

**Report Highlight:**

- Thirty-four human cases of WNV have been reported from 16 New Jersey counties, including two fatalities in Bergen County.
- A total of 1,129 mosquito pools and one horse have tested positive for WNV.
- A total of 12 mosquito pools and five horses have tested positive for EEE. There have been no human EEE cases reported in 2018.

## Human Testing

New Jersey Administrative Code (N.J.A.C.) Title 8 Chapter 57 mandates public health reporting of specified vector-borne diseases to prevent further disease spread.

### Human Cases<sup>a</sup>

Mosquito-borne diseases			Tickborne Diseases		
	2018 <sup>b</sup>	2017		2018 <sup>b</sup>	2017
Chikungunya	6	12	Anaplasmosis	72	154
Dengue	13	25	Babesiosis	179	193
Eastern equine encephalitis	-	-	Ehrlichiosis	69	102
Malaria	64	125	Lyme disease	2508	5107
West Nile	34	8	Powassan	-	4
Zika	7	37	Spotted fever group rickettsioses	96	137

<sup>a</sup> Data for 2018 reflect confirmed and probable cases that have been approved by NJDOH. This does not include cases under investigation. All 2018 numbers are preliminary and are subject to change.

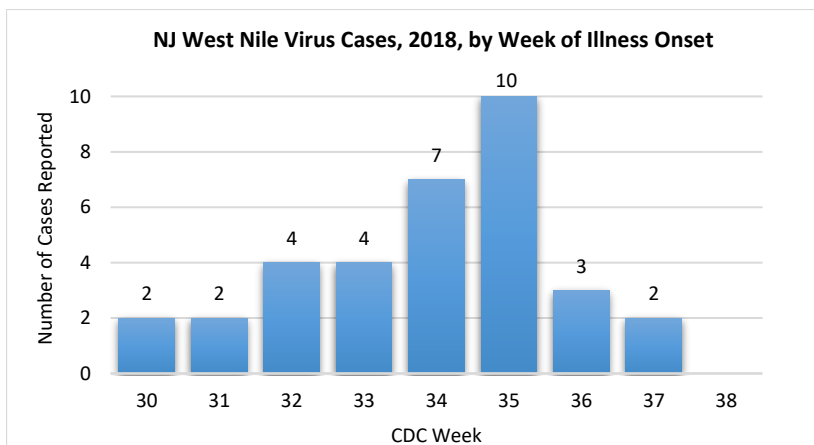
<sup>b</sup> Cumulative through week 38: September 16-22, 2018.

## 2018 West Nile Virus Cases

- As of week 38, 34 WNV cases including 2 fatalities from Bergen County have been reported. An additional 9 reports are under investigation. In 2017, there was a total of 8 reported West Nile virus cases.
- Two WNV cases were identified through routine blood screening (Hunterdon and Morris County).
- The mean age of cases is 64 years (ranging from 19 to 95 years); 21 of the 34 cases are male.
- 29 cases were hospitalized for an average of 11 days. 10 of the 34 cases required additional medical care after hospitalization.
- 27 cases were classified with neuroinvasive disease.
- 10 of the 34 cases had onset of symptoms in week 35 (Aug 28-Sep 1), which is also the week with the highest number of WNV positive mosquito pools.

### West Nile Virus Cases\*

County	No. of Cases
Bergen	6
Burlington	3
Camden	3
Hudson	3
Hunterdon	2
Middlesex	2
Monmouth	2
Morris	2
Passaic	2
Somerset	2
Warren	2
Cape May	1
Essex	1
Mercer	1
Ocean	1
Union	1
<b>Total</b>	<b>34</b>



\* Represents confirmed and probable cases that have been approved by NJDOH. This does not include cases under investigation. All 2018 numbers are preliminary and are subject to change.

## Mosquito Testing\*

The New Jersey Department of Health Public Health and Environmental Laboratories (PHEL) and the Cape May County Department of Mosquito Control Bio-safety Level 3 Laboratory (CMBSL3) perform arboviral testing on mosquito pools collected by county mosquito control agencies throughout New Jersey.

