



Florida Arbovirus Surveillance Week 31: July 30-August 5, 2017

Arbovirus surveillance in Florida includes endemic mosquito-borne viruses such as West Nile virus (WNV), Eastern equine encephalitis virus (EEEV), and St. Louis encephalitis virus (SLEV), as well as exotic viruses such as dengue virus (DENV), chikungunya virus (CHIKV) and California encephalitis group viruses (CEV). Malaria, a parasitic mosquito-borne disease is also included. During the period of July 30-August 5, 2017, the following arboviral activity was recorded in Florida.

This report contains information for all arboviruses in 2017. For additional information on Zika virus cases from 2016, please visit <http://www.floridahealth.gov/diseases-and-conditions/zika-virus/index.html>.

WNV activity: No human cases of WNV infection were reported this week. No horses with WNV infection were reported this week. One sentinel chicken tested positive for antibodies to WNV this week in Hillsborough County. In 2017, positive samples from fourteen sentinel chickens, one eagle, and one mosquito pool have been reported from five counties.

SLEV activity: No human cases of SLEV infection were reported this week. One sentinel chicken tested positive for antibodies to SLEV this week in Palm Beach County. In 2017, positive samples from six sentinel chickens have been reported from six counties.

EEEV activity: No human cases of EEEV infection were reported this week. No horses with EEEV infection were reported this week. One deer with EEEV infection was reported this week in Wakulla County. Three sentinel chickens tested positive for antibodies to EEEV this week in Nassau and Walton Counties. In 2017, positive samples from one horse, one deer, and sixteen sentinel chickens have been reported from six counties.

International Travel-Associated Dengue Fever Cases: One case of dengue fever was reported this week in a person that had international travel. In 2017, five travel-associated cases have been reported.

Dengue Fever Cases Acquired in Florida: No cases of locally acquired dengue fever were reported this week. In 2017, no cases of locally acquired dengue fever have been reported.

International Travel-Associated Chikungunya Fever Cases: No cases of chikungunya fever were reported this week in persons that had international travel. In 2017, one travel-associated case has been reported.

Chikungunya Fever Cases Acquired in Florida: No cases of locally acquired chikungunya fever were reported this week. In 2017, no cases of locally acquired chikungunya fever have been reported.

International Travel-Associated Zika Fever Cases: Nine cases of Zika fever were reported this week in persons that had international travel. In 2017, 97 cases have been reported.

Zika Fever Cases Acquired in Florida: One case of Zika virus infection was reported this week. In 2017, seven cases of locally acquired Zika fever exposed in 2016 and tested in 2017 have been reported.

Advisories/Alerts: No counties are currently under mosquito-borne illness advisory or alert. Forty counties are currently under a declared public health emergency due to the identification of travel-associated Zika infections: Alachua, Bay, Brevard, Broward, Charlotte, Citrus, Clay, Collier, Duval, Escambia, Flagler, Franklin, Hernando, Highlands, Hillsborough, Indian River, Lake, Lee, Leon, Manatee, Marion, Martin, Miami-Dade,

Monroe, Nassau, Okaloosa, Okeechobee, Orange, Osceola, Palm Beach, Pasco, Pinellas, Polk, St. Johns, St. Lucie, Santa Rosa, Sarasota, Seminole, Volusia, and Walton Counties.

There are no areas of ongoing, active Zika transmission in Florida. On June 2nd, CDC removed the cautionary area designation for Miami-Dade County after more than 45 days since the last confirmed local case. For additional information on current CDC recommendations, please visit <https://www.cdc.gov/zika/intheus/florida-update.html>. Zika zones were lifted in Wynwood (September 19), North Miami Beach (November 22), Little River (December 2), and South Miami Beach (December 9) after 45 days with no evidence of active Zika transmission.

There is a Level 2 (Alert) Travel Health Notice from the CDC for multiple countries in the Caribbean, Central and South America, Mexico, Cape Verde, Southeast Asia, and Pacific Islands related to Zika virus transmission and an association with poor pregnancy outcomes. Pregnant women should consider postponing travel to these areas. There is a Level 2 Travel Health Notice from the CDC for Brazil related to the transmission of Yellow Fever virus. There is a Level 1 (Watch) Travel Health Notice from the CDC for multiple countries in the Caribbean, Central and South America, and Mexico, related to the transmission of chikungunya virus. Additional information on travel health notices can be found at the following link: <http://wwwnc.cdc.gov/travel/notices>.

