

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

Begin to 28 May, 2021, CDC Week 21

Data download 10:00 am 28 May



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

- Currently, there is no arboviral activity reported at this time.
- In 2020, there were 13 positive EEE pools in *Culiseta melanura*.
- There were 241 positive WNV pools, in *Culex Mix* (231), in *Culex pipiens* (4), *Culex restuans* (1), *Culiseta melanura* (2), *Aedes albopictus* (2), and *Aedes canadensis canadensis* (1).
- There were 6 positive JVC pools in *Aedes cantator* (2), *Aedes taeniorhynchus* (1), *Anopheles quadrimaculatus* (1) and *Coquillettidia perturbans* (2).
- There was one EEE horse case reported. There are no WNV horse cases.
- There were 3 human WNV cases; in Essex County (1) and Monmouth County (2).
- There was one WNV positive Red-tailed Hawk (*Buteo jamaicensis*) in Cumberland County (regular surveillance of birds is no longer done in NJ).
- 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.

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	NR	ND				
Green Bank (Burlington Co.)/25	Coastal	NR	0.12	3			
Corbin City (Atlantic Co.)/25	Coastal	NR	ND				
Dennisville (Cape May Co.)/50	Coastal	NR	ND				
Winslow (Camden Co.)/50	Inland	NR	ND				
Centerton (Salem Co.)/50	Inland	NR	0.0	20			
Turkey Swamp (Monmouth Co.)/50	Inland	NR	ND				
Glassboro (Gloucester Co.)/50	Inland	NR	ND				

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

Remarks: This is the first report of the season. Arboviral surveillance began two weeks earlier than typical due to increasing evidence that mosquito populations were active earlier. NOTE: The traditional site at Bass River is offline due to a recent fire and damage to resting boxes. The area is being explored to determine if a sampling site can be obtained.

Statewide: 312 *Cs. melanura* from 21 pools have been tested, with no positives detected and an overall *Cs. melanura* MFIR of 0.000. 8,166 specimens in 286 pools from 19 other species have also been tested with no positive pools detected. Overall MFIR for all species statewide is 0.000.

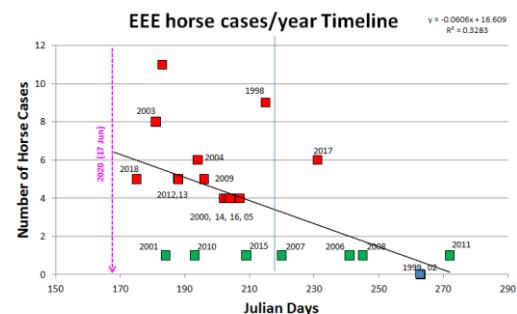
Traditional Resting Box Sites: 11 *Cs. melanura* from 1 pool has been tested, with no positive pools detected. 12 mosquitoes in 2 pools are pending. Overall *Cs. melanura* MFIR at the traditional resting box site is 0.000.

Additional <i>Cs. melanura</i> trapped by counties *traps with positives indicated in BOLD UNDERLINE .					
County	Trap types*	Pools	Mosquitoes	Positives	MFIR
Bergen	RB	1 5 5 4 1 1 1	3 216 56 9 2 1 2		
Burlington	ULVT				
Cumberland	CO2, RB				
Middlesex	NJLT				
Morris	RB				
Salem	CO2,				
Sussex	RB				
TOTAL		18	289		

Additional County-set *Cs. melanura*: Counties maintain trap sites for *Cs. melanura* in other areas, using a variety of traps. Currently, no positive pools of *Cs. melanura* have been detected outside of the traditional resting box sites.

Graph below indicate start times to detection of EEE in *Culiseta melanura* from 1998 to 2020. Last year was the earliest collected during that time period, suggesting the possibility of multiple horse cases.

