

# VECTOR SURVEILLANCE IN NEW JERSEY

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

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 Data download 1:00 pm 22 June



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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	0.09	0.20	3 (4)	1		
Green Bank (Burlington Co.)/25	Coastal	0.92	0.44	11 (13)	1		
Corbin City (Atlantic Co.)/25	Coastal	0.98	0.52	24	3		
Dennisville (Cape May Co.)/50	Coastal	2.59	0.00	26	2		
Winslow (Camden Co.)/50	Inland	3.14	nc	–	–		
Centerton (Salem Co.)/50	Inland	1.56	nc	–	–		
Turkey Swamp (Monmouth Co.)/50	Inland	0.44	0.38	69	6		
Glassboro (Gloucester Co.)/50	Inland	0.41	nc	–	–		

\*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, 1,067 *Cs. melanura* from 95 pools have been tested, with no positive pools detected for an overall *Cs. melanura* MFIR of 0.0. 21,020 specimens in 995 pools from 28 other species have also been tested, with no positives detected. Overall MFIR for all species statewide is 0.0.

**Traditional Resting Box Sites:** 124 *Cs. melanura* from 13 pools have been tested, with no positive pools detected. An additional 11 *Cs. melanura* in two pools are at labs to be tested.

		<b>Additional <i>Cs. melanura</i> trapped by counties</b> *traps with positives indicated in <b>BOLD UNDERLINED.</b>			
<b>County</b>	<b>Trap types*</b>	<b>Pools</b>	<b>Mosquitoes</b>	<b>Positives</b>	<b>MFIR</b>
Atlantic	BGS, CO <sub>2</sub> , RB	13	354		
Bergen	RB	1	1		
Burlington	ULVT	5	142		
Cape May	GR, RB	28	99		
Cumberland	AGO, RB	3	46		
Gloucester	RB	9	169		
Middlesex	RB	2	16		
Monmouth	Other	1	1		
Morris	RB	2	7		
Ocean	CO <sub>2</sub> , GR, RB	13	86		
Salem	CO <sub>2</sub> , RB	4	4		
Sussex	CO <sub>2</sub>	1	18		
<b>TOTAL</b>		<b>82</b>	<b>943</b>		

**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:** There have not been any reports of human illness. 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](http://www.aaep.org/vaccination_guidelines.htm)

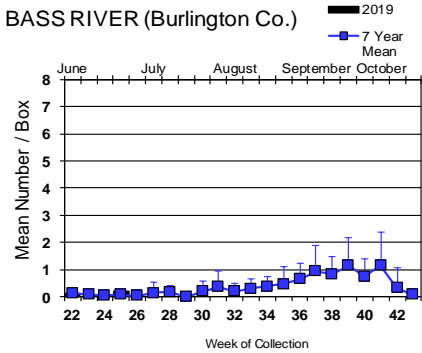
**Additional Species:** 28 additional species were tested for EEE. No positives were detected.

<b>Species other than <i>Cs. melanura</i></b>	<b>Pools</b>	<b>Mosquitoes</b>	<b>Positives</b>	<b>MFIR</b>
<i>Aedes abserratus</i>	9	249		
<i>Aedes albopictus</i>	77	244		
<i>Aedes atlanticus</i>	1	1		
<i>Aedes aurifer</i>	1	12		
<i>Aedes canadensis canadensis</i>	39	502		
<i>Aedes cantator</i>	11	206		
<i>Aedes grossbecki</i>	5	12		
<i>Aedes japonicus</i>	117	654		
<i>Aedes mitchellae</i>	1	1		
<i>Aedes provocans</i>	2	8		
<i>Aedes sollicitans</i>	1	53		
<i>Aedes sticticus</i>	1	46		
<i>Aedes stimulans</i>	2	10		
<i>Aedes triseriatus</i>	11	32		
<i>Aedes trivittatus</i>	11	184		
<i>Aedes vexans</i>	10	46		
<i>Anopheles bradleyi</i>	6	48		
<i>Anopheles crucians</i>	1	6		
<i>Anopheles punctipennis</i>	14	52		
<i>Anopheles quadrimaculatus</i>	15	179		
<i>Coquillettidia perturbans</i>	44	1253		
<i>Culex Mix</i>	426	16314		
<i>Culex erraticus</i>	5	6		
<i>Culex pipiens</i>	43	460		
<i>Culex restuans</i>	95	236		
<i>Culex salinarius</i>	36	176		
<i>Culex territans</i>	5	7		
<i>Psorophora ferox</i>	5	22		
<i>Psorophora howardii</i>	1	1		
<b>State Total</b>	<b>995</b>	<b>21020</b>		

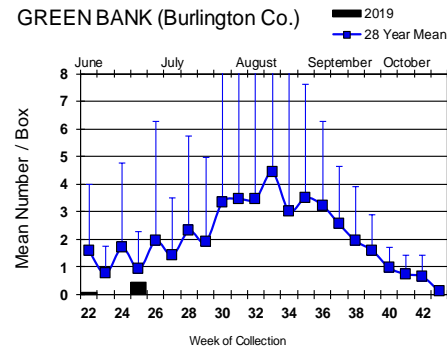
# Culiseta melanura Populations

## Coastal

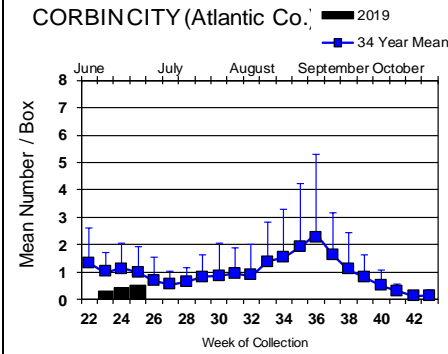
BASS RIVER (Burlington Co.)