2017 Human Case Summary*

International Travel-Associated Chikungunya Fever Cases: One case of chikungunya with onset in 2017 has been reported in an individual with travel history to a chikungunya endemic country in the two weeks prior to onset. Country of origin was Brazil. The county reporting the case was Broward.

International Travel-Associated Dengue Fever Cases: Five cases of dengue with onset in 2017 have been reported in individuals with travel history to a dengue endemic country in the two weeks prior to onset. Countries of origin were: Brazil, Cuba, Cuba/Mexico, Guatemala, and Nigeria. Counties reporting cases were Miami-Dade (2), Osceola, Palm Beach, and Sumter. Two cases were reported in non-Florida residents. In 2017, four of the five cases of dengue reported in Florida have been serotyped by PCR. Additional serotyping and strain typing are being conducted.

| | # of cases per serotype – 2016 |
|--------|--------------------------------|
| DENV-1 | 2 |
| DENV-2 | 2 |
| Total | 4 |

International Travel-Associated Zika Fever Cases: In 2017, ninety-seven cases of Zika fever have been reported in individuals with travel history to a country or area experiencing Zika virus activity. Countries of origin were: Barbados (2), Barbados/Virgin Islands, Bolivia, Cayman Islands/St. Martin, Costa Rica, Cuba (15), Curacao (3), Dominican Republic (7), Dominican Republic/Haiti (2), Ecuador (3), El Salvador, Guatemala (2), Haiti (29), Honduras (4), Jamaica (4), Mexico (2), Panama, Philippines, Puerto Rico (2), Saint Kitts and Nevis, Trinidad and Tobago, Venezuela (9), and multiple countries/regions (3). Counties reporting cases were: Broward (19), Collier (4), Flagler, Franklin, Hillsborough (4), Indian River (2), Marion, Miami-Dade (39), Monroe, Orange (12), Palm Beach (4), Pinellas (2), Polk (2), Seminole (2), St. Johns (2), and Walton. Fifteen cases were reported in non-Florida residents. One Pinellas County case was acquired through sexual transmission. Florida is monitoring a total of 87 pregnant women in 2017.

Zika Virus Infections Acquired in Florida: In 2017, seven locally acquired Zika virus infection cases with exposure in 2016 and testing in 2017 have been reported by Miami-Dade County. In addition, twenty-four individuals reported travel in 2016 to both Miami-Dade and countries with areas of active Zika virus transmission and exposure location could not definitively be determined.

International Travel-Associated Malaria Cases: Thirty-five cases of malaria with onset in 2017 have been reported. Countries of origin were Brazil (2), Cameroon (3), Ethiopia/Malawi, Ghana (3), Ghana/Liberia,

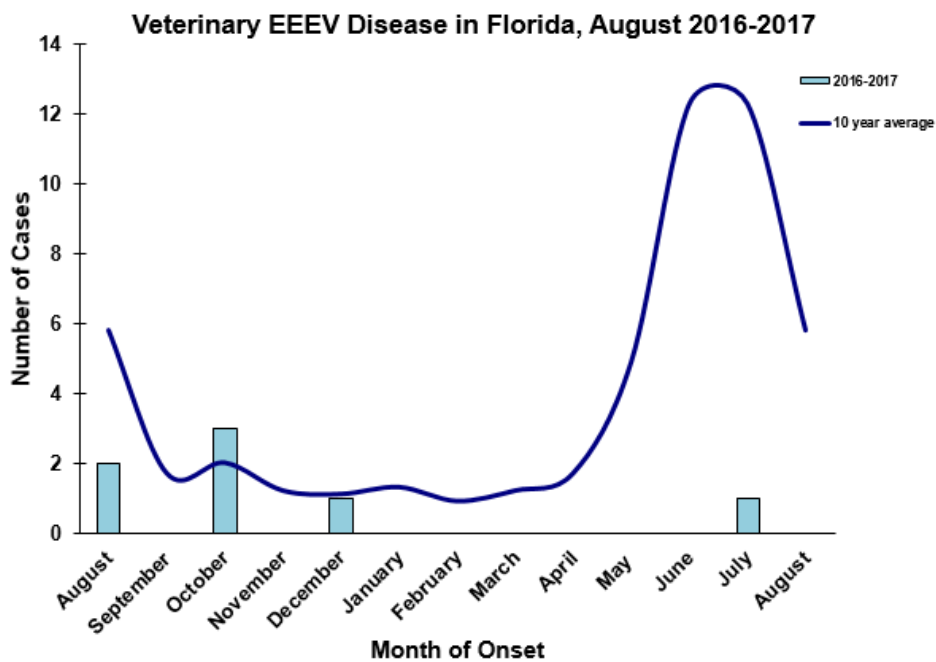
Guatemala, Guyana, Haiti (2), India (2), Indonesia, Kenya, Kenya/South Africa/Tanzania, Liberia, Mozambique, Nigeria (4), Sierra Leone (2), South Africa, Togo, Uganda (5), and Venezuela. Counties reporting cases were Alachua, Brevard, Broward (3), Clay, Desoto, Duval (3), Escambia, Hillsborough (3), Lee (3), Leon (5), Marion, Miami-Dade (4), Monroe, Orange (2), Palm Beach (3), Seminole, and Volusia. Three cases were reported in non-Florida residents.

