

VECTOR SURVEILLANCE IN NEW JERSEY

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

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 Begin to 30 June to 6 July, 2019, CDC Week 27
 Data download 1:58 pm 5 July



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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	0.14	0.00	4	2		
Green Bank (Burlington Co.)/25	Coastal	1.43	0.00	13	2		
Corbin City (Atlantic Co.)/25	Coastal	0.57	0.20	46 (51)	4 (5)		
Dennisville (Cape May Co.)/50	Coastal	2.89	0.02	28	4		
Winslow (Camden Co.)/50	Inland	1.57	0.28	65	3		
Centerton (Salem Co.)/50	Inland	2.05	0.32	42	2		
Turkey Swamp (Monmouth Co.)/50	Inland	0.44	0.80	86 (126)	6 (7)		
Glassboro (Gloucester Co.)/50	Inland	0.48	0.24	43	23		

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

Remarks: Currently in 2019, there are no detections of EEE virus in mosquito pools, horses or humans.

Statewide, 1,813 *Cs. melanura* from 155 (corrected) pools have been tested, with no positive pools detected for an overall *Cs. melanura* MFIR of 0.0. 37,756 specimens in 1,799 pools from 30 other species have also been tested, with no positives detected. Overall MFIR for all species statewide is 0.0.

Traditional Resting Box Sites: 284 *Cs. melanura* from 21 pools have been tested, with no positive pools detected. An additional 45 *Cs. melanura* in two pools are at labs to be tested.

Additional Cs. melanura trapped by counties *traps with positives indicated in BOLD UNDERLINED .					
County	Trap types*	Pools	Mosquitoes	Positives	MFIR
Atlantic	BGS, CO ₂ , RB	20	576		
Bergen	RB	1	1		
Burlington	ULVT	7	197		
Cape May	GR, RB	51	148		
Cumberland	AGO, RB	4	47		
Gloucester	RB	9	169		
Middlesex	RB	2	16		
Monmouth	CO ₂ , Other	3	29		
Morris	CO ₂ , RB	10	113		
Ocean	CO ₂ , GR, RB	20	163		
Salem	CO ₂ , RB	5	5		
Sussex	CO ₂	2	65		
TOTAL		134	1529		

Additional County-set Cs. melanura: Counties maintain trap sites for *Cs. melanura* in other areas, using a variety of traps. Last year, half of the EEE detection came from such trappings. No pools have detected EEE to date from these sites.

Horses and Humans: No horse or human cases have been reported. Last year five horses were reported with EEE. All had either an incomplete 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

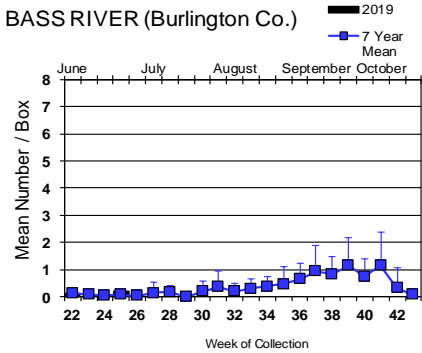
Additional Species: 30 additional species were tested for EEE. No positives were detected.

Species other than <i>Cs. melanura</i>	Pools	Mosquitoes	Positives	MFIR
<i>Aedes abserratus</i>	13	258		
<i>Aedes albopictus</i>	131	486		
<i>Aedes atlanticus</i>	1	1		
<i>Aedes aurifer</i>	1	12		
<i>Aedes canadensis canadensis</i>	63	1004		
<i>Aedes cantator</i>	13	257		
<i>Aedes grossbecki</i>	5	12		
<i>Aedes japonicus</i>	205	1189		
<i>Aedes mitchellae</i>	1	1		
<i>Aedes provocans</i>	2	8		
<i>Aedes sollicitans</i>	1	53		
<i>Aedes sticticus</i>	2	84		
<i>Aedes stimulans</i>	2	10		
<i>Aedes triseriatus</i>	28	75		
<i>Aedes trivittatus</i>	11	184		
<i>Aedes vexans</i>	20	169		
<i>Anopheles bradleyi</i>	17	82		
<i>Anopheles crucians</i>	1	6		
<i>Anopheles punctipennis</i>	22	116		
<i>Anopheles quadrimaculatus</i>	28	298		
<i>Coquillettidia perturbans</i>	64	1614		
<i>Culex Mix</i>	735	29070		
<i>Culex erraticus</i>	7	9		
<i>Culex pipiens</i>	126	1410		
<i>Culex restuans</i>	179	539		
<i>Culex salinarius</i>	93	582		
<i>Culex territans</i>	12	23		
<i>Orthopodomyia signifera</i>	2	2		
<i>Psorophora columbiae</i>	1	17		
<i>Psorophora ferox</i>	12	184		
<i>Psorophora howardii</i>	1	1		
State Total	1799	37756		

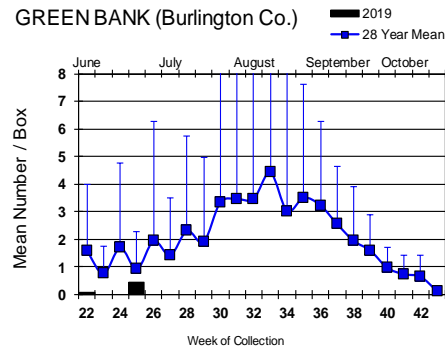
Culiseta melanura Populations

Coastal

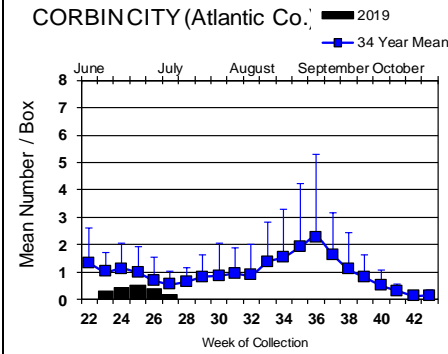
BASS RIVER (Burlington Co.)



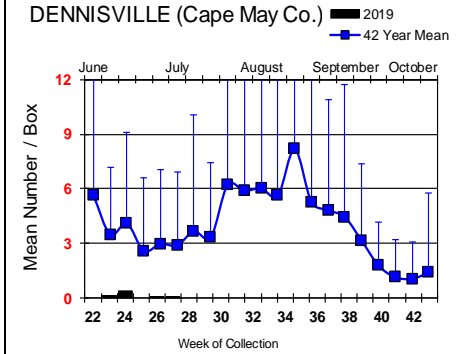
GREEN BANK (Burlington Co.)



CORBINCITY (Atlantic Co.)

