



## Florida Arbovirus Surveillance Week 37: September 12-18, 2021

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 September 12-18, 2021, 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. Five mosquito pools tested positive for WNV in Collier County. Six sentinel chickens tested positive for antibodies to WNV this week in Bay, Lee, and Nassau counties. In 2021, positive samples from one human, one horse, 56 sentinel chickens, and seven mosquito pools have been reported from 10 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 2021, positive samples from two sentinel chickens have 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. Two sentinel chickens tested positive for antibodies to EEEV this week in Brevard and Walton counties. In 2021, positive samples from 15 horses and 173 sentinel chickens have been reported from 28 counties.

**International Travel-Associated Dengue Fever Cases** No cases of dengue fever were reported this week in persons that had international travel. In 2021, seven travel-associated dengue fever cases have been reported.

**Dengue Fever Cases Acquired in Florida:** No cases of locally acquired dengue fever were reported this week. In 2021, 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 2021, one travel-associated chikungunya fever case has been reported.

**Chikungunya Fever Cases Acquired in Florida:** No cases of locally acquired chikungunya fever were reported this week. In 2021, 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 2021, 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 2021, no cases of locally acquired Zika fever have been reported.

**Advisories/Alerts:** Citrus, Collier, Jefferson, Nassau, Orange, Pasco and Walton counties are currently under a mosquito-borne illness advisory. 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 Burundi related to malaria transmission and for Chad related to Leishmaniasis. A Level 2 Travel Health Alert has been issued for Nigeria related to the transmission of yellow fever virus. Additional information on travel health notices can be found at: [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).

## 2021 Human Case Summary

**West Nile Virus Illnesses Acquired in Florida:** One human case of WNV illness acquired in Florida has been reported in 2021 from Miami-Dade County (July).

**International Travel-Associated Chikungunya Fever Cases:** One case of chikungunya fever with onset in 2021 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: Broward.

**International Travel-Associated Dengue Fever Cases:** Seven cases with onset in 2021 have been reported in individuals with travel history to a dengue endemic area in the two weeks prior to onset. Counties reporting cases were: Broward, Hernando (2), Hillsborough, Miami-Dade and Palm Beach (2): One case was reported in a non-Florida resident. In 2021, six cases of dengue reported in Florida have been serotyped by PCR. Please see the table below for a breakdown of case by country of origin and serotype.

Country of Exposure	DENV-1	DENV-2	DENV-3	Unknown Serotype	Total
Colombia			1	1	2
Cuba		1			1
Ecuador	1				1
Honduras				1	1
Mexico/Caribbean		1			1
Saint Barts	1				1
<b>Total</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>7</b>

**International Travel-Associated Malaria Cases:** Thirty-one cases of malaria with onset in 2021 have been reported. Countries of origin were: Cameroon (3), Côte D'Ivoire, Ethiopia, Ghana (6), Kenya, Liberia (3), Mozambique, Nigeria (6), Sierra Leone (5), Togo, Uganda (2) and Venezuela. Counties reporting cases were: Alachua (2), Brevard (2), Broward (5), Duval (4), Miami-Dade (4), Orange (2), Osceola (2), Palm Beach (2), Pinellas (2), Polk (2), Seminole (3) and St. Johns. Three cases were reported in non-Florida residents.

