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

3 July to 9 July 2022, CDC Week 27

Data download 2:10 pm 8 July

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 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.**

- **No pools tested for EEE virus have been detected positive in any species submitted to date. No horse or human cases have been reported.**
- **9 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, *Aedes cantator*, *Ae. triseriatus*, and *Ae. vexans*. No horse or human 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.**
- **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. 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**	0.10	0.00 PW	0	0		
Green Bank (Burlington Co.)/25	**Coastal**	1.28	0.00 PW	7	2		
Corbin City (Atlantic Co.)/25	**Coastal**	0.55	0.16 PW	99	9		
Dennisville (Cape May Co.)/50	**Coastal**	2.76	0.22 PW	20	4		
Winslow (Camden Co.)/50	**Inland**	1.36	2.30 PW	145	7		
Centerton (Salem Co.)/50	**Inland**	1.95	0.50 PW	25	6		
Turkey Swamp (Monmouth Co.)/50	**Inland**	0.41	0.56 PW	106	14		
Glassboro (Gloucester Co.)/50	**Inland**	0.39	0.24 PW	19	6		

*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.

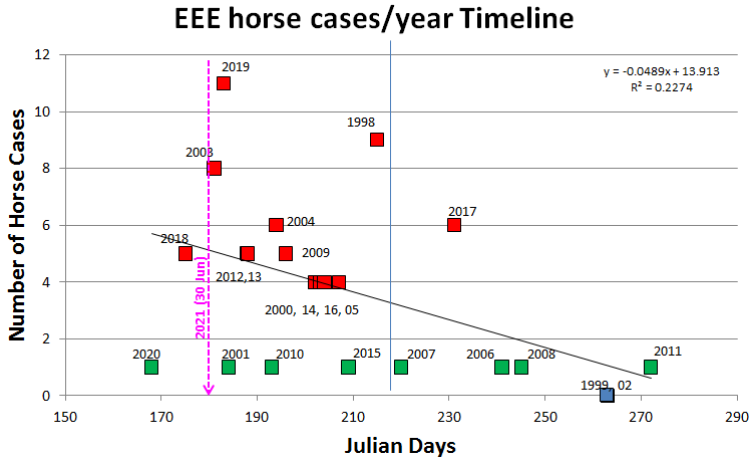
Statewide: 1144 *Cs. melanura* from 140 pools have been submitted for testing, with no positive pools detected and an overall *Cs. melanura* MFIR of 0.000. 49,526 specimens in 1920 pools from 30 other species have also been tested with no positive pools detected. Overall MFIR for *all* species statewide is 0.000.

Traditional Resting Box Sites: 421 *Cs. melanura* from 48 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 *Cs. melanura* trapped by counties *traps with positives indicated in **BOLD UNDERLINED.**				
County	**Trap types***	**Pools**	**Mosquitoes**	**Positives**	**MFIR**
Atlantic	CO2, RB	16	216		
Bergen	RB	2	42		
Cape May	GRA	12	20		
Cumberland	CO2, RB	16	59		
Gloucester	RB	7	91		
Middlesex	NJLT	3	15		
Monmouth	CO2	3	4		
Morris	ASP, CO2, GRA, RB	14	99		
Ocean	CO2	1	3		
Salem	CO2, RB	6	62		
Sussex	CO2, RB	12	112		
TOTAL		**92**	**723**		

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 above 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/

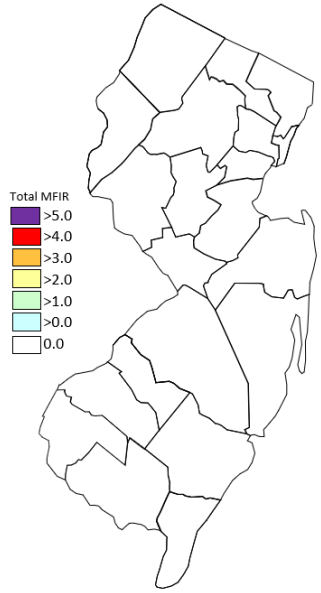
Case	Animal	Age	Sex	County	Date of Onset	Euthanized?	Vaccinated?	Comment

