

VECTOR SURVEILLANCE IN NEW JERSEY

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

Prepared by Lisa M. Reed, Diana Carle and Dina Fonseca

Center for Vector Biology, Rutgers University

CDC WEEK 39: 23 September to 29 September, 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	1.33	0.00	3	2		
Green Bank (Burlington Co.)/25	Coastal	1.56	2.44	339 [‡] (400) [‡]	15 (17)		
Corbin City (Atlantic Co.)/25	Coastal	0.81	0.92	210 [‡] (233) [‡]	16 (17)		
Dennisville (Cape May Co.)/50	Coastal	1.83	0.18	301	18		
Winslow (Camden Co.)/50	Inland	0.62	0.96	2134	50	4	1.874
Centerton (Salem Co.)/50	Inland	1.66	0.80	376	18	2	5.319
Turkey Swamp (Monmouth Co.)/49	Inland	0.43	NC	499 [‡]	19	1	2.004
Glassboro (Gloucester Co.)/50	Inland	0.49	0.18	166	16		

*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. 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, 8568 *Cs. melanura* from 493 pools have been tested, with 12 positive pools detected for an overall *Cs. melanura* MFIR of 1.401. 15670 specimens in 1449 pools from 20 other species have also been tested, with no positives detected. Overall MFIR for all species statewide is 0.495.

Traditional Resting Box Sites: 4028 *Cs. melanura* from 154 pools have been tested for EEE (plus two pools totaling 84 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 <i>Cs. melanura</i> trapped by counties *traps with positives indicated in BOLD UNDERLINED .					
County	Trap types*	Pools	Mosquitoes	Positives	MFIR
Atlantic	CO2, GR , RB	42	1072	1	0.933
Bergen	RB	7	21		
Burlington	CDCL	58	2588	4	1.546
Cape May	GR, RB	162	424		
Cumberland	BGSCL, RB	16	117		
Middlesex	RB	2	21		
Monmouth	OTHER	1	2		
Morris	CDCL	1	1		
Ocean	CDCL, RB	33	166		
Passaic	RB	4	4		
Salem	CDCL	4	49		
Sussex	ABC	8	69		
Warren	CDCL	1	6		
TOTAL		339	4540	5	1.101

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 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

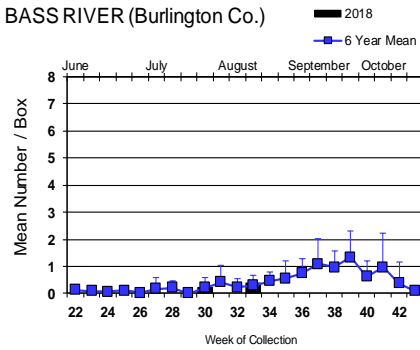
Additional Species: Twenty additional species were tested for EEE. No positives were detected.

Species other than <i>Cs. melanura</i>	Pools	Mosquitoes	Positives	MFIR
<i>Aedes albopictus</i>	3	26		
<i>Aedes atlanticus</i>	1	7		
<i>Aedes canadensis canadensis</i>	1	10		
<i>Aedes cantator</i>	2	2		
<i>Aedes infirmatus</i>	1	1		
<i>Aedes japonicus</i>	1	1		
<i>Aedes sollicitans</i>	10	63		
<i>Aedes taeniorhynchus</i>	3	88		
<i>Aedes triseriatus</i>	1	1		
<i>Aedes vexans</i>	3	32		
<i>Anopheles barberi</i>	1	1		
<i>Anopheles bradleyi</i>	53	382		
<i>Anopheles punctipennis</i>	14	47		
<i>Anopheles quadrimaculatus</i>	1	1		
<i>Coquillettidia perturbans</i>	85	1776		
<i>Culex erraticus</i>	109	1106		
<i>Culex pipiens</i>	795	10121		
<i>Culex salinarius</i>	306	1473		
<i>Culex</i> spp.	52	215		
<i>Culiseta inornata</i>	1	10		
<i>Psorophora columbiae</i>	2	7		
<i>Psorophora ferox</i>	4	300		
State Total	1449	15670		

