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

18 June to 24 June 2022, CDC Week 25

Data download 3:15 pm 24 June

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.**
- **5 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 virus have been detected positive in any species submitted to date.**
- **No pools tested for LAC 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.**
- **No pools tested for DENG, CHIK, and ZIKA have been detected positive in any samples submitted to date.**

- **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**	0.04	0.00	0	0		
Green Bank (Burlington Co.)/25	**Coastal**	1.54	0.00	6	1		
Corbin City (Atlantic Co.)/25	**Coastal**	0.99 (week 23)	1.28 (week 23)	87	5		
Dennisville (Cape May Co.)/50	**Coastal**	3.93	0.00	9	2		
Winslow (Camden Co.)/50	**Inland**	3.16	0.00	32(57)	1(2)		
Centerton (Salem Co.)/50	**Inland**	1.37	0.00	9	3		
Turkey Swamp (Monmouth Co.)/50	**Inland**	0.36	0.24	45	7		
Glassboro (Gloucester Co.)/50	**Inland**	0.53	0.00	7	2		

*Current week (in parentheses) results pending. ‡ corrected from previous week na =not available ND=No Data (site offline) NR=Not Recorded

Remarks: *NOTE: Due to external circumstances, this first page (and traditional resting box graphs page 4) will not be updated until later.* Currently, there are no positive EEE pools detected in the samples submitted.

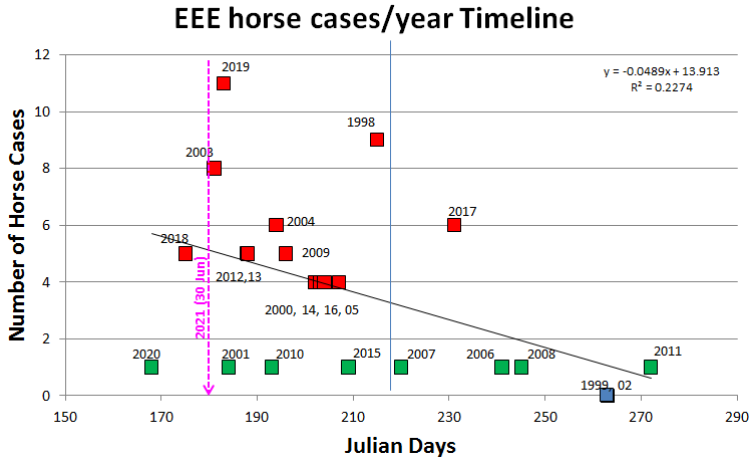
Statewide: 658 *Cs. melanura* from 73 pools have been submitted for testing, with no positive pools detected and an overall *Cs. melanura* MFIR of 0.000. 19,645 specimens in 884 pools from 26 other species have also been tested with no positive pools detected. Overall MFIR for *all* species statewide is 0.000.

Traditional Resting Box Sites: 243 *Cs. melanura* from 22 pools have been collected at the traditional resting box sites. Of these, 20 pools of 186 mosquitoes have been submitted for testing 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	10	141		
Bergen	RB	2	42		
Cape May	GRA	4	6		
Cumberland	CO2, RB	9	34		
Gloucester	RB	7	91		
Middlesex	NJLT	3	15		
Monmouth	CO2	3	4		
Morris	ASP, CO2, GRA, RB	12	82		
Ocean	CO2	1	3		
Salem	CO2, RB	5	49		
Sussex	CO2	6	56		
TOTAL		**62**	**523**		

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 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/

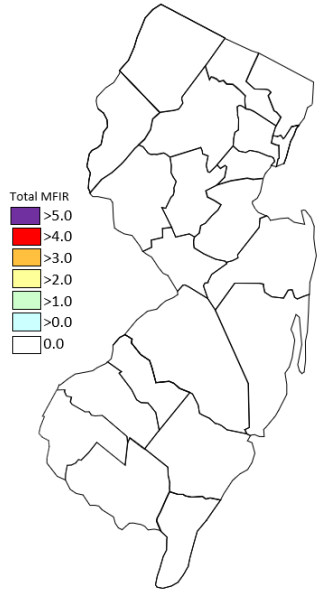
Case	Animal	Age	Sex	County	Date of Onset	Euthanized?	Vaccinated?	Comment

