VECTOR SURVEILLANCE IN NEW JERSEY

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

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4 September to 10 September 2022, CDC Week 36
Data download 5:04 pm 9 September

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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.**

- **One pool of *Culex* Mix tested positive for EEE virus in Morris County, collected 17 August. No pools of *Culiseta melanura* have tested positive. No horse or human cases have been reported.**
- **451 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 erraticus*, *Culiseta melanura*, *Aedes albopictus*, *Ae. canadensis canadensis*, *Aedes cantator*, *Ae. japonicus*, *Ae. triseriatus*, and *Ae. vexans*. Six humans have been reported with WNV infection, one each in Bergen, Camden, Morris, and Union counties and 2 in Ocean County. One Cooper's Hawk (*Accipiter cooperii*) and four Red-tailed Hawks (*Buteo jamaicensis*) 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 latest in *Anopheles punctipennis*, collected 18 Aug in Sussex County. The first two were both in *Aedes cantator*, collected in Bergen County at the same location, first collected on 3 June.**

- **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**	0.45	0.00	1	1		
Green Bank (Burlington Co.)/25	**Coastal**	2.95	0.00	11	5		
Corbin City (Atlantic Co.)/25	**Coastal**	2.16	0.36	156	16		
Dennisville (Cape May Co.)/50	**Coastal**	4.50	0.00	27	7		
Winslow (Camden Co.)/50	**Inland**	1.32	(0.04)	221 (223)	13 (14)		
Centerton (Salem Co.)/50	**Inland**	2.66	(0.08)	40 (44)	11 (12)		
Turkey Swamp (Monmouth Co.)/50	**Inland**	1.75	0.10	118	16		
Glassboro (Gloucester Co.)/50	**Inland**	0.56	(0.04)	32 (36)	12 (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 in one positive EEE pools detected 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. No pools of *Culiseta melanura* have been found positive.

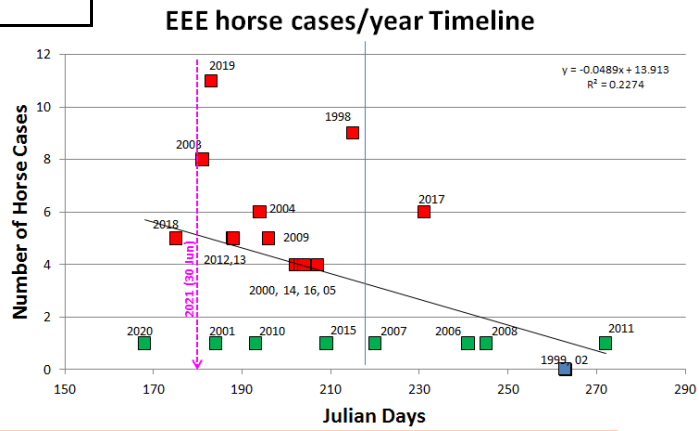
Statewide: 1963 *Cs. melanura* from 263 pools have been submitted for testing, with no positive pools detected and an overall *Cs. melanura* MFIR of 0.000. 136,033 specimens in 5090 pools from 34 other species have also been tested with one positive pool in *Culex* Mix detected. Overall MFIR for *all* species statewide is 0.007.

Traditional Resting Box Sites: 624 *Cs. melanura* from 87 pools have been collected at the traditional resting box sites with no positive pools detected and 3 pools of 10 total mosquitoes pending. Overall *Cs. melanura* MFIR at the traditional resting box site is 0.00.

	Additional *Cs. melanura* trapped by counties *traps with positives indicated in **BOLD UNDERLINED.**				
County	**Trap types***	**Pools**	**Mosquitoes**	**Positives**	**MFIR**
Atlantic	CO2, RB	38	475		
Bergen	RB	2	42		
Burlington	UVLT	11	99		
Cape May	GRA, RB	12	20		
Cumberland	CO2, GRA, RB	24	83		
Gloucester	RB	12	127		
Middlesex	NJLT	3	15		
Monmouth	CO2	4	7		
Morris	ASP, CO2, GRA, RB	33	193		
Ocean	CO2	3	5		
Salem	CO2, RB	13	120		
Sussex	CO2, RB	20	146		
Union	BGPRO	1	7		
TOTAL		**176**	**1339**		

Additional County-set *Cs. melanura*: Counties maintain trap sites for *Cs. melanura* in other areas, using a variety of traps. In 2021, first positive pools of *Cs. melanura* were detected at a non-traditional resting box site in Gloucester County, collected 30 Jun. Currently, there are no positive EEE pools detected.

