



## Florida Arbovirus Surveillance

### Week 24: June 10-16, 2018

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 June 10-16, 2018, the following arboviral activity was recorded in Florida.

**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 2018, positive samples from twenty-seven sentinel chickens have been reported from six 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 2018, there have been no positive samples reported.

**EEEV activity:** One human case of EEEV infection was reported this week in Taylor County. Four horses with EEEV infection were reported this week in Lake, Marion, Suwannee, and Taylor counties. One mosquito pool tested positive for EEEV this week in Lake County. Nineteen sentinel chickens tested positive for antibodies to EEEV this week in Alachua, Leon, Nassau, Orange, Putnam, and St. Johns counties. In 2018, positive samples from one human, twenty-seven horses, one mule, one owl, one emu, four emu flocks, two mosquito pools, and sixty-five sentinel chickens have been reported from twenty-three counties.

**International Travel-Associated Dengue Fever Cases:** No cases of dengue fever were reported this week in persons that had international travel. In 2018, 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 2018, 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 2018, 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 2018, no cases of locally acquired chikungunya fever have been reported.

**International Travel-Associated Zika Fever Cases:** No cases of Zika fever were reported this week in persons that had international travel. In 2018, 47 cases have been reported.

**Zika Fever Cases Acquired in Florida:** No cases of locally acquired Zika fever were reported this week. In 2018, no cases of locally acquired Zika fever have been reported.

**Advisories/Alerts:** Lake, Marion, Nassau, St. Johns, and Taylor counties are currently under a mosquito-borne illness advisory. Levy County is currently under a mosquito-borne illness alert. No other counties are currently under mosquito-borne illness advisory or alert.

There are no areas of ongoing, active Zika transmission in Florida. For additional information on current CDC recommendations, please visit <https://www.cdc.gov/zika/intheus/florida-update.html>. For additional information on Zika virus cases from 2016 or 2017, including up-to-date numbers, please visit <https://zikafreefl.org/>.

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 also a Level 2 Travel Health Notice for Brazil and a Level 1 Travel Health Notice in Nigeria related to the transmission of yellow fever virus. Additional information on travel health notices can be found at the following link: <http://wwwnc.cdc.gov/travel/notices>. For a map of arboviral disease activity in the United States, please visit the following link: [https://wwwn.cdc.gov/arbovet/maps/ADB\\_Diseases\\_Map/index.html](https://wwwn.cdc.gov/arbovet/maps/ADB_Diseases_Map/index.html).

**2018 Human Case Summary\***

**EEEV Infection Acquired in Florida:** One human case of Eastern equine encephalitis acquired in Florida has been reported in 2018 in Taylor County (May).

**International Travel-Associated Chikungunya Fever Cases:** One case of chikungunya fever with onset in 2018 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. County reporting the case was: Orange.

**International Travel-Associated Dengue Fever Cases:** Three cases of dengue fever with onset in 2018 have been reported in individuals with travel history to a dengue endemic country in the two weeks prior to onset. Countries of origin were: Cuba and Haiti (2). Counties reporting cases were: Broward, Lake, and Miami-Dade. In 2018, three cases of dengue reported in Florida have been serotyped by PCR. Additional serotyping and strain typing are being conducted.

	<b># of cases per serotype – 2018</b>
<b>DENV-1</b>	2
<b>DENV-2</b>	1
<b>Total</b>	<b>3</b>

**International Travel-Associated Zika Fever Cases:** In 2018, forty-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: Brazil (3), Brazil/Haiti, Brazil/Mexico, Cuba (11), Cuba/Mexico, Dominica, Guatemala, Haiti (15), Honduras (3), Jamaica, Puerto Rico, and Venezuela (8). Counties reporting cases were: Broward (3), Collier (16), Hernando, Lee, Miami-Dade (11), Orange (9), Osceola (3), Palm Beach (2), and Walton. Six cases were reported in non-Florida residents. Florida is monitoring a total of 33 pregnant women in 2018.

