

# VECTOR SURVEILLANCE IN NEW JERSEY EEE, WNV, SLE, LAC, DENV, CHIK, ZIKV, and JCV

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Data download 4:00 pm 7 November



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

## Arbovirus Summary

- Note: Data downloads 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.
- Three pools tested positive for EEE. First positive pool of *Culex Mix* was in Morris County, collected 17 August. Second positive pool was in *Culiseta melanura*, collected 19 October in Atlantic County. Third pool was *Culiseta melanura*, collected 26 October in Burlington County.
- 607 pools have tested positive for WN virus, the first in *Aedes cantator*, collected in Burlington County on 2 June. Also positive were pools of *Culex Mix*, *Culex pipiens*, *Culex restuans*, *Culex erraticus*, *Aedes albopictus*, *Ae. canadensis canadensis*, *Aedes cantator*, *Ae. japonicus*, *Ae. triseriatus*, *Ae. vexans*, *Anopheles punctipennis*, *An. quadrimaculatus*, and *Coquillettidia perturbans*. 17 humans have been reported with WNV infection, in Bergen (3), Burlington, Camden (3), Middlesex, Monmouth (4), Morris, Ocean (2) and Union (2) counties. One Cooper's Hawk (*Accipiter cooperii*), five Red-tailed Hawks (*Buteo jamaicensis*), and one Blue Jay (*Cyanocitta cristata*) tested positive for WNV. No horse cases have been reported.
- No pools tested for SLE, LAC, DENG, CHIK, or ZIKA virus have been detected positive in any species submitted to date.
- 3 pools have tested positive for JC virus. The first two positives were both in *Aedes cantator*, collected in Bergen County at the same location, first collected on 3 June. *Anopheles punctipennis* collected 18 Aug in Sussex County also tested positive. Previously reported EEE co-infected pool was positive for EEE only.
- In 2021, there were 35 positive EEE pools in *Culiseta melanura*, *Culex erraticus*, *Ae. taeniorhynchus*, and *Ae. triseriatus*. There were 3 horse case reported. There were no human cases reported.
- There were 997 positive WNV pools, in *Culex Mix*, *Culex pipiens*, *Culex restuans*, *Culex erraticus*, *Culiseta melanura*, *Aedes albopictus*, *Aedes japonicus*, *Ae. taeniorhynchus*, *Ae. triseriatus*, *Ae. trivitattus*, *Ae. vexans*, *Anopheles bradleyi*, *An. punctipennis*, *An. quadrimaculatus*, *Coquillettidia perturbans*, *Psorophora ciliate*, and *Ps. ferox*. There were 36 human cases with 5 fatalities, plus 13 positive birds. There were no horse cases.
- There were 8 positive JVC pools in *Aedes albopictus*, *Ae. vexans*, *Anopheles punctipennis* and *Culex Mix*. There were 2 human cases reported.

## *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	0.25	nc	1	1		
Green Bank (Burlington Co.)/25	Coastal	0.13	nc	17	7		
Corbin City (Atlantic Co.)/25	Coastal	0.12	nc	179	22		
Dennisville (Cape May Co.)/50	Coastal	nc	nc	27	7		
Winslow (Camden Co.)/50	Inland	0.09	nc	226	15		
Centerton (Salem Co.)/50	Inland	0.06	nc	49	13		
Turkey Swamp (Monmouth Co.)/50	Inland	nc	nc	127	19		
Glassboro (Gloucester Co.)/50	Inland	nc	nc	33	13		

\*Current week (in parentheses) results pending. ‡ Corrected from previous week. PW = Previous week na =not available ND=No Data NR=Not Recorded

**Remarks:** Currently, there are two positive EEE pools detected. First positive pool was in a pool of *Culex Mix*, caught 17 August in Morris County, in northern NJ. EEE is thought to be refractory in *Culex pipiens*. Minimally, this positive pool can indicate virus circulating, but from this species, would not likely be involved in transmission. Second positive was in a pool of *Culiseta melanura*, collected on 19 October in Atlantic County. This was a pool of two mosquitoes that also tested positive for JCV. *Cs. melanura* is a cold-hardy species and this positive result suggests the potential for transmission is still there.

