

**Report Highlight:**

- **No new human cases of West Nile virus (WNV) have been added this week. To date, there have been 3 human cases from Essex and Monmouth (2) counties.**
- **West Nile virus (WNV) has been detected in 219 mosquito pools in 15 counties. These levels are lower than historical averages. No WNV in animals has been reported this year.**
- **One equine case of Eastern equine encephalitis (EEE) was reported from Atlantic County in week 37. EEE has been detected in 6 mosquito pools in 3 counties (Atlantic, Burlington and Camden). No human EEE cases have been reported this year.**
- **The number of tickborne disease reports and tick-related ED visits in 2020 is significantly below seasonal trends observed in past 5 years.**

## 1. Human Testing

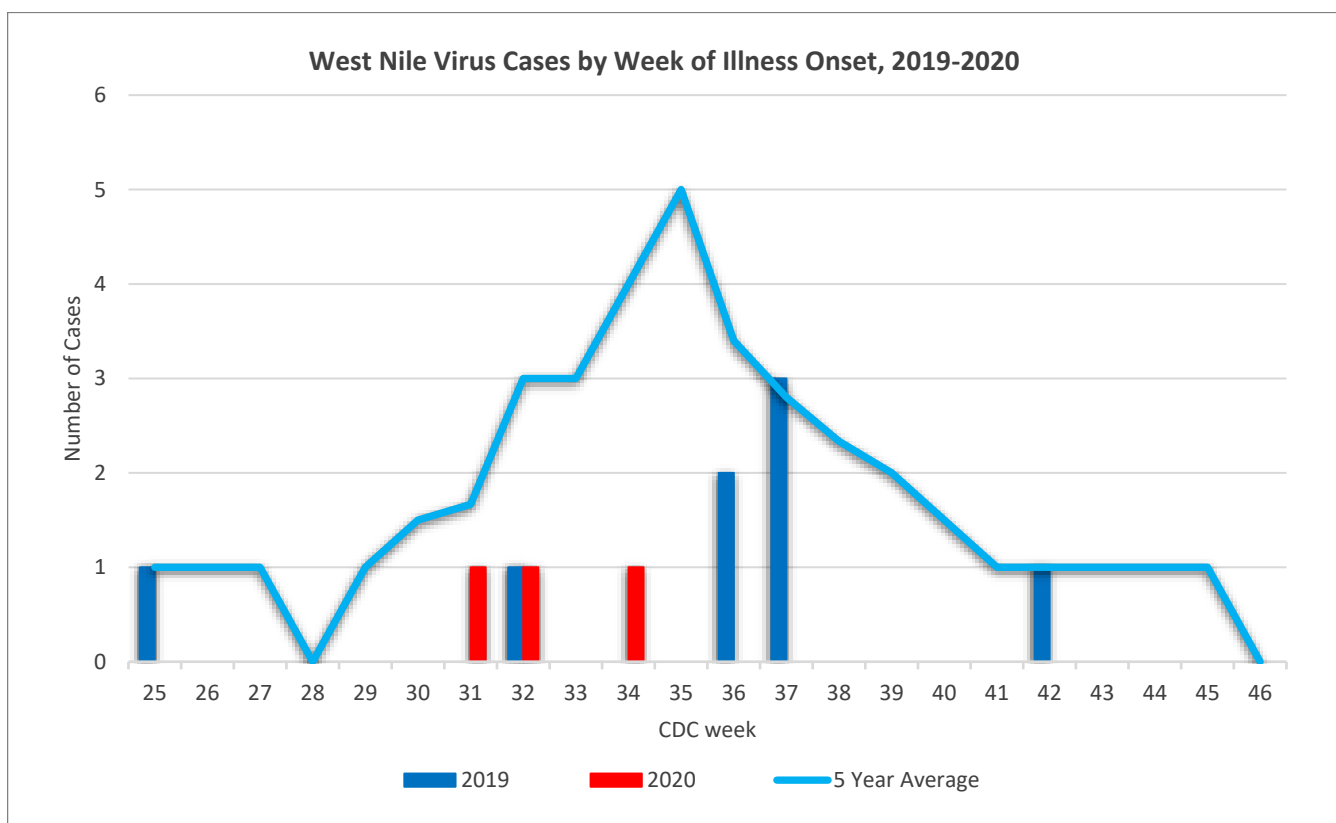
New Jersey Administrative Code (N.J.A.C.) Title 8 Chapter 57 mandates public health reporting of specified vector-borne diseases to prevent further disease spread.

