



Florida Arbovirus Surveillance Week 28: July 10-16, 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 10-16, 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. No sentinel chickens tested positive for antibodies to WNV this week. In 2022, positive samples from five sentinel chickens have been reported from two 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. One horse with EEEV infection was reported this week in St. Johns County. Three sentinel chickens tested positive for antibodies to EEEV this week in Brevard, Orange, and Walton counties. In 2022, positive samples from 37 sentinel chickens and seven horses have been reported from 16 counties.

International Travel-Associated Dengue: Nineteen cases of dengue were reported this week in persons that had international travel. In 2022, 61 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, one case of locally acquired dengue has 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 and Osceola counties are 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	Nigeria
	Colombia	Pakistan	
	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.

For a map of arboviral disease activity in the United States visit: www.cdc.gov/arbovet/maps/ADB_Diseases_Map/index.html.

2022 Human Case Summary

International Travel-Associated Dengue Cases: Sixty-two 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 (2), Duval (2), Hillsborough (6), Hendry, Lee (4), Manatee, Miami-Dade (35), Orange (2), Palm Beach (3), Pinellas, Polk, Sarasota, St. Johns, and St. Lucie. Four cases were reported in non-Florida residents. In 2022, 56 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
Cuba	10	17	10	3	6	46
El Salvador	1					1
Honduras				1		1
India		1				1
Mexico	1	1				2
Panama	1					1
Puerto Rico	1					1
Sri Lanka			1			1
Total	21	19	12	4	6	62

Dengue Cases Acquired in Florida: In 2022, one case of locally acquired dengue has been reported in Miami-Dade County, with onset in June.

International Travel-Associated Malaria Cases: Twenty-four cases of malaria with onset in 2022 have been reported. Countries of origin were: Brazil (3), Central African Republic, Ethiopia, Equatorial Guinea, Kenya, Nicaragua (3), Nigeria (8), Sierra Leone (2), Sudan, Uganda (2), and Zambia. Counties reporting cases were: Broward (4), Duval (3), Flagler, Hillsborough (3), Lee (3), Leon, Miami-Dade (2), Orange (2), Palm Beach (2), Pasco, Santa Rosa, and St. Johns. Four cases were reported in non-Florida residents.

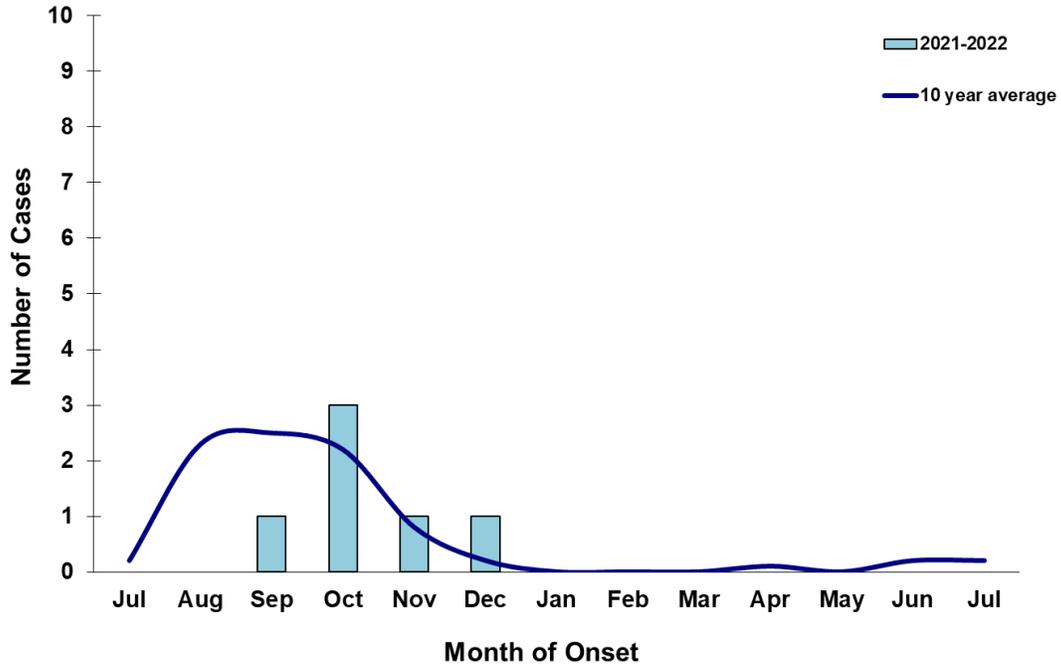
Fourteen cases (59%) were diagnosed with *Plasmodium falciparum*. Eight cases (33%) were diagnosed with *Plasmodium vivax*. Two cases (8%) were diagnosed with *Plasmodium malariae*.

