VECTOR SURVEILLANCE IN NEW JERSEY

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

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Data download 12:30 pm 28 September

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NOTE: County/species tables for arboviruses are now in a supplemental file here

Arbovirus Summary

- **In 2020, there are six positive EEE pools in *Culiseta melanura*.**
- **There are 204 positive WNV pools, in *Culex* Mix (199), in *Culex pipiens* (3) and *Aedes albopictus* (2).**
- **There are 6 positive JVC pools in *Aedes cantator* (2), *Aedes taeniorhynchus* (1), *Anopheles quadrimaculatus* (1) and *Coquillettidia perturbans* (2).**
- **There is one EEE horse case reported. There are no WNV horse cases.**
- **There are 3 human WNV cases; in Essex County (1) and Monmouth County (2).**
- **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**	1.18	0.00	9	2		
Green Bank (Burlington Co.)/25	**Coastal**	1.55	0.00	30‡	8		
Corbin City (Atlantic Co.)/25	**Coastal**	0.88	0.00	212	16	1	4.717
Dennisville (Cape May Co.)/50	**Coastal**	1.74	0.08	30	6		
Winslow (Camden Co.)/50	**Inland**	0.78	0.16	176	8	2	11.628
Centerton (Salem Co.)/50	**Inland**	1.59	0.12	88	8		
Turkey Swamp (Monmouth Co.)/50	**Inland**	0.49	0.00	41	14		
Glassboro (Gloucester Co.)/50	**Inland**	0.43	0.12	46	11		

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

Remarks: Currently six positive EEE pools have been detected, collected in pools of *Culiseta melanura.* The latest positive pool was found at in Atlantic County on 17 September, at the site of a previous positive. A horse case in Atlantic County was also detected.

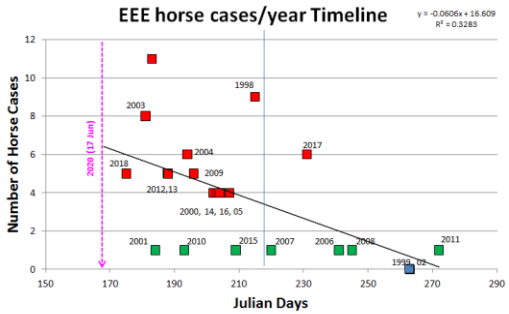
Statewide, 6,173 *Cs. melanura* from 530 pools have been tested, with an overall *Cs. melanura* MFIR of 0.972. 158,649 specimens in 6346 pools from 40 other species have also been tested, with no positive pools detected. Overall MFIR for all species statewide is 0.036.

Traditional Resting Box Sites: 632 *Cs. melanura* from 73 pools has been tested, with three positive pools, one at Corbin City, collected 17 June and the last two at Winslow, collected 8 and 14 September. No pools are pending. Overall *Cs. melanura* MFIR at the traditional resting box site is 4.747.

	Additional *Cs. melanura* trapped by counties *traps with positives indicated in **BOLD UNDERLINED.**				
County	**Trap types***	**Pools**	**Mosquitoes**	**Positives**	**MFIR**
Atlantic	BGS, CO2, RB	50	994	2	2.012
Bergen	CO2, RB	7	63		
Burlington	ULVT	56	1427	1	0.701
Camden	GRA	1	1		
Cape May	GRA, RB	56	112		
Cumberland	CO2, RB	9	40		
Gloucester	RB	74	1887		
Middlesex	CO2, GRA, LT, RB	15	89		
Monmouth	CO2, Other	3	10		
Morris	CO2, RB	40	355		
Ocean	CO2, GRA, RB	15	48		
Salem	CO2, GRA, Other, RB	37	123		
Sussex	CO2, GRA, RB	94	392		
TOTAL		**457**	**5541**	**3**	**0.541**

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, three positive pools of *Cs. melanura* have been detected in Burlington County, sampled 10 August and Atlantic County, sampled 13 August, and 17 September.

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. *Note* - first horse case had date on onset late into the season.