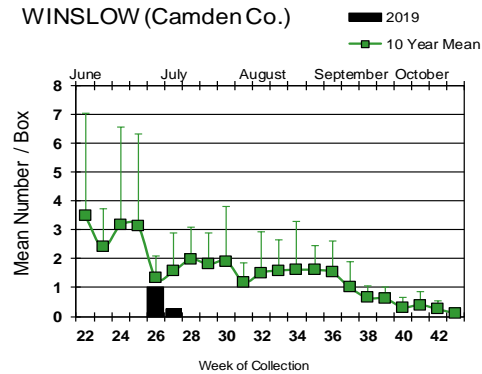


DENNISVILLE (Cape May Co.)

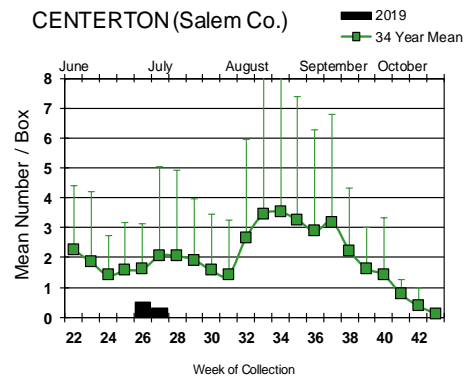


Inland

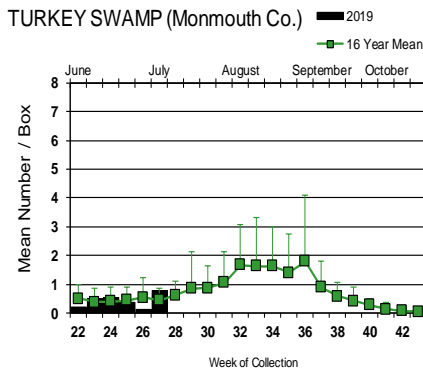
WINSLOW (Camden Co.)



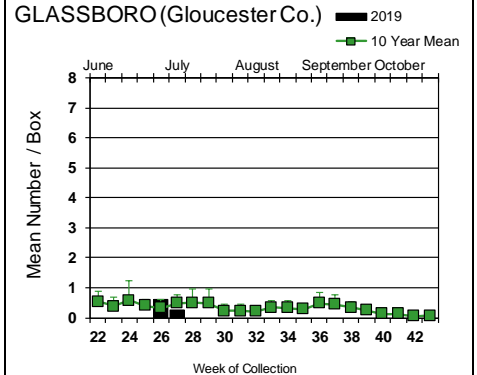
CENTERTON (Salem Co.)





TURKEY SWAMP (Monmouth Co.)



GLASSBORO (Gloucester Co.)



Culiseta melanura populations at most traditional resting box sites were well below historical values. Only the Turkey Swamp site had *Cs. melanura* collections higher than historical values. No detections of EEE has occurred at any of the traditional resting box sites.



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

EEE in US (2019 cumulative cases): (Black or Red = previous + new reported cases occurring)

- **equine:** 18 (FL) 1 (GA)
- **mosquito pools:**
- **sentinel:** 53 (+1 emu 1 BAEA, FL)
- **human:**

West Nile Virus Positive Organisms in US, 2019

West Nile in US (2019 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					
Alaska					
Arizona	0	183	0	1	10/27
Arkansas					
California	5/13	220/351	0	0	0
Colorado					
Connecticut		0		0	0
Delaware					
Florida			14/15	1	
Georgia					
Hawaii					
Idaho	0	2		0	0
Illinois	2	55/62		0	0
Indiana	0	2/5		0	0
Iowa				2	
Kansas					0
Kentucky					
Louisiana					
Maine					
Maryland(+DC)					
Mass.		0		0	0
Michigan	1	2/3			0
Minnesota					
Mississippi		1/5			0
Missouri		0		0	0

	Birds	Mosquito Pools	Sentinels	Horses*	Humans
Montana					
Nebraska	0	0		0	0
Nevada					
New Hampshire					
New Jersey		1		0	1
New Mexico					0
New York					
North Carolina					
North Dakota	0	0		0	1
Ohio		2			
Oklahoma					
Oregon	0	0	0	0	0
Pennsylvania					
Rhode Island		0			
South Carolina					
South Dakota		0			
Tennessee					
Texas		15/23			
Utah					
Vermont					
Virginia					
Washington	0	1		0	0
West Virginia					
Wisconsin	0	1/3		0	0
Wyoming	0	1		0	1

* 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 6 July 2019

Species	Pools	Mosquitoes	Positives	MFIR
<i>Aedes abserratus</i>	13	258		
<i>Aedes albopictus</i>	241	713		
<i>Aedes atlanticus</i>	1	1		
<i>Aedes aurifer</i>	1	12		
<i>Aedes canadensis canadensis</i>	63	1004		
<i>Aedes cantator</i>	13	257		
<i>Aedes grossbecki</i>	5	12		
<i>Aedes japonicus</i>	209	1248		
<i>Aedes mitchellae</i>	1	1		
<i>Aedes provocans</i>	2	8		
<i>Aedes sollicitans</i>	1	53		
<i>Aedes sticticus</i>	2	84		
<i>Aedes stimulans</i>	2	10		
<i>Aedes triseriatus</i>	140	355	1	2.817
<i>Aedes trivittatus</i>	11	184		
<i>Aedes vexans</i>	20	169		
<i>Anopheles bradleyi</i>	17	82		
<i>Anopheles crucians</i>	1	6		
<i>Anopheles punctipennis</i>	23	117		
<i>Anopheles quadrimaculatus</i>	28	298		
<i>Coquillettidia perturbans</i>	64	1614		
<i>Culex</i> spp.	735	29070		
<i>Culex erraticus</i>	7	9		
<i>Culex pipiens</i>	127	1411		
<i>Culex restuans</i>	182	542		
<i>Culex salinarius</i>	93	582		
<i>Culex territans</i>	12	23		
<i>Culiseta melanura</i>	155	1813		
<i>Orthopodomyia signifera</i>	2	2		
<i>Psorophora columbiae</i>	1	17		
<i>Psorophora ferox</i>	12	184		
<i>Psorophora howardii</i>	1	1		
Grand Total	2185	40140	1	0.025

