

VECTOR SURVEILLANCE IN NEW JERSEY

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

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 CDC WEEK 44: 30 October to 11 November, 2016



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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 | | | 15 | 8 | 1 | 66.67 |
| Green Bank (Burlington Co.)/25 | Coastal | No Collection | No Collection | 115 | 18 | | |
| Corbin City (Atlantic Co.)/25 | Coastal | | | 299 | 23 | 1 | 3.34 |
| Dennisville (Cape May Co.)/50 | Coastal | | | 90 | 16 | | |
| Winslow (Camden Co.)/50 | Inland | | | 992 | 31 | 2 | 2.02 |
| Centerton (Salem Co.)/50 | Inland | | | 297 | 20 | | |
| Turkey Swamp (Monmouth Co.)/50 | Inland | | | 156 | 21 | 1 | 6.41 |
| Glassboro (Gloucester Co.)/49 | Inland | | | 109 | 19 | 1 | 9.17 |

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

Remarks: This is the final report for 2016. Total positive EEE pools detected remain at 11, with 9 pools of *Cs. melanura* and 2 pools of *Culex pipiens*. A total of 4 horse cases have been found.

Traditional Resting Box Sites: 2,073 *Cs. melanura* from 156 pools have been tested for EEE. No new positive pools were detected at the traditional resting box sites. Statewide, 5,484 *Cs. melanura* have been tested, with nine positive pools detected (six traditional, three county sites), for an overall *Cs. melanura* MFIR of 1.64. 19,284 specimens from 24 other species have also been tested, with two positives *Culex pipiens* pools. Overall MFIR for all species statewide is 0.44.

| Additional <i>Cs. melanura</i> trapped by counties | | | | | |
|--|-------------------------------|------------|-------------|-----------|-------------|
| *traps with positives indicated in BOLD . | | | | | |
| County | Trap types* | Pools | Mosquitoes | Positives | MFIR |
| Atlantic | CO ₂ , RB | 38 | 452 | | |
| Burlington | CO ₂ | 82 | 1682 | | |
| Cape May | CDC, CO ₂ , GR, RB | 213 | 464 | | |
| Cumberland | BGS, CDC, GRA RB | 21 | 103 | | |
| Middlesex | RB | 54 | 615 | 3 | 4.88 |
| Ocean | CO ₂ , GR, RB | 26 | 56 | | |
| Passaic | EVS | 1 | 1 | | |
| Sussex | CO ₂ , GR | 12 | 15 | | |
| Union | LT | 1 | 23 | | |
| TOTAL | | 448 | 3411 | 3 | 0.88 |

Additional *Cs. melanura*: Counties maintain trap sites for *Cs. melanura* in other areas, using a variety of traps. Three positive pools were detected in Middlesex, the first on 25 July and the most recent at the same site on 20 Sep.

Horses and Humans: Four horses have been detected with EEE, two from Morris, one from Ocean and one from Passaic. All horses were not up to date with vaccinations. ***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.*** Other sensitive species are non-native birds, such as Ostriches/Emus and Gallinaceous birds such as pheasants of Eurasian origins.

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

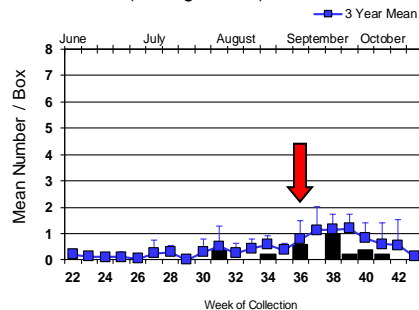
| Species other than <i>Cs. melanura</i> | Pools | Mosquitoes | Positives | MFIR |
|--|-------------|--------------|-----------|--------------|
| <i>Aedes albopictus</i> | 5 | 10 | | |
| <i>Aedes canadensis canadensis</i> | 5 | 85 | | |
| <i>Aedes cantator</i> | 25 | 52 | | |
| <i>Aedes japonicus</i> | 1 | 4 | | |
| <i>Aedes mitchellae</i> | 5 | 82 | | |
| <i>Aedes sollicitans</i> | 37 | 1197 | | |
| <i>Aedes taeniorhynchus</i> | 4 | 195 | | |
| <i>Aedes trivittatus</i> | 2 | 2 | | |
| <i>Aedes vexans</i> | 12 | 138 | | |
| <i>Anopheles bradleyi</i> | 109 | 630 | | |
| <i>Anopheles crucians</i> | 13 | 174 | | |
| <i>Anopheles punctipennis</i> | 32 | 124 | | |
| <i>Anopheles quadrimaculatus</i> | 7 | 15 | | |
| <i>Anopheles walkeri</i> | 1 | 1 | | |
| <i>Coquillettidia perturbans</i> | 110 | 1961 | | |
| <i>Culex erraticus</i> | 193 | 1080 | | |
| <i>Culex pipiens</i> | 925 | 9856 | 2 | 0.203 |
| <i>Culex restuans</i> | 3 | 6 | | |
| <i>Culex salinarius</i> | 356 | 3136 | | |
| <i>Culex sp.</i> | 75 | 456 | | |
| <i>Culex territans</i> | 1 | 12 | | |
| <i>Orthopodomyia signifera</i> | 1 | 1 | | |
| <i>Psorophora columbiae</i> | 1 | 2 | | |
| <i>Psorophora ferox</i> | 3 | 20 | | |
| <i>Uranotaenia sapphirina</i> | 1 | 45 | | |
| State Total | 1927 | 19284 | 2 | 0.104 |

Additional Species: Twenty-four additional species were tested for EEE. First positive pools were detected in *Culex pipiens*, an ornithophilic species, in Cape May, collected on 6 July.

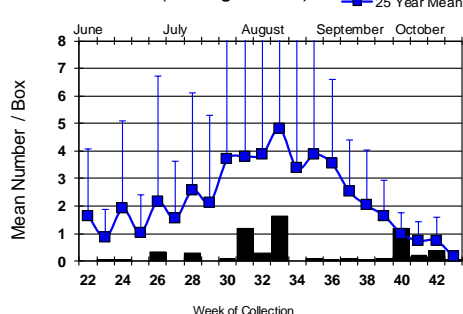
Culiseta melanura Population Graphs

Coastal

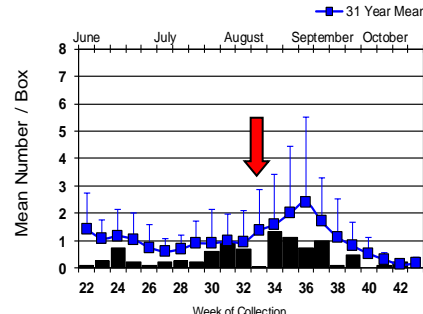
BASS RIVER (Burlington Co.)



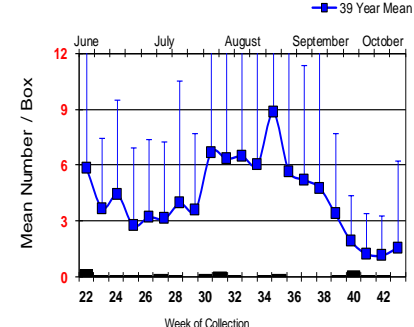
GREEN BANK (Burlington Co.)