Twenty-three cases (66%) were diagnosed with *Plasmodium falciparum*. Nine cases (26%) were diagnosed with *Plasmodium vivax*. Two cases (6%) were diagnosed with *Plasmodium malariae*. One case (3%) was diagnosed with both *Plasmodium malariae* and *Plasmodium ovale*.

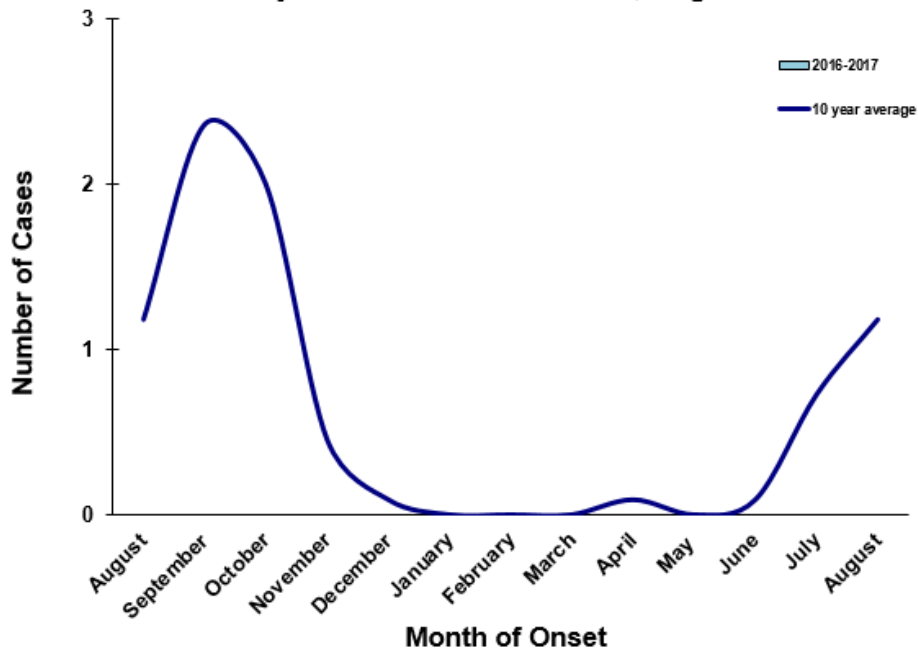
Veterinary Cases*

*Veterinary cases are reported by date of onset

No horses with EEEV or WNV infection were reported this week.



