



## Florida Arbovirus Surveillance Week 35: August 23-29, 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 23-29, 2020, the following arboviral activity was recorded in Florida.

**WNV activity:** One human case of WNV infection was reported this week in Palm Beach County. One horse with WNV infection was reported this week in Palm Beach County. Thirty-four sentinel chickens tested positive for antibodies to WNV this week in Bay, Lee, Nassau, Orange, Putnam, Sarasota, St. Lucie, and Walton counties. One mosquito pool tested positive for WNV this week in Collier County. In 2020, positive samples from 18 humans, 31 asymptomatic blood donors, seven horses, four crows, 11 blue jays, two ibises, 13 mosquito pools, and 107 sentinel chickens have been reported from 21 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. Two sentinel chickens tested positive for antibodies to EEEV this week in Putnam and Walton counties. In 2020, positive samples from 27 sentinel chickens, 16 horses, one duck, two sparrows, and one mosquito pool have been reported from 17 counties.

**International Travel-Associated Dengue Fever Cases:** No cases of dengue fever were reported this week in persons that had international travel. In 2020, 32 travel-associated cases have been reported.

**Dengue Fever Cases Acquired in Florida:** One case of locally acquired dengue fever was reported in Monroe County this week. This case was identified through retrospective case finding efforts to better characterize activity early in the outbreak. In 2020, 54 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:** Bay, Bradford, Holmes, Lee, and Martin counties are currently under a mosquito-borne illness advisory. Broward, Miami-Dade, Monroe, and Palm Beach 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](http://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](http://www.cdc.gov/arbovet/maps/ADB_Diseases_Map/index.html).

## 2020 Human Case Summary\*

**West Nile Virus Illnesses Acquired in Florida:** Eighteen human cases of WNV illness acquired in Florida have been reported in 2020: 13 in Miami-Dade County (June, July), three in Palm Beach County (July), and two in Broward County (July). Thirty-one asymptomatic positive blood donors have been reported in 2020 from Miami-Dade County (May, June, July, and August).

**International Travel-Associated Dengue Fever Cases:** Thirty-two 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 (2), Broward (5), Clay, Collier, Duval, Franklin, Hillsborough (3), Miami-Dade (13), Orange, Palm Beach, Sarasota, Seminole, and St. Lucie. Five 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
St. Barts/St. Martin						1	1
Thailand						1	1
US Virgin Islands						2	2
<b>Total</b>	<b>10</b>	<b>3</b>	<b>4</b>	<b>2</b>	<b>1</b>	<b>12</b>	<b>32</b>

**Dengue Fever Cases Acquired in Florida:** In 2020, 54 cases of locally acquired dengue fever have been reported in Miami-Dade and Monroe (53) counties, with onsets in February, March, April, May, June, July, and August. One case was reported in a non-Florida resident.

