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

12 July to 18 July, 2020, CDC Week 29
Data download 2:08 pm 20 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

- **In 2020, there is one positive EEE pool in *Culiseta melanura*.**
- **There are five positive WNV pools, in *Culex* Mix.**
- **There are two positive JVC pools in *Aedes cantator*.**
- **There are no horse or human arbovirus cases reported.**
- **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.**

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**	0.00	0.00	0			
Green Bank (Burlington Co.)/25	**Coastal**	1.84	0.00	1	1		
Corbin City (Atlantic Co.)/25	**Coastal**	0.81	0.12	35 (38)	6 (7)	1	28.571
Dennisville (Cape May Co.)/50	**Coastal**	3.25	NC	0			
Winslow (Camden Co.)/50	**Inland**	1.77	NC	0			
Centerton (Salem Co.)/50	**Inland**	1.86	NC	0			
Turkey Swamp (Monmouth Co.)/50	**Inland**	0.88	0.04	7 (9)	5 (6)		
Glassboro (Gloucester Co.)/50	**Inland**	0.45	NC	0‡			

*Current week (in parentheses) results pending. ‡ corrected from previous week NC=No Collection NR=Not Recorded

Remarks: Currently one positive EEE pool was detected collected in a pool of *Culiseta melanura* at the Corbin City traditional resting box site on 17 June. This is the earliest positive pool collected in the past 20 years (see graph page 2). Note that not all sites are up and running.

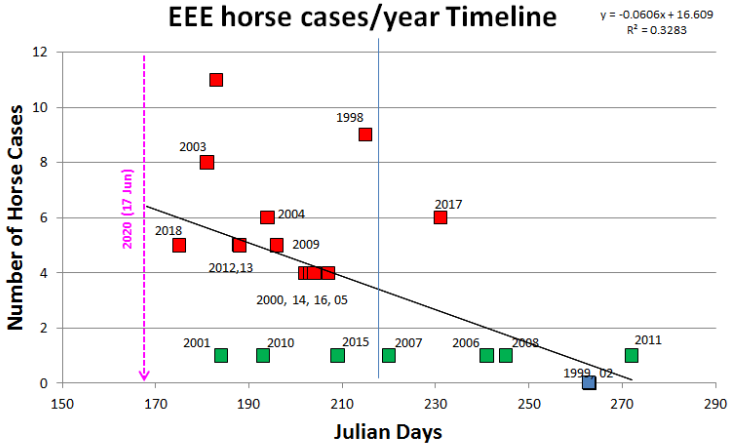
Statewide, 1,318 *Cs. melanura* from 174 pools have been tested, with an overall *Cs. melanura* MFIR of 0.759. 55,819 specimens in 1882 pools from 31 other species have also been tested, with no positive pools detected. Overall MFIR for all species statewide is 0.018.

Traditional Resting Box Sites: 43 (corrected from previous week) *Cs. melanura* from 12 pools has been tested, with one positive pool at Corbin City, collected 17 June. Two pools with 5 mosquitoes pending. MFIR at the traditional resting box site is 23.256.

	Additional *Cs. melanura* trapped by counties *traps with positives indicated in **BOLD UNDERLINED.**				
County	**Trap types***	**Pools**	**Mosquitoes**	**Positives**	**MFIR**
Atlantic	CO2, RB	13	125		
Bergen	RB	1	1		
Burlington	ULVT	18	371		
Cumberland	CO2, RB	3	12		
Gloucester	RB	36	437		
Middlesex	CO2, LT, RB	8	68		
Monmouth	CO2, Other	3	10		
Morris	CO2, RB	21	76		
Ocean	CO2	5	10		
Salem	CO2, Other, RB	17	44		
Sussex	CO2, RB	37	121		
TOTAL		**162**	**1275**		

Additional County-set *Cs. melanura*: Counties maintain trap sites for *Cs. melanura* in other areas, using a variety of traps. In the previous year, 2019, 36 pools of *Cs. melanura* have been found positive. Currently, there are no positive detections.

