

# VECTOR SURVEILLANCE IN NEW JERSEY

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

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Data download 4:00 am 8 October



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***NOTE: County/species tables for arboviruses are now in a supplemental file [here](#)***

## Arbovirus Summary

- Currently, there are 943 positive WNV pools (880 pools of *Culex Mix*, *Cx. pipiens* or *Cx. restuans*, 10 pools of *Cs. melanura*, 30 pools of *Ae. albopictus*, 5 pools of *Ae. japonicus*, 3 pools of *Ae. triseriatus*, *Ae. vexans* and *Anopheles punctipennis* each, 2 pools of *Coquillettidia perturbans* and one pool each of *Ae. taeniorhynchus*, *Ae. trivittatus*, *An. bradleyi*, *An. quadrimaculatus*, *Cx. erraticus*, *Psorophora ciliata*, and *Ps. ferox*). Six positive birds (1 *Corvus brachyrhynchos*, 4 *Accipiter cooperii* and 1 *Falco peregrinus*) have been detected. There are a total of 28 confirmed or probable human cases statewide with 1 fatality.
- There are 25 positive EEE pools, 17 detected in *Cs. melanura*, 4 in *Cx. Mix*, 2 in *Culex erraticus* and one each in *Ae. taeniorhynchus* and *Ae. triseriatus*. There have been 3 EEE horse cases, 1 each in Atlantic, Camden and Cumberland County.
- There are 6 positive JCV pool, first detected in *Aedes vexans*, from Sussex County, collected 8 July. Positive pools were also detected in *Anopheles* spp. (2), *Anopheles punctipennis*, *Culex Mix*, and most recently *Aedes albopictus*. There is one human case of Jamestown Canyon virus, in Sussex County. Date of onset was May 8.
- Note: Data download times are noted and do not necessarily reflect all pools submitted and analyzed to that point in time. This report may vary from other reports from the same dataset as they are all snapshots in time.
- In 2020, there were 13 positive EEE pools in *Culiseta melanura*.
- There were 241 positive WNV pools, in *Culex Mix* (231), in *Culex pipiens* (4), *Culex restuans* (1), *Culiseta melanura* (2), *Aedes albopictus* (2), and *Aedes canadensis canadensis* (1).
- There were 6 positive JVC pools in *Aedes cantator* (2), *Aedes taeniorhynchus* (1), *Anopheles quadrimaculatus* (1) and *Coquillettidia perturbans* (2).
- There was one EEE horse case reported. There are no WNV horse cases. There were 3 human WNV cases; in Essex County (1) and Monmouth County (2). There was one WNV positive Red-tailed Hawk (*Buteo jamaicensis*) in Cumberland County (regular surveillance of birds is no longer done in NJ).

*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	1.04	4.40	24	3		
Green Bank (Burlington Co.)/25	Coastal	1.50	1.12	81	11		
Corbin City (Atlantic Co.)/25	Coastal	0.78	0.40	427	18		
Dennisville (Cape May Co.)/50	Coastal	1.70	0.00	108	14	2	18.519
Winslow (Camden Co.)/50	Inland	0.73	2.78	841	26	4	4.756
Centerton (Salem Co.)/50	Inland	1.55	0.14	259	20		
Turkey Swamp (Monmouth Co.)/50	Inland	0.46	0.08	156	14		
Glassboro (Gloucester Co.)/50	Inland	0.22	0.00	110	7		

\*Current week (in parentheses) results pending. ‡ corrected from previous week NC=No Collection ND=No Data (site offline) NR=Not Recorded a=pool tested

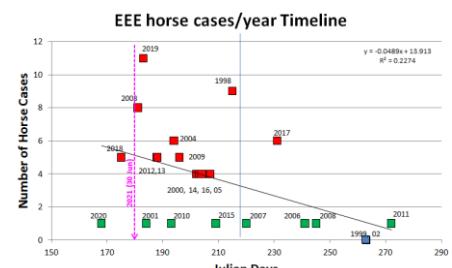
**Remarks:** Currently, 25 positive EEE pools (17 in *Cs. melanura*, 4 in *Cx. Mix*, 2 in *Culex erraticus*, and one each in *Aedes taeniorhynchus* and *Ae. triseriatus*) have been detected. First detected pool of *Cs. melanura* was from a county-run site in Gloucester, sampled 30 June. Current weekly mean is for Week 39.