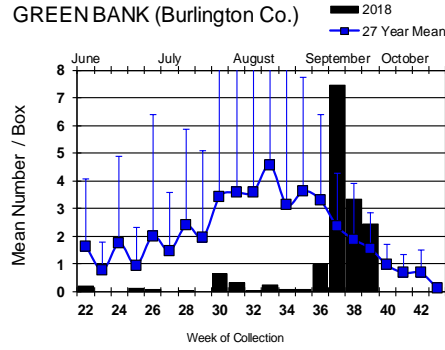
Culiseta melanura Populations

Coastal

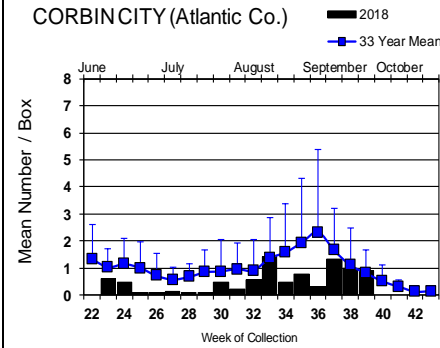
BASS RIVER (Burlington Co.)



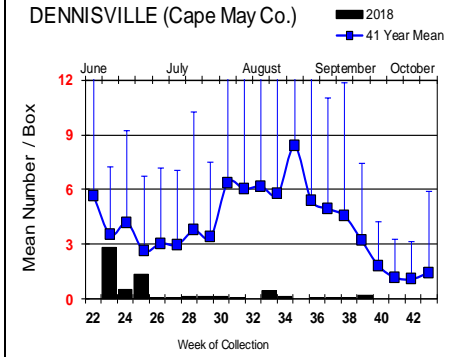
GREEN BANK (Burlington Co.)



CORBINCITY (Atlantic Co.)

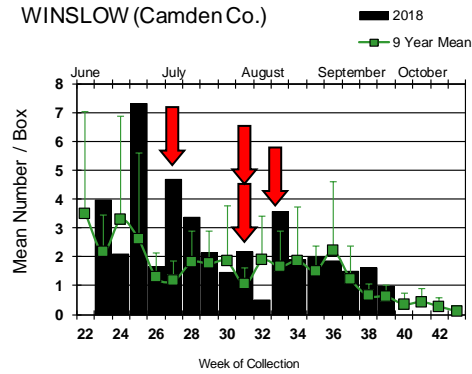


DENNISVILLE (Cape May Co.)

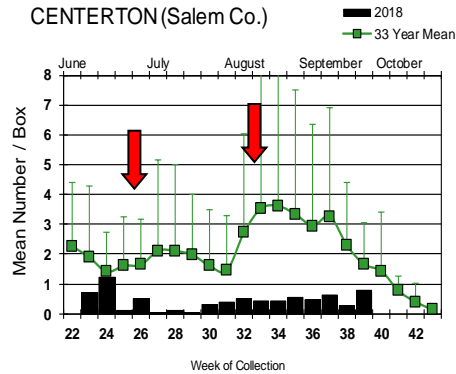


Inland

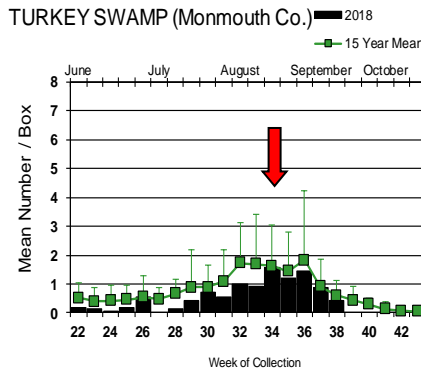
WINSLOW (Camden Co.)



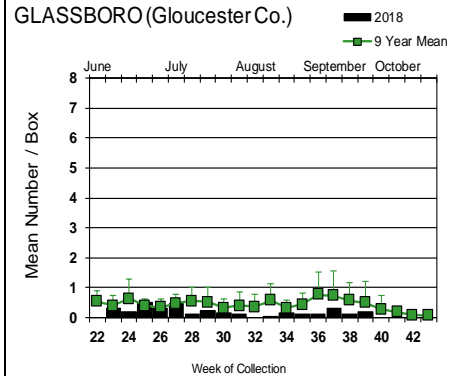
CENTERTON (Salem Co.)





TURKEY SWAMP (Monmouth Co.)



GLASSBORO (Gloucester Co.)



