# Florida Arbovirus Surveillance
## Week 22: May 28-June 3, 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 May 28-June 3, 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. No sentinel chickens tested positive for antibodies to WNV this week. In 2017, positive samples from seven sentinel chickens have been reported from three counties.

**SLEV activity:** No human cases of SLEV infection were reported this week. No sentinel chickens tested positive for antibodies to SLEV this week. In 2017, a positive sample from one sentinel chicken has been reported from one county.

**EEEV activity:** No human cases of EEEV infection were reported this week. No horses with EEEV infection were reported this week. One sentinel chicken tested positive for antibodies to EEEV this week in Hernando County. In 2017, there have been three positive samples reported from two counties.

**International Travel-Associated Dengue Fever Cases:** No cases of dengue fever were reported this week in persons that had international travel. In 2017, three 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:** Two cases of Zika fever were reported this week in persons that had international travel. In 2017, 52 cases have been reported.

**Zika Fever Cases Acquired in Florida:** No cases of Zika virus infection were reported this week. In 2017, four 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:** Three 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, Guatemala, and Nigeria. Counties reporting cases were Miami-Dade, Osceola and Palm Beach. One case was reported in a non-Florida resident. In 2017, two of the three 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** | 1 |
| **DENV-2** | 1 |
| **Total** | **2** |

**International Travel-Associated Zika Fever Cases:** In 2017, fifty-two 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, Barbados/Virgin Islands, Cayman Islands/St. Martin, Costa Rica, Cuba (5), Curacao (3), Dominican Republic (3), Ecuador (2), Guatemala (2), Haiti (13), Honduras (4), Jamaica (2), Mexico, Panama, Philippines, Puerto Rico (2), Saint Kitts and Nevis, Trinidad and Tobago, Venezuela (4), and multiple countries/regions (3). Counties reporting cases were: Broward (12), Collier (2), Flagler, Franklin, Hillsborough (3), Indian River, Marion, Miami-Dade (21), Monroe, Orange (3), Palm Beach (3), Polk, St. Johns, and Walton. Eleven cases were reported in non-Florida residents. Florida is monitoring a total of 42 pregnant women in 2017.

**Zika Virus Infections Acquired in Florida:** In 2017, four locally acquired Zika virus infection cases with exposure in 2016 and testing in 2017 have been reported by Miami-Dade County. In addition, ten 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.

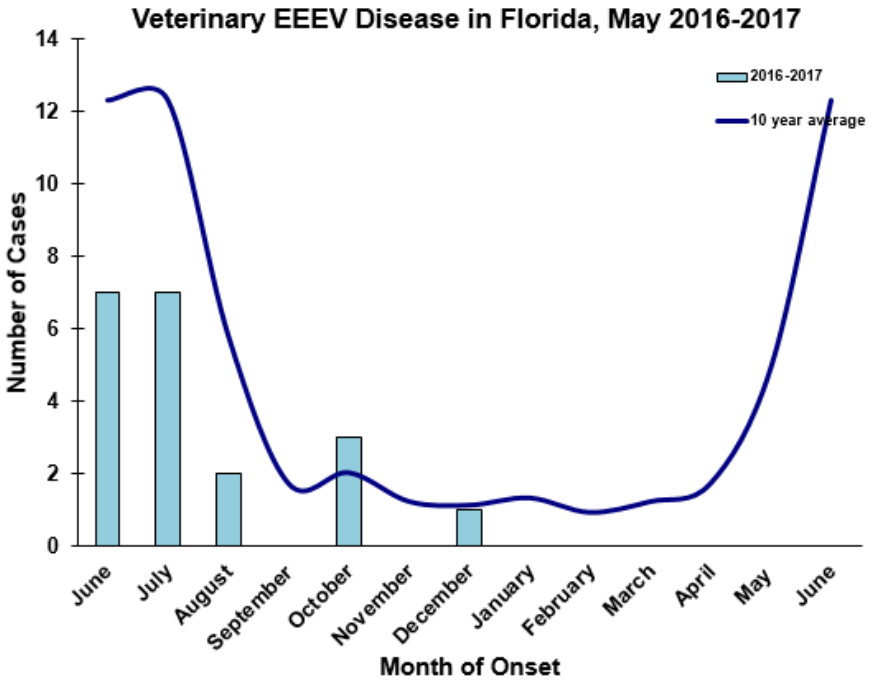
**International Travel-Associated Malaria Cases:** Seventeen cases of malaria with onset in 2017 have been reported. Countries of origin were Brazil (2), Cameroon (2), Ethiopia/Malawi, Ghana, Ghana/Liberia, Guatemala, Haiti (2), Indonesia, South Africa, Togo, Uganda (3) and Venezuela. Counties reporting cases were Alachua, Brevard, Broward, Escambia, Hillsborough, Leon (3), Miami-Dade (4), Monroe, Orange (2), Palm Beach, and Seminole. One case was reported in a non-Florida resident.

