



Florida Arbovirus Surveillance Week 32: August 2-8, 2020

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), Zika virus (ZIKV), and California encephalitis group viruses (CEV). Malaria, a parasitic mosquito-borne disease is also included. During the period of August 2-8, 2020, the following arboviral activity was recorded in Florida.

WNV activity: Seven human cases of WNV infection were reported this week in Miami-Dade County. No horses with WNV infection were reported this week. Twenty sentinel chickens tested positive for antibodies to WNV this week in Lee, Martin, Nassau, Putnam, St. Lucie, and Walton counties. In 2020, positive samples from eight humans, 24 asymptomatic blood donors, one horse, four crows, 11 blue jays, 12 mosquito pools, and 60 sentinel chickens have been reported from 17 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 2020, no positive samples have been reported.

EEEV activity: No human cases of EEEV infection were reported this week. No horses with EEEV infection were reported this week. Three sentinel chickens tested positive for antibodies to EEEV this week in Leon and Nassau counties. In 2020, positive samples from 21 sentinel chickens, 16 horses, one duck, and one mosquito pool have been reported from 16 counties.

International Travel-Associated Dengue Fever Cases: No cases of dengue fever were reported this week in persons that had international travel. In 2020, 29 travel-associated cases have been reported.

Dengue Fever Cases Acquired in Florida: Sixteen cases of locally acquired dengue fever were reported in Monroe County this week. These were identified through retrospective case finding efforts to better characterize activity early in the outbreak (reported illness between April and early July). In 2020, 43 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 2020, no travel-associated chikungunya fever cases have been reported.

Chikungunya Fever Cases Acquired in Florida: No cases of locally acquired chikungunya fever were reported this week. In 2020, 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 2020, no travel-associated Zika fever cases have been reported.

Zika Fever Cases Acquired in Florida: No cases of locally acquired Zika fever were reported this week. In 2020, no cases of locally acquired Zika fever have been reported.

Advisories/Alerts: Bradford, Holmes, Lee, and Palm Beach counties are currently under a mosquito-borne illness advisory. Miami-Dade and Monroe counties are currently under a mosquito-borne illness alert. No other counties are currently under mosquito-borne illness advisory or alert.

A Level 1 Travel Health Notice has been issued for Central and South America, Mexico, the Caribbean, Asia, the Pacific Islands, Africa, and the Middle East related to the transmission of dengue virus, for Ethiopia related

to chikungunya virus transmission, and for Burundi related to malaria transmission. Additional information on travel health notices can be found at the following link: wwwnc.cdc.gov/travel/notices. For a map of arboviral disease activity in the United States visit: www.cdc.gov/arbovet/maps/ADB_Diseases_Map/index.html.

2020 Human Case Summary*

West Nile Virus Illnesses Acquired in Florida: Eight human cases of WNV illness acquired in Florida have been reported in 2020: seven in Miami-Dade County (June, July) and one in Palm Beach County (July). Twenty-four asymptomatic positive blood donors have been reported in 2020 from Miami-Dade County (May, June, and July).

International Travel-Associated Dengue Fever Cases: Twenty-nine cases of dengue fever with onset in 2020 have been reported in individuals with travel history to a dengue endemic area in the two weeks prior to onset. Counties reporting cases were: Brevard, Broward (5), Clay, Collier, Duval, Franklin, Hillsborough (3), Miami-Dade (11), Orange, Palm Beach, Sarasota, Seminole, and St. Lucie. Four cases were reported in non-Florida residents. In 2020, 20 cases of dengue reported in Florida have been serotyped by PCR. Please see the table below for a breakdown of cases by country of origin and serotype.

