



## Florida Arbovirus Surveillance Week 12: March 19-25, 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 March 19-25, 2017 the following arboviral activity was recorded in Florida.

[This report contains information for all arboviruses in 2017 and Zika virus only for 2016.](#)

**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 three sentinel chickens have been reported from two 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. No sentinel chickens tested positive for antibodies to EEEV this week. In 2017, there have been no positive samples reported.

**International Travel-Associated Dengue Fever Cases:** No cases of dengue fever were reported this week in persons that had international travel. In 2017, no 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, no travel-associated cases have 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:** Four cases of Zika fever were reported this week in persons that had international travel. In 2017, 27 cases have been reported. In 2016, 1099 travel-associated cases were reported.

**Zika Fever Cases Acquired in Florida:** In 2017, two cases of locally acquired Zika fever have been reported. In 2016, 284 local cases were reported.

**Advisories/Alerts:** No counties are currently under mosquito-borne illness advisory or alert. Thirty-nine 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, 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. However, isolated local Zika cases continue to be identified in Miami-Dade County. CDC currently designates Miami-Dade County as a cautionary area and recommends that pregnant women should consider postponing travel to the county. 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 Zika Fever Cases:** In 2017, twenty-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, Barbados/Virgin Islands, Cayman Islands/St. Martin, Costa Rica, Cuba (4), Curacao (3), Dominican Republic, Ecuador, Guatemala (2), Haiti (4), Jamaica, Mexico, Panama, Puerto Rico (2), Venezuela, and multiple countries/regions (2). Counties reporting cases were: Broward (10), Collier, Flagler, Hillsborough (2), Miami-Dade (8), Monroe, Palm Beach (2), St. Johns, and Walton. Four cases were reported in non-Florida residents. Florida is monitoring a total of 15 pregnant women in 2017.

In 2016, one thousand ninety-nine 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: Anguilla, Antigua and Barbuda (3), Aruba/Curacao, Bahamas (11), Bahamas/Nicaragua, Bahamas/Virgin Islands (2), Barbados (8), Barbados/Dominica (2), Belize (2), Bolivia (4), Bonaire, Brazil (9), Brazil/Bolivia/Peru, Brazil/Caribbean, Brazil/Haiti, Cameroon, Cape Verde, Caribbean (4), Cayman Islands, Central America, Colombia (43), Costa Rica (4), Costa Rica/Nicaragua, Costa Rica/Panama, Cuba (12), Curacao (2), Curacao/Guyana, Dominica, Dominican Republic (145), Dominican Republic/Puerto Rico (3), Dominican Republic/Venezuela, Ecuador (2), El Salvador (8), Grenada (4), Guadeloupe (3), Guatemala (18), Guyana (6), Haiti (97), Haiti/Virgin Islands, Honduras (37), Honduras/Guatemala, Honduras/Mexico, Jamaica (121), Jamaica/Colombia/Paraguay, Jamaica/Panama, Martinique (3), Mexico (32), Mexico/Caribbean, Mexico/Panama, Mexico/Trinidad and Tobago, Nicaragua (119), Nicaragua/Costa Rica, Panama, Puerto Rico (219), St. Barthelemy (2), St. Barthelemy/St. Martin (2), St. Eustatius (4), St. Lucia, St. Martin (3), Suriname, Trinidad and Tobago (29), Venezuela (77), Virgin Islands (25) and multiple countries/regions (3). Counties reporting cases were: Alachua (11), Bay (4), Brevard (16), Broward (179), Charlotte (2), Citrus (2), Clay (6), Collier (27), Duval (11), Escambia (4), Flagler (2), Hernando (4), Highlands, Hillsborough (44), Indian River, Lake (4), Lee (15), Leon (2), Manatee (5), Marion (4), Martin (4), Miami-Dade (346), Monroe (10), Nassau, Okaloosa (4), Okeechobee, Orange (163), Osceola (38), Palm Beach (63), Pasco (9), Pinellas (25), Polk (31), St. Johns (4), St. Lucie (11), Santa Rosa, Sarasota (5), Seminole (27), and Volusia (12). Seventy-eight cases were reported in non-Florida residents. One Lee County, one Pinellas County, and one Polk County case were acquired through sexual transmission. Florida is monitoring a total of 289 pregnant women in 2016, all of whom are also included in our total case counts following a change in the national case definition.

**Zika Virus Infections Acquired in Florida:** In 2017, two locally acquired Zika virus infection have been reported by Miami-Dade County. In addition, two individuals reported travel to both Florida and countries with widespread Zika virus transmission and exposure location could not definitively be determined.