Veterinary Cases**

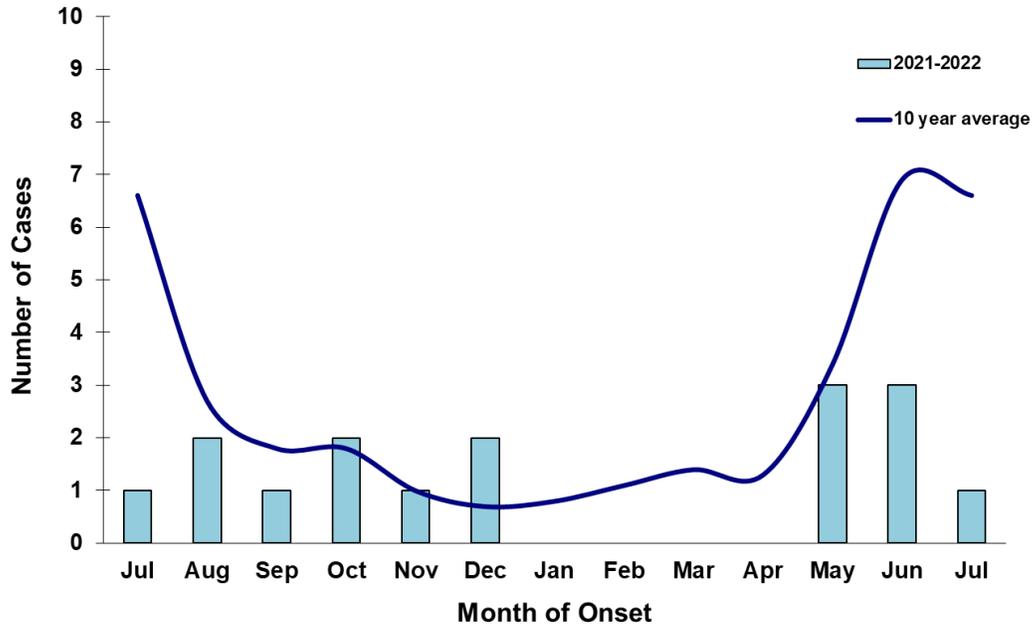
**Veterinary cases are reported by date of onset. Only mammalian veterinary cases are included in the graphs.

One horse with EEEV infection was reported this week in St. Johns County.

Veterinary WNV Disease in Florida, July 2021-2022



Veterinary EEEV Disease in Florida, July 2021-2022



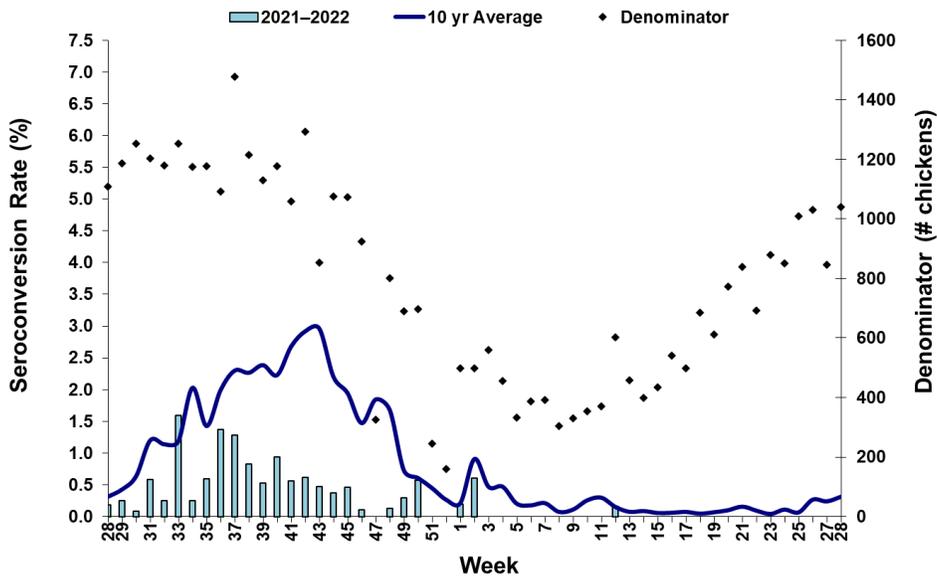
Sentinel Chickens

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.