**Statewide:** 11,369 *Cs. melanura* from 621 pools have been tested, with 17 positive pools detected and an overall *Cs. melanura* MFIR of 1.495. 179,489 specimens in 6163 pools from 38 other species have also been tested with 8 positive pools detected, two in *Culex erraticus* (first non-*melanura* detection), and one each in *Aedes taeniorhynchus*, *Ae. triseriatus* and 4 in *Culex Mix*. Overall MFIR for all species statewide is 0.131.

**Traditional Resting Box Sites:** 2013 *Cs. melanura* from 113 pools have been tested, with 6 positive pools detected, 4 at Winslow in Camden County and 2 at Dennisville, Cape May County. There are 22 mosquitoes in one pool pending. The latest positive came in Winslow during week 39. Overall *Cs. melanura* MFIR at the traditional resting box site is 2.981. The Winslow resting box site produced not only EEE positive pools, but 1 pool of WNV (in *Cs. melanura*) and two pools of JCV (in *Anopheles* spp.).

		Additional <i>Cs. melanura</i> trapped by counties *traps with positives indicated in <b>BOLD UNDERLINE</b> .			
County	Trap types*	Pools	Mosquitoes	Positives	MFIR
Atlantic	CO2, GRA, RB	80 14 57 1 45 43 96 6 4 38 26 36 60 1 1	2126	5	2.352
Bergen	NJLT, RB		236		
Burlington	ULVT		2124	1	0.471
Camden	GRA		2		
Cape May	GRA, RB		858		
Cumberland	CO2, GRA, RB		352		
Gloucester	RB		2797	5	1.788
Middlesex	CO2, NJLT		18		
Monmouth	CO2, Other		7		
Morris	CO2, GRA, RB		147		
Ocean	CO2, GRA		123		
Salem	CO2, GRA, RB		232		
Sussex	CO2, GRA, RB		305		
Union	NJLT		13		
Warren	CO2		16		
<b>TOTAL</b>		<b>508</b>	<b>9356</b>	<b>11</b>	<b>1.176</b>

**Additional County-set *Cs. melanura*:** Counties maintain trap sites for *Cs. melanura* in other areas, using a variety of traps. First positive pools of *Cs. melanura* have been detected at a non-traditional resting box site in Gloucester County, collected 30Jun. The latest positive pools came from Gloucester County for a total of 11 positive pools from county-set sites.



**Graph above** indicate start times to detection of EEE in *Culiseta melanura* and associated number of horse cases from 1998 to 2020.

**Horses and Humans:** Last year, only 1 horse was reported with EEE, detected in September. **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.

Case	Animal	Age	Sex	County	Date of Onset			Comment
					Onset	Euthanized?	Vaccinated?	
1	horse	7	mare	Cumberland	Aug 18	Aug 19	no	<a href="https://jerseyfresh.nj.gov/agriculture/news/press/2021/approved/press210824.html">https://jerseyfresh.nj.gov/agriculture/news/press/2021/approved/press210824.html</a>
2	horse	8	mare	Atlantic	Aug 26	Aug 27	no	
3	horse	7	stallion	Camden	Aug 28	Aug 29	no	Miniature horse

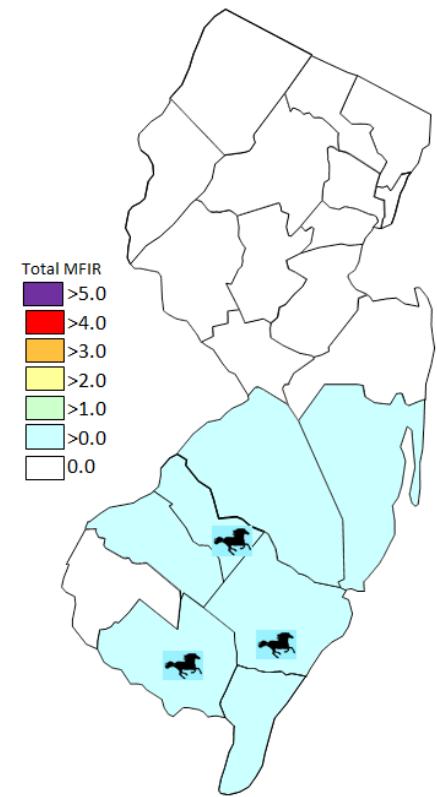
**Horses and Vaccinations:** The fate of unvaccinated equids reinforces the necessity of maintaining a vaccination schedule for arboviruses. For vaccination schedules recommended by the American Association of Equine Practices, see: [http://www.aaep.org/vaccination\\_guidelines.htm](http://www.aaep.org/vaccination_guidelines.htm)