**Table 1.1 Human Cases<sup>a</sup>**

| Mosquito-borne diseases     |                   |      | Tickborne Diseases                |                   |      |
|-----------------------------|-------------------|------|-----------------------------------|-------------------|------|
|                             | 2020 <sup>b</sup> | 2019 |                                   | 2020 <sup>b</sup> | 2019 |
| Chikungunya                 | 3                 | 15   | Anaplasmosis                      | 75                | 142  |
| Dengue                      | 2                 | 73   | Babesiosis                        | 143               | 236  |
| Eastern equine encephalitis | -                 | 4    | <i>Borrelia miyamotoi</i>         | 8                 | 16   |
| Jamestown Canyon            | -                 | -    | Ehrlichiosis                      | 61                | 142  |
| Malaria                     | 13                | 102  | Lyme disease                      | 1590              | 3621 |
| West Nile                   | 3                 | 8    | Powassan                          | 1                 | 4    |
| Zika                        | 3                 | 12   | Spotted fever group rickettsioses | 24                | 209  |

<sup>a</sup> Data for 2020 reflect confirmed and probable cases that have been approved by NJDOH. This does not include cases under investigation. All 2020 numbers are preliminary and are subject to change.

<sup>b</sup> Cumulative through week 39: September 20-26, 2020.