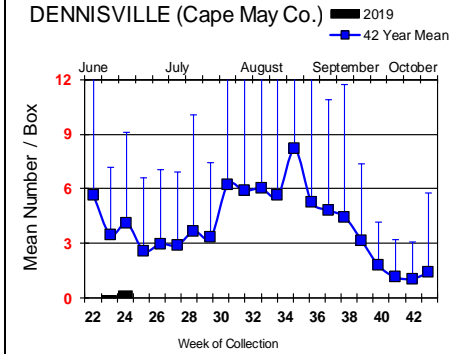
GREEN BANK (Burlington Co.)



CORBINCITY (Atlantic Co.)

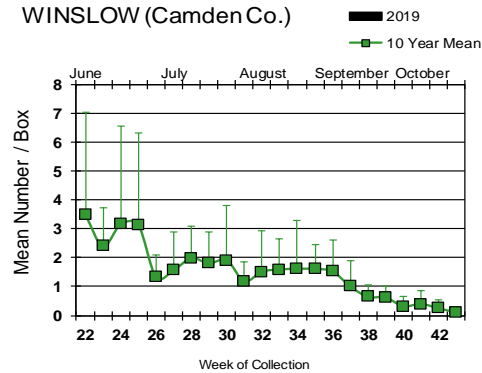


DENNISVILLE (Cape May Co.)

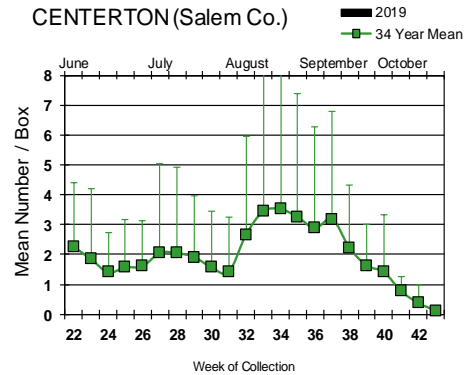


## Inland

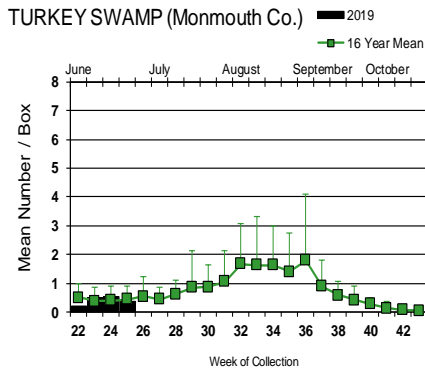
WINSLOW (Camden Co.)



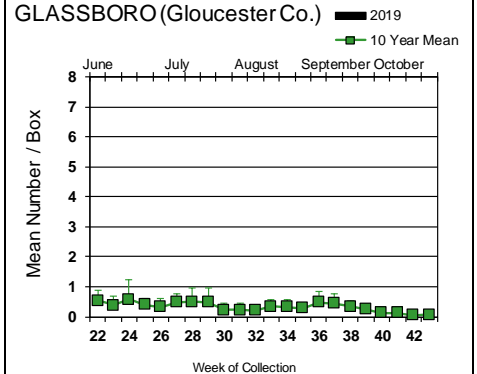
CENTERTON (Salem Co.)





TURKEY SWAMP (Monmouth Co.)



GLASSBORO (Gloucester Co.)



Resting boxes were put out at the Centerton, Glassboro, and Winslow site on 3 Jun and collections not yet begun. 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:** 15 (FL) 1 (GA)
- **mosquito pools:**
- **sentinel:** 37(+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	9/183	0	0/1	2/10
Arkansas					
California	1/5	3/220	0	0	0
Colorado					
Connecticut		0		0	0
Delaware					
DC					
Florida			13	1	
Georgia					
Hawaii					
Idaho	0	0/1		0	0
Illinois	0/2	10/39		0	0
Indiana	0	0/1		0	0
Iowa					
Kansas					0
Kentucky					
Louisiana					
Maine					
Maryland(+DC)					
Mass.		0		0	0
Michigan	0/1	0/2			
Minnesota					
Mississippi		1			0
Missouri		0		0	0

	Birds	Mosquito Pools	Sentinels	Horses*	Humans
Montana					
Nebraska	0	0		0	0
Nevada					
New Hampshire					
New Jersey		0/1		0	0
New Mexico					0
New York					
North Carolina					
North Dakota	0	0		0	0
Ohio		0/2			
Oklahoma					
Oregon	0	0	0	0	0
Pennsylvania					
Rhode Island					
South Carolina					
South Dakota					
Tennessee					
Texas		6/10			
Utah					
Vermont					
Virginia					
Washington	0	0		0	0
West Virginia					
Wisconsin	0	0		0	0
Wyoming	0	0/1		0	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 22 June 2019

