VECTOR SURVEILLANCE IN NEW JERSEY

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

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1 September to 7 September, 2019, CDC Week 36
Data download 12:10 pm 7 September

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

Arbovirus Summary

- **52 EEE positive pools, 9 horse cases, 1 alpaca case, 1 human case (Somerset County)**
- **202 WNV positive pools, 0 horses, 1 human case (Hunterdon County)**
- **1 LAC positive pool**
- **4 JCV positive pools**
- **0 SLE, DENG, CHIK, ZIKA positive pools**
- **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 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**	0.64	0.00	7	4		
Green Bank (Burlington Co.)/25	**Coastal**	3.23	0.64	81 (97)	10 (11)		
Corbin City (Atlantic Co.)/25	**Coastal**	2.27	0.32	139 (147)	13 (14)		
Dennisville (Cape May Co.)/50	**Coastal**	4.83	0.20	62	10		
Winslow (Camden Co.)/50	**Inland**	1.52	0.92	617	18	5	8.104
Centerton (Salem Co.)/50	**Inland**	2.88	0.14	150	11	1	6.667
Turkey Swamp (Monmouth Co.)/50	**Inland**	1.81	3.62	775 (956)‡	24 (28)‡	6	7.712
Glassboro (Gloucester Co.)/50	**Inland**	0.48	0.20	159	12	2	12.579

*Current week (in parentheses) results pending. ‡ corrected from previous week NC=no collection

Remarks: ***EEE activity in the state is ramping up and due diligence is needed***. Currently in 2019, there are 52 detections of EEE virus: 40 pools of *Culiseta melanura* (14 collected at traditional resting box sites, and 26 collected at county trap sites) and 12 pools in *Aedes albopictus, Ae. canadensis, Ae. triseriatus,* and *Culex* Mix. The first positive pool was collected on 3 July at Turkey Swamp, Monmouth County. There are ten animal cases and one human case (Somerset County).

Statewide, 9,590 *Cs. melanura* from 598 pools have been tested, with an overall *Cs. melanura* MFIR of 4.067. 140,415 specimens in 6,118 pools from 37 other species have also been tested, with 12 positive pools detected (*Aedes albopictus, Ae. canadensis, Ae. triseriatus,* and *Culex* Mix pools). Overall MFIR for all species statewide is 0.340.

Traditional Resting Box Sites: 1,997 *Cs. melanura* from 101 pools have been tested, with 14 positive pools detected – 1 at Centerton, 2 at Glassboro, 6 at Turkey Swamp, and 5 at Winslow (with the latest pool found here). An additional 233 *Cs. melanura* in 5 pools are at labs to be tested.

	Additional *Cs. melanura* trapped by counties *traps with positives indicated in **BOLD UNDERLINED.**				
County	**Trap types***	**Pools**	**Mosquitoes**	**Positives**	**MFIR**
Atlantic	BGS, **CO_2**, GR, **RB**	73	2254	5	2.218
Bergen	CO_2, RB	4	13		
Burlington	**ULVT**	50	1759	7	3.980
Cape May	GR, **RB**	128	353	1	2.833
Cumberland	AGO, RB	21	139		
Gloucester	CO_2, **RB**	48	1451	3	2.068
Middlesex	RB	12	71		
Monmouth	CO_2, **Other**	20	171	1	5.848
Morris	**CO_2**, **RB**	45	542	5	9.225
Ocean	**CO_2**, GR, RB	52	375	1	2.667
Salem	CO_2, GR, **RB**	18	66	1	15.152
Sussex	**CO_2**, GR	23	367	2	5.450
Union	NJLT	3	32		
TOTAL		**497**	**7593**	**26**	**3.293**

Additional County-set *Cs. melanura*: Counties maintain trap sites for *Cs. melanura* in other areas, using a variety of traps. Last year, half of the EEE detection came from such trappings. In 2019, 26 pools of *Cs. melanura* have been found positive, the latest from Sussex County. Earliest positive pools were found in Salem County, collected 9 July, and Ocean County collected 10 July.