## 2. 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):

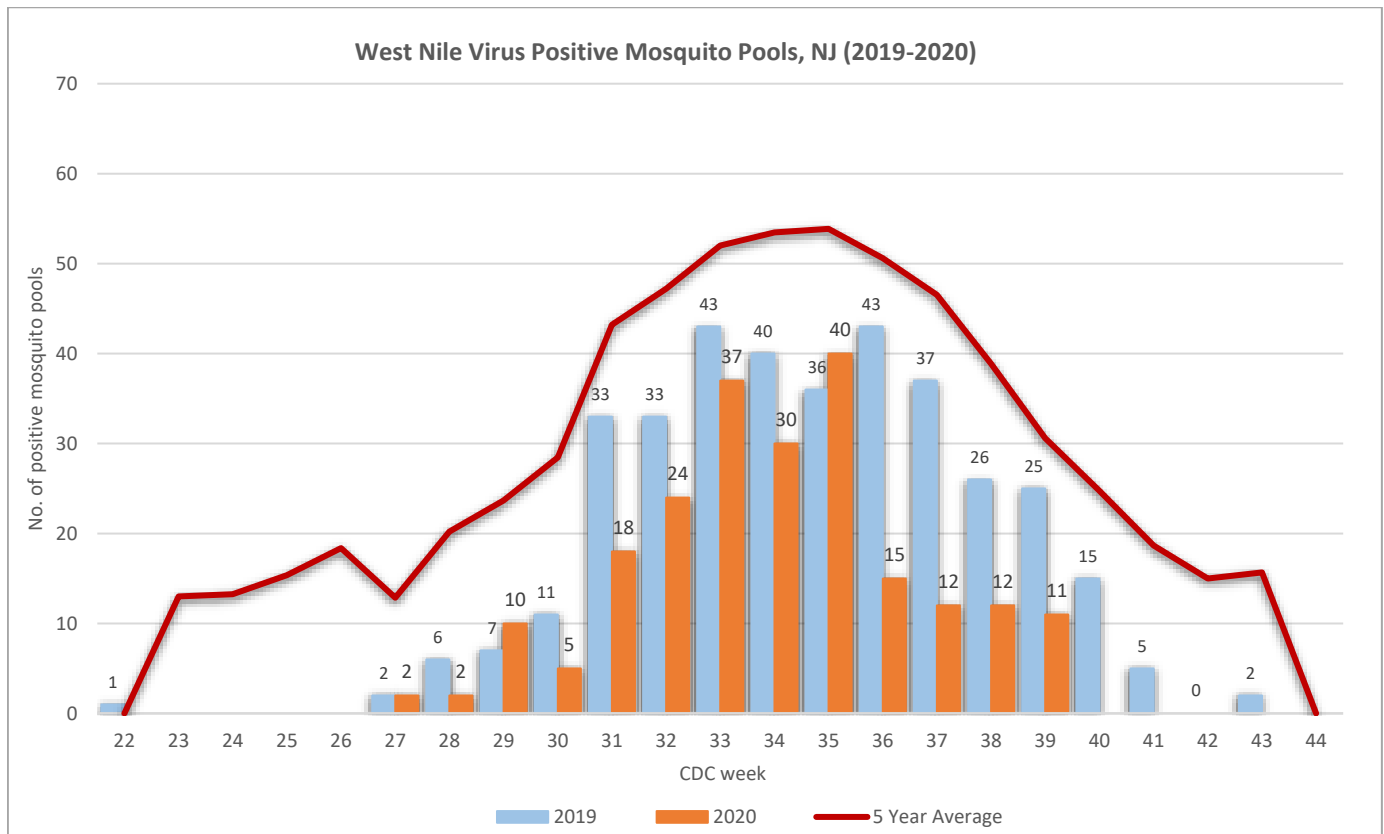
- A total of 7281 mosquito pools have been tested for WNV.
- 219 mosquito pools were positive for WNV.
- The highest number of positive pools are reported in Bergen, Monmouth and Union counties.
- The highest number of positive pools this season was reported in week 35 ( $n=40$ ).
- The first WNV positive pools were detected in week 27 from Mercer and Monmouth counties. In 2019 the first WNV positive mosquito pool was identified in week 22 in Passaic County.
- The positive pools were detected in *Aedes albopictus*, *Aedes canadensis*, *Culex pipiens/restuans/salinarius* and *Culex* species mix.
- 97% ( $n=212$ ) of the positive pools were *Culex sp.*

\*Test results may be incomplete; counties submit pools for testing on specific weekdays. Mosquito testing data reflects test results received from PHEL and CMBSL3 as of October 1, 2020

### WNV Positive Mosquito Pools

| County       | Week 39   |           | Cumulative Total (week 39) |            |
|--------------|-----------|-----------|----------------------------|------------|
|              | 2020*     | 2019      | 2020*                      | 2019       |
| Atlantic     |           | 2         | 1                          | 15         |
| Bergen       |           | 11        | 35                         | 83         |
| Burlington   | 6         | 4         | 30                         | 58         |
| Camden       | 4         |           | 11                         | 8          |
| Cape May     |           |           |                            | 5          |
| Cumberland   |           |           |                            | 1          |
| Essex        |           |           |                            | 1          |
| Gloucester   |           | 3         | 3                          | 14         |
| Hudson       |           |           | 25                         | 41         |
| Hunterdon    |           | 2         | 7                          | 20         |
| Mercer       | 1         | 1         | 17                         | 8          |
| Middlesex    |           |           | 5                          | 9          |
| Monmouth     |           |           | 34                         | 18         |
| Morris       |           | 1         | 4                          | 9          |
| Ocean        |           |           |                            | 11         |
| Passaic      |           |           | 7                          | 4          |
| Salem        |           |           |                            | 3          |
| Somerset     |           |           | 10                         | 17         |
| Sussex       |           |           |                            | 3          |
| Union        |           | 1         | 28                         | 34         |
| Warren       |           |           | 2                          | 3          |
| <b>Total</b> | <b>11</b> | <b>25</b> | <b>219</b>                 | <b>365</b> |