In 2016, 284 locally acquired Zika virus infections have been reported by Miami-Dade (269), Broward (5), Duval (1), Palm Beach (8), and Pinellas (1) Counties. Twenty-three of these cases were reported in non-Florida residents. The Duval County case is believed to have been acquired in Miami-Dade County. Many

infections were linked to two focal areas in Miami-Dade County; 38 cases (including 2 out of state residents) were linked to the Wynwood area and 80 cases (including 13 out of state residents) were linked to the Miami Beach area. In addition, 42 individuals (including 5 out of state residents) reported travel to both Florida and countries with widespread Zika virus transmission and exposure location could not definitively be determined.

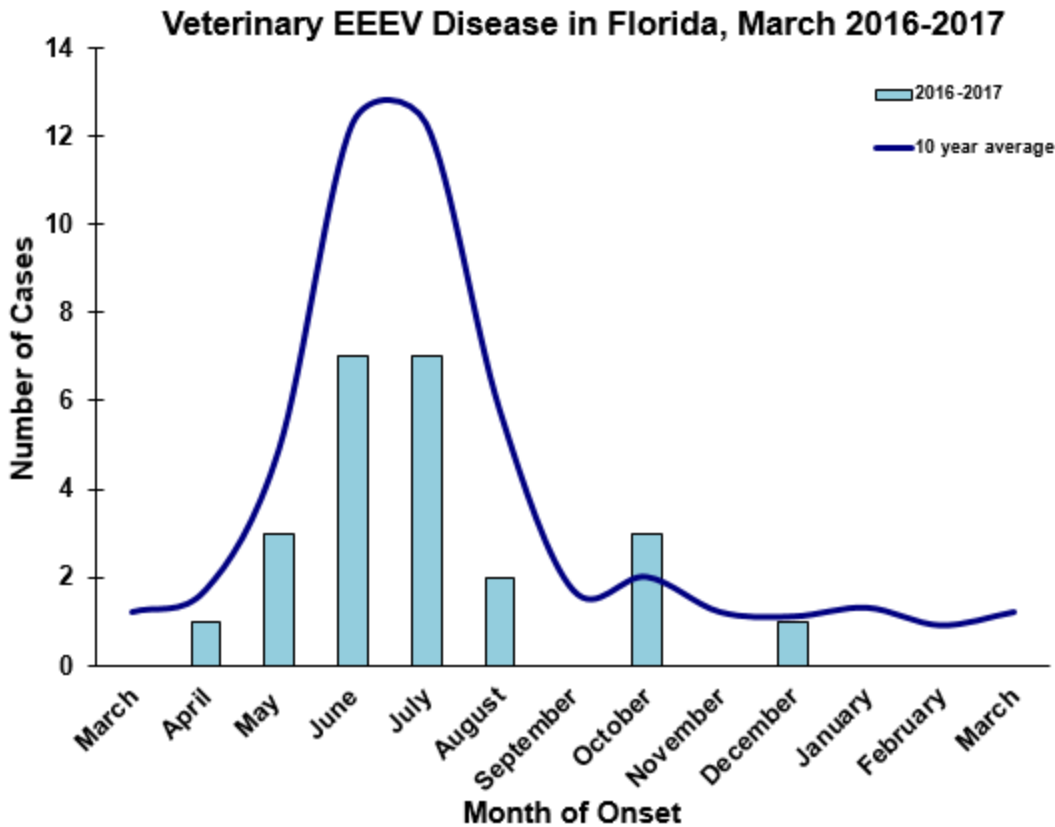
**International Travel-Associated Malaria Cases:** Nine cases of malaria with onset in 2017 have been reported. Countries of origin were Cameroon, Ethiopia/Malawi, Guatemala, Haiti (2), Indonesia, Uganda (2) and Venezuela. Counties reporting cases were Brevard, Broward, Leon (2), Miami-Dade (2), Monroe, Orange, and Palm Beach. One case was reported in a non-Florida resident.

Three cases (33%) were diagnosed with *Plasmodium falciparum*. Four cases (44%) were diagnosed with *Plasmodium vivax*. Two cases (22%) were diagnosed with *Plasmodium malariae*.

