Co.)/25	Coastal	nc	0.00	484	19		
Corbin City (Atlantic Co.)/25	Coastal	nc	0.08	265 [‡]	21		
Dennisville (Cape May Co.)/50	Coastal	nc	0.00	325	21		
Winslow (Camden Co.)/50	Inland	nc	0.00	2192	54	4	1.825
Centerton (Salem Co.)/50	Inland	nc	0.04	455	23	2	4.396
Turkey Swamp (Monmouth Co.)/49	Inland	nc	nc	535	22	1	1.869
Glassboro (Gloucester Co.)/50	Inland	nc	0.04	183	21		

Culiseta melanura and Eastern Equine Encephalitis

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

Remarks: This is likely the penultimate report for the season with few collections likely from this week forward. 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. No new positive pools were detected this past week. 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, 10,461 *Cs. melanura* from 646 pools have been tested, with 14 positive pools detected for an overall *Cs. melanura* MFIR of 1.338. 19315 specimens in 1947 pools from 25 other species have also been tested, with no positives detected. Overall MFIR for all species statewide is 0.470.

Traditional Resting Box Sites: 4461 *Cs. melanura* from 185 pools have been tested for EEE 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, <u>GR</u> , RB	55	1379	1	0.725		
Bergen	RB	8	24				
Burlington	CDCL	76	3111	5	1.607		
Cape May	GR, RB	222	522				
Cumberland	BGSCL, <u>RB</u>	27	192	1	5.208		
Gloucester		11	422				
Middlesex	RB	2	21				
Monmouth	OTHER	1	2				
Morris	CDCL	1	1				
Ocean	CDCL, RB	38	193				
Passaic	RB	4	4				
Salem	CDCL	6	53				
Sussex	ABC	9	70				
Warren	CDCL	1	6				
TOTAL		461	6000	7	1.167		

Additional County-set Cs. *melanura*: Counties maintain trap sites for Cs. *melanura* in other areas, using a variety of traps. A total of 7 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. Horse 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. m	nelanura	Pools	Mosquitoes	Positives	MFIR
Aedes albopictus		15	71		
Aedes atlanticus		4	59		
Aedes canadensis canadens	is	4	60		
Aedes cantator		4	4		
Aedes infirmatus		3	6		
Aedes japonicus		3	21		
Aedes mitchellae		1	2		
Aedes sollicitans		17	103		
Aedes taeniorhynchus		3	88		
Aedes triseriatus		2	6		
Aedes vexans		9	215		
Anopheles barberi		2	17		
Anopheles bradleyi		76	480		
Anopheles crucians		2	17		
Anopheles punctipennis		28	142		
Anopheles quadrimaculatus		3	4		
Coquillettidia perturbans		92	1835		
Culex erraticus		187	1730		
Culex pipiens		1015	11689		
Culex restuans		1	1		
Culex salinarius		382	1756		
<i>Culex</i> spp.		77	626		
Culiseta inornata		1	10		
Psorophora ciliata		2	9		
Psorophora columbiae		2	7		
Psorophora ferox		12	357		
	State Total	1947	19315		

Culiseta melanura Populations



= 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(2) 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(8)
- 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 <u>here</u>.