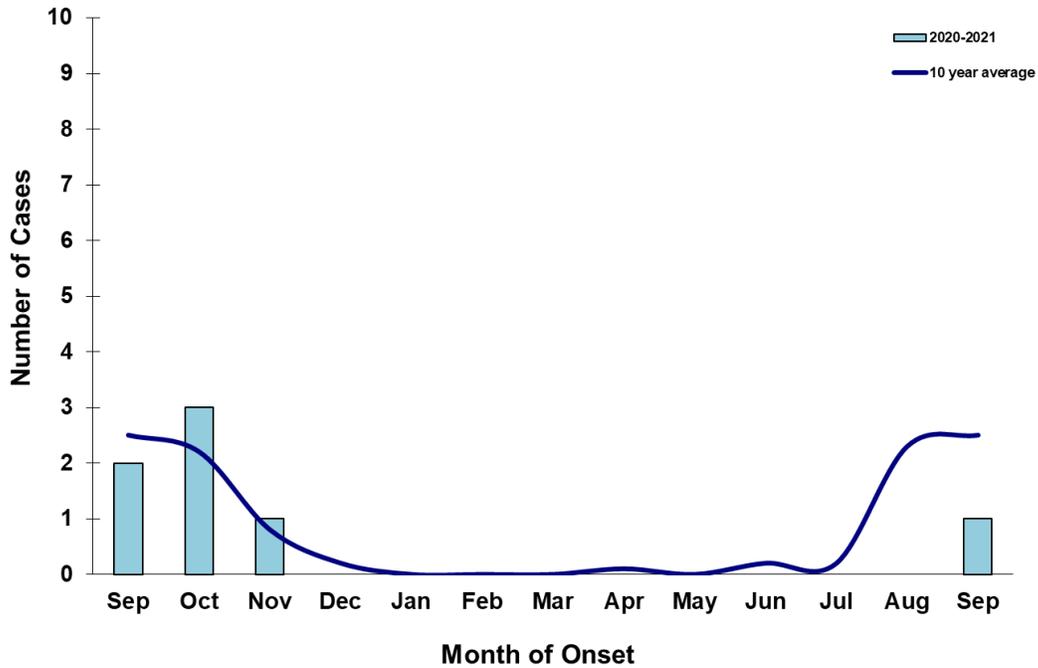
Twenty-eight cases (91%) were diagnosed with *Plasmodium falciparum*. One case (3%) was diagnosed with *Plasmodium malariae*. One case (3%) was diagnosed with *Plasmodium ovale*. One case (3%) was diagnosed with *Plasmodium vivax*.

## Veterinary Cases\*

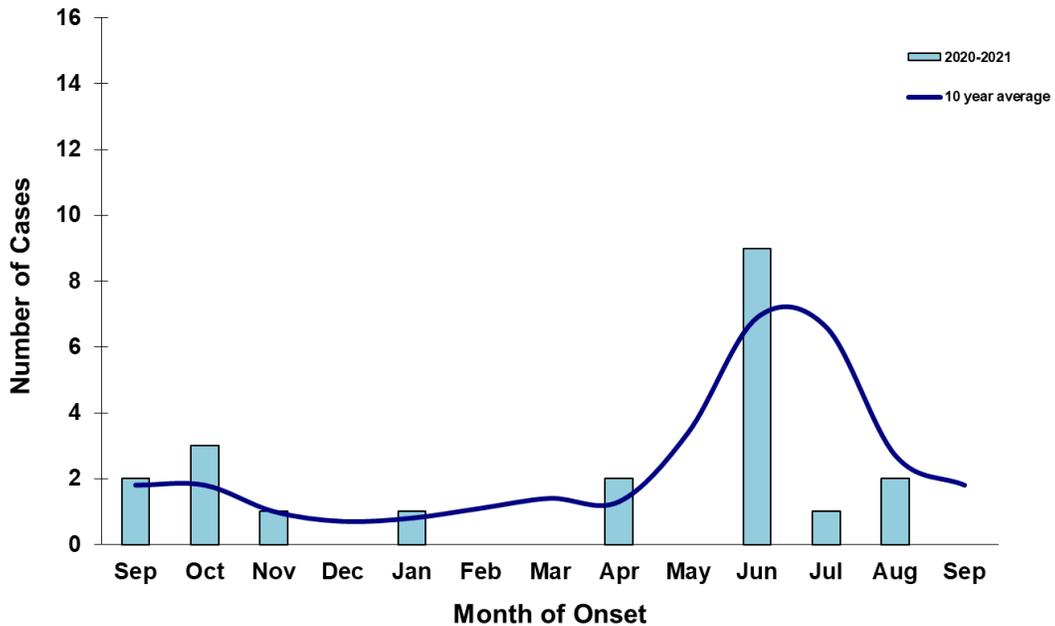
\*Veterinary cases are reported by date of onset. Only mammalian veterinary cases are included in the graphs.