Horses and Humans: Over the past ten years, first onset dates for horses have been in August or October except for 2012, where an onset date was 22 July. Last year five horses were reported with EEE. All 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
10	Horse	Unknown	Gelding	Ocean	?	26-Aug	Not vaccinated	
9	Horse	4 year old	Gelding	Ocean	?	26-Aug	Not vaccinated	
8	Horse	1 year old	Filly	Atlantic	?	24-Aug	Not vaccinated	
7	Horse	3 or 4 month old	Gelding	Salem	?	25-Aug	Not vaccinated	
6	Horse	18 year old	Gelding	Morris	25-Aug	26-Aug	Not vaccinated	
5	Horse	2 year old	Gelding	Ocean	15-Aug	16-Aug	Unknown	
4	Alpaca	7 year old	Unknown	Camden	2-Aug	3-Aug	Unknown	
3	Horse	yearling	Colt	Monmouth	5 Aug	5-Aug	April vaccination (incomplete)	
2	Horse	20 year old	Gelding	Ocean	26-Jul	26-Jul	Unknown	
1	Horse	12 year old	Mare	Ocean	23-Jul	23-Jul	Possible incomplete	11-14 miles from two active EEE sites

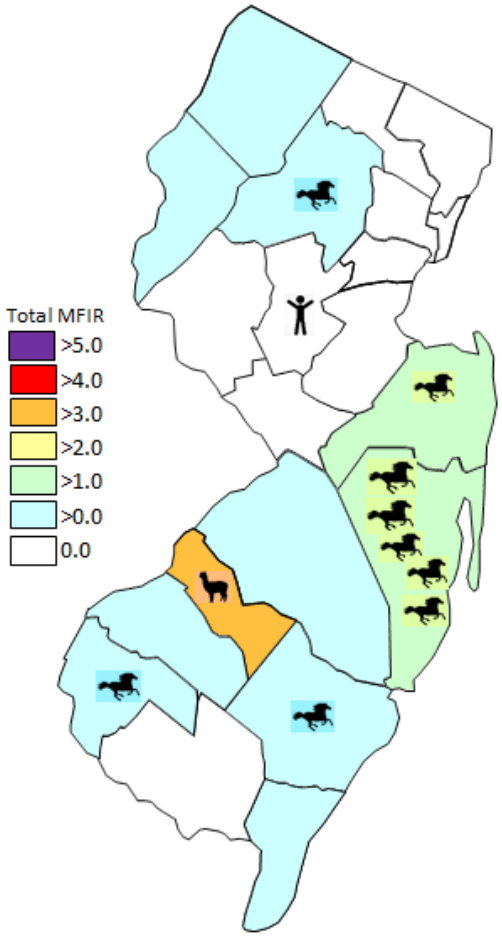
Horses and Vaccinations: The fate of unvaccinated equids reinforces the necessity of maintaining a vaccination schedule for arboviruses. For vaccination schedules recommended by the American Association of Equine Practices, see: http://www.aaep.org/vaccination_guidelines.htm

There is one human case from Somerset County. For more information, see DOH press release: https://www.nj.gov/health/news/2019/approved/20190816a.shtml

Species other than *Cs. melanura*	Pools	Mosquitoes	Positives	MFIR
Aedes abserratus	13	258		
Aedes albopictus	562	4988	2	0.401
Aedes atlanticus	13	126		
Aedes aurifer	3	14		
Aedes canadensis canadensis	127	2437	2	0.821
Aedes cantator	18	295		
Aedes grossbecki	5	12		
Aedes infirmatus	1	1		
Aedes japonicus	568	3830		
Aedes mitchellae	1	1		
Aedes provocans	2	8		
Aedes sollicitans	24	631		
Aedes sticticus	5	100		
Aedes stimulans	2	10		
Aedes taeniorhynchus	12	255		
Aedes thibaulti	2	27		
Aedes triseriatus	102	451	1	2.217
Aedes trivittatus	27	497		
Aedes vexans	77	652		
Anopheles barberi	2	2		
Anopheles bradleyi	93	593		
Anopheles crucians	14	175		
Anopheles punctipennis	81	550		
Anopheles quadrimaculatus	129	954		
Anopheles walkeri	1	18		
Coquillettidia perturbans	232	4557		
Culex Mix	2640	108620	7	0.064
Culex erraticus	106	836		
Culex pipiens	501	5350		
Culex restuans	373	1103		
Culex salinarius	258	1832		
Culex territans	37	100		
Culiseta inornata	1	4		
Orthopodomyia signifera	6	6		
Psorophora ciliate	1	1		
Psorophora columbiae	21	274		
Psorophora ferox	41	744		
Psorophora howardii	1	1		
Uranotaenia sapphirina	16	102		
State Total	**6118**	**140415**	**12**	**0.085**