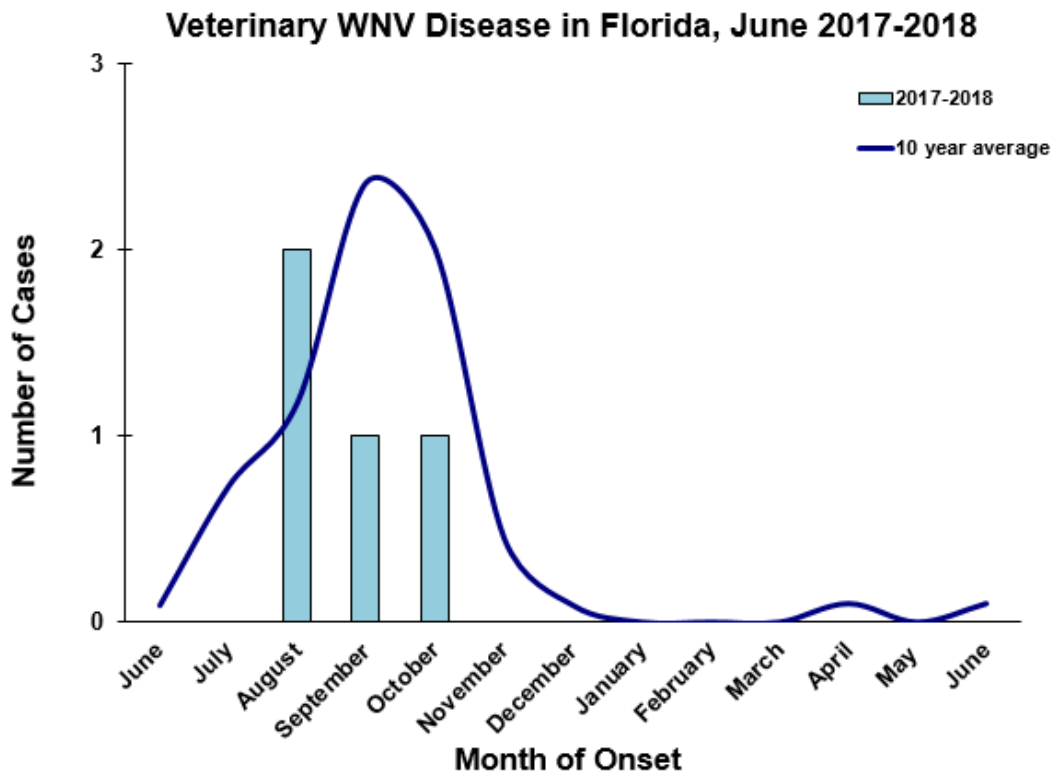
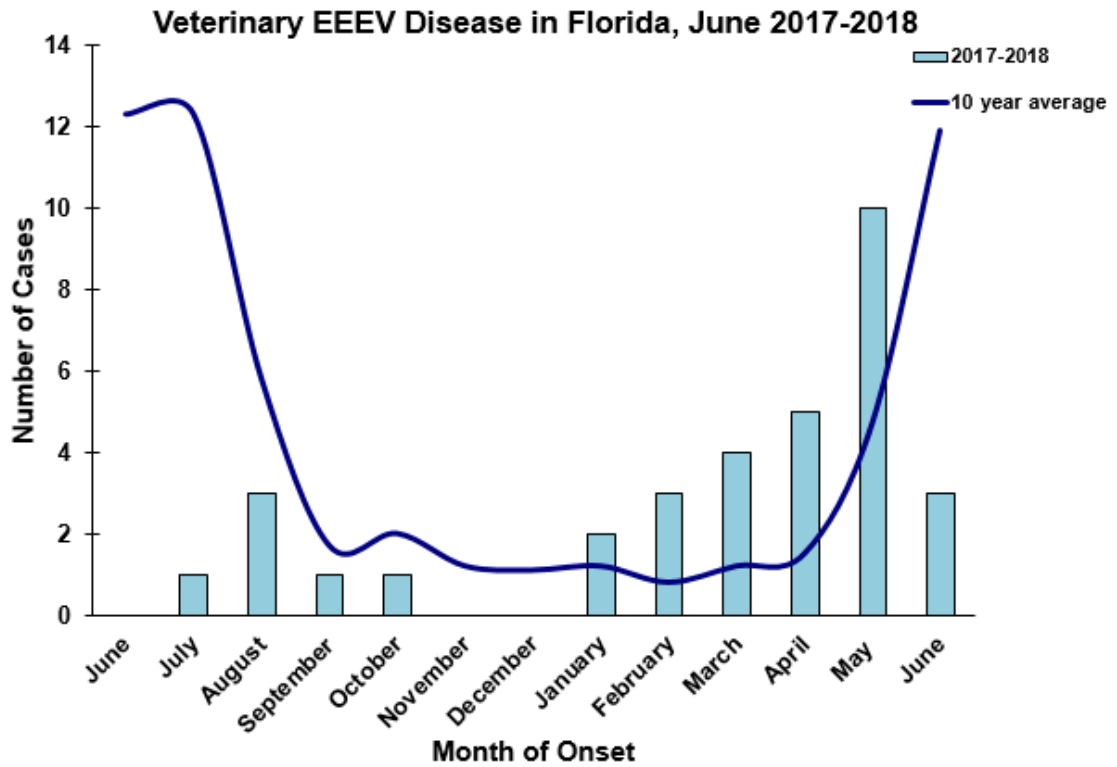
**International Travel-Associated Malaria Cases:** Twenty-six cases of malaria with onset in 2018 have been reported. Countries of origin were: Afghanistan, Angola, Brazil, Cameroon, Ghana, Haiti (2), India (3), Kenya, Nicaragua (3), Nigeria (9), Sierra Leone, and Togo (2). Counties reporting cases were: Broward (7), Duval (2), Hillsborough (3), Miami-Dade (9), Okaloosa, Orange, Palm Beach, Polk, and Seminole. Four cases were reported in non-Florida residents.