**Statewide:** 2465 *Cs. melanura* from 341 pools have been submitted for testing (numbers redacted from last week), with two positive pool detected and an overall *Cs. melanura* MFIR of 0.811. 170,892 specimens in 7296 pools from 36 other species have also been tested with one positive pool in *Culex Mix* detected. Overall MFIR for *all* species statewide is 0.011.

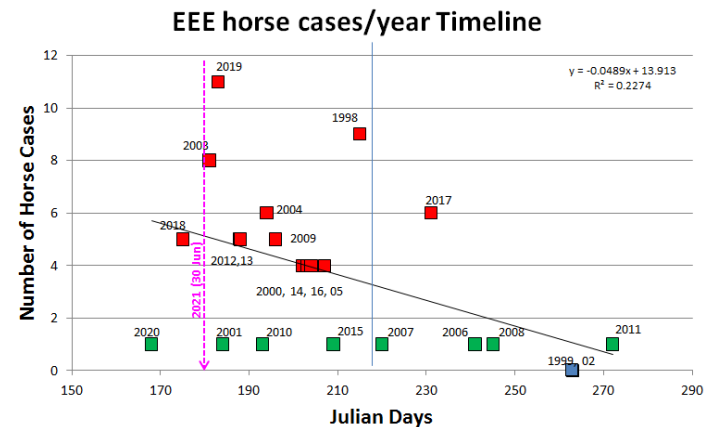
**Traditional Resting Box Sites:** No collections occurred this week. For the season, 659 *Cs. melanura* from 97 pools have been collected at the traditional resting box sites with no positive pools detected. Overall *Cs. melanura* MFIR at the traditional resting box site is 0.00.

Additional <i>Cs. melanura</i> trapped by counties *traps with positives indicated in <b>BOLD UNDERLINED&gt;</b>					
County	Trap types*	Pools	Mosquitoes	Positives	MFIR
Atlantic	CO2, RB	55	593	1	1.686
Bergen	RB	2	42		
Burlington	UVLT	31	384	1	2.604
Cape May	GRA, RB	12	20		
Cumberland	CO2, GRA, RB	32	107		
Gloucester	RB	13	129		
Middlesex	NJLT	3	15		
Monmouth	CO2	5	8		
Morris	ASP, CO2, GRA, RB	41	208		
Ocean	CO2	5	7		
Salem	CO2, RB	14	121		
Sussex	CO2, RB	30	165		
Union	BGPRO	1	7		
<b>TOTAL</b>		<b>244</b>	<b>1806</b>	<b>2</b>	<b>1.107</b>

**Additional County-set *Cs. melanura*:** Counties maintain trap sites for *Cs. melanura* in other areas, using a variety of traps. Currently, there is one pool of *Cs. melanura* detected with EEE, collected 19 October in Atlantic County.

**Graph to the right** indicate start times to detection of EEE in *Culiseta melanura* and associated number of horse cases from 1998 to 2021. Early detections are associated with multiple horse cases.

**Horses and Humans:** In 2021, 3 horses were reported with EEE. Currently, no horse or humans have been reported. For more information, see DOH Vectorborne Surveillance reports: <https://www.nj.gov/health/cd/statistics/arboviral-stats/>



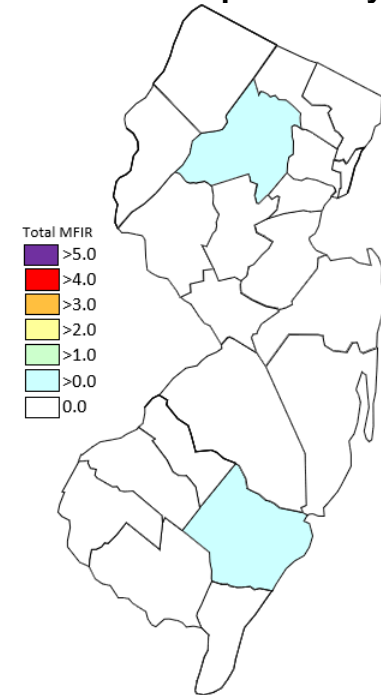
Case	Animal	Age	Sex	County	Date of Onset	Euthanized?	Vaccinated?	Comment
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**Horses and Vaccinations:** *Horse owners are urged to make sure their horses are up to date on their vaccinations (see link below). EEE horse cases are known to occur through October and sometimes into November.* Other sensitive species are non-native birds, such as Ostriches/Emus and Gallinaceous birds such as pheasants of Eurasian origins. 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)

