

VECTOR SURVEILLANCE IN NEW JERSEY EEE, WNV, SLE, LAC, DENV, CHIK, ZIKV, and JCV

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29 September to 5 October, 2019, CDC Week 40

Data download 3:00 pm 6 October



This New Jersey Agricultural Experiment Station report is supported by Rutgers University, Hatch funds, funding from the NJ State Mosquito Control Commission and with the participation of the Department of Health, Department of Agriculture and of the 21 county mosquito control agencies of New Jersey. Data is held in JerseySurv, a subset of the CalSurv system.

NOTE: County/species tables for arboviruses are now in a supplemental file [here](#)

Arbovirus Summary

- 73 EEE positive pools, 12 animal cases: 11 horse cases, 1 alpaca case; 3 human case (Atlantic, Somerset, Union Counties)
- 333 WNV positive pools, 0 horses, 7 human case (Atlantic(2), Bergen(2), Burlington, Gloucester, Hunterdon County)
- 1 LAC positive pool
- 5 JCV positive pools
- 0 SLE, DENG, CHIK, ZIKA positive pools
- Note: Data download 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 | 0.76 | 0.20 | 17 (18) | 6 (7) | | |
| Green Bank (Burlington Co.)/25 | Coastal | 0.97 | 0.32 | 175 (183) | 14 (15) | | |
| Corbin City (Atlantic Co.)/25 | Coastal | 0.51 | 0.12 | 181‡ | 17 | 1 | 5.525 |
| Dennisville (Cape May Co.)/50 | Coastal | 1.14 | 0.02 | 69 | 13 | | |
| Winslow (Camden Co.)/50 | Inland | 0.32 | 0.54 | 866 | 26 | 6 | 6.928 |
| Centerton (Salem Co.)/50 | Inland | 1.41 | 0.76 | 224 | 15 | 2 | 8.929 |
| Turkey Swamp (Monmouth Co.)/49 | Inland | 0.28 | nd | 1238‡ | 34‡ | 7 | 5.654 |
| Glassboro (Gloucester Co.)/50 | Inland | 0.12 | 0.00 | 173 | 15 | 2 | 11.561 |

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

Remarks: *EEE activity continues in the state and due diligence is needed.* Currently in 2019, there are 73 detections of EEE virus: 54 pools of *Culiseta melanura* (18 collected at traditional resting box sites, and 36 collected at county trap sites) and 19 pools in *Aedes albopictus*, *Ae. canadensis*, *Ae. triseriatus*, *Culex pipiens* 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, 12,776 *Cs. melanura* from 861 pools have been tested, with an overall *Cs. melanura* MFIR of 4.227. 173,890 specimens in 8,423 pools from 40 other species have also been tested, with 19 positive pools detected (*Aedes albopictus*, *Ae. canadensis*, *Ae. triseriatus*, and *Culex Mix/Cx. pipiens* pools). Overall MFIR for all species statewide is 0.391.

Traditional Resting Box Sites: 2,943 *Cs. melanura* from 139 pools have been tested, with 18 positive pools detected – 1 at Corbin City, 2 at Centerton, 2 at Glassboro, 7 at Turkey Swamp, and 6 at Winslow. An additional 9 *Cs. melanura* in 2 pools are at labs to be tested.