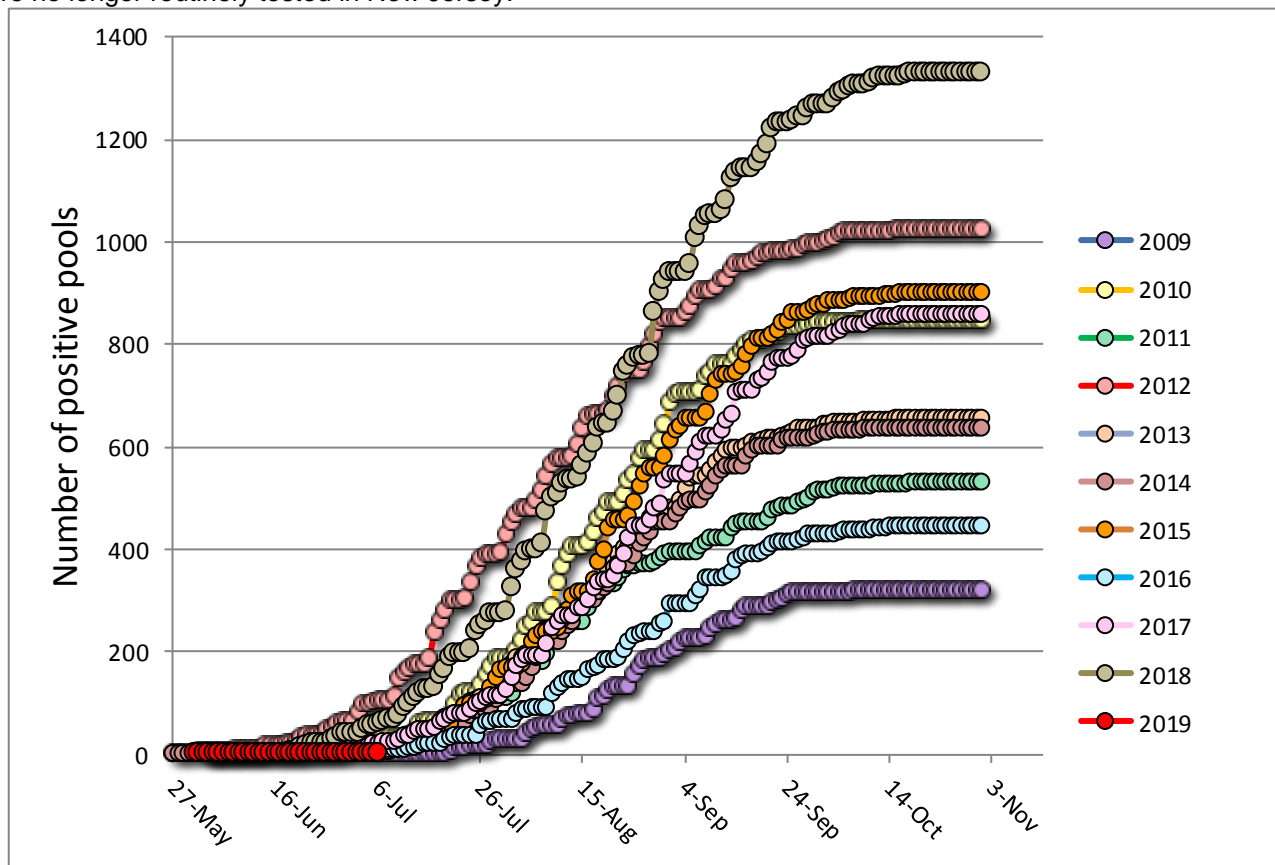
Remarks: To date, 2,185 pools of 40,140 mosquitoes from 31 species have been tested. A total of 1 positive WNV pools have been detected throughout the state, from a pool of *Aedes triseriatus*, collected on 31 May, 2019 in Passaic County. This pool was also co-infected with LAC (see table below). Last year was a year of significant activity, with over 1300 positive pools detected. Date of first detection in 2018 was 5 June in *Culex pipiens* from Gloucester County. Last year's patterns also included an increase in activity in the northwestern side of the state. Currently, the statewide MFIR rate for all mosquitoes is 0.031.

Humans, Horses and Wild Birds: There has been one human case of West Nile virus from Hunterdon County reported, with an onset date of 21 June. This represents the earliest typical case reported in New Jersey. (A few years ago, there was one case reported in May from a long-term hospitalized patient making date of infection difficult to determine.) For

more information, see NJ arboviral reports from the Department of Health: <https://www.nj.gov/health/cd/statistics/arboviral-stats/> . Last year we have over 60 cases reported, the highest to date.

Currently, there are no reported horse cases for WNV. Last year only one WNV horse case has been reported, occurring in Burlington County. This seemed rather unusual, given all the other indicators of high virus activity. 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 10 years, inclusive of the most active (2018) and least active (2009) years. The red series represents this year, starting with the first positive pool.

WNV Results by County through 6 July 2019.

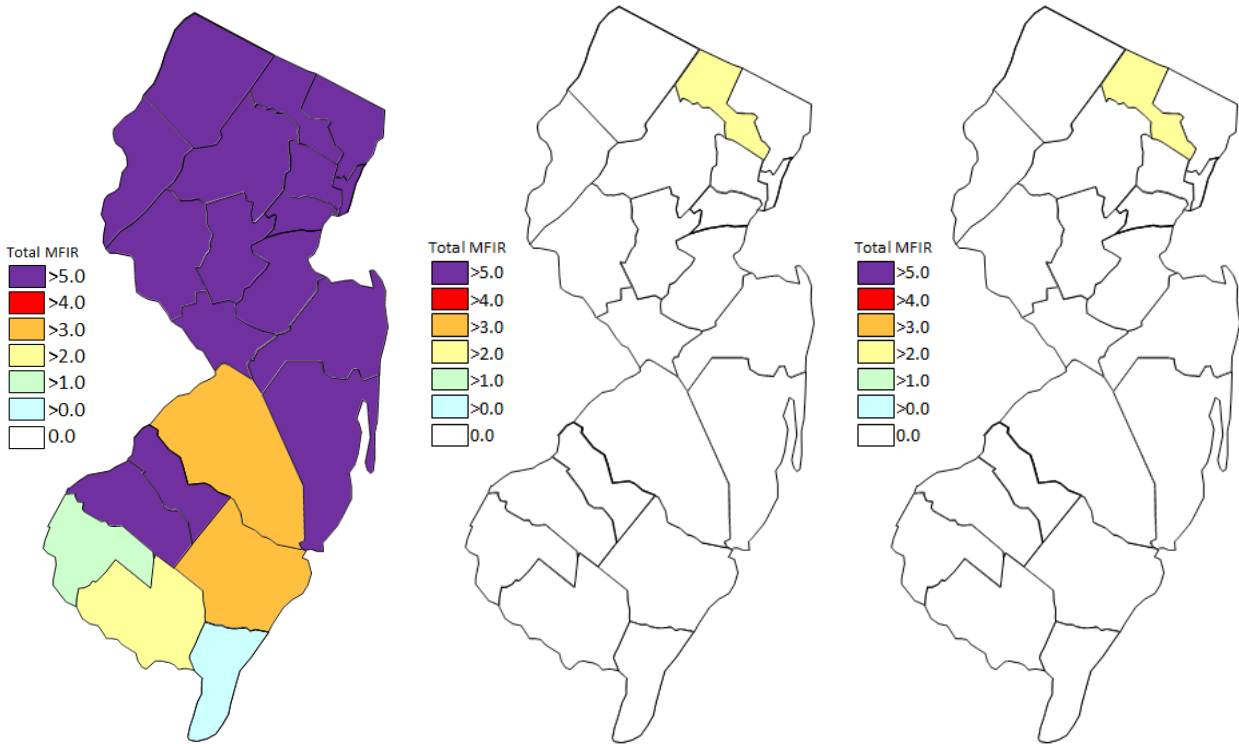
County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		99	3673		
	<i>Aedes albopictus</i>	13	61		
	<i>Aedes cantator</i>	2	112		
	<i>Aedes japonicus</i>	2	33		
	<i>Aedes sollicitans</i>	1	53		
	<i>Aedes vexans</i>	3	85		
	<i>Anopheles bradleyi</i>	2	6		
	<i>Anopheles crucians</i>	1	6		
	<i>Anopheles punctipennis</i>	1	45		
	<i>Coquillettidia perturbans</i>	10	413		
	<i>Culex spp.</i>	35	2008		
	<i>Culex pipiens</i>	1	75		
	<i>Culex restuans</i>	1	3		
	<i>Culex territans</i>	1	1		
	<i>Culiseta melanura</i>	24	622		
	<i>Psorophora ferox</i>	2	150		