### West Nile virus (WNV):

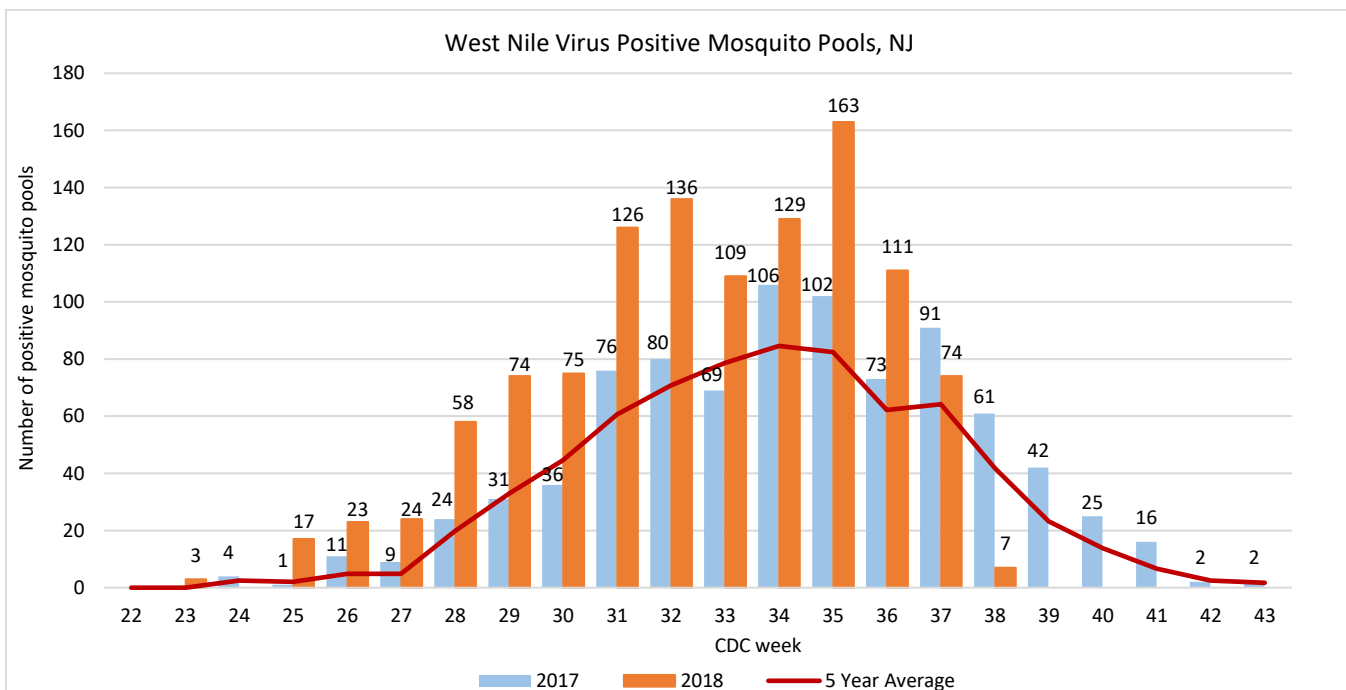
- A total of 1,129 mosquito pools have tested positive for WNV. This exceeds the total number of positive pools reported in 2017 ( $n=861$ ) and is the first time since 2012 the number of positive pools reported in a season has exceeded 1000+ pools.
- 89% ( $n=1,002$ ) of the positive pools were *Culex sp.* A total of 18 species have tested positive for WNV this season compared with 10 species in 2017.
- 163 WNV positive pools were reported in week 35. 24% of the total pools collected in week 35 were positive for WNV. This is the highest ratio of positive pools to total pools collected in a week this season.
- 75% ( $n=848$ ) of the WNV positive pools this season were reported in weeks 31 to 37. This is higher than the cumulative number of positive pools ( $n=658$ ) reported at the same time last year and higher than the 5-year average of WNV positive pools reported during the same period.
- Overall, 16 counties are reporting increased WNV activity this season compared with 2017.