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

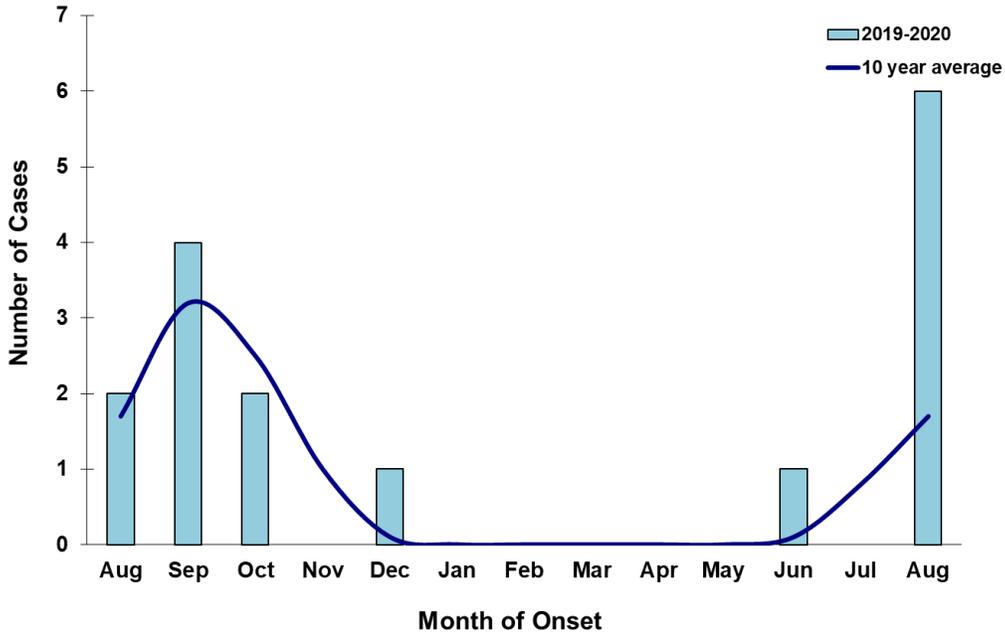
Five cases (50%) were diagnosed with *Plasmodium falciparum*. Three cases (30%) were diagnosed with *Plasmodium vivax*. One case (10%) was diagnosed with *Plasmodium ovale*. The *Plasmodium* species for one case (10%) was unknown due to low parasitemia.

## Veterinary Cases\*

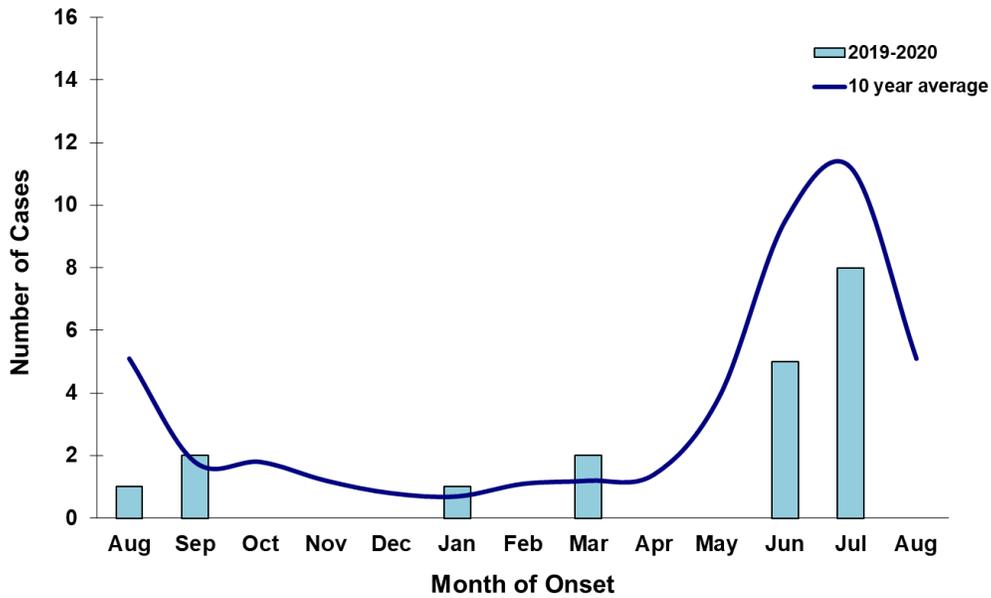
\*Veterinary cases are reported by date of onset. Only mammalian veterinary cases are included in the graphs.

One horse with WNV infection was reported this week in Palm Beach County.