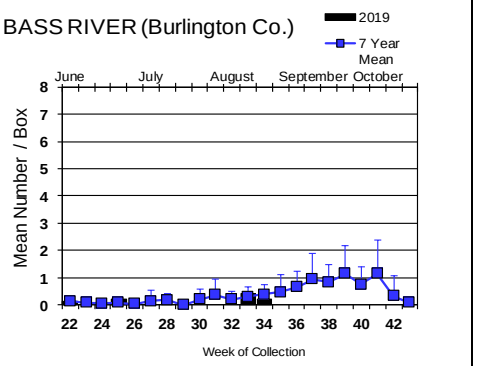
Additional Species: 38 additional species were tested for EEE. 12 positive pools have been detected in three species, the latest species being *Ae. canadensis* in Sussex County and *Culex* Mix in Camden County. (One positive pool in *Aedes albopictus*, collected in Ocean County on 9 July was found. On 16 July, a positive pool of *Culex* Mix was detected in Camden County. A second *Culex* pool was detected in Ocean County 31 July. Note: *Culex pipiens* is refractory for EEE virus).

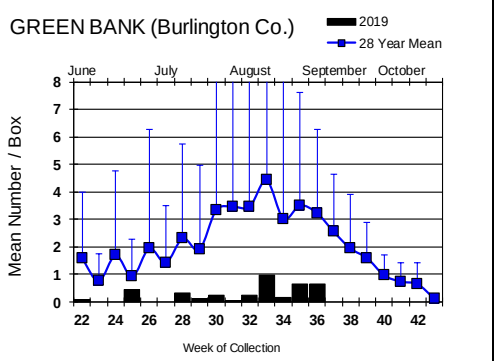
Overall MFIR rates, human and animal cases per county:

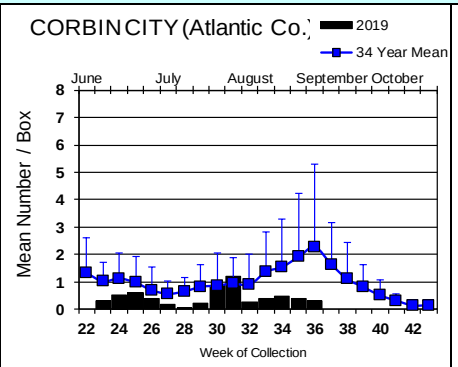


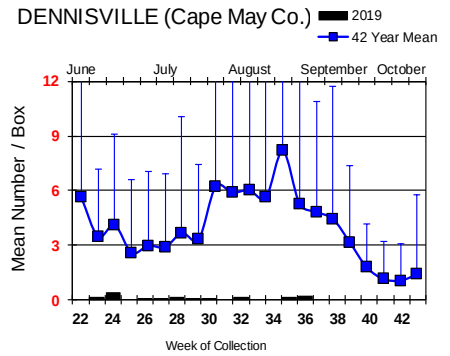
Culiseta melanura Populations

Coastal

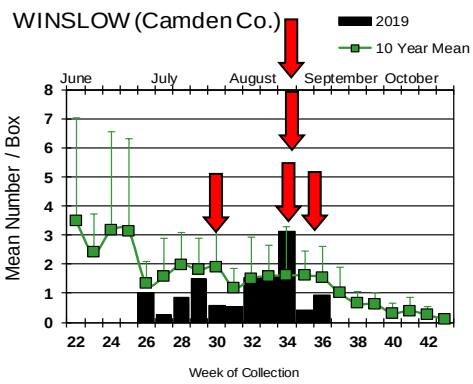


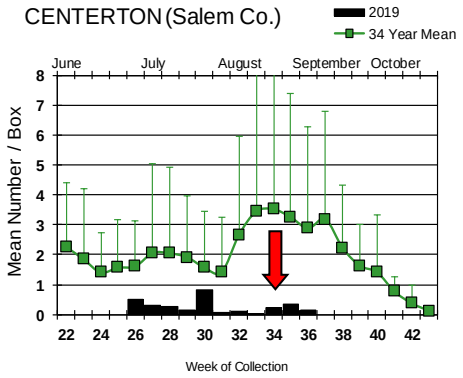


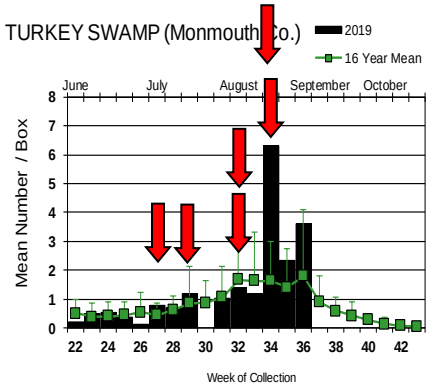


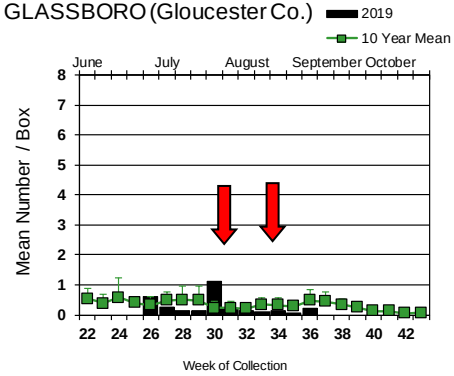


Inland









Culiseta melanura populations at Turkey Swamp continue to remain above historical levels. One more positive pool was detected at Winslow. Positive pools continue to be detected at both traditional resting box sites and county-maintained sites and transmission is evident with animal detection continuing.

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

EEE in US (2019 cumulative cases): (Black or Red = previous + new reported cases occurring)

- **equine:** 2(CT) 26(FL) 1(GA) 2(IN) 21(LA) 9(MA) 1(ME) 11(MI) 1(MN) 7(MS) 1(NC) 8(NH) 9(+1 alpaca, NJ) 3(NY) 1(OH) 1(RI) 3(SC) 4(TX) 3(WI) 5(CAN-ON)
- **mosquito pools:** 73(CT) 1(IN) 2(LA) 400(MA) 3(MD) 5(NH) 52(NJ) 41(NY) 4(RI)
- **sentinel:** 96(+1 emu 1 BAEA, FL) 3(DE)
- **human:** 7(MA) 3(MI) 1(NJ)

West Nile Virus Positive Organisms in US, 2019

West Nile in US (2019 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	1
Alaska					
Arizona	2	347	1	1	139/140
Arkansas					2
California	91/103	2516/2815	53/81	5/7	52/62
Colorado		62/92		3	3/14
Connecticut		37/48		1	3
Delaware					
Florida	1		129/189	1	
Georgia					1
Hawaii					
Idaho	0	19/32		2/3	2/7
Illinois	2/3	530/687		0	3
Indiana	0	73/102		0	0
Iowa				2	3
Kansas					0
Kentucky					1
Louisiana		124/140		1	10
Maine		0			0
Maryland(+DC)					3(2DC)
Mass.		61/64		0	0
Michigan	9	20/21			2/5
Minnesota				1	1
Mississippi		26		5/7	9
Missouri		0		0	1