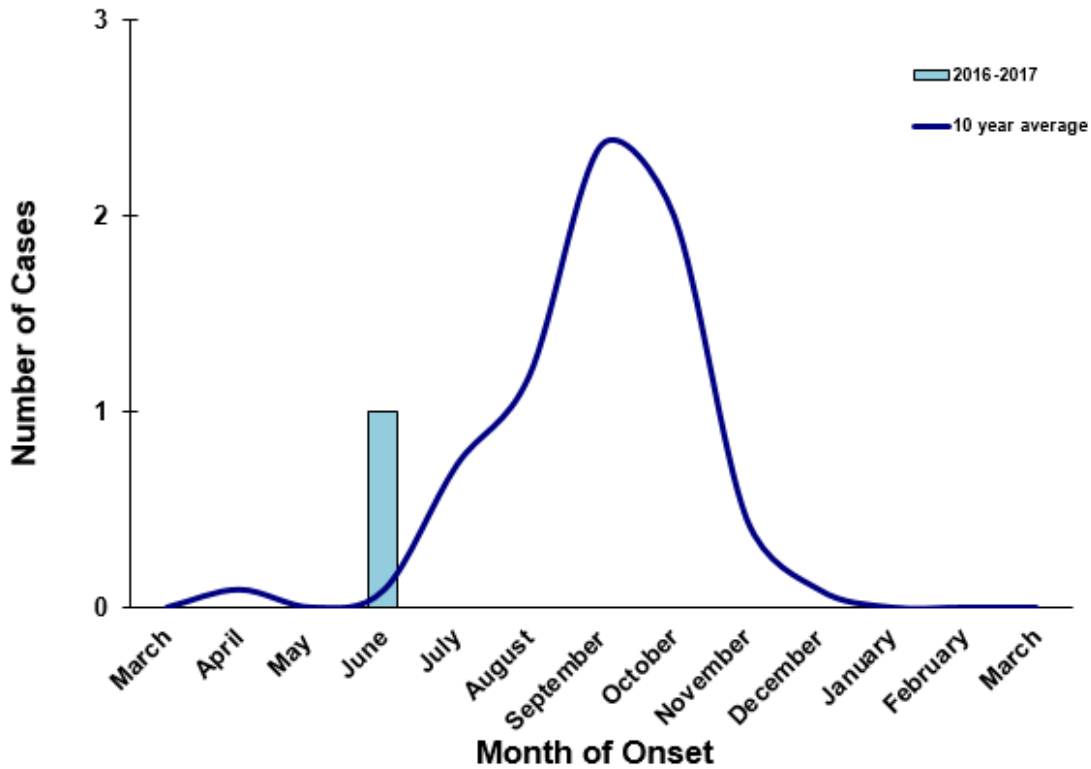
### Veterinary Cases\*

\*Veterinary cases are reported by date of onset

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



### Veterinary WNV Disease in Florida, March 2016-2017



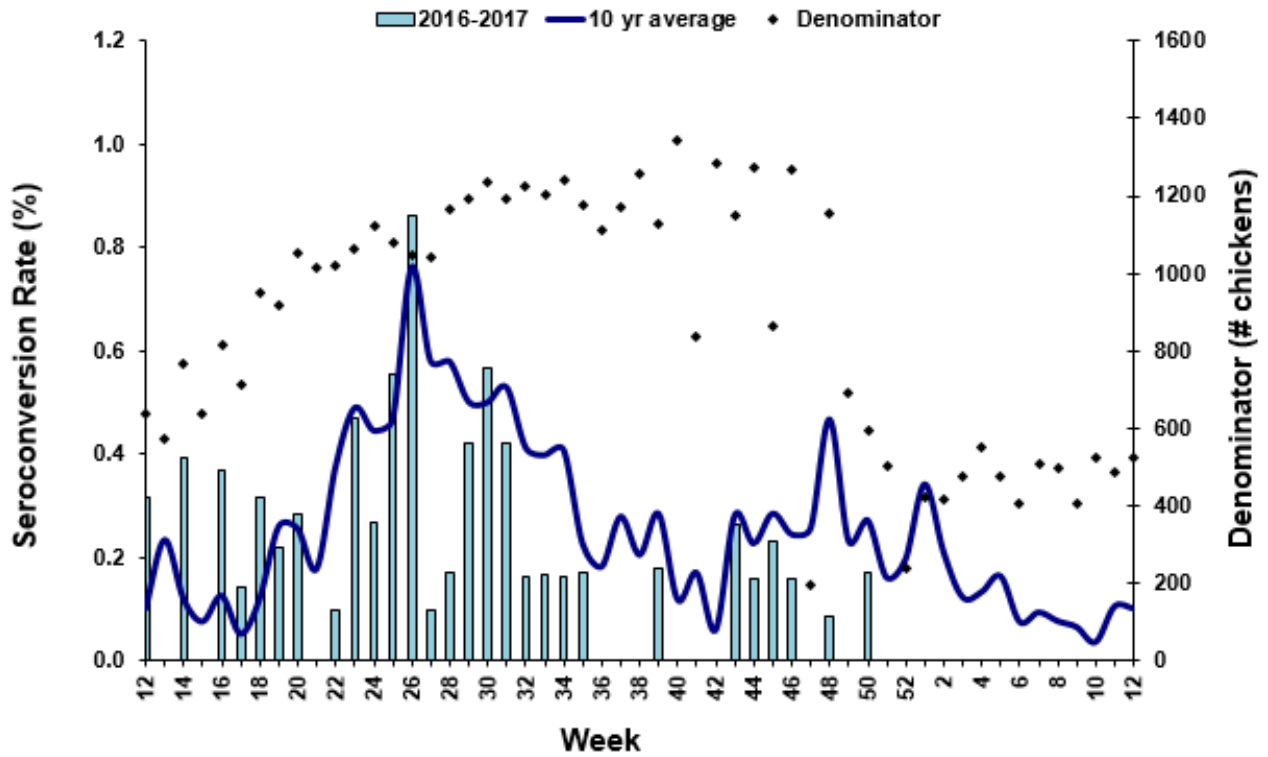