There are no human cases of EEE currently reported. For more information, see DOH Vectorborne Surveillance reports:  
<https://www.nj.gov/health/cd/statistics/arboviral-stats/>

Species other than <i>Cs. melanura</i>	Pools	Mosquitoes	Positives	MFIR
<i>Aedes abserratus</i>	15	129		
<i>Aedes albopictus</i>	504	5027		
<i>Aedes atlanticus</i>	20	336		
<i>Aedes atlanticus/tormentor</i>	1	17		
<i>Aedes aurifer</i>	5	102		
<i>Aedes canadensis canadensis</i>	90	1274		
<i>Aedes cantator</i>	42	573		
<i>Aedes cinereus</i>	3	80		
<i>Aedes grossbecki</i>	9	33		
<i>Aedes japonicus</i>	275	1485		
<i>Aedes mitchellae</i>	1	1		
<i>Aedes sollicitans</i>	25	576		
<i>Aedes sticticus</i>	15	261		
<i>Aedes stimulans</i>	6	29		
<i>Aedes taeniorhynchus</i>	38	1534	1	0.652
<i>Aedes thibaulti</i>	2	105		
<i>Aedes triseriatus</i>	67	130	1	7.692
<i>Aedes trivittatus</i>	65	2242		
<i>Aedes vexans</i>	201	6052		
<i>Anopheles</i> spp.	21	686		
<i>Anopheles bradleyi</i>	37	892		
<i>Anopheles crucians</i>	26	262		
<i>Anopheles punctipennis</i>	242	3394		
<i>Anopheles quadrimaculatus</i>	98	1742		
<i>Anopheles walkeri</i>	13	902		
<i>Coquillettidia perturbans</i>	213	6583		
<i>Culex erraticus</i>	172	2980	2	0.671
<i>Culex Mix</i>	3252	122480	4	0.033
<i>Culex pipiens</i>	412	14219		
<i>Culex restuans</i>	106	2251		
<i>Culex salinarius</i>	64	1008		
<i>Culex territans</i>	1	1		
<i>Culiseta inornata</i>	18	244		
<i>Culiseta morsitans</i>	4	8		
<i>Orthopodomyia signifera</i>	3	4		
<i>Psorophora ciliata</i>	10	118		
<i>Psorophora columbiae</i>	34	761		
<i>Psorophora cyanescens</i>	1	1		
<i>Psorophora ferox</i>	49	949		
<i>Psorophora howardii</i>	3	18		
<b>State Total</b>	<b>6163</b>	<b>179489</b>	<b>8</b>	<b>0.045</b>

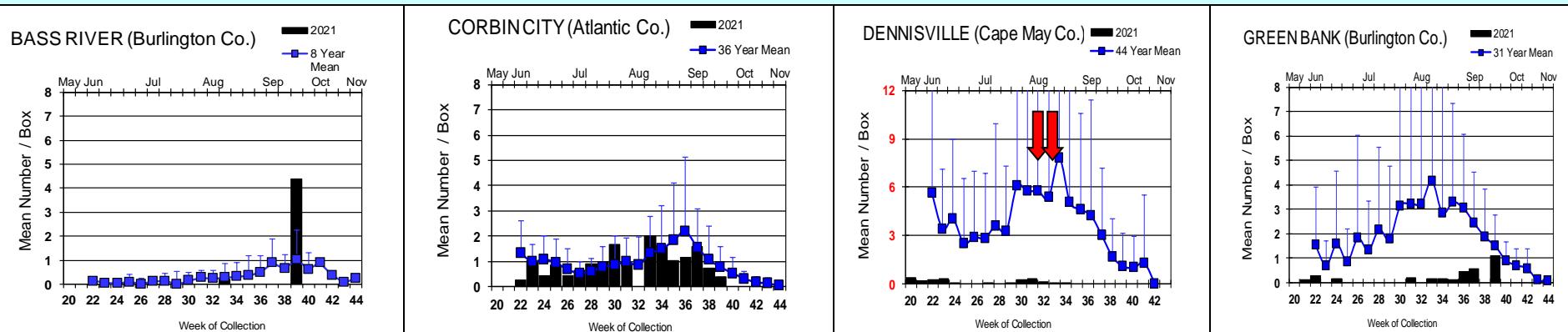
**Additional Species:** 38 additional species were tested for EEE. 8 positive pools in four species have been detected positive. The first included a pool of *Culex erraticus* in Atlantic County on 5 Aug. The latest positive pools were detected *Culex Mix* and *Cx. erraticus*.