| Additional <i>Cs. melanura</i> trapped by counties *traps with positives indicated in UNDERLINED . | | | | | |
|---|--|--------------|-------------------|------------------|--------------|
| County | Trap types* | Pools | Mosquitoes | Positives | MFIR |
| Atlantic | BGS, <u>CO₂</u> , GR, <u>RB</u> | 91 | 2512 | 7 | 2.787 |
| Bergen | CO ₂ , <u>RB</u> | 7 | 46 | | |
| Burlington | <u>ULVT</u> | 73 | 2424 | 8 | 3.300 |
| Cape May | GR, <u>RB</u> | 177 | 450 | 1 | 2.222 |
| Cumberland | AGO, <u>RB</u> | 38 | 232 | | |
| Gloucester | CO ₂ , <u>RB</u> | 63 | 1813 | 3 | 1.655 |
| Middlesex | <u>RB</u> | 19 | 89 | | |
| Monmouth | CO ₂ , <u>Other</u> | 22 | 177 | 1 | 5.650 |
| Morris | <u>CO₂</u> , <u>RB</u> | 74 | 735 | 6 | 8.163 |
| Ocean | <u>CO₂</u> , GR, <u>RB</u> | 64 | 436 | 1 | 2.294 |
| Salem | CO ₂ , GR, <u>RB</u> | 24 | 76 | 1 | 13.158 |
| Sussex | <u>CO₂</u> , GR, <u>RB</u> | 62 | 724 | 8 | 11.050 |
| Union | NJLT | 6 | 64 | | |
| Warren | CO ₂ , NJLT | 2 | 55 | | |
| TOTAL | | 722 | 9833 | 36 | 3.661 |

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, 36 pools of *Cs. melanura* have been found positive, most recently in 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. In 2019, 9 horses and one alpaca have been found with EEE.

| Case | Animal | Age | Sex | County | Date of Onset | Euthanized ? | Vaccinated? | Comment |
|------|--------|-----------------------------------|---------|------------|---------------|--------------|--|---------------------------------------|
| 12 | Horse | 3 year old | Gelding | Camden | 30 Sep | 30 Sep | EWT Feb/Mar | |
| 11 | Horse | 1 year old | Filly | Burlington | 24-Sep | 29-Sep | Unknown | |
| 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 3 or 4 month old | Filly | Atlantic | ? | 24-Aug | Not vaccinated | |
| 7 | Horse | 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 April vaccination (incomplete) | |
| 3 | Horse | yearling | Colt | Monmouth | 5 Aug | 5-Aug | Unknown | |
| 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 |

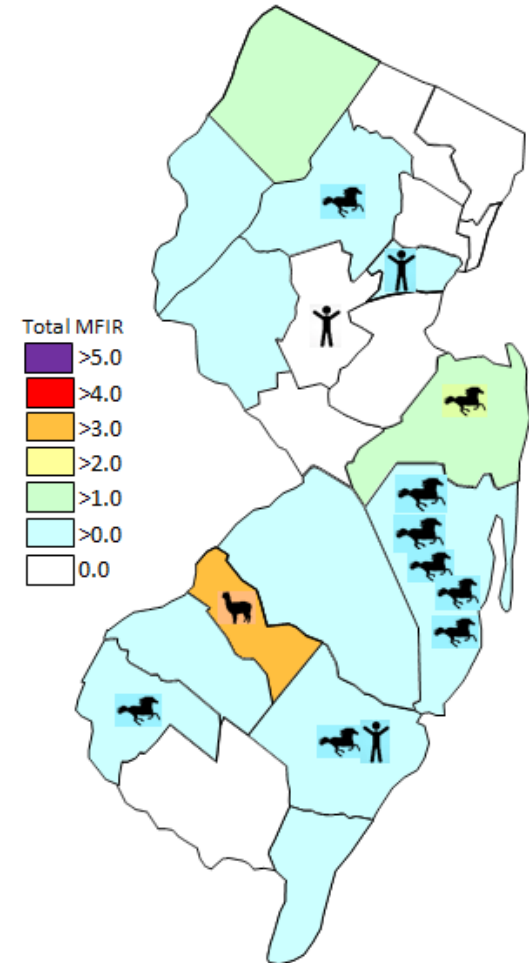
Horses and Vaccinations: The fate of unvaccinated equids reinforces the necessity of maintaining a vaccination schedule for arboviruses. For vaccination schedules recommended by the American Association of Equine Practices, see: http://www.aaep.org/vaccination_guidelines.htm