No veterinary cases were reported this week.

### Veterinary WNV Disease in Florida, September 2020-2021



### Veterinary EEEV Disease in Florida, September 2020-2021



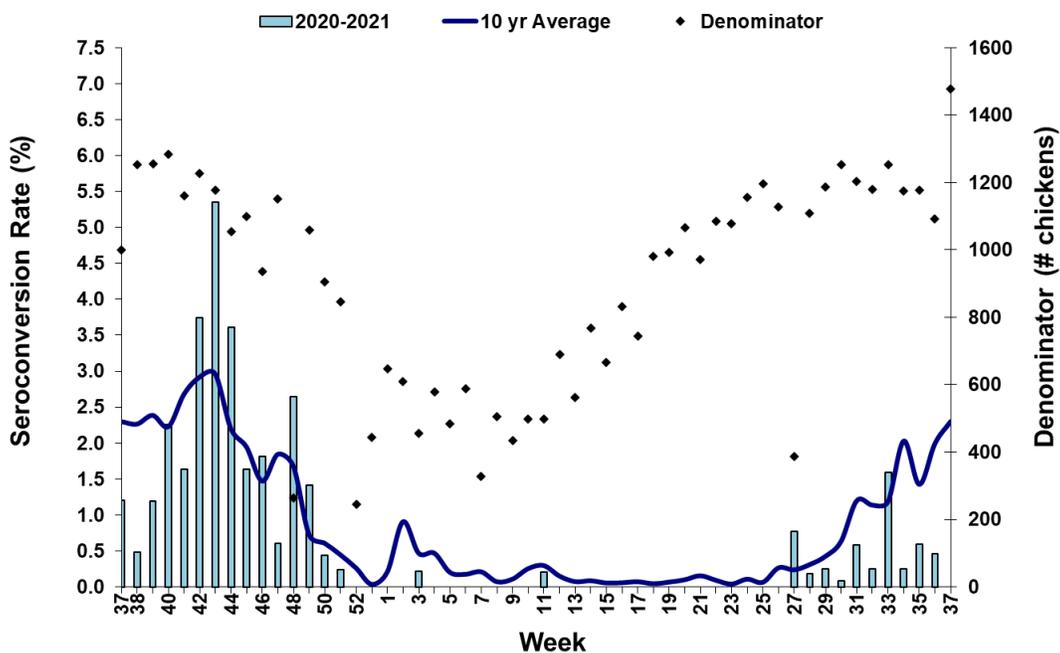
## Sentinel Chickens

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.

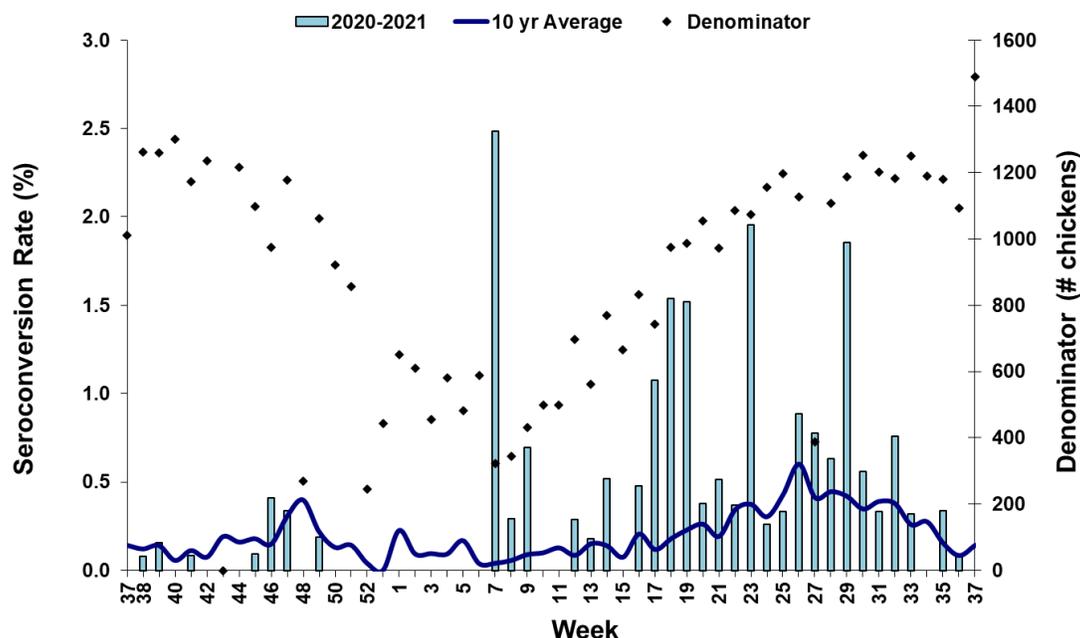
Six sentinel chickens tested positive for antibodies to WNV this week in Bay, Lee, and Nassau counties. Two sentinel chickens tested positive for antibodies to EEEV this week in Brevard and Walton counties.