**Veterinary WNV Disease in Florida, August 2019-2020**



**Veterinary EEEV Disease in Florida, August 2019-2020**



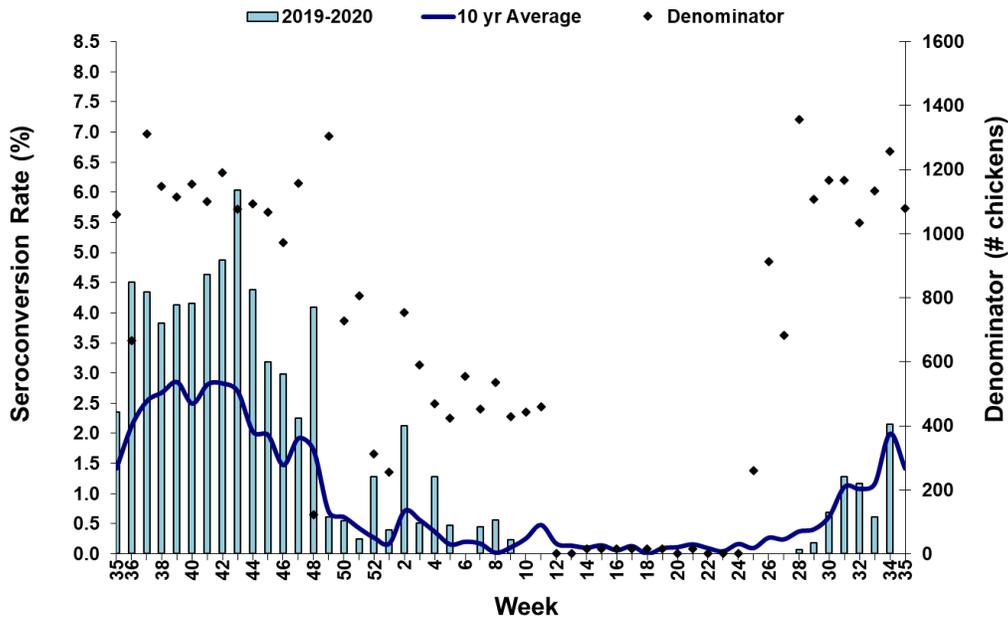
## Sentinel Chickens\*

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.

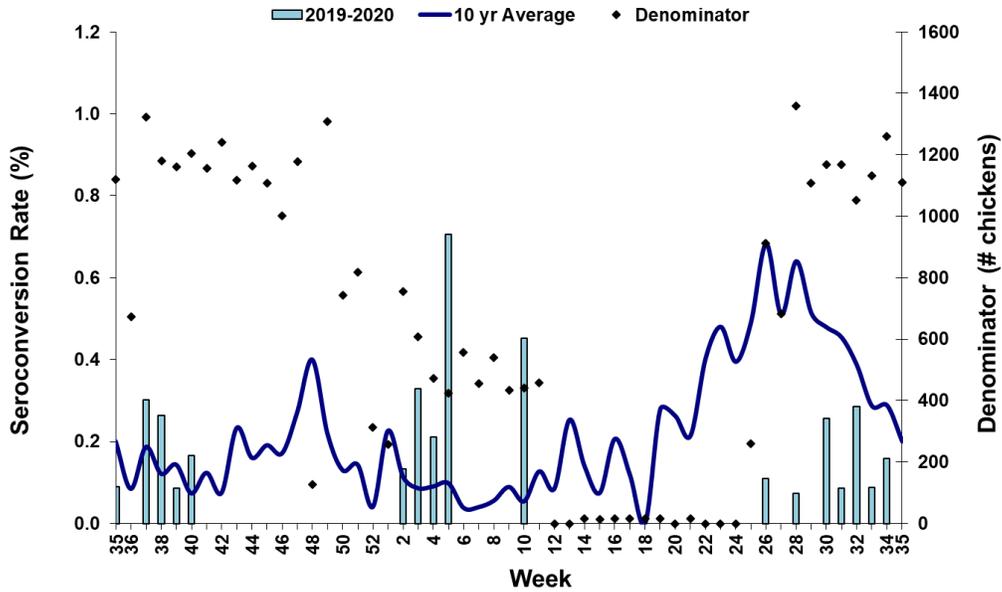
Thirty-four sentinel chickens tested positive for antibodies to WNV this week in Bay, Lee, Nassau, Orange, Putnam, Sarasota, St. Lucie, and Walton counties. Two sentinel chickens tested positive for antibodies to EEEV this week in Putnam and Walton counties.