Populations continued to be above the recent historical trend at Green Bank, but are decreasing. Abundances at other resting box sites are also decreasing, from either low previous numbers or from around historical averages. Note: *Culiseta melanura* is a cold weather mosquito and can be on the wing later than other species, perhaps accounting for horse cases that sometimes occur late in the season (November). Due diligence is required.



 = 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(2) Ontario Canada(10)
- mosquito pools: CT(1) FL(2) NJ(12) NY(22) LA(1) MA(1) NC(1) RI(4)
- sentinel: FL(142/6 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					21
Alaska					
Arizona		55/81			7/8
Arkansas					6
California	430/445	1,606/1,802	112/122	7/8	79/114
Colorado	Present	Present			47
Connecticut		362/378			6
Delaware	27		47	3	5
DC	1	21		1	10/11
Florida	1	25	212/306	2/4	8/12
Georgia		Present			7/13
Hawaii					
Idaho		39		2	9/11
Illinois	30	2,922/2,972		7	63/79
Indiana		490/598			9/17
Iowa		77		6/8	39/53
Kansas					6
Kentucky		Present			6
Louisiana	86/88	1012/1036		4	79
Maine		1/2		1	2
Maryland(+DC)	1	30		3	26/32
Mass.		572/579		1	14/25
Michigan	129/131	150/153			54/67
Minnesota		Present		Present	5
Mississippi		108			37/40
Missouri	1	3		3	12

	Birds	Mosquito Pools	Sentinels	Horses*	Humans
Montana		9		38/40	34/38
Nebraska	1	116/118			150/163
Nevada		Present			2
New Hampshire	4	16			
New Jersey		1,075/1180		1	25/34
New Mexico					3
New York		1,261/1,422		4/6	24/38
North Carolina					3
North Dakota	12	102		4	148/167
Ohio		2,923/3,132		17/31	23/34
Oklahoma		21traps			7
Oregon	1	47			1
Pennsylvania	38/84	2,140/4,370		3/64	1/40
Rhode Island		10			
South Carolina					4
South Dakota		9counties			140
Tennessee	1	546/679			8/9
Texas	6	776/825		2	45/57
Utah		174/175		7	8
Vermont		120/127		1	
Virginia					21
Washington		49		2	2
West Virginia		24			
Wisconsin	52/53	83		2	6/7
Wyoming	3	11		11	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 28 September 2018

Species	Pools	Mosquitoes	Positives	MFIR
<i>Aedes abserratus</i>	1	11		
<i>Aedes albopictus</i>	1237	10732	33	3.075
<i>Aedes atlanticus</i>	6	29		
<i>Aedes atropalpus</i>	22	56		
<i>Aedes canadensis canadensis</i>	29	232		
<i>Aedes cantator</i>	7	52		
<i>Aedes cinereus</i>	1	18		
<i>Aedes excrucians</i>	1	2		
<i>Aedes grossbecki</i>	2	10		
<i>Aedes infirmatus</i>	2	2		
<i>Aedes japonicus</i>	642	3875	19	4.903
<i>Aedes sollicitans</i>	18	156		
<i>Aedes sticticus</i>	5	53		
<i>Aedes taeniorhynchus</i>	12	324	1	3.086
<i>Aedes thibaulti</i>	1	10		
<i>Aedes triseriatus</i>	248	642	3	4.673
<i>Aedes trivittatus</i>	17	177	1	5.650
<i>Aedes vexans</i>	121	2010	2	0.995
<i>Anopheles barberi</i>	2	8		
<i>Anopheles bradleyi</i>	60	553		
<i>Anopheles crucians</i>	1	2	1	500.00
<i>Anopheles punctipennis</i>	69	228	1	4.386
<i>Anopheles quadrimaculatus</i>	155	2480	1	0.403
<i>Anopheles walkeri</i>	1	35		
<i>Coquillettidia perturbans</i>	111	2707	3	1.108
<i>Culex erraticus</i>	152	1339	6	4.481
<i>Culex pipiens</i>	884	11898	31	2.605
<i>Culex restuans</i>	535	4216	7	1.660
<i>Culex salinarius</i>	341	3109	2	0.643
<i>Culex spp.</i>	3136	128165	1053	8.216
<i>Culex territans</i>	14	63		
<i>Culiseta inornata</i>	1	10		
<i>Culiseta melanura</i>	494	8605	14	1.627
<i>Orthopodomyia signifera</i>	2	3		
<i>Psorophora ciliata</i>	4	63		
<i>Psorophora columbiae</i>	23	162	1	6.173
<i>Psorophora cyanescens</i>	1	14		
<i>Psorophora ferox</i>	44	629		
<i>Psorophora howardii</i>	1	2	1	500.00
<i>Uranotaenia sapphirina</i>	3	13		
Grand Total	8406	182695	1180	6.459

Remarks: To date, 8406 pools of 182,695 mosquitoes from 39 species have been tested. A total of 1180 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

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 28 September 2018.

