VECTOR SURVEILLANCE IN NEW JERSEY

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

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18 October to 24 October, 2020, CDC Week 43
Data download 12:55 pm 26 October

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

Arbovirus Summary

- **In 2020, there are ten positive EEE pools in *Culiseta melanura*.**
- **There are 239 positive WNV pools, in *Culex* Mix (229), in *Culex pipiens* (4), *Culex restuans* (1), *Culiseta melanura (2)*, *Aedes albopictus* (2), and *Aedes canadensis canadensis (1)*.**
- **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).**
- **There is one WNV positive Red-tailed Hawk (*Buteo jamaicensis*) in Cumberland County (regular surveillance of birds is no longer done in NJ).**
- **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**	0.06	0.20	10‡	3		
Green Bank (Burlington Co.)/25	**Coastal**	0.11	0.04	37‡	10		
Corbin City (Atlantic Co.)/25	**Coastal**	0.15	0.00	306‡	20	2	6.536
Dennisville (Cape May Co.)/50	**Coastal**	0.01	0.00	47	9		
Winslow (Camden Co.)/50	**Inland**	0.10	0.14	222‡	12	3	13.514
Centerton (Salem Co.)/50	**Inland**	0.12	0.10	126	12	1	7.937
Turkey Swamp (Monmouth Co.)/49	**Inland**	.05	0.00	48‡	17		
Glassboro (Gloucester Co.)/50	**Inland**	0.07	0.04	58	14		

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

Remarks: Currently 10 positive EEE pools have been detected, all in pools of *Culiseta melanura.* The latest positive pool was detected in Camden County on 21 October, at the Winslow traditional resting box site. One horse case in Atlantic County has been detected.

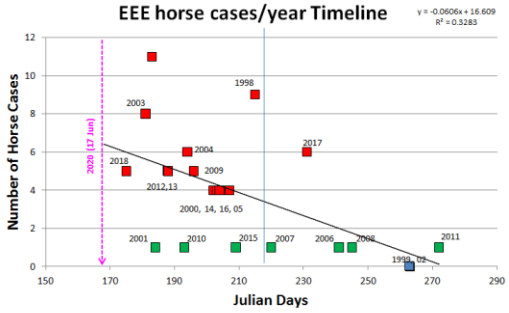
Statewide: 7,105 *Cs. melanura* from 676 pools have been tested, with an overall *Cs. melanura* MFIR of 1.407. 175,974 specimens in 7880 pools from 40 other species have also been tested, with no positive pools detected. Overall MFIR for all species statewide is 0.050.

Traditional Resting Box Sites: 854 *Cs. melanura* from 96 pools has been tested, with six positive pools, the latest at Winslow collected 21 October. Previous positives include one collected at Centerton on 6 October, two at Corbin City, collected 17 June and 30 September, and two at Winslow, collected 8 and 14 September. Overall *Cs. melanura* MFIR at the traditional resting box site is 7.026.

	Additional *Cs. melanura* trapped by counties *traps with positives indicated in **BOLD UNDERLINED.**				
County	**Trap types***	**Pools**	**Mosquitoes**	**Positives**	**MFIR**
Atlantic	BGS, CO2, RB	69	1175	3	2.553
Bergen	CO2, RB	7	63		
Burlington	ULVT	74	1630	1	0.613
Camden	GRA	1	1		
Cape May	GRA, RB	102	174		
Cumberland	CO2, RB	18	90		
Gloucester	RB	84	2032		
Middlesex	CO2, GRA, LT, RB	16	92		
Monmouth	CO2, Other	4	12		
Morris	CO2, RB	40	355		
Ocean	CO2, GRA, RB	19	61		
Salem	CO2, GRA, Other, RB	39	125		
Sussex	CO2, GRA, RB	107	441		
TOTAL		**580**	**6251**	**4**	**0.640**

Additional County-set *Cs. melanura*: Counties maintain trap sites for *Cs. melanura* in other areas, using a variety of traps. Currently, four positive pools of *Cs. melanura* have been detected: one in Burlington County, sampled 10 August and three in Atlantic County, sampled 13 August, 17 September, and the latest on 6 October.