Species other than <i>Cs. melanura</i>	Pools	Mosquitoes	Positives	MFIR
<i>Aedes abserratus</i>	17	393		
<i>Aedes albopictus</i>	761	7544		
<i>Aedes atlanticus</i>	3	7		
<i>Aedes atropalpus</i>	1	1		
<i>Aedes aurifer</i>	16	154		
<i>Aedes canadensis canadensis</i>	78	1254		
<i>Aedes cantator</i>	57	1765		
<i>Aedes cinereus</i>	4	48		
<i>Aedes grossbecki</i>	9	51		
<i>Aedes japonicus</i>	581	3290		
<i>Aedes provocans</i>	2	3		
<i>Aedes sollicitans</i>	64	1892		
<i>Aedes sticticus</i>	8	167		
<i>Aedes stimulans</i>	13	71		
<i>Aedes taeniorhynchus</i>	72	2271		
<i>Aedes triseriatus</i>	115	292		
<i>Aedes trivittatus</i>	10	74		
<i>Aedes vexans</i>	246	5612		
<i>Anopheles spp.</i>	3	97		
<i>Anopheles barberi</i>	4	4		
<i>Anopheles bradleyi</i>	35	758		
<i>Anopheles crucians</i>	11	55		
<i>Anopheles punctipennis</i>	261	2386		
<i>Anopheles quadrimaculatus</i>	123	1357		
<i>Coquillettidia perturbans</i>	193	3982		
<i>Culex erraticus</i>	248	4594		
<i>Culex Mix</i>	3632	122426	1	0.008
<i>Culex pipiens</i>	260	8088		
<i>Culex restuans</i>	157	2121		
<i>Culex salinarius</i>	35	708		
<i>Culex territans</i>	2	5		
<i>Culiseta inornata</i>	8	17		
<i>Culiseta morsitans</i>	2	2		
<i>Orthopodomyia signifera</i>	3	3		
<i>Psorophora ciliata</i>	3	9		
<i>Psorophora columbiae</i>	9	43		
<i>Psorophora ferox</i>	21	269		
<i>Uranotaenia sapphirina</i>	8	161		
<b>State Total</b>	<b>7075</b>	<b>171974</b>	<b>1</b>	<b>0.006</b>

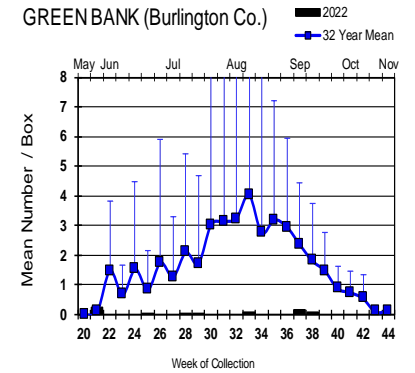
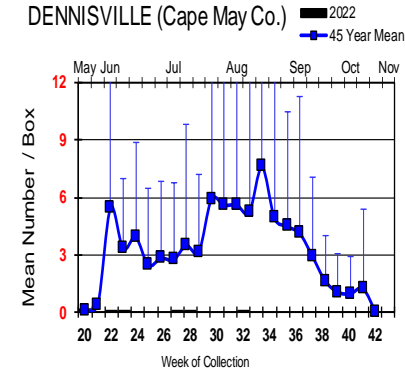
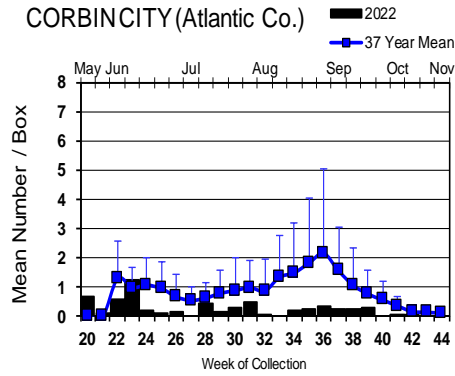
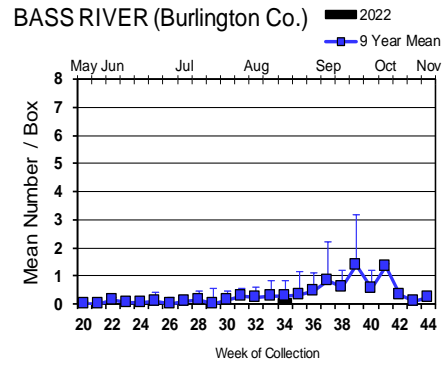
**Additional Species:** 36 additional species were tested for EEE. One positive pool in *Culex Mix* in Morris County was detected on 17 August.