### WNV Positive Mosquito Pools

County	Week 38		Cumulative Total (week 38)	
	2018*	2017	2018*	2017
Morris			141	28
Bergen	4	5	128	106
Hunterdon		13	122	80
Gloucester		19	92	91
Somerset		1	78	34
Union		6	69	95
Hudson		2	66	67
Warren		1	65	27
Monmouth			56	15
Middlesex			53	49
Mercer			42	23
Sussex		6	40	35
Camden	2		35	34
Burlington	1	2	32	25
Ocean			26	13
Atlantic		1	23	4
Cape May		3	17	24
Passaic		1	13	5
Essex			12	6
Cumberland			10	3
Salem		1	9	10
<b>Total</b>	<b>7</b>	<b>61</b>	<b>1129</b>	<b>774</b>

Week 38: September 17-23, 2017; September 16-22, 2018

\* Test results may be incomplete; Counties submit pools for testing on specific weekdays. Mosquito testing data reflects test results received from PHEL, CMBSL3 and US Army Public Health as of September 25, 2018



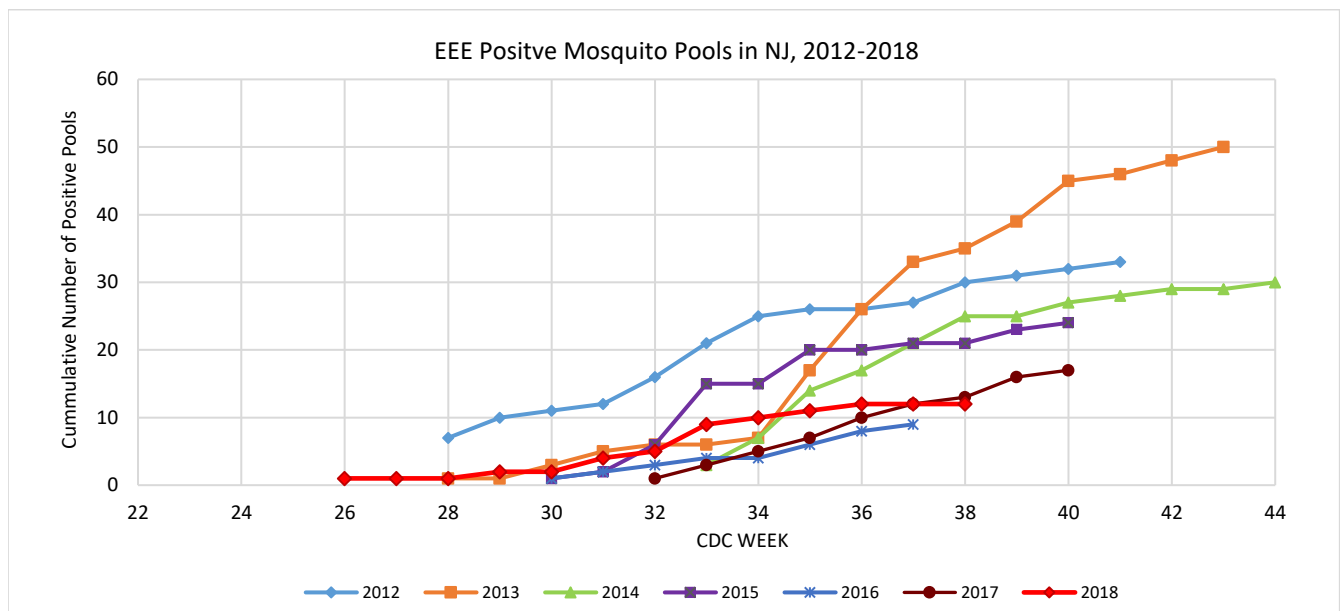
## Eastern equine encephalitis virus (EEE)

- To date, 1,892 mosquito pools from 16 counties have been tested for EEE.
- A total of 12 mosquito pools from 5 counties have tested positive for EEE this season.
- The first EEE positive pool was reported in week 26. This is the earliest EEE positive pool identified in the state in the past 7 years (see chart below).
- All EEE positive pools were *Culiseta melanura* species.