CORBINCITY (Atlantic Co.)

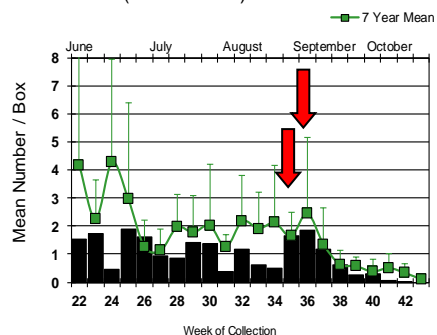


DENNISVILLE (Cape May Co.)

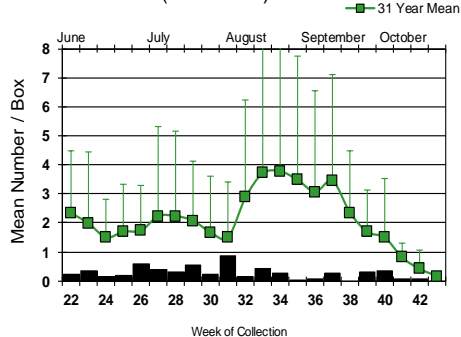


Inland

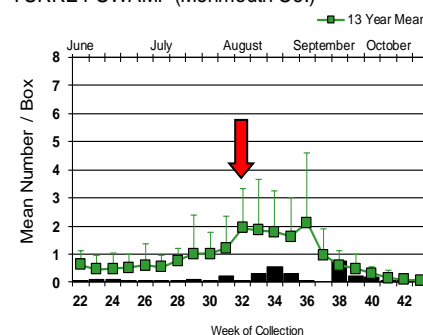
WINSLOW (Camden Co.)



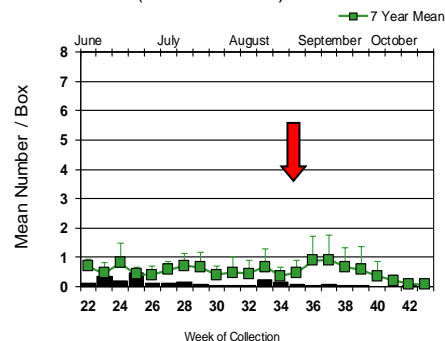
CENTERTON (Salem Co.)



TURKEY SWAMP (Monmouth Co.)



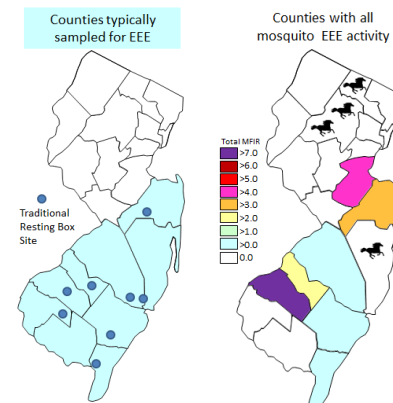
GLASSBORO (Gloucester Co.)



No new detection have occurred at the traditional resting box sites.

Maps to right: Note that Middlesex County (in pink, far right) and Passaic and Morris County (with a total of three horse symbols, representing the positive horses – symbols do not point to location within the county of the horse cases) are north of the areas typically sampled for EEE (left map). Horse cases have occurred on occasion in the northern half of the state. (map to right up-to-date for all species mosquito MFIR – modified due to county data correction).

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



EEE in US (2016 cumulative cases): (Black or Red = previous + new reported cases occurring)

- equine: AL(7) AR(1) FL(22) GA(5) LA(14) MA(4) MS(8) MI(3) NC(7) NJ(4) NY(1) SC(15) TN(2) TX(6) VA(6) WI(19)
- mosquito pools: CT(1) LA(3) MA(4) NJ(11) NY(5) RI(2)
- sentinel: FL(81) GA(2) TX(26)
- human: MI(1) NC(1)

West Nile Virus Positive Organisms in US, 2016

West Nile in US (2016 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 | | | | | 5 |
| Alaska | | | | | |
| Arizona | 1/2 | 115 | 0 | 1 | 71/73 |
| Arkansas | | | | 2 | 4 |
| California | 1340 | 3481/3491 | 335 | 20 | 370/380 |
| Colorado | 17 | 207 | | 6 | 137 |
| Connecticut | | 122 | | | 1 |
| Delaware | | | | | |
| DC | | | | | 1 |
| Florida | | 5 | 169/178 | 1 | 6 |
| Georgia | | 0 | | | 2 |
| Hawaii | | | | | |
| Idaho | 0 | 34 | | 10 | 8 |
| Illinois | 73/74 | 2430/2434 | | 1/4 | 136 |
| Indiana | 0 | 261 | | 0 | 10 |
| Iowa | | 46 | | 15 | 35/37 |
| Kansas | 1 | 2 | | 1 | 25/29 |
| Kentucky | | | | 4/6 | |
| Louisiana | 64/72 | 190/202 | | 5/9 | 36/40 |
| Maine | | 0 | | | 0 |
| Maryland | | 1 | | | 1 |
| Mass. | | 189 | | 0 | 14/15 |
| Michigan | 13 | 4 | | 2 | 32/34 |
| Minnesota | | 6 | | 19 | 41 |
| Mississippi | | 25 | | | 36 |
| Missouri | | 8 | | 7 | 7/9 |

| | Birds | Mosquito Pools | Sentinels | Horses | Humans |
|----------------|-------|----------------|-----------|--------|---------|
| Montana | | | | | 6 |
| Nebraska | 2 | 112 | | 5 | 85/88 |
| Nevada | | | | 6 | 13/15 |
| New Hampshire | | 1 | | 0 | 0 |
| New Jersey | | 448 | | 0 | 9/10 |
| New Mexico | | | | | 5 |
| New York | | 542 | | 3 | 18/20 |
| North Carolina | | | | | |
| North Dakota | 8 | 15 | | 6 | 79 |
| Ohio | | 452 | | 1 | 14 |
| Oklahoma | | 7 | | 2 | 26 |
| Oregon | 9 | 51 | 0 | 6 | 3 |
| Pennsylvania | 16/18 | 1457 | | 6 | 14/15 |
| Rhode Island | | 1 | | | |
| South Carolina | | 6 | | | 5 |
| South Dakota | | 242 | | 2 | 146 |
| Tennessee | | | | 2 | 5/6 |
| Texas | 5 | 1727/1754 | 13/17 | 84/105 | 225/258 |
| Utah | | 244 | | 7 | 13 |
| Vermont | | 19 | | | 3 |
| Virginia | | | | | |
| Washington | 2 | 95 | | 27 | 9 |
| West Virginia | | 5 | | 1 | |
| Wisconsin | 59 | 11 | | 7 | 6 |
| Wyoming | 1 | 23 | | | 9 |

* 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 Testing through 1 November 2016