County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		240	6226	23	3.694
	<i>Aedes albopictus</i>	44	903	1	1.107
	<i>Aedes atlanticus</i>	1	13		
	<i>Aedes canadensis canadensis</i>	3	54		
	<i>Aedes japonicus</i>	6	64		
	<i>Aedes sollicitans</i>	3	85		
	<i>Aedes sticticus</i>	1	35		
	<i>Aedes taeniorhynchus</i>	5	271		
	<i>Aedes vexans</i>	16	305	1	3.279
	<i>Anopheles bradleyi</i>	4	165		
	<i>Coquillettidia perturbans</i>	13	320	1	3.125
	<i>Culex erraticus</i>	14	195	1	5.128
	<i>Culex pipiens</i>	18	709	6	8.463
	<i>Culex restuans</i>	1	23		
	<i>Culex salinarius</i>	1	24		
	<i>Culex</i> spp.	43	1327	11	8.289
	<i>Culiseta melanura</i>	58	1282	2	1.560
	<i>Psorophora ferox</i>	9	451		
Bergen		270	17003	128	7.528
	<i>Aedes albopictus</i>	26	711	1	1.406
	<i>Aedes japonicus</i>	5	20	1	50.000
	<i>Coquillettidia perturbans</i>	4	50		
	<i>Culex</i> spp.	227	16199	125	7.717
	<i>Culiseta melanura</i>	7	21		
	<i>Psorophora howardii</i>	1	2	1	500.00
Burlington		240	7476	32	4.280
	<i>Aedes albopictus</i>	18	172		
	<i>Aedes atlanticus</i>	1	7		
	<i>Aedes canadensis canadensis</i>	1	10		
	<i>Aedes infirmatus</i>	1	1		
	<i>Aedes japonicus</i>	14	153	2	13.072
	<i>Aedes taeniorhynchus</i>	1	42		
	<i>Aedes triseriatus</i>	2	7		
	<i>Aedes vexans</i>	5	72		
	<i>Anopheles bradleyi</i>	3	101		
	<i>Anopheles quadrimaculatus</i>	1	3		
	<i>Coquillettidia perturbans</i>	2	127		
	<i>Culex erraticus</i>	7	142		
	<i>Culex pipiens</i>	6	6		
	<i>Culex salinarius</i>	9	323		
	<i>Culex</i> spp.	91	3365	24	7.132
	<i>Culiseta melanura</i>	75	2930	6	2.048
	<i>Psorophora columbiae</i>	2	14		
	<i>Psorophora ferox</i>	1	1		
Camden		184	6198	38	6.131
	<i>Aedes albopictus</i>	27	83	3	36.145