Graph below indicate start times to detection of EEE in *Culiseta melanura* from 1998 to 2020. This year is the earliest collected during that time period, suggesting multiple horse cases could occur this year.



Horses and Humans: Currently, no large animals have been reported with EEE. Last year eleven horses (plus 1 deer and 1 alpaca) were reported with EEE. All equids had either an incomplete or no vaccination history. ***Horse owners are urged to make sure their horses are up to date on their vaccinations. Horse cases are known to occur through October and sometimes into November (see link below).*** Other sensitive species are non-native birds, such as Ostriches/Emus and Gallinaceous birds such as pheasants of Eurasian origins.

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

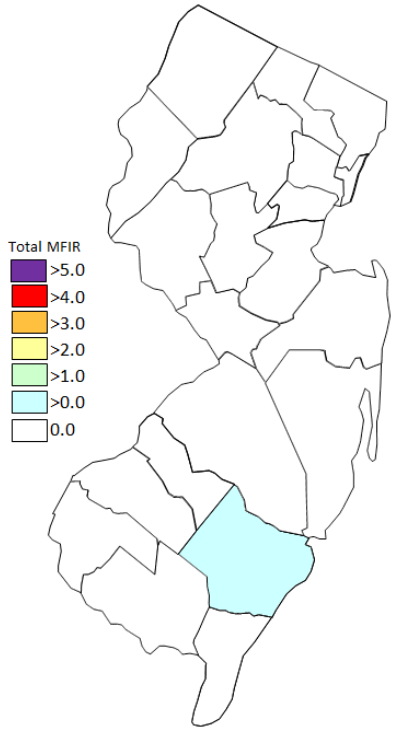
Horses and Vaccinations: The fate of unvaccinated equids reinforces the necessity of maintaining a vaccination schedule for arboviruses. For vaccination schedules recommended by the American Association of Equine Practices, see: http://www.aaep.org/vaccination_guidelines.htm

There are no human cases of EEE currently reported. For more information, see DOH Vectorborne Surveillance reports: https://www.nj.gov/health/cd/statistics/arboviral-stats/

Species other than *Cs. melanura*	Pools	Mosquitoes	Positives	MFIR
Aedes abserratus	11	29		
Aedes albopictus	105	533		
Aedes canadensis canadensis	44	685		
Aedes cantator	31	814		
Aedes cinereus	1	16		
Aedes excrucians	2	2		
Aedes grossbecki	1	4		
Aedes japonicus	103	374		
Aedes provocans	1	1		
Aedes sollicitans	11	123		
Aedes sticticus	5	174		
Aedes stimulans	14	32		
Aedes taeniorhynchus	5	235		
Aedes thibaulti	1	5		
Aedes triseriatus	22	72		
Aedes trivittatus	3	30		
Aedes vexans	19	126		
Anopheles bradleyi	1	1		
Anopheles crucians	7	61		
Anopheles punctipennis	57	458		
Anopheles quadrimaculatus	27	444		
Anopheles walkeri	2	7		
Coquillettidia perturbans	92	2369		
Culex erraticus	18	83		
Culex Mix	1139	45499		
Culex pipiens	76	2154		
Culex restuans	23	508		
Culex salinarius	33	879		
Culiseta inornata	10	42		
Culiseta morsitans	8	32		
Orthopodomyia signifera	4	5		
Psorophora ferox	6	22		
State Total	**1882**	**55819**		

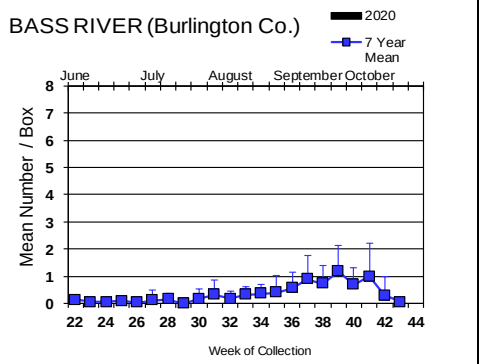
Additional Species: 31 additional species were tested for EEE. No positive pools have been detected to date.