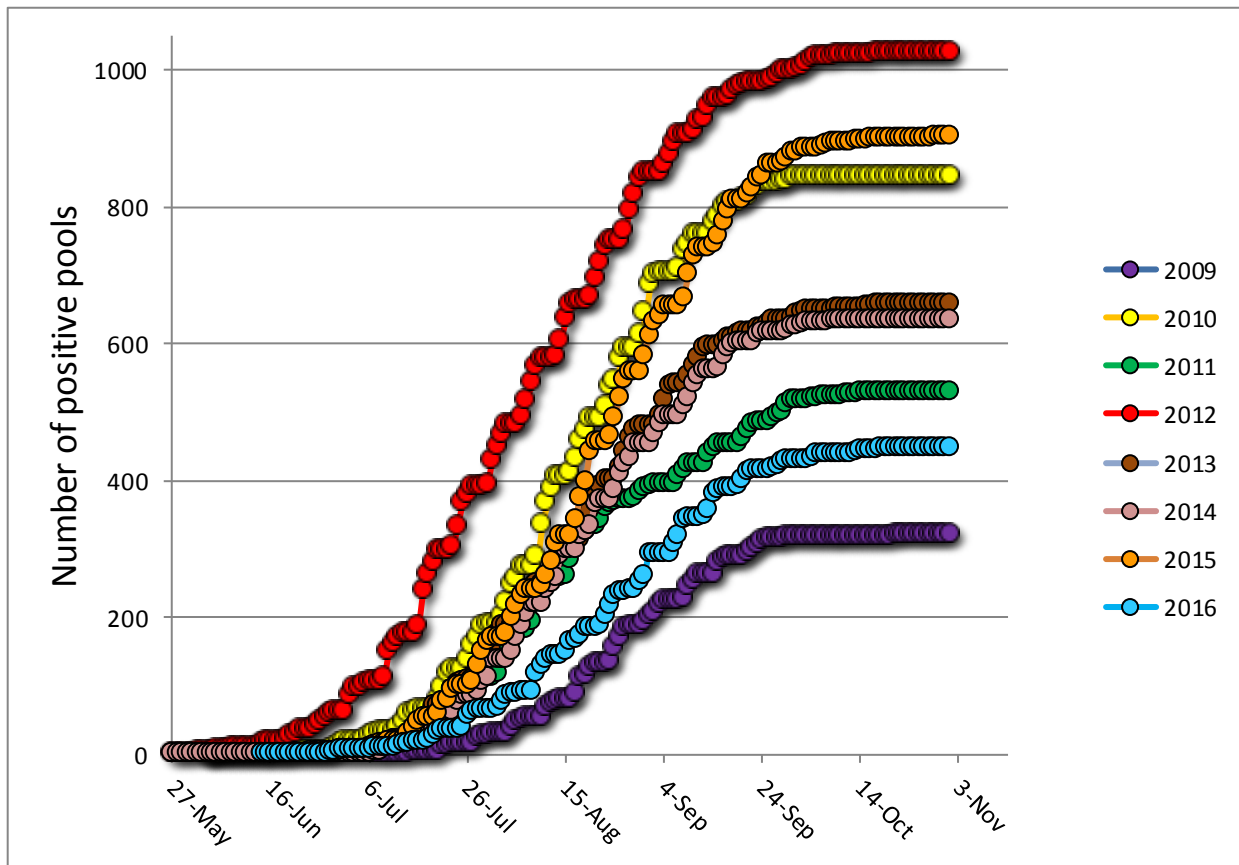
| Species | Pools | Mosquitoes | Positives | MFIR |
|------------------------------------|--------------|---------------|------------|--------------|
| <i>Aedes albopictus</i> | 2441 | 24175 | 5 | 0.207 |
| <i>Aedes atlanticus</i> | 16 | 44 | | |
| <i>Aedes atropalpus</i> | 31 | 84 | | |
| <i>Aedes canadensis canadensis</i> | 40 | 720 | | |
| <i>Aedes cantator</i> | 37 | 247 | | |
| <i>Aedes grossbecki</i> | 1 | 1 | | |
| <i>Aedes japonicus</i> | 605 | 3203 | 2 | 0.624 |
| <i>Aedes mitchellae</i> | 5 | 82 | | |
| <i>Aedes sollicitans</i> | 52 | 1428 | | |
| <i>Aedes sticticus</i> | 1 | 6 | | |
| <i>Aedes taeniorhynchus</i> | 30 | 702 | | |
| <i>Aedes triseriatus</i> | 272 | 586 | | |
| <i>Aedes trivittatus</i> | 4 | 36 | | |
| <i>Aedes vexans</i> | 129 | 1712 | 1 | 0.584 |
| <i>Anopheles atropos</i> | 1 | 1 | | |
| <i>Anopheles barberi</i> | 2 | 2 | | |
| <i>Anopheles bradleyi</i> | 129 | 1010 | | |
| <i>Anopheles crucians</i> | 17 | 182 | | |
| <i>Anopheles punctipennis</i> | 108 | 359 | | |
| <i>Anopheles quadrimaculatus</i> | 184 | 1267 | | |
| <i>Anopheles walkeri</i> | 1 | 1 | | |
| <i>Coquillettidia perturbans</i> | 129 | 2888 | 1 | 0.346 |
| <i>Culex erraticus</i> | 259 | 1698 | 1 | 0.589 |
| <i>Culex pipiens</i> | 1469 | 35928 | 67 | 1.865 |
| <i>Culex restuans</i> | 969 | 8870 | 11 | 1.240 |
| <i>Culex salinarius</i> | 372 | 3552 | | |
| <i>Culex</i> spp. | 3418 | 118565 | 356 | 3.003 |
| <i>Culex territans</i> | 44 | 367 | | |
| <i>Culiseta melanura</i> | 606 | 5457 | 4 | 0.733 |
| <i>Orthopodomyia signifera</i> | 8 | 8 | | |
| <i>Psorophora ciliata</i> | 1 | 1 | | |
| <i>Psorophora columbiae</i> | 19 | 112 | | |
| <i>Psorophora ferox</i> | 28 | 244 | | |
| <i>Uranotaenia sapphirina</i> | 8 | 60 | | |
| Grand Total | 11436 | 213598 | 448 | 2.097 |

Remarks: To date, 11,436 pools of 213,598 mosquitoes from 33 species have been tested, with 448 positive pools detected. No new positive pools were detected. Statewide MFIR is 2.097. First non-*Culex* detection occurred in *Aedes albopictus*, collected in Hudson County on 19 July. The first positive pool of *Culex* Mix was collected on 14 June in Monmouth County.

Humans, Horses and Wild Birds: A total of 10 human cases have been detected. Currently, case count is Camden (2), Gloucester (1), Middlesex (1) Monmouth (1), Passaic (1), Somerset (1) and Union (3). No horse cases are currently reported. Last year 26 humans and one horse were positive. Onset in 2015 for humans began in early August and the onset for the horse case began in September. For further information, see <http://www.state.nj.us/health/cd/westnile/techinfo.shtml>.

Birds are no longer routinely tested in New Jersey.

The graph below shows cumulative positive pools from 2009-2016, with 2012 as the most active year and 2009 as the least active year. Positives continue to taper off as the season comes to a close, with numbers trending between low (2009) and moderate (2011) activity.