Country of Exposure	DENV-1	DENV-2	DENV-3	DENV-4	DENV-1/ DENV-3	Unknown	Total
Cuba	2	1				1	4
Jamaica			3		1		4
Bolivia	2					2	4
Colombia	2						2
Dominican Republic	2						2
Indonesia						2	2
Antigua and Barbuda			1				1
Bahamas	1						1
Brazil		1					1
Mexico						1	1
Nicaragua		1					1
Paraguay				2			2
Puerto Rico						2	2
Puerto Rico/US Virgin Islands	1						1
US Virgin Islands						1	1
Total	10	3	4	2	1	9	29

Dengue Fever Cases Acquired in Florida: In 2020, 43 cases of locally acquired dengue fever have been reported in Miami-Dade and Monroe (42) counties, with onsets in February, March, April, May, June, and July. One case was reported in a non-Florida resident.

International Travel-Associated Malaria Cases: Nine cases of malaria with onset in 2020 have been reported. Countries of origin were: Cameroon, Dominican Republic, Kenya (2), Nicaragua, Nigeria, Sierra Leone, Uganda, and Venezuela. Counties reporting cases were: Broward (3), Miami-Dade (2), Orange, Osceola, Palm Beach, and Polk. Two cases were reported in non-Florida residents.

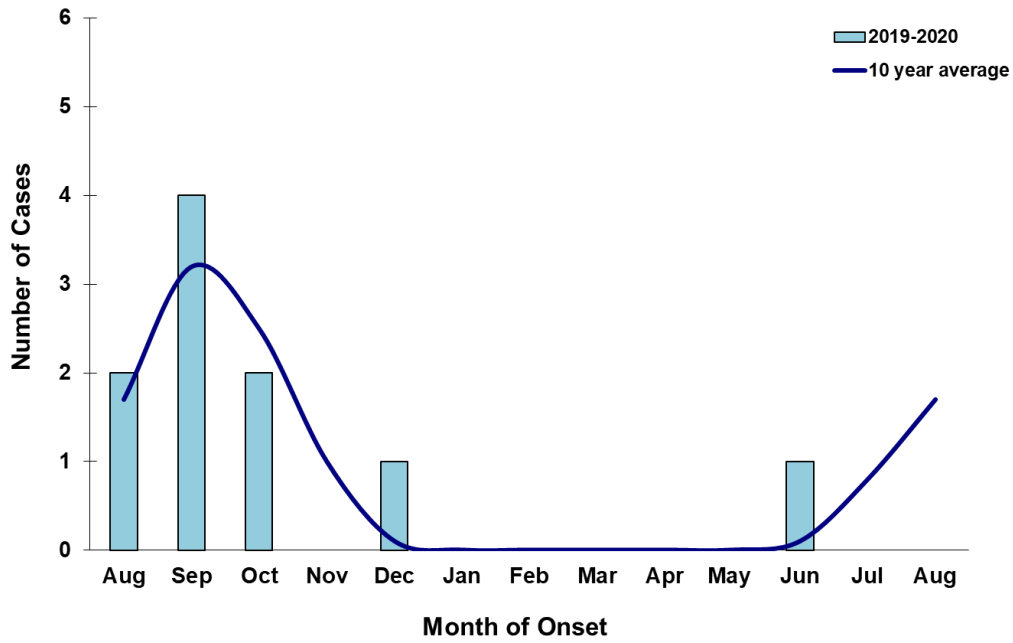
Five cases (56%) were diagnosed with *Plasmodium falciparum*. Two cases (22%) were diagnosed with *Plasmodium vivax*. One case (11%) was diagnosed with *Plasmodium ovale*. The *Plasmodium* species for one case (11%) was unknown due to low parasitemia.