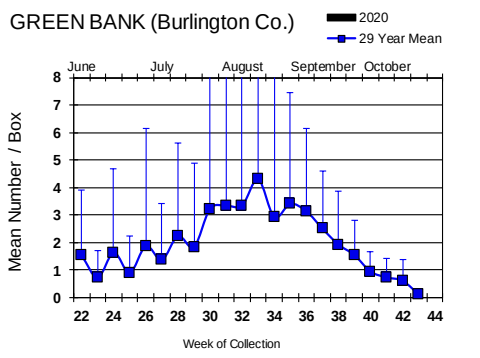
Overall MFIR rates, human and animal cases per county:

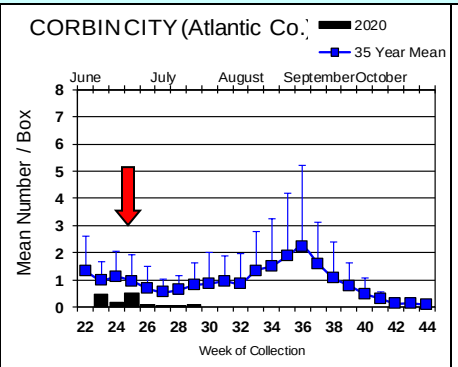


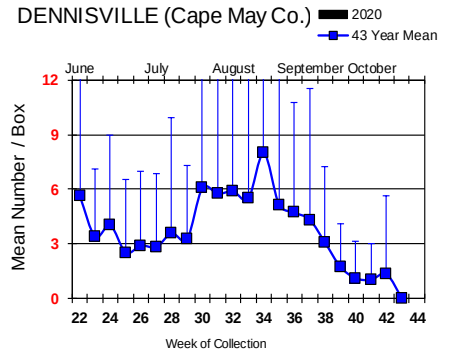
Culiseta melanura Populations

Coastal

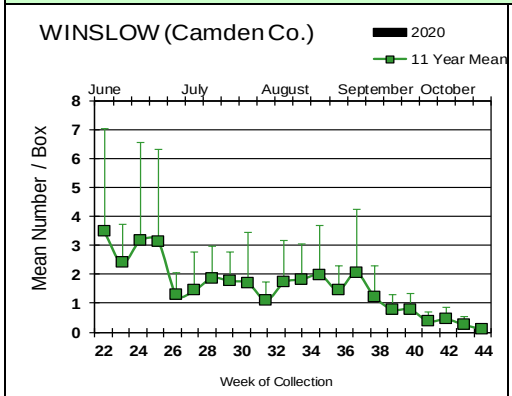


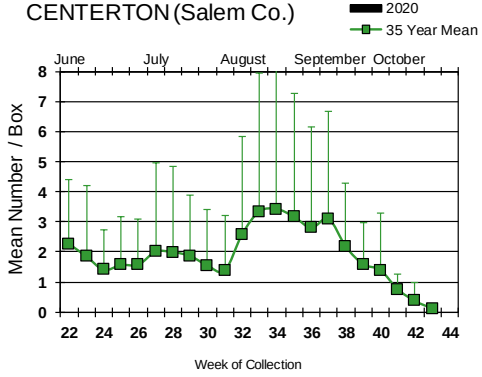


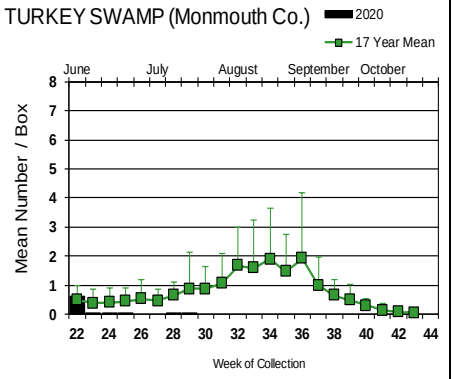


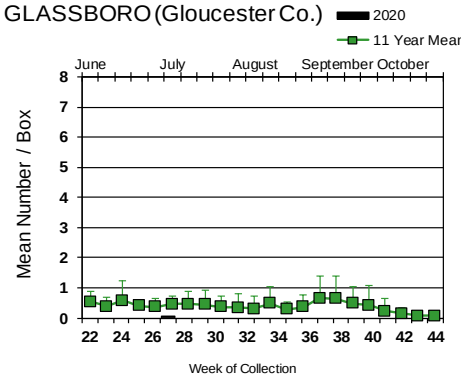


Inland









Culiseta melanura populations are reported at certain sites (Corbin City, Bass River, Green Bank, Turkey Swamp, and Glassboro) with the rest of the traditional resting box sites expected to come online after week 29. First positive EEE pool has been detected at Corbin City, on 17 June. Populations at sites monitored are significantly low, presumably due to the lack of monitoring due to covid effects.

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

EEE in US (2020 cumulative cases): (Black or Red = previous + new reported cases occurring)

- **equine: 9(FL) 4(SC)**
- **mosquito pools: 1(FL) 7(MA) 1(NJ)**
- **sentinel: 16+1duck(FL)**
- **human:**

West Nile Virus Positive Organisms in US, 2020

West Nile in US (2020 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		1/50			3
Arkansas					1
California	34/41	179/251	1	1	2
Colorado					0
Connecticut		1			
Delaware					
Florida	3/9	7	35	1	2
Georgia					
Hawaii					
Idaho	0	1		0	0
Illinois	1/3	14/26			0
Indiana	0	2		0	0
Iowa					1
Kansas					2
Kentucky					
Louisiana					0
Maine					0
Maryland(+DC)					1
Mass.		2/5			0
Michigan	1				0
Minnesota					0
Mississippi					1
Missouri		0		0	1

	Birds	Mosquito Pools	Sentinels	Horses*	Humans
Montana					0
Nebraska		0		0	0
Nevada					0
New Hampshire					0
New Jersey		0		0	0
New Mexico					3
New York					0
North Carolina					
North Dakota					0
Ohio		22/56		0	0
Oklahoma					0
Oregon	1	0	0	0	0
Pennsylvania		2			0
Rhode Island					0
South Carolina					
South Dakota		1			0
Tennessee					
Texas		55/100	1		0
Utah					0
Vermont					0
Virginia					0
Washington	0	1		0	0
West Virginia					
Wisconsin					0
Wyoming					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.