Week 39: September 22-28, 2019; September 20-26, 2020



### Eastern equine encephalitis virus (EEE)

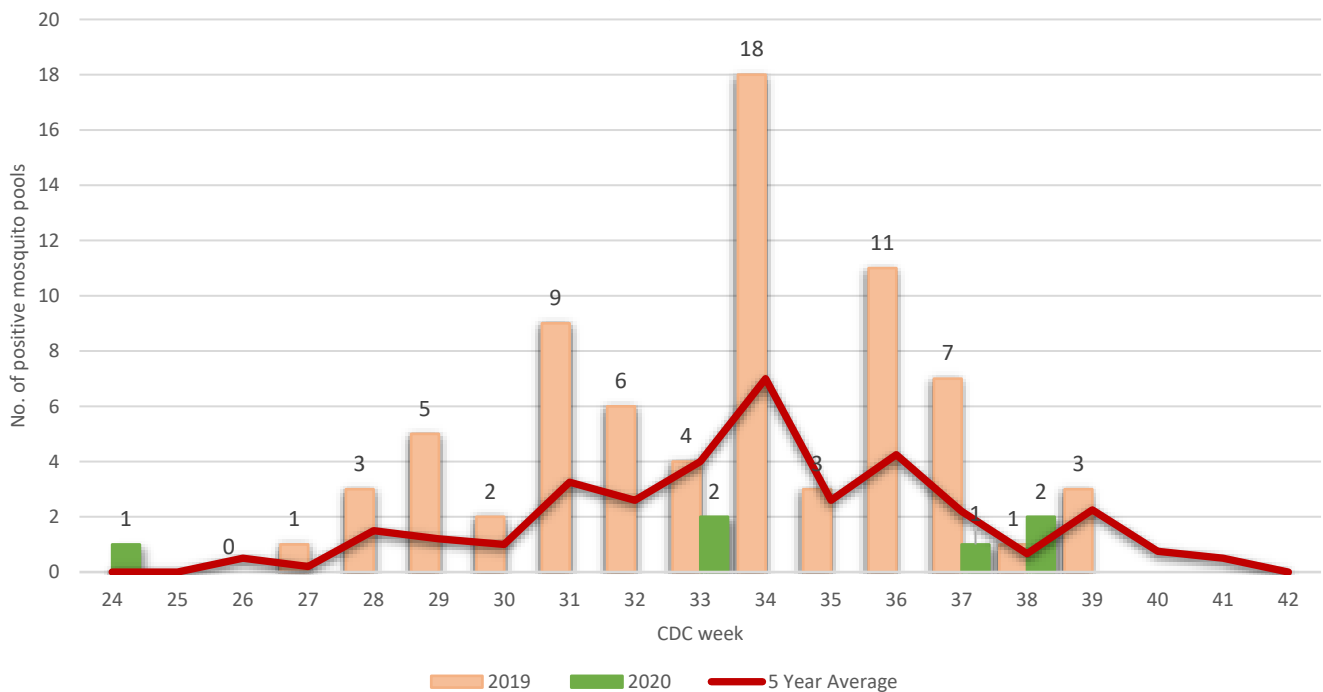
- A total of 7177 mosquito pools have been tested for EEE. Six pools have tested positive for EEE.
- The first positive pool this season was detected in week 25 (Atlantic County). This is the earliest detection of EEE in mosquito pools in the state in at least 8 years.
- The positive pools were detected in *Culiseta melanura* species.
- In 2019, the first EEE mosquito pool was reported from Monmouth County in week 27.