WNV Results by County through 1 November 2016

| County | Species | Pools | Mosquitoes | Positives | MFIR |
|-----------------|----------------------------------|------------|-------------|-----------|--------------|
| Atlantic | | 348 | 8742 | 14 | 1.601 |
| | <i>Aedes albopictus</i> | 64 | 540 | | |
| | <i>Aedes japonicus</i> | 4 | 18 | | |
| | <i>Aedes sollicitans</i> | 14 | 871 | | |
| | <i>Aedes sticticus</i> | 1 | 6 | | |
| | <i>Aedes taeniorhynchus</i> | 8 | 390 | | |
| | <i>Aedes vexans</i> | 18 | 603 | | |
| | <i>Anopheles bradleyi</i> | 10 | 193 | | |
| | <i>Anopheles punctipennis</i> | 2 | 18 | | |
| | <i>Anopheles quadrimaculatus</i> | 2 | 34 | | |
| | <i>Coquillettidia perturbans</i> | 23 | 526 | | |
| | <i>Culex erraticus</i> | 21 | 161 | | |
| | <i>Culex pipiens</i> | 42 | 1938 | 11 | 5.676 |
| | <i>Culex restuans</i> | 9 | 157 | | |
| | <i>Culex salinarius</i> | 7 | 285 | | |
| | <i>Culex spp.</i> | 54 | 2155 | 2 | 0.928 |
| | <i>Culiseta melanura</i> | 61 | 751 | 1 | 1.332 |

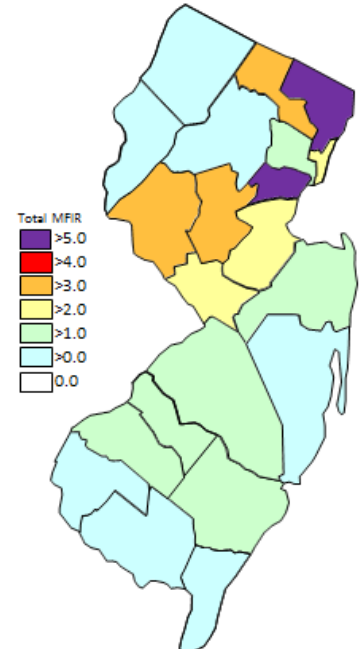
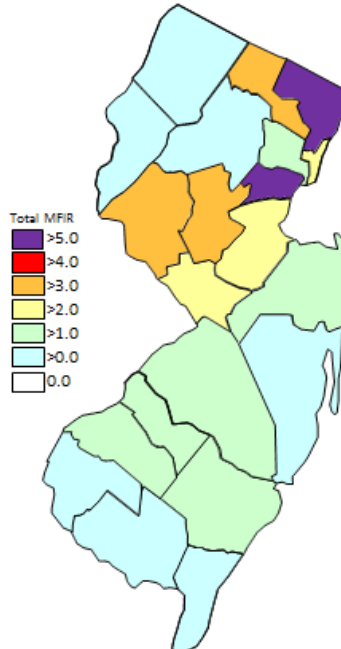
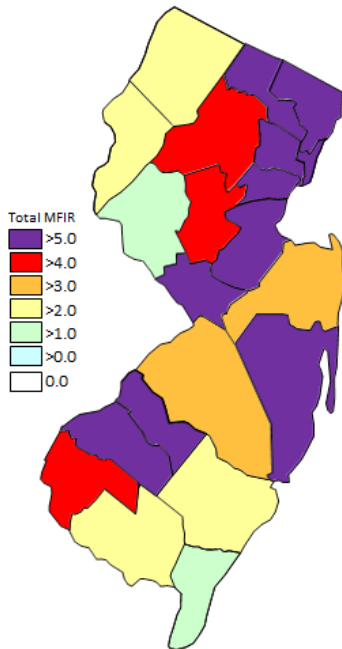
| | | | | |
|------------------------------------|-------------|--------------|-----------|--------------|
| <i>Psorophora columbiae</i> | 1 | 10 | | |
| <i>Psorophora ferox</i> | 7 | 86 | | |
| Bergen | 280 | 17283 | 88 | 5.092 |
| <i>Aedes albopictus</i> | 48 | 406 | | |
| <i>Aedes japonicus</i> | 11 | 432 | | |
| <i>Culex</i> spp. | 221 | 16445 | 88 | 5.351 |
| Burlington | 331 | 8173 | 9 | 1.101 |
| <i>Aedes albopictus</i> | 22 | 357 | | |
| <i>Aedes atropalpus</i> | 3 | 18 | | |
| <i>Aedes canadensis canadensis</i> | 4 | 84 | | |
| <i>Aedes japonicus</i> | 12 | 213 | | |
| <i>Aedes mitchellae</i> | 5 | 82 | | |
| <i>Aedes sollicitans</i> | 1 | 2 | | |
| <i>Aedes taeniorhynchus</i> | 4 | 195 | | |
| <i>Aedes triseriatus</i> | 9 | 35 | | |
| <i>Aedes vexans</i> | 2 | 63 | | |
| <i>Anopheles barberi</i> | 1 | 1 | | |
| <i>Anopheles bradleyi</i> | 11 | 272 | | |
| <i>Anopheles crucians</i> | 10 | 146 | | |
| <i>Anopheles punctipennis</i> | 3 | 13 | | |
| <i>Anopheles quadrimaculatus</i> | 1 | 3 | | |
| <i>Coquillettidia perturbans</i> | 8 | 342 | 1 | 2.924 |
| <i>Culex erraticus</i> | 7 | 113 | | |
| <i>Culex pipiens</i> | 1 | 2 | | |
| <i>Culex salinarius</i> | 24 | 699 | | |
| <i>Culex</i> spp. | 98 | 3745 | 7 | 1.869 |
| <i>Culex territans</i> | 1 | 12 | | |
| <i>Culiseta melanura</i> | 103 | 1731 | 1 | 0.578 |
| <i>Uranotaenia sapphirina</i> | 1 | 45 | | |
| Camden | 244 | 4936 | 8 | 1.621 |
| <i>Aedes albopictus</i> | 53 | 210 | | |
| <i>Aedes japonicus</i> | 24 | 82 | | |
| <i>Anopheles punctipennis</i> | 1 | 4 | | |
| <i>Culex</i> spp. | 135 | 3648 | 8 | 2.193 |
| <i>Culiseta melanura</i> | 31 | 992 | | |
| Cape May | 3876 | 21219 | 6 | 0.283 |
| <i>Aedes albopictus</i> | 634 | 1379 | | |
| <i>Aedes atlanticus</i> | 13 | 31 | | |
| <i>Aedes atropalpus</i> | 28 | 66 | | |
| <i>Aedes canadensis canadensis</i> | 13 | 249 | | |
| <i>Aedes cantator</i> | 25 | 52 | | |
| <i>Aedes japonicus</i> | 246 | 481 | | |
| <i>Aedes sollicitans</i> | 5 | 7 | | |
| <i>Aedes taeniorhynchus</i> | 5 | 6 | | |
| <i>Aedes triseriatus</i> | 183 | 315 | | |
| <i>Aedes vexans</i> | 12 | 17 | | |
| <i>Anopheles atropos</i> | 1 | 1 | | |
| <i>Anopheles bradleyi</i> | 98 | 358 | | |
| <i>Anopheles punctipennis</i> | 12 | 13 | | |
| <i>Anopheles quadrimaculatus</i> | 144 | 1134 | | |
| <i>Coquillettidia perturbans</i> | 27 | 426 | | |
| <i>Culex erraticus</i> | 73 | 148 | | |