Bergen	58	2800		
<i>Aedes albopictus</i>	2	14		
<i>Aedes canadensis canadensis</i>	3	11		
<i>Aedes cantator</i>	2	105		
<i>Aedes japonicus</i>	4	90		
<i>Aedes triseriatus</i>	1	3		
<i>Aedes trivittatus</i>	1	6		
<i>Coquillettidia perturbans</i>	3	37		
<i>Culex</i> spp.	37	2386		
<i>Culex salinarius</i>	3	141		
<i>Culiseta melanura</i>	1	1		
<i>Psorophora ferox</i>	1	6		
Burlington	68	3039		
<i>Aedes albopictus</i>	2	13		
<i>Aedes canadensis canadensis</i>	5	184		
<i>Aedes japonicus</i>	4	73		
<i>Aedes mitchellae</i>	1	1		
<i>Aedes triseriatus</i>	1	2		
<i>Anopheles bradleyi</i>	1	27		
<i>Coquillettidia perturbans</i>	4	300		
<i>Culex</i> spp.	33	2058		
<i>Culex salinarius</i>	6	167		
<i>Culiseta melanura</i>	11	214		
Camden	4	56		
<i>Aedes japonicus</i>	1	1		
<i>Culex</i> spp.	1	4		
<i>Culiseta melanura</i>	2	51		
Cape May	834	3093		
<i>Aedes albopictus</i>	138	281		
<i>Aedes canadensis canadensis</i>	11	15		
<i>Aedes cantator</i>	4	4		
<i>Aedes japonicus</i>	88	204		
<i>Aedes triseriatus</i>	92	156		
<i>Aedes vexans</i>	3	3		
<i>Anopheles bradleyi</i>	13	48		
<i>Anopheles punctipennis</i>	5	5		
<i>Anopheles quadrimaculatus</i>	21	266		
<i>Coquillettidia perturbans</i>	12	17		
<i>Culex</i> spp.	6	20		
<i>Culex erraticus</i>	4	6		
<i>Culex pipiens</i>	123	1225		
<i>Culex restuans</i>	173	409		
<i>Culex salinarius</i>	74	235		
<i>Culex territans</i>	11	22		
<i>Culiseta melanura</i>	54	175		
<i>Orthopodomyia signifera</i>	2	2		
Cumberland	42	405		
<i>Aedes albopictus</i>	3	16		
<i>Aedes canadensis canadensis</i>	2	51		
<i>Aedes japonicus</i>	1	10		
<i>Aedes trivittatus</i>	2	6		

<i>Aedes vexans</i>	7	38		
<i>Anopheles punctipennis</i>	4	32		
<i>Anopheles quadrimaculatus</i>	3	13		
<i>Coquillettidia perturbans</i>	3	6		
<i>Culex</i> spp.	11	184		
<i>Culiseta melanura</i>	4	47		
<i>Psorophora ferox</i>	2	2		
Essex	36	203		
<i>Aedes albopictus</i>	4	6		
<i>Aedes canadensis canadensis</i>	2	14		
<i>Aedes grossbecki</i>	5	12		
<i>Aedes japonicus</i>	4	6		
<i>Aedes triseriatus</i>	1	3		
<i>Aedes trivittatus</i>	6	116		
<i>Aedes vexans</i>	1	1		
<i>Culex</i> spp.	13	45		
Gloucester	73	2506		
<i>Aedes albopictus</i>	10	56		
<i>Aedes japonicus</i>	13	220		
<i>Culex</i> spp.	39	1995		
<i>Culex pipiens</i>	1	35		
<i>Culiseta melanura</i>	10	200		
Hudson	29	1085		
<i>Aedes triseriatus</i>	6	10		
<i>Culex</i> spp.	23	1075		
Hunterdon	52	2283		
<i>Aedes albopictus</i>	1	6		
<i>Aedes triseriatus</i>	1	3		
<i>Aedes trivittatus</i>	1	50		
<i>Aedes vexans</i>	1	7		
<i>Anopheles punctipennis</i>	1	3		
<i>Coquillettidia perturbans</i>	1	2		
<i>Culex</i> spp.	44	2200		
<i>Psorophora ferox</i>	1	11		
<i>Psorophora howardii</i>	1	1		
Mercer	103	1546		
<i>Aedes albopictus</i>	6	45		
<i>Aedes japonicus</i>	28	152		
<i>Aedes triseriatus</i>	9	35		
<i>Culex</i> spp.	60	1314		
Middlesex	41	314		
<i>Aedes albopictus</i>	1	3		
<i>Aedes japonicus</i>	2	22		
<i>Aedes triseriatus</i>	1	5		
<i>Coquillettidia perturbans</i>	1	18		
<i>Culex</i> spp.	34	250		
<i>Culiseta melanura</i>	2	16		
Monmouth	129	1321		

