

VECTOR SURVEILLANCE IN NEW JERSEY

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

Prepared by Lisa M. Reed and Dina Fonseca

Center for Vector Biology, Rutgers University

14 August to 20 August 2022, CDC Week 33

Data download 5:04 pm 19 August



This New Jersey Agricultural Experiment Station report is supported by Rutgers University, Hatch funds, funding from the NJ State Mosquito Control Commission and with the participation of the Department of Health, Department of Agriculture and of the 21 county mosquito control agencies of New Jersey. Data is held in JerseySurv, a subset of the CalSurv system.

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.
- No pools tested for EEE virus have been detected positive in any species submitted to date. No horse or human cases have been reported.
- 268 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*, *Aedes albopictus*, *Ae. canadensis canadensis*, *Aedes cantator*, *Ae. triseriatus*, and *Ae. vexans*. No horse or human cases have been reported. One Red-tailed Hawk (*Buteo jamaicensis*) from Somerset County tested positive for WNV.
- No pools tested for SLE, LAC, DENG, CHIK, or ZIKA virus have been detected positive in any species submitted to date.
- 2 pools have tested positive for JC virus, 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. trivittatus*, *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	0.27	0.00	0	0		
Green Bank (Burlington Co.)/25	Coastal	4.03	0.08	11	5		
Corbin City (Atlantic Co.)/25	Coastal	1.34	0.00	136	14		
Dennisville (Cape May Co.)/50	Coastal	5.24	0.00	26 (27)	6 (7)		
Winslow (Camden Co.)/50	Inland	1.45	0.00	211 (214)	10 (11)		
Centerton (Salem Co.)/50	Inland	3.19	0.00	36	10		
Turkey Swamp (Monmouth Co.)/50	Inland	1.49	0.06	103	13		
Glassboro (Gloucester Co.)/50	Inland	0.42	0.00	29 (30)	10 (11)		

*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 no positive EEE pools detected in the samples submitted.

Statewide: 1727 *Cs. melanura* from 220 pools have been submitted for testing, with no positive pools detected and an overall *Cs. melanura* MFIR of 0.000. 112,757 specimens in 4099 pools from 33 other species have also been tested with no positive pools detected. Overall MFIR for all species statewide is 0.000.

Traditional Resting Box Sites: 552 *Cs. melanura* from 68 pools (corrected from last week) have been collected at the traditional resting box sites with no positive pools detected and 3 pools of 5 total mosquitoes pending. Overall *Cs. melanura* MFIR at the traditional resting box site is 0.00.

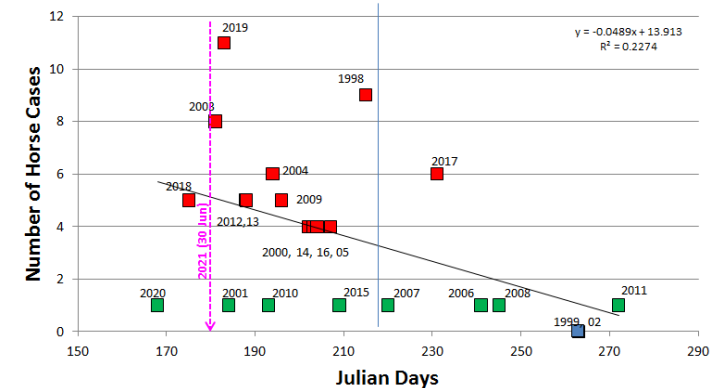
Additional <i>Cs. melanura</i> trapped by counties *traps with positives indicated in BOLD UNDERLINED>					
County	Trap types*	Pools	Mosquitoes	Positives	MFIR
Atlantic	CO2, RB	31	394		
Bergen	RB	2	42		
Burlington	UVLT	8	70		
Cape May	GRA, RB	12	20		
Cumberland	CO2, GRA, RB	24	83		
Gloucester	RB	12	127		
Middlesex	NJLT	3	15		
Monmouth	CO2	3	4		
Morris	ASP, CO2, GRA, RB	25	157		
Ocean	CO2	3	5		
Salem	CO2, RB	11	116		
Sussex	CO2, RB	18	142		
TOTAL		152	1175		

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/>

EEE horse cases/year Timeline



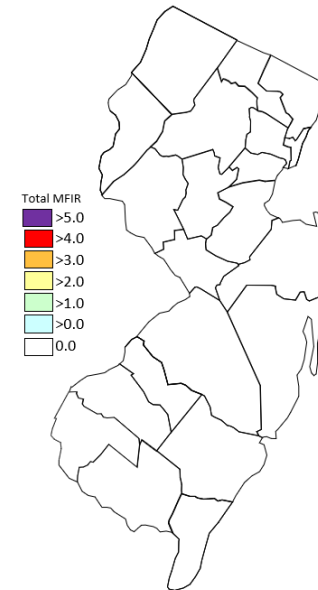
Case	Animal	Age	Sex	County	Date of Onset	Euthanized?	Vaccinated?	Comment
------	--------	-----	-----	--------	---------------	-------------	-------------	---------