There are 3 human cases of EEE, coming from Atlantic, Union, and Somerset Counties. For more information, see DOH Vectorborne Surveillance reports: <https://www.nj.gov/health/cd/statistics/arboviral-stats/>

| Species other than <i>Cs. melanura</i> | Pools | Mosquitoes | Positives | MFIR |
|--|-------------|---------------|-----------|--------------|
| <i>Aedes abserratus</i> | 14 | 259 | | |
| <i>Aedes albopictus</i> | 993 | 7830 | 2 | 0.255 |
| <i>Aedes atlanticus</i> | 15 | 134 | | |
| <i>Aedes atropalpus</i> | 1 | 3 | | |
| <i>Aedes aurifer</i> | 3 | 14 | | |
| <i>Aedes canadensis canadensis</i> | 139 | 2536 | 2 | 0.789 |
| <i>Aedes cantator</i> | 19 | 297 | | |
| <i>Aedes cinereus</i> | 1 | 1 | | |
| <i>Aedes grossbecki</i> | 5 | 12 | | |
| <i>Aedes infirmatus</i> | 1 | 1 | | |
| <i>Aedes japonicus</i> | 708 | 4341 | | |
| <i>Aedes mitchellae</i> | 1 | 1 | | |
| <i>Aedes provocans</i> | 2 | 8 | | |
| <i>Aedes sollicitans</i> | 34 | 793 | | |
| <i>Aedes sticticus</i> | 5 | 100 | | |
| <i>Aedes stimulans</i> | 2 | 10 | | |
| <i>Aedes taeniorhynchus</i> | 23 | 351 | | |
| <i>Aedes thibaulti</i> | 2 | 27 | | |
| <i>Aedes triseriatus</i> | 196 | 1004 | 2 | 1.992 |
| <i>Aedes trivittatus</i> | 29 | 545 | | |
| <i>Aedes vexans</i> | 104 | 986 | | |
| <i>Anopheles barberi</i> | 3 | 3 | | |
| <i>Anopheles bradleyi</i> | 138 | 1178 | | |
| <i>Anopheles crucians</i> | 29 | 361 | | |
| <i>Anopheles punctipennis</i> | 127 | 784 | | |
| <i>Anopheles quadrimaculatus</i> | 196 | 1496 | | |
| <i>Anopheles walkeri</i> | 7 | 397 | | |
| <i>Coquillettidia perturbans</i> | 283 | 5128 | | |
| <i>Culex Mix</i> | 3384 | 130584 | 12 | 0.092 |
| <i>Culex erraticus</i> | 243 | 2125 | | |
| <i>Culex pipiens</i> | 720 | 7540 | 1 | 0.133 |
| <i>Culex restuans</i> | 528 | 1555 | | |
| <i>Culex salinarius</i> | 322 | 2105 | | |
| <i>Culex territans</i> | 42 | 114 | | |
| <i>Culiseta inornata</i> | 2 | 5 | | |
| <i>Orthopodomyia signifera</i> | 8 | 8 | | |
| <i>Psorophora ciliata</i> | 1 | 1 | | |
| <i>Psorophora columbiae</i> | 25 | 287 | | |
| <i>Psorophora ferox</i> | 46 | 788 | | |
| <i>Psorophora howardii</i> | 1 | 1 | | |
| <i>Uranotaenia sapphirina</i> | 21 | 177 | | |
| State Total | 8423 | 173890 | 19 | 0.109 |