**Overall MFIR rates, human and animal cases per county:**

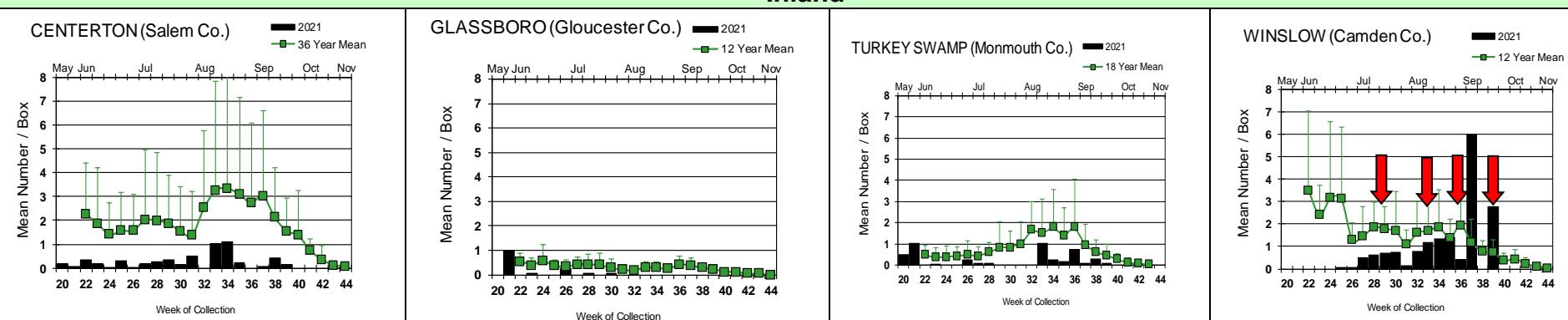


# Culiseta melanura Populations

## Coastal



## Inland



This year's surveillance season began two weeks earlier to accommodate increasing indications of earlier population emergences. To date, 6 positive pools have been detected, two at Dennisville, and four at Winslow, the latest at Winslow coming in week 39. A significant population emergence occurred at Winslow on week 37 and again in week 39, when the positive EEE pool was detected. The first seasonal positive pool on the state had been detected at Winslow. Adult mosquito surveillance reports at <http://vectorbio.rutgers.edu/reports/mosquito/> continue to suggest resting box collections are lower than light box collections, although some populations are beginning to reflect NJLT trapping patterns. WNV positive pools were also detected in *Cs. melanura* as well as JCV in two pools of *Anopheles* spp. at Winslow.



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

**EEE in US** (2021 cumulative cases): (Black or Red = previous + new reported cases occurring)

- equine: ~~1(AZ lab error)~~ 2(AK) 16(FL) 1(MD) 1(MI) 1(MN) 3(NC) 3(NJ) 4(NY) 2(SC) 3(TX) 5(WI) 1(Ontario)
- mosquito pools: 2(CT) 1(MD) 25(NJ) 2(TX)
- sentinel: 174(FL)
- human:

## West Nile Virus Positive Organisms in US, 2021

West Nile in US (2021 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					9
Alaska					
Arizona	118/457	12/13		3	97/164
Arkansas					1
California	192/205	2126/2224	78/83	11/13	62/70
Colorado		282/290		18/20	94/139
Connecticut		190/207			3
Delaware					
Florida		8	82/91	1	1/2
Georgia					1
Hawaii					
Idaho	2	52		12	10
Illinois	24/27	2531/2648	0	1	33/40
Indiana	0	226/253		1	5/6
Iowa					2
Kansas					1
Kentucky				3	
Louisiana					3/11
Maine					
Maryland(+DC)		126			2
Mass.		143/144		1	7/8
Michigan				1	20
Minnesota				2	1
Mississippi		39		3	4/5
Missouri					4/6