	Birds	Mosquito Pools	Sentinels	Horses*	Humans	
Alabama					25/ <mark>28</mark>	Montar
Alaska					1	Nebras
Arizona	1	142	1	4	19	Nevada
Arkansas				2	7	New Ha
California	490/ <mark>493</mark>	1,952/1, <mark>95</mark> 4	152/ <mark>156</mark>	10	143/ <mark>156</mark>	New Je
Colorado	Present	Present		5	84/ <mark>92</mark>	New M
Connecticut		393			19/ <mark>22</mark>	New Yo
Delaware	37/ <mark>40</mark>		66/ <mark>68</mark>	3/ <mark>5</mark>	8/ <mark>9</mark>	North C
DC	1	21		2	14	North E
Florida	4/5	27/28	466/ <mark>544</mark>	5	17	Ohio
Georgia		Present			24/ <mark>29</mark>	
Hawaii						Pennsy
Idaho		39		4	13/ <mark>15</mark>	Rhode
Illinois	34	3,012		11	123/137	South (
Indiana		688		18/ <mark>23</mark>	29/ <mark>30</mark>	South I
Iowa		102		13	91/ <mark>95</mark>	Tennes
Kansas					19/ <mark>23</mark>	Texas
Kentucky		Present		2	12/ <mark>16</mark>	Utah
Louisiana	98	1063		5	87	Vermo
Maine		4		1	3*	Virginia
Maryland(+DC)	1	30		6	40/ <mark>41</mark>	Washir
Mass.		579		3	44	West V
Michigan	185/ <mark>187</mark>	154		2/ <mark>3</mark>	98/101	Wiscor
Minnesota		Present		Present	38/ <mark>39</mark>	Wyomi
Mississippi		111			44	
Missouri	1	3		5	17	

	Birds	Mosquito Pools	Sentinels	Horses*	Humans
Montana		9		42	44/ <mark>45</mark>
Nebraska	1	122		2	230/ <mark>234</mark>
Nevada		Present			7/ <mark>8</mark>
New Hampshire	4	32			
New Jersey		1,327		1	58
New Mexico					5
New York		1,495 <mark>/1,496</mark>		19/ <mark>20</mark>	77/ <mark>82</mark>
North Carolina					5/ <mark>6</mark>
North Dakota	12	102		4	184/ <mark>200</mark>
Ohio		3,281		43/ <mark>48</mark>	57
Oklahoma		21traps		1	14/ <mark>17</mark>
Oregon	1	58		2	2
Pennsylvania	107	4,729		90/ <mark>92</mark>	87/ <mark>100</mark>
Rhode Island		10			
South Carolina	1		5	3	9/1 <mark>2</mark>
South Dakota		9counties			161
Tennessee	1/ <mark>2</mark>	957/ <mark>978</mark>			11
Texas	6	947/ <mark>970</mark>		12	98/ <mark>101</mark>
Utah		180		9	11
Vermont		157		1	
Virginia				1	40/ <mark>47</mark>
Washington		49		2	2/ <mark>3</mark>
West Virginia		24			
Wisconsin	55	83		3	15/ <mark>19</mark>
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.

Species	Pools	Mosquitoes	Positives	MFIR
Aedes abserratus	1	11		
Aedes albopictus	1733	14997	34	2.267
Aedes atlanticus	30	185		
Aedes atropalpus	26	61		
Aedes canadensis canadensis	37	297		
Aedes cantator	10	112		
Aedes cinereus	1	18		
Aedes excrucians	1	2		
Aedes grossbecki	2	10		
Aedes infirmatus	5	9		
Aedes japonicus	838	4585	19	4.144
Aedes mitchellae	1	2		
Aedes sollicitans	31	372		
Aedes sticticus	5	53		
Aedes taeniorhynchus	19	381	1	2.625
Aedes thibaulti	1	10		
Aedes triseriatus	298	739	3	4.060
Aedes trivittatus	35	506	1	1.976
Aedes vexans	266	5604	2	0.357
Anopheles barberi	3	24		
Anopheles bradleyi	89	895		
Anopheles crucians	3	19	1	52.632
Anopheles punctipennis	103	397	1	2.519
Anopheles quadrimaculatus	201	2719	1	0.368
Anopheles walkeri	1	35		
Coquillettidia perturbans	120	2778	3	1.080
Culex erraticus	248	2030	6	2.956
Culex pipiens	1119	13567	32	2.359
Culex restuans	779	5062	9	1.778
Culex salinarius	435	3958	1	0.253
Culex spp.	3784	144596	1196	8.271
Culex territans	18	74		
Culiseta inornata	1	10		
Culiseta melanura	649	10500	15	1.429
Orthopodomyia signifera	4	5		
Psorophora ciliata	8	74		
Psorophora columbiae	34	246	1	4.065
Psorophora cyanescens	2	19		
Psorophora ferox	90	1525		
Psorophora howardii	2	14	1	71.429
Uranotaenia sapphirina	12	47		
Grand Total	11045	216548	1327	6.128

Mosquito Species Submitted and Tested for West Nile Virus through 2 November 2018

Remarks: To date, 11,045 pools of 216,548 mosquitoes from 40 species have been tested. A total of 1,327 positive WNV pools have been detected throughout the state (no new positives this past week). The bulk of 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 6.128 from last week's 6.224.