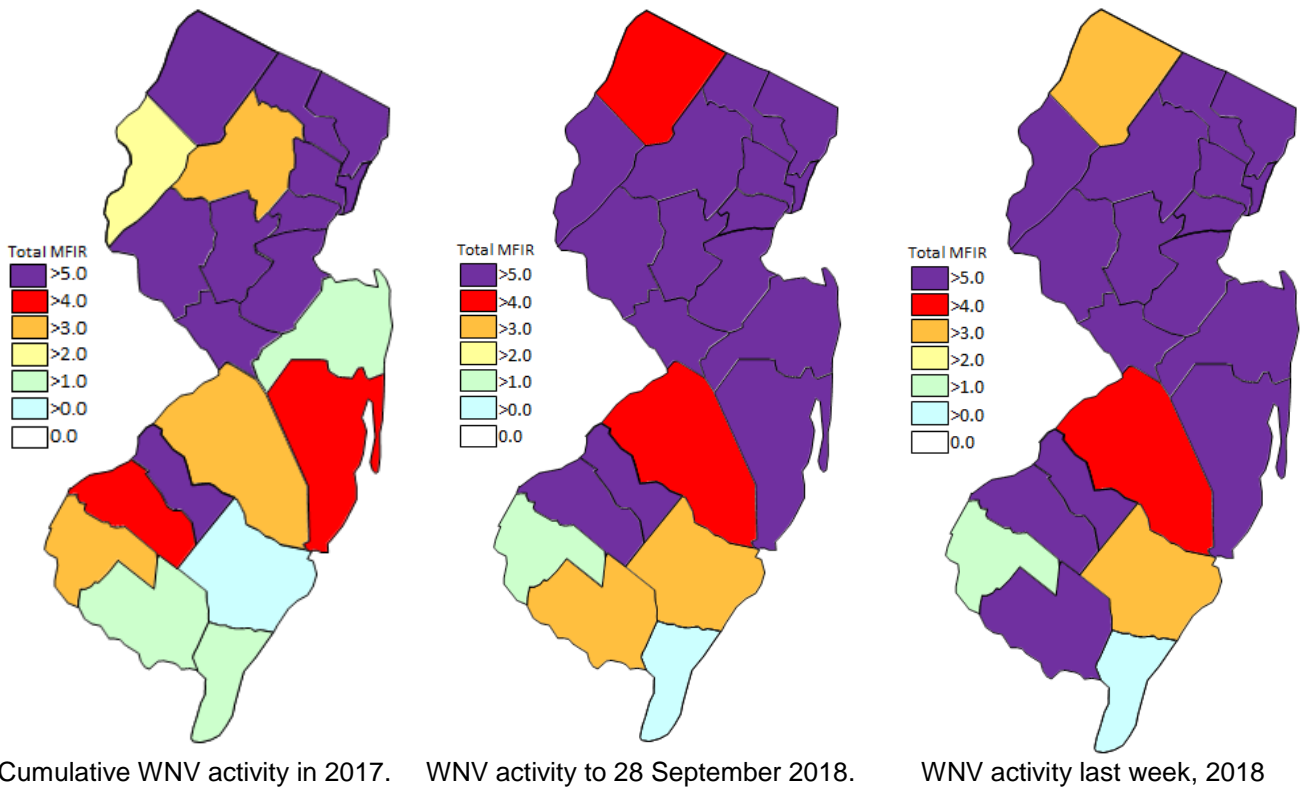
<i>Aedes excrucians</i>	1	2		
<i>Aedes japonicus</i>	27	136	1	7.353
<i>Aedes triseriatus</i>	1	2		
<i>Anopheles punctipennis</i>	2	3		
<i>Culex</i> spp.	75	3836	32	8.342
<i>Culiseta melanura</i>	50	2134	2	0.937
<i>Psorophora ferox</i>	1	2		
Cape May	2955	19248	17	0.883
<i>Aedes albopictus</i>	528	1150		
<i>Aedes atlanticus</i>	2	3		
<i>Aedes atropalpus</i>	22	56		
<i>Aedes canadensis canadensis</i>	7	11		
<i>Aedes cantator</i>	2	2		
<i>Aedes infirmatus</i>	1	1		
<i>Aedes japonicus</i>	229	505		
<i>Aedes sollicitans</i>	7	7		
<i>Aedes sticticus</i>	1	1		
<i>Aedes taeniorhynchus</i>	2	2		
<i>Aedes triseriatus</i>	122	231		
<i>Aedes vexans</i>	17	33		
<i>Anopheles bradleyi</i>	50	281		
<i>Anopheles punctipennis</i>	8	16		
<i>Anopheles quadrimaculatus</i>	129	2148		
<i>Coquillettidia perturbans</i>	10	33		
<i>Culex erraticus</i>	38	321		
<i>Culex pipiens</i>	795	10121	16	1.581
<i>Culex restuans</i>	444	2233	1	0.448
<i>Culex salinarius</i>	294	1140		
<i>Culex</i> spp.	39	133		
<i>Culex territans</i>	14	63		
<i>Culiseta melanura</i>	180	725		
<i>Orthopodomyia signifera</i>	2	3		
<i>Psorophora columbiae</i>	5	10		
<i>Psorophora ferox</i>	4	6		
<i>Uranotaenia sapphirina</i>	3	13		
Cumberland	233	2664	10	3.754
<i>Aedes albopictus</i>	59	895	3	3.352
<i>Aedes japonicus</i>	12	47		
<i>Aedes sollicitans</i>	1	3		
<i>Aedes sticticus</i>	1	1		
<i>Aedes triseriatus</i>	8	16		
<i>Aedes trivittatus</i>	1	8		
<i>Aedes vexans</i>	21	321		
<i>Anopheles punctipennis</i>	11	46		
<i>Anopheles quadrimaculatus</i>	14	307		
<i>Coquillettidia perturbans</i>	4	4		
<i>Culex erraticus</i>	21	362	2	5.525
<i>Culex pipiens</i>	6	41		
<i>Culex restuans</i>	1	1		
<i>Culex salinarius</i>	3	10		
<i>Culex</i> spp.	41	394	3	7.614
<i>Culiseta melanura</i>	16	117	2	17.094
<i>Psorophora columbiae</i>	7	69		
<i>Psorophora ferox</i>	6	22		