	Birds	Mosquito Pools	Sentinels	Horses*	Humans
Montana					
Nebraska	0	14/17		0	7/10
Nevada					4/13
New Hampshire		1			1
New Jersey		174/202		0	1
New Mexico					1/4
New York		220/361		0	0
North Carolina					
North Dakota	0	2/6		0	5/6
Ohio		172/197		0	0
Oklahoma					3/4
Oregon	0	59/79	0	1/2	3/4
Pennsylvania	1	297/328		1	
Rhode Island		1			
South Carolina	1	3			
South Dakota		9			6
Tennessee					1
Texas	1	97/101		1	7/14
Utah		162/192		1	4/8
Vermont		2/4			
Virginia					1
Washington	0	24/25		0	1
West Virginia					
Wisconsin	1	10/22		0	0
Wyoming	0	7		1/2	2

* 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 7 September 2019

Species	Pools	Mosquitoes	Positives	MFIR
Aedes abserratus	13	258		
Aedes albopictus	998	6128	1	0.163
Aedes atlanticus	13	126		
Aedes aurifer	3	14		
Aedes canadensis canadensis	127	2437		
Aedes cantator	18	295	1	3.390
Aedes grossbecki	5	12		
Aedes infirmatus	1	1		
Aedes japonicus	586	4397	1	0.227
Aedes mitchellae	1	1		
Aedes provocans	2	8		
Aedes sollicitans	24	631		
Aedes sticticus	5	100		
Aedes stimulans	2	10		
Aedes taeniorhynchus	12	255		
Aedes thibaulti	2	27		
Aedes triseriatus	391	1600	1	0.625
Aedes trivittatus	27	497		
Aedes vexans	77	652		
Anopheles barberi	2	2		
Anopheles bradleyi	93	593		
Anopheles crucians	14	175		
Anopheles punctipennis	82	551	1	1.815
Anopheles quadrimaculatus	129	954		
Anopheles walkeri	1	18		
Coquillettidia perturbans	236	4770	1	0.210
Culex spp.	2640	108620	180	1.657
Culex erraticus	106	836		
Culex pipiens	502	5351	4	0.748
Culex restuans	376	1106		
Culex salinarius	258	1832		
Culex territans	37	100		
Culiseta melanura	1	4		
Culiseta melanura	598	9590	12	1.251
Orthopodomyia signifera	6	6		
Psorophora ciliata	1	1		
Psorophora columbiae	21	274		
Psorophora ferox	41	744		
Psorophora howardii	1	1		
Uranotaenia sapphirina	16	102		
Grand Total	**7468**	**153079**	**202**	**1.320**