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 <i>Cs. melanura</i>	Pools	Mosquitoes	Positives	MFIR
<i>Aedes abserratus</i>	17	393		
<i>Aedes albopictus</i>	333	3516		
<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>	49	1658		
<i>Aedes cinereus</i>	4	48		
<i>Aedes grossbecki</i>	9	51		
<i>Aedes japonicus</i>	345	2423		
<i>Aedes provocans</i>	2	3		
<i>Aedes sollicitans</i>	27	550		
<i>Aedes sticticus</i>	7	166		
<i>Aedes stimulans</i>	13	71		
<i>Aedes taeniorhynchus</i>	25	675		
<i>Aedes triseriatus</i>	63	164		
<i>Aedes trivittatus</i>	5	64		
<i>Aedes vexans</i>	123	2757		
<i>Anopheles spp.</i>	3	97		
<i>Anopheles barberi</i>	4	4		
<i>Anopheles bradleyi</i>	20	341		
<i>Anopheles crucians</i>	7	13		
<i>Anopheles punctipennis</i>	176	1945		
<i>Anopheles quadrimaculatus</i>	60	798		
<i>Coquillettidia perturbans</i>	155	3622		
<i>Culex erraticus</i>	48	654		
<i>Culex Mix</i>	2139	82203		
<i>Culex pipiens</i>	178	6522		
<i>Culex restuans</i>	131	1927		
<i>Culex salinarius</i>	18	342		
<i>Culiseta inornata</i>	7	15		
<i>Orthopodomyia signifera</i>	2	2		
<i>Psorophora ciliata</i>	3	9		
<i>Psorophora columbiae</i>	9	43		
<i>Psorophora ferox</i>	19	265		
State Total	4099	112757		

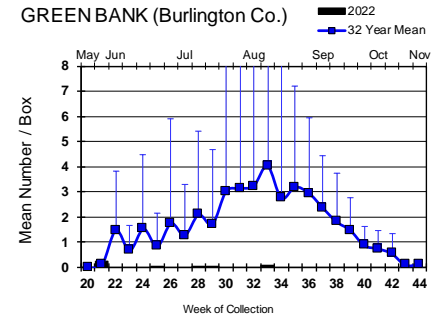
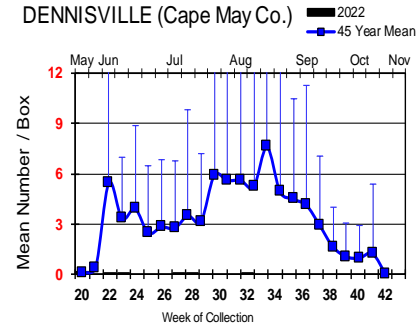
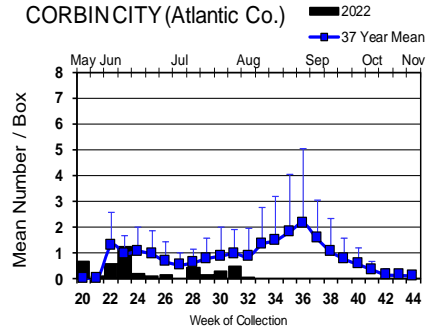
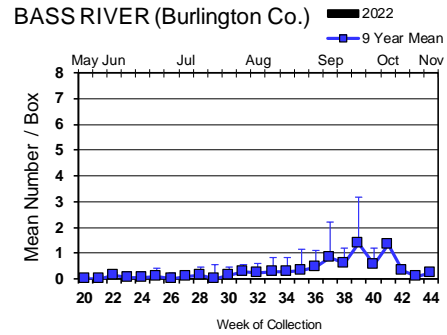
Additional Species: 33 additional species were tested for EEE. No positive pools were detected. In 2021, the first positive non-*melanura* pool was detected in of *Culex erraticus* in Atlantic County on 5 Aug.