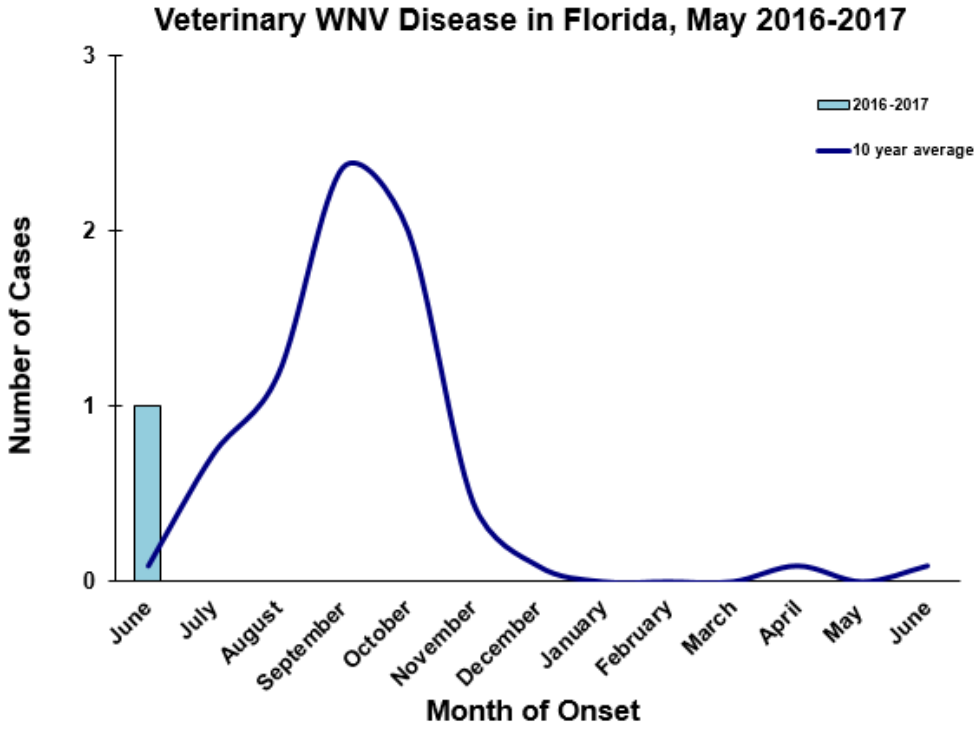
Eight cases (47%) were diagnosed with *Plasmodium falciparum*. Six cases (35%) were diagnosed with *Plasmodium vivax*. Two cases (12%) were diagnosed with *Plasmodium malariae*. One case (6%) was diagnosed with both *Plasmodium malariae* and *Plasmodium ovale*.