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/

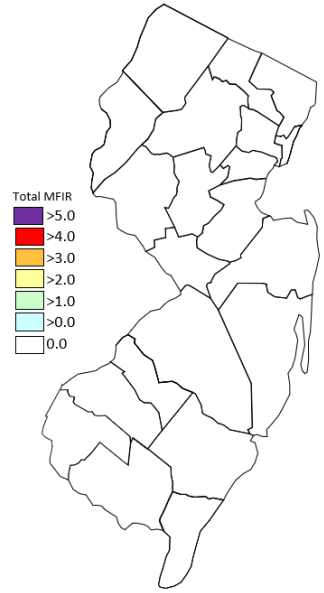
Case	Animal	Age	Sex	County	Date of Onset	Euthanized?	Vaccinated?	Comment

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 *Cs. melanura*	Pools	Mosquitoes	Positives	MFIR
Aedes abserratus	17	393		
Aedes albopictus	510	5453		
Aedes atlanticus	3	7		
Aedes atropalpus	1	1		
Aedes aurifer	16	154		
Aedes canadensis canadensis	78	1254		
Aedes cantator	50	1660		
Aedes cinereus	4	48		
Aedes grossbecki	9	51		
Aedes japonicus	409	2693		
Aedes provocans	2	3		
Aedes sollicitans	34	889		
Aedes sticticus	7	166		
Aedes stimulans	13	71		
Aedes taeniorhynchus	47	1539		
Aedes triseriatus	81	220		
Aedes trivittatus	9	68		
Aedes vexans	143	3193		
Anopheles spp.	3	97		
Anopheles barberi	4	4		
Anopheles bradleyi	24	446		
Anopheles crucians	8	20		
Anopheles punctipennis	199	2138		
Anopheles quadrimaculatus	74	886		
Coquillettidia perturbans	173	3788		
Culex erraticus	102	2132		
Culex Mix	2659	98568	1	0.010
Culex pipiens	208	7340		
Culex restuans	135	1972		
Culex salinarius	25	441		
Culiseta inornata	8	17		
Culiseta morsitans	2	2		
Orthopodomyia signifera	2	2		
Psorophora ciliata	3	9		
Psorophora columbiae	9	43		
Psorophora ferox	19	265		
State Total	**5090**	**136033**	**1**	**0.007**

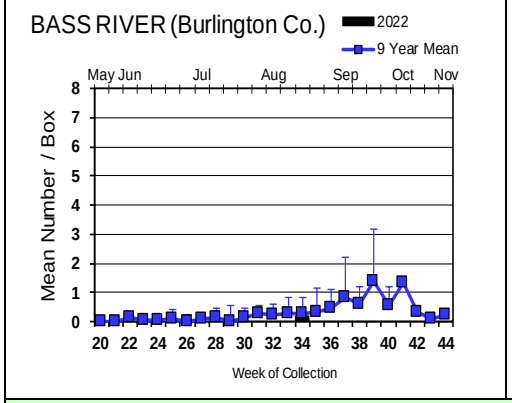
Additional Species: 34 additional species were tested for EEE. No positive pools were detected. In 2021, the first positive non-*melanura* pool was detected in of *Culex erraticus* in Atlantic County on 5 Aug.