Veterinary WNV Disease in Florida, August 2016-2017



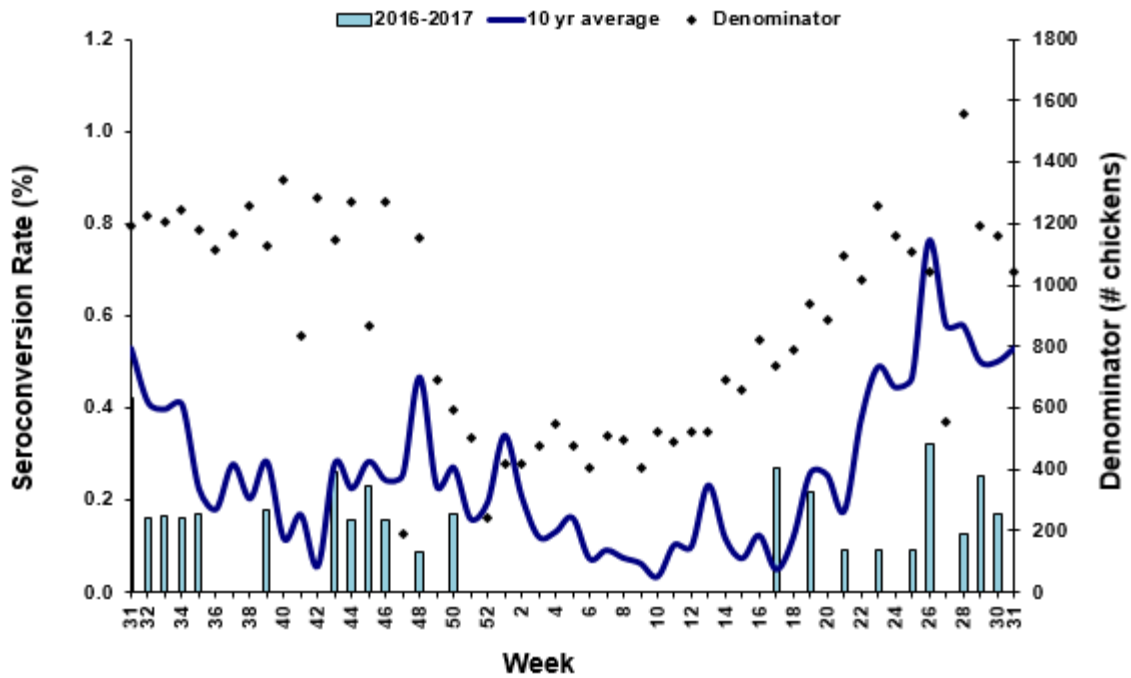
Sentinel Chickens*

The table below is for the reporting of confirmatory laboratory results from this week. Some of the samples were collected at earlier dates. The date of collection is recorded for samples collected on that day along with the total number of positives and the corresponding seroconversion rate for the week the sample was collected.

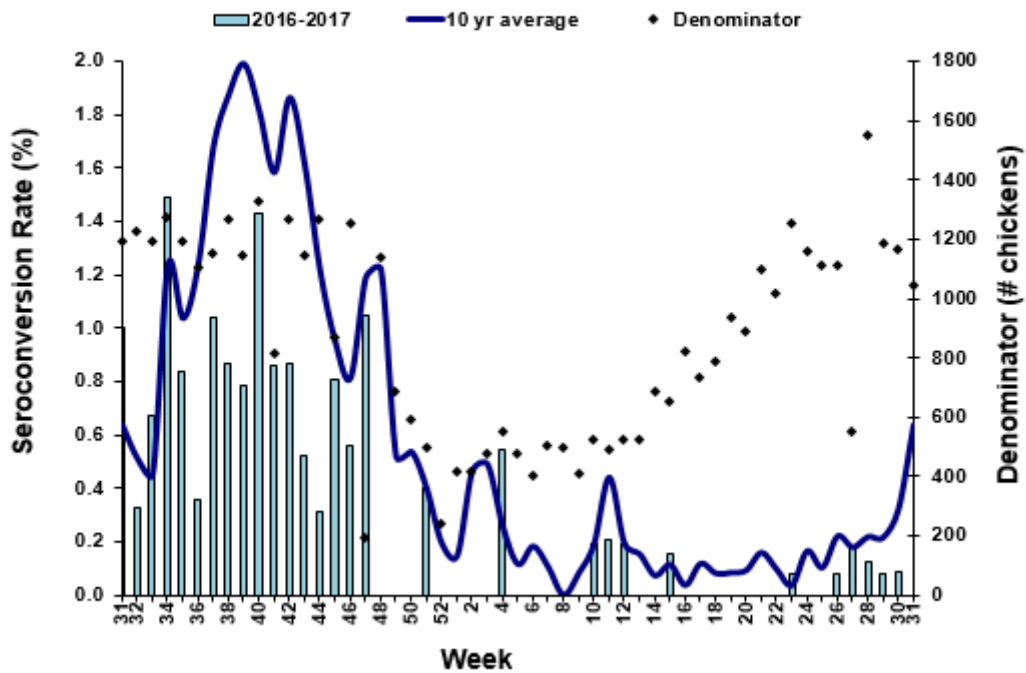
One sentinel chicken tested positive for antibodies to WNV this week in Hillsborough County. One sentinel chicken tested positive for antibodies to SLEV this week in Palm Beach County. Three sentinel chickens tested positive for antibodies to EEEV this week in Nassau and Walton Counties.