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	91	637		
Aedes atlanticus	3	7		
Aedes aurifer	14	104		
Aedes canadensis canadensis	58	950		
Aedes cantator	41	1625		
Aedes cinereus	2	21		
Aedes grossbecki	9	51		
Aedes japonicus	171	919		
Aedes provocans	2	3		
Aedes sollicitans	17	228		
Aedes sticticus	7	166		
Aedes stimulans	13	71		
Aedes taeniorhynchus	12	376		
Aedes triseriatus	19	47		
Aedes vexans	84	2145		
Anopheles bradleyi	7	114		
Anopheles crucians	3	3		
Anopheles punctipennis	105	1224		
Anopheles quadrimaculatus	22	272		
Coquillettidia perturbans	74	1848		
Culex erraticus	6	15		
Culex Mix	889	32801		
Culex pipiens	105	3375		
Culex restuans	112	1598		
Culex salinarius	13	264		
Culiseta inornata	4	7		
Orthopodomyia signifera	1	1		
Psorophora ciliata	2	7		
Psorophora columbiae	4	33		
Psorophora ferox	13	221		
State Total	**1920**	**49526**		

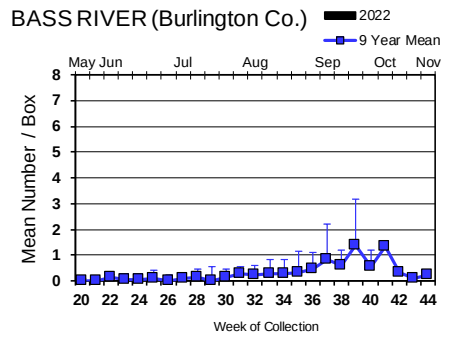
Additional Species: 30 additional species were tested for EEE. No positive pools were detected. In 2021, the first positive non-*melanura* pool was detected in of *Culex erraticus* in Atlantic County on 5 Aug.

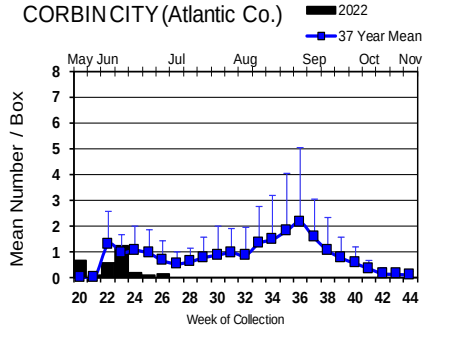
Overall MFIR rates, human and animal cases per county:

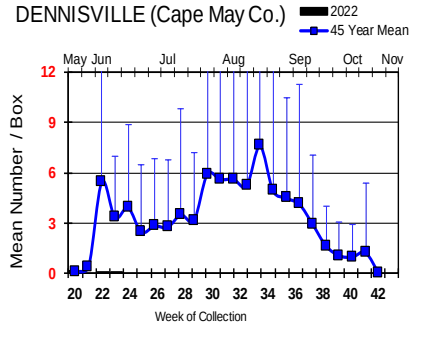


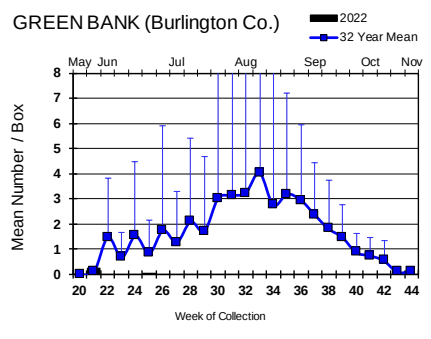
Culiseta melanura Populations

Coastal

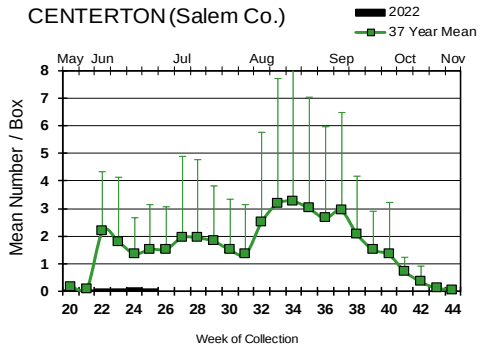


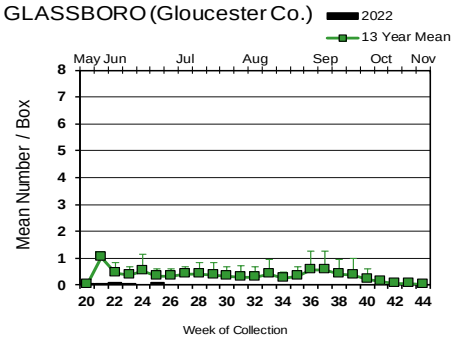


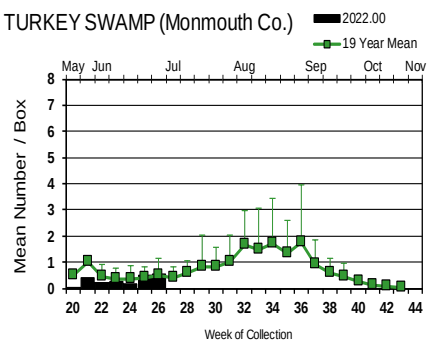


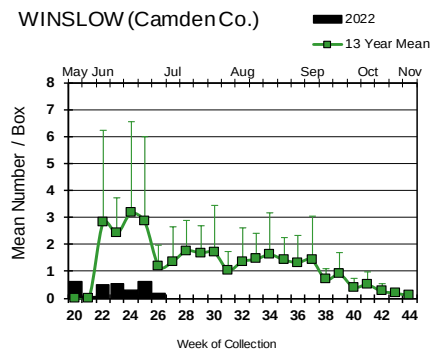


Inland









As with other species throughout the state, *Cs. melanura* populations remain below historic levels at the traditional resting box sites. Currently, no positive EEE pools have been detected at any sites withing the state, but a Green Bank sample of *Ae. cantator* was positive for WNV.

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

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

- **equine: 6(FL)**
- **mosquito pools:**
- **sentinel: 30(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					0
Alaska					
Arizona		2	0		5
Arkansas					
California	12/20	87/222	0	0	0
Colorado		0			0
Connecticut		0			
Delaware					
Florida			5/5		
Georgia					1
Hawaii					
Idaho	0	0		0	0
Illinois	0	27/37		0	0
Indiana	0	1/1		0	1/1
Iowa					
Kansas					
Kentucky					
Louisiana					
Maine					
Maryland(+DC)					
Mass.		0		0	0
Michigan					
Minnesota					
Mississippi		7/15			3/3
Missouri		0		0	0

	Birds	Mosquito Pools	Sentinels	Horses*	Humans
Montana					
Nebraska					
Nevada					
New Hampshire					
New Jersey	0	7/9		0	0
New Mexico					
New York					
North Carolina					
North Dakota	0	0		0	1/1
Ohio		4/4		0	0
Oklahoma					
Oregon	0	0	0	0	0
Pennsylvania		10/18			
Rhode Island					
South Carolina					
South Dakota		1			
Tennessee					
Texas	0	25/32	0	0	1
Utah					
Vermont		0		0	0
Virginia					
Washington					
West Virginia					
Wisconsin					
Wyoming		0		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.

