

### Report Highlight:

- Fifty human cases of WNV have been reported from 19 New Jersey counties, including three fatalities in Bergen County.
- A total of 1,262 mosquito pools and one horse have tested positive for WNV.
- A total of 13 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	7	12	Anaplasmosis	77	154
Dengue	14	25	Babesiosis	186	193
Eastern equine encephalitis	-	-	Ehrlichiosis	71	102
Malaria	70	125	Lyme disease	2735	5107
West Nile	50	8	Powassan	-	4
Zika	7	37	Spotted fever group rickettsioses	103	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.

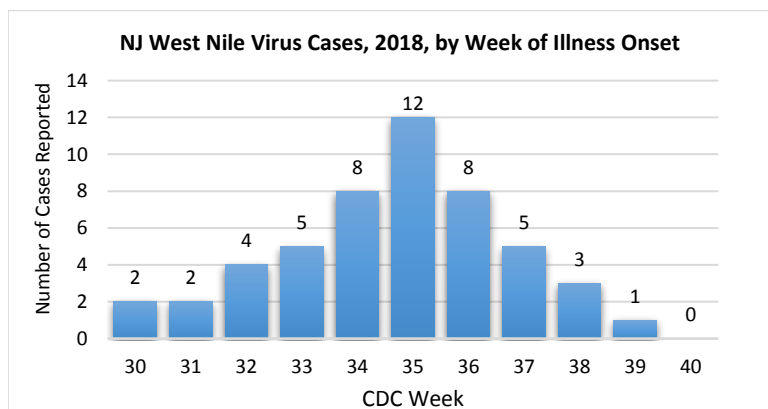
<sup>b</sup> Cumulative through week 40: September 30-October 6, 2018.

### 2018 West Nile Virus Cases

- As of week 40, 50 WNV cases including 3 fatalities from Bergen County have been reported. An additional 9 reports are under investigation. This is the highest number of cases ever reported in the state. In 2017, there was a total of 8 reported West Nile virus cases.
- The mean age of cases is 64 years (ranging from 19 to 95 years); 32 of the 50 cases are male.
- 39 cases were hospitalized for an average of 12 days. 16 of the 39 cases required additional medical care after hospitalization.
- 36 cases were classified with neuroinvasive disease.
- 2 cases were identified through routine blood screening (Hunterdon and Morris County).
- 12 of the 50 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.
- 2 asymptomatic presumptive viremic blood donor (PVD) reports were received from Mercer and Middlesex County. These are not cases but are reported as PVDs.

#### West Nile Virus Cases\*

County	No. of Cases
Bergen	7
Hudson	4
Middlesex	4
Morris	4
Burlington	3
Camden	3
Hunterdon	3
Passaic	3
Somerset	3
Warren	3
Cape May	2
Cumberland	2
Monmouth	2
Ocean	2
Atlantic	1
Essex	1
Gloucester	1
Mercer	1
Union	1
<b>Total</b>	<b>50</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):