County	Collection Date	Seroconversion Rates (%)						County Totals	
		Flavi	SLEV	WNV	Alpha	EEEV	HJV	Collection Week	YTD
Bay	9/7/2021	12.50		12.50				2 WNV	7 WNV, 3 EEEV
Brevard	9/1/2021				1.49	1.49		1 EEEV	5 EEEV
Lee	9/6/2021-9/7/2021	3.70		3.70				3 WNV	25 WNV, 1 EEEV
Nassau	9/4/2021	2.86		2.86				1 WNV, 1 EEEV	2 WNV, 12 EEEV
Walton	9/7/2021				1.18	1.18		1 EEEV	17 WNV, 56 EEEV

**Sentinel Seroconversions to WNV in Florida, 2020-2021**



### Sentinel Seroconversions to EEEV in Florida, 2020-2021



### Mosquito Pools

Five mosquito pools tested positive for WNV in Collier County this week.

County	Collection Date	Result	Species	County YTD
Collier	8/20/2021	2 WNV	<i>Culex quinquefasciatus</i>	7 WNV
	8/24/2021	1 WNV	<i>Culex nigripalpus</i>	
	8/27/2021	1 WNV	<i>Culex nigripalpus</i>	
	8/27/2021	1 WNV	<i>Culex quinquefasciatus</i>	