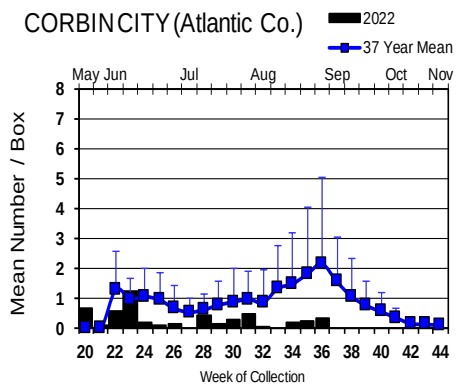
Overall MFIR rates, human and animal cases per county:

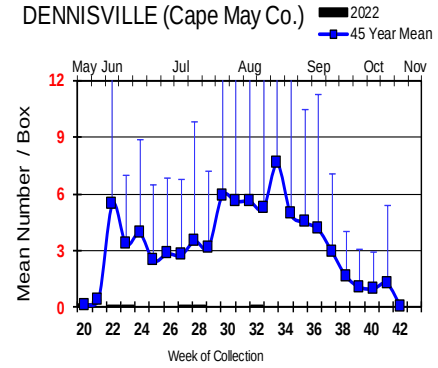


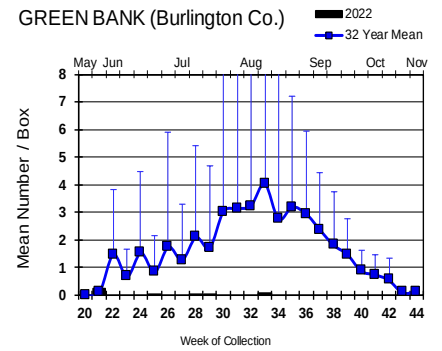
Culiseta melanura Populations

Coastal

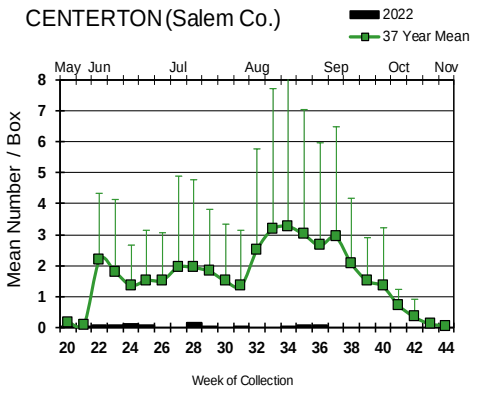


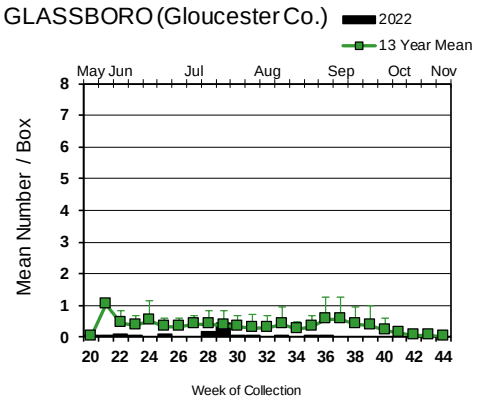


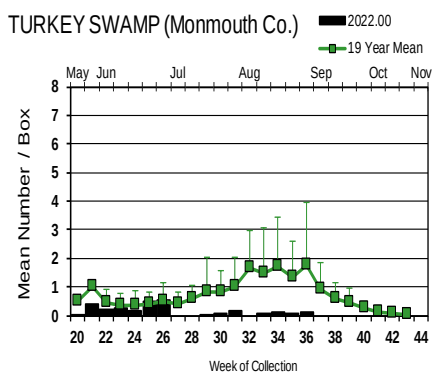


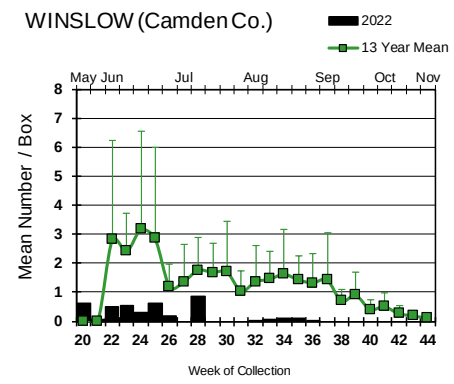


Inland









***Cs. melanura* populations continue to remain below historic levels at the traditional resting box sites. Currently, one positive EEE pool have been detected at a Morris County (northern part of the state) in a pool of *Culex pipiens* (refractory for the EEE virus). No *Culiseta melanura* pools have been detected positive for EEE.**