<i>Aedes albopictus</i>	26	107		
<i>Aedes atlanticus</i>	1	1		
<i>Aedes canadensis canadensis</i>	12	277		
<i>Aedes cantator</i>	3	27		
<i>Aedes japonicus</i>	3	7		
<i>Aedes triseriatus</i>	6	78		
<i>Aedes vexans</i>	5	35		
<i>Anopheles punctipennis</i>	7	17		
<i>Coquillettidia perturbans</i>	4	8		
<i>Culex</i> spp.	41	606		
<i>Culex erraticus</i>	1	1		
<i>Culex restuans</i>	2	2		
<i>Culex salinarius</i>	4	15		
<i>Culiseta melanura</i>	9	115		
<i>Psorophora columbiae</i>	1	17		
<i>Psorophora ferox</i>	4	8		
Morris	110	4147		
<i>Aedes canadensis canadensis</i>	8	239		
<i>Aedes japonicus</i>	5	16		
<i>Coquillettidia perturbans</i>	12	656		
<i>Culex</i> spp.	75	3123		
<i>Culiseta melanura</i>	10	113		
Ocean	93	523		
<i>Aedes albopictus</i>	17	52		
<i>Aedes canadensis canadensis</i>	6	19		
<i>Aedes cantator</i>	2	9		
<i>Aedes japonicus</i>	6	15		
<i>Aedes triseriatus</i>	1	3		
<i>Anopheles bradleyi</i>	1	1		
<i>Anopheles punctipennis</i>	2	3		
<i>Coquillettidia perturbans</i>	5	22		
<i>Culex</i> spp.	25	209		
<i>Culex erraticus</i>	2	2		
<i>Culex restuans</i>	1	1		
<i>Culex salinarius</i>	4	20		
<i>Culiseta melanura</i>	20	163		
<i>Psorophora ferox</i>	1	4		
Passaic	54	383	1	2.611
<i>Aedes albopictus</i>	1	1		
<i>Aedes canadensis canadensis</i>	2	12		
<i>Aedes japonicus</i>	17	122		
<i>Aedes triseriatus</i>	3	10	1	100.00
<i>Aedes trivittatus</i>	1	6		
<i>Coquillettidia perturbans</i>	1	8		
<i>Culex</i> spp.	26	213		
<i>Culex restuans</i>	2	8		
<i>Psorophora ferox</i>	1	3		
Salem	99	1500		
<i>Aedes albopictus</i>	16	45		
<i>Aedes japonicus</i>	15	55		
<i>Aedes triseriatus</i>	10	15		
<i>Anopheles punctipennis</i>	3	12		

<i>Anopheles quadrimaculatus</i>	4	19		
<i>Coquillettidia perturbans</i>	8	127		
<i>Culex</i> spp.	33	1190		
<i>Culex pipiens</i>	1	1		
<i>Culex restuans</i>	1	1		
<i>Culex salinarius</i>	2	4		
<i>Culiseta melanura</i>	6	31		
Somerset	55	1760		
<i>Aedes albopictus</i>	1	7		
<i>Aedes canadensis canadensis</i>	1	3		
<i>Aedes japonicus</i>	7	73		
<i>Aedes triseriatus</i>	2	4		
<i>Culex</i> spp.	44	1673		
Sussex	79	2536		
<i>Aedes abserratus</i>	13	258		
<i>Aedes aurifer</i>	1	12		
<i>Aedes canadensis canadensis</i>	11	179		
<i>Aedes provocans</i>	2	8		
<i>Aedes sticticus</i>	2	84		
<i>Aedes stimulans</i>	2	10		
<i>Aedes triseriatus</i>	6	28		
<i>Culex</i> spp.	37	1699		
<i>Culex pipiens</i>	1	75		
<i>Culex restuans</i>	2	118		
<i>Culiseta melanura</i>	2	65		
Union	27	1655		
<i>Culex</i> spp.	27	1655		
Warren	100	5312		
<i>Aedes japonicus</i>	9	149		
<i>Culex</i> spp.	91	5163		
Grand Total	2185	40140	1	0.025



Cumulative WNV activity in 2018.

WNV activity to 6 July 2019.

WNV activity last week, 2019

Beginning in 2019, viruses are tested as a panel, and so there may be results for species not normally associated with that virus. We have also begun testing for Jamestown Canyon virus.

Saint Louis Encephalitis (SLE) to 6 July 2019.

New Jersey will be primarily testing for SLE as part of a panel of arboviruses. SLE has had previous activity in New Jersey, most notably in 1964 and 1975, the latter outbreak 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 2019. No human cases have been reported.

County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		99	3673		
	<i>Aedes albopictus</i>	13	61		
	<i>Aedes cantator</i>	2	112		
	<i>Aedes japonicus</i>	2	33		
	<i>Aedes sollicitans</i>	1	53		
	<i>Aedes vexans</i>	3	85		
	<i>Anopheles bradleyi</i>	2	6		
	<i>Anopheles crucians</i>	1	6		
	<i>Anopheles punctipennis</i>	1	45		
	<i>Coquillettidia perturbans</i>	10	413		
	<i>Culex</i> spp.	35	2008		
	<i>Culex pipiens</i>	1	75		
	<i>Culex restuans</i>	1	3		
	<i>Culex territans</i>	1	1		
	<i>Culiseta melanura</i>	24	622		
	<i>Psorophora ferox</i>	2	150		
Bergen		58	2800		

	<i>Aedes albopictus</i>	2	14		
	<i>Aedes canadensis canadensis</i>	3	11		
	<i>Aedes cantator</i>	2	105		
	<i>Aedes japonicus</i>	4	90		
	<i>Aedes triseriatus</i>	1	3		
	<i>Aedes trivittatus</i>	1	6		
	<i>Coquillettidia perturbans</i>	3	37		
	<i>Culex</i> spp.	37	2386		
	<i>Culex salinarius</i>	3	141		
	<i>Culiseta melanura</i>	1	1		
	<i>Psorophora ferox</i>	1	6		
Burlington		65	2979		
	<i>Aedes albopictus</i>	1	3		
	<i>Aedes canadensis canadensis</i>	5	184		
	<i>Aedes japonicus</i>	3	25		
	<i>Aedes mitchellae</i>	1	1		
	<i>Anopheles bradleyi</i>	1	27		
	<i>Coquillettidia perturbans</i>	4	300		
	<i>Culex</i> spp.	33	2058		
	<i>Culex salinarius</i>	6	167		
	<i>Culiseta melanura</i>	11	214		
Camden		4	56		
	<i>Aedes japonicus</i>	1	1		
	<i>Culex</i> spp.	1	4		
	<i>Culiseta melanura</i>	2	51		
Cape May		640	2738		
	<i>Aedes albopictus</i>	30	65		
	<i>Aedes canadensis canadensis</i>	11	15		
	<i>Aedes cantator</i>	4	4		
	<i>Aedes japonicus</i>	85	193		
	<i>Aedes triseriatus</i>	14	33		
	<i>Aedes vexans</i>	3	3		
	<i>Anopheles bradleyi</i>	13	48		
	<i>Anopheles punctipennis</i>	4	4		
	<i>Anopheles quadrimaculatus</i>	21	266		
	<i>Coquillettidia perturbans</i>	12	17		
	<i>Culex</i> spp.	6	20		
	<i>Culex erraticus</i>	4	6		
	<i>Culex pipiens</i>	122	1224		
	<i>Culex restuans</i>	170	406		
	<i>Culex salinarius</i>	74	235		
	<i>Culex territans</i>	11	22		
	<i>Culiseta melanura</i>	54	175		
	<i>Orthopodomyia signifera</i>	2	2		
Cumberland		42	405		
	<i>Aedes albopictus</i>	3	16		
	<i>Aedes canadensis canadensis</i>	2	51		
	<i>Aedes japonicus</i>	1	10		
	<i>Aedes trivittatus</i>	2	6		
	<i>Aedes vexans</i>	7	38		
	<i>Anopheles punctipennis</i>	4	32		
	<i>Anopheles quadrimaculatus</i>	3	13		