County	Collection Date	Seroconversion Rates (%)						County Totals	
		Flavi	SLEV	WNV	Alpha	EEEV	HJV	Collection Week	YTD
Bay	8/17/2020	33.33		33.33				6 WNV	6 WNV
Lee	8/10/2020	6.45		6.45				4 WNV	45 WNV
	8/17/2020-8/18/2020	29.03		29.03				18 WNV	
Nassau	8/15/2020	3.03		3.03				1 WNV	2 WNV, 2 EEEV
Orange	8/17/2020	0.89		0.89				1 WNV	4 WNV, 9 EEEV
Putnam	8/17/2020	8.33		8.33	8.33	8.33		1 WNV, 1 EEEV	2 WNV, 1 EEEV
Sarasota	8/14/2020	1.41		1.41				1 WNV	1 WNV
St. Lucie	8/13/2020	3.33		3.33				1 WNV	4 WNV
Walton	8/17/2020	1.09		1.09	1.10	1.10		1 WNV, 1 EEEV	2 WNV, 6 EEEV

**Sentinel Seroconversions to WNV in Florida, 2019-2020**



### Sentinel Seroconversions to EEEV in Florida, 2019-2020



### Mosquito Pools

Three mosquito pools associated with the dengue outbreak in Monroe County tested positive this week. One mosquito pool tested positive for WNV this week in Collier County.

County	Collection Date	Result	Species	County YTD
Monroe	6/23/2020	DENV-1	<i>Ae. aegypti</i>	3 DENV
Monroe	6/27/2020	DENV-1	<i>Ae. aegypti</i>	
Monroe	7/29/2020	DENV-1	<i>Ae. aegypti</i>	
Collier	8/5/2020	WNV	<i>Cx. nigripalpus</i>	1 WNV