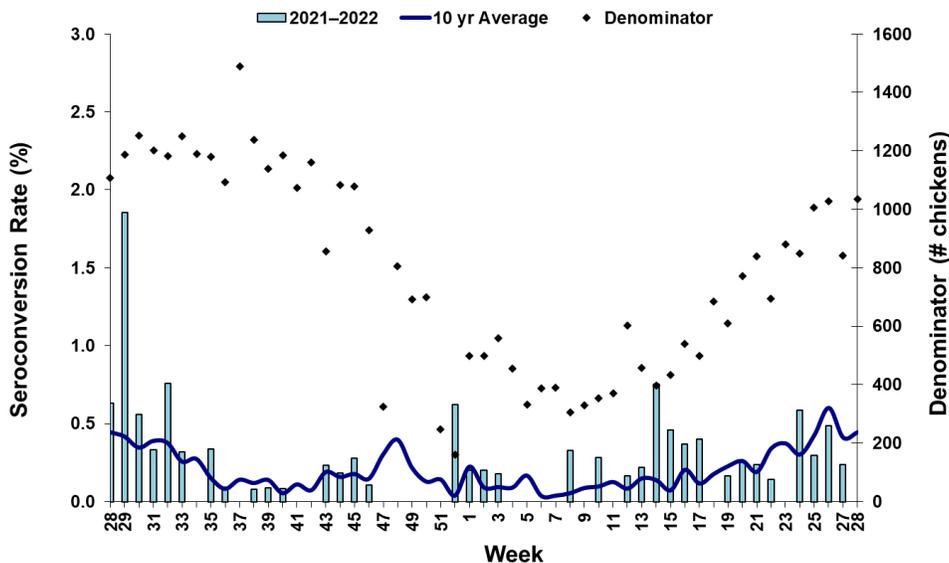
Three sentinel chickens tested positive for antibodies to EEEV this week in Brevard, Orange, and Walton counties.

County	Collection Date	Seroconversion Rates (%)						Collection Week	County Totals
		Flavi	SLEV	WNV	Alpha	EEEV	HJV		YTD
Brevard	7/1/2022				2.86	2.86		1 EEEV	2 EEEV
Orange	7/5/2022				0.91	0.91		1 EEEV	10 EEEV
Walton	7/5/2022				2.22	2.22		1 EEEV	8 EEEV, 1 SLEV, 1 Flavivirus