<i>Coquillettidia perturbans</i>	3	6		
<i>Culex</i> spp.	11	184		
<i>Culiseta melanura</i>	4	47		
<i>Psorophora ferox</i>	2	2		
Essex	36	203		
<i>Aedes albopictus</i>	4	6		
<i>Aedes canadensis canadensis</i>	2	14		
<i>Aedes grossbecki</i>	5	12		
<i>Aedes japonicus</i>	4	6		
<i>Aedes triseriatus</i>	1	3		
<i>Aedes trivittatus</i>	6	116		
<i>Aedes vexans</i>	1	1		
<i>Culex</i> spp.	13	45		
Gloucester	73	2506		
<i>Aedes albopictus</i>	10	56		
<i>Aedes japonicus</i>	13	220		
<i>Culex</i> spp.	39	1995		
<i>Culex pipiens</i>	1	35		
<i>Culiseta melanura</i>	10	200		
Hudson	23	1075		
<i>Culex</i> spp.	23	1075		
Hunterdon	52	2283		
<i>Aedes albopictus</i>	1	6		
<i>Aedes triseriatus</i>	1	3		
<i>Aedes trivittatus</i>	1	50		
<i>Aedes vexans</i>	1	7		
<i>Anopheles punctipennis</i>	1	3		
<i>Coquillettidia perturbans</i>	1	2		
<i>Culex</i> spp.	44	2200		
<i>Psorophora ferox</i>	1	11		
<i>Psorophora howardii</i>	1	1		
Mercer	94	1511		
<i>Aedes albopictus</i>	6	45		
<i>Aedes japonicus</i>	28	152		
<i>Culex</i> spp.	60	1314		
Middlesex	41	314		
<i>Aedes albopictus</i>	1	3		
<i>Aedes japonicus</i>	2	22		
<i>Aedes triseriatus</i>	1	5		
<i>Coquillettidia perturbans</i>	1	18		
<i>Culex</i> spp.	34	250		
<i>Culiseta melanura</i>	2	16		
Monmouth	124	1245		
<i>Aedes albopictus</i>	26	107		
<i>Aedes atlanticus</i>	1	1		
<i>Aedes canadensis canadensis</i>	12	277		
<i>Aedes cantator</i>	3	27		
<i>Aedes japonicus</i>	3	7		

	<i>Aedes triseriatus</i>	1	2		
	<i>Aedes vexans</i>	5	35		
	<i>Anopheles punctipennis</i>	7	17		
	<i>Coquillettidia perturbans</i>	4	8		
	<i>Culex</i> spp.	41	606		
	<i>Culex erraticus</i>	1	1		
	<i>Culex restuans</i>	2	2		
	<i>Culex salinarius</i>	4	15		
	<i>Culiseta melanura</i>	9	115		
	<i>Psorophora columbiae</i>	1	17		
	<i>Psorophora ferox</i>	4	8		
Morris		110	4147		
	<i>Aedes canadensis canadensis</i>	8	239		
	<i>Aedes japonicus</i>	5	16		
	<i>Coquillettidia perturbans</i>	12	656		
	<i>Culex</i> spp.	75	3123		
	<i>Culiseta melanura</i>	10	113		
Ocean		93	523		
	<i>Aedes albopictus</i>	17	52		
	<i>Aedes canadensis canadensis</i>	6	19		
	<i>Aedes cantator</i>	2	9		
	<i>Aedes japonicus</i>	6	15		
	<i>Aedes triseriatus</i>	1	3		
	<i>Anopheles bradleyi</i>	1	1		
	<i>Anopheles punctipennis</i>	2	3		
	<i>Coquillettidia perturbans</i>	5	22		
	<i>Culex</i> spp.	25	209		
	<i>Culex erraticus</i>	2	2		
	<i>Culex restuans</i>	1	1		
	<i>Culex salinarius</i>	4	20		
	<i>Culiseta melanura</i>	20	163		
	<i>Psorophora ferox</i>	1	4		
Passaic		55	390		
	<i>Aedes albopictus</i>	1	1		
	<i>Aedes canadensis canadensis</i>	2	12		
	<i>Aedes japonicus</i>	17	122		
	<i>Aedes triseriatus</i>	4	17		
	<i>Aedes trivittatus</i>	1	6		
	<i>Coquillettidia perturbans</i>	1	8		
	<i>Culex</i> spp.	26	213		
	<i>Culex restuans</i>	2	8		
	<i>Psorophora ferox</i>	1	3		
Salem		91	1487		
	<i>Aedes albopictus</i>	16	45		
	<i>Aedes japonicus</i>	15	55		
	<i>Aedes triseriatus</i>	2	2		
	<i>Anopheles punctipennis</i>	3	12		
	<i>Anopheles quadrimaculatus</i>	4	19		
	<i>Coquillettidia perturbans</i>	8	127		
	<i>Culex</i> spp.	33	1190		
	<i>Culex pipiens</i>	1	1		
	<i>Culex restuans</i>	1	1		

	<i>Culex salinarius</i>	2	4		
	<i>Culiseta melanura</i>	6	31		
Somerset		55	1760		
	<i>Aedes albopictus</i>	1	7		
	<i>Aedes canadensis canadensis</i>	1	3		
	<i>Aedes japonicus</i>	7	73		
	<i>Aedes triseriatus</i>	2	4		
	<i>Culex</i> spp.	44	1673		
Sussex		73	2508		
	<i>Aedes abserratus</i>	13	258		
	<i>Aedes aurifer</i>	1	12		
	<i>Aedes canadensis canadensis</i>	11	179		
	<i>Aedes provocans</i>	2	8		
	<i>Aedes sticticus</i>	2	84		
	<i>Aedes stimulans</i>	2	10		
	<i>Culex</i> spp.	37	1699		
	<i>Culex pipiens</i>	1	75		
	<i>Culex restuans</i>	2	118		
	<i>Culiseta melanura</i>	2	65		
Union		27	1655		
	<i>Culex</i> spp.	27	1655		
Warren		100	5312		
	<i>Aedes japonicus</i>	9	149		
	<i>Culex</i> spp.	91	5163		
Grand Total		1955	39570		

La Crosse Encephalitis (LAC) to 6 July 2019.