Seventeen cases (65%) were diagnosed with *Plasmodium falciparum*. Eight cases (31%) were diagnosed with *Plasmodium vivax*. One case (4%) was diagnosed with *Plasmodium ovale*.

## Veterinary Cases\*

\*Veterinary cases are reported by date of onset. Only mammalian veterinary cases are included in the graphs.

Four horses with EEEV infection were reported this week in Lake, Marion, Suwannee, and Taylor counties.



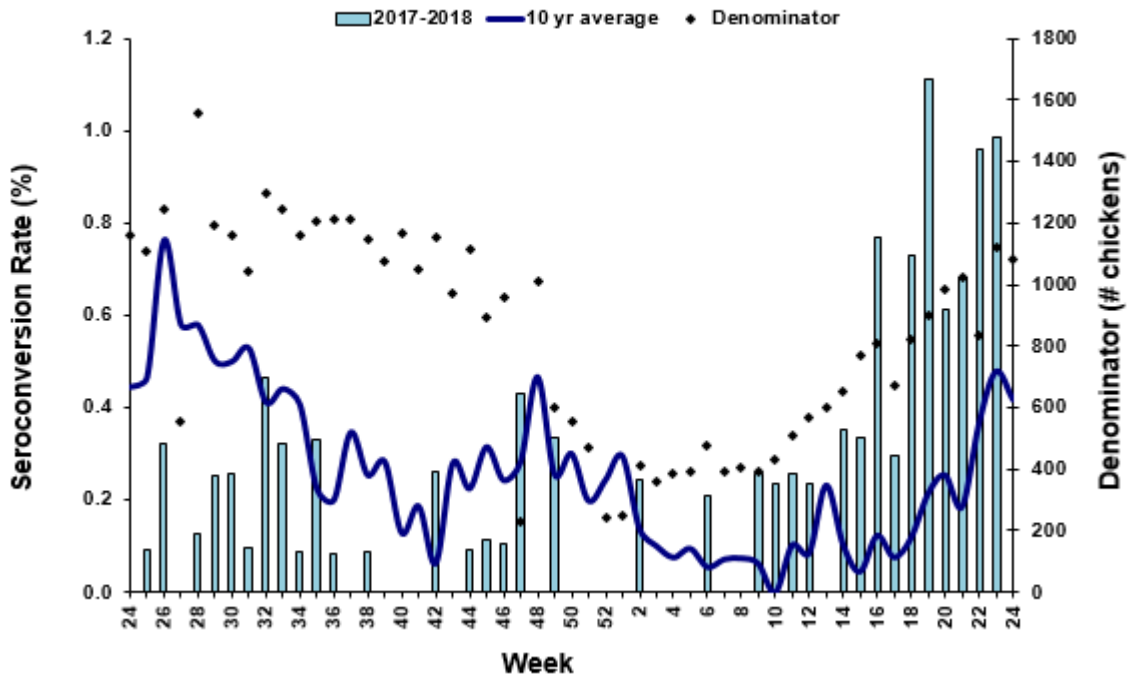
## Sentinel Chickens\*

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.