| | | | | |
|----------------------------------|------------|--------------|-----------|--------------|
| <i>Culex pipiens</i> | 925 | 9850 | 1 | 0.102 |
| <i>Culex restuans</i> | 798 | 4793 | 4 | 0.835 |
| <i>Culex salinarius</i> | 293 | 820 | | |
| <i>Culex</i> spp. | 51 | 136 | | |
| <i>Culex territans</i> | 43 | 355 | | |
| <i>Culiseta melanura</i> | 229 | 554 | 1 | 1.805 |
| <i>Orthopodomyia signifera</i> | 6 | 6 | | |
| <i>Psorophora columbiae</i> | 2 | 2 | | |
| <i>Psorophora ferox</i> | 4 | 9 | | |
| <i>Uranotaenia sapphirina</i> | 6 | 11 | | |
| Cumberland | 323 | 4773 | 1 | 0.210 |
| <i>Aedes albopictus</i> | 49 | 500 | | |
| <i>Aedes cantator</i> | 1 | 1 | | |
| <i>Aedes japonicus</i> | 11 | 21 | | |
| <i>Aedes sollicitans</i> | 20 | 476 | | |
| <i>Aedes taeniorhynchus</i> | 5 | 36 | | |
| <i>Aedes triseriatus</i> | 2 | 4 | | |
| <i>Aedes vexans</i> | 55 | 869 | 1 | 1.151 |
| <i>Anopheles bradleyi</i> | 5 | 157 | | |
| <i>Anopheles crucians</i> | 1 | 5 | | |
| <i>Anopheles punctipennis</i> | 11 | 67 | | |
| <i>Anopheles quadrimaculatus</i> | 4 | 19 | | |
| <i>Coquillettidia perturbans</i> | 8 | 111 | | |
| <i>Culex erraticus</i> | 23 | 233 | | |
| <i>Culex pipiens</i> | 10 | 24 | | |
| <i>Culex salinarius</i> | 38 | 1548 | | |
| <i>Culex</i> spp. | 40 | 421 | | |
| <i>Culiseta melanura</i> | 21 | 103 | | |
| <i>Orthopodomyia signifera</i> | 1 | 1 | | |
| <i>Psorophora ciliata</i> | 1 | 1 | | |
| <i>Psorophora columbiae</i> | 12 | 92 | | |
| <i>Psorophora ferox</i> | 4 | 80 | | |
| <i>Uranotaenia sapphirina</i> | 1 | 4 | | |
| Essex | 268 | 1541 | 2 | 1.298 |
| <i>Aedes albopictus</i> | 116 | 599 | | |
| <i>Aedes japonicus</i> | 7 | 14 | | |
| <i>Aedes triseriatus</i> | 2 | 2 | | |
| <i>Anopheles punctipennis</i> | 1 | 1 | | |
| <i>Anopheles quadrimaculatus</i> | 1 | 1 | | |
| <i>Culex</i> spp. | 141 | 924 | 2 | 2.165 |
| Gloucester | 632 | 27329 | 50 | 1.830 |
| <i>Aedes albopictus</i> | 192 | 3917 | 1 | 0.255 |
| <i>Aedes japonicus</i> | 28 | 265 | | |
| <i>Aedes triseriatus</i> | 6 | 17 | | |
| <i>Anopheles punctipennis</i> | 7 | 20 | | |
| <i>Culex pipiens</i> | 380 | 23001 | 49 | 2.130 |
| <i>Culiseta melanura</i> | 19 | 109 | | |
| Hudson | 238 | 10443 | 28 | 2.681 |
| <i>Aedes albopictus</i> | 50 | 2229 | 1 | 0.449 |
| <i>Culex</i> spp. | 188 | 8214 | 27 | 3.287 |

| | | | | |
|------------------------------------|------------|--------------|-----------|--------------|
| Hunterdon | 295 | 11614 | 39 | 3.358 |
| <i>Aedes albopictus</i> | 11 | 362 | | |
| <i>Culex</i> spp. | 284 | 11252 | 39 | 3.466 |
| Mercer | 542 | 9204 | 24 | 2.608 |
| <i>Aedes albopictus</i> | 147 | 1522 | | |
| <i>Aedes japonicus</i> | 43 | 128 | | |
| <i>Aedes triseriatus</i> | 2 | 24 | | |
| <i>Aedes vexans</i> | 3 | 12 | | |
| <i>Culex erraticus</i> | 26 | 89 | 1 | 11.236 |
| <i>Culex pipiens</i> | 53 | 942 | 5 | 5.308 |
| <i>Culex restuans</i> | 137 | 3867 | 7 | 1.810 |
| <i>Culex</i> spp. | 131 | 2620 | 11 | 4.198 |
| Middlesex | 451 | 12966 | 29 | 2.237 |
| <i>Aedes albopictus</i> | 105 | 893 | | |
| <i>Coquillettidia perturbans</i> | 1 | 2 | | |
| <i>Culex erraticus</i> | 3 | 4 | | |
| <i>Culex</i> spp. | 287 | 11451 | 29 | 2.533 |
| <i>Culiseta melanura</i> | 55 | 616 | | |
| Monmouth | 922 | 10140 | 16 | 1.578 |
| <i>Aedes albopictus</i> | 534 | 5918 | 1 | 0.169 |
| <i>Aedes atlanticus</i> | 3 | 13 | | |
| <i>Aedes canadensis canadensis</i> | 21 | 316 | | |
| <i>Aedes cantator</i> | 11 | 194 | | |
| <i>Aedes grossbecki</i> | 1 | 1 | | |
| <i>Aedes japonicus</i> | 44 | 132 | | |
| <i>Aedes sollicitans</i> | 12 | 72 | | |
| <i>Aedes taeniorhynchus</i> | 8 | 75 | | |
| <i>Aedes triseriatus</i> | 13 | 22 | | |
| <i>Aedes trivittatus</i> | 1 | 1 | | |
| <i>Aedes vexans</i> | 14 | 34 | | |
| <i>Anopheles barberi</i> | 1 | 1 | | |
| <i>Anopheles crucians</i> | 3 | 3 | | |
| <i>Anopheles punctipennis</i> | 49 | 96 | | |
| <i>Anopheles quadrimaculatus</i> | 8 | 8 | | |
| <i>Coquillettidia perturbans</i> | 4 | 5 | | |
| <i>Culex erraticus</i> | 13 | 47 | | |
| <i>Culex restuans</i> | 3 | 6 | | |
| <i>Culex salinarius</i> | 1 | 1 | | |
| <i>Culex</i> spp. | 148 | 3003 | 15 | 4.995 |
| <i>Culiseta melanura</i> | 22 | 157 | | |
| <i>Psorophora columbiae</i> | 3 | 7 | | |
| <i>Psorophora ferox</i> | 5 | 28 | | |
| Morris | 467 | 13645 | 12 | 0.879 |
| <i>Aedes albopictus</i> | 81 | 1020 | | |
| <i>Aedes japonicus</i> | 4 | 19 | | |
| <i>Aedes trivittatus</i> | 2 | 2 | | |
| <i>Aedes vexans</i> | 2 | 5 | | |
| <i>Anopheles punctipennis</i> | 6 | 61 | | |
| <i>Anopheles quadrimaculatus</i> | 2 | 8 | | |
| <i>Anopheles walkeri</i> | 1 | 1 | | |
| <i>Coquillettidia perturbans</i> | 2 | 20 | | |