New Jersey will be testing for LAC as part of a panel. New Jersey has had 3 cases of this encephalitic disease since 1964. 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).

One pool of *Aedes triseriatus* has been detected infected with LAC, collected 31 May in Passaic County. This pool was also reported co-infected with WNV. No human cases have been reported.

County	Species	Pools	Mosquitoes	Positives	MFIR
Bergen		3	33		
	<i>Aedes canadensis canadensis</i>	1	3		
	<i>Aedes japonicus</i>	1	27		
	<i>Aedes triseriatus</i>	1	3		
Burlington		3	60		
	<i>Aedes albopictus</i>	1	10		
	<i>Aedes japonicus</i>	1	48		

	<i>Aedes triseriatus</i>	1	2		
Cape May		83	136		
	<i>Aedes japonicus</i>	3	11		
	<i>Aedes triseriatus</i>	77	122		
	<i>Anopheles punctipennis</i>	1	1		
	<i>Culex restuans</i>	2	2		
Essex		1	3		
	<i>Aedes triseriatus</i>	1	3		
Hudson		6	10		
	<i>Aedes triseriatus</i>	6	10		
Mercer		9	35		
	<i>Aedes triseriatus</i>	9	35		
Monmouth		5	76		
	<i>Aedes triseriatus</i>	5	76		
Passaic		4	18	1	55.556
	<i>Aedes canadensis canadensis</i>	1	8		
	<i>Aedes triseriatus</i>	3	10	1	100.00
Salem		8	13		
	<i>Aedes triseriatus</i>	8	13		
Sussex		6	28		
	<i>Aedes triseriatus</i>	6	28		
Grand Total		128	412	1	2.427

Dengue (DENV) to 6 July 2019.

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.

Negative pools are reported without reference to the 4 serotypes. Positive pools will refer to the serotypes.

No pools of Dengue have been found positive in 2019. There are currently 10 travel-related human cases in NJ.

County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		13	61		
	<i>Aedes albopictus</i>	13	61		
Middlesex		1	3		
	<i>Aedes albopictus</i>	1	3		
Grand Total		14	64		

Chikungunya (CHIK) to 6 July 2019.

Mosquitoes will be tested for CHIK as part of a panel. 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 found positive in 2019. There are currently 3 travel-related human cases in NJ.

County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		13	61		
	<i>Aedes albopictus</i>	13	61		
Cape May		111	219		
	<i>Aedes albopictus</i>	108	216		
	<i>Aedes triseriatus</i>	1	1		
	<i>Culex pipiens</i>	1	1		
	<i>Culex restuans</i>	1	1		
Middlesex		1	3		
	<i>Aedes albopictus</i>	1	3		
Grand Total		125	283		

Zika (ZIKV) to 6 July 2019.

Mosquitoes will be tested for ZIKV as part of a panel. 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 of ZIKV have tested positive in 2019. There are currently 4 travel-related human cases in NJ.

County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		13	61		
	<i>Aedes albopictus</i>	13	61		
Cape May		111	219		
	<i>Aedes albopictus</i>	108	216		
	<i>Aedes triseriatus</i>	1	1		
	<i>Culex pipiens</i>	1	1		
	<i>Culex restuans</i>	1	1		
Middlesex		1	3		
	<i>Aedes albopictus</i>	1	3		
Grand Total		125	283		

Jamestown Canyon (JCV) to 6 July 2019.

New Jersey will begin testing for JCV this year. Jamestown Canyon is a native arboviral threat with fever and meningitis or meningoencephalitis consequences. JCV is an orthobunyavirus with a number of potential mosquito vectors, including *Aedes*, *Coquillettidia*, and *Culex* species.

Two pools of positive mosquitoes have been detected. One pool of *Aedes abserratus* in Sussex County and one pool of *Aedes cantator* collected in Bergen County have been found positive in 2019. The Sussex pool was collected 5 June 2019 and the Bergen pool was collected on 22 June. *Ae. abserratus* is a deer-feeding species that has been found positive in Connecticut and implicated as a potential vector (Theodore G. Andreadis, John F.

Anderson, Philip M. Armstrong, and Andrew J. Main. Vector-Borne and Zoonotic Diseases. Apr 2008. <http://doi.org/10.1089/vbz.2007.0169>). *Ae.*

cantator tends to feed on human-associated species and likely plays little if any role in the transmission of JCV. There are currently 0 human cases in NJ.

County	Species	Pools	Mosquitoes	Positives	MFIR
Atlantic		99	3673		
	<i>Aedes albopictus</i>	13	61		
	<i>Aedes cantator</i>	2	112		
	<i>Aedes japonicus</i>	2	33		
	<i>Aedes sollicitans</i>	1	53		
	<i>Aedes vexans</i>	3	85		
	<i>Anopheles bradleyi</i>	2	6		
	<i>Anopheles crucians</i>	1	6		
	<i>Anopheles punctipennis</i>	1	45		
	<i>Coquillettidia perturbans</i>	10	413		
	<i>Culex</i> spp.	35	2008		
	<i>Culex pipiens</i>	1	75		
	<i>Culex restuans</i>	1	3		
	<i>Culex territans</i>	1	1		
	<i>Culiseta melanura</i>	24	622		
	<i>Psorophora ferox</i>	2	150		
Bergen		58	2800	1	0.357
	<i>Aedes albopictus</i>	2	14		
	<i>Aedes canadensis canadensis</i>	3	11		
	<i>Aedes cantator</i>	2	105	1	9.524
	<i>Aedes japonicus</i>	4	90		
	<i>Aedes triseriatus</i>	1	3		
	<i>Aedes trivittatus</i>	1	6		
	<i>Coquillettidia perturbans</i>	3	37		
	<i>Culex</i> spp.	37	2386		
	<i>Culex salinarius</i>	3	141		
	<i>Culiseta melanura</i>	1	1		
	<i>Psorophora ferox</i>	1	6		
Burlington		65	2979		
	<i>Aedes albopictus</i>	1	3		
	<i>Aedes canadensis canadensis</i>	5	184		
	<i>Aedes japonicus</i>	3	25		
	<i>Aedes mitchellae</i>	1	1		
	<i>Anopheles bradleyi</i>	1	27		
	<i>Coquillettidia perturbans</i>	4	300		
	<i>Culex</i> spp.	33	2058		
	<i>Culex salinarius</i>	6	167		
	<i>Culiseta melanura</i>	11	214		
Camden		2	5		
	<i>Aedes japonicus</i>	1	1		
	<i>Culex</i> spp.	1	4		
Cape May		21	33		
	<i>Aedes triseriatus</i>	21	33		
Cumberland		42	405		
	<i>Aedes albopictus</i>	3	16		
	<i>Aedes canadensis canadensis</i>	2	51		

