

VECTOR SURVEILLANCE IN NEW JERSEY

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

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Data download 5:00 pm 28 October



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

Arbovirus Summary

- 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.
- Two 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.
- 605 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.
- 4 pools have tested positive for JC virus, the latest in *Culiseta melanura* collected 19 October in Atlantic County. This pool of two mosquitoes also tested positive for EEE. The first two 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.
- 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	0.09	0.00	1	1		
Green Bank (Burlington Co.)/25	Coastal	0.11	0.00	17	7		
Corbin City (Atlantic Co.)/25	Coastal	0.14	0.00	179	22		
Dennisville (Cape May Co.)/50	Coastal	0.01	0.00	27	7		
Winslow (Camden Co.)/50	Inland	0.17	0.00	226	15		
Centerton (Salem Co.)/50	Inland	0.11	0.00	49	13		
Turkey Swamp (Monmouth Co.)/50	Inland	0.04	0.00	127	19		
Glassboro (Gloucester Co.)/50	Inland	0.06	0.00	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: 3061 *Cs. melanura* from 439 pools have been submitted for testing, with one positive pool detected and an overall *Cs. melanura* MFIR of 0.327. 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: 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.

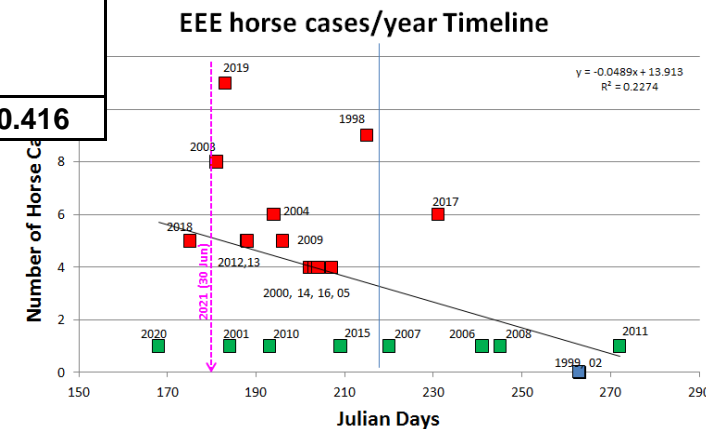
Additional <i>Cs. melanura</i> trapped by counties *traps with positives indicated in BOLD UNDERLINED>					
County	Trap types*	Pools	Mosquitoes	Positives	MFIR
Atlantic	CO2, RB	76	770	1	1.299
Bergen	RB	2	42		
Burlington	UVLT	36	324		
Camden	GRA, RB	15	226		
Cape May	GRA, RB	19	47		
Cumberland	CO2, GRA, RB	31	105		
Gloucester	RB	26	162		
Middlesex	NJLT	3	15		
Monmouth	CO2	30	154		
Morris	ASP, CO2, GRA, RB	41	208		
Ocean	CO2	5	7		
Salem	CO2, RB	27	170		
Sussex	CO2, RB	30	165		
Union	BGPRO	1	7		
TOTAL		342	2402	1	0.416

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/>



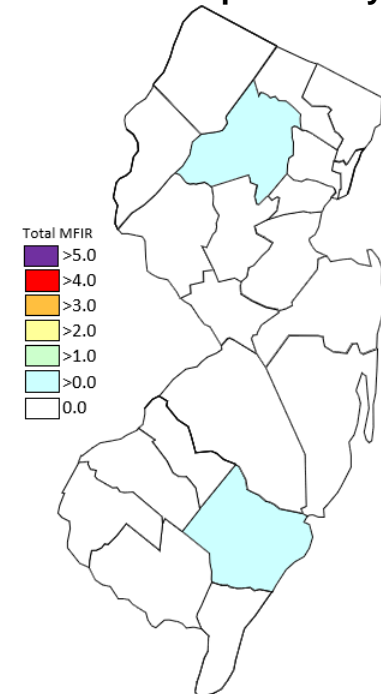
Case	Animal	Age	Sex	County	Date of Onset	Euthanized?	Vaccinated?	Comment
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Horses and Vaccinations: *Horse owners are urged to make sure their horses are up to date on their vaccinations (see link below). EEE horse cases are known to occur through October 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