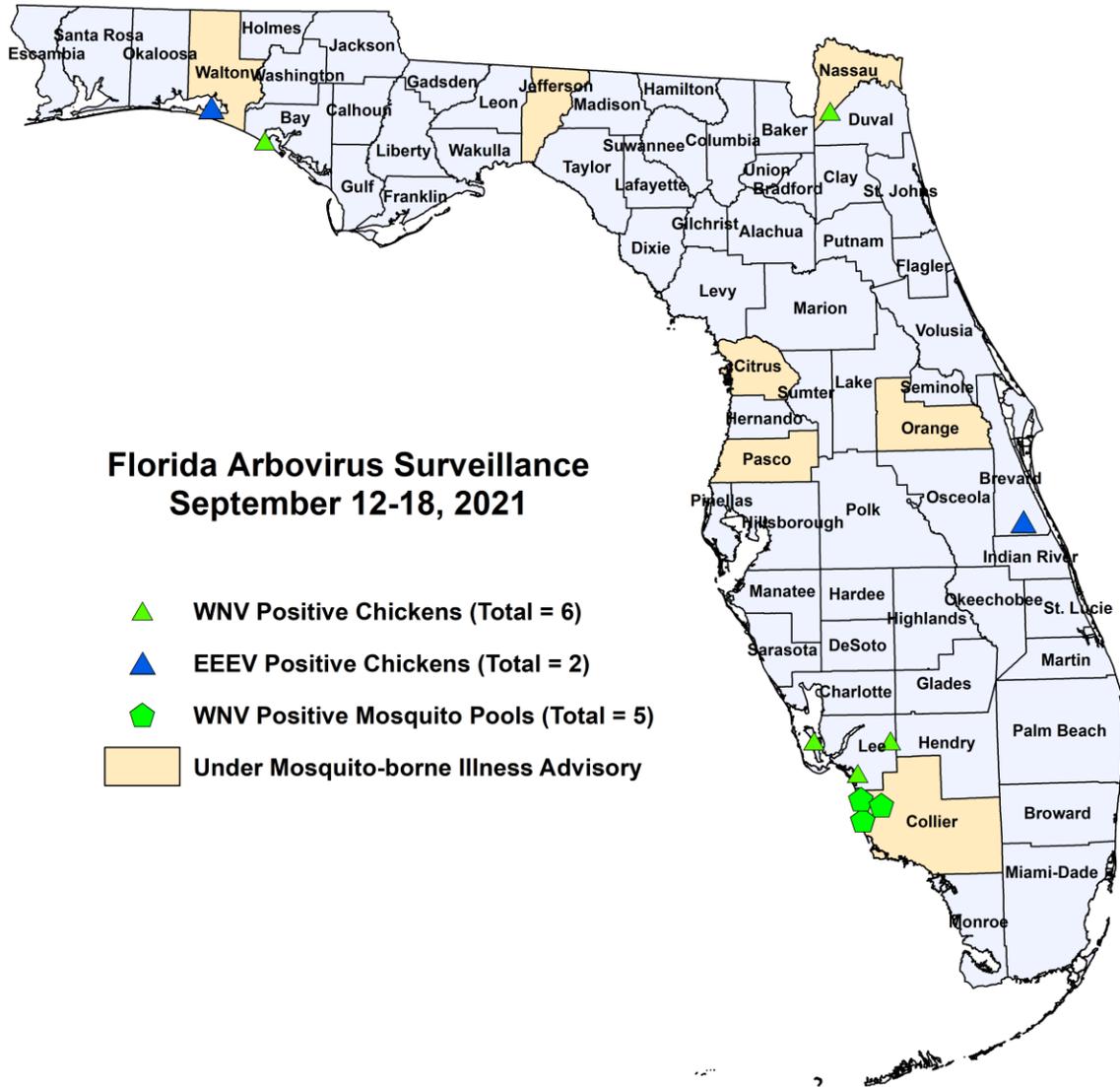
### Dead Birds

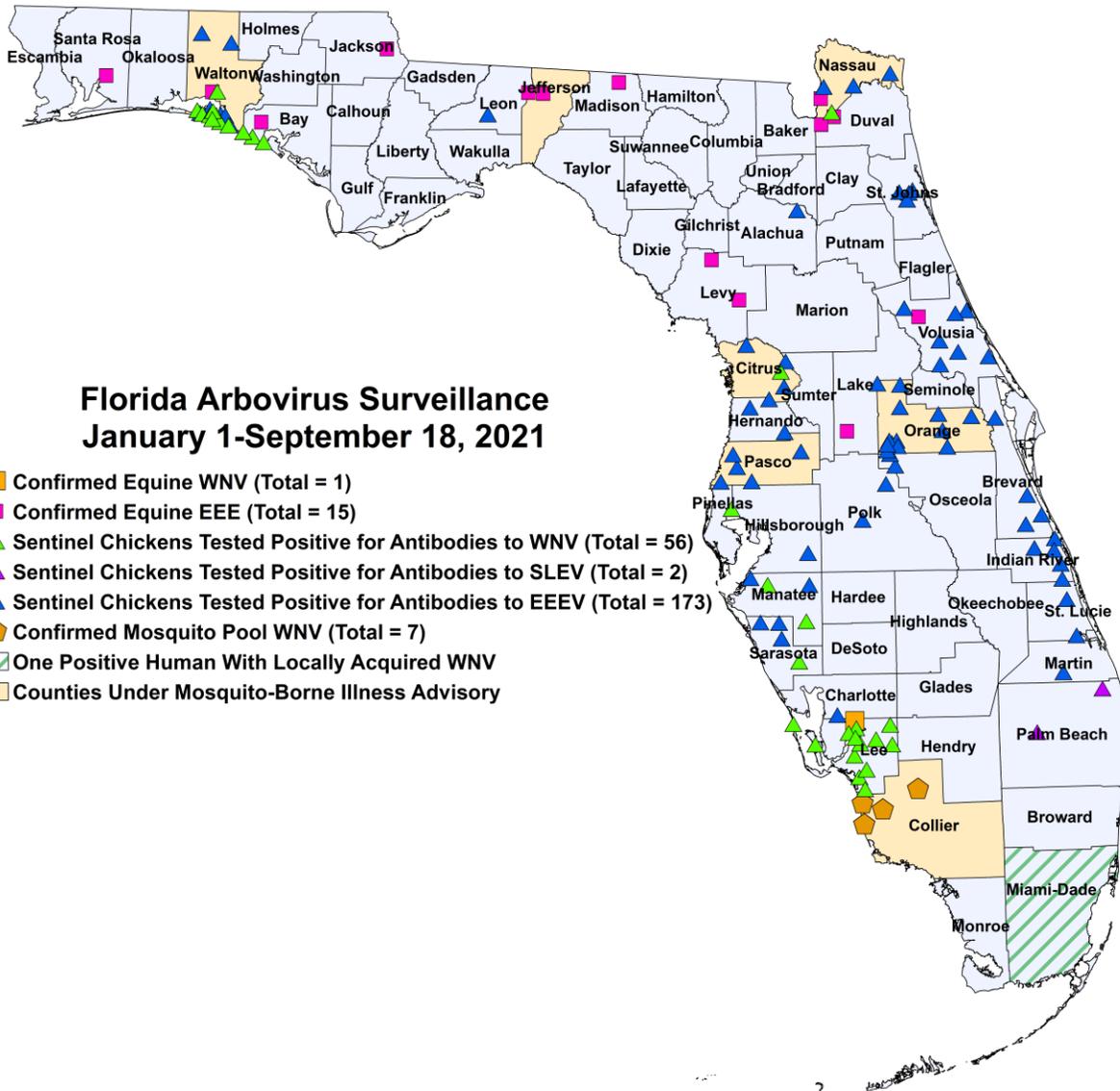
The Fish and Wildlife Conservation Commission (FWC) collects reports of dead birds, which can be an indication of arbovirus circulation in an area. This week, seven reports representing a total of 13 dead birds, including two raptors and five doves, were received from five counties.

In 2021, 424 reports representing a total of 1,048 dead birds (61 crows, 26 jays, 83 raptors, 132 doves) were received from 50 of Florida's 67 counties.

#### 2021

County	Total Dead Birds	Crows	Jays	Raptors	Doves
Highlands	1	0	0	1	0
Miami-Dade	3	0	0	0	0
Orange	1	0	0	0	0
Palm Beach	5	0	0	0	5
Pinellas	3	0	0	1	0





## Florida Arbovirus Surveillance January 1-September 18, 2021

- Confirmed Equine WNV (Total = 1)
- Confirmed Equine EEE (Total = 15)
- ▲ Sentinel Chickens Tested Positive for Antibodies to WNV (Total = 56)
- ▲ Sentinel Chickens Tested Positive for Antibodies to SLEV (Total = 2)
- ▲ Sentinel Chickens Tested Positive for Antibodies to EEEV (Total = 173)
- ◆ Confirmed Mosquito Pool WNV (Total = 7)
- ▨ One Positive Human With Locally Acquired WNV
- Counties Under Mosquito-Borne Illness Advisory