EEE Positive Mosquito Pools

| County       | Week 39  |          | Cumulative Total (week 39) |           |
|--------------|----------|----------|----------------------------|-----------|
|              | 2020*    | 2019     | 2020*                      | 2019      |
| Atlantic     |          |          | 3                          | 10        |
| Bergen       |          |          |                            |           |
| Burlington   |          |          | 1                          | 9         |
| Camden       |          | 1        | 2                          | 8         |
| Cape May     |          |          |                            | 1         |
| Cumberland   |          |          |                            |           |
| Essex        |          |          |                            |           |
| Gloucester   |          |          |                            | 6         |
| Hudson       |          |          |                            |           |
| Hunterdon    |          |          |                            | 2         |
| Mercer       |          |          |                            |           |
| Middlesex    |          |          |                            |           |
| Monmouth     |          |          |                            | 8         |
| Morris       |          |          |                            | 10        |
| Ocean        |          |          |                            | 3         |
| Passaic      |          |          |                            |           |
| Salem        |          |          |                            | 3         |
| Somerset     |          |          |                            |           |
| Sussex       |          | 2        |                            | 11        |
| Union        |          |          |                            | 1         |
| Warren       |          |          |                            | 1         |
| <b>Total</b> | <b>-</b> | <b>3</b> | <b>6</b>                   | <b>73</b> |

Week 39: September 22-28, 2019; September 20-26, 2020

EEE Virus Positive Mosquito Pools, NJ (2019-2020)



**Other viruses:**

Mosquito pools from all counties have been tested for other arboviruses.

**Cumulative 2020 Mosquito Pool Testing (Other Viruses<sup>a</sup>)**

| County       | SLE   |     | JCV   |     | LAC   |     | CHIKV |     | DENV  |     | ZIKV  |     |
|--------------|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|
|              | Pools | Pos | Pools | Pos | Pools | Pos | Pools | Pos | Pools | Pos | Pools | Pos |
| Atlantic     | 360   |     | 360   |     |       |     | 84    |     | 84    |     | 84    |     |
| Bergen       | 281   |     | 281   | 2   |       |     | 2     |     | 2     |     | 2     |     |
| Burlington   | 296   |     | 296   |     | 21    |     |       |     |       |     |       |     |
| Camden       | 189   |     | 181   |     |       |     |       |     |       |     |       |     |
| Cape May     | 1114  |     |       |     |       |     |       |     |       |     |       |     |
| Cumberland   | 400   |     | 400   | 2   | 1     |     |       |     |       |     |       |     |
| Essex        | 100   |     | 100   |     |       |     |       |     |       |     |       |     |
| Gloucester   | 370   |     | 363   |     | 5     |     |       |     |       |     |       |     |
| Hudson       | 175   |     | 175   |     |       |     |       |     |       |     |       |     |
| Hunterdon    | 335   |     | 335   |     |       |     |       |     |       |     |       |     |
| Mercer       | 344   |     | 344   |     | 16    |     |       |     |       |     |       |     |
| Middlesex    | 284   |     | 284   | 1   | 19    |     | 1     |     | 1     |     | 1     |     |
| Monmouth     | 453   |     | 453   | 1   | 1     |     |       |     |       |     |       |     |
| Morris       | 405   |     | 405   |     |       |     |       |     |       |     |       |     |
| Ocean        | 292   |     | 292   |     |       |     |       |     |       |     |       |     |
| Passaic      | 167   |     | 167   |     | 6     |     |       |     |       |     |       |     |
| Salem        | 570   |     | 562   |     | 22    |     |       |     |       |     |       |     |
| Somerset     | 252   |     | 252   |     |       |     |       |     |       |     |       |     |
| Sussex       | 345   |     | 345   |     | 13    |     |       |     |       |     |       |     |
| Union        | 179   |     | 179   |     |       |     |       |     |       |     |       |     |
| Warren       | 266   |     | 266   |     | 2     |     |       |     |       |     |       |     |
| <b>Total</b> | 7177  | -   | 6040  | 6   | 106   | -   | 87    | -   | 87    | -   | 87    | -   |

<sup>a</sup> St. Louis encephalitis virus (SLE), Jamestown Canyon Virus (JCV), 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 2020

Numbers in green shaded columns represent positive pools in 2020

**Jamestown Canyon virus (JCV):**

- Six mosquito pools from 4 counties have tested positive for Jamestown Canyon virus at PHEL. The positive pools were detected in the following counties: Bergen (week 23 and week 25), Cumberland (week 28 and week 32), Middlesex (week 31) and Monmouth (week 29).
- The positive pools were detected in *Aedes cantator*, *Aedes taeniorhynchus*, *Anopheles quadrimaculatus* and *Coquillettidia perturbans* species.
- In 2019, five mosquito pools from 4 counties have tested positive for Jamestown Canyon virus. Positive pools were identified in Sussex, Bergen, Burlington and Salem counties.
- NJ reported its first and only human case of Jamestown Canyon virus in 2015 in a Sussex County resident.