### Sentinel Chickens\*

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.

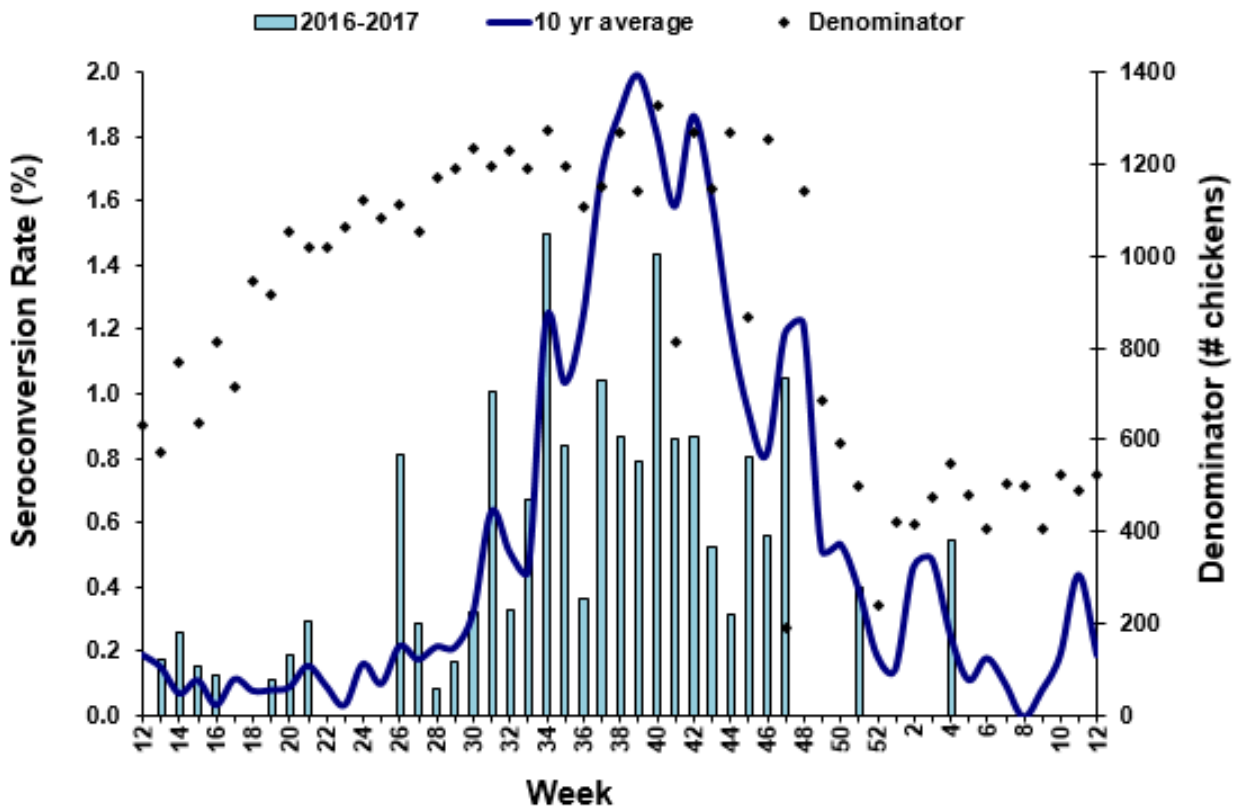
No sentinel chickens tested positive for antibodies to SLEV, WNV, EEEV, or HJV this week.

