



## Florida Arbovirus Surveillance Week 30: July 24-30, 2022

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 July 24-30, 2022, 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. Six sentinel chickens tested positive for antibodies to WNV this week in Bay, Charlotte, Lee, and Sarasota counties. One mosquito pool tested positive for WNV this week in Sarasota County. In 2022, positive samples from 16 sentinel chickens and one mosquito pool 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 2022, one positive sample has been reported from one county.

**Flavivirus (WNV or SLEV)\* activity:** No sentinel chickens tested positive for antibodies to a flavivirus this week. In 2022, positive samples from two sentinel chickens have been reported from two counties.

**EEEV activity:** No human cases of EEEV infection were reported this week. No horses with EEEV infection were reported this week. No sentinel chickens tested positive for antibodies to EEEV this week. In 2022, positive samples from 40 sentinel chickens and eight horses have been reported from 17 counties.

**International Travel-Associated Dengue:** Twenty-eight cases of dengue were reported this week in persons that had international travel. In 2022, 100 travel-associated dengue cases have been reported.

**Dengue Cases Acquired in Florida:** One case of locally acquired dengue was reported this week in Miami-Dade County. In 2022, two cases of locally acquired dengue 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 2022, 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 2022, 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 2022, 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 2022, no cases of locally acquired Zika fever have been reported.

**Advisories/Alerts:** Miami-Dade County is currently under a mosquito-borne illness alert. Osceola County is currently under a mosquito-borne illness advisory. No other counties are currently under a mosquito-borne illness advisory or alert.

There are currently multiple travel health notices from the Centers for Disease Control and Prevention related to mosquito-borne diseases.

Dengue			Yellow Fever
Africa and the Middle East	Americas	Asia and the Pacific Islands	Africa and the Middle East
Kenya	Argentina	Bangladesh	Ghana
Reunion	Belize	India	Kenya
	Colombia	Pakistan	Nigeria
	Dominican Republic	Sri Lanka	
	El Salvador	Timor-Leste (East Timor)	
	French Guiana		
	Peru		

Level 1 Travel Health Notice, Level 2 Travel Health Alert: [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).

## 2022 Human Case Summary

**International Travel-Associated Dengue Cases:** One hundred cases with onset in 2022 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 (8), Collier, Duval (4), Escambia, Hendry, Hillsborough (8), Lee (4), Manatee (2), Miami-Dade (58), Monroe, Orange (2), Palm Beach (3), Pinellas, Polk, Sarasota, St. Johns, and St. Lucie (2). Four cases were reported in non-Florida residents. In 2022, 89 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	DENV-4	Unknown	Total
Brazil	4					4
Caribbean			1			1
Colombia	2					2
Costa Rica	1				1	2
Cuba	12	26	26	8	10	82
El Salvador	1					1
Honduras				1		1
India		1				1
Mexico	1	2				3
Panama	1					1
Puerto Rico	1					1
Sri Lanka			1			1
<b>Total</b>	<b>23</b>	<b>29</b>	<b>28</b>	<b>9</b>	<b>11</b>	<b>100</b>

**Dengue Cases Acquired in Florida:** In 2022, two cases of locally acquired dengue have been reported in Miami-Dade County, with onset in June and July.

**International Travel-Associated Malaria Cases:** Twenty-eight cases of malaria with onset in 2022 have been reported. Countries of origin were: Brazil (3), Cameroon, Central African Republic, Ethiopia, Equatorial Guinea, Ghana, India, Kenya, Nicaragua (3), Nigeria (9), Sierra Leone (2), Sudan, Uganda (2), and Zambia. Counties reporting cases were: Brevard, Broward (4), Duval (4), Flagler, Hillsborough (3), Lee (3), Leon, Miami-Dade (2), Orange (3), Palm Beach (3), Pasco, Santa Rosa, and St. Johns. Five cases were reported in non-Florida residents.