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	

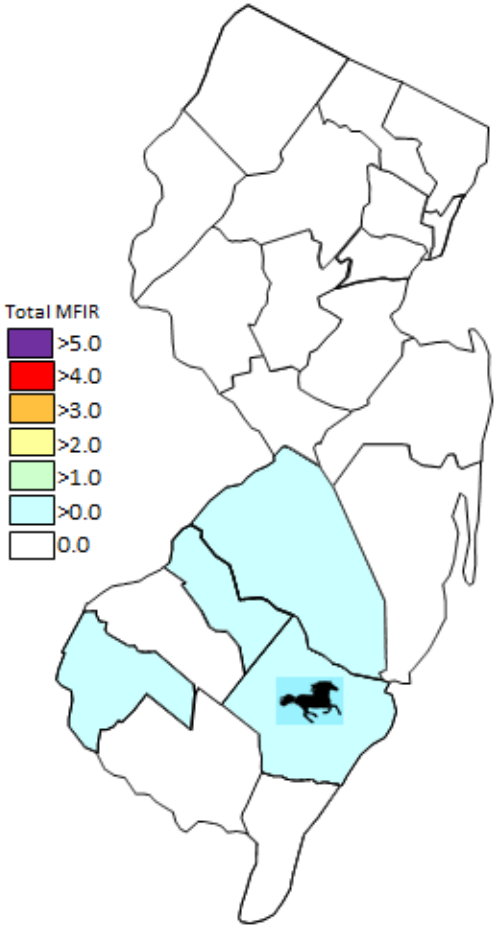
Horses and Vaccinations: The fate of unvaccinated equids reinforces the necessity of maintaining a vaccination schedule for arboviruses. For vaccination schedules recommended by the American Association of Equine Practices, see: http://www.aaep.org/vaccination_guidelines.htm

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	1164	8826		
Aedes atlanticus	48	563		
Aedes canadensis canadensis	66	905		
Aedes cantator	36	828		
Aedes cinereus	1	16		
Aedes excrucians	2	2		
Aedes grossbecki	1	4		
Aedes infirmatus	3	3		
Aedes japonicus	323	1310		
Aedes mitchellae	1	4		
Aedes provocans	1	1		
Aedes sollicitans	38	849		
Aedes sticticus	7	176		
Aedes stimulans	14	32		
Aedes taeniorhynchus	43	1517		
Aedes thibaulti	1	5		
Aedes triseriatus	215	596		
Aedes trivittatus	9	151		
Aedes vexans	109	1130		
Anopheles barberi	2	4		
Anopheles bradleyi	65	1378		
Anopheles crucians	34	392		
Anopheles punctipennis	162	2228		
Anopheles quadrimaculatus	133	2004		
Anopheles walkeri	2	7		
Coquillettidia perturbans	215	4861		
Culex erraticus	292	3203		
Culex Mix	3530	127201		
Culex pipiens	710	12094		
Culex restuans	327	2024		
Culex salinarius	178	2059		
Culex territans	1	2		
Culiseta inornata	17	108		
Culiseta morsitans	13	48		
Orthopodomyia signifera	12	15		
Psorophora ciliata	3	5		
Psorophora columbiae	32	603		
Psorophora cyanescens	1	5		
Psorophora ferox	52	784		
Psorophora howardii	1	1		
Uranotaenia sapphirina	6	74		
State Total	**7881**	**176047**		

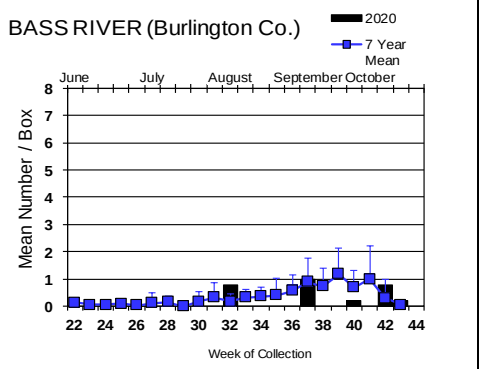
Additional Species: 40 additional species were tested for EEE. No positive pools have been detected to date.