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 58 human cases of WNV have been detected in the following counties: Atlantic 1, Bergen 10, 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.

County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		335	7996	24	3.002
	Aedes albopictus	55	1047	1	0.955
	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	25	580	1	1.724
	Anopheles bradleyi	6	242		
	Coquillettidia perturbans	13	320	1	3.125
	Culex erraticus	26	230	1	4.348
	Culex pipiens	22	766	6	7.833
	Culex restuans	1	23		
	Culex salinarius	1	24		
	<i>Culex</i> spp.	60	1593	12	7.533
	Culex territans	1	3		
	Culiseta melanura	76	1644	2	1.217
	Psorophora ciliata	1	1		
	Psorophora columbiae	1	1		
	Psorophora ferox	18	892		
Bergen		415	23239	161	6.928
	Aedes albopictus	39	928	1	1.078
	Aedes japonicus	8	28	1	35.714
	Aedes sollicitans	3	146		
	Aedes trivittatus	2	29		
	Aeues vexans	24 1	1134		
	Anopheles bradleyi	1	4		
	Culox poliparius	4	00		
		9	270	150	7 602
	Culiex spp.	0	20042	100	7.092
	Descenhora forex	0	24		
	Psorophora howardii	2 1	02	1	500.00
	r solophola nowardii	1	2	I	300.00
Burlington		329	9794	35	3.574
	Aedes albopictus	25	397		
	Aedes atlanticus	4	59		
	Aedes canadensis canadensis	3	56		
	Aedes infirmatus	3	6		
	Aedes japonicus	17	163	2	12.270
	Aedes mitchellae	1	2		
	Aedes taeniorhynchus	1	42		
	Aedes triseriatus	4	27		
	Aedes vexans	12	485		
	Anopheles bradleyi	4	120		

WNV Results by County through 2 November 2018.

	Anopheles crucians Anopheles punctipennis Anopheles quadrimaculatus Coquillettidia perturbans Culex erraticus Culex pipiens Culex salinarius Culex spp. Culiseta melanura Psorophora ciliata Psorophora columbiae Psorophora ferox	1 1 2 10 6 12 119 99 1 2 1	16 1 3 127 146 6 471 4027 3617 8 14 1	27 6	6.705 1.659
Camden		211	6569	40	6.089
	Aedes albopictus	33	104	3	28.846
	Aedes excrucians	1	2		
	Aedes japonicus	31	144	1	6.944
	Aedes triseriatus	2	4		
	Ariopheies punctipennis	చ ండ	4	24	0 750
	Culex spp. Culiseta molanura	80 54	4117	34	8.258
	Psoronhora ferox	04 1	2192	Z	0.912
			Z		
Cape May		4038	22966	20	0.871
	Aedes albopictus	767	1680		
	Aedes atlanticus	18	33		
	Aedes atropalpus	26	61		
	Aedes canadensis canadensis	8	12		
	Aedes cantator	4	4		
	Aedes Infirmatus	2	3 610		
	Aedes japonicus	293	012		
	Aedes sticticus	9 1	1		
	Aedes taeniorhynchus	6	7		
	Aedes triseriatus	149	268		
	Aedes vexans	35	55		
	Anopheles barberi	1	16		
	Anopheles bradleyi	72	360		
	Anopheles punctipennis	11	20		
	Anopheles quadrimaculatus	157	2311		
	Coquillettidia perturbans	10	33		
	Culex erraticus	88 1015	474	17	1 454
	Culex pipieris	662	11089	17	1.454
	Culex salinarius	363	2921 1241	5	1.020
	Culex spp.	53	166		
	Culex territans	16	70		
	Culiseta melanura	243	847		
	Orthopodomyia signifera	2	3		
	Psorophora columbiae	7	12		
	Psorophora ferox	12	17		
	Uranotaenia sapphirina	8	35		
Cumberland		344	4434	10	2 255
	Aedes albopictus	78	1352	3	2.219
	Aedes japonicus	16	51		-