**La Crosse encephalitis virus (LAC):**

- No positive La Crosse virus pools have been identified in 2020.
- In 2019, a mosquito pool collected in Passaic County (week 22) tested positive for La Crosse virus at PHEL.
- There have not been any human La Crosse virus cases reported in at least the past 20 years.

### 3. 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.

- The first EEE equine case this season was reported from Atlantic county in a 4-year-old unvaccinated mare (onset September 7<sup>th</sup>, euthanized September 8<sup>th</sup>).
- Routine avian testing has been discontinued but is available upon request at PHEL.

**WNV/EEE Positive Test Results**

|              | Week 39 |      | Cum. Total (Year) |      |
|--------------|---------|------|-------------------|------|
|              | 2020*   | 2019 | 2020*             | 2019 |
| Equine (EEE) | -       | 10   | 1                 | 10   |
| Equine (WNV) |         |      |                   |      |
| Avian (WNV)  |         |      |                   |      |
| Other        |         |      |                   |      |

Week 39: September 22-28, 2019; September 20-26, 2020

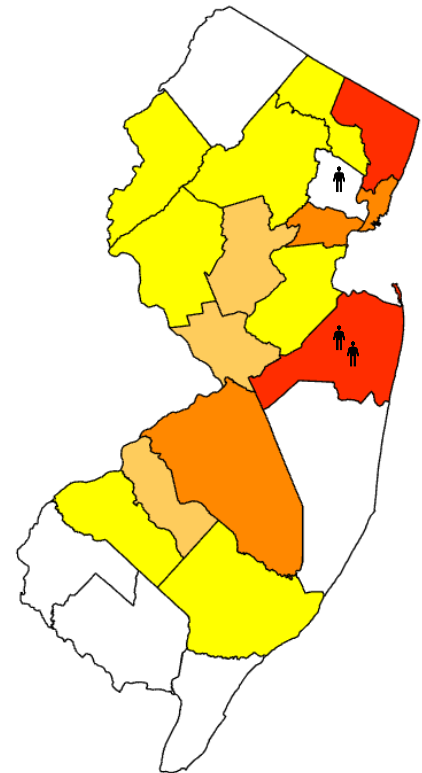
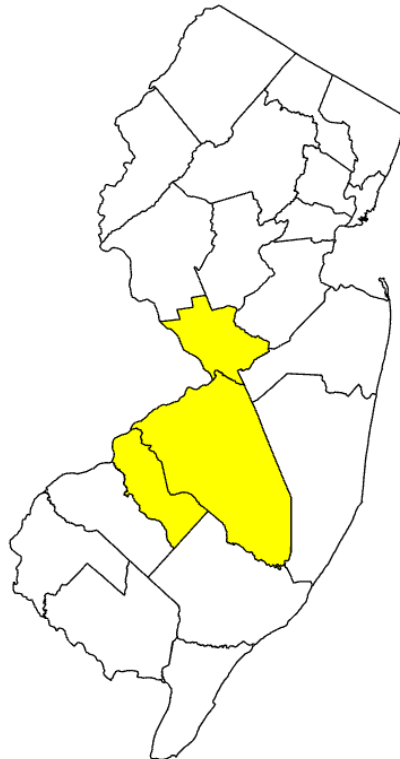
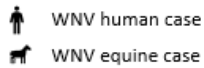
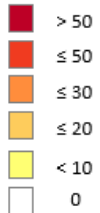
### 4. Surveillance Maps