Overall MFIR rates, human and animal cases per county:

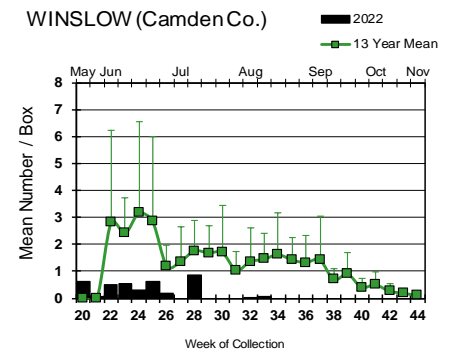
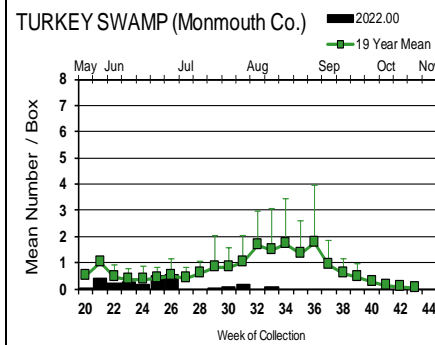
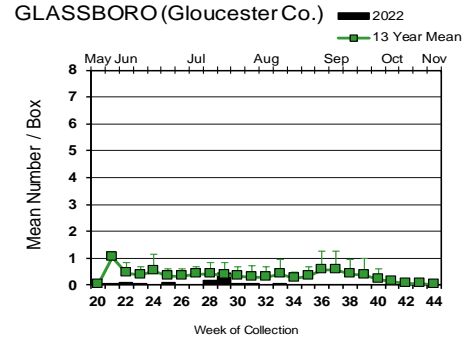
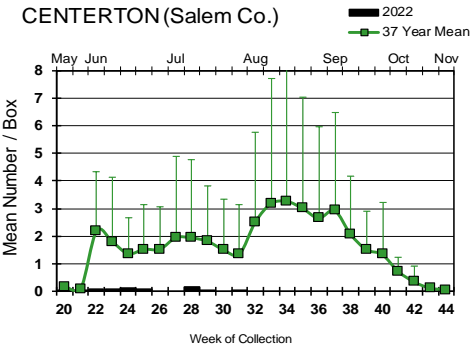


Culiseta melanura Populations



Coastal



Inland



***Cs. melanura* populations continue to remain below historic levels at the traditional resting box sites. Very few specimens again were collected this week. Drought conditions continue. Currently, no positive EEE pools have been detected at any sites within the state, but a Green Bank sample of *Ae. cantator* was positive for WNV near the beginning of the season.**



 = 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)
- mosquito pools:
- sentinel: 47(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	68/78	1263/1609	17/40	2/2	12/18
Colorado		82/119			5/5
Connecticut		46/88			
Delaware					
Florida		1/2	30/37		
Georgia					1/1
Hawaii					
Idaho	0	3/8		0	0
Illinois	1/3	652/952		0	0
Indiana	0	40/40		1	1/1
Iowa					
Kansas					
Kentucky					
Louisiana					
Maine					
Maryland(+DC)					
Mass.		22/33		0	0
Michigan					
Minnesota					
Mississippi		46/50			3/3
Missouri		0		0	1/1

	Birds	Mosquito Pools	Sentinels	Horses*	Humans
Montana					
Nebraska					
Nevada					
New Hampshire					
New Jersey	1	191/268		0	0
New Mexico					
New York					
North Carolina					
North Dakota	0	0		0	5/5
Ohio		136/288		0	0
Oklahoma					
Oregon	0	8/12	0	1	0
Pennsylvania	1/2	877/1313			6/6
Rhode Island		0			
South Carolina					
South Dakota		0			1/9
Tennessee					
Texas	0	135/164	0	0	5/6
Utah					
Vermont		1		0	0
Virginia					
Washington					
West Virginia					
Wisconsin					
Wyoming		3/3		0	0

* 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.