Veterinary Cases*

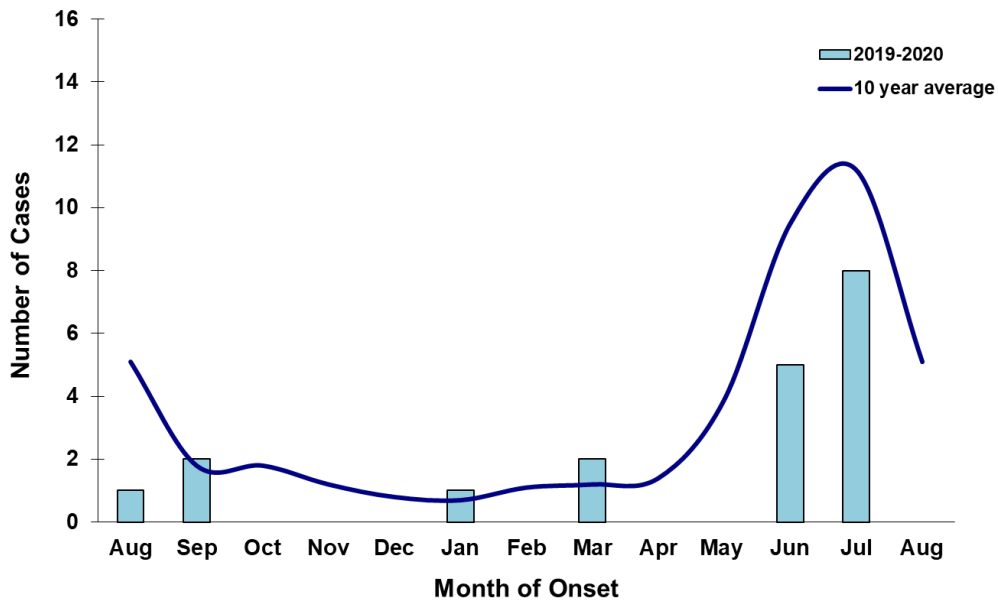
*Veterinary cases are reported by date of onset. Only mammalian veterinary cases are included in the graphs.

No veterinary cases were reported this week.

Veterinary WNV Disease in Florida, August 2019-2020



Veterinary EEEV Disease in Florida, August 2019-2020



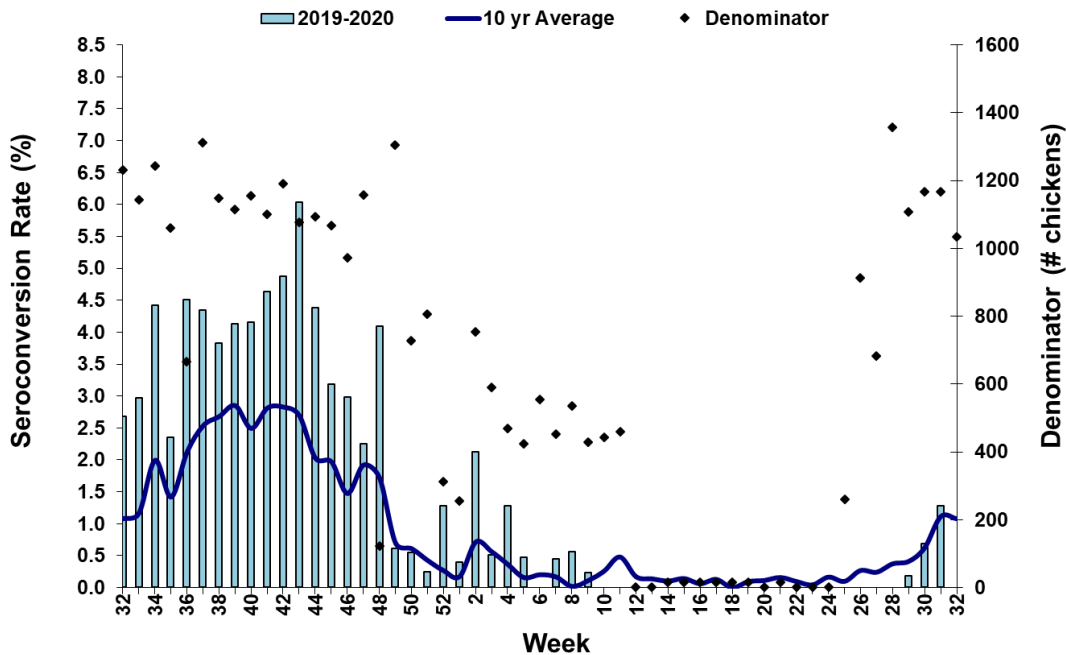
Sentinel Chickens*

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.