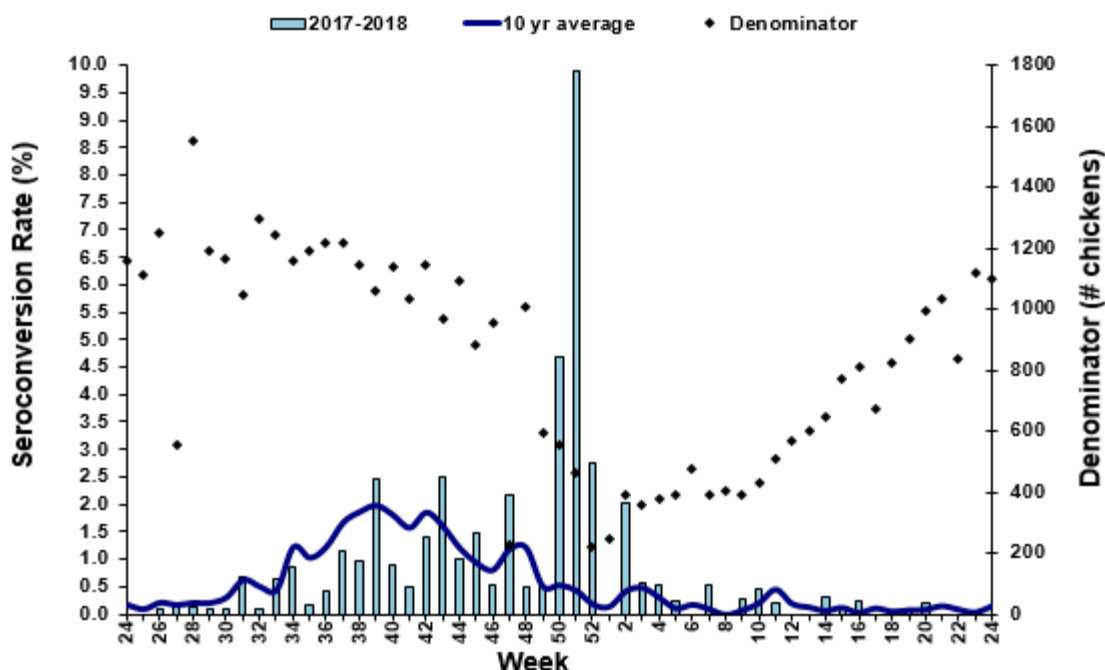
Nineteen sentinel chickens tested positive for antibodies to EEEV this week in Alachua, Leon, Nassau, Orange, Putnam, and St. Johns counties.

County	Collection Date	Seroconversion Rates (%)					County Totals	
		Flavi	SLEV	WNV	Alpha	EEEV	HJV	Collection Week
Alachua	6/5/18				3.13	3.13		5 EEEV
Leon	6/5/18				2.38	2.38		1 EEEV
Nassau	5/31/18				2.86	2.86		3 EEEV
Orange	6/5/2018				1.64	1.64		1 WNV, 3 EEEV
Putnam	5/30/18				11.11	11.11		2 EEEV
St. Johns	5/29/18				7.14	7.14		29 EEEV
	6/4/18				14.55	14.55		

**Sentinel Seroconversions to EEEV in Florida, 2017-2018**



### Sentinel Seroconversions to WNV in Florida, 2017-2018



\* Please note that a change in testing procedure starting on week 50 of 2017 resulted in an artificial spike in positive test results that cannot be directly compared with past results.

### Mosquito Pools

One mosquito pool tested positive for EEEV this week in Lake County.