Essex	140	760	12	15.789
<i>Aedes albopictus</i>	38	117		
<i>Aedes japonicus</i>	21	36	3	83.333
<i>Aedes trivittatus</i>	14	21	1	47.619
<i>Aedes vexans</i>	2	3		
<i>Anopheles quadrimaculatus</i>	2	2	1	500.000
<i>Culex</i> spp.	63	581	7	12.048
Gloucester	386	11156	92	8.247
<i>Aedes albopictus</i>	87	723	6	8.299
<i>Aedes japonicus</i>	66	801	9	11.236
<i>Aedes triseriatus</i>	15	71		
<i>Aedes vexans</i>	2	29		
<i>Anopheles barberi</i>	1	7		
<i>Anopheles punctipennis</i>	9	36	1	27.778
<i>Anopheles quadrimaculatus</i>	1	3		
<i>Coquillettidia perturbans</i>	1	1		
<i>Culex pipiens</i>	22	361	5	13.850
<i>Culex restuans</i>	1	3		
<i>Culex</i> spp.	164	8890	71	7.987
<i>Culiseta melanura</i>	16	166		
<i>Psorophora ferox</i>	1	65		
Hudson	184	9050	66	7.293
<i>Culex</i> spp.	184	9050	66	7.293
Hunterdon	324	15456	137	8.864
<i>Culex</i> spp.	324	15456	137	8.864
Mercer	284	5397	43	7.967
<i>Aedes albopictus</i>	66	820	3	3.659
<i>Aedes canadensis canadensis</i>	1	6		
<i>Aedes japonicus</i>	65	297	1	3.367
<i>Aedes triseriatus</i>	2	7		
<i>Aedes vexans</i>	17	170	1	5.882
<i>Coquillettidia perturbans</i>	1	3	1	333.333
<i>Culex erraticus</i>	1	6		
<i>Culex pipiens</i>	5	59	1	16.949
<i>Culex restuans</i>	37	1100	6	5.455
<i>Culex</i> spp.	89	2929	30	10.242
Middlesex	212	6286	55	8.750
<i>Aedes albopictus</i>	7	81		
<i>Aedes japonicus</i>	1	64		
<i>Anopheles punctipennis</i>	1	1		
<i>Coquillettidia perturbans</i>	3	9		
<i>Culex</i> spp.	199	6121	55	8.985
<i>Culiseta inornata</i>	1	10		
Monmouth	453	9272	56	6.040
<i>Aedes albopictus</i>	97	2262	5	2.210
<i>Aedes atlanticus</i>	1	5		
<i>Aedes canadensis canadensis</i>	14	107		
<i>Aedes cantator</i>	5	50		