Horses and Humans: Currently one horse has 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
1	thoroughbred	4	female	Atlantic	7 Sep	yes	No history	

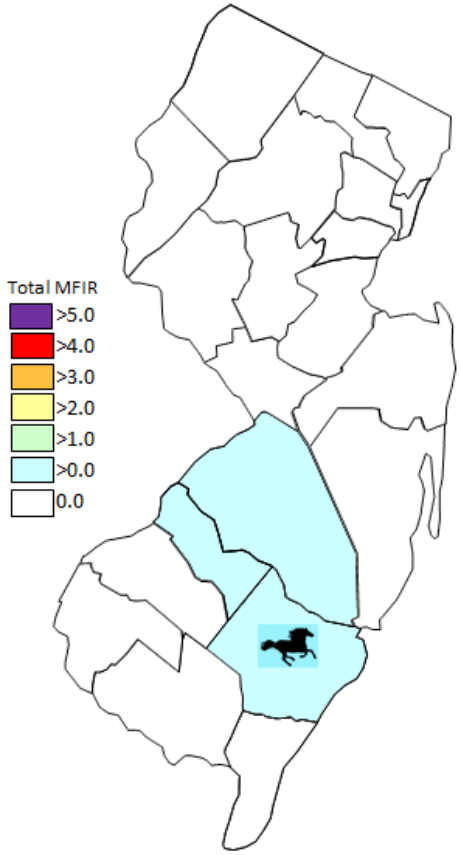
Horses and Vaccinations: The fate of unvaccinated equids reinforces the necessity of maintaining a vaccination schedule for arboviruses. For vaccination schedules recommended by the American Association of Equine Practices, see: http://www.aaep.org/vaccination_guidelines.htm

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	915	7737		
Aedes atlanticus	33	394		
Aedes canadensis canadensis	60	895		
Aedes cantator	36	828		
Aedes cinereus	1	16		
Aedes excrucians	2	2		
Aedes grossbecki	1	4		
Aedes infirmatus	3	3		
Aedes japonicus	270	1191		
Aedes mitchellae	1	4		
Aedes provocans	1	1		
Aedes sollicitans	34	782		
Aedes sticticus	7	176		
Aedes stimulans	14	32		
Aedes taeniorhynchus	40	1474		
Aedes thibaulti	1	5		
Aedes triseriatus	184	545		
Aedes trivittatus	6	140		
Aedes vexans	83	674		
Anopheles barberi	2	4		
Anopheles bradleyi	40	760		
Anopheles crucians	24	353		
Anopheles punctipennis	134	1929		
Anopheles quadrimaculatus	109	1762		
Anopheles walkeri	2	7		
Coquillettidia perturbans	207	4845		
Culex erraticus	194	2335		
Culex Mix	3057	117904		
Culex pipiens	488	9546		
Culex restuans	112	815		
Culex salinarius	157	1982		
Culiseta inornata	13	58		
Culiseta morsitans	13	48		
Orthopodomyia signifera	7	9		
Psorophora ciliata	3	5		
Psorophora columbiae	29	584		
Psorophora cyanescens	1	5		
Psorophora ferox	49	763		
Psorophora howardii	1	1		
Uranotaenia sapphirina	1	2		
State Total	**6346**	**158649**		

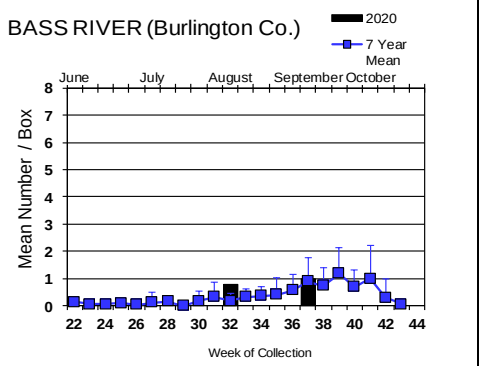
Additional Species: 40 additional species were tested for EEE. No positive pools have been detected to date. *note* *Aedes aegypti* removed from previous week.

