



Florida Arbovirus Surveillance

Week 23: June 3-9, 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 3-9, 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. One sentinel chicken tested positive for antibodies to WNV this week in Sarasota County. 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: No human cases of EEEV infection were reported this week. An outbreak of EEEV in a flock of emus was reported this week in Okeechobee County. Six horses with EEEV infection were reported this week in Columbia, Lake, Nassau (2), Seminole, and St. Johns counties. One sentinel chicken tested positive for antibodies to EEEV this week in Nassau County. In 2018, positive samples from twenty-three horses, one mule, one owl, one emu, four emu flocks, one mosquito pool, and forty-six sentinel chickens have been reported from twenty 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: Three 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: Marion, Nassau, and St. Johns 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.

2018 Human Case Summary*

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.

	# of cases per serotype – 2018
DENV-1	2
DENV-2	1
Total	3

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.

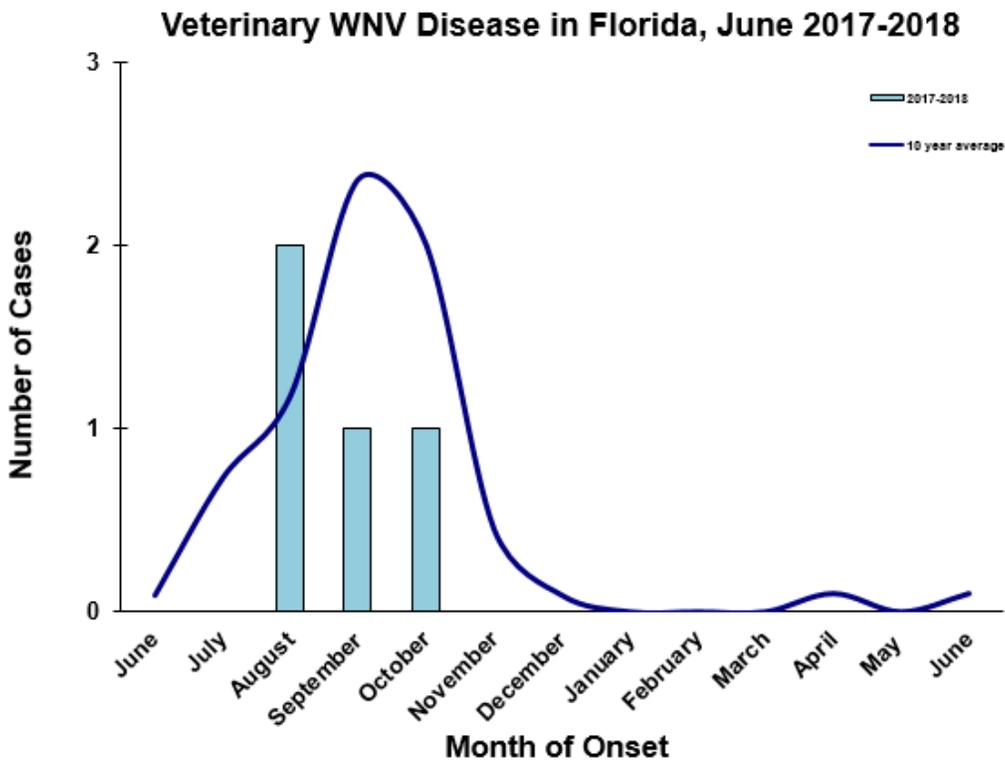
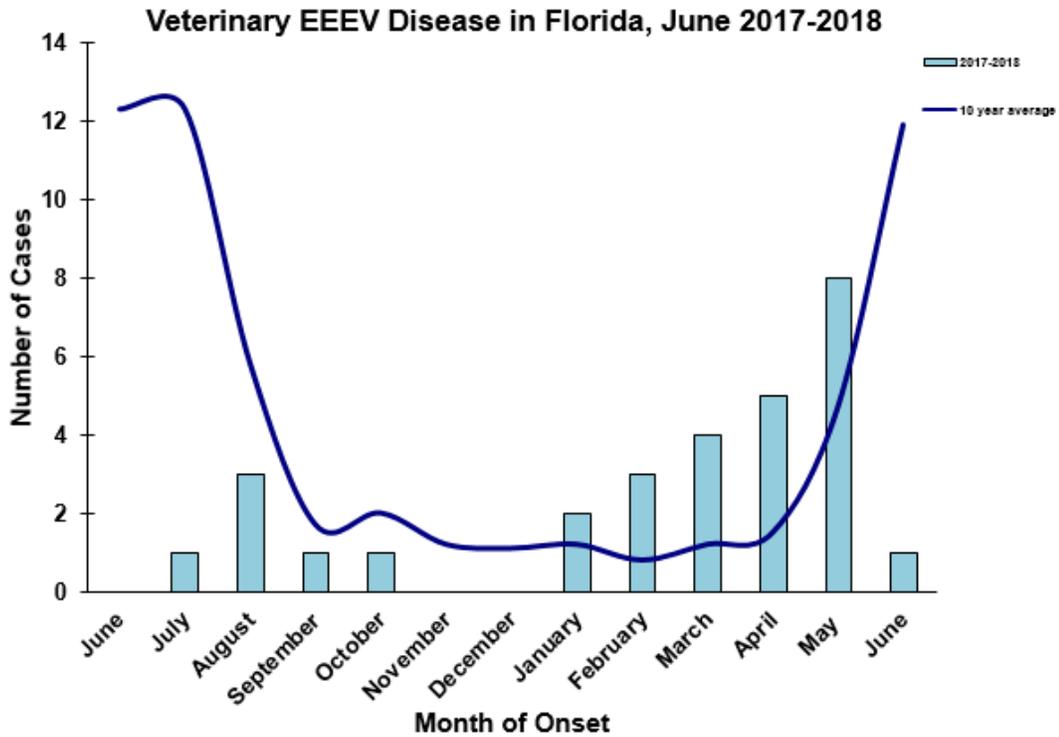
International Travel-Associated Malaria Cases: Twenty-three cases of malaria with onset in 2018 have been reported. Countries of origin were: Afghanistan, Angola, Brazil, Cameroon, Ghana, Haiti (2), India (3), Kenya, Nicaragua (3), Nigeria (6), Sierra Leone, and Togo (2). Counties reporting cases were: Broward (6), Duval, Hillsborough (2), Miami-Dade (9), Okaloosa, Orange, Palm Beach, Polk, and Seminole. Four cases were reported in non-Florida residents.