	Aedes sollicitans	4	21		
	Aedes sticticus	1	1		
	Aedes triseriatus	8	16		
	Aedes trivittatus	4	12		
	Aedes vexans	42	776		
	Anopheles bradleyi	1	24		
	Anopheles punctipennis	13	59		
	Anopheles quadrimaculatus	20	334		
	Coquillettidia perturbans	6	6	_	
	Culex erraticus	32	790	2	2.532
	Culex pipiens	(43		
	Culex restuans	2	2		
	Culex salinarius	9	65	0	0.400
	Culex spp.	54	484	3	6.198
	Culiseta melanura	27	192	2	10.417
	Psorophora ciliata	1	1		
	Psorophora columbiae	9	89		
	Psoropnora terox	8	107		
	Uranotaenia sappnirina	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		588	15038	117	7.780
Gloucester	Aedes albopictus	588 129	15038 941	117 6	7.780 6.376
Gloucester	Aedes albopictus Aedes canadensis canadensis	588 129 1	15038 941 4	117 6	7.780 6.376
Gloucester	Aedes albopictus Aedes canadensis canadensis Aedes japonicus	588 129 1 94	15038 941 4 934	117 6 9	7.780 6.376 9.636
Gloucester	Aedes albopictus Aedes canadensis canadensis Aedes japonicus Aedes triseriatus	588 129 1 94 17	15038 941 4 934 73	117 6 9	7.780 6.376 9.636
Gloucester	Aedes albopictus Aedes canadensis canadensis Aedes japonicus Aedes triseriatus Aedes vexans	588 129 1 94 17 8	15038 941 4 934 73 64	117 6 9	7.780 6.376 9.636
Gloucester	Aedes albopictus Aedes canadensis canadensis Aedes japonicus Aedes triseriatus Aedes vexans Anopheles barberi	588 129 1 94 17 8 1	15038 941 4 934 73 64 7	117 6 9	7.780 6.376 9.636
Gloucester	Aedes albopictus Aedes canadensis canadensis Aedes japonicus Aedes triseriatus Aedes vexans Anopheles barberi Anopheles punctipennis	588 129 1 94 17 8 1 22	15038 941 4 934 73 64 7 127	117 6 9 1	7.780 6.376 9.636 7.874
Gloucester	Aedes albopictus Aedes canadensis canadensis Aedes japonicus Aedes triseriatus Aedes vexans Anopheles barberi Anopheles punctipennis Anopheles quadrimaculatus	588 129 1 94 17 8 1 22 5	15038 941 4 934 73 64 7 127 127 13	117 6 9 1	7.780 6.376 9.636 7.874
Gloucester	Aedes albopictus Aedes canadensis canadensis Aedes japonicus Aedes triseriatus Aedes vexans Anopheles barberi Anopheles punctipennis Anopheles quadrimaculatus Coquillettidia perturbans	588 129 1 94 17 8 1 22 5 7	15038 941 4 934 73 64 7 127 13 36	117 6 9 1	7.780 6.376 9.636 7.874
Gloucester	Aedes albopictus Aedes canadensis canadensis Aedes japonicus Aedes triseriatus Aedes vexans Anopheles barberi Anopheles punctipennis Anopheles quadrimaculatus Coquillettidia perturbans Culex pipiens	588 129 1 94 17 8 1 22 5 7 28	15038 941 4 934 73 64 7 127 13 36 394	117 6 9 1	7.780 6.376 9.636 7.874 12.690
Gloucester	Aedes albopictus Aedes canadensis canadensis Aedes japonicus Aedes triseriatus Aedes vexans Anopheles barberi Anopheles punctipennis Anopheles quadrimaculatus Coquillettidia perturbans Culex pipiens Culex restuans	588 129 1 94 17 8 1 22 5 7 28 1	15038 941 4 934 73 64 7 127 127 13 36 394 3	117 6 9 1 5	7.780 6.376 9.636 7.874 12.690
Gloucester	Aedes albopictus Aedes canadensis canadensis Aedes japonicus Aedes triseriatus Aedes vexans Anopheles barberi Anopheles punctipennis Anopheles quadrimaculatus Coquillettidia perturbans Culex pipiens Culex restuans Culex spp.	588 129 1 94 17 8 1 22 5 7 28 1 229	15038 941 4 934 73 64 7 127 13 36 394 3 11623	117 6 9 1 5 96	7.780 6.376 9.636 7.874 12.690 8.259
Gloucester	Aedes albopictus Aedes canadensis canadensis Aedes japonicus Aedes triseriatus Aedes vexans Anopheles barberi Anopheles punctipennis Anopheles quadrimaculatus Coquillettidia perturbans Culex pipiens Culex restuans Culex spp. Culiseta melanura	588 129 1 94 17 8 1 22 5 7 28 1 229 32	15038 941 4 934 73 64 7 127 13 36 394 3 11623 605	117 6 9 1 5 96	7.780 6.376 9.636 7.874 12.690 8.259
Gloucester	Aedes albopictus Aedes canadensis canadensis Aedes japonicus Aedes triseriatus Aedes vexans Anopheles barberi Anopheles punctipennis Anopheles quadrimaculatus Coquillettidia perturbans Culex pipiens Culex restuans Culex spp. Culiseta melanura Psorophora ciliata	588 129 1 94 17 8 1 22 5 7 28 1 229 32 1	15038 941 4 934 73 64 7 127 13 36 394 3 11623 605 1	117 6 9 1 5 96	7.780 6.376 9.636 7.874 12.690 8.259
Gloucester	Aedes albopictus Aedes canadensis canadensis Aedes japonicus Aedes triseriatus Aedes vexans Anopheles barberi Anopheles punctipennis Anopheles quadrimaculatus Coquillettidia perturbans Culex pipiens Culex restuans Culex restuans Culex spp. Culiseta melanura Psorophora ciliata Psorophora columbiae	588 129 1 94 17 8 1 22 5 7 28 1 229 32 1 1	15038 941 4 934 73 64 7 127 13 36 394 3 11623 605 1 8	117 6 9 1 5 96	7.780 6.376 9.636 7.874 12.690 8.259
Gloucester	Aedes albopictus Aedes canadensis canadensis Aedes japonicus Aedes triseriatus Aedes vexans Anopheles barberi Anopheles punctipennis Anopheles quadrimaculatus Coquillettidia perturbans Culex pipiens Culex restuans Culex restuans Culex spp. Culiseta melanura Psorophora ciliata Psorophora columbiae Psorophora ferox	588 129 1 94 17 8 1 22 5 7 28 1 229 32 1 1 12	15038 941 4 934 73 64 7 127 13 36 394 3 11623 605 1 8 205	117 6 9 1 5 96	7.780 6.376 9.636 7.874 12.690 8.259
Gloucester	Aedes albopictus Aedes canadensis canadensis Aedes japonicus Aedes triseriatus Aedes vexans Anopheles barberi Anopheles punctipennis Anopheles quadrimaculatus Coquillettidia perturbans Culex pipiens Culex restuans Culex restuans Culex spp. Culiseta melanura Psorophora ciliata Psorophora columbiae Psorophora ferox	588 129 1 94 17 8 1 22 5 7 28 1 229 32 1 1 12 220	15038 941 4 934 73 64 7 127 13 36 394 3 11623 605 1 8 205 9701	117 6 9 1 5 96 68	7.780 6.376 9.636 7.874 12.690 8.259 7.010
Gloucester	Aedes albopictus Aedes canadensis canadensis Aedes japonicus Aedes triseriatus Aedes vexans Anopheles barberi Anopheles punctipennis Anopheles quadrimaculatus Coquillettidia perturbans Culex pipiens Culex restuans Culex restuans Culex spp. Culiseta melanura Psorophora ciliata Psorophora columbiae Psorophora ferox	588 129 1 94 17 8 1 22 5 7 28 1 229 32 1 1 12 220 13	15038 941 4 934 73 64 7 127 13 36 394 3 11623 605 1 8 205 9701 178	117 6 9 1 5 96 68	7.780 6.376 9.636 7.874 12.690 8.259 7.010
Gloucester	Aedes albopictus Aedes canadensis canadensis Aedes japonicus Aedes triseriatus Aedes vexans Anopheles barberi Anopheles punctipennis Anopheles quadrimaculatus Coquillettidia perturbans Culex pipiens Culex restuans Culex spp. Culiseta melanura Psorophora ciliata Psorophora columbiae Psorophora ferox	588 129 1 94 17 8 1 22 5 7 28 1 229 32 1 1 12 220 13 207	15038 941 4 934 73 64 7 127 13 36 394 3 11623 605 1 8 205 9701 178 9523	117 6 9 1 5 96 68 68	7.780 6.376 9.636 7.874 12.690 8.259 7.010 7.141
Gloucester	Aedes albopictus Aedes canadensis canadensis Aedes japonicus Aedes triseriatus Aedes vexans Anopheles barberi Anopheles punctipennis Anopheles quadrimaculatus Coquillettidia perturbans Culex pipiens Culex restuans Culex spp. Culiseta melanura Psorophora ciliata Psorophora columbiae Psorophora ferox Aedes albopictus Culex spp.	588 129 1 94 17 8 1 22 5 7 28 1 229 32 1 1 12 220 13 207	15038 941 4 934 73 64 7 127 13 36 394 3 11623 605 1 8 205 9701 178 9523	117 6 9 1 5 96 68 68	7.780 6.376 9.636 7.874 12.690 8.259 7.010 7.141
Gloucester Hudson Hunterdon	Aedes albopictus Aedes canadensis canadensis Aedes japonicus Aedes triseriatus Aedes vexans Anopheles barberi Anopheles punctipennis Anopheles quadrimaculatus Coquillettidia perturbans Culex pipiens Culex restuans Culex spp. Culiseta melanura Psorophora ciliata Psorophora ferox Aedes albopictus Culex spp.	588 129 1 94 17 8 1 22 5 7 28 1 229 32 1 1 1 22 5 7 28 1 229 32 1 1 229 32 1 1 229 32 1 1 229 32 1 32 7 28 32 1 32 7 20 32 397 397	15038 941 4 934 73 64 7 127 13 36 394 3 11623 605 1 8 205 9701 178 9523 17051	117 6 9 1 5 96 68 68 68 1 59	7.780 6.376 9.636 7.874 12.690 8.259 7.010 7.141 9.325 9.325
Gloucester Hudson Hunterdon	Aedes albopictus Aedes canadensis canadensis Aedes japonicus Aedes triseriatus Aedes vexans Anopheles barberi Anopheles punctipennis Anopheles quadrimaculatus Coquillettidia perturbans Culex pipiens Culex restuans Culex spp. Culiseta melanura Psorophora ciliata Psorophora columbiae Psorophora ferox Aedes albopictus Culex spp.	588 129 1 94 17 8 1 22 5 7 28 1 229 32 1 1 12 220 13 207 397 397	15038 941 4 934 73 64 7 127 13 36 394 3 11623 605 1 8 205 9701 178 9523 17051 17051	117 6 9 1 5 96 68 68 68 68 159	7.780 6.376 9.636 7.874 12.690 8.259 7.010 7.141 9.325 9.325
Gloucester Hudson Hunterdon Mercer	Aedes albopictus Aedes canadensis canadensis Aedes japonicus Aedes triseriatus Aedes vexans Anopheles barberi Anopheles punctipennis Anopheles quadrimaculatus Coquillettidia perturbans Culex pipiens Culex restuans Culex spp. Culiseta melanura Psorophora ciliata Psorophora columbiae Psorophora ferox Aedes albopictus Culex spp.	588 129 1 94 17 8 1 22 5 7 28 1 229 32 1 1 12 220 13 207 397 397 350	15038 941 4 934 73 64 7 127 13 36 394 3 11623 605 1 8 205 9701 178 9523 9701 178 9523 17051 17051	117 6 9 1 5 96 68 68 68 159 159 43	7.780 6.376 9.636 7.874 12.690 8.259 7.010 7.141 9.325 9.325 7.267