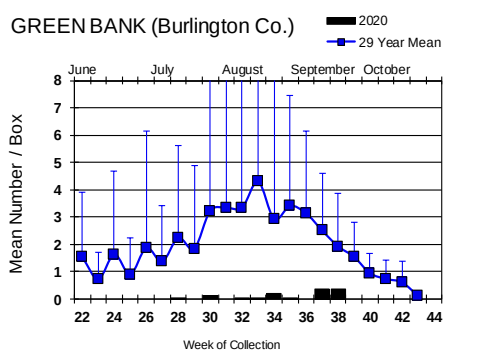
Overall MFIR rates, human and animal cases per county:

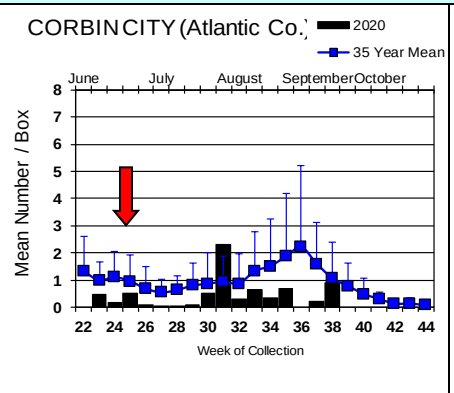


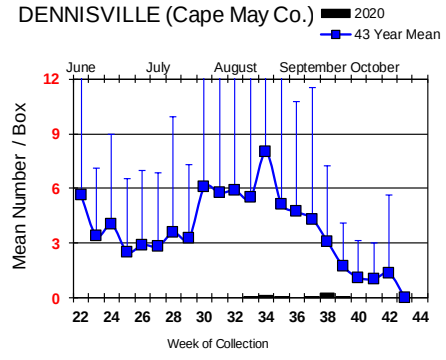
Culiseta melanura Populations

Coastal

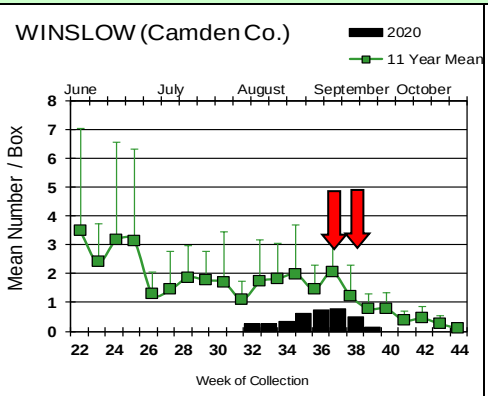


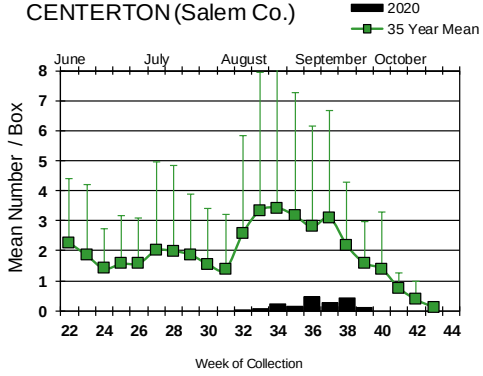


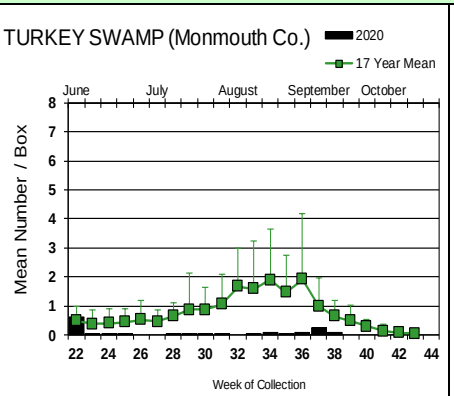


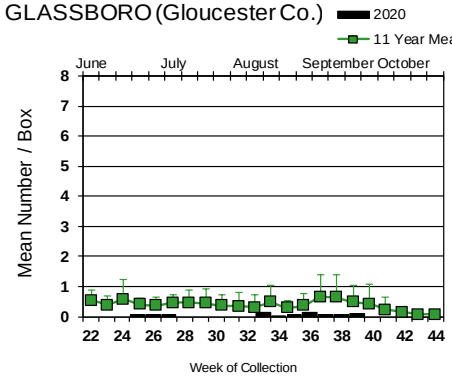


Inland









Culiseta melanura populations are now reported at all sites but populations continue to be well below historical averages. First positive EEE pool has been detected at Corbin City, on 17 June. Two more positive melanura pools detected at Winslow during CDC weeks 37 and 38. Although cooler weather is beginning, *Culiseta melanura* is a cold-hardy species, with equine bloodmeals occasionally showing up in this ornithophilic species. Horse cases have been recorded into November in New Jersey.