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	55	290		
Aedes atlanticus	1	1		
Aedes aurifer	8	81		
Aedes canadensis canadensis	44	819		
Aedes cantator	37	1509		
Aedes cinereus	1	1		
Aedes grossbecki	5	41		
Aedes japonicus	100	381		
Aedes provocans	2	3		
Aedes sollicitans	15	223		
Aedes sticticus	7	166		
Aedes stimulans	9	34		
Aedes taeniorhynchus	11	352		
Aedes triseriatus	11	23		
Aedes vexans	65	1655		
Anopheles bradleyi	5	83		
Anopheles punctipennis	78	943		
Anopheles quadrimaculatus	12	179		
Coquillettidia perturbans	29	417		
Culex erraticus	3	5		
Culex Mix	583	19696		
Culex pipiens	64	2241		
Culex restuans	64	1255		
Culex salinarius	8	152		
Culiseta inornata	2	4		
Psorophora columbiae	4	33		
Psorophora ferox	5	48		
State Total	**1245**	**31028**		

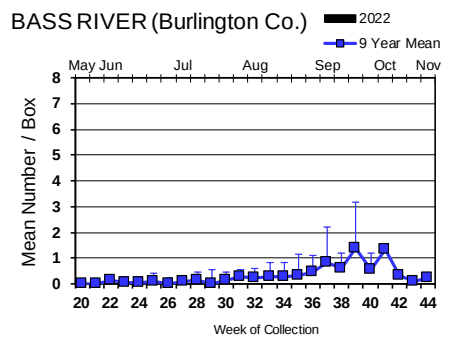
Additional Species: 27 additional species were tested for EEE. No positive pools were detected. In 2021, the first positive non-*melanura* pool was detected in of *Culex erraticus* in Atlantic County on 5 Aug.

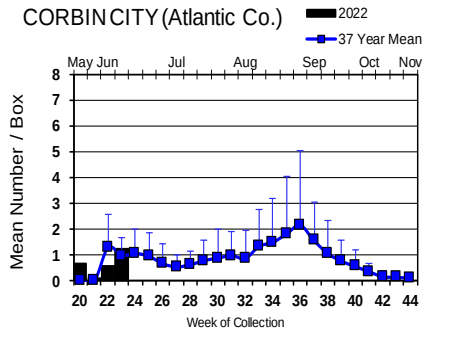
Overall MFIR rates, human and animal cases per county:

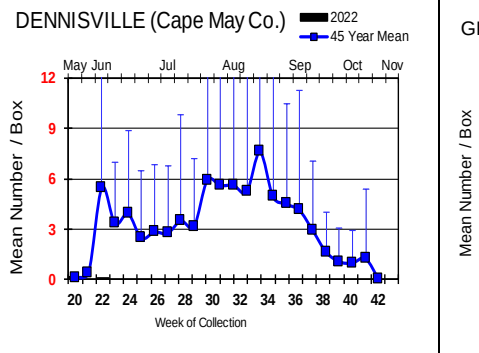


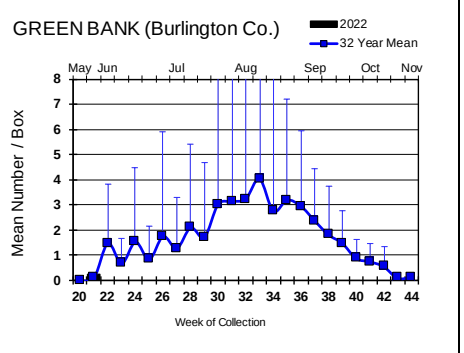
Culiseta melanura Populations

Coastal

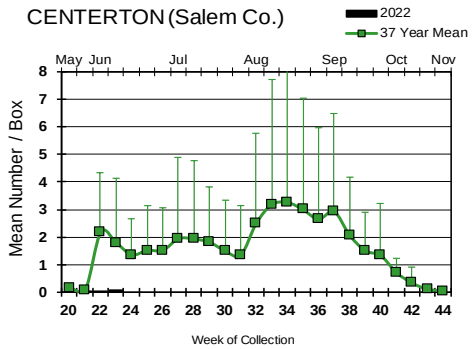


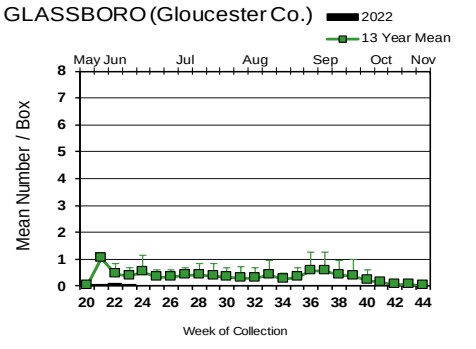


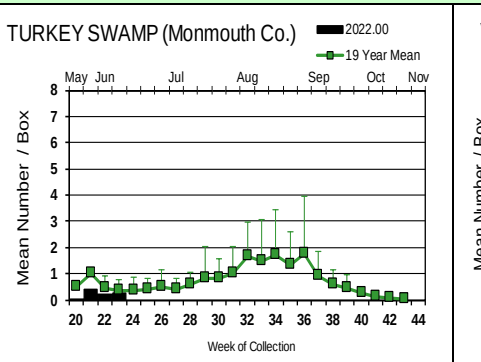


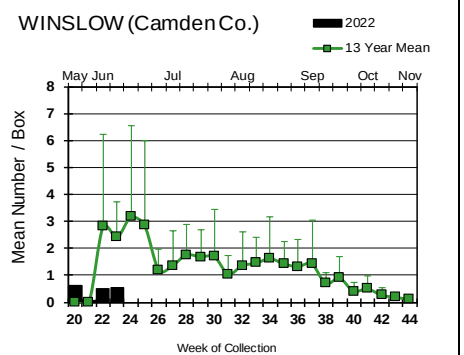


Inland









Note: This page will be updated when the first page is updated. Little has changed from the previous week, with populations well below historic levels at the traditional resting box sites. Currently, no positive EEE pools have been detected at any sites withing the state.

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

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

- **equine: 3(FL)**
- **mosquito pools:**
- **sentinel: 24(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	**10/10**	**56/56**	**0**	**0**	**0**
Colorado					
Connecticut		**0**			
Delaware					
Florida			**5/5**		
Georgia					**1**
Hawaii					
Idaho	**0**	**0**		**0**	**0**
Illinois	**0**	**10/16**		**0**	**0**
Indiana	**0**	**0**		**0**	**0**
Iowa					
Kansas					
Kentucky					
Louisiana					
Maine					
Maryland(+DC)					
Mass.		**0**		**0**	**0**
Michigan					
Minnesota					
Mississippi		**5/5**			**3/3**
Missouri		**0**		**0**	**0**

	Birds	Mosquito Pools	Sentinels	Horses*	Humans
Montana					
Nebraska					
Nevada					
New Hampshire					
New Jersey	**0**	**1/5**		**0**	**0**
New Mexico					
New York					
North Carolina					
North Dakota					
Ohio		**4**		**0**	**0**
Oklahoma					
Oregon	**0**	**0**	**0**	**0**	**0**
Pennsylvania		**6/10**			
Rhode Island					
South Carolina					
South Dakota					
Tennessee					
Texas	**0**	**6/11**	**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.