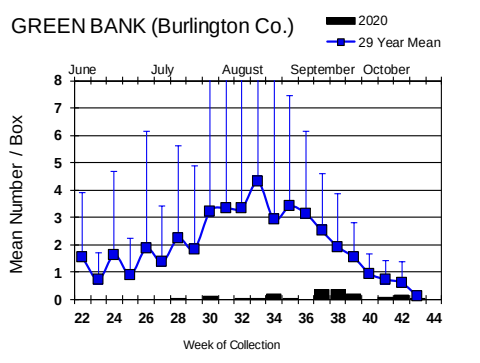
Overall MFIR rates, human and animal cases per county:

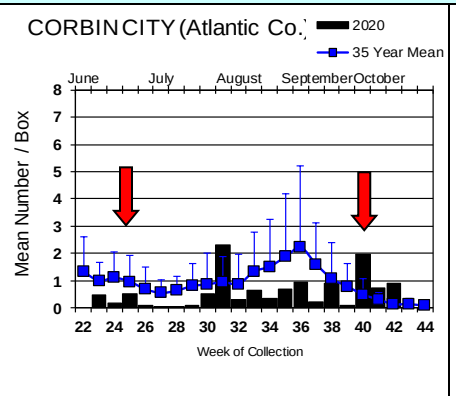


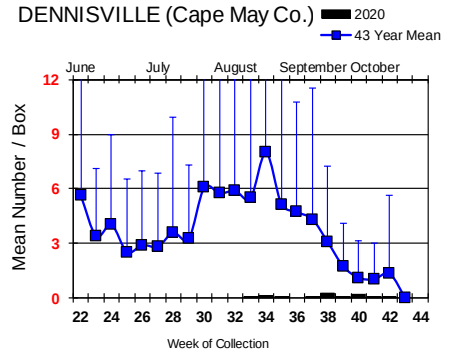
Culiseta melanura Populations

Coastal

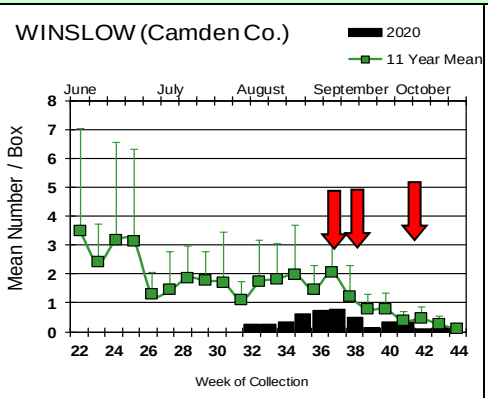


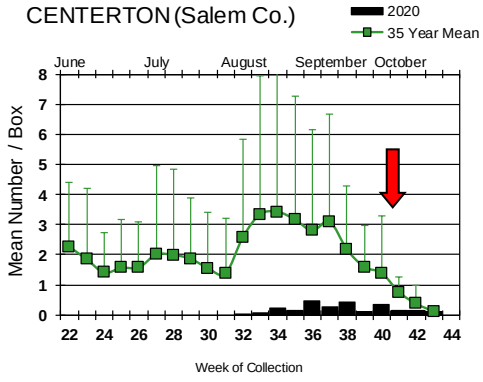


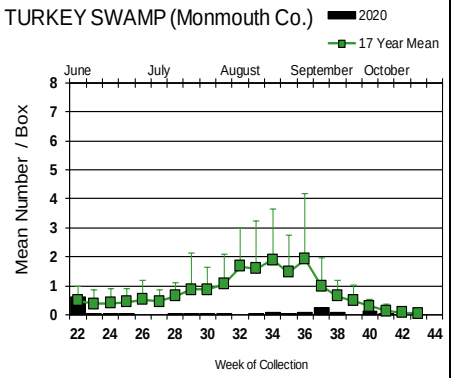


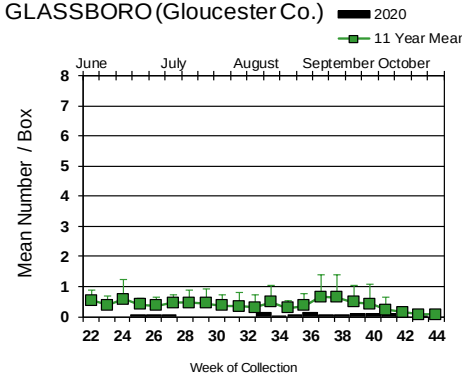


Inland









Culiseta melanura populations have been rising at a few site, sometimes above historical averages (Corbin City and Bass River). 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. Next positive was detected at Corbin City on 30 September followed by a positive at Centerton during week 41 and finally a third positive at Winslow on 14 October. 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: 20+1deer(FL) 1(GA) 4(IN) 5(LA) 38(MI) 7(NC) 1(MN) 1(NJ) 7(NY) 13(SC) 4(VA) 16(WI)**
- **mosquito pools: 2(CT) 1(FL) 1(LA) 66(MA) 10(NJ) 1(RI)**
- **sentinel: 41+1duck, 2sparrows(FL)**
- **human: 1(IN) 5(MA) 2(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					4/6