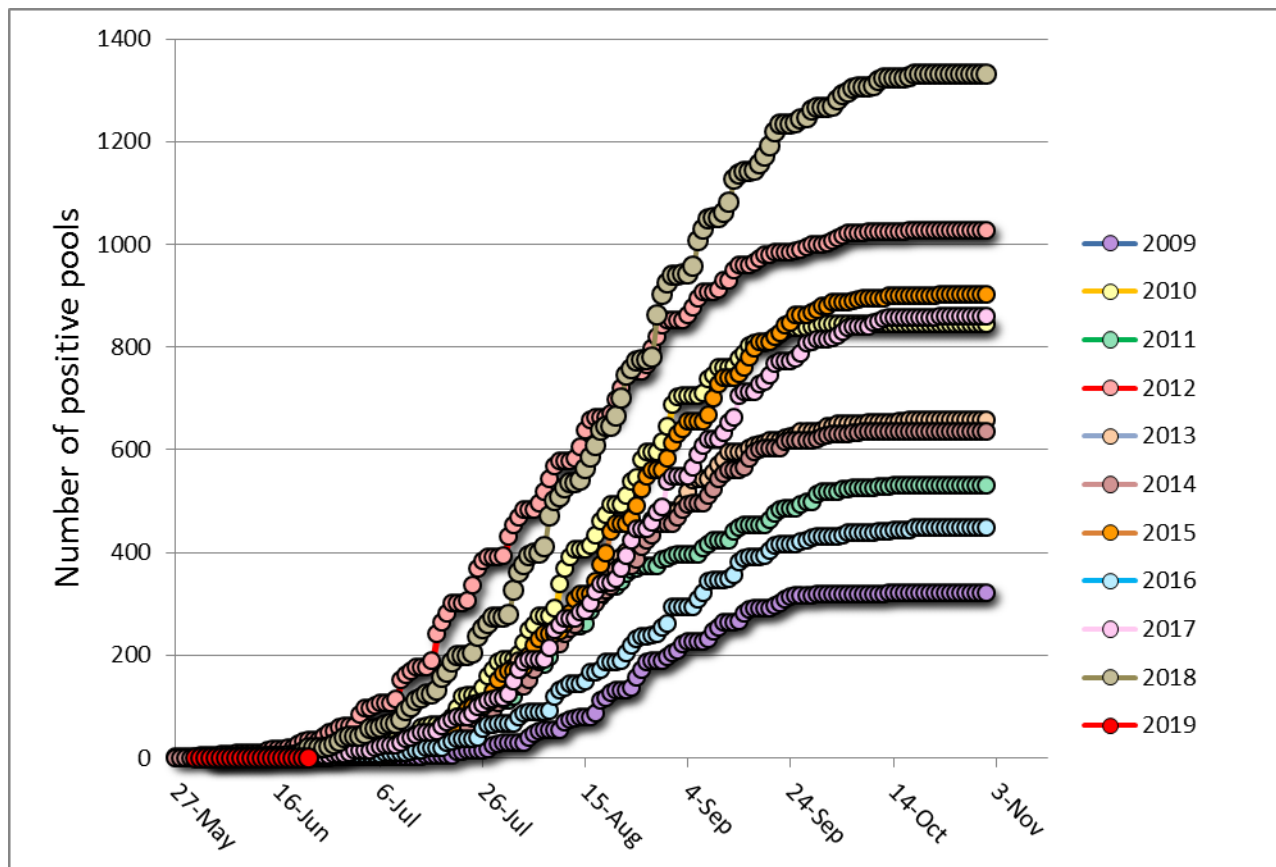
Species	Pools	Mosquitoes	Positives	MFIR
<i>Aedes abserratus</i>	9	249		
<i>Aedes albopictus</i>	124	328		
<i>Aedes atlanticus</i>	1	1		
<i>Aedes aurifer</i>	1	12		
<i>Aedes canadensis canadensis</i>	39	502		
<i>Aedes cantator</i>	11	206		
<i>Aedes grossbecki</i>	5	12		
<i>Aedes japonicus</i>	117	654		
<i>Aedes mitchellae</i>	1	1		
<i>Aedes provocans</i>	2	8		
<i>Aedes sollicitans</i>	1	53		
<i>Aedes sticticus</i>	1	46		
<i>Aedes stimulans</i>	2	10		
<i>Aedes triseriatus</i>	64	127	1	7.874
<i>Aedes trivittatus</i>	11	184		
<i>Aedes vexans</i>	10	46		
<i>Anopheles bradleyi</i>	6	48		
<i>Anopheles crucians</i>	1	6		
<i>Anopheles punctipennis</i>	14	52		
<i>Anopheles quadrimaculatus</i>	15	179		
<i>Coquillettidia perturbans</i>	44	1253		
<i>Culex</i> spp.	426	16314		
<i>Culex erraticus</i>	5	6		
<i>Culex pipiens</i>	43	460		
<i>Culex restuans</i>	95	236		
<i>Culex salinarius</i>	36	176		
<i>Culex territans</i>	5	7		
<i>Culiseta melanura</i>	92	1062		
<i>Psorophora ferox</i>	5	22		
<i>Psorophora howardii</i>	1	1		
<b>Grand Total</b>	<b>1187</b>	<b>22261</b>	<b>1</b>	<b>0.045</b>

**Remarks:** To date, 1,187 pools of 22,261 mosquitoes from 29 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 is ahead of last year's start date (a continuing trend we've been observing over the past decade). 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 0.045.

**Humans, Horses and Wild Birds:** Currently, there are no reported human cases of WNV. 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 22 June 2019.

County	Species	Pools	Mosquitoes	Positives	MFIR
<b>Atlantic</b>		<b>52</b>	<b>1709</b>		
	<i>Aedes albopictus</i>	8	25		
	<i>Aedes cantator</i>	2	112		
	<i>Aedes sollicitans</i>	1	53		
	<i>Anopheles bradleyi</i>	1	5		
	<i>Anopheles crucians</i>	1	6		
	<i>Coquillettidia perturbans</i>	7	319		
	<i>Culex</i> spp.	15	736		
	<i>Culex pipiens</i>	1	75		
	<i>Culex restuans</i>	1	3		
	<i>Culiseta melanura</i>	15	375		
<b>Bergen</b>		<b>38</b>	<b>1824</b>		
	<i>Aedes canadensis canadensis</i>	2	7		
	<i>Aedes cantator</i>	1	55		
	<i>Aedes japonicus</i>	2	35		
	<i>Aedes triseriatus</i>	1	3		
	<i>Aedes trivittatus</i>	1	6		
	<i>Coquillettidia perturbans</i>	2	34		
	<i>Culex</i> spp.	26	1658		
	<i>Culex salinarius</i>	1	19		
	<i>Culiseta melanura</i>	1	1		
	<i>Psorophora ferox</i>	1	6		