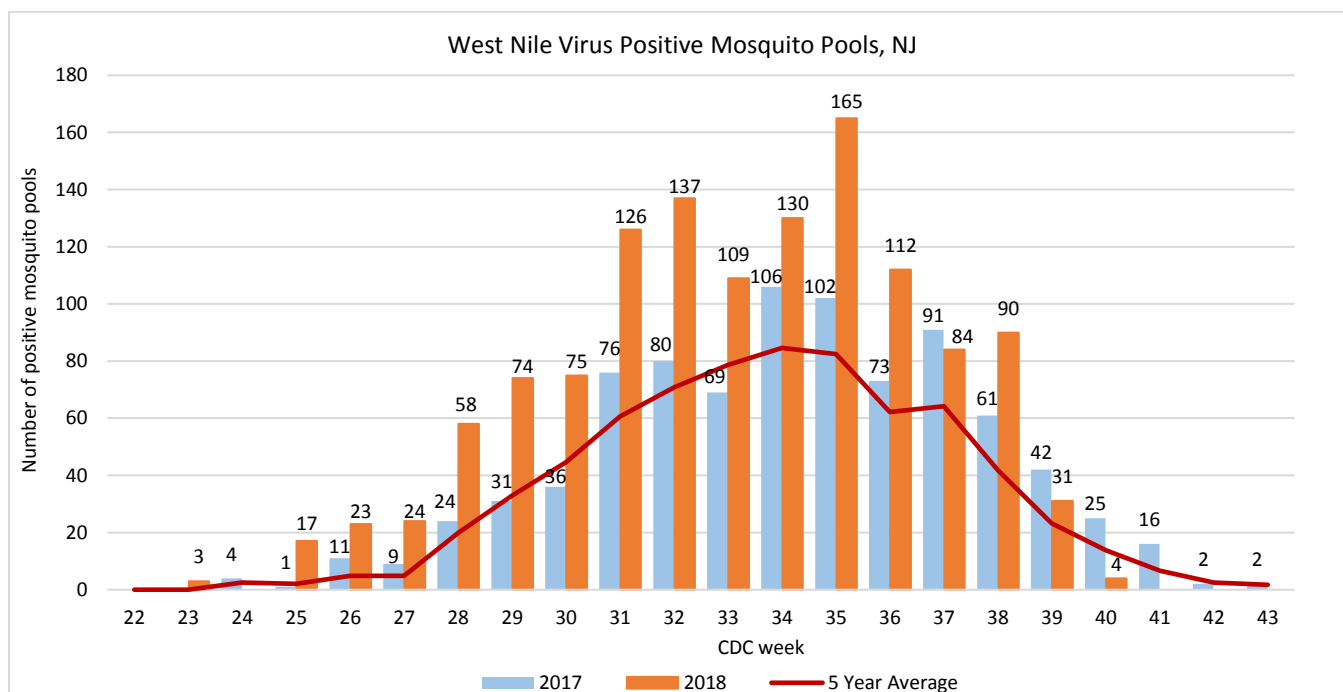
- A total of 1,262 mosquito pools have tested positive for WNV. This exceeds the total number of positive pools reported in 2017 ( $n=861$ ) and is the first time since 2012 the number of positive pools reported in a season has exceeded 1000+ pools.
- 90% ( $n=1,132$ ) of the positive pools were *Culex sp.* A total of 18 species have tested positive for WNV this season compared with 10 species in 2017.
- As of week 40, Morris, Bergen and Hunterdon Counties have the highest number of WNV positive pools in the State.
- 165 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.
- Overall, 17 counties are reporting increased WNV activity this season compared with 2017.

\* 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 October 10, 2018

### WNV Positive Mosquito Pools

County	Week 40		Cumulative Total (week 40)	
	2018*	2017	2018*	2017
Morris			164	29
Bergen	1	9	148	122
Hunterdon		2	144	88
Gloucester		6	107	101
Somerset		1	80	37
Union	3	1	78	98
Warren			72	31
Hudson			67	68
Monmouth			62	15
Middlesex		1	56	56
Sussex		2	53	37
Mercer			43	24
Camden		1	39	38
Burlington		1	33	26
Ocean			26	14
Atlantic			23	5
Cape May		1	18	26
Passaic			16	7
Essex			14	6
Cumberland			10	3
Salem			9	10
<b>Total</b>	<b>4</b>	<b>25</b>	<b>1262</b>	<b>841</b>