## Veterinary Cases*

*Veterinary cases are reported by date of onset

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



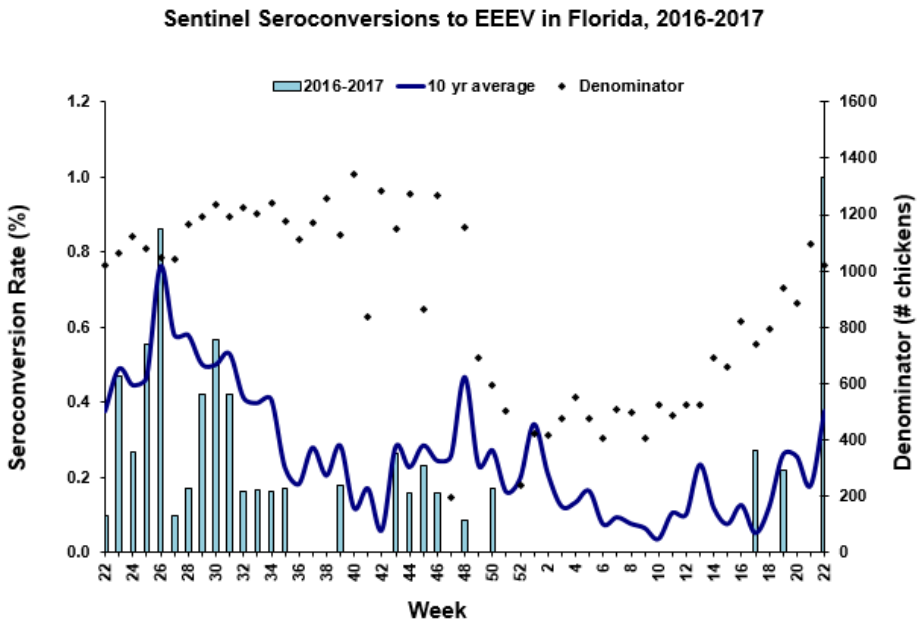



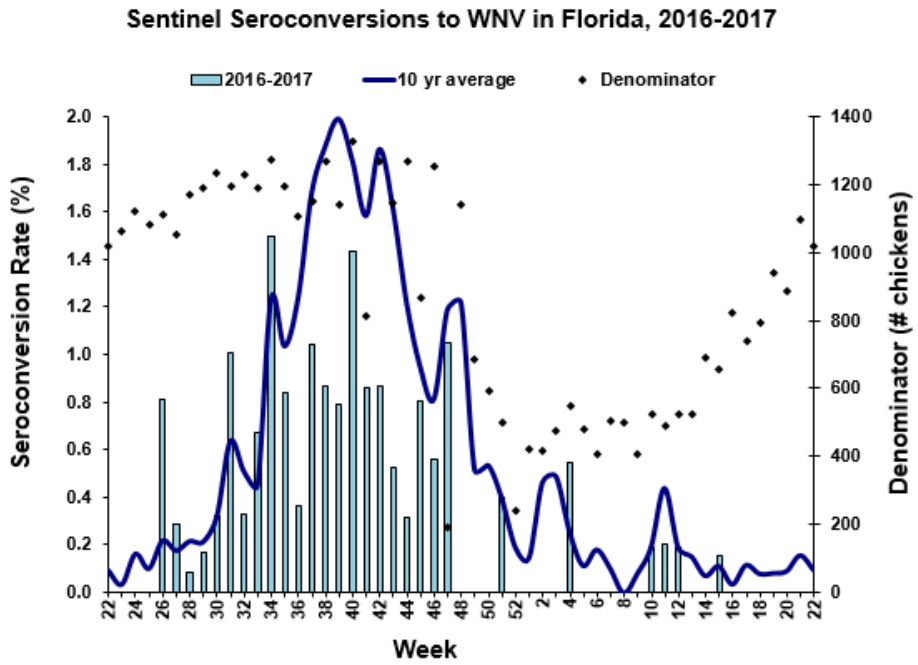
## Sentinel Chickens*

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 EEEV this week in Hernando County.

| | | Seroconversion Rates (%) | | | | | | County Totals | |
|---|---|---|---|---|---|---|---|---|---|
| County | Collection Date | Flavi | SLEV | WNV | Alpha | EEEV | HJV | Collection Week | YTD |
| Hernando | 5/22/17 | | | | 3.45 | 3.45 | | 1 EEEV | 1 EEEV |