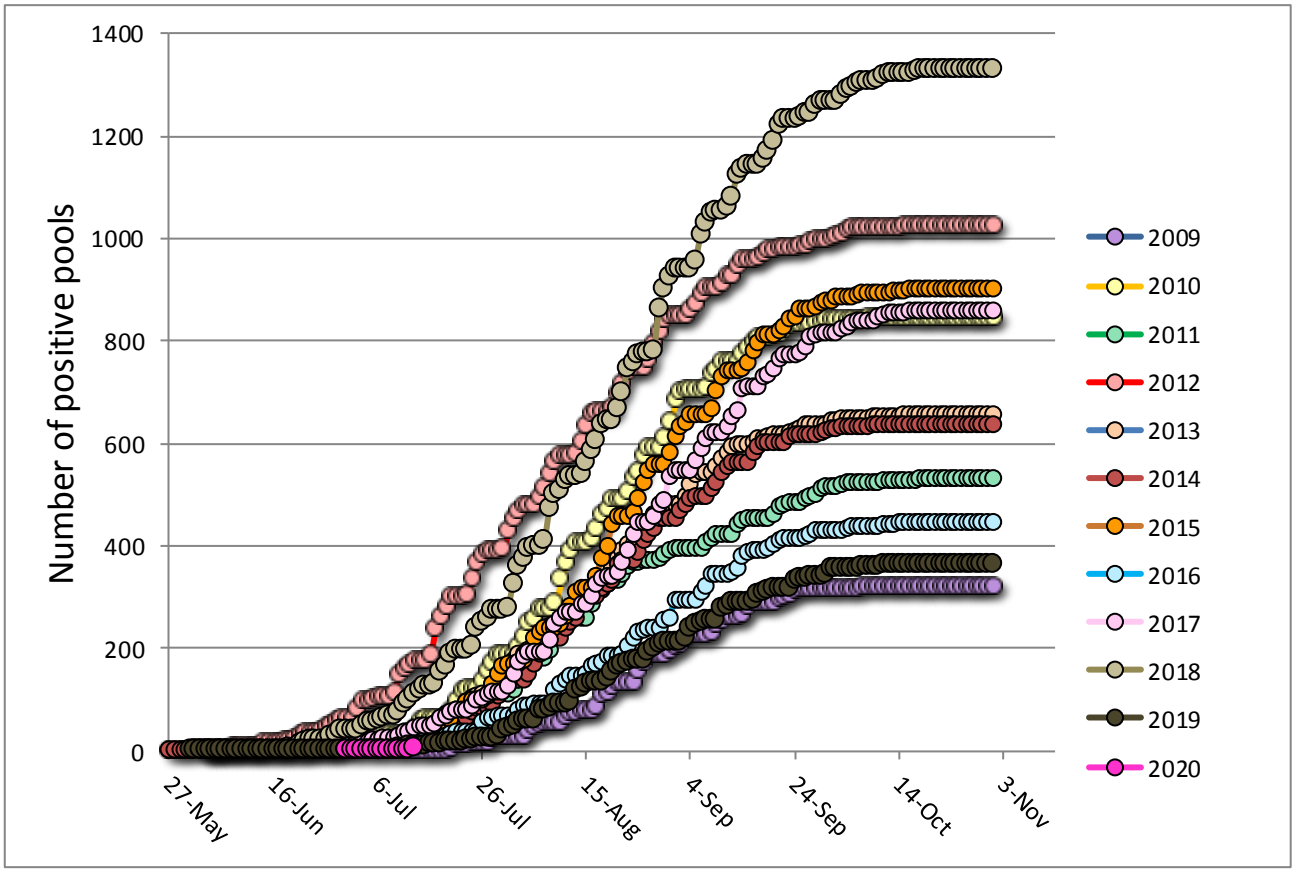
Mosquito Species Submitted and Tested for West Nile Virus through 20 July 2020

Species	Pools	Mosquitoes	Positives	MFIR
Aedes abserratus	11	29		
Aedes albopictus	105	533		
Aedes canadensis canadensis	44	685		
Aedes cantator	31	814		
Aedes cinereus	1	16		
Aedes excrucians	2	2		
Aedes grossbecki	1	4		
Aedes japonicus	104	399		
Aedes provocans	1	1		
Aedes sollicitans	11	123		
Aedes sticticus	5	174		
Aedes stimulans	14	32		
Aedes taeniorhynchus	5	235		
Aedes thibaulti	1	5		
Aedes triseriatus	50	157		
Aedes trivittatus	3	30		
Aedes vexans	19	126		
Anopheles bradleyi	1	1		
Anopheles crucians	7	61		
Anopheles punctipennis	57	458		
Anopheles quadrimaculatus	27	444		
Anopheles walkeri	2	7		
Coquillettidia perturbans	92	2369		
Culex erraticus	18	83		
Culex spp.	1139	45499	5	0.110
Culex pipiens	76	2154		
Culex restuans	23	508		
Culex salinarius	33	879		
Culiseta inornata	10	42		
Culiseta melanura	174	1318		
Culiseta morsitans	8	32		
Orthopodomyia signifera	4	5		
Psorophora ferox	6	22		
Grand Total	**2085**	**57247**	**5**	**0.087**

Remarks: To date 1,355 pools of 33,501 mosquitoes from 32 species have been tested. Five positive WNV pools have been detected by RTPCR this year, all in *Culex* Mix pools. The pools were in Burlington, Mercer and Monmouth counties (earliest collected 30 June)

Humans, Horses and Wild Birds: No humans, horses or wild birds have been reported infected with WNV in 2020. Last year, eight human cases were reported. No horses were detected with WNV in 2019.

Birds are no longer routinely tested in New Jersey.



Above is a graph showing cumulative number of positive pools for the previous 11 years, inclusive of the most active (2018) and least active (2009) years. 2020 is represented in PINK.

Go here for the table supplement of arbovirus by county by mosquito species.