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

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

- **equine: 9(FL) 1(MI)**
- **mosquito pools: 1(NJ) 1(RI)**
- **sentinel: 55(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		5
Arkansas					
California	113/126	2136/2399	78/84	5/6	35/41
Colorado		199/231			39/42
Connecticut		154/173			
Delaware					
Florida		2/2	97/112	1	1/1
Georgia					1/1
Hawaii					
Idaho	0	24/24		1/1	0
Illinois	8/11	1634/1938		0	1/2
Indiana	0	103/117		1/1	1/2
Iowa					
Kansas					
Kentucky					
Louisiana					
Maine					
Maryland(+DC)					
Mass.		76/85		0	2/4
Michigan	6/7	18/22		1	3/3
Minnesota					
Mississippi		60/65			3/5
Missouri		0		0	1/2

	Birds	Mosquito Pools	Sentinels	Horses*	Humans
Montana					
Nebraska					
Nevada					
New Hampshire					
New Jersey	1/5	375/451			5/6
New Mexico					
New York					
North Carolina					
North Dakota	1	24		0	5/11
Ohio		517/637		0	1/3
Oklahoma					
Oregon	0	33/33	0	1	0
Pennsylvania	4/5	1963/2208			6/9
Rhode Island		1/2			
South Carolina					
South Dakota		7/7			23/31
Tennessee					
Texas	1	208/226	0	0	7/11
Utah					
Vermont		2/6		0	0
Virginia					
Washington		5			
West Virginia					
Wisconsin					
Wyoming		5/6		0	2

* 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.

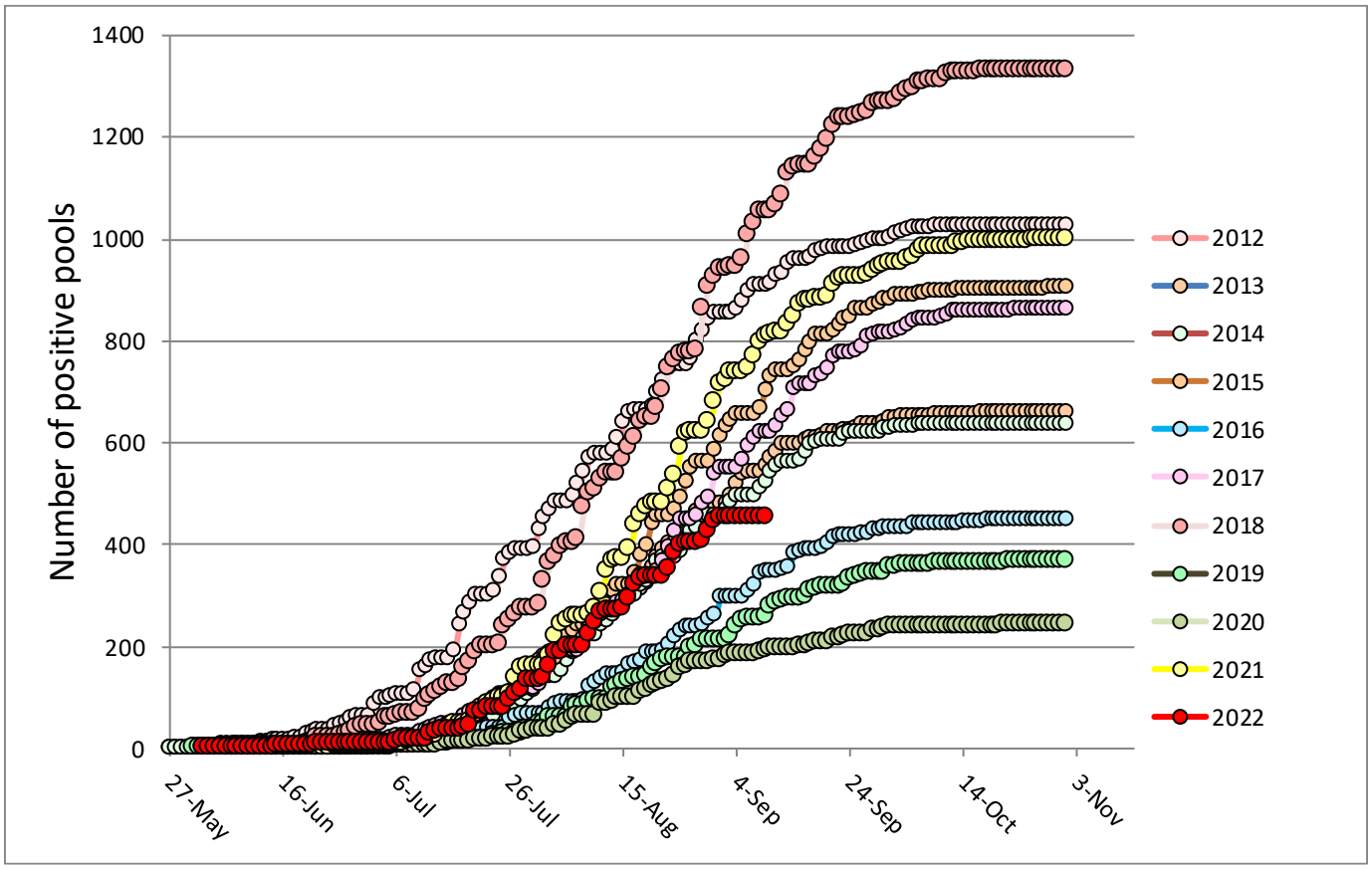
Mosquito Species Submitted and Tested for West Nile Virus through 9 September 2022