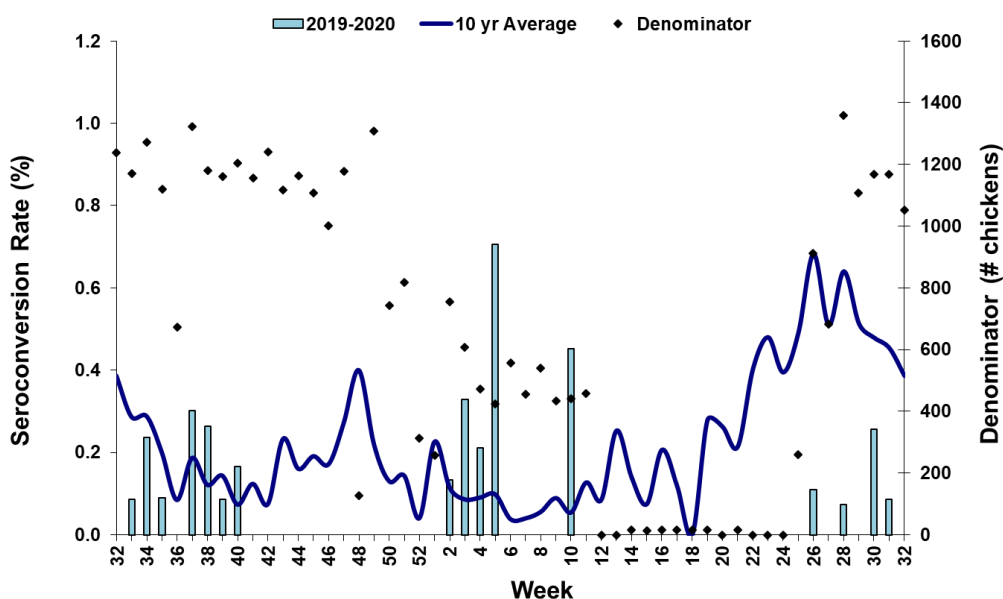
Twenty sentinel chickens tested positive for antibodies to WNV this week in Lee, Martin, Nassau, Putnam, St. Lucie, and Walton counties. Three sentinel chickens tested positive for antibodies to EEEV this week in Leon and Nassau counties.

County	Collection Date	Seroconversion Rates (%)						County Totals	
		Flavi	SLEV	WNV	Alpha	EEEV	HJV	Collection Week	YTD
Lee	7/27/2020-7/28/2020	18.42		18.42				14 WNV	17 WNV
Leon	7/27/2020				2.17	2.17		1 EEEV	2 EEEV
Martin	7/24/2020	2.38		2.38				1 WNV	2 WNV
Nassau	7/25/2020	2.78		2.78	5.56	5.56		1 WNV, 2 EEEV	1 WNV, 2 EEEV
Putnam	7/21/2020	8.33		8.33				1 WNV	1 WNV
St. Lucie	7/23/2020	6.67		6.67				2 WNV	2 WNV
Walton	7/27/2020	1.14		1.14				1 WNV	1 WNV, 2 EEEV