County	Collection Date	Result	Species	County YTD
Lake	6/13/18	EEEV	<i>Culiseta melanura</i>	1 EEEV

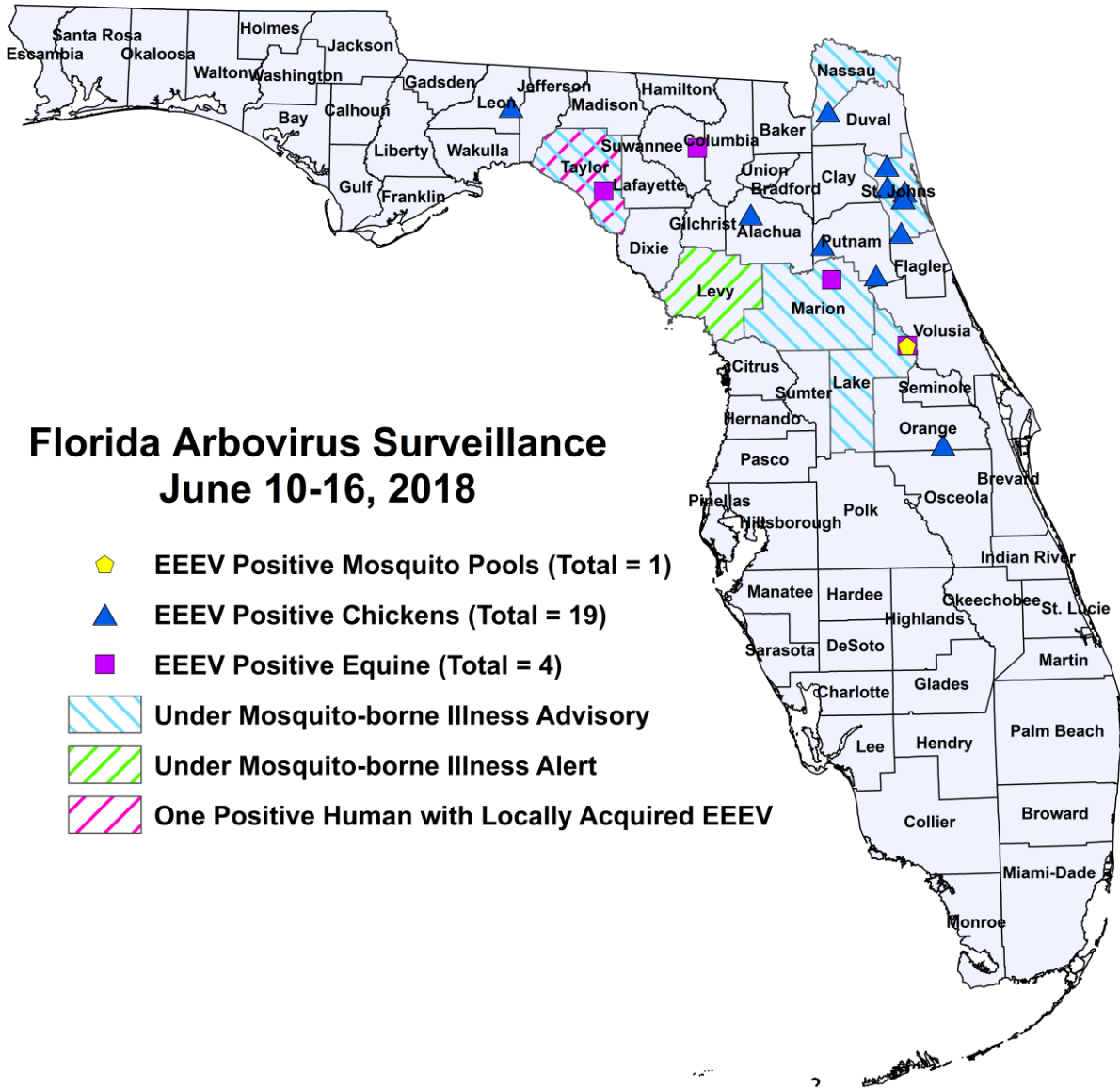
### Dead Birds

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, 10 reports representing a total of 13 dead birds, including three crows, three jays, and one raptor, were received from seven counties.

In 2018, 258 reports representing a total of 681 dead birds (14 crows, 19 jays, 53 raptors, 5 doves) were received from 41 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/).