Fourteen cases (61%) were diagnosed with *Plasmodium falciparum*. Eight cases (35%) 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.

Six horses with EEEV infection were reported this week in Columbia, Lake, Nassau (2), Seminole, and St. Johns counties. An outbreak of EEEV in a flock of emus was reported this week in Okeechobee County.



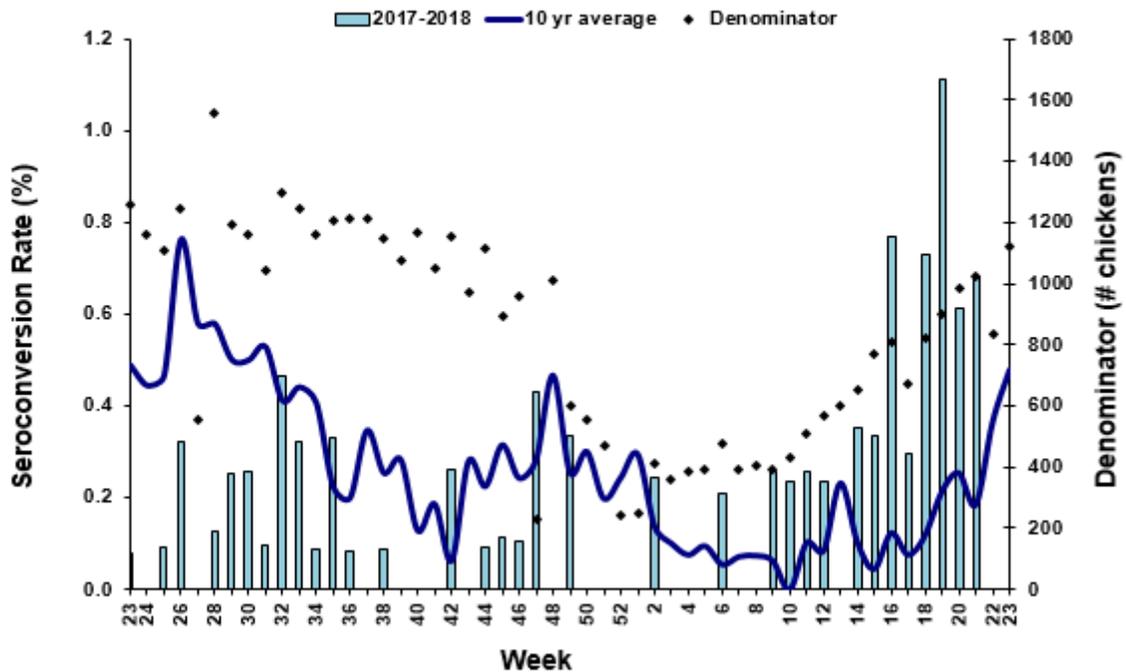
Sentinel Chickens*

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.

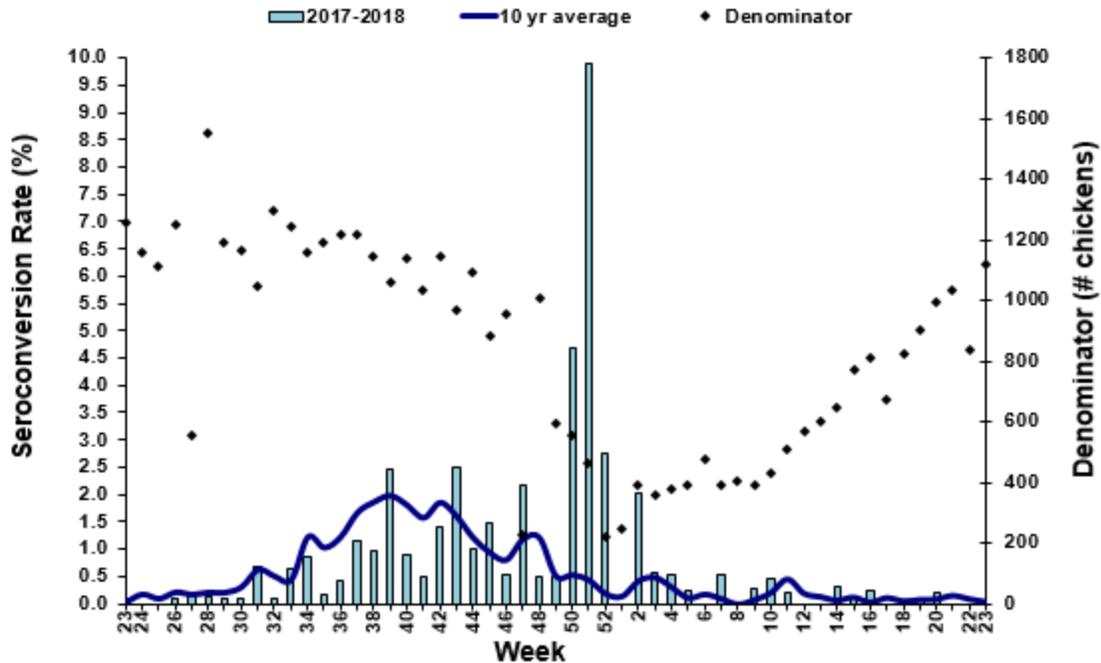
One sentinel chicken tested positive for antibodies to WNV this week in Sarasota County. One sentinel chicken tested positive for antibodies to EEEV this week in Nassau County.