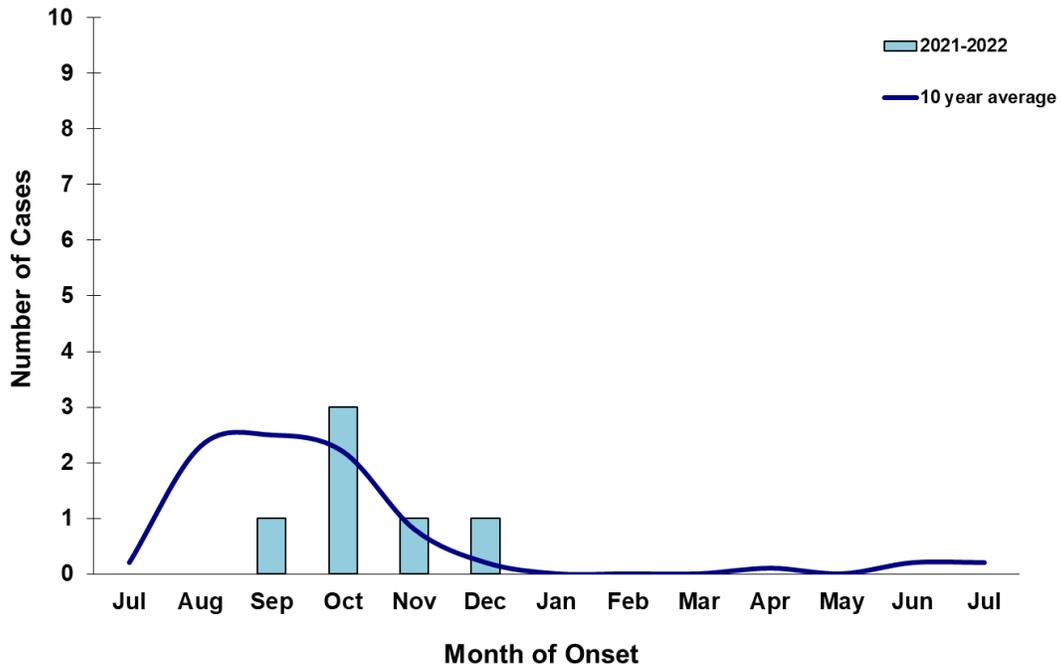
Sixteen cases (57%) were diagnosed with *Plasmodium falciparum*. Nine cases (32%) were diagnosed with *Plasmodium vivax*. Three cases (11%) were diagnosed with *Plasmodium malariae*.

## Veterinary Cases\*\*

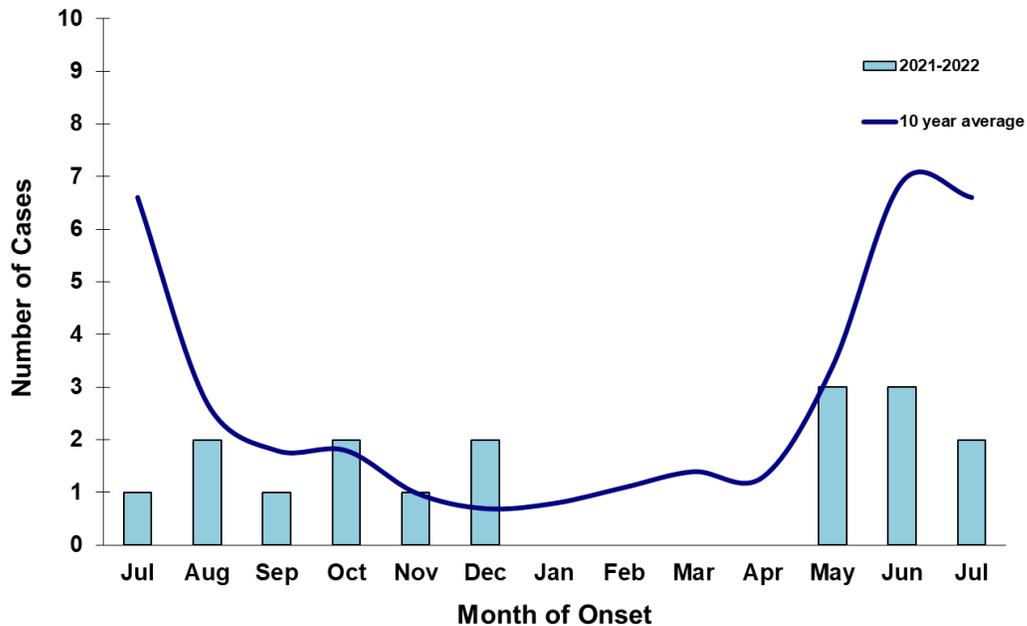
\*\*Veterinary cases are reported by date of onset. Only mammalian veterinary cases are included in the graphs.