Sentinel Seroconversions to WNV in Florida, 2019-2020



Sentinel Seroconversions to EEEV in Florida, 2019-2020



Mosquito Pools

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

County	Collection Date	Result	Species	County YTD

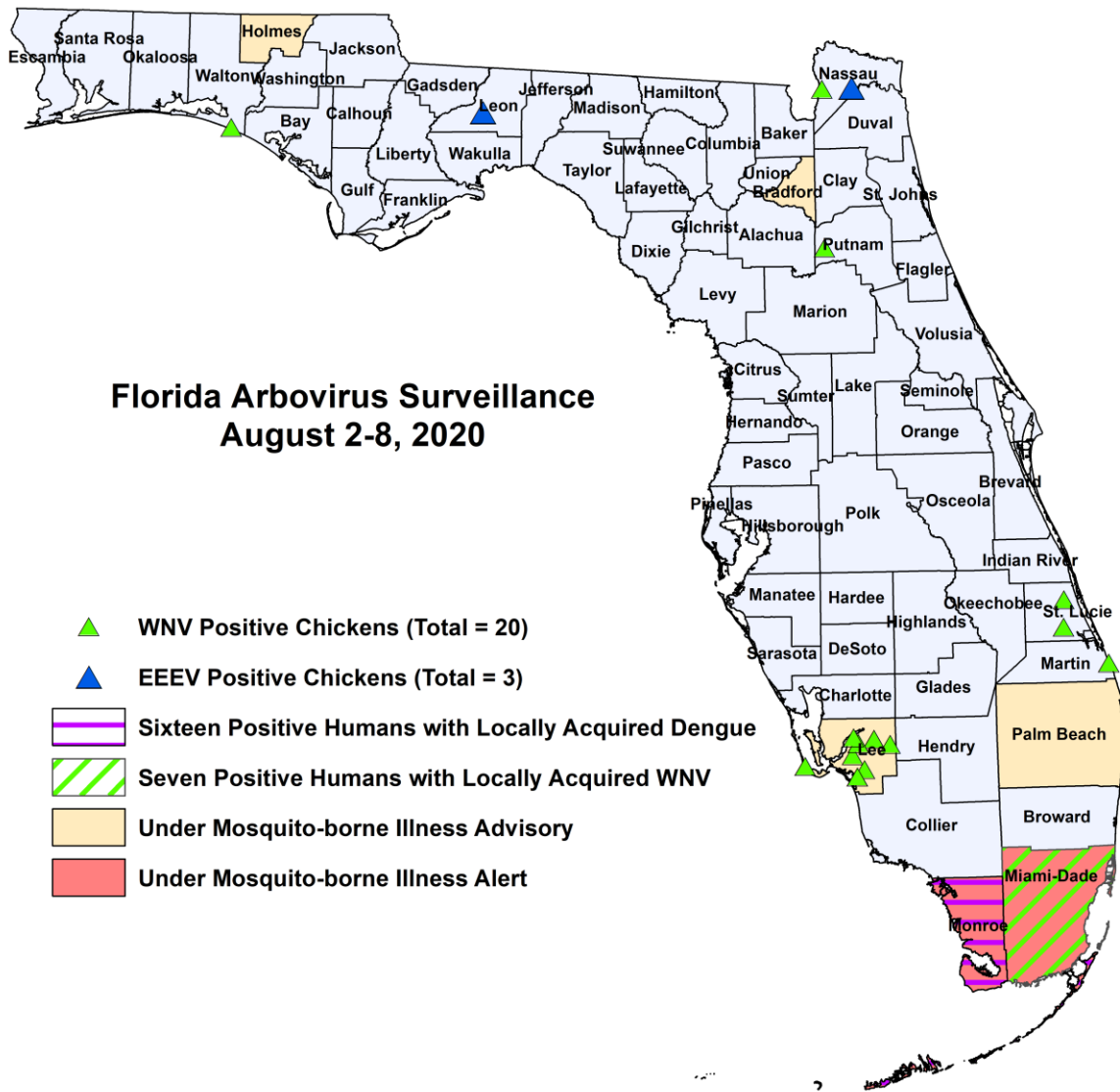
Dead Birds

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, eight reports representing a total of 37 dead birds, including one crow and one raptor, were received from seven counties.

In 2020, 267 reports representing a total of 707 dead birds (41 crows, 35 jays, 68 raptors, 32 doves) were received from 40 of Florida's 67 counties.