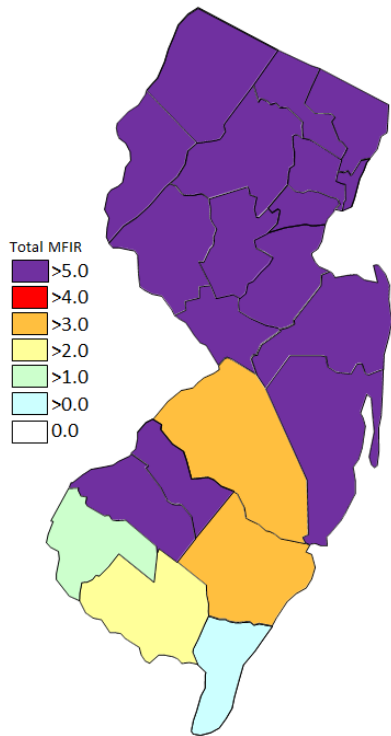
<b>Burlington</b>	<b>43</b>	<b>1843</b>		
<i>Aedes albopictus</i>	1	3		
<i>Aedes canadensis canadensis</i>	4	168		
<i>Aedes japonicus</i>	2	12		
<i>Aedes mitchellae</i>	1	1		
<i>Anopheles bradleyi</i>	1	27		
<i>Coquillettidia perturbans</i>	4	300		
<i>Culex</i> spp.	19	1107		
<i>Culex salinarius</i>	4	78		
<i>Culiseta melanura</i>	7	147		
<b>Cape May</b>	<b>361</b>	<b>1229</b>		
<i>Aedes albopictus</i>	52	94		
<i>Aedes canadensis canadensis</i>	9	12		
<i>Aedes cantator</i>	3	3		
<i>Aedes japonicus</i>	43	114		
<i>Aedes triseriatus</i>	40	65		
<i>Anopheles bradleyi</i>	3	15		
<i>Anopheles punctipennis</i>	3	3		
<i>Anopheles quadrimaculatus</i>	11	155		
<i>Coquillettidia perturbans</i>	7	9		
<i>Culex erraticus</i>	3	4		
<i>Culex pipiens</i>	41	350		
<i>Culex restuans</i>	89	222		
<i>Culex salinarius</i>	22	51		
<i>Culex territans</i>	5	7		
<i>Culiseta melanura</i>	30	125		
<b>Cumberland</b>	<b>33</b>	<b>332</b>		
<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>	5	30		
<i>Anopheles punctipennis</i>	3	31		
<i>Anopheles quadrimaculatus</i>	1	11		
<i>Coquillettidia perturbans</i>	3	6		
<i>Culex</i> spp.	8	123		
<i>Culiseta melanura</i>	3	46		
<i>Psorophora ferox</i>	2	2		
<b>Essex</b>	<b>36</b>	<b>203</b>		
<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		
<b>Gloucester</b>	<b>59</b>	<b>1914</b>		
<i>Aedes albopictus</i>	8	29		
<i>Aedes japonicus</i>	10	145		



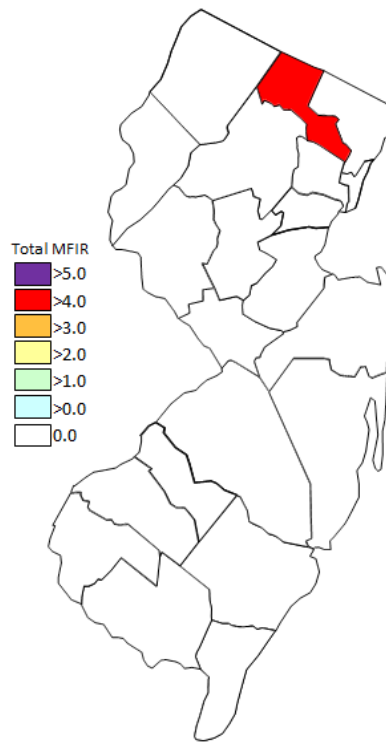
	<i>Culex</i> spp.	31	1536		
	<i>Culex pipiens</i>	1	35		
	<i>Culiseta melanura</i>	9	169		
<b>Hudson</b>		<b>18</b>	<b>731</b>		
	<i>Aedes triseriatus</i>	4	7		
	<i>Culex</i> spp.	14	724		
<b>Hunterdon</b>		<b>14</b>	<b>383</b>		
	<i>Aedes albopictus</i>	1	6		
	<i>Aedes triseriatus</i>	1	3		
	<i>Aedes 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.	6	300		
	<i>Psorophora ferox</i>	1	11		
	<i>Psorophora howardii</i>	1	1		
<b>Mercer</b>		<b>60</b>	<b>1004</b>		
	<i>Aedes albopictus</i>	1	1		
	<i>Aedes japonicus</i>	20	94		
	<i>Aedes triseriatus</i>	1	7		
	<i>Culex</i> spp.	38	902		
<b>Middlesex</b>		<b>29</b>	<b>228</b>		
	<i>Aedes albopictus</i>	1	3		
	<i>Coquillettidia perturbans</i>	1	18		
	<i>Culex</i> spp.	25	191		
	<i>Culiseta melanura</i>	2	16		
<b>Monmouth</b>		<b>81</b>	<b>477</b>		
	<i>Aedes albopictus</i>	23	91		
	<i>Aedes atlanticus</i>	1	1		
	<i>Aedes canadensis canadensis</i>	8	139		
	<i>Aedes cantator</i>	3	27		
	<i>Aedes japonicus</i>	1	3		
	<i>Aedes triseriatus</i>	3	9		
	<i>Aedes vexans</i>	3	8		
	<i>Anopheles punctipennis</i>	4	6		
	<i>Coquillettidia perturbans</i>	2	3		
	<i>Culex</i> spp.	21	104		
	<i>Culex erraticus</i>	1	1		
	<i>Culex restuans</i>	2	2		
	<i>Culex salinarius</i>	4	15		
	<i>Culiseta melanura</i>	5	68		
<b>Morris</b>		<b>60</b>	<b>2095</b>		
	<i>Aedes japonicus</i>	5	16		
	<i>Coquillettidia perturbans</i>	7	426		
	<i>Culex</i> spp.	46	1646		
	<i>Culiseta melanura</i>	2	7		
<b>Ocean</b>		<b>55</b>	<b>293</b>		
	<i>Aedes albopictus</i>	9	16		