County	Collection Date	Seroconversion Rates (%)					County Totals		
		Flavi	SLEV	WNV	Alpha	EEEV	HJV	Collection Week	YTD
Nassau	5/17/18				2.78	2.78		1 EEEV	2 EEEV
Sarasota	5/11/18	2.08		2.08				1 WNV	7 WNV

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

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

County	Collection Date	Result	Species	County YTD

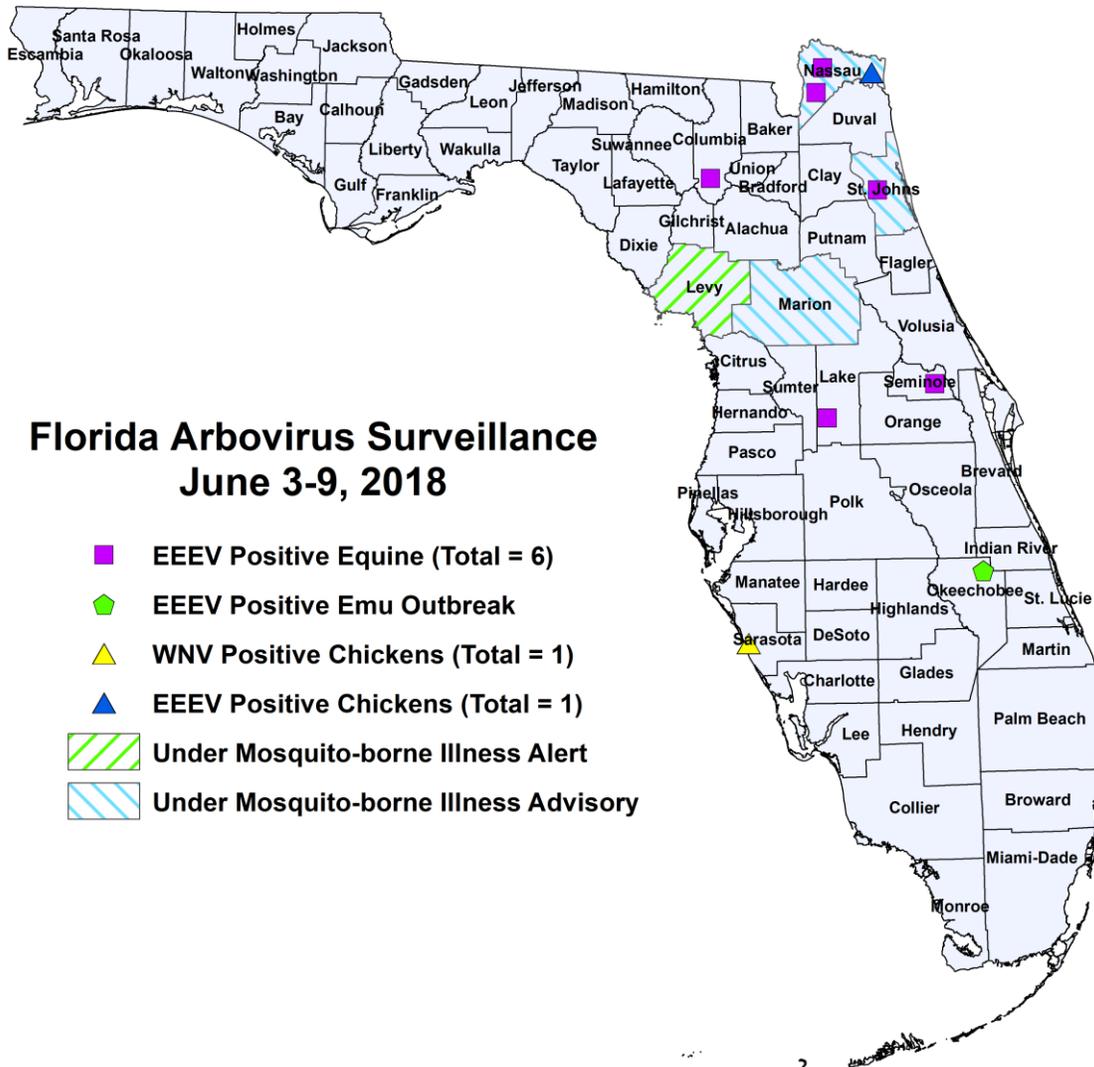
Dead Birds

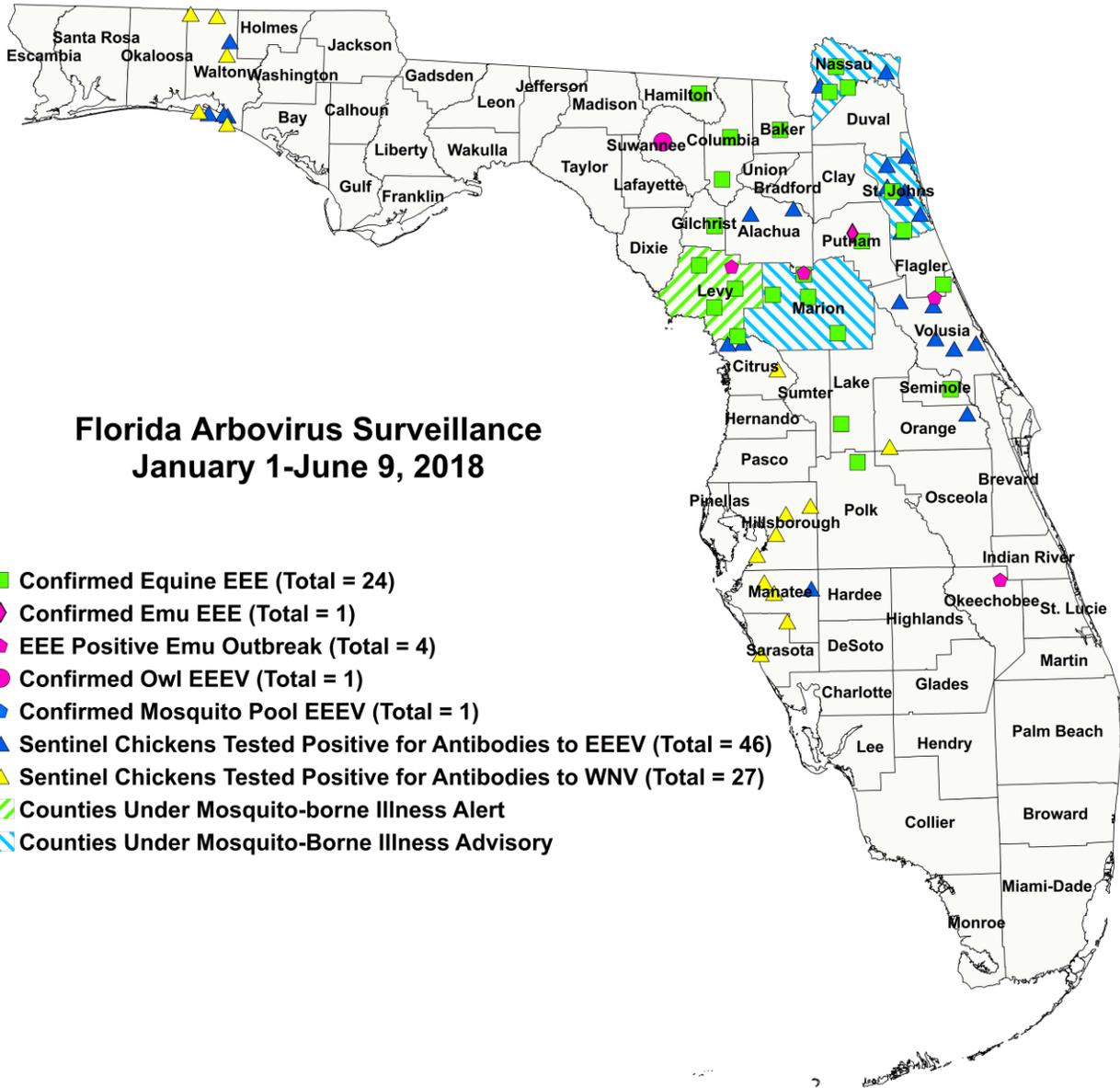
The Fish and Wildlife Conservation Commission (FWC) collects reports of dead birds, which can be an indication of arbovirus circulation in an area. This week, 12 reports representing a total of 28 dead birds, including two crows, five jays, and seven raptors, were received from ten counties.