	Aedes canadensis canadensis Aedes japonicus Aedes triseriatus	1 74 2	6 328 7	1	3.049
	Aedes trivittatus Aedes vexans Coquillettidia perturbans	25 2 8	351 37 20	1 1	2.849 27.027
	Culex circulous Culex pipiens Culex restuans	6 49	60 1214	1 6	16.667 4.942
	Culex spp. Culiseta melanura	95 1	2948 1	30	10.176
Middlesex		248	6627	56	8.450
	Aedes albopictus	14	148		
	Aedes japonicus	1	64		
	Aedes vexans	3	105		
	Anopheles punctipennis	1	1		
	Coquillettidia perturbans	3	9		
	Culex spp.	225	6290	56	8.903
	Culiseta inornata	1	10		
Monmouth		585	11414	63	5.520
	Aedes albopictus	128	3454	6	1.737
	Aedes atlanticus	2	6		
	Aedes canadensis canadensis	15	110		
	Aedes cantator	5	50		
	Aedes grossbecki	2	10		
	Aedes japonicus	26	80		
	Aedes sollicitans	5	37		
	Aedes taeniomynchus	4	107		
	Aedes trisenatus	21	137		
	Aedes Invitatus	1	00 160		
	Aedes vexans Apopholos barbori	32 1	100		
	Anopheles bradlevi	1	1		
	Anopheles crucians	2	3	1	333 333
	Anopheles punctipennis	35	102		000.000
	Anopheles quadrimaculatus	3	4		
	Coquillettidia perturbans	4	5		
	Culex erraticus	14	54	2	37.037
	Culex restuans	5	8		
	Culex salinarius	9	263		
	<i>Culex</i> spp.	210	6206	52	8.379
	Culex territans	1	1		
	Culiseta melanura	25	539	1	1.855
	Orthopodomyia signifera	2	2		
	Psorophora ciliata	1	1		40.000
	Psorophora columbiae Psorophora ferox	7 18	61 56	1	16.393
Morris	Anden albeniatur	473	17101	166	9.707
	Aeues albopicius Aedes iaponieus	17	104		
	Aeues japonicus	22	CQI		
	Andre collicitane	1	1		
	Aedes sollicitans Aedes vexans	1 7	1 190		