County	Collection Date	Seroconversion Rates (%)					County Totals		
		Flavi	SLEV	WNV	Alpha	EEEV	HJV	Collection Week	YTD

### 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

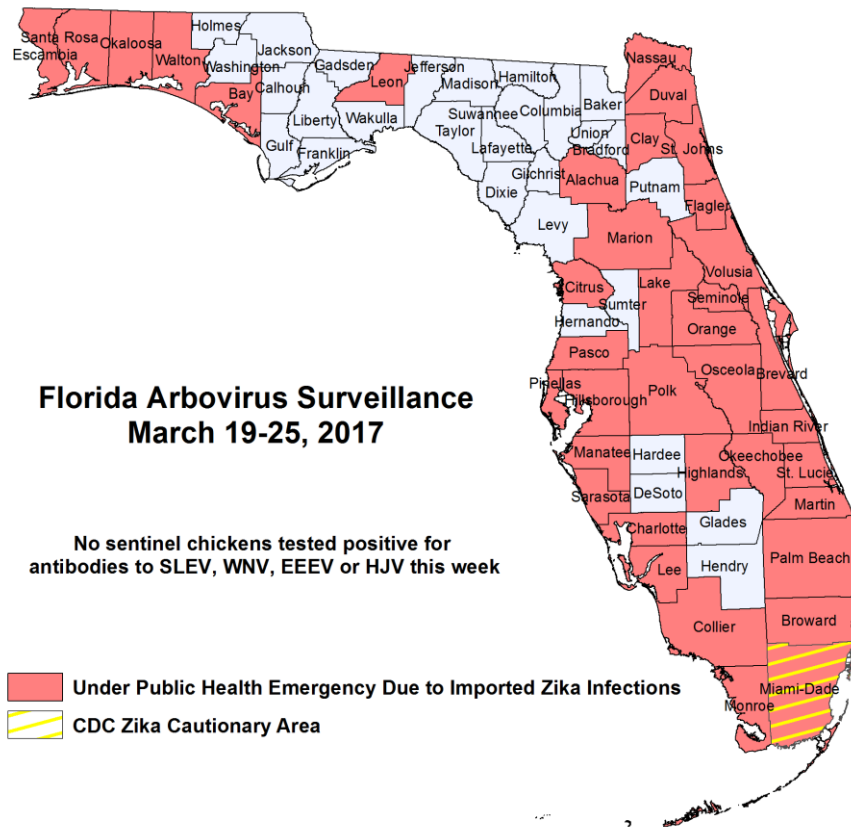
The Fish and Wildlife Conservation Commission (FWC) collects reports of dead birds, which can be an indication of arbovirus circulation in an area. This week, eight reports representing a total of 18 dead birds, including three raptors and one dove, were received from seven counties.