No veterinary cases were reported this week.

### Veterinary WNV Disease in Florida, July 2021-2022



### Veterinary EEEV Disease in Florida, July 2021-2022



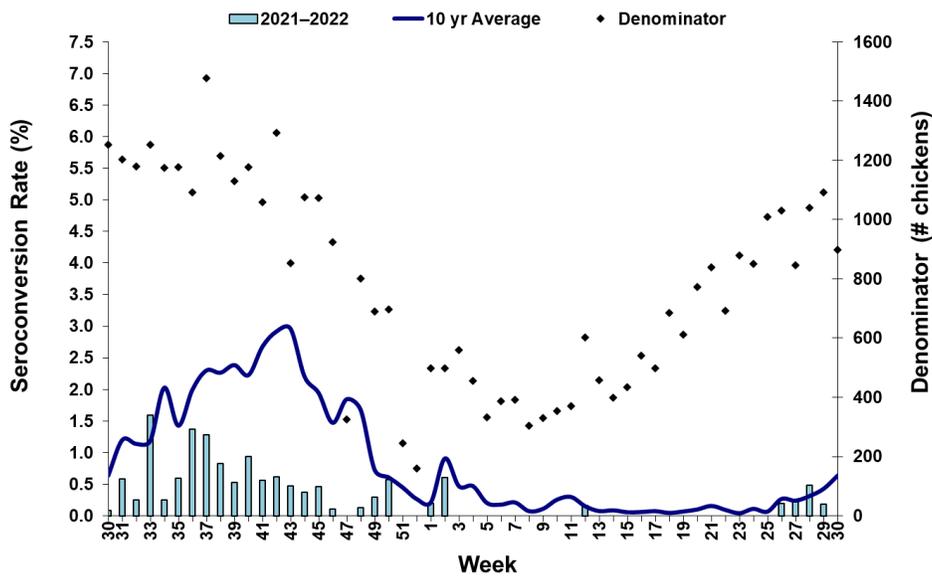
## Sentinel Chickens

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.

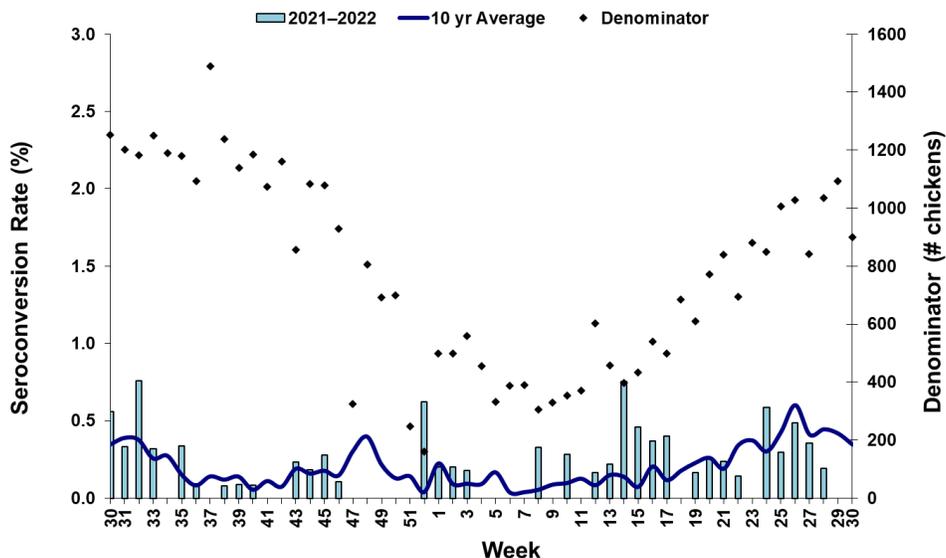
Six sentinel chickens tested positive for antibodies to WNV this week in Bay, Charlotte, Lee, and Sarasota counties.