Horses and Humans: Last year, only 1 horse was reported with EEE, detected in September. **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

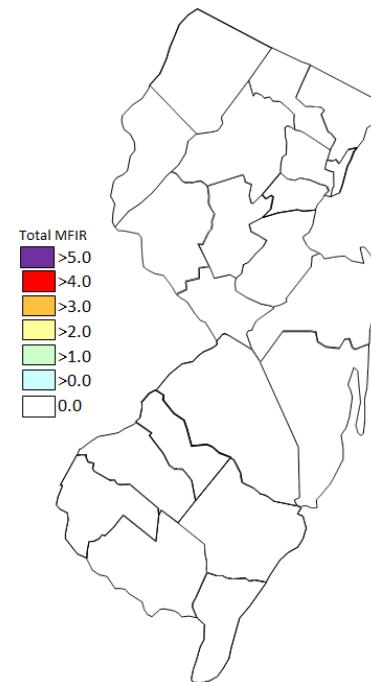
Horses and Vaccinations: The fate of unvaccinated equids reinforces the necessity of maintaining a vaccination schedule for arboviruses. For vaccination schedules recommended by the American Association of Equine Practices, see: http://www.aaep.org/vaccination_guidelines.htm

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 <i>Cs. melanura</i>	Pools	Mosquitoes	Positives	MFIR
<i>Aedes abserratus</i>	1	8		
<i>Aedes albopictus</i>	1	1		
<i>Aedes canadensis canadensis</i>	9	159		
<i>Aedes cantator</i>	5	37		
<i>Aedes grossbecki</i>	2	8		
<i>Aedes japonicus</i>	7	21		
<i>Aedes sticticus</i>	3	64		
<i>Aedes stimulans</i>	1	4		
<i>Aedes trivittatus</i>	1	6		
<i>Aedes vexans</i>	3	4		
<i>Anopheles punctipennis</i>	10	37		
<i>Anopheles quadrimaculatus</i>	5	12		
<i>Culex erraticus</i>	1	1		
<i>Culex Mix</i>	205	7123		
<i>Culex pipiens</i>	10	337		
<i>Culex restuans</i>	14	209		
<i>Culex salinarius</i>	4	17		
<i>Culex territans</i>	1	1		
<i>Culiseta inornata</i>	3	117		
State Total	286	8166		

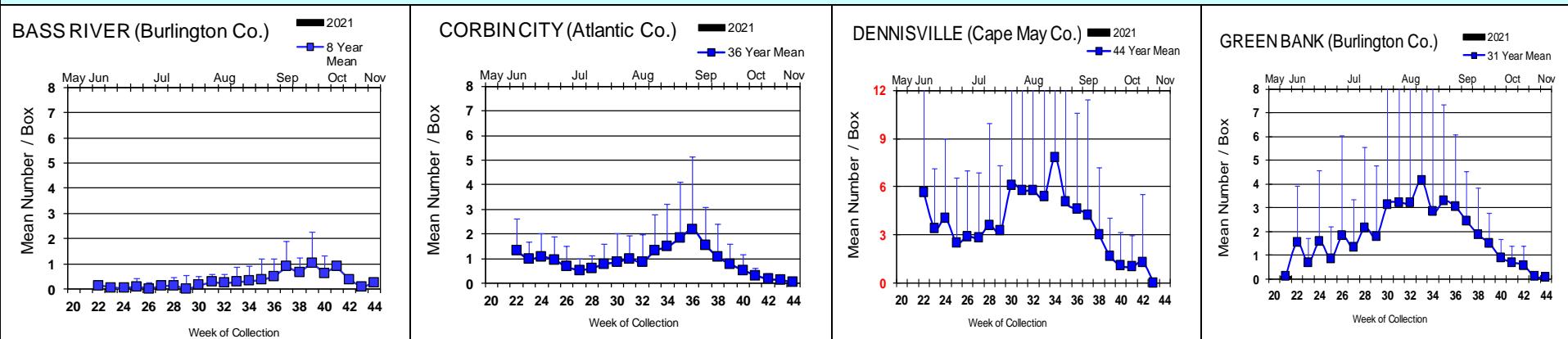
Additional Species: 19 additional species were tested for EEE. No positive pools have been detected to date.