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

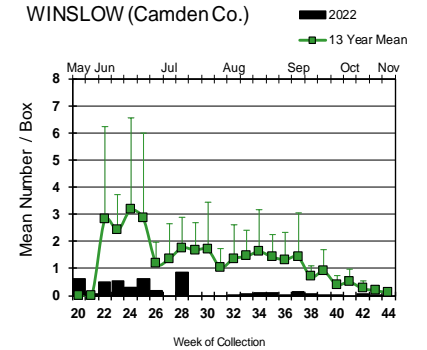
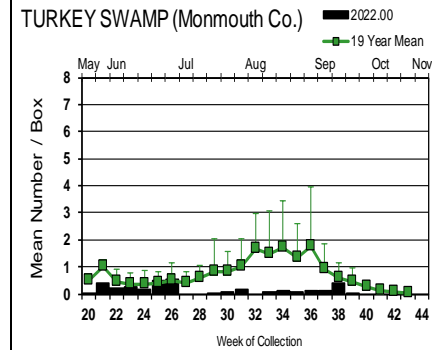
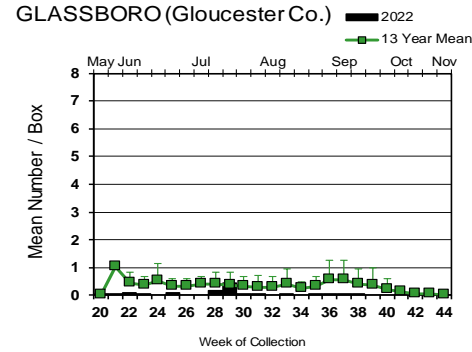
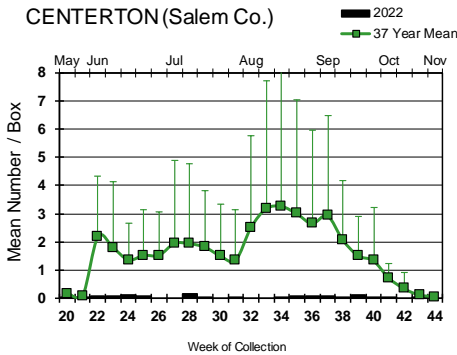


# Culiseta melanura Populations



## Coastal



## Inland



Collections at the traditional resting box sites are done for the season. No positive pools for EEE in *Culiseta melanura* were detected at the traditional resting box sites, although two pools of *Cs. melanura* were found positive at county collected sites (Atlantic and Burlington counties), plus one *Culex* pool found positive in Morris County.



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

EEE in US (2022 cumulative cases): (Black or Red = previous + new reported cases occurring)

- equine: 11(FL) 6(LA) 3(IN) 3(MI) 4(NY) 1(OH)
- mosquito pools: 5(LA) 3(NJ) 1(RI) 1(NY)
- sentinel: 62(FL)
- human:

## West Nile Virus Positive Organisms in US, 2022

West Nile in US (2022 cumulative cases): Single black values indicate no change from previous week. Black values / red values equal 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					1
Alaska					
Arizona		2	0		39/50
Arkansas					2/4
California	185/189	3128/3151	144/145	16/16	106/109
Colorado		251/251			195/200
Connecticut		185/185			5/7
Delaware					1
Florida		8/8	309/309	3/4	2/2
Georgia					8/9
Hawaii					
Idaho	0	38/38		3/3	2/3
Illinois	19/19	2400/2400		4/5	29/29
Indiana	0	251/251		2/2	4/5
Iowa					5/9
Kansas					7/12
Kentucky					2/3
Louisiana	11/11	1003/1015		3/3	42/43
Maine					
Maryland(+DC)					3/4
Mass.		95/95		0	7/7
Michigan	17/17	67/67		17/17	10/12
Minnesota					2/8
Mississippi		72/72			7/7
Missouri		0		3/8	10/14