Week 40: October 1-7, 2017; September 30-October 6, 2018



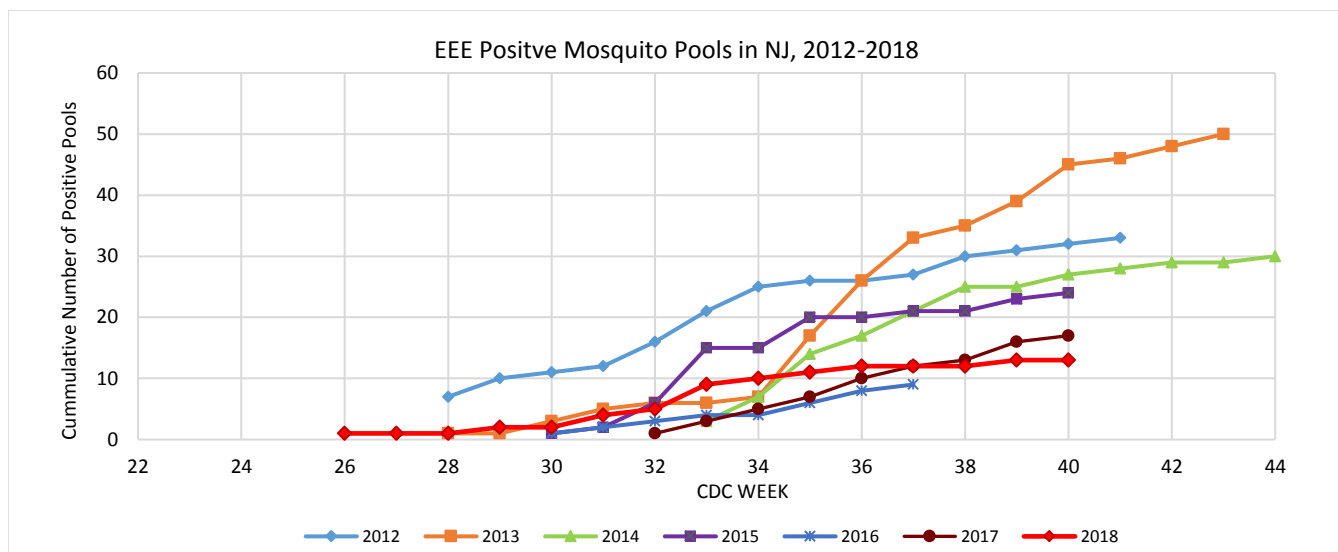
## Eastern equine encephalitis virus (EEE)

- To date, 2,124 mosquito pools from 16 counties have been tested for EEE.
- A total of 13 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 40		Cumulative Total (week 40)	
	2018	2017	2018	2017
Burlington			5	
Camden		1	4	1
Salem			2	4
Atlantic			1	3
Monmouth			1	1
Cape May				3
Cumberland				1
Gloucester				1
<b>Total</b>	-	1	<b>13</b>	17

Week 40: October 1-7, 2017; September 30-October 6, 2018



### Other viruses:

Mosquito pools from 11 counties (Atlantic, Bergen, Burlington, Cape May, Gloucester, Middlesex, Monmouth, Ocean, Salem, Somerset 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					48		48		48	
Bergen					1		1		1	
Burlington	36		15							
Cape May	898								568	
Gloucester					7		7		7	
Middlesex					2		2		2	
Monmouth					2		2		2	
Ocean			4		63		63		63	
Salem			3							
Somerset					1				1	
Sussex			3		2		2		2	
<b>Total</b>	934	-	25	-	126	-	125	-	694	-

<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 40		Cum. Total (Year)	
	2018	2017	2018	2017
Equine (EEE)		1	<b>5</b>	3
Equine (WNV)		2	<b>1</b>	2
Avian (WNV)			<b>13</b>	
Other				

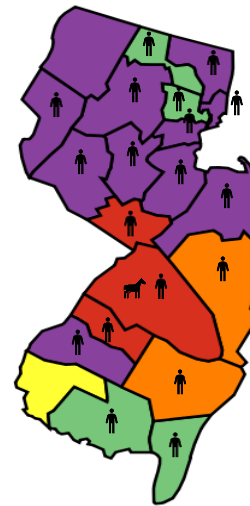
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## Surveillance Maps\*