Overall MFIR rates, human and animal cases per county:

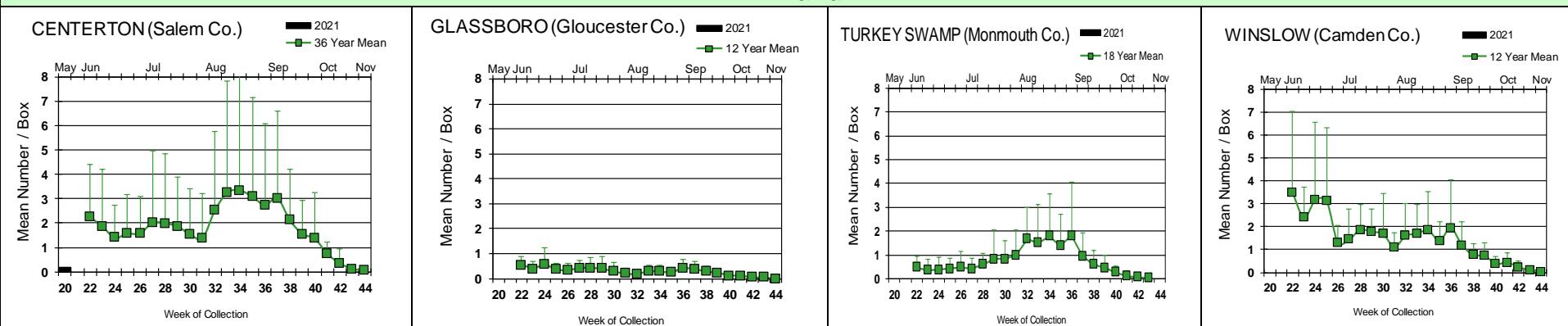


Culiseta melanura Populations

Coastal



Inland



This year's surveillance season began two weeks earlier to accommodate increasing indications of earlier population emergences. Currently, only populations of *Cs. melanura* at Centerton and Green Bank have been observed. All values are low (although historical data for CDC Week 20 and 21 are unavailable).



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

EEE in US (2021 cumulative cases): (Black or Red = previous + new reported cases occurring)

- equine: **3(FL)**
- mosquito pools:
- sentinel: **63(FL)**
- human:

West Nile Virus Positive Organisms in US, 2021

West Nile in US (2021 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					
Arkansas					
California	1	0	0	0	0
Colorado					
Connecticut					
Delaware					
Florida			2		
Georgia					
Hawaii					
Idaho					
Illinois	0	0	0	0	0
Indiana	0	0		0	0
Iowa					
Kansas					
Kentucky					
Louisiana					
Maine					
Maryland(+DC)					
Mass.					
Michigan					
Minnesota					
Mississippi					
Missouri					

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

* 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.