| County | Collection Date | Seroconversion Rates (%) | | | | | County Totals | | |
|--------------|-----------------|--------------------------|------|------|-------|------|---------------|-----------------|------------------------|
| | | Flavi | SLEV | WNV | Alpha | EEEV | HJV | Collection Week | YTD |
| Hillsborough | 7/26/17 | 1.75 | | 1.75 | | | | 1 WNV | 2WNV, 1 SLEV |
| Nassau | 7/20/17 | | | | 2.78 | 2.78 | | 1 EEEV | EEEV |
| Palm Beach | 7/10/17 | 5.00 | 5.00 | | | | | 1 SLEV | 1 SLEV |
| Walton | 7/24/17 | | | | 1.75 | 1.75 | | 2 EEEV | 6 WNV, 1 SLEV, 13 EEEV |

Sentinel Seroconversions to EEEV in Florida, 2016-2017



Sentinel Seroconversions to WNV in Florida, 2016-2017



Mosquito Pools

No mosquito pools tested positive for EEEV, WNV, or Zika this week.

| County | Collection Week | Result | Species | County YTD |
|--------|-----------------|--------|---------|------------|
| | | | | |

Dead Birds

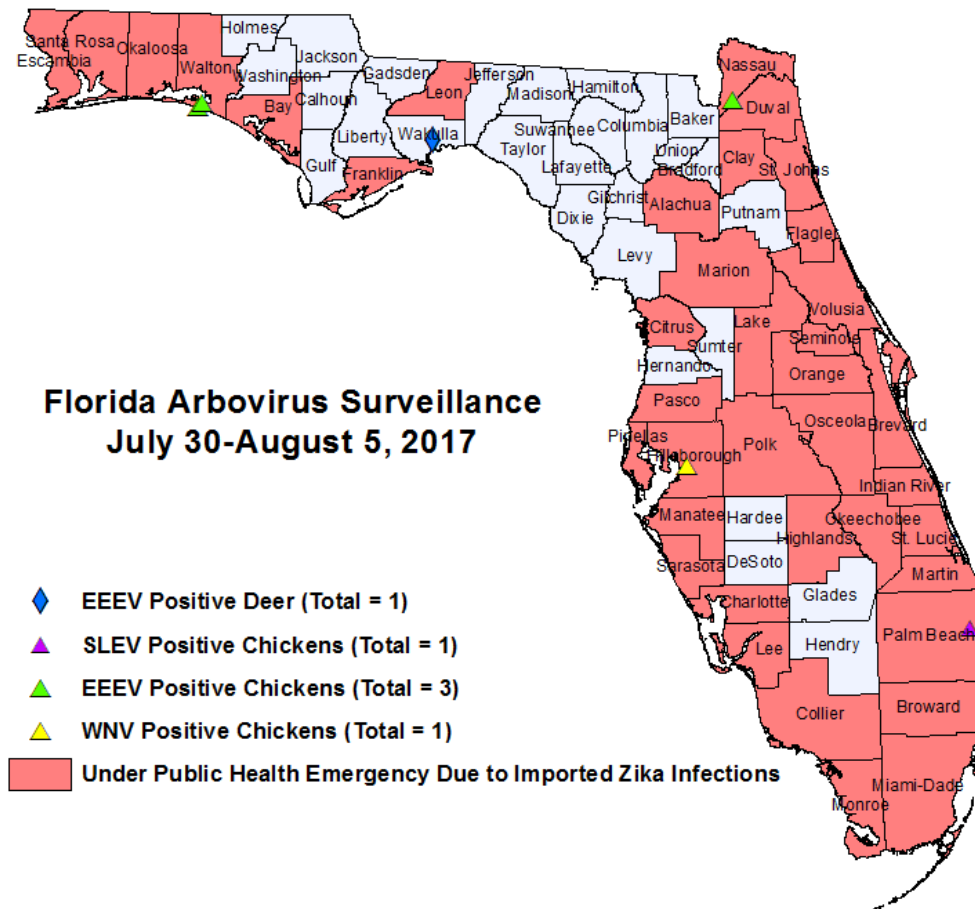
The Fish and Wildlife Conservation Commission (FWC) collects reports of dead birds, which can be an indication of arbovirus circulation in an area. This week, 7 reports representing a total of 21 dead birds, including 1 raptor were received from 7 counties.