### Dead Birds

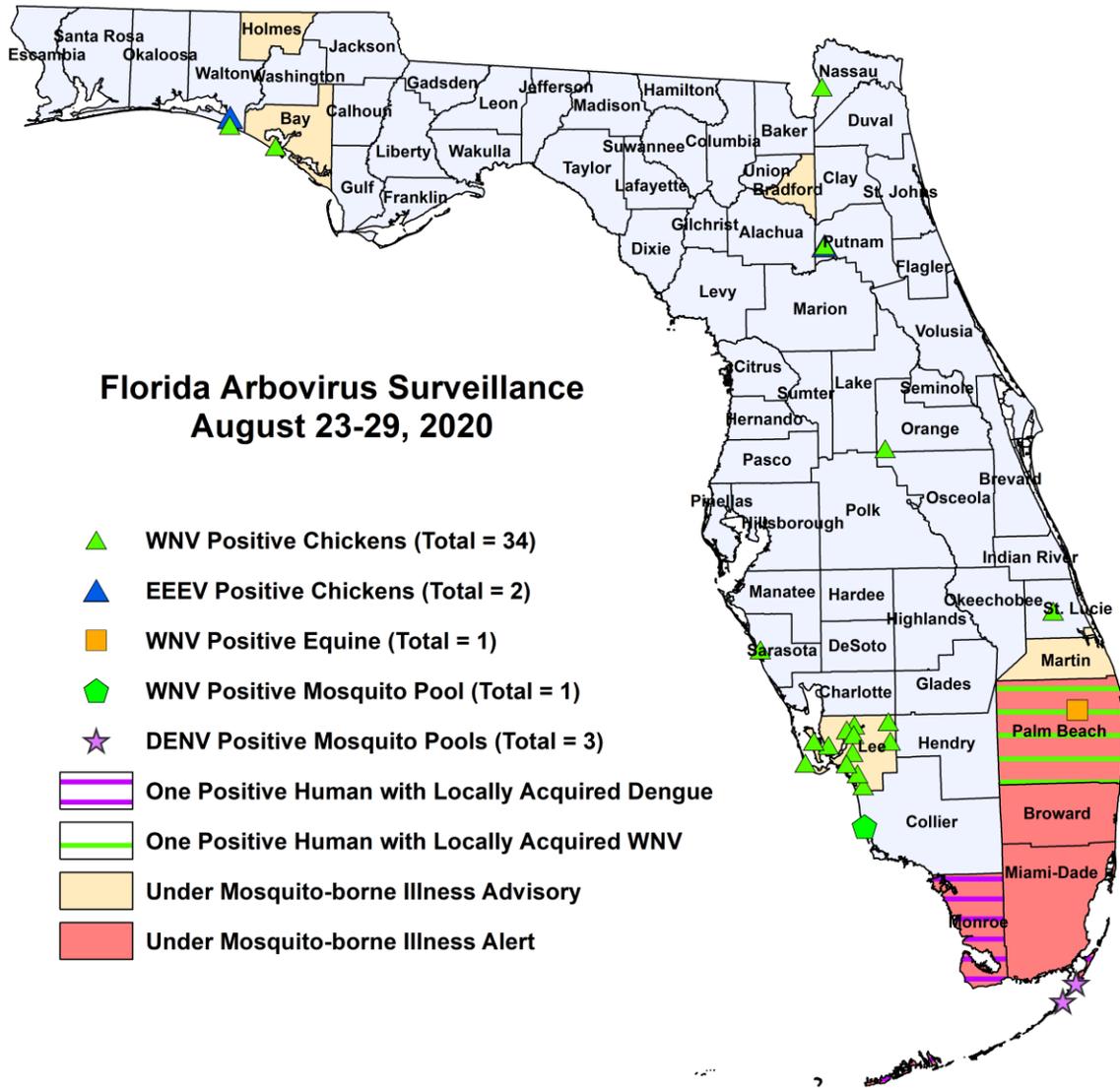
The Fish and Wildlife Conservation Commission (FWC) collects reports of dead birds, which can be an indication of arbovirus circulation in an area. This week, nine reports representing a total of 42 dead birds, including three jays and two raptors, were received from six counties.