<i>Aedes canadensis canadensis</i>	4	9		
<i>Aedes cantator</i>	2	9		
<i>Aedes japonicus</i>	4	7		
<i>Anopheles bradleyi</i>	1	1		
<i>Anopheles punctipennis</i>	1	1		
<i>Coquillettidia perturbans</i>	1	1		
<i>Culex</i> spp.	15	152		
<i>Culex erraticus</i>	1	1		
<i>Culex restuans</i>	1	1		
<i>Culex salinarius</i>	3	9		
<i>Culiseta melanura</i>	13	86		
<b>Passaic</b>	<b>34</b>	<b>225</b>	<b>1</b>	<b>4.444</b>
<i>Aedes albopictus</i>	1	1		
<i>Aedes canadensis canadensis</i>	2	12		
<i>Aedes japonicus</i>	9	66		
<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.	14	111		
<i>Culex restuans</i>	2	8		
<i>Psorophora ferox</i>	1	3		
<b>Salem</b>	<b>73</b>	<b>1331</b>		
<i>Aedes albopictus</i>	12	37		
<i>Aedes japonicus</i>	8	29		
<i>Aedes triseriatus</i>	7	12		
<i>Anopheles punctipennis</i>	2	8		
<i>Anopheles quadrimaculatus</i>	3	13		
<i>Coquillettidia perturbans</i>	8	127		
<i>Culex</i> spp.	27	1097		
<i>Culex salinarius</i>	2	4		
<i>Culiseta melanura</i>	4	4		
<b>Somerset</b>	<b>25</b>	<b>847</b>		
<i>Aedes canadensis canadensis</i>	1	3		
<i>Aedes japonicus</i>	4	36		
<i>Aedes triseriatus</i>	1	2		
<i>Culex</i> spp.	19	806		
<b>Sussex</b>	<b>39</b>	<b>1120</b>		
<i>Aedes abserratus</i>	9	249		
<i>Aedes aurifer</i>	1	12		
<i>Aedes canadensis canadensis</i>	5	87		
<i>Aedes provocans</i>	2	8		
<i>Aedes sticticus</i>	1	46		
<i>Aedes stimulans</i>	2	10		
<i>Aedes triseriatus</i>	2	6		
<i>Culex</i> spp.	16	684		
<i>Culiseta melanura</i>	1	18		
<b>Union</b>	<b>17</b>	<b>1006</b>		
<i>Culex</i> spp.	17	1006		
<b>Warren</b>	<b>60</b>	<b>3467</b>		

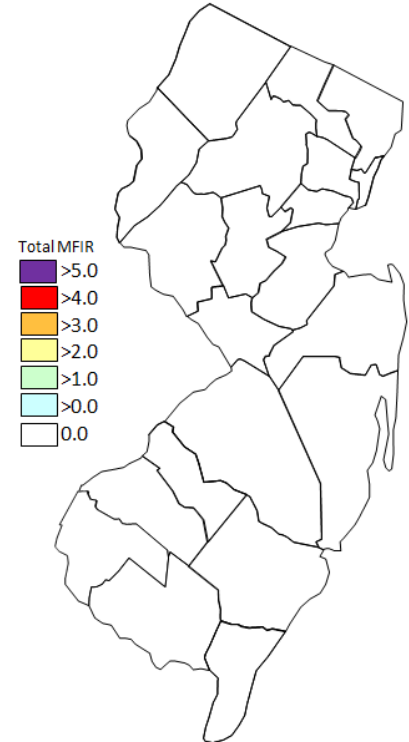
<i>Aedes japonicus</i>	4	81		
<i>Culex</i> spp.	56	3386		
<b>Grand Total</b>	<b>1187</b>	<b>22261</b>	<b>1</b>	<b>0.045</b>



Cumulative WNV activity in 2018.



WNV activity to 22 June 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 22 June 2019.

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, 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 2019. No human cases have been reported.

County	Species	Pools	Mosquitoes	Positives	MFIR
<b>Atlantic</b>		<b>52</b>	<b>1709</b>		
	<i>Aedes albopictus</i>	8	25		
	<i>Aedes cantator</i>	2	112		
	<i>Aedes sollicitans</i>	1	53		
	<i>Anopheles bradleyi</i>	1	5		
	<i>Anopheles crucians</i>	1	6		
	<i>Coquillettidia perturbans</i>	7	319		
	<i>Culex</i> spp.	15	736		
	<i>Culex pipiens</i>	1	75		
	<i>Culex restuans</i>	1	3		