	Birds	Mosquito Pools	Sentinels	Horses*	Humans
Montana					
Nebraska		88/88		1/1	50/57
Nevada					
New Hampshire		8/8			
New Jersey	7/7	605/607			17/17
New Mexico					9
New York		218			31/69
North Carolina					4/8
North Dakota	1/1	29/29		0	18/26
Ohio		944/944		2/2	7/7
Oklahoma					1/2
Oregon	0	52/52	0	3/3	3/4
Pennsylvania	6/6	2817/2817		3/3	30/32
Rhode Island		3/3			1
South Carolina					8
South Dakota		7/7			69/69
Tennessee					4
Texas	1/1	378/399	0	2/7	22/24
Utah					5
Vermont		7/7		0	0
Virginia					4/5
Washington	1	6/6		2	4/4
West Virginia					
Wisconsin	1			1	4
Wyoming		9/9		1/1	3/3

\* 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 October 2022

Species	Pools	Mosquitoes	Positives	MFIR
<i>Aedes abserratus</i>	17	393		
<i>Aedes albopictus</i>	761	7544	14	1.856
<i>Aedes atlanticus</i>	3	7		
<i>Aedes atropalpus</i>	1	1		
<i>Aedes aurifer</i>	16	154		
<i>Aedes canadensis canadensis</i>	78	1254	1	0.797
<i>Aedes cantator</i>	57	1765	1	0.567
<i>Aedes cinereus</i>	4	48		
<i>Aedes grossbecki</i>	9	51		
<i>Aedes japonicus</i>	608	3525	11	3.121
<i>Aedes provocans</i>	2	3		
<i>Aedes sollicitans</i>	76	2670		
<i>Aedes sticticus</i>	8	167		
<i>Aedes stimulans</i>	13	71		
<i>Aedes taeniorhynchus</i>	72	2271		
<i>Aedes triseriatus</i>	219	638	2	3.135
<i>Aedes trivittatus</i>	10	74		
<i>Aedes vexans</i>	247	5621	1	0.178
<i>Anopheles spp.</i>	3	97		
<i>Anopheles barberi</i>	4	4		
<i>Anopheles bradleyi</i>	35	758		
<i>Anopheles crucians</i>	11	55		
<i>Anopheles punctipennis</i>	261	2386	1	0.419
<i>Anopheles quadrimaculatus</i>	123	1357	1	0.737
<i>Coquillettidia perturbans</i>	193	3982	1	0.251
<i>Culex erraticus</i>	248	4594	2	0.435
<i>Culex spp.</i>	3647	122861	550	4.477
<i>Culex pipiens</i>	260	8088	19	2.349
<i>Culex restuans</i>	157	2121	3	1.414
<i>Culex salinarius</i>	35	708		
<i>Culex territans</i>	2	5		
<i>Culiseta inornata</i>	8	17		
<i>Culiseta melanura</i>	347	2484		
<i>Culiseta morsitans</i>	2	2		
<i>Orthopodomyia signifera</i>	3	3		
<i>Psorophora ciliata</i>	3	9		
<i>Psorophora columbiae</i>	9	43		
<i>Psorophora ferox</i>	21	269		
<i>Uranotaenia sapphirina</i>	8	161		
<b>Grand Total</b>	<b>7581</b>	<b>176261</b>	<b>607</b>	<b>3.444</b>