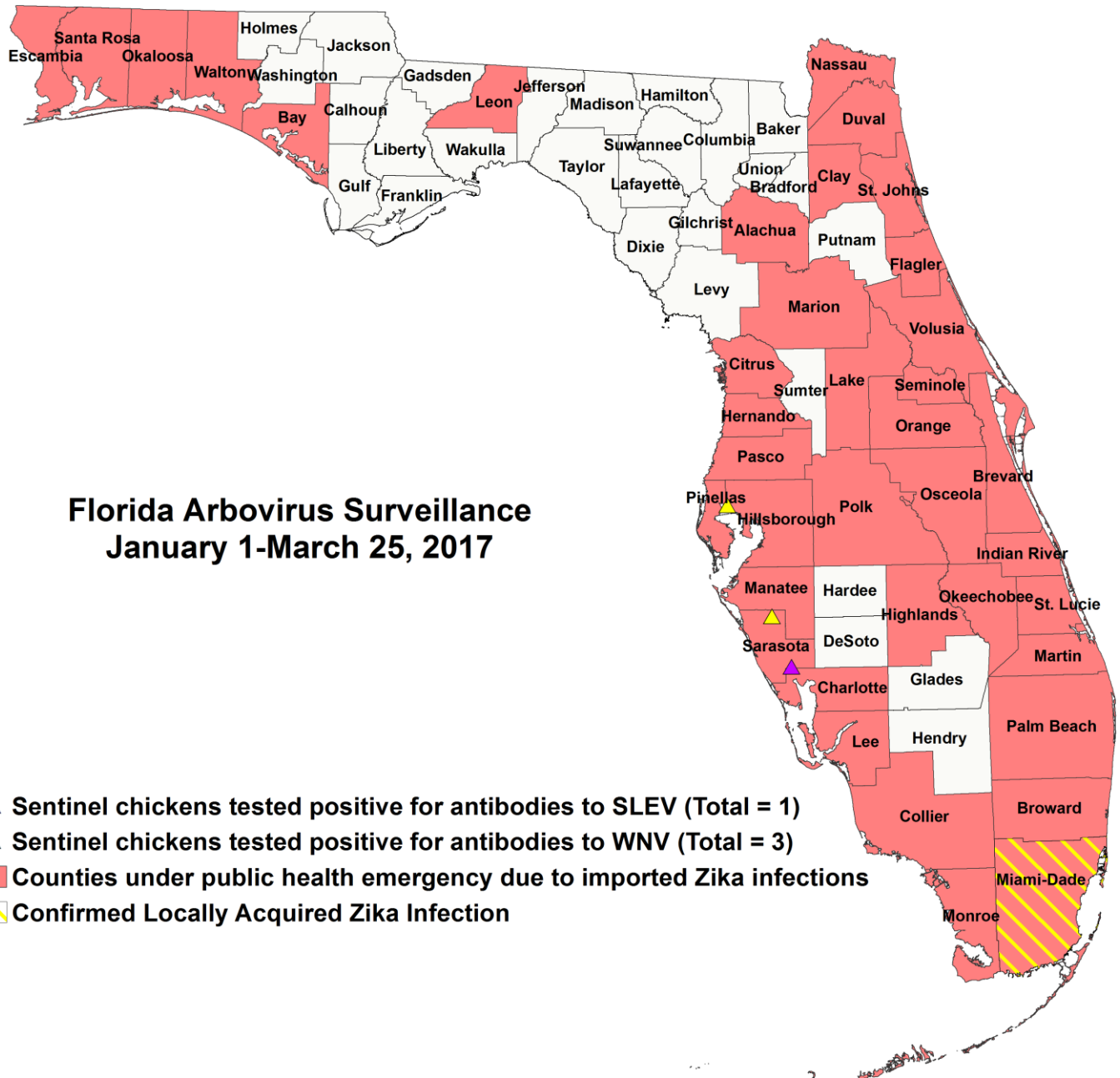
In 2017, 145 reports representing a total of 300 dead birds (6 crows, 0 jays, 27 raptors, and 2 doves) were received from 39 of Florida's 67 counties. Please note that FWC collects reports of birds that have died from a variety of causes, not only arboviruses. Dead birds should be reported to [www.myfwc.com/bird/](http://www.myfwc.com/bird/).

**2017**

County	Total Dead Birds	Crows	Jays	Raptors	Dove
Collier	1	0	0	0	1
Duval	6	0	0	0	0
Escambia	2	0	0	0	0
Holmes	5	0	0	0	0
Pinellas	1	0	0	0	0
Seminole	1	0	0	1	0
Suwannee	2	0	0	2	0

## Maps





### Florida Arbovirus Surveillance January 1-March 25, 2017

- ▲ Sentinel chickens tested positive for antibodies to SLEV (Total = 1)
- ▲ Sentinel chickens tested positive for antibodies to WNV (Total = 3)
- Counties under public health emergency due to imported Zika infections
- ▨ Confirmed Locally Acquired Zika Infection

2017 Arbovirus Activity by County	
County	Arbovirus Activity
Broward	2016 ZIKV: 5 humans (July, August, September, October)
Duval	2016 ZIKV: 1 human (acquired in Miami-Dade, September)
Hillsborough	WNV: 1 sentinel (1/24)
Miami-Dade	2016 ZIKV: 269 humans (July, August, September, October, November, December 2016); 8 mosquito pools (8/22, 8/23, 9/4, 9/9, 9/20, 9/23, 10/5) 2017 ZIKV: 2 humans (January, February-both asymptomatic)
Palm Beach	2016 ZIKV: 8 humans (July, August, September, October)
Pinellas	2016 ZIKV: 1 human (August)
Sarasota	WNV: 2 sentinels (1/23) SLEV: 1 sentinel (1/20)

## Acknowledgements and Data Sources

Contributors: Andrea Bingham, PhD, MSPH 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.