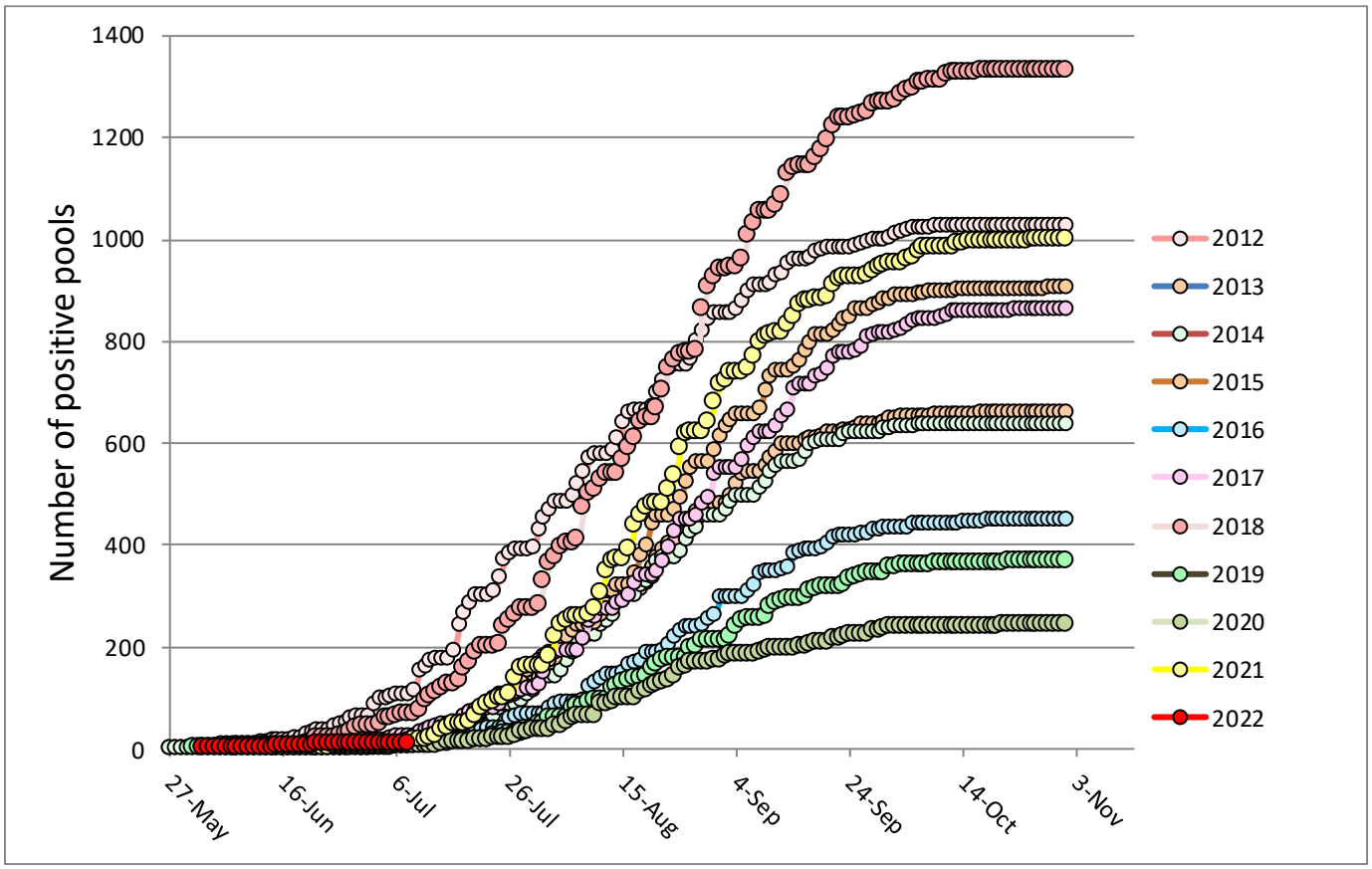
Mosquito Species Submitted and Tested for West Nile Virus through 8 July 2022

Species	Pools	Mosquitoes	Positives	MFIR
Aedes abserratus	17	393		
Aedes albopictus	91	637		
Aedes atlanticus	3	7		
Aedes aurifer	14	104		
Aedes canadensis canadensis	58	950		
Aedes cantator	41	1625	1	0.615
Aedes cinereus	2	21		
Aedes grossbecki	9	51		
Aedes japonicus	171	919		
Aedes provocans	2	3		
Aedes sollicitans	17	228		
Aedes sticticus	7	166		
Aedes stimulans	13	71		
Aedes taeniorhynchus	12	376		
Aedes triseriatus	36	97	1	10.309
Aedes vexans	84	2145	1	0.466
Anopheles bradleyi	7	114		
Anopheles crucians	3	3		
Anopheles punctipennis	105	1224		
Anopheles quadrimaculatus	22	272		
Coquillettidia perturbans	74	1848		
Culex erraticus	6	15		
Culex spp.	889	32801	4	0.122
Culex pipiens	105	3375	2	0.593
Culex restuans	112	1598		
Culex salinarius	13	264		
Culiseta inornata	4	7		
Culiseta melanura	140	1144		
Orthopodomyia signifera	1	1		
Psorophora ciliata	2	7		
Psorophora columbiae	4	33		
Psorophora ferox	13	221		
Grand Total	**2077**	**50720**	**9**	**0.177**

Remarks: To date 2077 pools of 50,720 mosquitoes from 31 species have been tested, with 9 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 cantator, Ae. triseriatus*, and *Ae. vexans*. Cumulative MFIR for all mosquitoes in New Jersey is 0.177.

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.