EEE Positive Mosquito Pools

County	Week 38		Cumulative Total (week 38)	
	2018	2017	2018	2017
Camden			4	
Burlington			4	3
Salem			2	3
Monmouth		1	1	1
Atlantic			1	2
Cape May				3
Cumberland				1
Gloucester				
<b>Total</b>	-	1	12	13

Week 38: September 17-23, 2017; September 16-22, 2018



## Other viruses:

Mosquito pools from 9 counties (Atlantic, Bergen, Burlington, Cape May, Gloucester, Middlesex, Ocean, Salem and Sussex) have been tested for other arboviruses. No positive mosquito pools were identified.

Cumulative 2018 Mosquito Pool Testing (Other Viruses<sup>a</sup>)

County	SLE		LAC		CHIKV		DENV		ZIKV	
	Pools	Positives	Pools	Positives	Pools	Positives	Pools	Positives	Pools	Positives
Atlantic					41		41		41	
Bergen					1		1		1	
Burlington	36		14							
Cape May	814								505	
Gloucester					7		7		7	
Middlesex					2		2		2	
Ocean			4		54		54		54	
Salem			3							
Sussex			3		1		1		1	
<b>Total</b>	850	-	24	-	106	-	106	-	611	-

<sup>a</sup> St. Louis encephalitis virus (SLE), La Crosse encephalitis virus (LAC), Chikungunya virus (CHIKV), Dengue virus (DENV), Zika Virus (ZIKV)

Numbers in white columns represent number of pools tested to date in 2018

Numbers in green shaded columns represent positive pools in 2018

## Equine/Avian /Other Animal Testing

Equine testing for WNV and EEE is conducted at the New Jersey Department of Agriculture's Animal Health and Diagnostic Laboratory.

- Five equine cases of EEE have been reported this season:
  - Monmouth County: 5-year-old mare. Onset Aug 17<sup>th</sup>.
  - Camden County: 12-year-old gelding. Onset Aug 26<sup>th</sup>.
  - Ocean County: 2 geldings (7-year-old and one of unknown age). Onset Sep 3<sup>rd</sup> and 4<sup>th</sup>.
  - Gloucester County: 12-year-old gelding. Onset Sep 12<sup>th</sup>.

All horses with EEE were euthanized.

- One equine case of WNV was reported from Burlington County in week 36 (onset Sep 4<sup>th</sup>).
- WNV has been detected in 13 dead bird carcasses from 7 counties submitted to NJDEP/NJDA for testing. The species of birds tested were the American crow, Broad-winged hawk, Cooper's Hawk, Fish crow and Red-tailed Hawk.

### WNV/EEE Positive Test Results

	Week 38		Cum. Total (Year)	
	2018	2017	2018	2017
Equine (EEE)		1	5	2
Equine (WNV)			1	
Avian (WNV)			13	
Other				

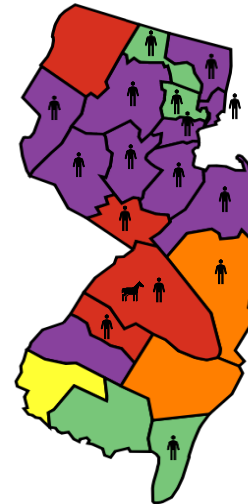
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## Surveillance Maps\*

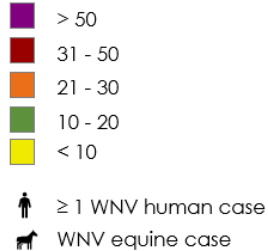
Week 38 WNV Activity (2018)\*



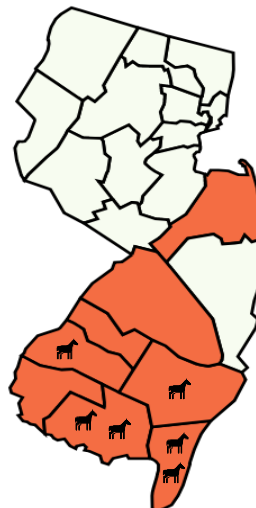
Cumulative WNV Activity 2018



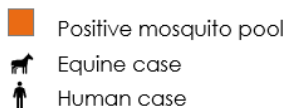
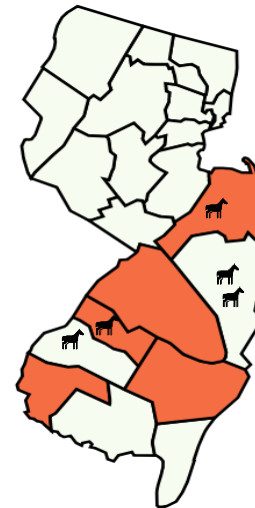
### WNV Positive Pools