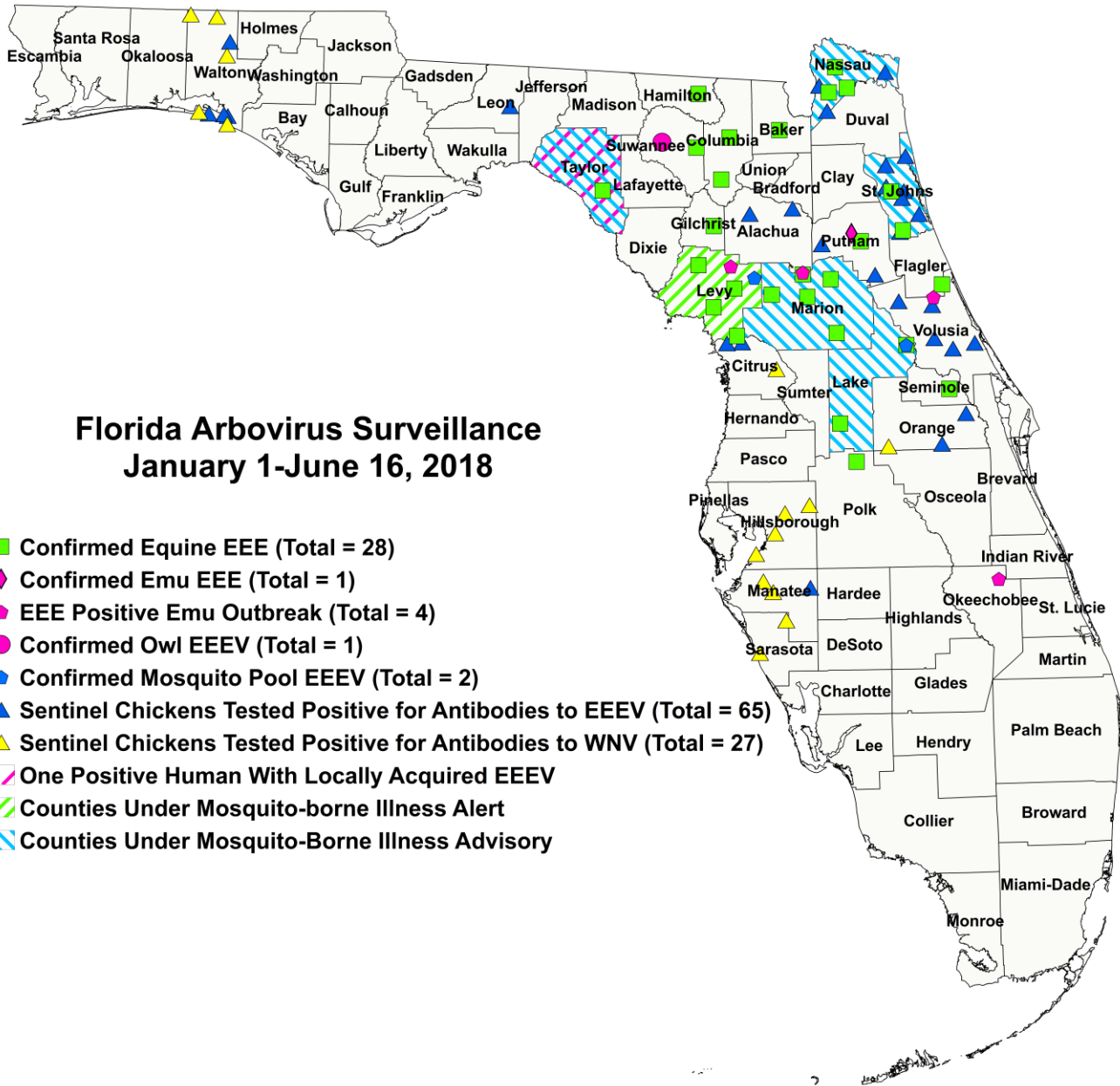
#### 2018

County	Total Dead Birds	Crows	Jays	Raptors	Dove
Duval	2	0	0	0	0
Lafayette	1	0	0	1	0
Lee	1	0	0	0	0
Nassau	2	0	2	0	0
Orange	1	0	1	0	0
Pasco	3	0	0	0	0
Volusia	3	3	0	0	0