County	Collection Date	Seroconversion Rates (%)						Collection Week	County Totals YTD
		Flavi	SLEV	WNV	Alpha	EEEV	HJV		
Bay	7/18/2022	11.76		11.76				2 WNV	4 WNV
Charlotte	7/15/2022	4.76		4.76				1 WNV	2 WNV
Lee	6/27/2022	1.06		1.06				1 WNV	3 WNV
	7/5/2022	1.03		1.03				1 WNV	
Sarasota	7/15/2022	1.52		1.52				1 WNV	1 WNV

**Sentinel Seroconversions to WNV in Florida, 2021–2022**



**Sentinel Seroconversions to EEEV in Florida, 2021–2022**



## Mosquito Pools

One mosquito pool tested positive for WNV this week in Sarasota County.

County	Collection Date	Result	Species	County YTD
Sarasota	7/20/2022	1 WNV	<i>Culex quinquefasciatus</i>	1 WNV

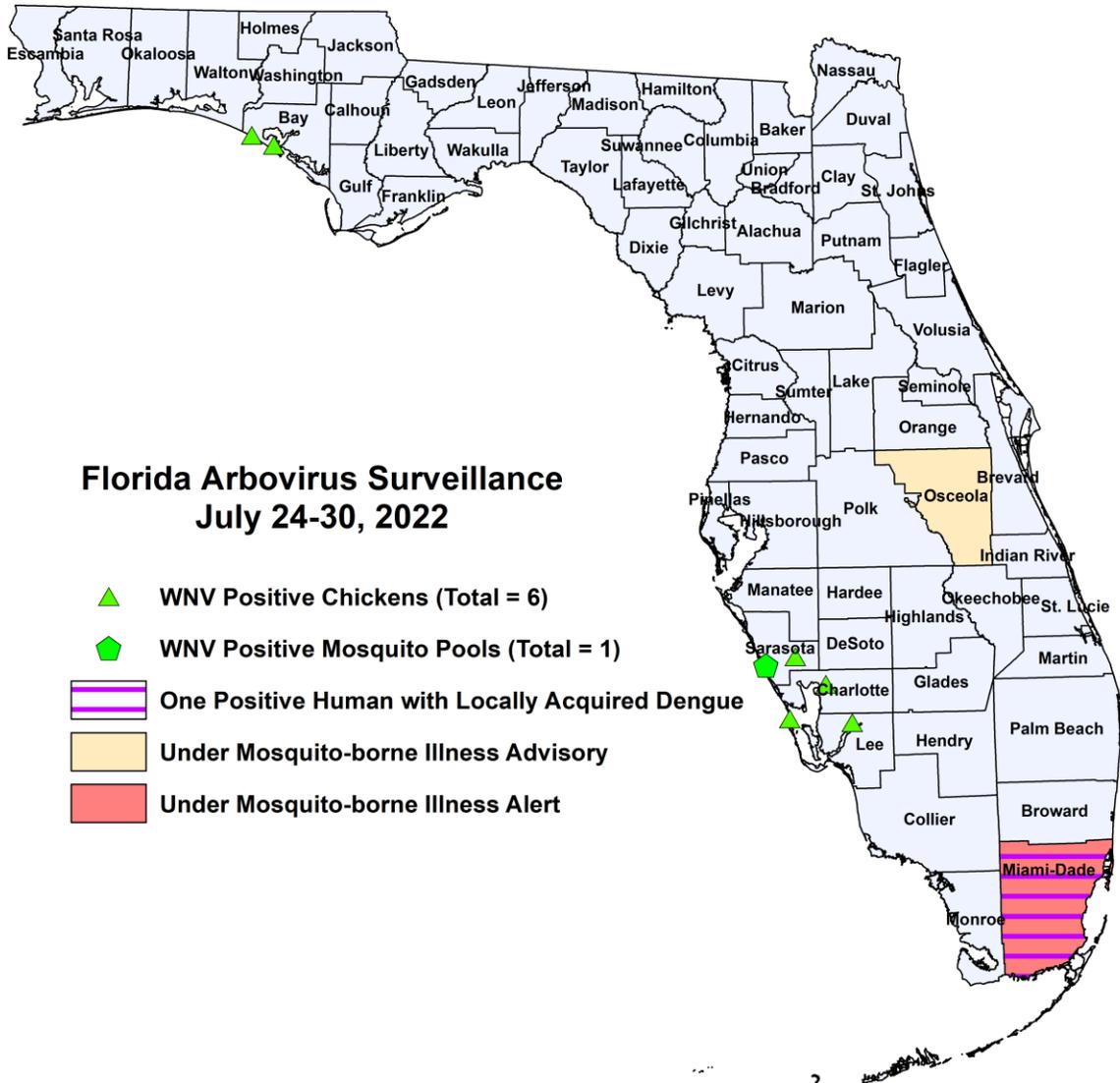
## Dead Birds

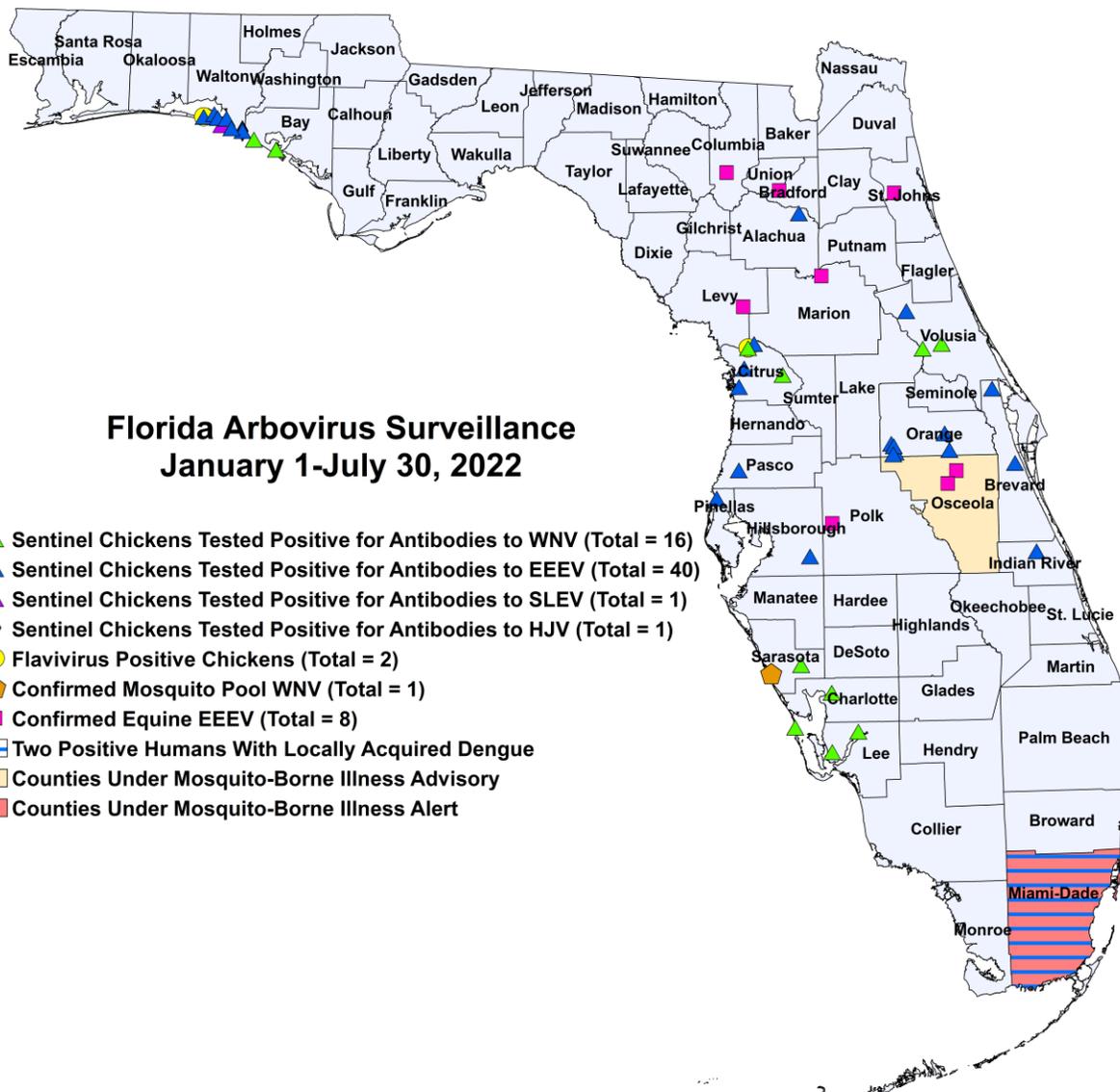
The Fish and Wildlife Conservation Commission (FWC) collects reports of dead birds, which can be an indication of arbovirus circulation in an area. This week, 31 reports representing a total of 38 dead birds, including 8 raptors and 4 doves, were received from 15 counties.