In 2018, 248 reports representing a total of 668 dead birds (11 crows, 16 jays, 52 raptors, 5 doves) were received from 38 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/.

County	Total Dead Birds	Crows	Jays	Raptors	Dove
Bradford	1	0	0	1	0
Brevard	1	0	0	0	0
Broward	6	0	0	0	0
Duval	8	0	5	0	0
Hendry	6	2	0	4	0
Lee	2	0	0	0	0
Nassau	1	0	0	0	0
Orange	1	0	0	0	0
Palm Beach	1	0	0	1	0
Polk	1	0	0	1	0

Maps





Florida Arbovirus Surveillance January 1-June 9, 2018

- Confirmed Equine EEE (Total = 24)
- ◆ Confirmed Emu EEE (Total = 1)
- EEE Positive Emu Outbreak (Total = 4)
- Confirmed Owl EEEV (Total = 1)
- ◆ Confirmed Mosquito Pool EEEV (Total = 1)
- ▲ Sentinel Chickens Tested Positive for Antibodies to EEEV (Total = 46)
- ▲ Sentinel Chickens Tested Positive for Antibodies to WNV (Total = 27)
- ▨ Counties Under Mosquito-borne Illness Alert
- ▨ Counties Under Mosquito-Borne Illness Advisory

2018 Arbovirus Activity by County	
County	Arbovirus Activity
Alachua	EEEV: 4 sentinels (5/15, 5/22)
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: 1 horse (5/24)
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)
Manatee	WNV: 2 sentinels (1/9, 2/13) EEEV: 1 sentinel (4/10)
Marion	EEEV: 4 horses (2/28, 4/23, 5/3, 5/14), 1 emu flock outbreak (5/2 for first emu)

Nassau	EEEV: 4 horses (1/29, 4/30, 5/25, 6/2), 2 sentinels (5/17, 5/25)
Okeechobee	EEEV: 1 emu flock outbreak (6/3 for first emu)
Orange	WNV: 1 sentinel (1/10) EEEV: 2 sentinels (2/27, 3/13)
Polk	EEEV: 1 horse (2/27)
Putnam	EEEV: 1 horse (4/21), 1 emu (2/13)
Sarasota	WNV: 7 sentinels (1/12, 2/2, 4/2, 4/9, 4/16, 5/11, 5/18)
Seminole	EEEV: 1 horse (5/29)
St. Johns	EEEV: 2 horses (1/9, 5/25), 16 sentinels (4/16, 4/23, 4/30, 5/7, 5/14, 5/21)
Suwannee	EEEV: 1 owl (4/6)
Volusia	EEEV: 1 emu flock outbreak (5/9 for first emu), 10 sentinels (4/9, 4/16, 4/23, 4/30, 5/7, 5/21)
Walton	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

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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.