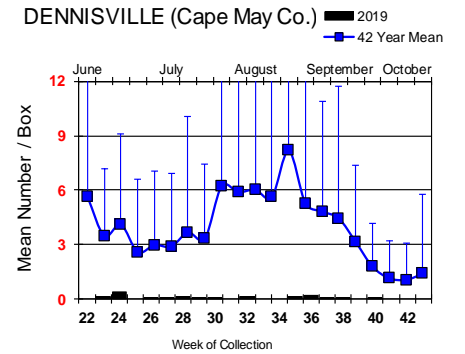
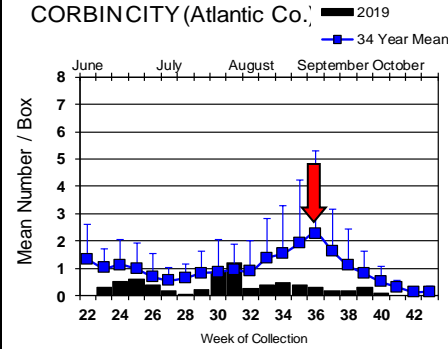
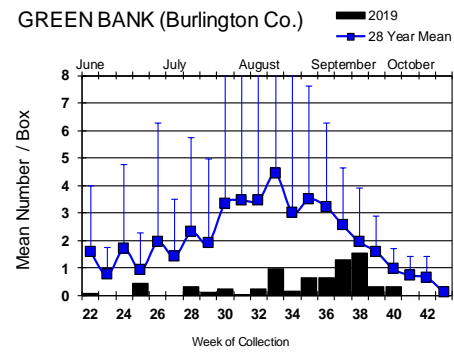
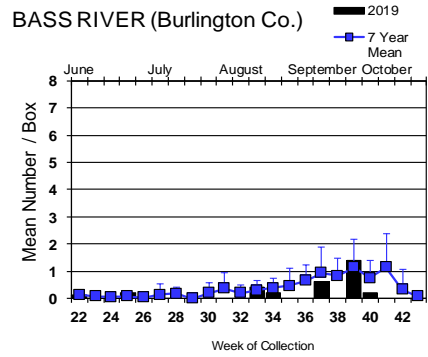
Additional Species: 40 additional species were tested for EEE. 19 positive pools have been detected in three species, the latest species being *Culex Mix* or *pipiens* in Hunterdon, Gloucester and Burlington Counties. (Note: *Culex pipiens* is refractory for EEE virus).

Overall MFIR rates, human and animal cases per county:

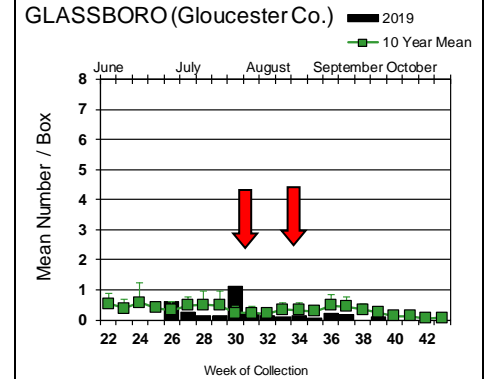
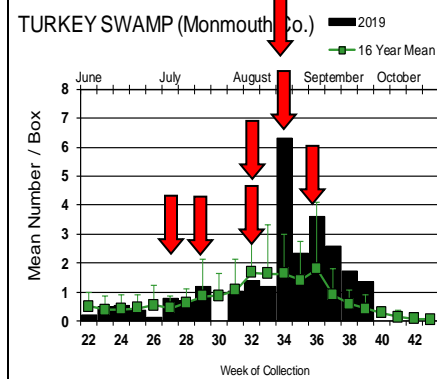
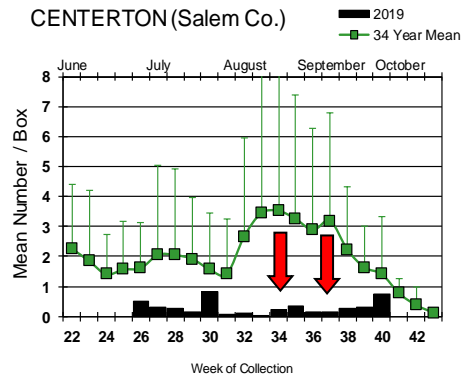
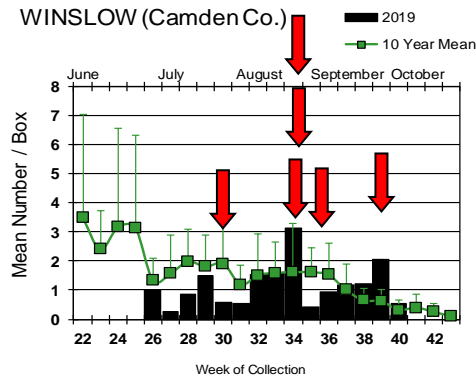


Culiseta melanura Populations

Coastal



Inland



Culiseta melanura populations at the traditional resting box sites appear to be declining, with the exception of the Centerton site (still below historical levels).