2021 Arbovirus Activity by County	
County	Arbovirus Activity
<b>Alachua</b>	EEEV: 1 sentinel (7/6)
<b>Bay</b>	WNV: 7 sentinels (8/16, 8/23, 9/7) EEEV: 1 horse (6/28), 3 sentinels (6/21, 7/19, 8/9)
<b>Brevard</b>	EEEV: 5 sentinels (4/2, 6/9, 6/16, 7/14, 9/1)
<b>Charlotte</b>	EEEV: 1 sentinel (6/18)
<b>Citrus</b>	WNV: 1 sentinel (3/16) EEEV: 8 sentinels (3/2, 4/20, 5/3, 5/25, 8/10)
<b>Collier</b>	WNV: 7 mosquito pools ( <i>Cx. nigripalpus</i> [7/13, 8/24, 8/27], <i>Cx. quinquefasciatus</i> [8/6, 8/20, 8/27])
<b>Duval</b>	EEEV: 1 horse (8/6)
<b>Hernando</b>	EEEV: 3 sentinels (6/7)
<b>Hillsborough</b>	EEEV: 1 sentinel (8/10)
<b>Indian River</b>	EEEV: 8 sentinels (4/8, 4/22, 5/7, 5/20, 7/22, 8/13)
<b>Jackson</b>	EEEV: 1 horse (6/16)
<b>Jefferson</b>	EEEV: 2 horses (6/22, 6/27)
<b>Lake</b>	EEEV: 1 horse (6/3)
<b>Lee</b>	WNV: 1 horse (9/2), 25 sentinels (7/7, 7/13, 7/19, 7/26, 8/2, 8/3, 8/16, 8/17, 9/6, 9/7) EEEV: 1 sentinel (6/1)

<b>Leon</b>	EEEV: 1 horse (6/6), 2 sentinels (8/10)
<b>Levy</b>	EEEV: 2 horses (4/18, 6/7)
<b>Madison</b>	EEEV: 1 horse (6/17)
<b>Manatee</b>	WNV: 2 sentinels (1/20, 8/10) EEEV: 4 sentinels (3/24, 4/7, 5/12, 5/19)
<b>Martin</b>	EEEV: 2 sentinels (5/28, 7/23)
<b>Miami-Dade</b>	WNV: 1 human (July)
<b>Nassau</b>	WNV: 2 sentinels (8/14, 9/4) EEEV: 2 horses (4/22, 6/8), 12 sentinels (6/26, 7/10, 7/17, 7/24, 7/31, 8/7, 8/14, 9/4)
<b>Orange</b>	EEEV: 29 sentinels (2/15, 2/22, 3/1, 3/22, 5/10, 5/17, 6/7, 6/28, 7/6, 7/12, 7/19, 7/26, 8/16)
<b>Palm Beach</b>	SLEV: 2 sentinels (4/19, 4/20)
<b>Pasco</b>	EEEV: 8 sentinels (5/10, 6/6, 6/14, 6/21, 7/26)
<b>Pinellas</b>	WNV: 1 sentinel (8/2)
<b>Polk</b>	EEEV: 3 sentinels (5/14, 5/28, 7/23)
<b>Santa Rosa</b>	EEEV: 1 horse (8/1)
<b>Sarasota</b>	WNV: 1 sentinel (8/13) EEEV: 6 sentinels (5/4, 5/18, 6/11)
<b>St. Johns</b>	EEEV: 8 sentinels (4/26, 5/3, 6/1, 6/28)
<b>St. Lucie</b>	EEEV: 2 sentinels (5/26)
<b>Volusia</b>	EEEV: 1 horse (1/11), 10 sentinels (2/15, 4/19, 4/26, 5/3, 6/1, 6/7, 8/16, 8/30)
<b>Walton</b>	WNV: 17 sentinels (8/2, 8/17, 8/23, 8/24, 8/30) EEEV: 1 horse (7/25), 56 sentinels (4/5, 4/26, 5/3, 5/4, 5/10, 6/7, 6/21, 6/28, 6/30, 7/12, 7/19, 7/20, 7/26, 8/2, 8/3, 8/9, 8/30, 9/7)

### Acknowledgements and Data Sources

Contributors: Andrea Morrison, PhD, MSPH, Rebecca Zimler, PhD, MPH, 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](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.