	<i>Aedes japonicus</i>	1	10		
	<i>Aedes trivittatus</i>	2	6		
	<i>Aedes vexans</i>	7	38		
	<i>Anopheles punctipennis</i>	4	32		
	<i>Anopheles quadrimaculatus</i>	3	13		
	<i>Coquillettidia perturbans</i>	3	6		
	<i>Culex</i> spp.	11	184		
	<i>Culiseta melanura</i>	4	47		
	<i>Psorophora ferox</i>	2	2		
Essex		36	203		
	<i>Aedes albopictus</i>	4	6		
	<i>Aedes canadensis canadensis</i>	2	14		
	<i>Aedes grossbecki</i>	5	12		
	<i>Aedes japonicus</i>	4	6		
	<i>Aedes triseriatus</i>	1	3		
	<i>Aedes trivittatus</i>	6	116		
	<i>Aedes vexans</i>	1	1		
	<i>Culex</i> spp.	13	45		
Gloucester		72	2475		
	<i>Aedes albopictus</i>	10	56		
	<i>Aedes japonicus</i>	13	220		
	<i>Culex</i> spp.	39	1995		
	<i>Culex pipiens</i>	1	35		
	<i>Culiseta melanura</i>	9	169		
Hudson		23	1075		
	<i>Culex</i> spp.	23	1075		
Hunterdon		52	2283		
	<i>Aedes albopictus</i>	1	6		
	<i>Aedes triseriatus</i>	1	3		
	<i>Aedes trivittatus</i>	1	50		
	<i>Aedes vexans</i>	1	7		
	<i>Anopheles punctipennis</i>	1	3		
	<i>Coquillettidia perturbans</i>	1	2		
	<i>Culex</i> spp.	44	2200		
	<i>Psorophora ferox</i>	1	11		
	<i>Psorophora howardii</i>	1	1		
Mercer		94	1511		
	<i>Aedes albopictus</i>	6	45		
	<i>Aedes japonicus</i>	28	152		
	<i>Culex</i> spp.	60	1314		
Middlesex		41	314		
	<i>Aedes albopictus</i>	1	3		
	<i>Aedes japonicus</i>	2	22		
	<i>Aedes triseriatus</i>	1	5		
	<i>Coquillettidia perturbans</i>	1	18		
	<i>Culex</i> spp.	34	250		
	<i>Culiseta melanura</i>	2	16		
Monmouth		124	1245		

<i>Aedes albopictus</i>	26	107		
<i>Aedes atlanticus</i>	1	1		
<i>Aedes canadensis canadensis</i>	12	277		
<i>Aedes cantator</i>	3	27		
<i>Aedes japonicus</i>	3	7		
<i>Aedes triseriatus</i>	1	2		
<i>Aedes vexans</i>	5	35		
<i>Anopheles punctipennis</i>	7	17		
<i>Coquillettidia perturbans</i>	4	8		
<i>Culex</i> spp.	41	606		
<i>Culex erraticus</i>	1	1		
<i>Culex restuans</i>	2	2		
<i>Culex salinarius</i>	4	15		
<i>Culiseta melanura</i>	9	115		
<i>Psorophora columbiae</i>	1	17		
<i>Psorophora ferox</i>	4	8		
Morris	110	4147		
<i>Aedes canadensis canadensis</i>	8	239		
<i>Aedes japonicus</i>	5	16		
<i>Coquillettidia perturbans</i>	12	656		
<i>Culex</i> spp.	75	3123		
<i>Culiseta melanura</i>	10	113		
Ocean	93	523		
<i>Aedes albopictus</i>	17	52		
<i>Aedes canadensis canadensis</i>	6	19		
<i>Aedes cantator</i>	2	9		
<i>Aedes japonicus</i>	6	15		
<i>Aedes triseriatus</i>	1	3		
<i>Anopheles bradleyi</i>	1	1		
<i>Anopheles punctipennis</i>	2	3		
<i>Coquillettidia perturbans</i>	5	22		
<i>Culex</i> spp.	25	209		
<i>Culex erraticus</i>	2	2		
<i>Culex restuans</i>	1	1		
<i>Culex salinarius</i>	4	20		
<i>Culiseta melanura</i>	20	163		
<i>Psorophora ferox</i>	1	4		
Passaic	55	390		
<i>Aedes albopictus</i>	1	1		
<i>Aedes canadensis canadensis</i>	2	12		
<i>Aedes japonicus</i>	17	122		
<i>Aedes triseriatus</i>	4	17		
<i>Aedes trivittatus</i>	1	6		
<i>Coquillettidia perturbans</i>	1	8		
<i>Culex</i> spp.	26	213		
<i>Culex restuans</i>	2	8		
<i>Psorophora ferox</i>	1	3		
Salem	90	1461		
<i>Aedes albopictus</i>	16	45		
<i>Aedes japonicus</i>	15	55		
<i>Aedes triseriatus</i>	2	2		
<i>Anopheles punctipennis</i>	3	12		

	<i>Anopheles quadrimaculatus</i>	4	19		
	<i>Coquillettidia perturbans</i>	8	127		
	<i>Culex</i> spp.	33	1190		
	<i>Culex pipiens</i>	1	1		
	<i>Culex restuans</i>	1	1		
	<i>Culex salinarius</i>	2	4		
	<i>Culiseta melanura</i>	5	5		
Somerset		55	1760		
	<i>Aedes albopictus</i>	1	7		
	<i>Aedes canadensis canadensis</i>	1	3		
	<i>Aedes japonicus</i>	7	73		
	<i>Aedes triseriatus</i>	2	4		
	<i>Culex</i> spp.	44	1673		
Sussex		73	2508	1	0.399
	<i>Aedes abserratus</i>	13	258	1	3.876
	<i>Aedes aurifer</i>	1	12		
	<i>Aedes canadensis canadensis</i>	11	179		
	<i>Aedes provocans</i>	2	8		
	<i>Aedes sticticus</i>	2	84		
	<i>Aedes stimulans</i>	2	10		
	<i>Anopheles punctipennis</i>	37	1699		
	<i>Culex</i> spp.	1	75		
	<i>Culex restuans</i>	2	118		
	<i>Culiseta melanura</i>	2	65		
Union		27	1655		
	<i>Culex</i> spp.	27	1655		
Warren		100	5312		
	<i>Aedes japonicus</i>	9	149		
	<i>Culex</i> spp.	91	5163		
Grand Total		1332	36757	2	0.054