## Mosquito Pools

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

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

## Dead Birds

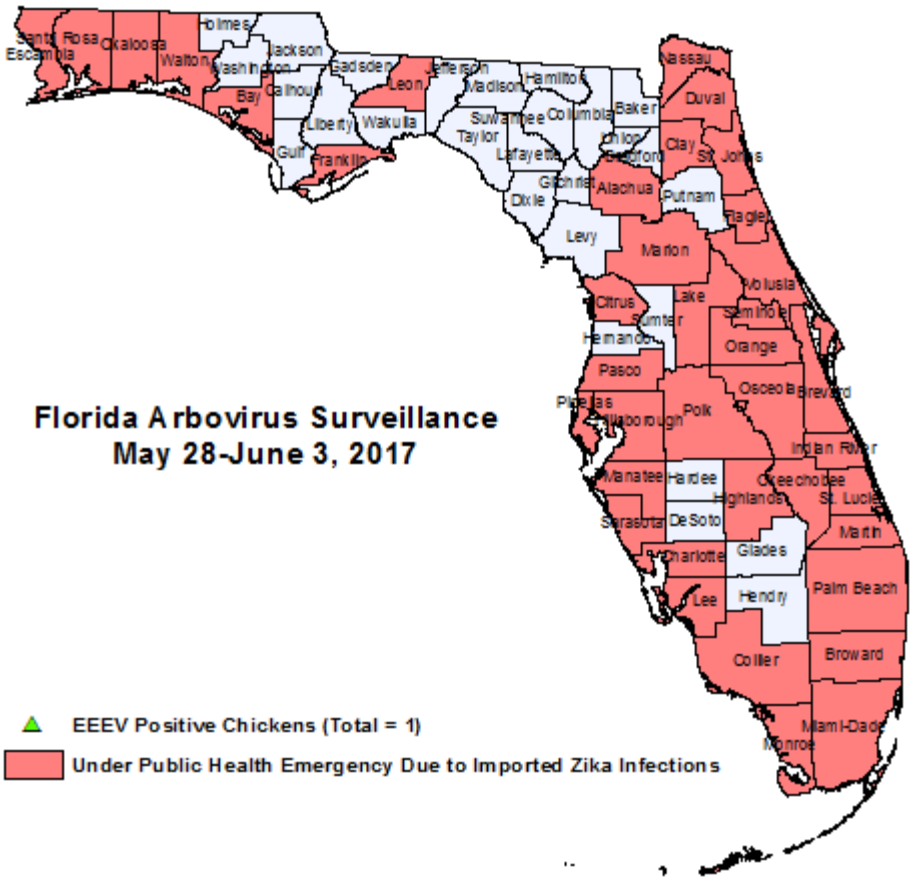
The Fish and Wildlife Conservation Commission (FWC) collects reports of dead birds, which can be an indication of arbovirus circulation in an area. This week, 12 reports representing a total of 20 dead birds, including 2 crows and 1 jay, were received from 9 counties.

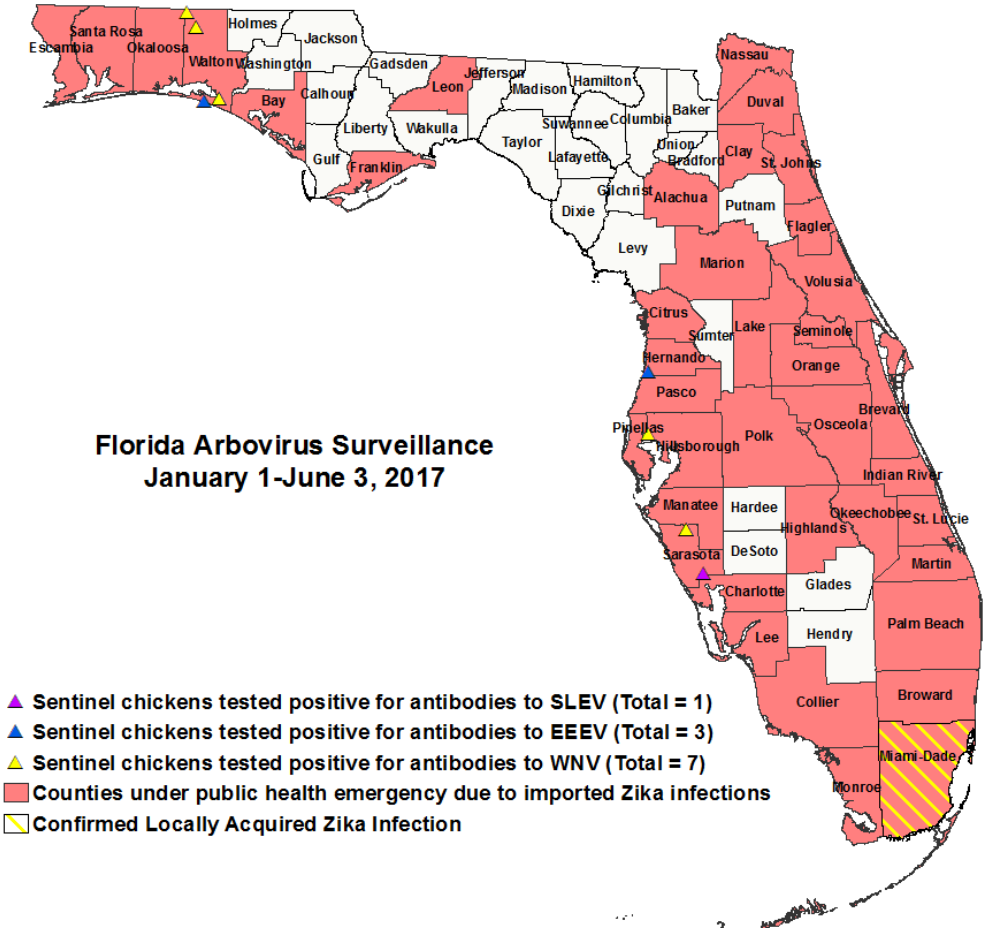
In 2017, 274 reports representing a total of 640 dead birds (22 crows, 17 jays, 53 raptors, and 3 doves) were received from 52 of Florida's 67 counties. Please note that FWC collects reports of birds that have died from a variety of causes, not only arboviruses. Dead birds should be reported to www.myfwc.com/bird/.