<i>Culiseta melanura</i>	15	375		
<b>Bergen</b>	<b>38</b>	<b>1824</b>		
<i>Aedes canadensis canadensis</i>	2	7		
<i>Aedes cantator</i>	1	55		
<i>Aedes japonicus</i>	2	35		
<i>Aedes triseriatus</i>	1	3		
<i>Aedes trivittatus</i>	1	6		
<i>Coquillettidia perturbans</i>	2	34		
<i>Culex</i> spp.	26	1658		
<i>Culex salinarius</i>	1	19		
<i>Culiseta melanura</i>	1	1		
<i>Psorophora ferox</i>	1	6		
<b>Burlington</b>	<b>43</b>	<b>1843</b>		
<i>Aedes albopictus</i>	1	3		
<i>Aedes canadensis canadensis</i>	4	168		
<i>Aedes japonicus</i>	2	12		
<i>Aedes mitchellae</i>	1	1		
<i>Anopheles bradleyi</i>	1	27		
<i>Coquillettidia perturbans</i>	4	300		
<i>Culex</i> spp.	19	1107		
<i>Culex salinarius</i>	4	78		
<i>Culiseta melanura</i>	7	147		
<b>Cape May</b>	<b>276</b>	<b>1082</b>		
<i>Aedes albopictus</i>	7	12		
<i>Aedes canadensis canadensis</i>	9	12		
<i>Aedes cantator</i>	3	3		
<i>Aedes japonicus</i>	43	114		
<i>Anopheles bradleyi</i>	3	15		
<i>Anopheles punctipennis</i>	3	3		
<i>Anopheles quadrimaculatus</i>	11	155		
<i>Coquillettidia perturbans</i>	7	9		
<i>Culex erraticus</i>	3	4		
<i>Culex pipiens</i>	41	350		
<i>Culex restuans</i>	89	222		
<i>Culex salinarius</i>	22	51		
<i>Culex territans</i>	5	7		
<i>Culiseta melanura</i>	30	125		
<b>Cumberland</b>	<b>33</b>	<b>332</b>		
<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>	5	30		
<i>Anopheles punctipennis</i>	3	31		
<i>Anopheles quadrimaculatus</i>	1	11		
<i>Coquillettidia perturbans</i>	3	6		
<i>Culex</i> spp.	8	123		
<i>Culiseta melanura</i>	3	46		
<i>Psorophora ferox</i>	2	2		
<b>Essex</b>	<b>36</b>	<b>203</b>		

<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 spp.</i>	13	45		
<b>Gloucester</b>	<b>59</b>	<b>1914</b>		
<i>Aedes albopictus</i>	8	29		
<i>Aedes japonicus</i>	10	145		
<i>Culex spp.</i>	31	1536		
<i>Culex pipiens</i>	1	35		
<i>Culiseta melanura</i>	9	169		
<b>Hudson</b>	<b>14</b>	<b>724</b>		
<i>Culex spp.</i>	14	724		
<b>Hunterdon</b>	<b>14</b>	<b>383</b>		
<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 spp.</i>	6	300		
<i>Psorophora ferox</i>	1	11		
<i>Psorophora howardii</i>	1	1		
<b>Mercer</b>	<b>59</b>	<b>997</b>		
<i>Aedes albopictus</i>	1	1		
<i>Aedes japonicus</i>	20	94		
<i>Culex spp.</i>	38	902		
<b>Middlesex</b>	<b>29</b>	<b>228</b>		
<i>Aedes albopictus</i>	1	3		
<i>Coquillettidia perturbans</i>	1	18		
<i>Culex spp.</i>	25	191		
<i>Culiseta melanura</i>	2	16		
<b>Monmouth</b>	<b>79</b>	<b>470</b>		
<i>Aedes albopictus</i>	23	91		
<i>Aedes atlanticus</i>	1	1		
<i>Aedes canadensis canadensis</i>	8	139		
<i>Aedes cantator</i>	3	27		
<i>Aedes japonicus</i>	1	3		
<i>Aedes triseriatus</i>	1	2		
<i>Aedes vexans</i>	3	8		
<i>Anopheles punctipennis</i>	4	6		
<i>Coquillettidia perturbans</i>	2	3		
<i>Culex spp.</i>	21	104		
<i>Culex erraticus</i>	1	1		
<i>Culex restuans</i>	2	2		
<i>Culex salinarius</i>	4	15		

<i>Culiseta melanura</i>	5	68		
<b>Morris</b>	<b>60</b>	<b>2095</b>		
<i>Aedes japonicus</i>	5	16		
<i>Coquillettidia perturbans</i>	7	426		
<i>Culex</i> spp.	46	1646		
<i>Culiseta melanura</i>	2	7		
<b>Ocean</b>	<b>55</b>	<b>293</b>		
<i>Aedes albopictus</i>	9	16		
<i>Aedes canadensis canadensis</i>	4	9		
<i>Aedes cantator</i>	2	9		
<i>Aedes japonicus</i>	4	7		
<i>Anopheles bradleyi</i>	1	1		
<i>Anopheles punctipennis</i>	1	1		
<i>Coquillettidia perturbans</i>	1	1		
<i>Culex</i> spp.	15	152		
<i>Culex erraticus</i>	1	1		
<i>Culex restuans</i>	1	1		
<i>Culex salinarius</i>	3	9		
<i>Culiseta melanura</i>	13	86		
<b>Passaic</b>	<b>35</b>	<b>232</b>		
<i>Aedes albopictus</i>	1	1		
<i>Aedes canadensis canadensis</i>	2	12		
<i>Aedes japonicus</i>	9	66		
<i>Aedes triseriatus</i>	4	17		
<i>Aedes trivittatus</i>	1	6		
<i>Coquillettidia perturbans</i>	1	8		
<i>Culex</i> spp.	14	111		
<i>Culex restuans</i>	2	8		
<i>Psorophora ferox</i>	1	3		
<b>Salem</b>	<b>68</b>	<b>1321</b>		
<i>Aedes albopictus</i>	12	37		
<i>Aedes japonicus</i>	8	29		
<i>Aedes triseriatus</i>	2	2		
<i>Anopheles punctipennis</i>	2	8		
<i>Anopheles quadrimaculatus</i>	3	13		
<i>Coquillettidia perturbans</i>	8	127		
<i>Culex</i> spp.	27	1097		
<i>Culex salinarius</i>	2	4		
<i>Culiseta melanura</i>	4	4		
<b>Somerset</b>	<b>25</b>	<b>847</b>		
<i>Aedes canadensis canadensis</i>	1	3		
<i>Aedes japonicus</i>	4	36		
<i>Aedes triseriatus</i>	1	2		
<i>Culex</i> spp.	19	806		
<b>Sussex</b>	<b>37</b>	<b>1114</b>		
<i>Aedes abserratus</i>	9	249		
<i>Aedes aurifer</i>	1	12		
<i>Aedes canadensis canadensis</i>	5	87		
<i>Aedes provocans</i>	2	8		