**West Nile Virus (WNV)**

**Week 39 WNV Activity (2020)\***

**Cumulative WNV Activity 2020**

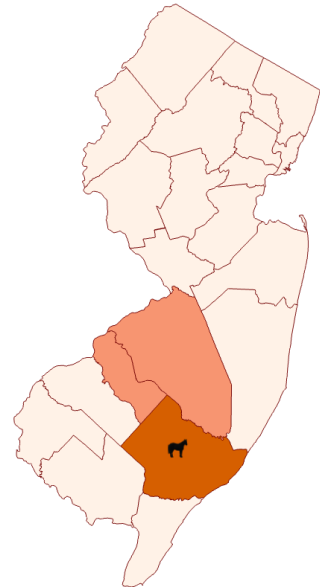
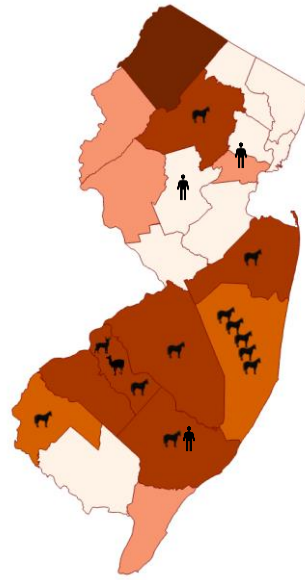
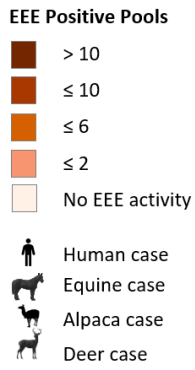
**WNV Positive Pools**



**Eastern equine encephalitis (EEE)**

2019 EEE Activity

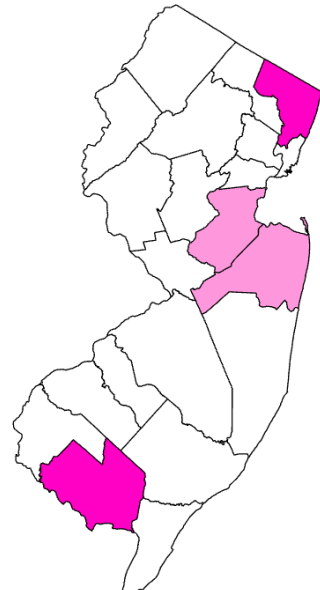
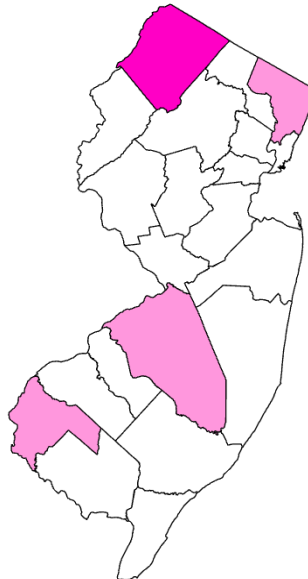
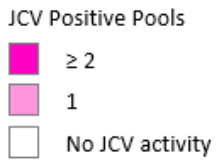
Cumulative EEE Activity 2020