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

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

- **equine:** 3(CT) 26(FL) 1(GA) **12(IN)** **27(LA)** 8(MA) 1(MD) 1(ME) **34(+deer (MI) 1(MN) 7(MS) 1(NC) 1(NH) 9(+1 alpaca, NJ) 5(+1 goat NY) 2(OH) 1(+3 deer RI) 3(SC) 5(TX) 3(WI) 5(CAN-ON)**
- **mosquito pools:** **116(CT)** 1(IN) **4(LA)** **425(MA)** 3(MD) 1(ME) 12(NH) **73(NJ)** **56(NY)** **8(RI)**
- **sentinel:** **106(+1 emu 1 BAEA, FL) 3(DE) 1(LA)**
- **human:** 1(CT) 12(MA) **9(MI)** 3(NJ) 3(RI)

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 | 3/4 |
| Alaska | | | | | |
| Arizona | 2 | 355/356 | 1 | 1 | 156/167 |
| Arkansas | | | | | 3 |
| California | 139/186 | 3070/3206 | 105/119 | 11/14 | 98/128 |
| Colorado | | 105/109 | | 3 | 54/72 |
| Connecticut | | 78/82 | | 1 | 3 |
| Delaware | | | | | |
| Florida | 1 | | 269/323 | 4 | 1 |
| Georgia | | | | | 1 |
| Hawaii | | | | | |
| Idaho | 0 | 41 | | 3 | 9/10 |
| Illinois | 4 | 1069/1128 | | 1 | 8/14 |
| Indiana | 0 | 117/165 | | 0 | 0 |
| Iowa | | | | 2 | 3 |
| Kansas | | | | | 2/5 |
| Kentucky | | | | 1 | 1 |
| Louisiana | 1/3 | 160/169 | | 1 | 14/16 |
| Maine | | 0 | | | 0 |
| Maryland(+DC) | | 3 | | | 3(2DC) |
| Mass. | | 83/84 | | 0 | 2 |
| Michigan | 9/11 | 41/54 | | | 2/4 |
| Minnesota | | | | 1 | 1 |
| Mississippi | | 26 | | 7 | 13 |
| Missouri | | 0 | | 0 | 2 |

| | Birds | Mosquito Pools | Sentinels | Horses* | Humans |
|----------------|-------|----------------|-----------|---------|--------|
| Montana | | | | | |
| Nebraska | 1 | 28 | | 0 | 18 |
| Nevada | | | | | 13/25 |
| New Hampshire | | 1 | | 1 | 1 |
| New Jersey | | 318/333 | | 0 | 4/5 |
| New Mexico | | | | | 9/28 |
| New York | | 479/506 | | 0 | 7/10 |
| North Carolina | | | | | 1 |
| North Dakota | 1 | 6 | | 0 | 7/8 |
| Ohio | | 254 | | 0 | 1 |
| Oklahoma | | | | | 3/4 |
| Oregon | 0 | 85 | 0 | 4/7 | 6/9 |
| Pennsylvania | 1 | 400+ | | 1 | 1 |
| Rhode Island | | 2/4 | | | |
| South Carolina | 1 | 3 | | | |
| South Dakota | | 9 | | | 11 |
| Tennessee | | | | | 1 |
| Texas | 1 | 106 | | 1 | 17/19 |
| Utah | | 262/271 | | 2/3 | 17/19 |
| Vermont | | 4/5 | | | |
| Virginia | | | | | 1 |
| Washington | 0 | 27 | | 1 | 3/6 |
| West Virginia | | | | | |
| Wisconsin | 2 | 43/45 | | 0 | 1 |
| Wyoming | 0 | 8 | | 3 | 4 |