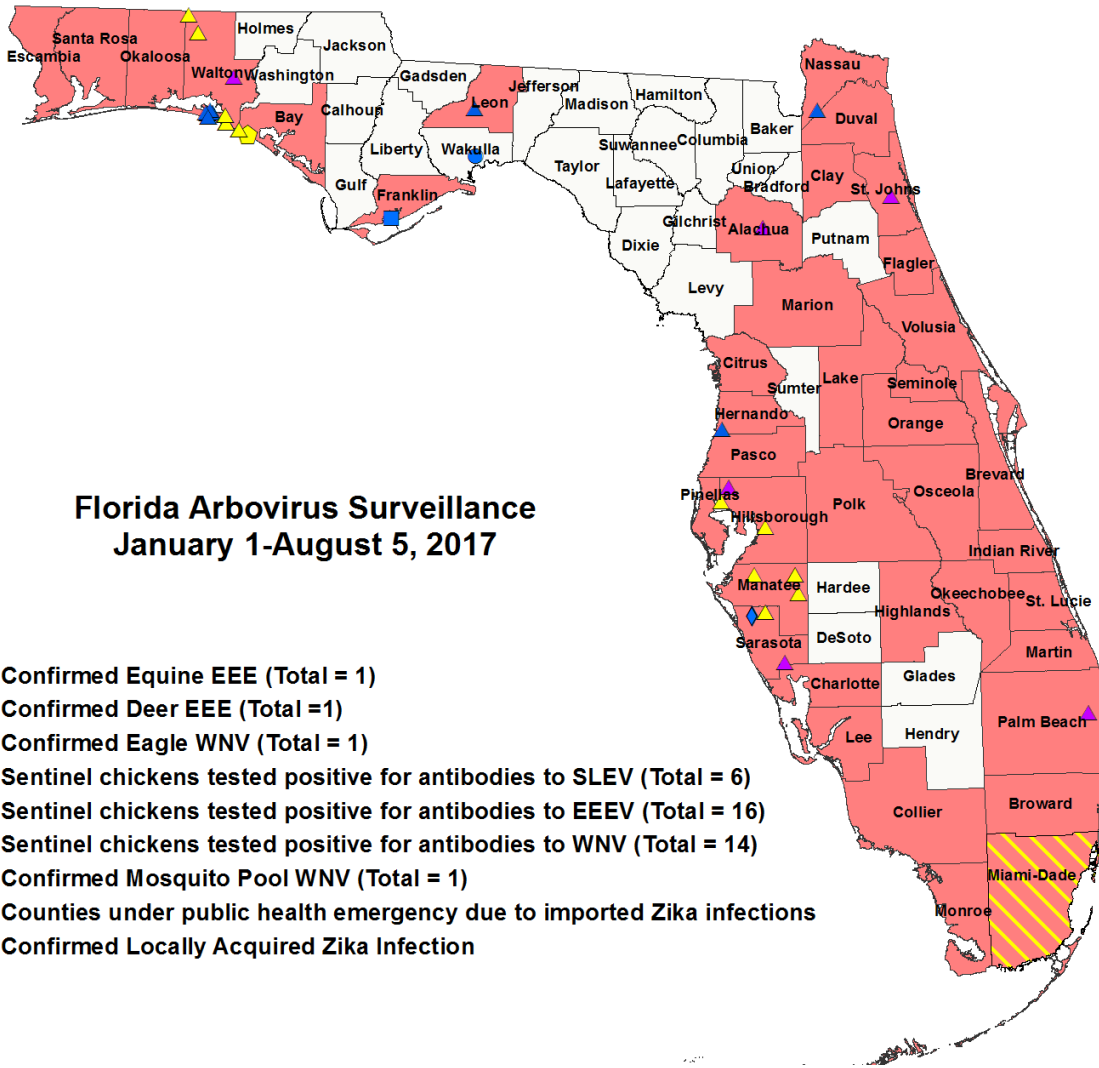
In 2017, 359 reports representing a total of 825 dead birds (31 crows, 23 jays, 98 raptors, and 8 doves) were received from 55 of Florida's 67 counties. Please note that FWC collects reports of birds that have died from a variety of causes, not only arboviruses. Dead birds should be reported to www.myfwc.com/bird/.