	Birds	Mosquito Pools	Sentinels	Horses*	Humans
Montana					
Nebraska	0	37		4	61
Nevada					
New Hampshire					
New Jersey	6	891/943		0	20/28
New Mexico					9
New York				2	3/14
North Carolina					
North Dakota	1	16		2	26
Ohio		1219			6
Oklahoma				1/4	31
Oregon	2	49	0	7	1
Pennsylvania	0	76	0	1	1/5
Rhode Island					
South Carolina				1	2/41
South Dakota	2	22		5	26/49
Tennessee					2/3
Texas	10	1330/1348	5	3/6	25/26
Utah				9	1/18
Vermont					
Virginia					1
Washington		51		11	3
West Virginia					
Wisconsin					
Wyoming					

\* 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.

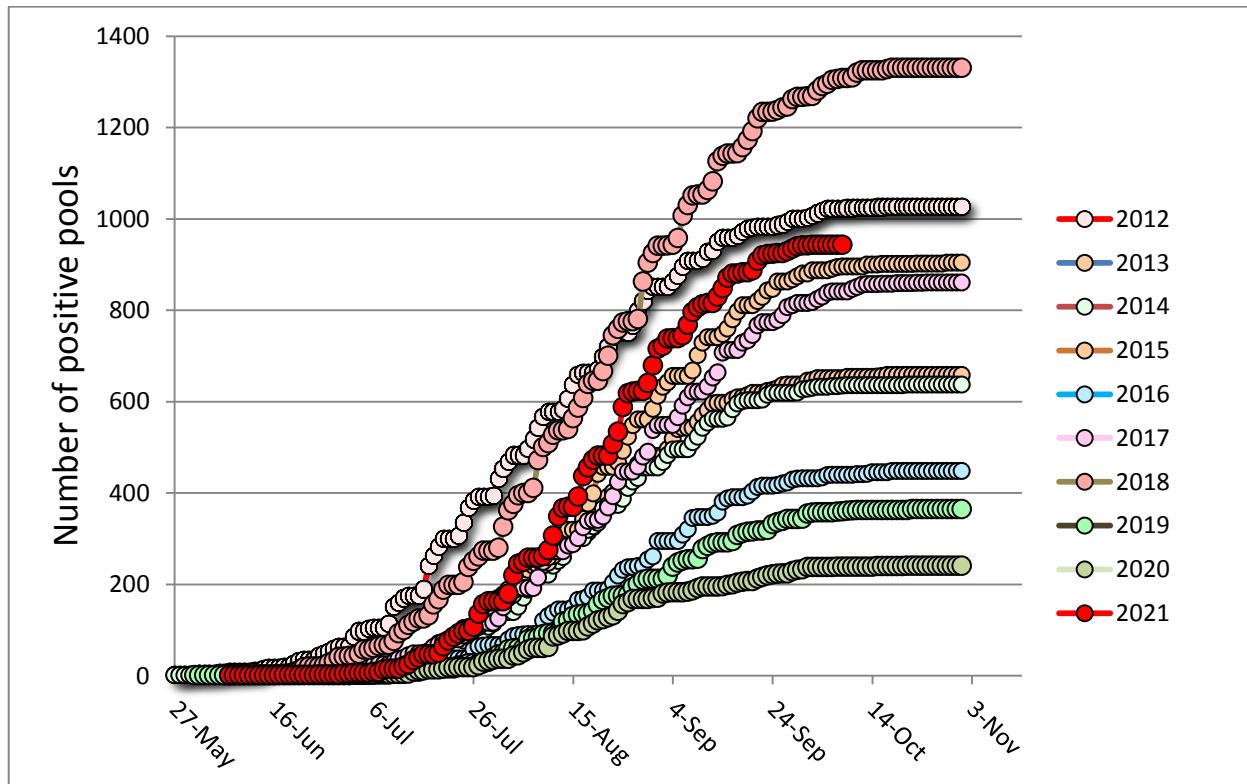
**Mosquito Species Submitted and Tested  
for West Nile Virus through 8 October 2021**