Species other than <i>Cs. melanura</i>	Pools	Mosquitoes	Positives	MFIR
<i>Aedes abserratus</i>	17	393		
<i>Aedes albopictus</i>	755	7536		
<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>	56	1764		
<i>Aedes cinereus</i>	4	48		
<i>Aedes grossbecki</i>	9	51		
<i>Aedes japonicus</i>	571	3277		
<i>Aedes provocans</i>	2	3		
<i>Aedes sollicitans</i>	63	1891		
<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>	233	5129		
<i>Anopheles spp.</i>	3	97		
<i>Anopheles barberi</i>	4	4		
<i>Anopheles bradleyi</i>	34	752		
<i>Anopheles crucians</i>	11	55		
<i>Anopheles punctipennis</i>	261	2386		
<i>Anopheles quadrimaculatus</i>	116	1348		
<i>Coquillettidia perturbans</i>	193	3982		
<i>Culex erraticus</i>	239	4563		
<i>Culex Mix</i>	3567	121970	1	0.008
<i>Culex pipiens</i>	260	8088		
<i>Culex restuans</i>	153	2099		
<i>Culex salinarius</i>	34	704		
<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>	5	113		
State Total	6954	170892	1	0.006

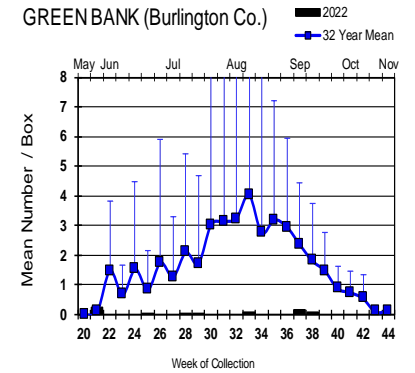
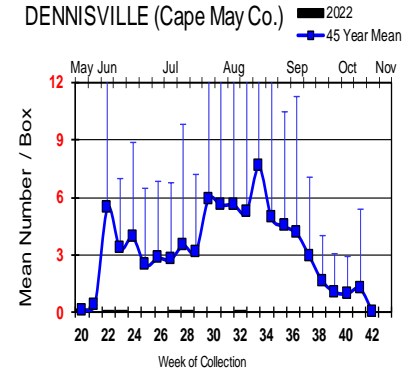
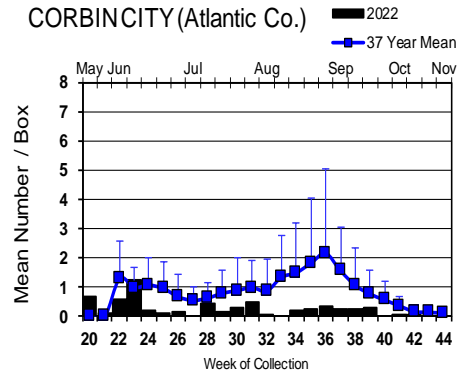
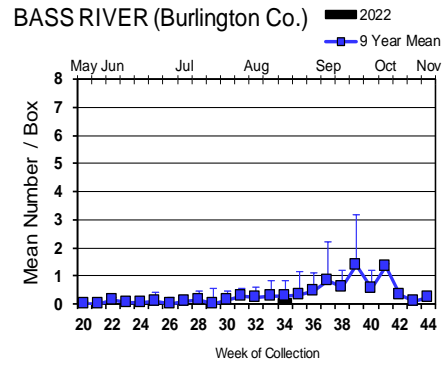
Additional Species: 36 additional species were tested for EEE. One positive pool in *Culex Mix* in Morris County was detected on 17 August.

Overall MFIR rates, human and animal cases per county:

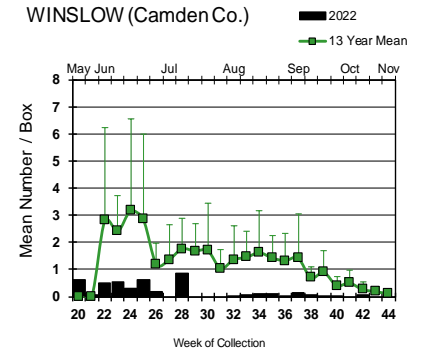
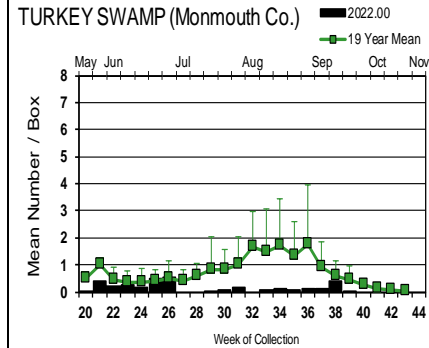
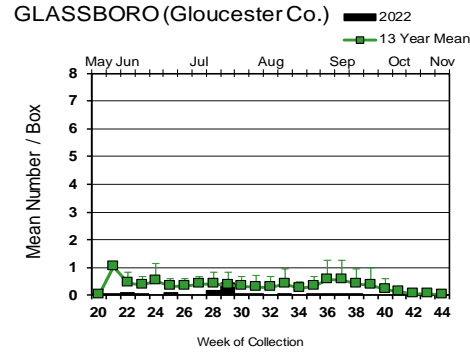
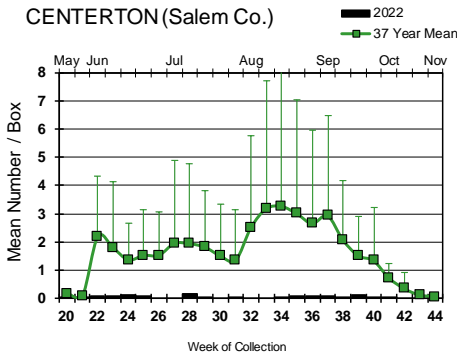