Sentinel Seroconversions to WNV in Florida, 2021–2022



Sentinel Seroconversions to EEEV in Florida, 2021–2022



Mosquito Pools

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

County	Collection Date	Result	Species	County YTD

Dead Birds

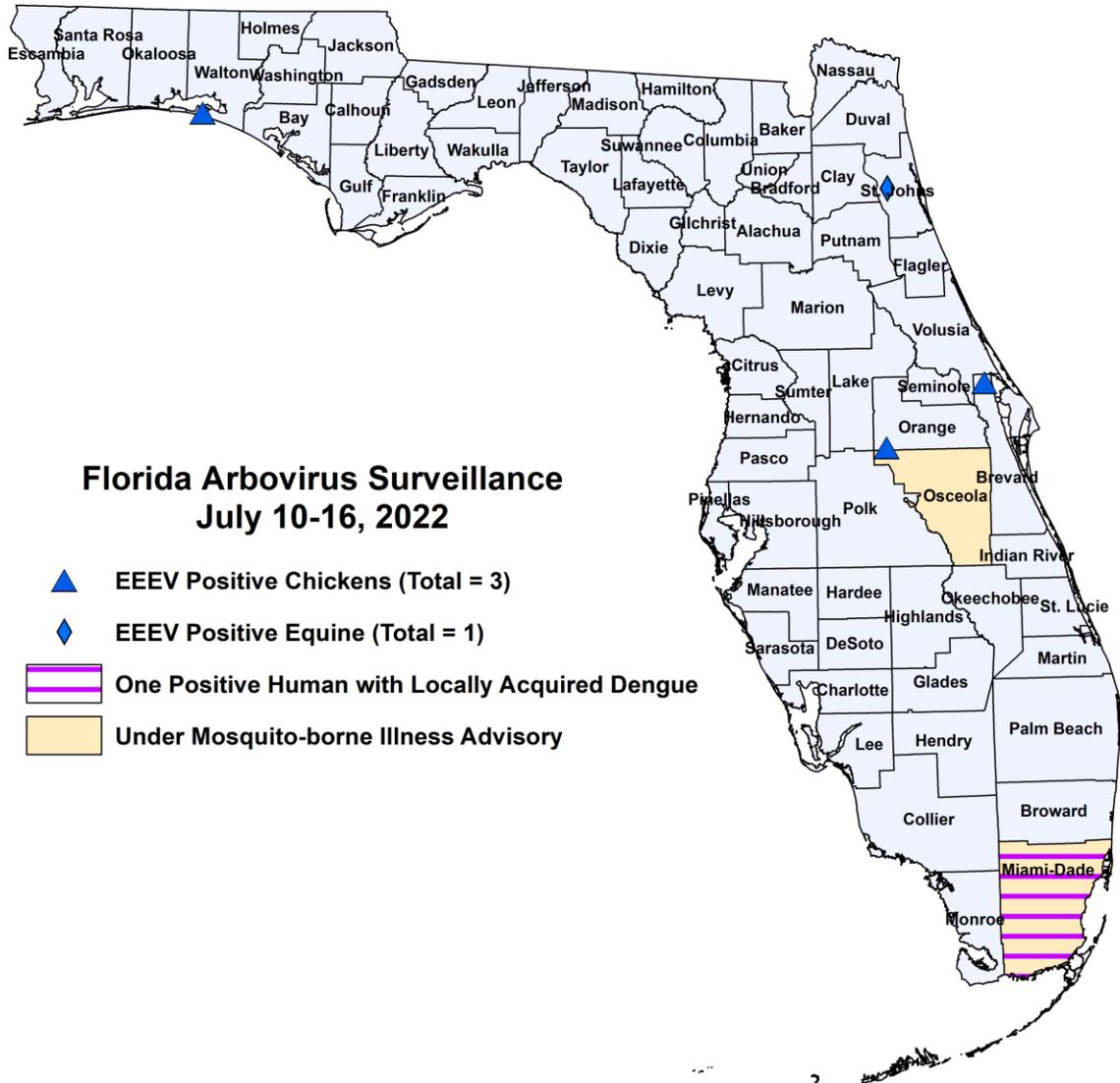
The Fish and Wildlife Conservation Commission (FWC) collects reports of dead birds, which can be an indication of arbovirus circulation in an area. This week, 20 reports representing a total of 74 dead birds, including 2 crows, 1 jay, 8 raptors, and 19 doves, were received from 11 counties.