2017

| County | Total Dead Birds | Crows | Jays | Raptors | Dove |
|----------|------------------|-------|------|---------|------|
| Brevard | 1 | 0 | 0 | 0 | 0 |
| Duval | 12 | 0 | 0 | 0 | 0 |
| Flagler | 1 | 0 | 0 | 0 | 0 |
| Lee | 4 | 0 | 0 | 0 | 0 |
| Martin | 1 | 0 | 0 | 0 | 0 |
| Pinellas | 1 | 0 | 0 | 1 | 0 |
| Seminole | 1 | 0 | 0 | 0 | 0 |

Maps





**Florida Arbovirus Surveillance
January 1-August 5, 2017**

- Confirmed Equine EEE (Total = 1)
- Confirmed Deer EEE (Total = 1)
- ◆ Confirmed Eagle WNV (Total = 1)
- ▲ Sentinel chickens tested positive for antibodies to SLEV (Total = 6)
- ▲ Sentinel chickens tested positive for antibodies to EEEV (Total = 16)
- ▲ Sentinel chickens tested positive for antibodies to WNV (Total = 14)
- ◇ Confirmed Mosquito Pool WNV (Total = 1)
- Counties under public health emergency due to imported Zika infections
- ▨ Confirmed Locally Acquired Zika Infection

| 2017 Arbovirus Activity by County | |
|-----------------------------------|--|
| County | Arbovirus Activity |
| Alachua | SLEV: 1 sentinel (5/30) |
| Bay | WNV: 1 mosquito pool (7/26) |
| Franklin | EEEV: 1 horse (7/17) |
| Hernando | EEEV: 1 sentinel (5/22) |
| Hillsborough | WNV: 2 sentinel (1/24, 7/26) SLEV: 1 sentinel (6/28) |
| Leon | EEEV: 1 sentinel (7/17) |
| Manatee | WNV: 4 sentinels (6/27, 7/5, 7/11, 7/18) |
| Nassau | EEEV: 1 sentinel (7/20) |
| Palm Beach | SLEV: 1 sentinel (7/10) |
| Sarasota | WNV: 1 eagle (June), 2 sentinels (1/23) SLEV: 1 sentinel (1/20) |
| St. Johns | SLEV: 1 sentinel (6/26) |
| Wakulla | EEEV: 1 deer (7/24) |
| Walton | WNV: 6 sentinels (3/7, 3/14, 3/20, 4/13, 6/5, 7/10) EEEV: 13 sentinels (4/24, 6/5, 6/19, 6/26, 7/10, 7/17, 7/24) SLEV: 1 sentinel (6/21) |

Acknowledgements and Data Sources

Contributors: Andrea Bingham, PhD, MSPH, Dana Giandomenico, MPH, and Danielle Stanek, DVM, DOH Bureau of Epidemiology; Lea Heberlein-Larson, Maribel Castaneda, and Valerie Mock, DOH Bureau of Public Health Laboratories; Carina Blackmore, DVM, PhD, DOH Division of Disease Control and Health Protection.

For more surveillance information, please see the DOH website at: <http://www.floridahealth.gov/diseases-and-conditions/mosquito-borne-diseases/surveillance.html>

For arbovirus surveillance information for the United States, please see the Centers for Disease Control and Prevention website at: <http://www.cdc.gov/ncidod/dvbid/westnile/surv&control.htm>

Case tallies included in the weekly Florida arbovirus surveillance report include confirmed and probable cases for EEE, WNV infection, SLE, dengue, chikungunya, and malaria by date of onset. Suspect cases are not included. Activity is mapped by county of exposure rather than county of residence. Case definitions being used in Florida are consistent with national criteria provided by the Council of State and Territorial Epidemiologists (CSTE) and may be viewed at: <http://www.floridahealth.gov/diseases-and-conditions/disease-reporting-and-management/disease-reporting-and-surveillance/index.html>. Case tallies reported by CDC do not include suspect cases and cases are reported by patient state of residence rather than where the exposure occurred. Data is provided by county health departments, Department of Health Bureau of Public Health Laboratories, Department of Agriculture and Consumer Services, mosquito control agencies, Florida Fish and Wildlife Conservation Commission, medical providers and veterinarians. Equine cases are provided by the Department of Agriculture and Consumer Services.