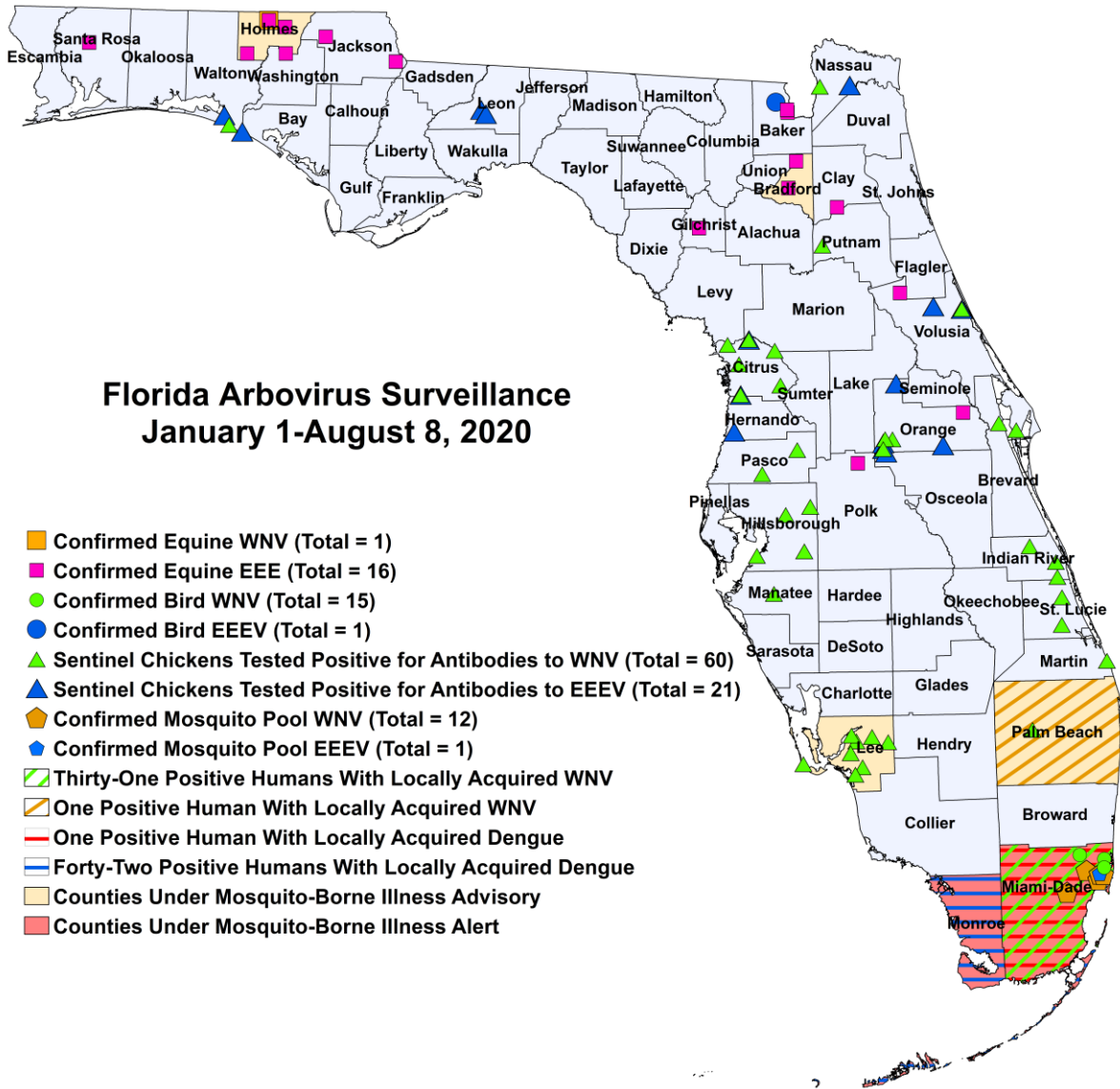
2020

County	Total Dead Birds	Crows	Jays	Raptors	Doves
Broward	1	1	0	0	0
Collier	5	0	0	0	0
Leon	11	0	0	0	0
Okaloosa	4	0	0	0	0
Palm Beach	3	0	0	0	0
Pinellas	1	0	0	1	0
Sarasota	12	0	0	0	0