| | | | | |
|------------------------------------|------------|--------------|-----------|--------------|
| <i>Culex</i> spp. | 365 | 12505 | 12 | 0.960 |
| <i>Psorophora ferox</i> | 2 | 4 | | |
| Ocean | 386 | 4684 | 1 | 0.213 |
| <i>Aedes albopictus</i> | 139 | 1738 | | |
| <i>Aedes canadensis canadensis</i> | 1 | 70 | | |
| <i>Aedes japonicus</i> | 28 | 89 | | |
| <i>Aedes triseriatus</i> | 13 | 21 | | |
| <i>Aedes vexans</i> | 2 | 2 | | |
| <i>Anopheles crucians</i> | 3 | 28 | | |
| <i>Anopheles punctipennis</i> | 5 | 7 | | |
| <i>Anopheles quadrimaculatus</i> | 1 | 1 | | |
| <i>Coquillettidia perturbans</i> | 24 | 462 | | |
| <i>Culex erraticus</i> | 21 | 98 | | |
| <i>Culex restuans</i> | 3 | 11 | | |
| <i>Culex</i> spp. | 114 | 2062 | 1 | 0.485 |
| <i>Culiseta melanura</i> | 29 | 62 | | |
| <i>Psorophora ferox</i> | 3 | 33 | | |
| Passaic | 303 | 7173 | 23 | 3.206 |
| <i>Aedes albopictus</i> | 15 | 55 | | |
| <i>Aedes japonicus</i> | 63 | 427 | 2 | 4.684 |
| <i>Aedes triseriatus</i> | 7 | 11 | | |
| <i>Aedes vexans</i> | 13 | 37 | | |
| <i>Coquillettidia perturbans</i> | 2 | 5 | | |
| <i>Culex</i> spp. | 202 | 6637 | 21 | 3.164 |
| <i>Culiseta melanura</i> | 1 | 1 | | |
| Salem | 343 | 2521 | 1 | 0.397 |
| <i>Aedes albopictus</i> | 84 | 407 | 1 | 2.457 |
| <i>Aedes japonicus</i> | 15 | 35 | | |
| <i>Aedes triseriatus</i> | 25 | 35 | | |
| <i>Anopheles bradleyi</i> | 5 | 30 | | |
| <i>Anopheles punctipennis</i> | 7 | 7 | | |
| <i>Anopheles quadrimaculatus</i> | 21 | 59 | | |
| <i>Coquillettidia perturbans</i> | 12 | 85 | | |
| <i>Culex erraticus</i> | 48 | 666 | | |
| <i>Culex pipiens</i> | 6 | 6 | | |
| <i>Culex restuans</i> | 10 | 11 | | |
| <i>Culex</i> spp. | 85 | 877 | | |
| <i>Culiseta melanura</i> | 20 | 297 | | |
| <i>Orthopodomyia signifera</i> | 1 | 1 | | |
| <i>Psorophora columbiae</i> | 1 | 1 | | |
| <i>Psorophora ferox</i> | 3 | 4 | | |
| Somerset | 238 | 3957 | 14 | 3.538 |
| <i>Aedes albopictus</i> | 19 | 87 | | |
| <i>Aedes japonicus</i> | 5 | 38 | | |
| <i>Aedes triseriatus</i> | 5 | 28 | | |
| <i>Anopheles punctipennis</i> | 3 | 8 | | |
| <i>Culex</i> spp. | 206 | 3796 | 14 | 3.688 |
| Sussex | 493 | 10470 | 7 | 0.669 |
| <i>Aedes albopictus</i> | 22 | 75 | | |
| <i>Aedes canadensis canadensis</i> | 1 | 1 | | |

| | | | | |
|----------------------------------|--------------|---------------|------------|--------------|
| <i>Aedes japonicus</i> | 59 | 807 | | |
| <i>Aedes triseriatus</i> | 5 | 72 | | |
| <i>Aedes trivittatus</i> | 1 | 33 | | |
| <i>Aedes vexans</i> | 8 | 70 | | |
| <i>Anopheles punctipennis</i> | 1 | 44 | | |
| <i>Coquillettidia perturbans</i> | 18 | 904 | | |
| <i>Culex erraticus</i> | 15 | 28 | | |
| <i>Culex pipiens</i> | 52 | 165 | 1 | 6.061 |
| <i>Culex restuans</i> | 9 | 25 | | |
| <i>Culex salinarius</i> | 9 | 199 | | |
| <i>Culex</i> spp. | 281 | 8032 | 5 | 0.623 |
| <i>Culiseta melanura</i> | 12 | 15 | 1 | 66.667 |
| Union | 227 | 12416 | 74 | 5.960 |
| <i>Aedes albopictus</i> | 56 | 1961 | 1 | 0.510 |
| <i>Culex erraticus</i> | 9 | 111 | | |
| <i>Culex</i> spp. | 159 | 10275 | 73 | 7.105 |
| <i>Culiseta melanura</i> | 3 | 69 | | |
| Warren | 229 | 10369 | 2 | 0.193 |
| <i>Aedes japonicus</i> | 1 | 2 | | |
| <i>Culex</i> spp. | 228 | 10367 | 2 | 0.193 |
| Grand Total | 11436 | 213598 | 448 | 2.097 |



Cumulative WNV activity in 2015. WNV activity to 1 November 2016. WNV activity last week, 2016.

Saint Louis Encephalitis (SLE) to 1 November 2016.

New Jersey will be primarily testing for SLE this year only when adjacent states show human activity (Cape May tests mosquitoes in the Cape May lab independently). SLE has had previous activity in New Jersey, most notably in 1964 and 1975 (CDC's SLE [website](#)), the latter prompting the surveillance reporting by Rutgers. SLE is a flavivirus and has a similar transmission pattern to West Nile, with *Culex* species as the predominant vectors.

Currently, there are no reported positive pools of SLE for 2016. There are no human cases reported.

| County | Species | Pools | Mosquitoes | Positives | MFIR |
|--------------------|---------------------------|-------------|--------------|-----------|------|
| Burlington | | 108 | 3906 | | |
| | <i>Aedes mitchellae</i> | 3 | 56 | | |
| | <i>Anopheles barberi</i> | 1 | 1 | | |
| | <i>Anopheles crucians</i> | 1 | 11 | | |
| | <i>Culex erraticus</i> | 4 | 91 | | |
| | <i>Culex pipiens</i> | 1 | 2 | | |
| | <i>Culex</i> spp. | 98 | 3745 | | |
| Cape May | | 975 | 9989 | | |
| | <i>Culex pipiens</i> | 925 | 9856 | | |
| | <i>Culex</i> spp. | 50 | 133 | | |
| Grand Total | | 1083 | 13895 | | |

La Crosse Encephalitis (LAC) to 1 November 2016.