Species	Pools	Mosquitoes	Positives	MFIR
<i>Aedes abserratus</i>	16	131		
<i>Aedes albopictus</i>	557	5487	30	5.467
<i>Aedes atlanticus</i>	21	345		
<i>Aedes atlanticus/tormentor</i>	1	17		
<i>Aedes aurifer</i>	5	102		
<i>Aedes canadensis canadensis</i>	100	1394		
<i>Aedes cantator</i>	48	730		
<i>Aedes cinereus</i>	3	80		
<i>Aedes grossbecki</i>	9	33		
<i>Aedes japonicus</i>	320	2070	5	2.415
<i>Aedes mitchellae</i>	1	1		
<i>Aedes sollicitans</i>	28	706		
<i>Aedes sticticus</i>	15	261		
<i>Aedes stimulans</i>	6	29		
<i>Aedes taeniorhynchus</i>	46	1762	1	0.568
<i>Aedes thibaulti</i>	2	105		
<i>Aedes triseriatus</i>	125	350	3	8.571
<i>Aedes trivittatus</i>	71	2258	1	0.443
<i>Aedes vexans</i>	214	6309	3	0.476
<i>Anopheles</i> spp.	23	755		
<i>Anopheles bradleyi</i>	39	1017	1	0.983
<i>Anopheles crucians</i>	30	298		
<i>Anopheles punctipennis</i>	271	3920	3	0.765
<i>Anopheles quadrimaculatus</i>	108	1873	1	0.534
<i>Anopheles walkeri</i>	14	927		
<i>Coquillettidia perturbans</i>	213	6583	2	0.304
<i>Culex erraticus</i>	172	2980	1	0.336
<i>Culex</i> spp.	3741	144901	831	5.735
<i>Culex pipiens</i>	477	16123	46	2.853
<i>Culex restuans</i>	113	2308	3	1.300
<i>Culex salinarius</i>	75	1349		
<i>Culex territans</i>	1	1		
<i>Culiseta inornata</i>	19	246		
<i>Culiseta melanura</i>	621	11369	10	0.880
<i>Culiseta morsitans</i>	4	8		
<i>Orthopodomyia signifera</i>	3	4		
<i>Psorophora ciliata</i>	11	127	1	7.874
<i>Psorophora columbiae</i>	39	872		
<i>Psorophora cyanescens</i>	1	1		
<i>Psorophora ferox</i>	60	1125	1	0.889
<i>Psorophora howardii</i>	4	68		
<b>Grand Total</b>	<b>7627</b>	<b>219025</b>	<b>943</b>	<b>4.305</b>

**Remarks:** To date 7627 pools of 219,025 mosquitoes from 38 species have been tested. 943 positive WNV pools (880 pools of *Culex Mix*, *Cx. pipiens* or *Cx. restuans*, 10 pools of *Cs melanura*, 30 pools of *Ae albopictus*, 5 pools of *Ae. japonicus*, 3 pools of *Ae. triseriatus*, *Ae. vexans* and *Anopheles punctipennis* each, 2 pools of *Coquillettidia perturbans* and one pool each of *Ae. taeniorhynchus*, *Ae. trivittatus*, *An. bradleyi*, *An. quadrimaculatus*, *Cx. erraticus*, *Psorophora ciliata*, and *Ps. ferox*) have been identified as positive for WNV in all but Salem County. First positive detected in a pool of *Culex Mix* collected on 7 June in Somerset County. Cumulative MFIR for all mosquitoes in New Jersey is 4.305.

**Humans, Horses and Wild Birds:** No horses have been reported infected with WNV in 2021. 28 human cases (one fatality from Camden County, and cases also in Bergen, Burlington, Camden, Essex, Gloucester, Mercer, Middlesex, Monmouth, Ocean, Passaic, and Somerset counties) has been reported to date. See DOH reports on arbovirus activity for further information: <https://www.nj.gov/health/cd/statistics/arboviral-stats/index.shtml>

Although birds are no longer routinely tested in New Jersey, 1 American Crow (*Corvus brachyrhynchos*) from Burlington County, 3 Cooper's Hawks (*Accipiter cooperii*) from Union County, 1 Cooper's Hawk from Middlesex County and 1 Peregrine Falcon (*Falco peregrinus*) from Atlantic County all tested positive for WNV..



Above is a graph showing cumulative number of positive pools for the previous 9 years, inclusive of the most active (2018) year. 2021 is represented in RED, with first positive showing on 7 June.

Go [here](#) for the table supplement of arbovirus by county by mosquito species.