	Anopheles quadrimaculatus Coquillettidia perturbans Culex spp Culiseta melanura Psorophora ferox	1 6 412 1 4	3 300 16273 1 37	166	10.201
Ocean		382	3272	26	7.946
	Aedes albopictus Aedes cantator Aedes japonicus	109 1 44	899 58 103	5	5.562
	Aedes taeniorhynchus Aedes triseriatus Aedes vexans Anopheles bradleyi	2 29 6 2	50 72 51 139	2	27.778
	Anopheles punctipennis Anopheles quadrimaculatus Coquillettidia perturbans Culex erraticus	2 3 21 15	2 6 168 32	1	5.952
	Culex pipiens Culex restuans Culex salinarius	1 2 4	1 2 86	47	10 1 10
	Culex spp. Culiseta melanura Psorophora ferox	99 38 4	1400 193 10	17 1	12.143 5.181
Passaic		260	2097	16	7.630
	Aedes abserratus Aedes albopictus Aedes japonicus Aedes thibaulti Aedes triseriatus Aedes vexans Coquillettidia perturbans	1 37 65 1 4 1 5	11 168 370 10 14 34 40	1	2.703
	Culex erraticus Culex pipiens Culex restuans Culex spp. Culiseta melanura Psorophora cyanescens	12 11 9 108 4 2	21 202 95 1109 4 19	15	13.526
Salem		418	7498	9	1.200
	Aedes albopictus Aedes atlanticus Aedes canadensis canadensis Aedes japonicus Aedes sollicitans	76 2 1 36 2	923 2 1 160 24		
	Aedes sonicitaits Aedes taeniorhynchus Aedes triseriatus Aedes trivittatus Aedes vexans Anopheles bradlevi	2 1 30 3 6 2	24 4 40 4 188 5	1	250.00
	Anopheles punctipennis Anopheles quadrimaculatus Coquillettidia perturbans Culex erraticus Culex pipiens	4 7 20 43 11	10 39 550 263 14	1	3.802