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

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

- **equine: 17(FL) 1(GA) 4(IN) 3(LA) 32(MI) 7(NC) 1(MN) 1(NJ) 7(NY) 13(SC) 4(VA) 16(WI)**
- **mosquito pools: 2(CT) 1(FL) 66(MA) 6(NJ) 1(RI)**
- **sentinel: 39+1duck, 2sparrows(FL)**
- **human: 1(IN) 5(MA) 1(MI)**

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					3
Alaska					
Arizona		93	31		4
Arkansas					1
California	248/261	2126/2295	81/92	11/13	58/91
Colorado		24/67			14
Connecticut		134/141			6
Delaware					
Florida	17	13	148/156	9	27/28
Georgia					
Hawaii					
Idaho	1	22		2	3/5
Illinois	6/7	2180/2267			4/13
Indiana	0	39/44		0	1
Iowa					1
Kansas					2
Kentucky				1	
Louisiana	5	317/346		2	9/11
Maine					0
Maryland(+DC)		2			1
Mass.		95/97			7/8
Michigan	5/7	29/41			13/21
Minnesota					0
Mississippi		91			4/6
Missouri		0		0	1

	Birds	Mosquito Pools	Sentinels	Horses*	Humans
Montana					0
Nebraska		14/15		1	1
Nevada					0
New Hampshire		1/2			0
New Jersey		195/204		0	3
New Mexico					3
New York					0
North Carolina					
North Dakota					0
Ohio		626/639		0	0
Oklahoma					0
Oregon	1	3	0	0	0
Pennsylvania		543			1
Rhode Island					0
South Carolina					
South Dakota		6			5
Tennessee					
Texas	1	1153/1191	1		24/31
Utah		31/42			
Vermont					0
Virginia					0
Washington	0	11		0	2
West Virginia					
Wisconsin					
Wyoming		1		1	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.

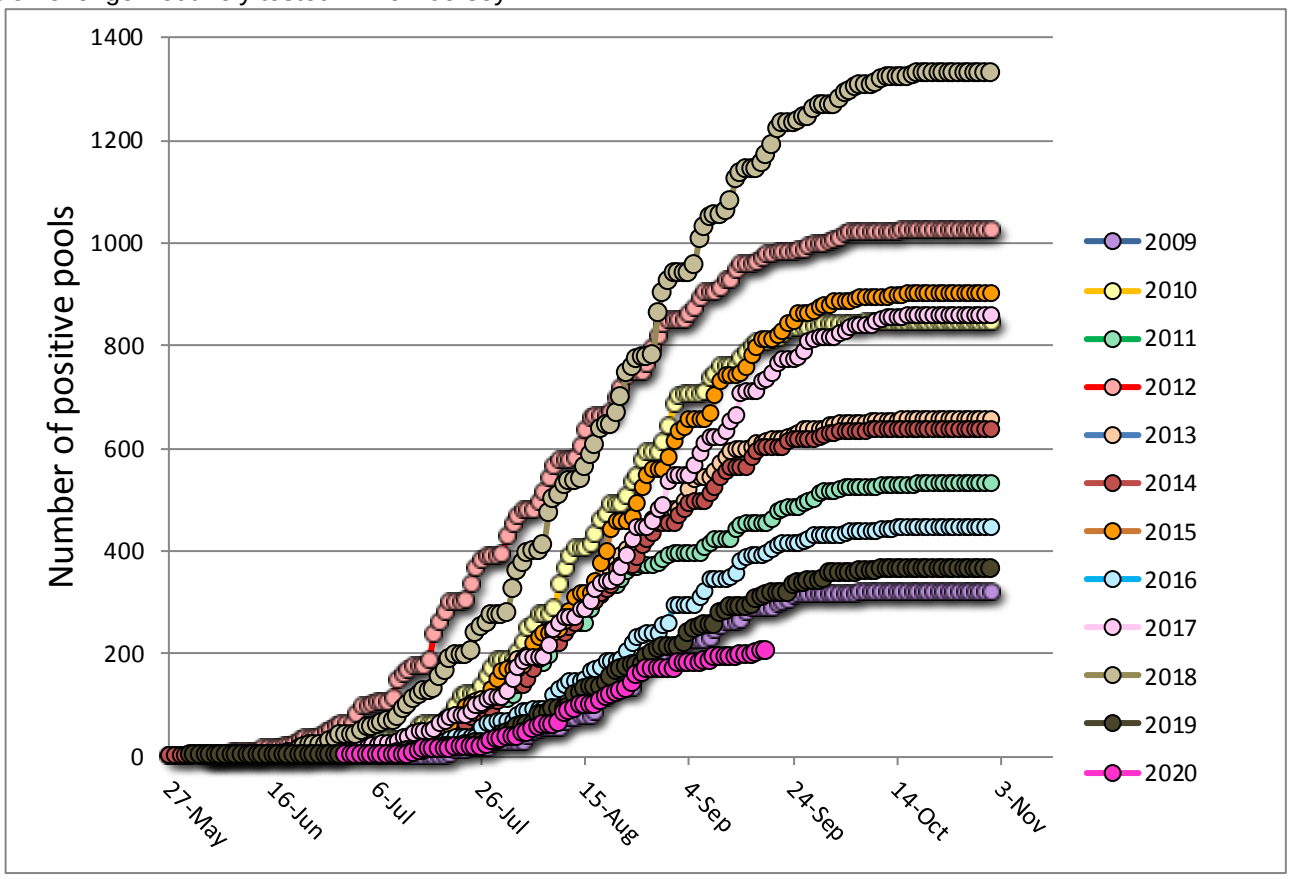
Mosquito Species Submitted and Tested for West Nile Virus through 28 September 2020