Alaska					
Arizona		94	27		7
Arkansas					1/2
California	314/333	2534/2598	123/129	16/17	123/135
Colorado		66			32/34
Connecticut		143			6
Delaware					
Florida	17	18	219/259	10/11	34/41
Georgia					
Hawaii					
Idaho	1	22		2	5
Illinois	10	2345		1	30/34
Indiana	0	55		1/3	1
Iowa					1
Kansas					2
Kentucky				2	
Louisiana	5	397/433		4	16
Maine					0
Maryland(+DC)		3		1	1
Mass.		97			8
Michigan	7	45			29
Minnesota					0
Mississippi		91			7
Missouri		0		0	1

	Birds	Mosquito Pools	Sentinels	Horses*	Humans
Montana					0
Nebraska		21		2	8/11
Nevada					0
New Hampshire		2			0
New Jersey		239		0	3
New Mexico					3
New York					3
North Carolina					
North Dakota					4/6
Ohio		666		0	2
Oklahoma					0
Oregon	1	3	0	0	0
Pennsylvania		623			8
Rhode Island					0
South Carolina					
South Dakota		6			8
Tennessee					
Texas	1	1329/1352	1		48
Utah		42/44			
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.

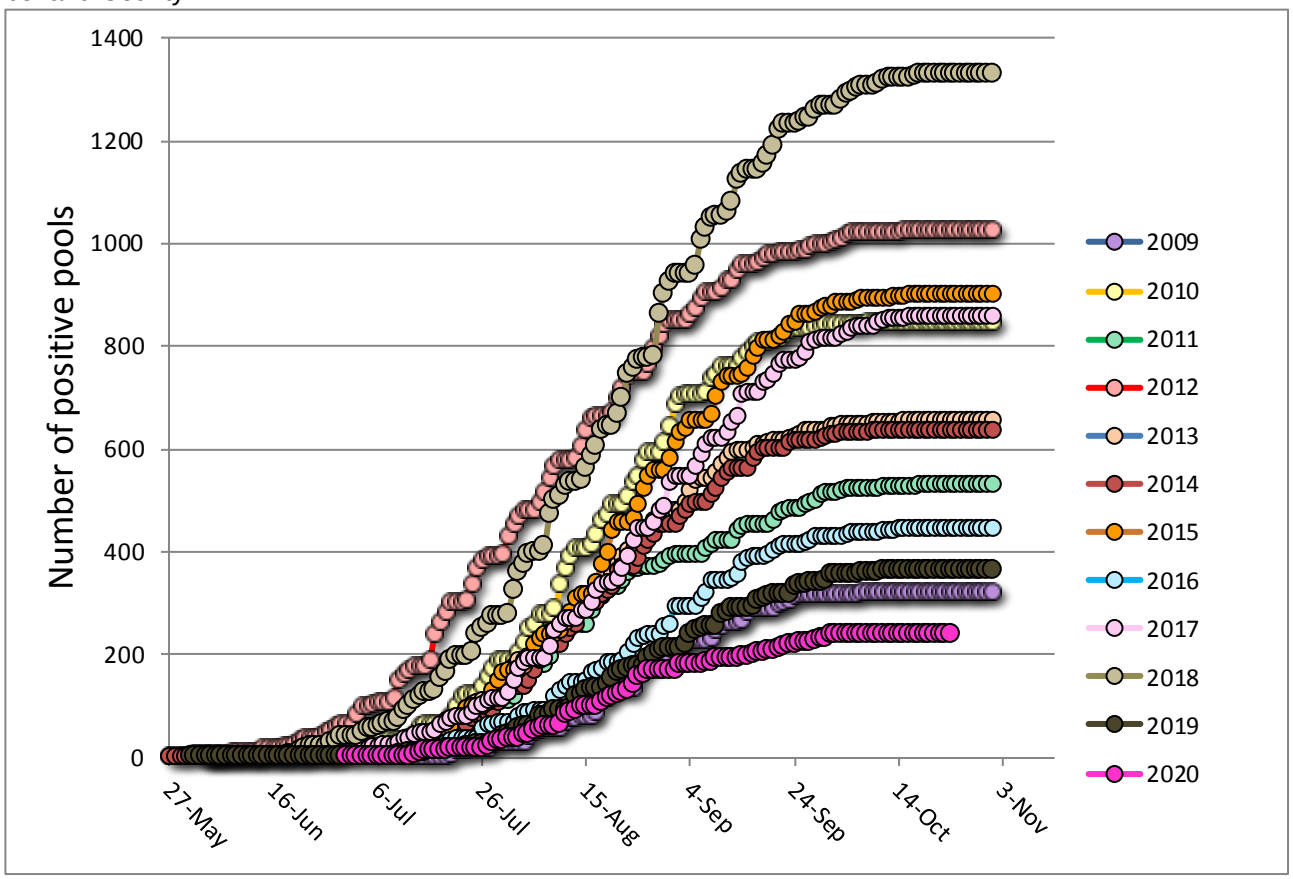
Mosquito Species Submitted and Tested for West Nile Virus through 26 October 2020