**Jamestown Canyon Virus**

2019 JCV Activity

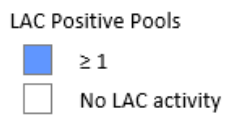
Cummulative JCV Activity 2020



**La Crosse Virus Activity 2020**

2019 LAC Activity

Cummulative LAC Activity 2020

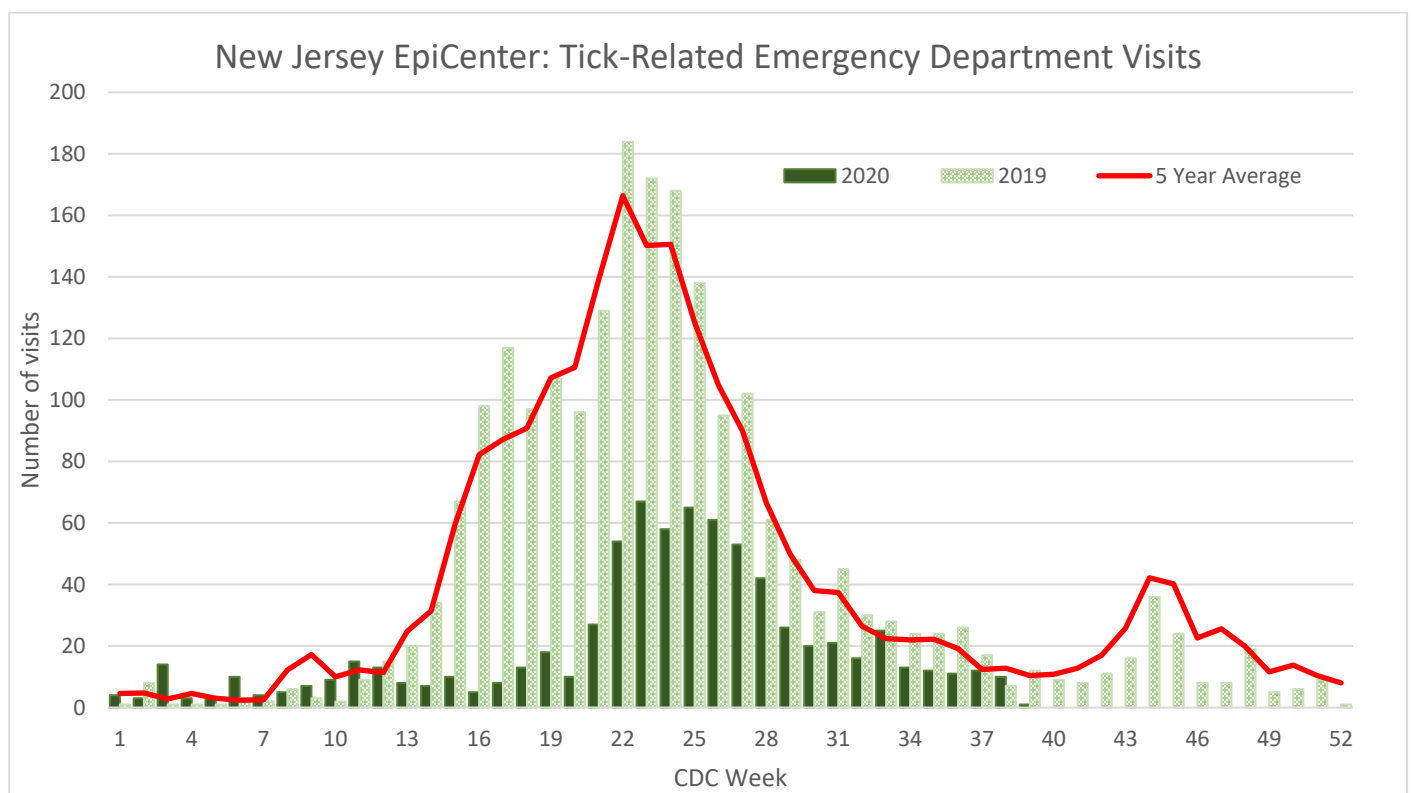


## 5. Syndromic Surveillance for Tick-related Emergency Department Visits

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 statewide with a tick-bite complaint or signs/symptoms associated with a reported tick-bite. Tick-related ED visits occur throughout the year with peak number of visits in the summer months and a smaller peak in the fall weeks when adult *Ixodes scapularis* (blacklegged ticks) are active.

In week 39, the number of ED visits is lower than the 5-year average. Overall, 2020 visits are significantly lower than the 5-year average. This may be due to the statewide "stay-at-home" orders implemented for the COVID-19 pandemic. A slight increase in numbers is seen starting from week 19 when state parks were reopened.



*Data reflects ED visits downloaded from EpiCenter as of September 30, 2020*

### For More Information

- NJDOH Communicable Disease Service: <http://nj.gov/health/cd/topics/vectorborne.shtml>
- New Jersey Arboviral Activity Maps: <http://bit.ly/JerseySurv>
- 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/>