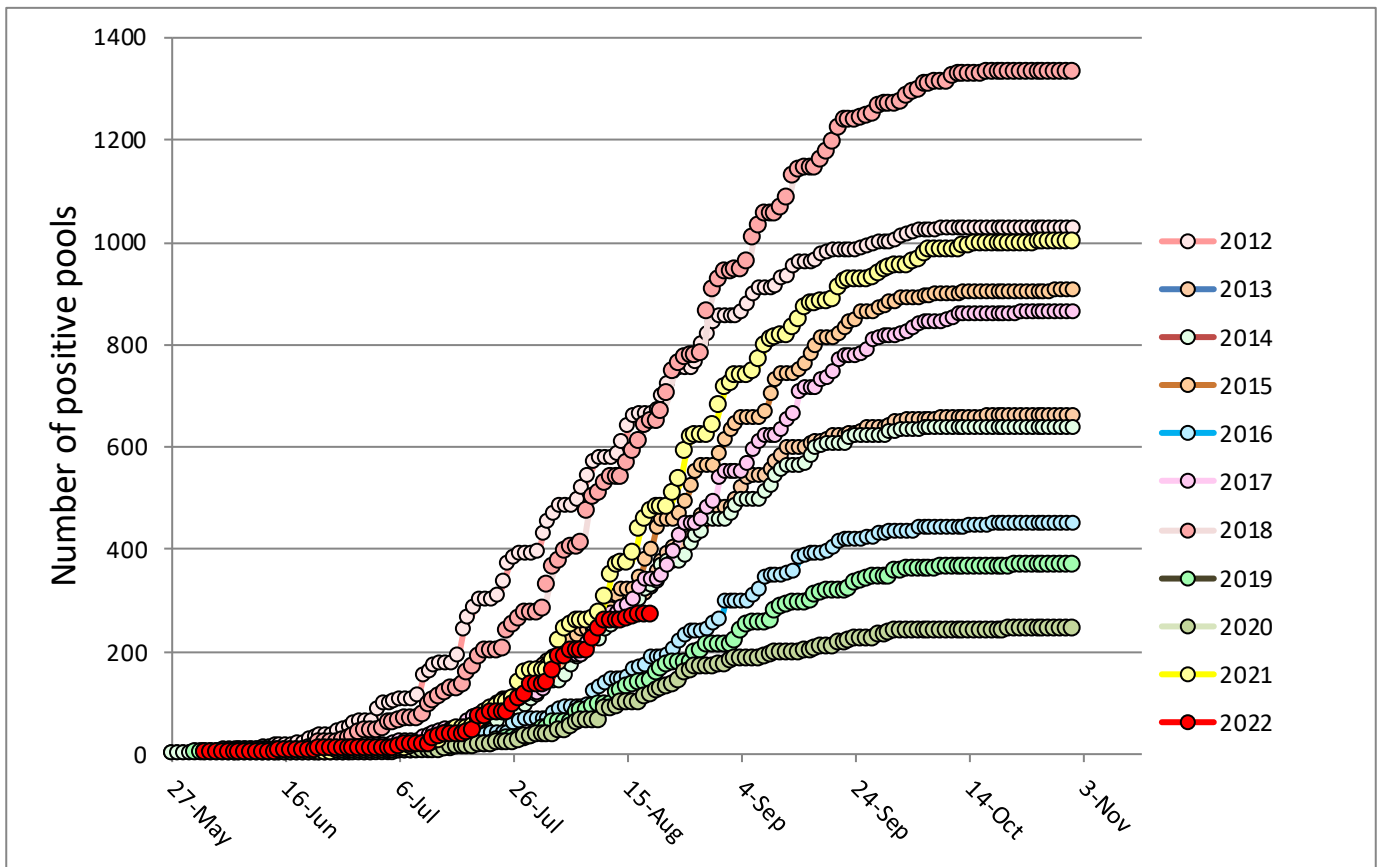
Mosquito Species Submitted and Tested for West Nile Virus through 19 August 2022

Species	Pools	Mosquitoes	Positives	MFIR
<i>Aedes abserratus</i>	17	393		
<i>Aedes albopictus</i>	333	3516	6	1.706
<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>	49	1658	1	0.603
<i>Aedes cinereus</i>	4	48		
<i>Aedes grossbecki</i>	9	51		
<i>Aedes japonicus</i>	357	2590		
<i>Aedes provocans</i>	2	3		
<i>Aedes sollicitans</i>	28	582		
<i>Aedes sticticus</i>	7	166		
<i>Aedes stimulans</i>	13	71		
<i>Aedes taeniorhynchus</i>	25	675		
<i>Aedes triseriatus</i>	131	425	1	2.353
<i>Aedes trivittatus</i>	5	64		
<i>Aedes vexans</i>	123	2757	1	0.363
<i>Anopheles spp.</i>	3	97		
<i>Anopheles barberi</i>	4	4		
<i>Anopheles bradleyi</i>	20	341		
<i>Anopheles crucians</i>	7	13		
<i>Anopheles punctipennis</i>	176	1945		
<i>Anopheles quadrimaculatus</i>	60	798		
<i>Coquillettidia perturbans</i>	155	3622		
<i>Culex erraticus</i>	48	654		
<i>Culex spp.</i>	2139	82203	250	3.041
<i>Culex pipiens</i>	178	6522	8	1.227
<i>Culex restuans</i>	131	1927		
<i>Culex salinarius</i>	18	342		
<i>Culiseta inornata</i>	7	15		
<i>Culiseta melanura</i>	225	1745		
<i>Orthopodomyia signifera</i>	2	2		
<i>Psorophora ciliata</i>	3	9		
<i>Psorophora columbiae</i>	9	43		
<i>Psorophora ferox</i>	19	265		
Grand Total	4405	114962	268	2.331

Remarks: To date 4405 pools of 114,962 mosquitoes from 34 species have been tested, with 268 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. triseriatus*, and *Ae. vexans*. Cumulative MFIR for all mosquitoes in New Jersey is 2.331, up from last week's value of 1.810.

Humans, Horses and Wild Birds: No date, no humans or livestock have been reported with WNV. 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.



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.