	Culex restuans Culex salinarius Culex spp. Culiseta melanura Psorophora ciliate Psorophora columbiae Psorophora ferox Psorophora howardii Uranotaenia sapphirina	7 12 113 29 1 4 5 1 2	18 760 3925 508 6 13 26 12 3	1 5 1	1.316 1.274 1.969
Somerset		289	8811	84	9.534
	Aedes albopictus Aedes canadensis canadensis Aedes japonicus Aedes triseriatus Aedes trivittatus Anopheles punctipennis Culex spp. Psorophora ferox	5 1 5 2 3 257 1	17 12 159 9 2 5 8606 1	84	9.761
Sussex		362	10531	56	5.318
	Aedes albopictus Aedes canadensis canadensis Aedes japonicus Aedes triseriatus Aedes trivittatus Aedes vexans Anopheles punctipennis Coquillettidia perturbans Culex pipiens Culex restuans Culex salinarius	3 1 14 3 2 19 1 15 12 41 13 228	5 31 255 27 129 1033 24 1008 392 770 670 6242	3	7.653
	Culex spp. Culiseta melanura Psorophora ferox	228 9 1	70 75	55	0.772
Union		196	10534	78	7.405
	Aedes albopictus Aedes sollicitans Culex salinarius Culex spp	37 2 3 154	822 29 108 9575	5 73	6.083 7.624
Warren		431	15019	82	5.460
	Aedes albopictus	34	712	1	1.404
	Aedes cinereus Aedes japonicus Aedes sticticus Aedes triseriatus	1 47 2 ⊿	18 828 16 7	1	1.208
	Aedes trivittatus Aedes vexans Anopheles punctipennis Anopheles quadrimaculatus Anopheles walkeri Coquillettidia perturbans	14 18 5 1 1 2	273 394 35 3 35 35 89	1	3.663
	Culex spp. Culiseta melanura	291 3	12428 63	79	6.357