* 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 5 October 2019

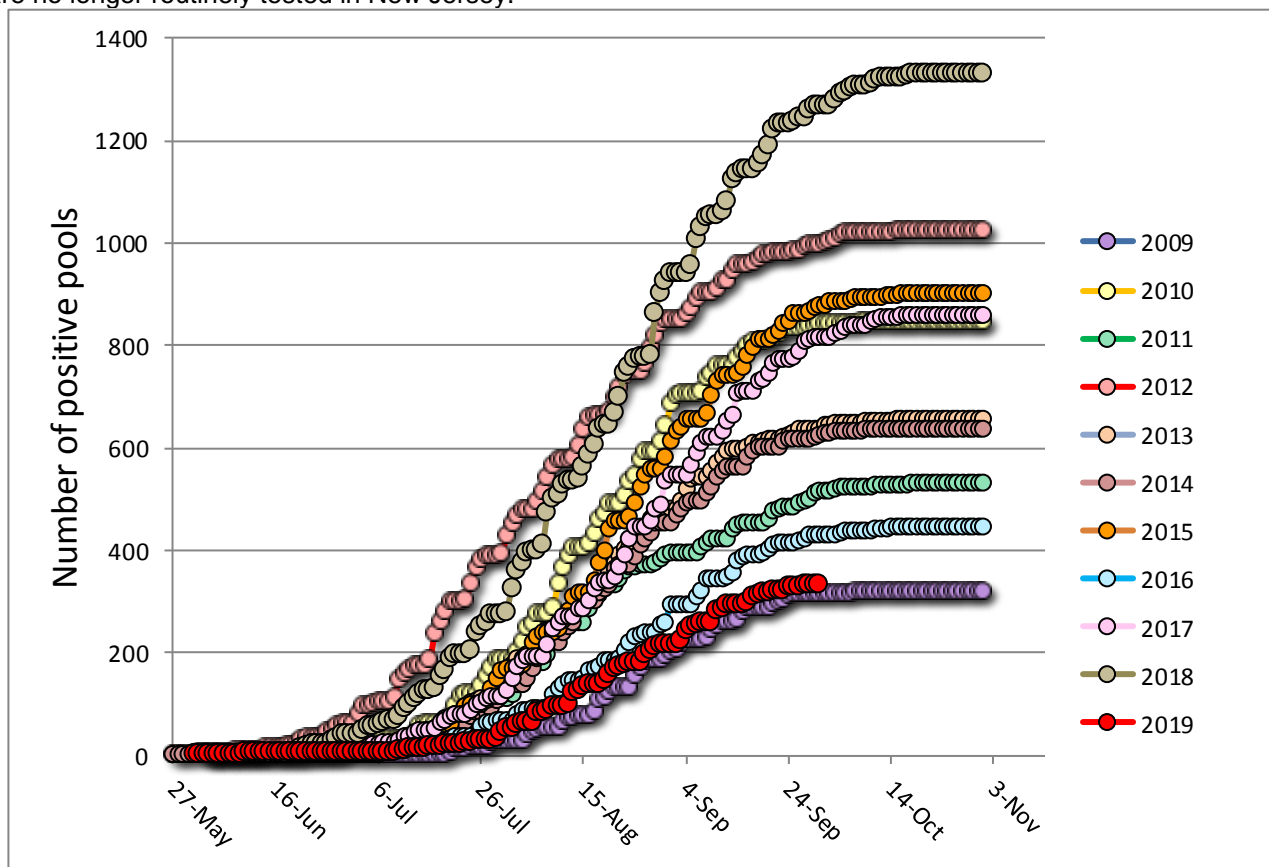
| Species | Pools | Mosquitoes | Positives | MFIR |
|------------------------------------|--------------|---------------|------------|--------------|
| <i>Aedes abserratus</i> | 14 | 259 | | |
| <i>Aedes albopictus</i> | 1433 | 8980 | 4 | 0.445 |
| <i>Aedes atlanticus</i> | 15 | 134 | | |
| <i>Aedes atropalpus</i> | 1 | 3 | | |
| <i>Aedes aurifer</i> | 3 | 14 | | |
| <i>Aedes canadensis canadensis</i> | 140 | 2540 | | |
| <i>Aedes cantator</i> | 20 | 352 | 2 | 5.682 |
| <i>Aedes cinereus</i> | 1 | 1 | | |
| <i>Aedes grossbecki</i> | 5 | 12 | | |
| <i>Aedes infirmatus</i> | 1 | 1 | | |
| <i>Aedes japonicus</i> | 727 | 4916 | 3 | 0.610 |
| <i>Aedes mitchellae</i> | 1 | 1 | | |
| <i>Aedes provocans</i> | 2 | 8 | | |
| <i>Aedes sollicitans</i> | 34 | 793 | | |
| <i>Aedes sticticus</i> | 5 | 100 | | |
| <i>Aedes stimulans</i> | 2 | 10 | | |
| <i>Aedes taeniorhynchus</i> | 23 | 351 | | |
| <i>Aedes thibaulti</i> | 2 | 27 | | |
| <i>Aedes triseriatus</i> | 501 | 2194 | 1 | 0.456 |
| <i>Aedes trivittatus</i> | 30 | 551 | | |
| <i>Aedes vexans</i> | 104 | 986 | | |
| <i>Anopheles barberi</i> | 3 | 3 | | |
| <i>Anopheles bradleyi</i> | 138 | 1178 | | |
| <i>Anopheles crucians</i> | 29 | 361 | | |
| <i>Anopheles punctipennis</i> | 128 | 785 | 2 | 2.548 |
| <i>Anopheles quadrimaculatus</i> | 196 | 1496 | | |
| <i>Anopheles walkeri</i> | 7 | 397 | | |
| <i>Coquillettidia perturbans</i> | 288 | 5355 | 3 | 0.560 |
| <i>Culex</i> spp. | 3401 | 131745 | 290 | 2.201 |
| <i>Culex erraticus</i> | 243 | 2125 | 1 | 0.471 |