**2017**

| County | Total Dead Birds | Crows | Jays | Raptors | Dove |
|---|---|---|---|---|---|
| Bay | 1 | 0 | 0 | 0 | 0 |
| Duval | 1 | 0 | 0 | 0 | 0 |
| Flagler | 1 | 0 | 0 | 0 | 0 |
| Marion | 2 | 2 | 0 | 0 | 0 |
| Orange | 5 | 0 | 0 | 0 | 0 |
| Pinellas | 5 | 0 | 0 | 0 | 0 |
| Polk | 3 | 0 | 1 | 0 | 0 |
| Seminole | 1 | 0 | 0 | 0 | 0 |
| Volusia | 1 | 0 | 0 | 0 | 0 |

## Maps


Florida Arbovirus Surveillance
May 28-June 3, 2017
EEEV Positive Chickens (Total = 1)
Under Public Health Emergency Due to Imported Zika Infections
Santa Rosa
Escambia
Okaloosa
Walton
Holmes
Jackson
Washington
Bay
Calhoun
Gadsden
Leon
Jefferson
Madison
Hamilton
Liberty
Wakulla
Gulf
Franklin
Suwannee
Taylor
Columbia
Lafayette
Baker
Nassau
Duval
Clay
St. Johns
Gilchrist
Alachua
Putnam
Dixie
Levy
Flagler
Marion
Volusia
Citrus
Lake
Sumter
Seminole
Hernando
Orange
Pasco
Osceola
Brevard
Pinellas
Polk
Hillsborough
Indian River
Manatee
Hardee
Okeechobee
Highlands
St. Lucie
Sarasota
DeSoto
Martin
Charlotte
Glades
Lee
Hendry
Palm Beach
Collier
Broward
Miami-Dade
Monroe


Florida Arbovirus Surveillance
January 1-June 3, 2017
Sentinel chickens tested positive for antibodies to SLEV (Total = 1)
Sentinel chickens tested positive for antibodies to EEEV (Total = 3)
Sentinel chickens tested positive for antibodies to WNV (Total = 7)
Counties under public health emergency due to imported Zika infections
Confirmed Locally Acquired Zika Infection
Santa Rosa
Escambia
Okaloosa
Walton
Holmes
Jackson
Washington
Bay
Calhoun
Gadsden
Leon
Jefferson
Madison
Hamilton
Liberty
Wakulla
Gulf
Franklin
Suwannee
Taylor
Columbia
Lafayette
Baker
Nassau
Duval
Union
Bradford
Clay
St. Johns
Gilchrist
Alachua
Putnam
Dixie
Levy
Flagler
Marion
Volusia
Citrus
Lake
Sumter
Seminole
Hernando
Orange
Pasco
Brevard
Pinellas
Polk
Osceola
Hillsborough
Indian River
Manatee
Hardee
Okeechobee
Highlands
St. Lucie
Sarasota
DeSoto
Martin
Charlotte
Glades
Lee
Hendry
Palm Beach
Collier
Broward
Miami-Dade
Monroe

| 2017 Arbovirus Activity by County | |
|---|---|
| **County** | **Arbovirus Activity** |
| **Hernando** | EEEV: 1 sentinel (5/22) |
| **Hillsborough** | WNV: 1 sentinel (1/24) |
| **Sarasota** | WNV: 2 sentinels (1/23)<br>SLEV: 1 sentinel (1/20) |
| **Walton** | WNV: 4 sentinels (3/7, 3/14, 3/20, 4/13)<br>EEEV: 2 sentinels (4/24) |

## Acknowledgements and Data Sources

Contributors: Andrea Bingham, PhD, MSPH, Dana Giandomenico, MPH, and Danielle Stanek, DVM, DOH Bureau of Epidemiology; Lea Heberlein-Larson, Lylah Seaton, 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.