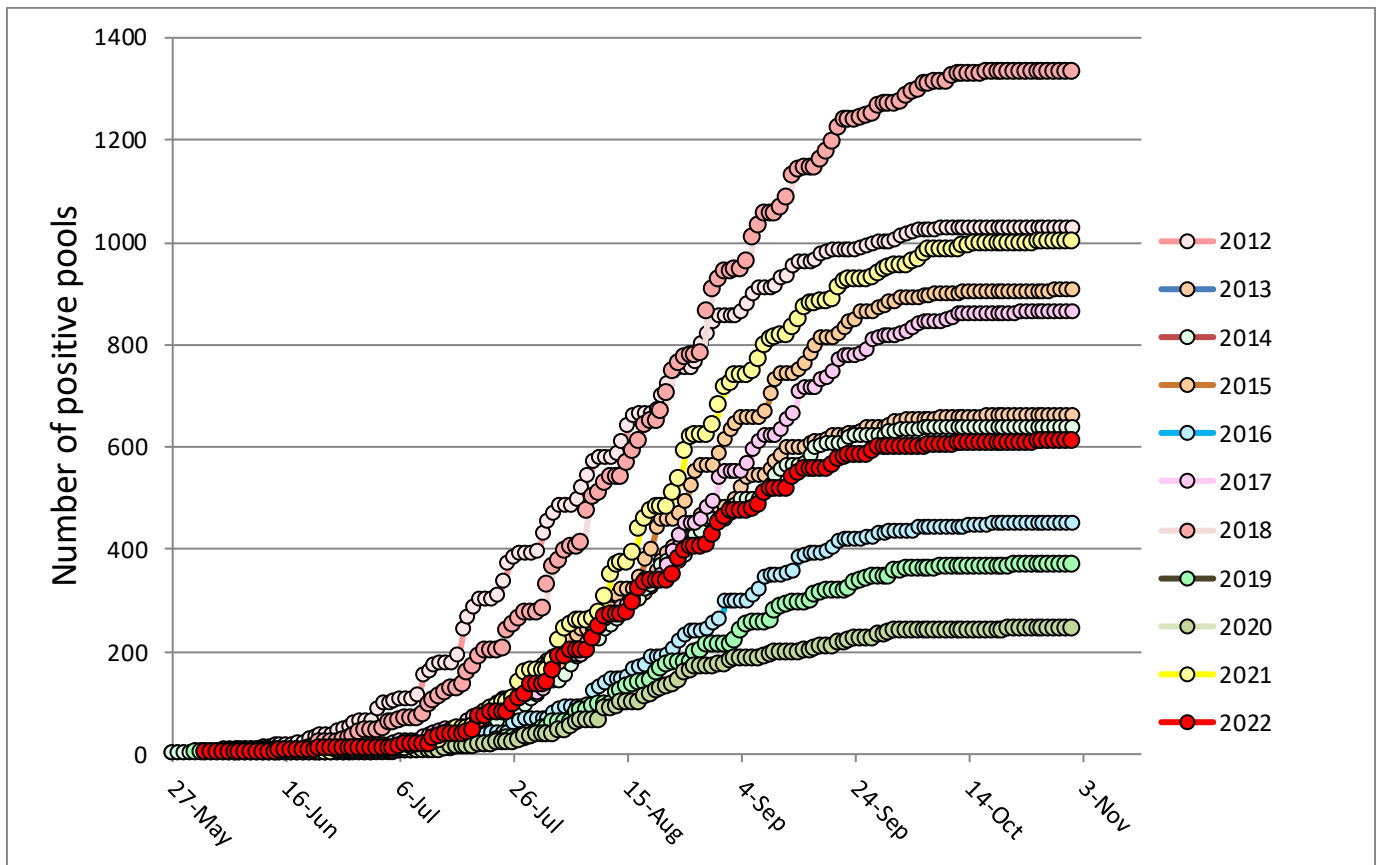
**Remarks:** To date 7581 pools of 176,261 mosquitoes from 36 species have been tested, with 607 positive pools of WNV detected. First positive pool was detected in *Aedes cantator*, collected 2 June in Burlington County at a traditional resting box site. Positive species include *Culex Mix*, *Culex pipiens*, *Cx. erraticus*, *Cx. restuans*, *Aedes albopictus*, *Ae. canadensis canadensis*, *Ae. cantator*, *Ae. japonicus*, *Ae. triseriatus*, *Ae. vexans*, *Anopheles punctipennis*, *An. quadrimaculatus*, and

*Coquillettidia perturbans*. Cumulative MFIR for all mosquitoes in New Jersey is 3.444, **down** from last week's value of 3.455.

**Humans, Horses, and Wild Birds:** 17 human cases of WNV have been detected in Bergen (3), Burlington, Camden (3), Middlesex, Monmouth (4), Morris, Ocean (2) and Union (2) counties. Last year, no horses have been reported infected but 36 human cases were detected. 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, last year 13 corvids and birds of prey were reported positive for WNV. This year, WNV was first detected in a Red-tailed Hawk (*Buteo jamaicensis*) from Somerset County. Infections include one Cooper's Hawk (*Accipiter cooperii*) and five Red-tailed Hawks (*Buteo jamaicensis*), all adult males from a raptor rehabilitation center (Essex, Morris, and Somerset County origins), plus one corvid, a Blue Jay (*Cyanocitta cristata*).



Above is a graph showing cumulative number of positive pools for the previous 10 years, inclusive of the most active (2018) year. 2022 is represented in RED (first positive collected 2 June).

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