Saint Louis Encephalitis (SLE) to 2 November 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.

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

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

La Crosse Encephalitis (LAC) to 2 November 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).

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		

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

Dengue (DENV) to 2 November 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		55	55	55	55	55	55	55	55		
	Aedes albopictus	55	55	55	55	55	55	55	55		
Bergen		1	1	1	1	1	1	1	1		
	Aedes albopictus	1	1	1	1	1	1	1	1		

Gloucester		7	7	7	7	7	7	7	7	
	Aedes albopictus	5	5	5	5	5	5	5	5	
	Aedes japonicus	2	2	2	2	2	2	2	2	
Middlesex		2	2	2	2	2	2	2	2	
	Aedes albopictus	2	2	2	2	2	2	2	2	
Monmouth		2	2	2	2	2	2	2	2	
	Aedes albopictus	2	2	2	2	2	2	2	2	
Morris		1	1	1	1	1	1	1	1	
	Aedes albopictus	1	1	1	1	1	1	1	1	
Ocean		67	67	67	67	67	67	67	67	
	Aedes albopictus	67	67	67	67	67	67	67	67	
Sussex		3	3	3	3	3	3	3	3	
	Aedes albopictus	3	3	3	3	3	3	3	3	
Grand Total		138	138	138	138	138	138	138	138	

Chikungunya (CHIK) to 2 November 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 9 travel-related human cases in NJ.

County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		55	1047		
	Aedes albopictus	55	1047		
Bergen		1	14		
	Aedes albopictus	1	14		
Cape May		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		138	1875		

Zika (ZIKV) to 2 November 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		55	1047		
	Aedes albopictus	55	1047		
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		803	3287		