**Florida Arbovirus Surveillance  
June 10-16, 2018**

- ◆ EEEV Positive Mosquito Pools (Total = 1)
- ▲ EEEV Positive Chickens (Total = 19)
- EEEV Positive Equine (Total = 4)
- Under Mosquito-borne Illness Advisory
- Under Mosquito-borne Illness Alert
- One Positive Human with Locally Acquired EEEV



## Florida Arbovirus Surveillance January 1-June 16, 2018

- Confirmed Equine EEE (Total = 28)
- ◆ Confirmed Emu EEE (Total = 1)
- ◆ EEE Positive Emu Outbreak (Total = 4)
- Confirmed Owl EEEV (Total = 1)
- ▲ Confirmed Mosquito Pool EEEV (Total = 2)
- ▲ Sentinel Chickens Tested Positive for Antibodies to EEEV (Total = 65)
- ▲ Sentinel Chickens Tested Positive for Antibodies to WNV (Total = 27)
- ▨ One Positive Human With Locally Acquired EEEV
- ▨ Counties Under Mosquito-borne Illness Alert
- ▨ Counties Under Mosquito-Borne Illness Advisory

2018 Arbovirus Activity by County	
County	Arbovirus Activity
Alachua	EEEV: 5 sentinels (5/15, 5/22, 6/5)
Baker	EEEV: 1 horse (3/11)
Citrus	WNV: 1 sentinel (4/17) EEEV: 3 sentinels (1/8, 4/30, 5/7)
Columbia	EEEV: 2 horses (3/5, 5/30)
Flagler	EEEV: 1 horse (3/6)
Gilchrist	EEEV: 1 horse (5/4)
Hamilton	EEEV: 1 horse (4/3)
Hillsborough	WNV: 9 sentinels (1/10, 1/16, 2/13, 3/6, 3/13, 4/3, 5/15)
Lake:	EEEV: 2 horses (5/24, 5/30), 1 mosquito pool (6/13)
Leon	EEEV: 1 sentinel (6/5)
Levy	EEEV: 3 horses (2/24, 3/5, 5/18), 1 mule (4/17), emu flock outbreak (3/2 for first emu), 1 mosquito pool (5/10)



<b>Manatee</b>	WNV: 2 sentinels (1/9, 2/13) EEEV: 1 sentinel (4/10)
<b>Marion</b>	EEEV: 5 horses (2/28, 4/23, 5/3, 5/14, 6/1), 1 emu flock outbreak (5/2 for first emu)
<b>Nassau</b>	EEEV: 4 horses (1/29, 4/30, 5/25, 6/2), 3 sentinels (5/17, 5/25, 5/31)
<b>Okeechobee</b>	EEEV: 1 emu flock outbreak (6/3 for first emu)
<b>Orange</b>	WNV: 1 sentinel (1/10) EEEV: 3 sentinels (2/27, 3/13, 6/5)
<b>Polk</b>	EEEV: 1 horse (2/27)
<b>Putnam</b>	EEEV: 1 horse (4/21), 1 emu (2/13), 2 sentinels (5/30)
<b>Sarasota</b>	WNV: 7 sentinels (1/12, 2/2, 4/2, 4/9, 4/16, 5/11, 5/18)
<b>Seminole</b>	EEEV: 1 horse (5/29)
<b>St. Johns</b>	EEEV: 2 horses (1/9, 5/25), 29 sentinels (4/16, 4/23, 4/30, 5/7, 5/14, 5/21, 5/29, 6/4)
<b>Suwannee</b>	EEEV: 1 owl (4/6), 1 horse (6/4)
<b>Taylor</b>	EEEV: 1 human (May), 1 horse (5/31)
<b>Volusia</b>	EEEV: 1 emu flock outbreak (5/9 for first emu), 10 sentinels (4/9, 4/16, 4/23, 4/30, 5/7, 5/21)
<b>Walton</b>	WNV: 7 sentinels (1/9, 1/22, 1/23, 2/26) EEEV: 8 sentinels (2/5, 3/5, 3/19, 4/2, 4/16, 4/30, 5/1)

### Acknowledgements and Data Sources

Contributors: Andrea Morrison, 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/dybid/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.