2017 EEE Activity



Cumulative EEE Activity 2018

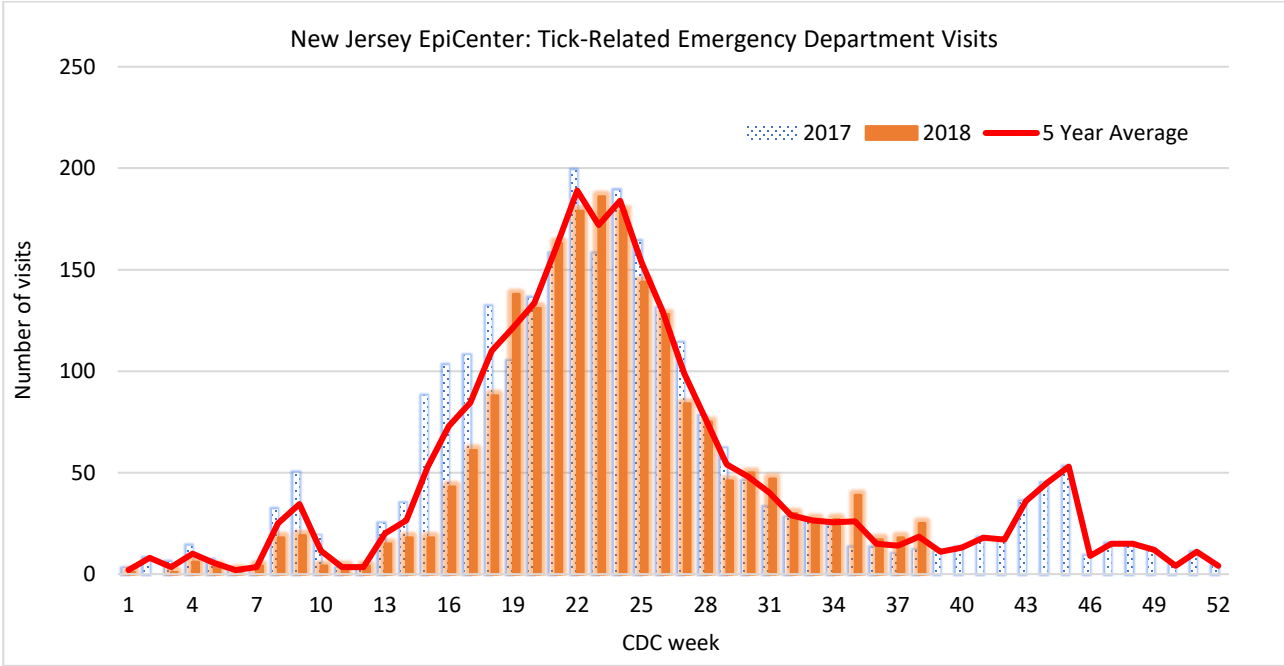


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## Syndromic Surveillance for Tick-related Emergency Department Visits

EpiCenter is a syndromic surveillance system developed and maintained by Health Monitoring Systems, Inc, for monitoring by health departments in the United States. New Jersey’s EpiCenter receives real time Emergency Department (ED) data from 78 acute care and satellite health (99 percent reporting) facilities statewide. The system collects “chief complaint” information and limited patient registration data from existing ED computer systems.

The chart below represents NJ residents seen at emergency departments state wide with a tick-bite complaint or signs/symptoms associated with a reported tick-bite.



Data reflects ED visits downloaded from EpiCenter as of September 25, 2018

## For More Information

- NJDOH Communicable Disease Service: <http://nj.gov/health/cd/topics/vectorborne.shtml>
- NJDEP Office of Mosquito Control Coordination: <http://www.nj.gov/dep/mosquito/>
- NJDA Division of Animal Health: <http://www.nj.gov/agriculture/divisions/ah/>
- Rutgers Center for Vector Biology: <http://vectorbio.rutgers.edu/>