New Jersey will be primarily testing for LAC this year only when adjacent states show human activity (Cape May tests mosquitoes in the Cape May lab independently). New Jersey has had 3 cases of this encephalitic disease since 1964 (see CDC's LAC [website](#)). The mortality is low but like other encephalitides, LAC can have both personal (lasting neurological sequelae) and economic impacts. LAC is a bunyavirus with a transmission cycle involving mosquitoes such as *Aedes triseriatus* and small mammals such as squirrels and chipmunks. LAC can not only infect *Aedes albopictus* but transovarial transmission was also demonstrated.

(Tesh and Gubler 1975 Laboratory studies of transovarial transmission of La Crosse and other arboviruses by *Aedes albopictus* and *Culex fatigans*. American Journal of Tropical Medicine and Hygiene 24(5):876-880).

Currently, there are no reported positive pools of LAC for 2016. There are no human cases reported.

| County | Species | Pools | Mosquitoes | Positives | MFIR |
|--------------------|---------------------------|-----------|------------|-----------|------|
| Burlington | | 44 | 608 | | |
| | <i>Aedes albopictus</i> | 18 | 329 | | |
| | <i>Aedes atropalpus</i> | 3 | 18 | | |
| | <i>Aedes japonicus</i> | 12 | 213 | | |
| | <i>Aedes mitchellae</i> | 1 | 11 | | |
| | <i>Aedes triseriatus</i> | 9 | 35 | | |
| | <i>Anopheles crucians</i> | 1 | 2 | | |
| Grand Total | | 44 | 608 | | |

Dengue (DENV) to 1 November 2016.

New Jersey will be selectively testing for DENV (including serotypes) this year. Dengue has not had a history of local transmission here in New Jersey, but each year, travelers can bring virus back from areas in the world with virus activity. This is significant as humans are NOT dead-end hosts and thus there is the potential for local transmission (i.e., New Jersey mosquitoes biting a sick person and then biting and transmitting the disease to someone else) to be established. DENV is a flavivirus but unlike WNV, *Aedes* mosquitoes are predominant vectors. In New Jersey, *Aedes albopictus* is a candidate for local transmission. There are 4 serotypes tested for Dengue.

Note Same pools of *Ae. albopictus* are tested for the four serotypes of Dengue as well as Chikungunya.

No pools have tested positive in 2016. Currently, New Jersey has 55 imported human cases of Dengue.

| County | Species | DENV1 | | DENV2 | | DENV3 | | DENV4 | | Pos. | MFIR |
|-------------------|--------------------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------|------|
| | | Pool | Mos. | Pool | Mos. | Pool | Mos. | Pool | Mos. | | |
| Atlantic | | 64 | 540 | 64 | 540 | 64 | 540 | 64 | 540 | | |
| | <i>Aedes albopictus</i> | 64 | 540 | 64 | 540 | 64 | 540 | 64 | 540 | | |
| Bergen | | 48 | 406 | 48 | 406 | 48 | 406 | 48 | 406 | | |
| | <i>Aedes albopictus</i> | 48 | 406 | 48 | 406 | 48 | 406 | 48 | 406 | | |
| Burlington | | 4 | 28 | 4 | 28 | 4 | 28 | 4 | 28 | | |
| | <i>Aedes albopictus</i> | 4 | 28 | 4 | 28 | 4 | 28 | 4 | 28 | | |
| Camden | | 53 | 210 | 53 | 210 | 53 | 210 | 53 | 210 | | |
| | <i>Aedes albopictus</i> | 53 | 210 | 53 | 210 | 53 | 210 | 53 | 210 | | |
| Cumberland | | 49 | 500 | 49 | 500 | 49 | 500 | 49 | 500 | | |
| | <i>Aedes albopictus</i> | 49 | 500 | 49 | 500 | 49 | 500 | 49 | 500 | | |
| Essex | | 116 | 599 | 116 | 599 | 116 | 599 | 116 | 599 | | |
| | <i>Aedes albopictus</i> | 116 | 599 | 116 | 599 | 116 | 599 | 116 | 599 | | |
| Gloucester | | 176 | 3718 | 176 | 3718 | 176 | 3718 | 176 | 3718 | | |
| | <i>Aedes albopictus</i> | 176 | 3718 | 176 | 3718 | 176 | 3718 | 176 | 3718 | | |
| Hudson | | 50 | 2229 | 50 | 2229 | 50 | 2229 | 50 | 2229 | | |
| | <i>Aedes albopictus</i> | 50 | 2229 | 50 | 2229 | 50 | 2229 | 50 | 2229 | | |
| Hunterdon | | 11 | 362 | 11 | 362 | 11 | 362 | 11 | 362 | | |
| | <i>Aedes albopictus</i> | 11 | 362 | 11 | 362 | 11 | 362 | 11 | 362 | | |
| Mercer | | 147 | 1522 | 147 | 1522 | 147 | 1522 | 147 | 1522 | | |
| | <i>Aedes albopictus</i> | 147 | 1522 | 147 | 1522 | 147 | 1522 | 147 | 1522 | | |
| Middlesex | | 107 | 913 | 107 | 913 | 107 | 913 | 107 | 913 | | |
| | <i>Aedes albopictus</i> | 105 | 893 | 105 | 893 | 105 | 893 | 105 | 893 | | |
| | <i>Culex</i> spp. | 1 | 19 | 1 | 19 | 1 | 19 | 1 | 19 | | |
| | <i>Culiseta melanura</i> | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | |
| Monmouth | | 442 | 5367 | 442 | 5367 | 442 | 5367 | 442 | 5367 | | |
| | <i>Aedes albopictus</i> | 442 | 5367 | 442 | 5367 | 442 | 5367 | 442 | 5367 | | |
| Morris | | 79 | 1019 | 79 | 1019 | 79 | 1019 | 79 | 1019 | | |
| | <i>Aedes albopictus</i> | 77 | 1016 | 77 | 1016 | 77 | 1016 | 77 | 1016 | | |
| | <i>Culex</i> spp. | 2 | 3 | 2 | 3 | 2 | 3 | 2 | 3 | | |
| Ocean | | 48 | 478 | 48 | 478 | 48 | 478 | 48 | 478 | | |
| | <i>Aedes albopictus</i> | 48 | 478 | 48 | 478 | 48 | 478 | 48 | 478 | | |
| Passaic | | 6 | 15 | 6 | 15 | 6 | 15 | 6 | 15 | | |
| | <i>Aedes albopictus</i> | 6 | 15 | 6 | 15 | 6 | 15 | 6 | 15 | | |
| Salem | | 84 | 407 | 84 | 407 | 84 | 407 | 84 | 407 | | |
| | <i>Aedes albopictus</i> | 84 | 407 | 84 | 407 | 84 | 407 | 84 | 407 | | |

| | | | | | | | | | | | |
|--------------------|-------------------------|-------------|--------------|-------------|--------------|-------------|--------------|-------------|--------------|--|--|
| Somerset | | 15 | 71 | 15 | 71 | 15 | 71 | 15 | 71 | | |
| | <i>Aedes albopictus</i> | 15 | 71 | 15 | 71 | 15 | 71 | 15 | 71 | | |
| Sussex | | 22 | 75 | 22 | 75 | 22 | 75 | 22 | 75 | | |
| | <i>Aedes albopictus</i> | 22 | 75 | 22 | 75 | 22 | 75 | 22 | 75 | | |
| Union | | 49 | 1828 | 49 | 1828 | 49 | 1828 | 49 | 1828 | | |
| | <i>Aedes albopictus</i> | 49 | 1828 | 49 | 1828 | 49 | 1828 | 49 | 1828 | | |
| Grand Total | | 1570 | 20287 | 1570 | 20287 | 1570 | 20287 | 1570 | 20287 | | |

Chikungunya (CHIK) to 1 November 2016.