Species	Pools	Mosquitoes	Positives	MFIR
Aedes abserratus	11	29		
Aedes albopictus	1174	9121	2	0.219
Aedes atlanticus	48	563		
Aedes canadensis canadensis	66	905	1	1.105
Aedes cantator	36	828		
Aedes cinereus	1	16		
Aedes excrucians	2	2		
Aedes grossbecki	1	4		
Aedes infirmatus	3	3		
Aedes japonicus	330	1396		
Aedes mitchellae	1	4		
Aedes provocans	1	1		
Aedes sollicitans	38	849		
Aedes sticticus	7	176		
Aedes stimulans	14	32		
Aedes taeniorhynchus	43	1517		
Aedes thibaulti	1	5		
Aedes triseriatus	314	987		
Aedes trivittatus	9	151		
Aedes vexans	109	1130		
Anopheles barberi	2	4		
Anopheles bradleyi	65	1378		
Anopheles crucians	34	392		
Anopheles punctipennis	162	2228		
Anopheles quadrimaculatus	133	2004		
Anopheles walkeri	2	7		
Coquillettidia perturbans	215	4861		
Culex erraticus	292	3203		
Culex spp.	3529	127128	229	1.801
Culex pipiens	710	12094	4	0.331
Culex restuans	327	2024	1	0.494
Culex salinarius	178	2059		
Culex territans	1	2		
Culiseta inornata	17	108		
Culiseta melanura	676	7105	2	0.281
Culiseta morsitans	13	48		
Orthopodomyia signifera	12	15		
Psorophora ciliata	3	5		
Psorophora columbiae	32	603		
Psorophora cyanescens	1	5		
Psorophora ferox	52	784		
Psorophora howardii	1	1		
Uranotaenia sapphirina	6	74		
Grand Total	**8672**	**183851**	**239**	**1.300**

Remarks: To date 8,672 pools of 183,851 mosquitoes from 42 species have been tested. 239 positive WNV pools have been detected by RTPCR this year, 229 pools in *Culex* Mix, 4 in *Culex pipiens,* 2 pools in *Aedes albopictus* and 1 in *Aedes canadensis canadensis* and 2 in *Culiseta melanura*. The pools were in Atlantic, Bergen, Burlington, Camden, Gloucester, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Passaic, Salem, 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. One positive Red-tailed Hawk (*Buteo jamaicensis*) was found 6 October in Cumberland County.



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.