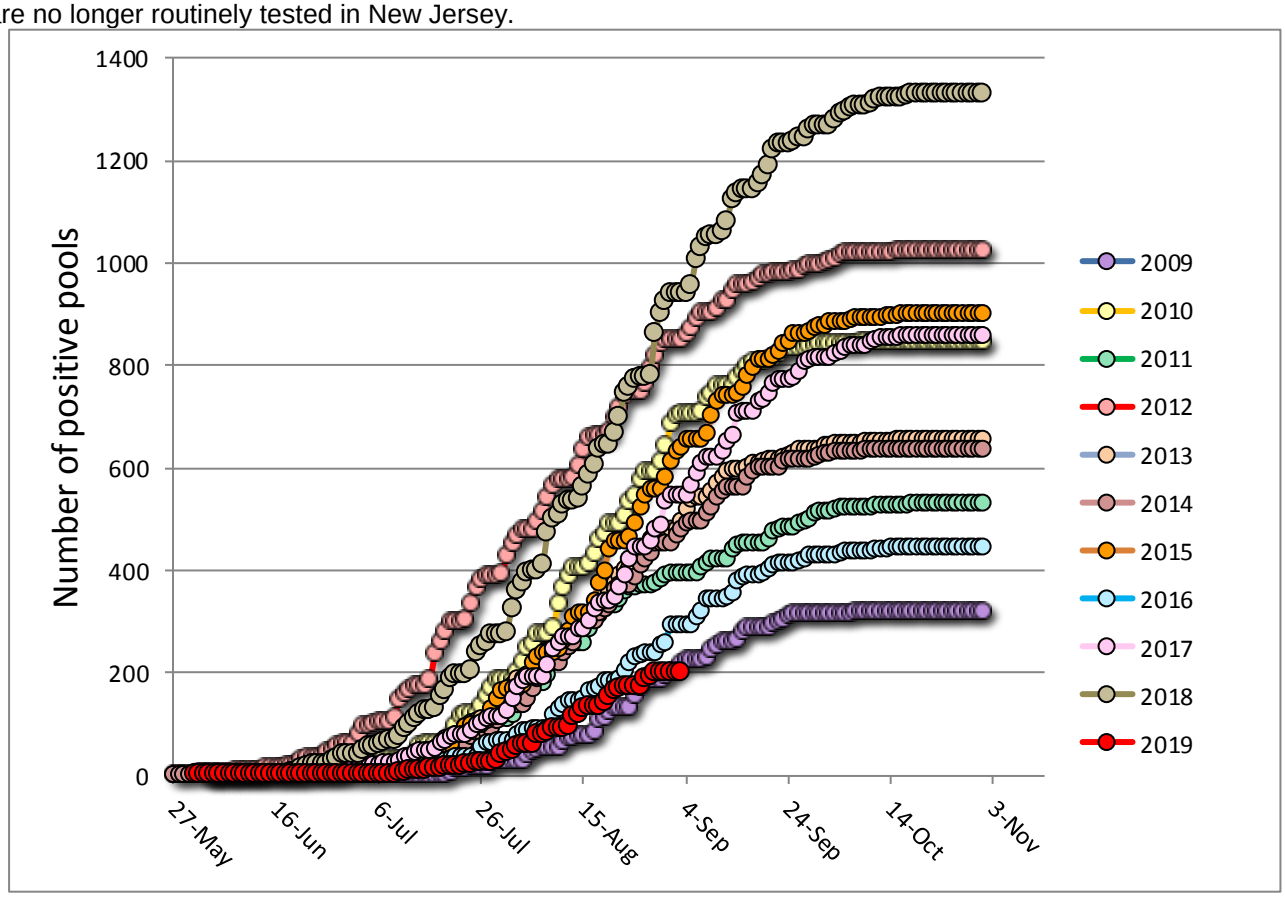
Remarks: To date, 7,468 pools of 153,079 mosquitoes from 39 species have been tested. A total of 202 positive WNV pools have been detected throughout the state beginning with a pool of *Aedes triseriatus*, collected on 31 May, 2019 in Passaic County. This pool was also co-infected with LAC (see table below). 118 (87%) of the positives are in *Culex*

species pools. Also positive are *Aedes albopictus, Ae. cantator*, *Ae. japonicus, Anopheles punctipennis, Coquillettidia perturbans*, and *Culiseta melanura.* Last year was a year of significant activity, with over 1300 positive pools detected. Currently, the statewide MFIR rate for all mosquitoes increased from 1.233 to 1.320.

Humans, Horses and Wild Birds: There has been one human case of West Nile virus from Hunterdon County reported, with an onset date of 21 June. This represents the earliest typical case reported in New Jersey. (A few years ago, there was one case reported in May from a long-term hospitalized patient making date of infection difficult to determine.) For more information, see NJ arboviral reports from the Department of Health: https://www.nj.gov/health/cd/statistics/arboviral-stats/ . Last year we have over 60 cases reported, the highest to date.

Currently, there are no reported horse cases for WNV. Last year only one WNV horse case has been reported, occurring in Burlington County. This seemed rather unusual, given all the other indicators of high virus activity. For further information, see http://www.nj.gov/health/cd/statistics/arboviral-stats/.

Birds are no longer routinely tested in New Jersey.



Above is a graph showing cumulative number of positive pools for the previous 10 years, inclusive of the most active (2018) and least active (2009) years. The red series represents this year, starting with the first positive pool.

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