In 2022, 1046 reports representing a total of 2833 dead birds (103 crows, 33 jays, 167 raptors, 89 doves) were received from 54 of Florida's 67 counties.

### 2022

County	Total Dead Birds	Crows	Jays	Raptors	Doves
Brevard	5	0	0	2	2
Clay	2	0	0	0	0
Columbia	1	0	0	0	0
Duval	1	0	0	0	0
Hillsborough	1	0	0	1	0
Indian River	1	0	0	0	0
Lee	2	0	0	0	0
Leon	1	0	0	1	0
Martin	1	0	0	1	0
Palm Beach	13	0	0	0	0
Pinellas	1	0	0	1	0
Polk	1	0	0	0	0
Seminole	1	0	0	1	0
St. Lucie	2	0	0	0	2
Volusia	5	0	0	1	0





## Florida Arbovirus Surveillance January 1-July 30, 2022

- ▲ Sentinel Chickens Tested Positive for Antibodies to WNV (Total = 16)
- ▲ Sentinel Chickens Tested Positive for Antibodies to EEEV (Total = 40)
- ▲ Sentinel Chickens Tested Positive for Antibodies to SLEV (Total = 1)
- ◆ Sentinel Chickens Tested Positive for Antibodies to HJV (Total = 1)
- Flavivirus Positive Chickens (Total = 2)
- ⬠ Confirmed Mosquito Pool WNV (Total = 1)
- Confirmed Equine EEEV (Total = 8)
- Two Positive Humans With Locally Acquired Dengue
- Counties Under Mosquito-Borne Illness Advisory
- Counties Under Mosquito-Borne Illness Alert

### 2022 Arbovirus Activity by County

County	Humans	Equines	Sentinel Chickens	Other
Alachua			1 EEEV (5/31)	
Bay			4 WNV (3/21, 7/5, 7/18)	
Bradford		1 EEEV (6/22)		
Brevard			2 EEEV (4/7, 7/1)	
Charlotte			2 WNV (7/1, 7/15)	
Citrus			4 WNV (1/4, 1/11) 11 EEEV (1/11, 1/18, 4/19, 5/17, 5/23, 6/1, 6/14, 6/21, 6/28, 7/6) 1 Flavivirus (1/25)	
Columbia		1 EEEV (5/9)		
Hillsborough			1 EEEV (3/23)	
Indian River			1 EEEV (4/28)	
Lee			3 WNV (6/27, 7/5, 7/11)	
Levy		1 EEEV (6/16)		
Marion		1 EEEV (7/7)		
Miami-Dade	2 dengue (June, July)			

County	Humans	Equines	Sentinel Chickens	Other
Orange			11 EEEV (1/3, 3/28, 4/11, 4/25, 5/16, 5/31, 6/6, 6/20, 6/27, 7/5, 7/11)	
Osceola		2 EEEV (5/24, 5/26)		
Pasco			1 EEEV (4/11)	
Pinellas			1 EEEV (3/7)	
Polk		1 EEEV (6/19)		
Sarasota			1 WNV (7/15)	1 WNV mosquito pool (Cx. quinquefasciatus [7/20])
St. Johns		1 EEEV (7/5)		
Volusia			2 EEEV (2/21, 6/27) 2 WNV (7/11)	
Walton			9 EEEV (4/4, 5/9, 6/13, 6/20, 6/27, 7/5, 7/11) 1 HJV (6/20) 1 SLEV (3/21) 1 Flavivirus (3/21)	

\*Two chickens in 2022 have tested positive for flavivirus antibodies and require additional specialized testing to distinguish between WNV and SLEV antibodies. Testing is currently delayed due to supply chain issues. The final determination of these birds will be updated as more information becomes available. In Florida, both WNV and SLEV have similar disease vectors and epidemiology. Seroconversion rates for flavivirus are included in the table.

### 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 Veronica Nunez, 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.