New Jersey will be selectively testing for CHIK this year. Chikungunya is similar in symptoms to Dengue, a “breakbone” fever and has a low mortality rate. But this virus has had recent worldwide activity, and in the past year has come to the Western Hemisphere. As with Dengue, transmission can occur when a mosquito bites an infected human, then bites an uninfected human who subsequently becomes ill. CHIK is an alphavirus with *Aedes* mosquitoes as potential vectors. In New Jersey, *Aedes albopictus* is the mosquito of interest.

No pools have tested positive in 2016. Currently, New Jersey has 6 imported human case of Chikungunya.

| County | Species | Pools | Mosquitoes | Positives | MFIR |
|-------------------|--------------------------|------------|-------------|-----------|------|
| Atlantic | | 64 | 540 | | |
| | <i>Aedes albopictus</i> | 64 | 540 | | |
| Bergen | | 48 | 406 | | |
| | <i>Aedes albopictus</i> | 48 | 406 | | |
| Burlington | | 4 | 28 | | |
| | <i>Aedes albopictus</i> | 4 | 28 | | |
| Camden | | 53 | 210 | | |
| | <i>Aedes albopictus</i> | 53 | 210 | | |
| Cape May | | 630 | 1373 | | |
| | <i>Aedes albopictus</i> | 630 | 1373 | | |
| Cumberland | | 49 | 500 | | |
| | <i>Aedes albopictus</i> | 49 | 500 | | |
| Essex | | 116 | 599 | | |
| | <i>Aedes albopictus</i> | 116 | 599 | | |
| Gloucester | | 176 | 3718 | | |
| | <i>Aedes albopictus</i> | 176 | 3718 | | |
| Hudson | | 50 | 2229 | | |
| | <i>Aedes albopictus</i> | 50 | 2229 | | |
| Hunterdon | | 11 | 362 | | |
| | <i>Aedes albopictus</i> | 11 | 362 | | |
| Mercer | | 147 | 1522 | | |
| | <i>Aedes albopictus</i> | 147 | 1522 | | |
| Middlesex | | 107 | 913 | | |
| | <i>Aedes albopictus</i> | 105 | 893 | | |
| | <i>Culex</i> spp. | 1 | 19 | | |
| | <i>Culiseta melanura</i> | 1 | 1 | | |
| Monmouth | | 442 | 5367 | | |
| | <i>Aedes albopictus</i> | 442 | 5367 | | |
| Morris | | 79 | 1019 | | |
| | <i>Aedes albopictus</i> | 77 | 1016 | | |

| | | | | | |
|--------------------|-------------------------|-------------|--------------|--|--|
| | <i>Culex</i> spp. | 2 | 3 | | |
| Ocean | | 48 | 478 | | |
| | <i>Aedes albopictus</i> | 48 | 478 | | |
| Passaic | | 6 | 15 | | |
| | <i>Aedes albopictus</i> | 6 | 15 | | |
| Salem | | 84 | 407 | | |
| | <i>Aedes albopictus</i> | 84 | 407 | | |
| Somerset | | 15 | 71 | | |
| | <i>Aedes albopictus</i> | 15 | 71 | | |
| Sussex | | 22 | 75 | | |
| | <i>Aedes albopictus</i> | 22 | 75 | | |
| Union | | 49 | 1828 | | |
| | <i>Aedes albopictus</i> | 49 | 1828 | | |
| Grand Total | | 2200 | 21660 | | |

Zika (ZIKV) to 1 November 2016.

New Jersey will be selectively testing for ZIKV this year. Zika is an emerging arboviral threat with significant health consequences for fetuses and recent activity in the Western Hemisphere. Humans are potential hosts that can transmit through sexual activity. ZIKV is a flavivirus with *Aedes* mosquitoes as potential vectors. In New Jersey, *Aedes albopictus* is the mosquito of interest.

No pools have tested positive in 2016. Currently, New Jersey has 167 imported human cases of Zika.

| County | Species | Pools | Mosquitoes | Positives | MFIR |
|-------------------|-------------------------|------------|-------------|-----------|------|
| Atlantic | | 51 | 383 | | |
| | <i>Aedes albopictus</i> | 51 | 383 | | |
| Bergen | | 33 | 334 | | |
| | <i>Aedes albopictus</i> | 33 | 334 | | |
| Burlington | | 4 | 28 | | |
| | <i>Aedes albopictus</i> | 4 | 28 | | |
| Camden | | 37 | 144 | | |
| | <i>Aedes albopictus</i> | 37 | 144 | | |
| Cape May | | 630 | 1373 | | |
| | <i>Aedes albopictus</i> | 630 | 1373 | | |
| Cumberland | | 43 | 413 | | |
| | <i>Aedes albopictus</i> | 43 | 413 | | |
| Essex | | 77 | 434 | | |
| | <i>Aedes albopictus</i> | 77 | 434 | | |
| Gloucester | | 176 | 3718 | | |
| | <i>Aedes albopictus</i> | 176 | 3718 | | |
| Hudson | | 32 | 1806 | | |
| | <i>Aedes albopictus</i> | 32 | 1806 | | |
| Hunterdon | | 11 | 362 | | |
| | <i>Aedes albopictus</i> | 11 | 362 | | |
| Mercer | | 325 | 3651 | | |
| | <i>Aedes albopictus</i> | 325 | 3651 | | |
| Middlesex | | 73 | 695 | | |
| | <i>Aedes albopictus</i> | 72 | 676 | | |
| | <i>Culex</i> spp. | 1 | 19 | | |
| Monmouth | | 272 | 3793 | | |

| | | | | | |
|--------------------|-------------------------|-------------|--------------|--|--|
| | <i>Aedes albopictus</i> | 272 | 3793 | | |
| Morris | | 64 | 964 | | |
| | <i>Aedes albopictus</i> | 64 | 964 | | |
| Ocean | | 48 | 478 | | |
| | <i>Aedes albopictus</i> | 48 | 478 | | |
| Passaic | | 4 | 12 | | |
| | <i>Aedes albopictus</i> | 4 | 12 | | |
| Salem | | 50 | 281 | | |
| | <i>Aedes albopictus</i> | 50 | 281 | | |
| Somerset | | 15 | 71 | | |
| | <i>Aedes albopictus</i> | 15 | 71 | | |
| Sussex | | 22 | 75 | | |
| | <i>Aedes albopictus</i> | 22 | 75 | | |
| Union | | 49 | 1828 | | |
| | <i>Aedes albopictus</i> | 49 | 1828 | | |
| Grand Total | | 2016 | 20843 | | |