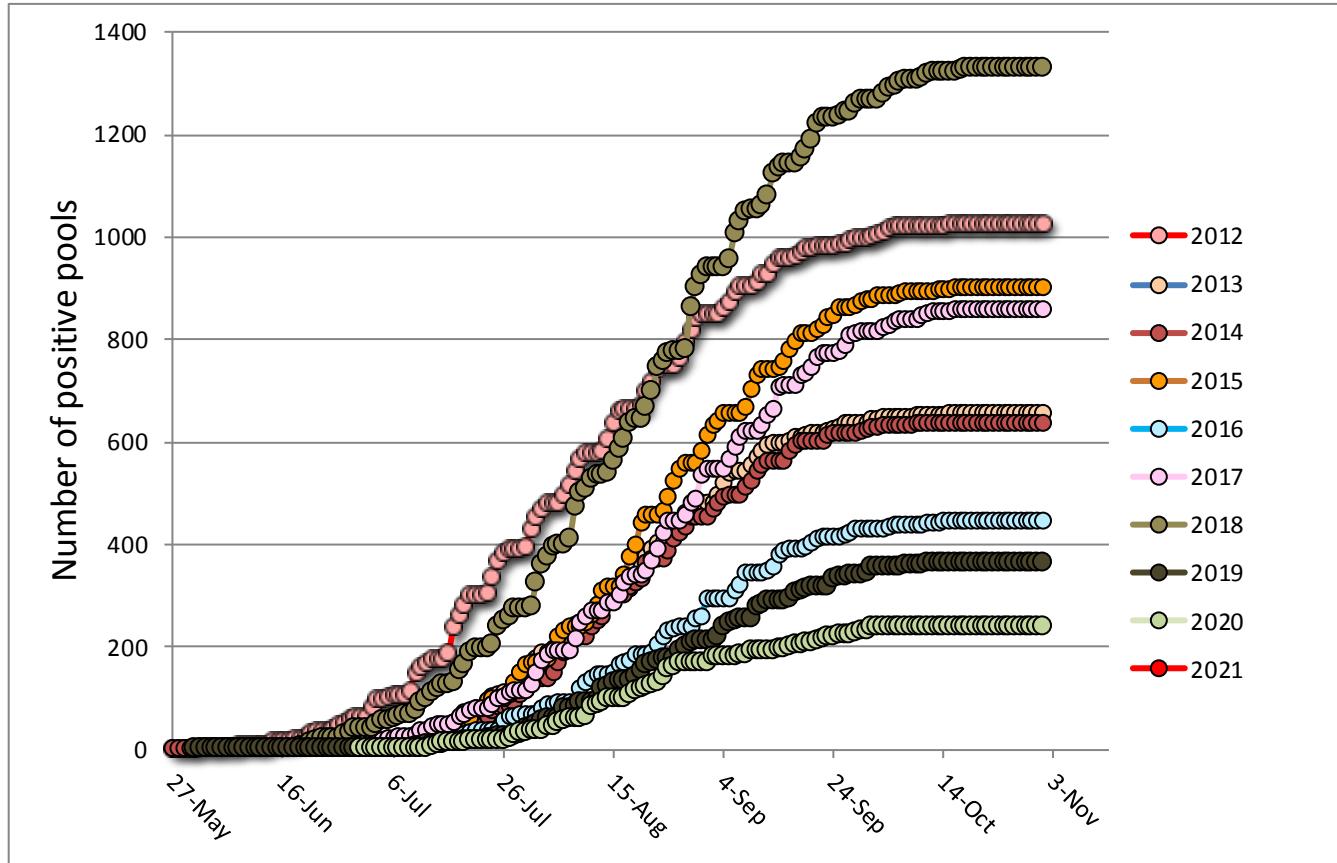
Mosquito Species Submitted and Tested for West Nile Virus through 28 May 2021

Species	Pools	Mosquitoes	Positives	MFIR
<i>Aedes abserratus</i>	1	8		
<i>Aedes albopictus</i>	1	1		
<i>Aedes canadensis canadensis</i>	9	159		
<i>Aedes cantator</i>	5	37		
<i>Aedes grossbecki</i>	2	8		
<i>Aedes japonicus</i>	8	38		
<i>Aedes sticticus</i>	3	64		
<i>Aedes stimulans</i>	1	4		
<i>Aedes trivittatus</i>	1	6		
<i>Aedes vexans</i>	3	4		
<i>Anopheles punctipennis</i>	10	37		
<i>Anopheles quadrimaculatus</i>	5	12		
<i>Culex erraticus</i>	1	1		
<i>Culex</i> spp.	205	7123		
<i>Culex pipiens</i>	10	337		
<i>Culex restuans</i>	14	209		
<i>Culex salinarius</i>	4	17		
<i>Culex territans</i>	1	1		
<i>Culiseta inornata</i>	3	117		
<i>Culiseta melanura</i>	19	300		
Grand Total	306	8483		

Remarks: To date 306 pools of 8,483 mosquitoes from 19 species have been tested. No positive WNV pools have been detected by RTPCR to date. Last year, the earliest positive was collected 30 June, a year with the lowest activity seen.

Humans, Horses and Wild Birds: No horses have been reported infected with WNV in 2021. No human activity has been reported to date. See DOH reports on arbovirus activity for further information:
<https://www.nj.gov/health/cd/statistics/arboviral-stats/index.shtml>

Birds are no longer routinely tested in New Jersey.



Above is a graph showing cumulative number of positive pools for the previous 9 years, inclusive of the most active (2018) year. 2021 will be represented in RED.

Go [here](#) for the table supplement of arbovirus by county by mosquito species.