Culiseta melanura Populations



Coastal



Inland



***Cs. melanura* populations are zero at the traditional resting box sites for the current week. Two positive EEE pool have been detected, one at a Morris County (northern part of the state) in a pool of *Culex pipiens* (refractory for the EEE virus) and the second positive was in a pool of *Culiseta melanura* collected at a non-traditional site on 19 October in Atlantic 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) 2(NJ) 1(RI) 1(NY)
- sentinel: 60(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 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					1
Alaska					
Arizona		2	0		39/39
Arkansas					2/2
California	185/185	3100/3128	144/144	14/16	99/106
Colorado		251/251			195/200
Connecticut		185/185			2/5
Delaware					1
Florida		4/8	300/309	3/3	2/2
Georgia					6/8
Hawaii					
Idaho	0	38/39		3/3	2/2
Illinois	19/19	2400/2400		4/4	29/29
Indiana	0	251/251		2/2	4/5
Iowa					5/5
Kansas					7/7
Kentucky					2/2
Louisiana	11/11	1003/1015		3/3	42/43
Maine					
Maryland(+DC)					3/3
Mass.		95/95		0	7/7
Michigan	12/17	72/76		12/17	10/10
Minnesota					2/2
Mississippi		72/72			7/7
Missouri		0		3/3	9/9

	Birds	Mosquito Pools	Sentinels	Horses*	Humans
Montana					
Nebraska		88/88		1/1	33/50
Nevada					
New Hampshire		8/8			
New Jersey	7/7	602/605			17/17
New Mexico					4
New York		218			31
North Carolina					4
North Dakota	1/1	29/29		0	18/18
Ohio		862/944		2	5/7
Oklahoma					1/1
Oregon	0	52/52	0	3/3	3/3
Pennsylvania	6/6	2813/2817		3/3	28/30
Rhode Island		3/3			
South Carolina					
South Dakota		7/7			69/69
Tennessee					
Texas	1/1	356/378	0	2	21/22
Utah					
Vermont		7/7		0	0
Virginia					4/4
Washington	1	6/6		2	4/4
West Virginia					
Wisconsin	1			1	
Wyoming		9/9		1/1	2/3