<i>Aedes grossbecki</i>	2	10		
<i>Aedes japonicus</i>	21	67		
<i>Aedes sollicitans</i>	5	37		
<i>Aedes taeniorhynchus</i>	3	5		
<i>Aedes triseriatus</i>	17	132		
<i>Aedes trivittatus</i>	6	55		
<i>Aedes vexans</i>	16	84		
<i>Anopheles barberi</i>	1	1		
<i>Anopheles bradleyi</i>	1	1		
<i>Anopheles crucians</i>	1	2	1	500.000
<i>Anopheles punctipennis</i>	28	90		
<i>Anopheles quadrimaculatus</i>	1	1		
<i>Coquillettidia perturbans</i>	4	5		
<i>Culex erraticus</i>	10	36	2	55.556
<i>Culex salinarius</i>	8	254		
<i>Culex</i> spp.	170	5495	47	8.553
<i>Culiseta melanura</i>	22	503		
<i>Psorophora ciliata</i>	1	1		
<i>Psorophora columbiae</i>	4	17	1	58.824
<i>Psorophora ferox</i>	15	52		
Morris	399	15677	157	10.015
<i>Aedes albopictus</i>	6	39		
<i>Aedes japonicus</i>	10	110		
<i>Coquillettidia perturbans</i>	6	300		
<i>Culex</i> spp	376	15227	157	10.311
<i>Culiseta melanura</i>	1	1		
Ocean	318	2558	26	10.164
<i>Aedes albopictus</i>	92	742	5	6.739
<i>Aedes japonicus</i>	39	95		
<i>Aedes triseriatus</i>	28	69	2	28.986
<i>Aedes vexans</i>	1	2		
<i>Anopheles punctipennis</i>	2	2		
<i>Anopheles quadrimaculatus</i>	3	6		
<i>Coquillettidia perturbans</i>	21	168	1	5.952
<i>Culex erraticus</i>	14	29		
<i>Culex salinarius</i>	2	3		
<i>Culex</i> spp.	80	1270	17	13.386
<i>Culiseta melanura</i>	33	166	1	6.024
<i>Psorophora ferox</i>	3	6		
Passaic	205	1871	16	8.552
<i>Aedes abserratus</i>	1	11		
<i>Aedes albopictus</i>	22	104		
<i>Aedes japonicus</i>	47	314	1	3.185
<i>Aedes thibaulti</i>	1	10		
<i>Aedes triseriatus</i>	4	14		
<i>Aedes vexans</i>	1	34		
<i>Coquillettidia perturbans</i>	5	40		
<i>Culex erraticus</i>	11	20		
<i>Culex pipiens</i>	11	202		
<i>Culex restuans</i>	9	95		
<i>Culex</i> spp.	88	1009	15	14.866
<i>Culiseta melanura</i>	4	4		
<i>Psorophora cyanescens</i>	1	14		

Salem	365	7106	9	1.267
<i>Aedes albopictus</i>	69	892		
<i>Aedes atlanticus</i>	1	1		
<i>Aedes canadensis canadensis</i>	1	1		
<i>Aedes japonicus</i>	33	156		
<i>Aedes sollicitans</i>	2	24		
<i>Aedes taeniorhynchus</i>	1	4	1	250.000
<i>Aedes triseriatus</i>	27	35		
<i>Aedes trivittatus</i>	2	3		
<i>Aedes vexans</i>	2	79		
<i>Anopheles bradleyi</i>	2	5		
<i>Anopheles punctipennis</i>	3	3		
<i>Anopheles quadrimaculatus</i>	3	7		
<i>Coquillettidia perturbans</i>	20	550		
<i>Culex erraticus</i>	36	228	1	4.386
<i>Culex pipiens</i>	11	14		
<i>Culex restuans</i>	5	16		
<i>Culex salinarius</i>	12	760	1	1.316
<i>Culex</i> spp.	107	3880	5	1.289
<i>Culiseta melanura</i>	22	425	1	2.353
<i>Psorophora ciliate</i>	1	6		
<i>Psorophora columbiae</i>	3	6		
<i>Psorophora ferox</i>	2	11		
Somerset	244	8323	79	9.492
<i>Aedes albopictus</i>	1	2		
<i>Aedes canadensis canadensis</i>	1	12		
<i>Aedes japonicus</i>	12	150		
<i>Aedes triseriatus</i>	4	8		
<i>Anopheles punctipennis</i>	3	5		
<i>Culex</i> spp.	222	8145	79	9.699
Sussex	271	8716	40	4.589
<i>Aedes albopictus</i>	1	3		
<i>Aedes canadensis canadensis</i>	1	31		
<i>Aedes japonicus</i>	3	126		
<i>Aedes triseriatus</i>	3	27		
<i>Aedes vexans</i>	9	600		
<i>Coquillettidia perturbans</i>	15	1008		
<i>Culex pipiens</i>	10	385	3	7.792
<i>Culex restuans</i>	37	745		
<i>Culex salinarius</i>	12	595	1	1.681
<i>Culex</i> spp.	172	5127	36	7.022
<i>Culiseta melanura</i>	8	69		
Union	156	8898	75	8.429
<i>Aedes albopictus</i>	27	633	5	7.899
<i>Culex</i> spp	129	8265	70	8.469
Warren	343	13354	69	5.167
<i>Aedes albopictus</i>	22	400	1	2.500
<i>Aedes cinereus</i>	1	18		
<i>Aedes japonicus</i>	31	734	1	1.362
<i>Aedes sticticus</i>	2	16		