**Florida Arbovirus Surveillance
August 2-8, 2020**

- ▲ WNV Positive Chickens (Total = 20)
- ▲ EEEV Positive Chickens (Total = 3)
- Sixteen Positive Humans with Locally Acquired Dengue
- Seven Positive Humans with Locally Acquired WNV
- Under Mosquito-borne Illness Advisory
- Under Mosquito-borne Illness Alert



2020 Arbovirus Activity by County	
County	Arbovirus Activity
Baker	EEEV: 2 horses (6/17, 7/5), 1 bird (5/7)
Bradford	EEEV: 2 horses (7/18, 7/19)
Brevard	WNV: 2 sentinels (1/23, 1/24)
Citrus	WNV: 9 sentinels (1/8, 1/14, 1/21, 7/14) EEEV: 2 sentinels (1/8, 3/2)
Clay	EEEV: 1 horse (7/11)
Gilchrist	EEEV: 1 horse (7/6)
Hernando	EEEV: 1 sentinel (1/21)
Hillsborough	WNV: 12 sentinels (1/6, 1/21, 1/29, 2/11, 2/18, 2/25)
Holmes	WNV: 1 horse (6/7) EEEV: 4 horses (6/3, 6/7, 6/9, 7/13)
Indian River	WNV: 3 sentinels (1/2, 1/9, 1/10)
Jackson	EEEV: 2 horses (6/27, 7/13)
Lee	WNV: 17 sentinels (7/20, 7/27, 7/28)
Leon	EEEV: 2 sentinels (7/20, 7/27)
Manatee	WNV: 3 sentinels (1/8)
Martin	WNV: 2 sentinels (7/17, 7/24)

Miami-Dade	WNV: seven humans (June, July), 24 asymptomatic blood donors (May, June, July), 15 birds (5/20, 6/15, 6/18, 6/24, 6/25, 6/26, 7/10, 7/11, 7/12, 7/13, 7/20), 12 mosquito pools (6/9, 6/16, 6/23, 6/30, 7/14) EEEV: 1 mosquito pool (1/7) Dengue: 1 human (March)
Monroe	Dengue: 42 humans (February, April, May, June, July)
Nassau	WNV: 1 sentinel (7/25) EEEV: 2 sentinels (7/25)
Orange	WNV: 3 sentinels (1/6) EEEV: 1 horse (3/25), 8 sentinels (1/13, 1/27, 1/28, 2/24, 3/2)
Palm Beach	WNV: 1 human (July), 1 sentinel (1/20)
Pasco	WNV: 2 sentinels (1/7)
Polk	EEEV: 1 horse (3/29)
Putnam	WNV: 1 sentinel (7/21)
Santa Rosa	EEEV: 1 horse (7/20)
St. Lucie	WNV: 2 sentinels (7/23)
Volusia	WNV: 1 sentinel (5/4) EEEV: 1 horse (1/24), 4 sentinels (2/24, 3/30, 5/18)
Walton	WNV: 1 sentinel (7/27) EEEV: 2 sentinels (6/22, 7/6)

Acknowledgements and Data Sources

Contributors: Andrea Morrison, PhD, MSPH, Devin Rowe, MS, Catherine McDermott, MPH, MHS, and Danielle Stanek, DVM, DOH Bureau of Epidemiology; Lea Heberlein-Larson, DrPH; Alexis LaCrue, PhD, MS; Maribel Castaneda, and Valerie Mock, BS; 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: 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: 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: 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.