| <i>Culex pipiens</i> | 721 | 7541 | 7 | 0.928 |
| <i>Culex restuans</i> | 531 | 1558 | | |
| <i>Culex salinarius</i> | 322 | 2105 | | |
| <i>Culex territans</i> | 42 | 114 | | |
| <i>Culiseta inornata</i> | 2 | 5 | | |
| <i>Culiseta melanura</i> | 861 | 12776 | 20 | 1.565 |
| <i>Orthopodomyia signifera</i> | 8 | 8 | | |
| <i>Psorophora ciliata</i> | 1 | 1 | | |
| <i>Psorophora columbiae</i> | 25 | 287 | | |
| <i>Psorophora ferox</i> | 47 | 794 | | |
| <i>Psorophora howardii</i> | 1 | 1 | | |
| <i>Uranotaenia sapphirina</i> | 21 | 177 | | |
| Grand Total | 10079 | 191045 | 333 | 1.743 |

Remarks: To date 10,079 pools of 191,045 mosquitoes from 41 species have been tested. A total of 333 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). 297 (89%) of the positives are in *Culex* bird-feeding species pools. Also positive are *Aedes albopictus*, *Ae. cantator*, *Ae. japonicus*, *Anopheles punctipennis*, *Coquillettidia perturbans*, *Culex erraticus*, 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 1.736 to 1.743.

Humans, Horses and Wild Birds: There have been seven human cases of West Nile virus, the latest two occurring in Bergen and Burlington counties. The fifth case was detected in Gloucester County, date of onset is unknown. The fourth case is in Atlantic County, with date of onset 4 Sep. The third case is in Bergen County, with date of onset as 30 Aug, and possible out of state exposure. The second case is from Atlantic County, with date of onset 2 September. The first is from Hunterdon County reported, with an onset date of 21 June. The first case 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.