Species	Pools	Mosquitoes	Positives	MFIR
Aedes abserratus	17	393		
Aedes albopictus	510	5453	10	1.834
Aedes atlanticus	3	7		
Aedes atropalpus	1	1		
Aedes aurifer	16	154		
Aedes canadensis canadensis	78	1254	1	0.797
Aedes cantator	50	1660	1	0.602
Aedes cinereus	4	48		
Aedes grossbecki	9	51		
Aedes japonicus	426	2872	7	2.437
Aedes provocans	2	3		
Aedes sollicitans	35	921		
Aedes sticticus	7	166		
Aedes stimulans	13	71		
Aedes taeniorhynchus	47	1539		
Aedes triseriatus	154	495	2	4.040
Aedes trivittatus	9	68		
Aedes vexans	143	3193	1	0.313
Anopheles spp.	3	97		
Anopheles barberi	4	4		
Anopheles bradleyi	24	446		
Anopheles crucians	8	20		
Anopheles punctipennis	199	2138		
Anopheles quadrimaculatus	74	886	1	1.129
Coquillettidia perturbans	173	3788		
Culex erraticus	102	2132	1	0.469
Culex spp.	2666	98865	411	4.157
Culex pipiens	208	7340	15	2.044
Culex restuans	135	1972		
Culex salinarius	25	441		
Culiseta inornata	8	17		
Culiseta melanura	263	1963	1	0.509
Culiseta morsitans	2	2		
Orthopodomyia signifera	2	2		
Psorophora ciliata	3	9		
Psorophora columbiae	9	43		
Psorophora ferox	19	265		
Grand Total	**5451**	**138779**	**451**	**3.250**

Remarks: To date 5451 pools of 138,779 mosquitoes from 34 species have been tested, with 451 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, Aedes albopictus, Ae. canadensis canadensis, Ae. cantator, Ae. japonicus, Ae. triseriatus*, and *Ae. vexans, Culex erraticus and Culiseta melanura* (the latter two positive in weeks 34 and 35). Cumulative MFIR for all mosquitoes in New Jersey is 3.250, up from last week's value of 2.871.

Humans, Horses and Wild Birds: Six human cases of WNV have been detected, one each in Bergen, Camden, Morris and Union counties and two in Ocean county. 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 also include one Cooper's Hawk (*Accipter cooperii*) and three Red-tailed Hawks (*Buteo jamaicensis*), all adult males from a raptor rehabilitation center (Essex, Morris, and Somerset county origins).



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.