Species	Pools	Mosquitoes	Positives	MFIR
Aedes abserratus	11	29		
Aedes albopictus	924	8028	2	0.249
Aedes atlanticus	33	394		
Aedes canadensis canadensis	60	895		
Aedes cantator	36	828		
Aedes cinereus	1	16		
Aedes excrucians	2	2		
Aedes grossbecki	1	4		
Aedes infirmatus	3	3		
Aedes japonicus	276	1269		
Aedes mitchellae	1	4		
Aedes provocans	1	1		
Aedes sollicitans	34	782		
Aedes sticticus	7	176		
Aedes stimulans	14	32		
Aedes taeniorhynchus	40	1474		
Aedes thibaulti	1	5		
Aedes triseriatus	270	906		
Aedes trivittatus	6	140		
Aedes vexans	83	674		
Anopheles barberi	2	4		
Anopheles bradleyi	40	760		
Anopheles crucians	24	353		
Anopheles punctipennis	134	1929		
Anopheles quadrimaculatus	109	1762		
Anopheles walkeri	2	7		
Coquillettidia perturbans	207	4845		
Culex erraticus	194	2335		
Culex spp.	3057	117904	199	1.688
Culex pipiens	488	9546	3	0.314
Culex restuans	112	815		
Culex salinarius	157	1982		
Culiseta inornata	13	58		
Culiseta melanura	530	6173		
Culiseta morsitans	13	48		
Orthopodomyia signifera	7	9		
Psorophora ciliata	3	5		
Psorophora columbiae	29	584		
Psorophora cyanescens	1	5		
Psorophora ferox	49	763		
Psorophora howardii	1	1		
Uranotaenia sapphirina	1	2		
Grand Total	**6977**	**165552**	**204**	**1.232**

Remarks: To date 6,977 pools of 165,552 mosquitoes from 41 species have been tested. 204 positive WNV pools have been detected by RTPCR this year, 199 pools in *Culex* Mix, 3 in *Culex pipiens* and 2 pools in *Aedes albopictus* (collected in Union County 28 July). The positive pools continue to be less diverse than in previous years, particularly for those years when activity is higher. The pools were in Atlantic, Bergen, Burlington, Camden, Gloucester, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Passaic, Somerset, Union, and Warren counties (earliest collected 30 June).

Humans, Horses and Wild Birds: No horses have been reported infected with WNV in 2020. Three human case of WNV has been reported: first case in Essex County, the second and third in Monmouth County. Last year, eight human cases were reported. No horses were detected with WNV in 2019. 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 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.