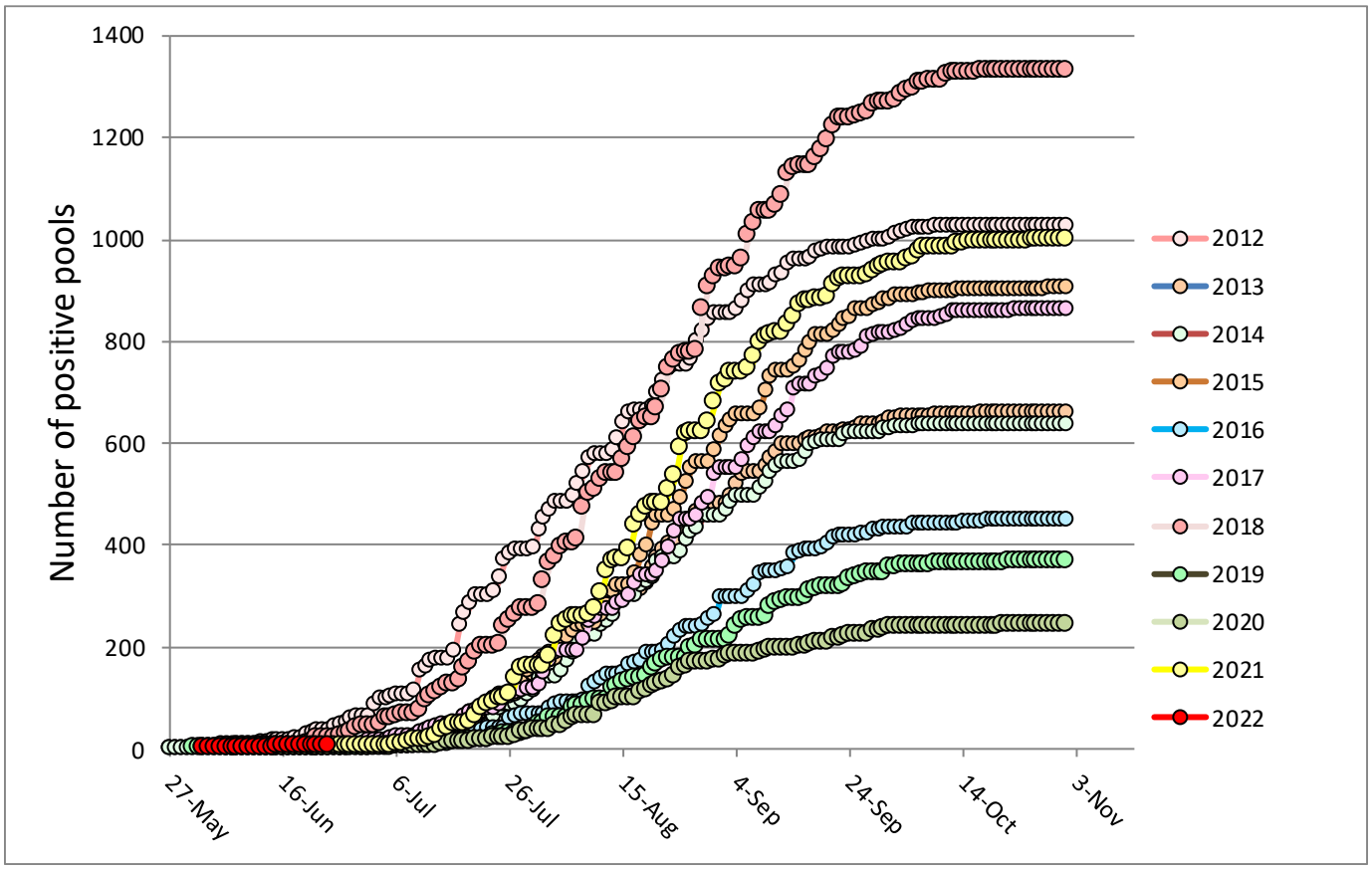
Mosquito Species Submitted and Tested for West Nile Virus through 24 June 2022

Species	Pools	Mosquitoes	Positives	MFIR
Aedes abserratus	17	393		
Aedes albopictus	55	290		
Aedes atlanticus	1	1		
Aedes aurifer	8	81		
Aedes canadensis canadensis	44	819		
Aedes cantator	37	1509	1	0.663
Aedes cinereus	1	1		
Aedes grossbecki	5	41		
Aedes japonicus	100	381		
Aedes provocans	2	3		
Aedes sollicitans	15	223		
Aedes sticticus	7	166		
Aedes stimulans	9	34		
Aedes taeniorhynchus	11	352		
Aedes triseriatus	22	55	1	18.182
Aedes vexans	65	1655	1	0.604
Anopheles bradleyi	5	83		
Anopheles punctipennis	78	943		
Anopheles quadrimaculatus	12	179		
Coquillettidia perturbans	29	417		
Culex erraticus	3	5		
Culex spp.	583	19696	2	0.102
Culex pipiens	64	2241		
Culex restuans	64	1255		
Culex salinarius	8	152		
Culiseta inornata	2	4		
Culiseta melanura	85	723		
Psorophora columbiae	4	33		
Psorophora ferox	5	48		
Grand Total	**1341**	**31783**	**5**	**0.157**

Remarks: To date 1341 pools of 31,783 mosquitoes from 28 species have been tested. 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, *Aedes cantator, Ae. triseriatus*, and *Ae. vexans*. Cumulative MFIR for all mosquitoes in New Jersey is 0.157.

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.