* 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

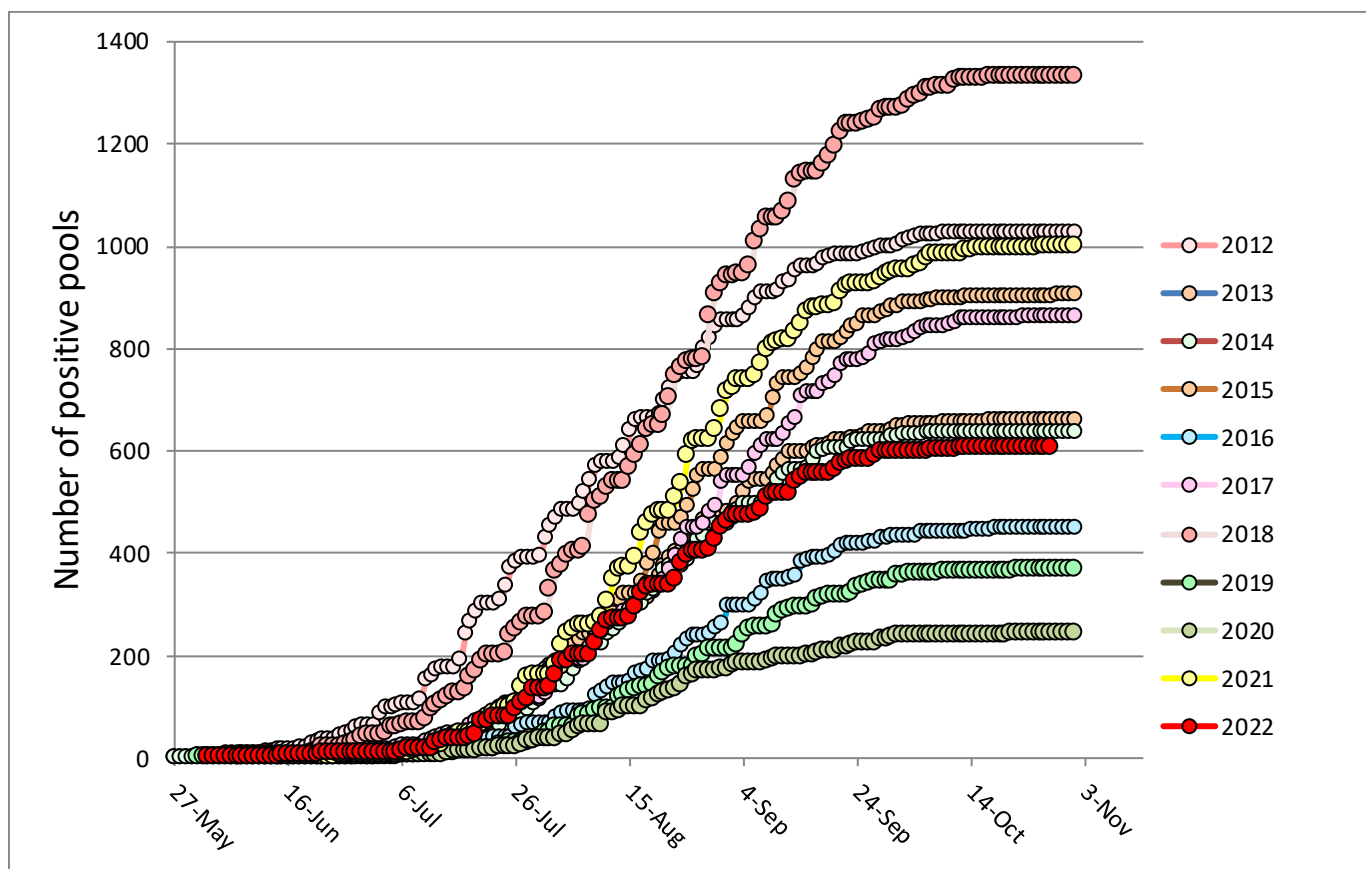
Species	Pools	Mosquitoes	Positives	MFIR
<i>Aedes abserratus</i>	17	393		
<i>Aedes albopictus</i>	755	7536	14	1.858
<i>Aedes atlanticus</i>	3	7		
<i>Aedes atropalpus</i>	1	1		
<i>Aedes aurifer</i>	16	154		
<i>Aedes canadensis canadensis</i>	78	1254	1	0.797
<i>Aedes cantator</i>	56	1764	1	0.567
<i>Aedes cinereus</i>	4	48		
<i>Aedes grossbecki</i>	9	51		
<i>Aedes japonicus</i>	598	3512	11	3.132
<i>Aedes provocans</i>	2	3		
<i>Aedes sollicitans</i>	75	2669		
<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>	234	5138	1	0.195
<i>Anopheles spp.</i>	3	97		
<i>Anopheles barberi</i>	4	4		
<i>Anopheles bradleyi</i>	34	752		
<i>Anopheles crucians</i>	11	55		
<i>Anopheles punctipennis</i>	261	2386	1	0.419
<i>Anopheles quadrimaculatus</i>	116	1348	1	0.742
<i>Coquillettidia perturbans</i>	193	3982	1	0.251
<i>Culex erraticus</i>	239	4563	2	0.438
<i>Culex spp.</i>	3582	122405	548	4.477
<i>Culex pipiens</i>	260	8088	19	2.349
<i>Culex restuans</i>	153	2099	3	1.429
<i>Culex salinarius</i>	34	704		
<i>Culex territans</i>	2	5		
<i>Culiseta inornata</i>	8	17		
<i>Culiseta melanura</i>	342	2402		
<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>	5	113		
Grand Total	7455	175097	605	3.455

Remarks: To date 7455 pools of 175,097 mosquitoes from 36 species have been tested, with 605 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 3.455, **up** from last week's value of 3.449.

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.