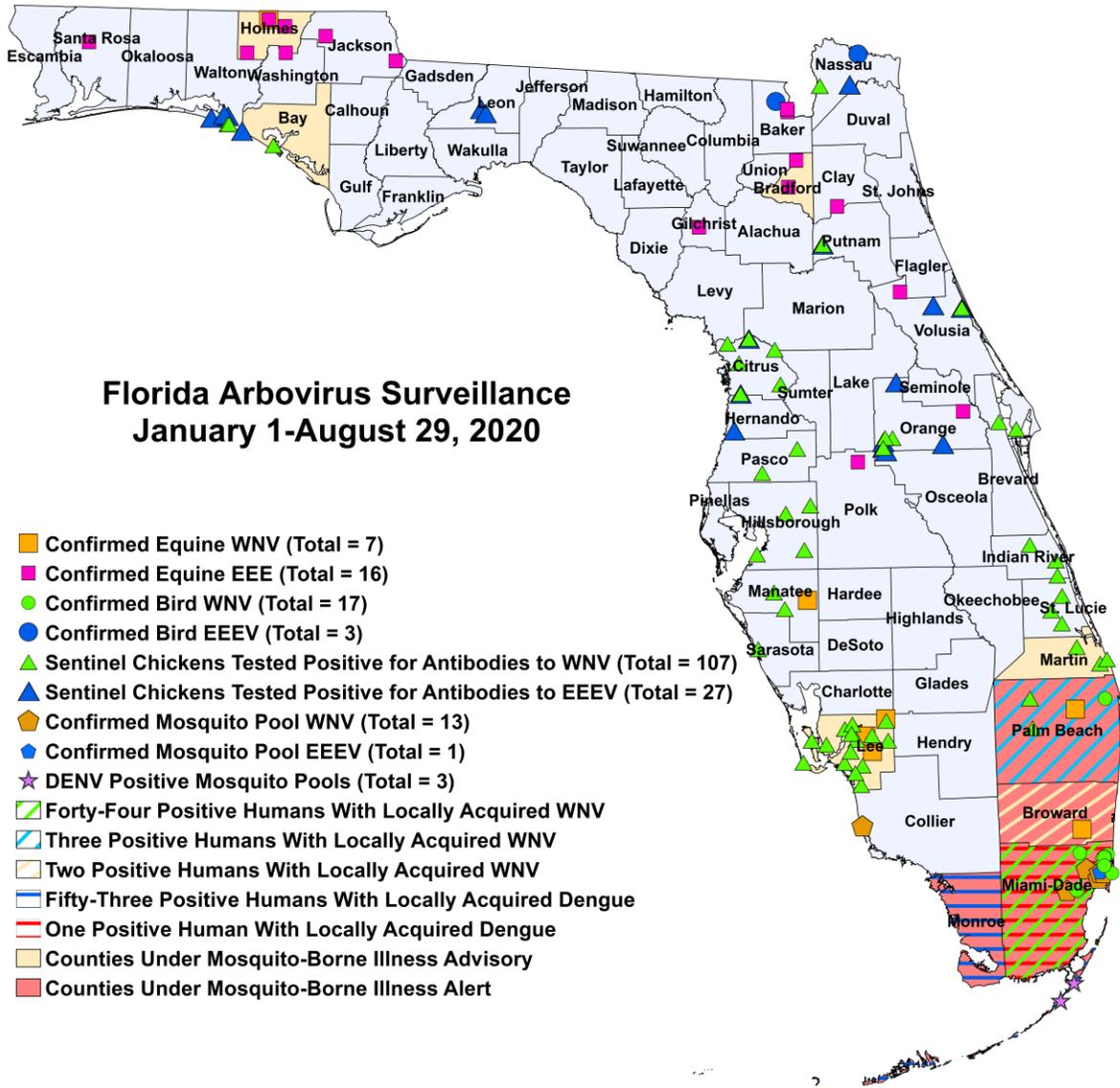
In 2020, 287 reports representing a total of 781 dead birds (41 crows, 38 jays, 71 raptors, 34 doves) were received from 40 of Florida's 67 counties.

#### 2020

County	Total Dead Birds	Crows	Jays	Raptors	Doves
Bay	4	0	3	1	0
Broward	3	0	0	0	0
Charlotte	1	0	0	1	0
Collier	20	0	0	0	0
Pasco	13	0	0	0	0
Sarasota	1	0	0	0	0

# Maps





## Florida Arbovirus Surveillance January 1-August 29, 2020

- Confirmed Equine WNV (Total = 7)
- Confirmed Equine EEE (Total = 16)
- Confirmed Bird WNV (Total = 17)
- Confirmed Bird EEEV (Total = 3)
- ▲ Sentinel Chickens Tested Positive for Antibodies to WNV (Total = 107)
- ▲ Sentinel Chickens Tested Positive for Antibodies to EEEV (Total = 27)
- ◆ Confirmed Mosquito Pool WNV (Total = 13)
- ◆ Confirmed Mosquito Pool EEEV (Total = 1)
- ★ DENV Positive Mosquito Pools (Total = 3)
- Forty-Four Positive Humans With Locally Acquired WNV
- Three Positive Humans With Locally Acquired WNV
- Two Positive Humans With Locally Acquired WNV
- Fifty-Three Positive Humans With Locally Acquired Dengue
- One Positive Human With Locally Acquired Dengue
- Counties Under Mosquito-Borne Illness Advisory
- Counties Under Mosquito-Borne Illness Alert