Week 40 WNV Activity (2018)\*



Cumulative WNV Activity 2018

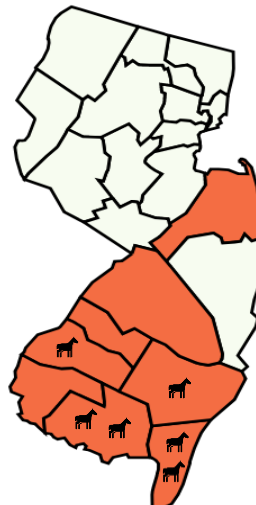


### WNV Positive Pools

- > 50
- 31 - 50
- 21 - 30
- 10 - 20
- < 10

- 👤 ≥ 1 WNV human case
- 🐎 WNV equine case

2017 EEE Activity



Cumulative EEE Activity 2018



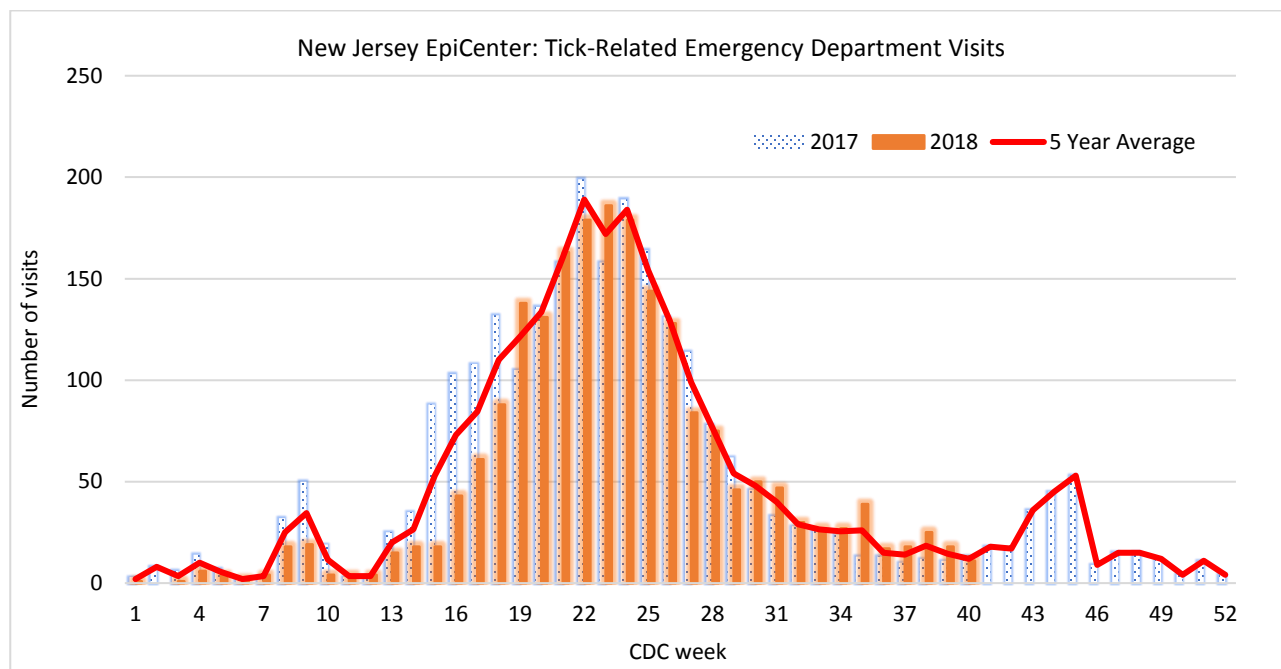
- Positive mosquito pool
- 🐎 Equine case
- 👤 Human case

\*Test results may be incomplete. Data reflects mosquito test results received from PHEL, CMBSL3 and US Army Public Health as of October 10, 2018

## 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 October 9, 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/>