<i>Aedes triseriatus</i>	1	2		
<i>Aedes trivittatus</i>	8	111	1	9.009
<i>Aedes vexans</i>	12	278		
<i>Anopheles punctipennis</i>	2	26		
<i>Anopheles quadrimaculatus</i>	1	3		
<i>Anopheles walkeri</i>	1	35		
<i>Coquillettidia perturbans</i>	2	89		
<i>Culex</i> spp.	253	11466	66	5.756
<i>Culiseta melanura</i>	2	62		
<i>Psorophora ciliata</i>	2	56		
<i>Psorophora columbiae</i>	2	46		
Grand Total	8406	182695	1180	6.459



Saint Louis Encephalitis (SLE) to 28 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		
	<i>Culex</i> spp	36	1987		
Cape May		833	10252		
	<i>Culex pipiens</i>	795	10121		
	<i>Culex</i> spp.	38	131		
Grand Total		869	12239		

La Crosse Encephalitis (LAC) to 28 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		14	206		
	<i>Aedes albopictus</i>	5	79		
	<i>Aedes japonicus</i>	7	120		
	<i>Aedes triseriatus</i>	2	7		
Ocean		4	9		
	<i>Aedes albopictus</i>	2	3		
	<i>Aedes japonicus</i>	1	1		
	<i>Aedes triseriatus</i>	1	5		
Salem		3	4		
	<i>Aedes triseriatus</i>	3	4		
Sussex		3	27		
	<i>Aedes triseriatus</i>	3	27		
Grand Total		24	246		

Dengue (DENV) to 28 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		44	903	44	903	44	903	44	903		
	<i>Aedes albopictus</i>	44	903	44	903	44	903	44	903		
Bergen		1	14	1	14	1	14	1	14		
	<i>Aedes albopictus</i>	1	14	1	14	1	14	1	14		
Gloucester		7	20	7	20	7	20	7	20		
	<i>Aedes albopictus</i>	5	18	5	18	5	18	5	18		
	<i>Aedes japonicus</i>	2	2	2	2	2	2	2	2		
Middlesex		2	12	2	12	2	12	2	12		
	<i>Aedes albopictus</i>	2	12	2	12	2	12	2	12		
Ocean		58	589	58	589	58	589	58	589		
	<i>Aedes albopictus</i>	58	589	58	589	58	589	58	589		
Sussex		1	3	1	3	1	3	1	3		
	<i>Aedes albopictus</i>	1	3	1	3	1	3	1	3		
Grand Total		113	1541	113	1541	113	1541	113	1541		

Chikungunya (CHIK) to 28 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		44	903		
	<i>Aedes albopictus</i>	44	903		
Bergen		1	14		
	<i>Aedes albopictus</i>	1	14		
Gloucester		7	20		
	<i>Aedes albopictus</i>	5	18		
	<i>Aedes japonicus</i>	2	2		
Middlesex		2	12		
	<i>Aedes albopictus</i>	2	12		
Ocean		58	589		
	<i>Aedes albopictus</i>	58	589		
Somerset		1	1		
	<i>Aedes albopictus</i>	1	1		
Sussex		1	3		
	<i>Aedes albopictus</i>	1	3		
Grand Total		114	1542		

Zika (ZIKV) to 28 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		44	903		
	<i>Aedes albopictus</i>	44	903		
Bergen		1	14		
	<i>Aedes albopictus</i>	1	14		
Cape May		514	1111		
	<i>Aedes albopictus</i>	514	1111		
Gloucester		7	20		
	<i>Aedes albopictus</i>	5	18		
	<i>Aedes japonicus</i>	2	2		
Middlesex		2	12		
	<i>Aedes albopictus</i>	2	12		
Ocean		58	589		
	<i>Aedes albopictus</i>	58	589		
Somerset		1	1		
	<i>Anopheles punctipennis</i>	1	1		
Sussex		1	3		
	<i>Aedes albopictus</i>	1	3		
Grand Total		628	2653		