	<i>Aedes sticticus</i>	1	46		
	<i>Aedes stimulans</i>	2	10		
	<i>Culex spp.</i>	16	684		
	<i>Culiseta melanura</i>	1	18		
<b>Union</b>		<b>17</b>	<b>1006</b>		
	<i>Culex spp.</i>	17	1006		
<b>Warren</b>		<b>60</b>	<b>3467</b>		
	<i>Aedes japonicus</i>	4	81		
	<i>Culex spp.</i>	56	3386		
<b>Grand Total</b>		<b>1089</b>	<b>22084</b>		

### La Crosse Encephalitis (LAC) to 22 June 2019.

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. 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
<b>Bergen</b>		<b>3</b>	<b>33</b>		
	<i>Aedes canadensis canadensis</i>	1	3		
	<i>Aedes japonicus</i>	1	27		
	<i>Aedes triseriatus</i>	1	3		
<b>Cape May</b>		<b>40</b>	<b>65</b>		
	<i>Aedes triseriatus</i>	40	65		
<b>Essex</b>		<b>1</b>	<b>3</b>		
	<i>Aedes triseriatus</i>	1	3		
<b>Hudson</b>		<b>4</b>	<b>7</b>		
	<i>Aedes triseriatus</i>	4	7		
<b>Mercer</b>		<b>1</b>	<b>7</b>		
	<i>Aedes triseriatus</i>	1	7		
<b>Monmouth</b>		<b>2</b>	<b>7</b>		
	<i>Aedes triseriatus</i>	2	7		
<b>Passaic</b>		<b>4</b>	<b>18</b>	<b>1</b>	<b>55.556</b>
	<i>Aedes canadensis canadensis</i>	1	8		
	<i>Aedes triseriatus</i>	3	10	1	100.00
<b>Salem</b>		<b>5</b>	<b>10</b>		
	<i>Aedes triseriatus</i>	5	10		
<b>Sussex</b>		<b>2</b>	<b>6</b>		
	<i>Aedes triseriatus</i>	2	6		
<b>Grand Total</b>		<b>62</b>	<b>156</b>	<b>1</b>	<b>6.410</b>

## Dengue (DENV) to 22 June 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 9 travel-related human cases in NJ.

County	Species	Pools	Mosquitoes	Positives	MFIR
<b>Atlantic</b>		<b>8</b>	<b>25</b>		
	<i>Aedes albopictus</i>	8	25		
<b>Middlesex</b>		<b>1</b>	<b>3</b>		
	<i>Aedes albopictus</i>	1	3		
<b>Grand Total</b>		<b>9</b>	<b>28</b>		

## Chikungunya (CHIK) to 22 June 2019.

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 found positive in 2019. There are currently 3 travel-related human cases in NJ.

County	Species	Pools	Mosquitoes	Positives	MFIR
<b>Atlantic</b>		<b>8</b>	<b>25</b>		
	<i>Aedes albopictus</i>	8	25		
<b>Cape May</b>		<b>45</b>	<b>82</b>		
	<i>Aedes albopictus</i>	45	82		
<b>Middlesex</b>		<b>1</b>	<b>3</b>		
	<i>Aedes albopictus</i>	1	3		
<b>Grand Total</b>		<b>54</b>	<b>110</b>		

## Zika (ZIKV) to 22 June 2019.

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 of ZIKV have tested positive in 2019. There are currently 4 travel-related human cases in NJ.

County	Species	Pools	Mosquitoes	Positives	MFIR
<b>Atlantic</b>		<b>8</b>	<b>25</b>		
	<i>Aedes albopictus</i>	8	25		
<b>Cape May</b>		<b>45</b>	<b>82</b>		
	<i>Aedes albopictus</i>	45	82		
<b>Middlesex</b>		<b>1</b>	<b>3</b>		
	<i>Aedes albopictus</i>	1	3		
<b>Grand Total</b>		<b>54</b>	<b>110</b>		

### Jamestown Canyon (JCV) to 22 June 2019.

New Jersey will be 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.

One pool of *Aedes abserratus* has been found positive in 2019. This pool was collected 5 June 2019 in Sussex County. This deer-feeding species 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>). There are currently 0 human cases in NJ.

County	Species	Pools	Mosquitoes	Positives	MFIR
<b>Atlantic</b>		<b>52</b>	<b>1709</b>		
	<i>Aedes albopictus</i>	8	25		
	<i>Aedes cantator</i>	2	112		
	<i>Aedes sollicitans</i>	1	53		
	<i>Anopheles bradleyi</i>	1	5		
	<i>Anopheles crucians</i>	1	6		
	<i>Coquillettidia perturbans</i>	7	319		
	<i>Culex</i> spp.	15	736		
	<i>Culex pipiens</i>	1	75		
	<i>Culex restuans</i>	1	3		
	<i>Culiseta melanura</i>	15	375		
<b>Bergen</b>		<b>38</b>	<b>1824</b>		
	<i>Aedes canadensis canadensis</i>	2	7		
	<i>Aedes cantator</i>	1	55		
	<i>Aedes japonicus</i>	2	35		
	<i>Aedes triseriatus</i>	1	3		
	<i>Aedes trivittatus</i>	1	6		
	<i>Coquillettidia perturbans</i>	2	34		
	<i>Culex</i> spp.	26	1658		
	<i>Culex salinarius</i>	1	19		
	<i>Culiseta melanura</i>	1	1		
	<i>Psorophora ferox</i>	1	6		
<b>Burlington</b>		<b>43</b>	<b>1843</b>		
	<i>Aedes albopictus</i>	1	3		
	<i>Aedes canadensis canadensis</i>	4	168		
	<i>Aedes japonicus</i>	2	12		
	<i>Aedes mitchellae</i>	1	1		