2020 Arbovirus Activity by County	
County	Arbovirus Activity
<b>Baker</b>	EEEV: 2 horses (6/17, 7/5), 1 bird (5/7)
<b>Bay</b>	WNV: 6 sentinels (8/17)
<b>Bradford</b>	EEEV: 2 horses (7/18, 7/19)
<b>Brevard</b>	WNV: 2 sentinels (1/23, 1/24)
<b>Broward</b>	WNV: 2 humans (July), 1 horse (8/13)
<b>Citrus</b>	WNV: 9 sentinels (1/8, 1/14, 1/21, 7/14) EEEV: 2 sentinels (1/8, 3/2)
<b>Clay</b>	EEEV: 1 horse (7/11)
<b>Collier</b>	WNV: 1 mosquito pool (8/5)
<b>Gilchrist</b>	EEEV: 1 horse (7/6)
<b>Hernando</b>	EEEV: 1 sentinel (1/21)
<b>Hillsborough</b>	WNV: 12 sentinels (1/6, 1/21, 1/29, 2/11, 2/18, 2/25)
<b>Holmes</b>	WNV: 1 horse (6/7) EEEV: 4 horses (6/3, 6/7, 6/9, 7/13)
<b>Indian River</b>	WNV: 3 sentinels (1/2, 1/9, 1/10)
<b>Jackson</b>	EEEV: 2 horses (6/27, 7/13)
<b>Lee</b>	WNV: 3 horses (8/9, 8/14, 8/18), 45 sentinels (7/6, 7/20, 7/27, 7/28, 8/3, 8/4, 8/10, 8/17, 8/18)

<b>Leon</b>	EEEV: 2 sentinels (7/20, 7/27)
<b>Manatee</b>	WNV: 1 horse (8/10), 4 sentinels (1/8, 8/4)
<b>Martin</b>	WNV: 6 sentinels (7/17, 7/24, 8/7)
<b>Miami-Dade</b>	WNV: 13 humans (June, July), 31 asymptomatic blood donors (May, June, July, August), 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)
<b>Monroe</b>	Dengue: 53 humans (February, April, May, June, July, August), 3 mosquito pools (6/23, 6/27, 7/29)
<b>Nassau</b>	WNV: 2 sentinels (7/25, 8/15) EEEV: 2 birds (6/16, 7/4), 2 sentinels (7/25)
<b>Orange</b>	WNV: 4 sentinels (1/6, 8/17) EEEV: 1 horse (3/25), 9 sentinels (1/13, 1/27, 1/28, 2/24, 3/2, 8/3)
<b>Palm Beach</b>	WNV: 3 humans (July), 1 horse (8/4), 2 sentinels (1/20, 8/3), 2 birds (6/19)
<b>Pasco</b>	WNV: 2 sentinels (1/7)
<b>Polk</b>	EEEV: 1 horse (3/29)
<b>Putnam</b>	WNV: 2 sentinels (7/21, 8/17) EEEV: 1 sentinel (8/17)
<b>Santa Rosa</b>	EEEV: 1 horse (7/20)
<b>Sarasota</b>	WNV: 1 sentinel (8/14)
<b>St. Lucie</b>	WNV: 4 sentinels (7/23, 8/6, 8/13)
<b>Volusia</b>	WNV: 1 sentinel (5/4) EEEV: 1 horse (1/24), 4 sentinels (2/24, 3/30, 5/18)
<b>Walton</b>	WNV: 2 sentinels (7/27, 8/17) EEEV: 6 sentinels (6/22, 7/6, 8/3, 8/10, 8/17)

### Acknowledgements and Data Sources

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**For more surveillance information, please see the DOH website at:** [www.floridahealth.gov/diseases-and-conditions/mosquito-borne-diseases/surveillance.html](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:** [www.cdc.gov/ncidod/dvbid/westnile/surv&control.htm](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: [www.floridahealth.gov/diseases-and-conditions/disease-reporting-and-management/disease-reporting-and-surveillance/index.html](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.