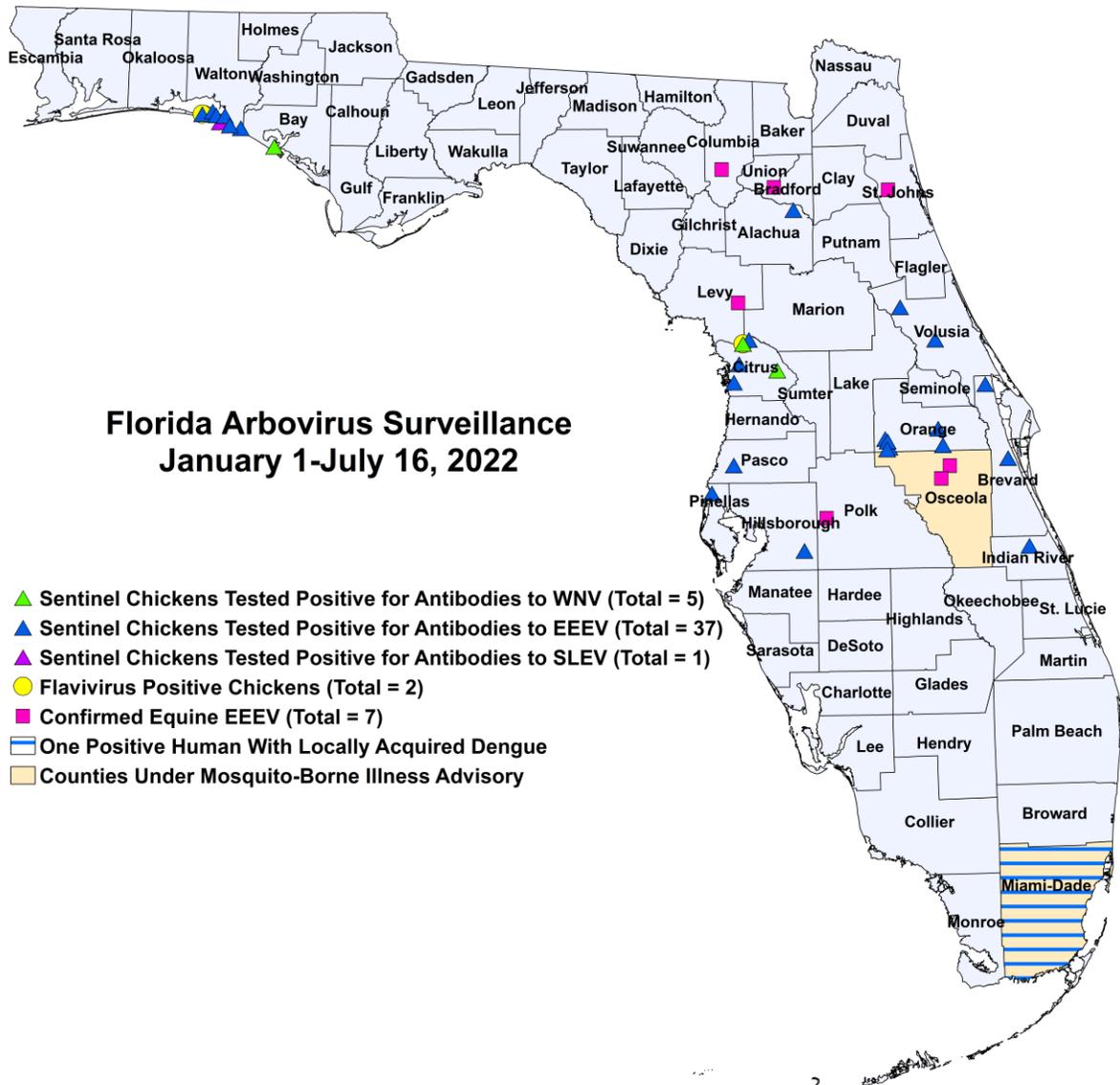
In 2022, 988 reports representing a total of 2662 dead birds (102 crows, 33 jays, 152 raptors, 76 doves) were received from 54 of Florida's 67 counties.

2022

County	Total Dead Birds	Crows	Jays	Raptors	Doves
Brevard	6	2	0	1	3
Broward	3	0	0	3	0
Clay	1	0	0	0	0
Duval	11	0	0	1	0
Hillsborough	1	0	0	1	0
Lee	1	0	0	0	0
Orange	1	0	0	1	0
Palm Beach	22	0	0	0	0
Pinellas	25	0	0	0	15
St. Lucie	1	0	1	0	0
Volusia	2	0	0	1	1

Maps





2022 Arbovirus Activity by County

County	Humans	Equines	Sentinel Chickens	Other
Alachua			1 EEEV (5/31)	
Bay			1 WNV (3/21)	
Bradford		1 EEEV (6/22)		
Brevard			2 EEEV (4/7, 7/1)	
Citrus			4 WNV (1/4, 1/11) 10 EEEV (1/11, 1/18, 4/19, 5/17, 5/23, 6/1, 6/14, 6/21, 6/28) 1 Flavivirus (1/25)	
Columbia		1 EEEV (5/9)		
Hillsborough			1 EEEV (3/23)	
Indian River			1 EEEV (4/28)	
Levy		1 EEEV (6/16)		
Miami-Dade	1 dengue (June)			
Orange			10 EEEV (1/3, 3/28, 4/11, 4/25, 5/16, 5/31, 6/6, 6/20, 6/27, 7/5)	
Osceola		2 EEEV (5/24, 5/26)		

County	Humans	Equines	Sentinel Chickens	Other
Pasco			1 EEEV (4/11)	
Pinellas			1 EEEV (3/7)	
Polk		1 EEEV (6/19)		
St. Johns		1 EEEV (7/5)		
Volusia			2 EEEV (2/21, 6/27)	
Walton			8 EEEV (4/4, 5/9, 6/13, 6/20, 6/27, 7/5) 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

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.