<i>Anopheles bradleyi</i>	1	27		
<i>Coquillettidia perturbans</i>	4	300		
<i>Culex</i> spp.	19	1107		
<i>Culex salinarius</i>	4	78		
<i>Culiseta melanura</i>	7	147		
<b>Cape May</b>	<b>21</b>	<b>33</b>		
<i>Aedes triseriatus</i>	21	33		
<b>Cumberland</b>	<b>33</b>	<b>332</b>		
<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>	5	30		
<i>Anopheles punctipennis</i>	3	31		
<i>Anopheles quadrimaculatus</i>	1	11		
<i>Coquillettidia perturbans</i>	3	6		
<i>Culex</i> spp.	8	123		
<i>Culiseta melanura</i>	3	46		
<i>Psorophora ferox</i>	2	2		
<b>Essex</b>	<b>36</b>	<b>203</b>		
<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		
<b>Gloucester</b>	<b>59</b>	<b>1914</b>		
<i>Aedes albopictus</i>	8	29		
<i>Aedes japonicus</i>	10	145		
<i>Culex</i> spp.	31	1536		
<i>Culex pipiens</i>	1	35		
<i>Culiseta melanura</i>	9	169		
<b>Hudson</b>	<b>14</b>	<b>724</b>		
<i>Culex</i> spp.	14	724		
<b>Hunterdon</b>	<b>14</b>	<b>383</b>		
<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.	6	300		
<i>Psorophora ferox</i>	1	11		
<i>Psorophora howardii</i>	1	1		
<b>Mercer</b>	<b>59</b>	<b>997</b>		
<i>Aedes albopictus</i>	1	1		

<i>Aedes japonicus</i>	20	94		
<i>Culex</i> spp.	38	902		
<b>Middlesex</b>	<b>29</b>	<b>228</b>		
<i>Aedes albopictus</i>	1	3		
<i>Coquillettidia perturbans</i>	1	18		
<i>Culex</i> spp.	25	191		
<i>Culiseta melanura</i>	2	16		
<b>Monmouth</b>	<b>79</b>	<b>470</b>		
<i>Aedes albopictus</i>	23	91		
<i>Aedes atlanticus</i>	1	1		
<i>Aedes canadensis canadensis</i>	8	139		
<i>Aedes cantator</i>	3	27		
<i>Aedes japonicus</i>	1	3		
<i>Aedes triseriatus</i>	1	2		
<i>Aedes vexans</i>	3	8		
<i>Anopheles punctipennis</i>	4	6		
<i>Coquillettidia perturbans</i>	2	3		
<i>Culex</i> spp.	21	104		
<i>Culex erraticus</i>	1	1		
<i>Culex restuans</i>	2	2		
<i>Culex salinarius</i>	4	15		
<i>Culiseta melanura</i>	5	68		
<b>Morris</b>	<b>60</b>	<b>2095</b>		
<i>Aedes japonicus</i>	5	16		
<i>Coquillettidia perturbans</i>	7	426		
<i>Culex</i> spp.	46	1646		
<i>Culiseta melanura</i>	2	7		
<b>Ocean</b>	<b>55</b>	<b>293</b>		
<i>Aedes albopictus</i>	9	16		
<i>Aedes canadensis canadensis</i>	4	9		
<i>Aedes cantator</i>	2	9		
<i>Aedes japonicus</i>	4	7		
<i>Anopheles bradleyi</i>	1	1		
<i>Anopheles punctipennis</i>	1	1		
<i>Coquillettidia perturbans</i>	1	1		
<i>Culex</i> spp.	15	152		
<i>Culex erraticus</i>	1	1		
<i>Culex restuans</i>	1	1		
<i>Culex salinarius</i>	3	9		
<i>Culiseta melanura</i>	13	86		
<b>Passaic</b>	<b>35</b>	<b>232</b>		
<i>Aedes albopictus</i>	1	1		
<i>Aedes canadensis canadensis</i>	2	12		
<i>Aedes japonicus</i>	9	66		
<i>Aedes triseriatus</i>	4	17		
<i>Aedes trivittatus</i>	1	6		
<i>Coquillettidia perturbans</i>	1	8		
<i>Culex</i> spp.	14	111		
<i>Culex restuans</i>	2	8		
<i>Psorophora ferox</i>	1	3		

<b>Salem</b>	<b>68</b>	<b>1321</b>		
<i>Aedes albopictus</i>	12	37		
<i>Aedes japonicus</i>	8	29		
<i>Aedes triseriatus</i>	2	2		
<i>Anopheles punctipennis</i>	2	8		
<i>Anopheles quadrimaculatus</i>	3	13		
<i>Coquillettidia perturbans</i>	8	127		
<i>Culex</i> spp.	27	1097		
<i>Culex salinarius</i>	2	4		
<i>Culiseta melanura</i>	4	4		
<b>Somerset</b>	<b>25</b>	<b>847</b>		
<i>Aedes canadensis canadensis</i>	1	3		
<i>Aedes japonicus</i>	4	36		
<i>Aedes triseriatus</i>	1	2		
<i>Culex</i> spp.	19	806		
<b>Sussex</b>	<b>36</b>	<b>1114</b>	<b>1</b>	<b>0.898</b>
<i>Aedes abserratus</i>	8	249	1	4.016
<i>Aedes aurifer</i>	1	12		
<i>Aedes canadensis canadensis</i>	5	87		
<i>Aedes provocans</i>	2	8		
<i>Aedes sticticus</i>	1	46		
<i>Aedes stimulans</i>	2	10		
<i>Culex</i> spp.	16	684		
<i>Culiseta melanura</i>	1	18		
<b>Union</b>	<b>17</b>	<b>1006</b>		
<i>Culex</i> spp.	17	1006		
<b>Warren</b>	<b>60</b>	<b>3467</b>		
<i>Aedes japonicus</i>	4	81		
<i>Culex</i> spp.	56	3386		
<b>Grand Total</b>	<b>833</b>	<b>21035</b>	<b>1</b>	<b>0.048</b>