



Florida Arbovirus Surveillance Week 29: July 16-22, 2023

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 16-22, 2023, the following arboviral activity was recorded in Florida.

WNV activity: One human case of WNV infection was reported this week in Escambia County. No horses with WNV infection were reported this week. Three sentinel chickens tested positive for antibodies to WNV this week in Orange, St. Johns, and Volusia counties. No mosquito pools tested positive for WNV this week. In 2023, positive samples from nine sentinel chickens, one horse, and one human have been reported from eight 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 2023, no sentinel chickens tested positive for SLEV.

EEEV activity: No human cases of EEEV infection were reported this week. One horse with EEEV infection was reported this week in Jefferson County. Six sentinel chickens tested positive for antibodies to EEEV this week in Leon, Nassau, Orange, and Walton counties. In 2023, positive samples from 75 sentinel chickens, eight horses, one sparrow, and one human have been reported from 16 counties.

International Travel-Associated Dengue: Eighteen cases of dengue were reported this week in persons that had international travel. In 2023, 136 travel-associated dengue cases have been reported.

Dengue Cases Acquired in Florida: Two cases of locally acquired dengue was reported this week in Miami-Dade County. In 2023, five 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 2023, one case of travel-associated chikungunya fever has been reported.

Chikungunya Fever Cases Acquired in Florida: No cases of locally acquired chikungunya fever were reported this week. In 2023, 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 2023, 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 2023, no cases of locally acquired Zika fever have been reported.

Malaria Cases Acquired in Florida: No cases of locally acquired malaria were reported this week. In 2023, seven cases of locally acquired malaria have been reported.

Advisories/Alerts: Escambia, Jefferson, Nassau, Orange, Polk, St. Johns, and Walton counties are currently under a mosquito-borne illness advisory. Manatee, Miami-Dade, and Sarasota counties are currently under a mosquito-borne illness alert. 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			Chikungunya	Yellow Fever	Malaria
Africa and the Middle East	Americas	Asia and the Pacific Islands	Americas	Africa and the Middle East	Americas
São Tomé and Príncipe	Argentina	Bangladesh	Paraguay	Nigeria	Costa Rica
Somalia	Bolivia	Laos			
Sudan	Colombia	Malaysia			
	Cuba	Myanmar (Burma)			
	Dominican Republic	Pakistan			
	Guadeloupe	Philippines			
	Guatemala	Sri Lanka			
	Martinique	Thailand			
	Nicaragua	Vietnam			
	Panama				
	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: <https://www.cdc.gov/fight-the-bite/at-risk/index.html>.

2023 Human Case Summary

West Nile Virus Illnesses Acquired in Florida: In 2023, one case of WNV illness acquired in Florida has been reported in Escambia County with onset in July.

2023 International Travel-Associated Chikungunya cases: One case with onset in 2023 has been reported in an individual with travel history to a chikungunya-endemic area in the two weeks prior to onset. County reporting case was: Lee. Country of origin was: Brazil.

2023 International Travel-Associated Dengue Cases: One hundred and thirty-six cases with onset in 2023 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 (10), Collier (3), Duval (3), Escambia, Hendry, Hillsborough (9), Lee (2), Manatee (2), Miami-Dade (83), Monroe (2), Nassau, Orange (5), Osceola, Palm Beach (4), Pasco, Polk, Sarasota, St. Lucie (3), and Volusia (2). Six cases were reported in non-Florida residents. One case met the criteria for severe dengue (dengue shock syndrome [DSS] or dengue hemorrhagic fever [DHF]). Those at greater risk for DSS and DHF include persons with previous dengue infection, pregnant women, infants, the elderly, and those with co-morbidities. However, severe illness can also occur in those without any of these risk factors. In 2023, 113 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-3/DENV-4	Unknown	Total
Argentina						1	1
Bahamas			1				1
Bolivia		5					5
Brazil	9					4	13
Colombia			1				1
Costa Rica	1						1
Cuba	1	1	74	3	1	9	89
Dominican Republic		1				2	3
Ecuador						1	1
Haiti						2	2
India			1				1
Indonesia		1					1
Maldives	1						1
Mexico			1			3	4
Peru	5	3				1	9
Puerto Rico	2	1					3
Total	19	12	78	3	1	23	136

2023 Dengue Cases Acquired in Florida: In 2023, five cases of locally acquired dengue have been reported in Miami-Dade County, with onsets in January, March, and June (3). Five cases have been serotyped by PCR. Serotypes reported were DENV-3 (4) and DENV-2 (1).

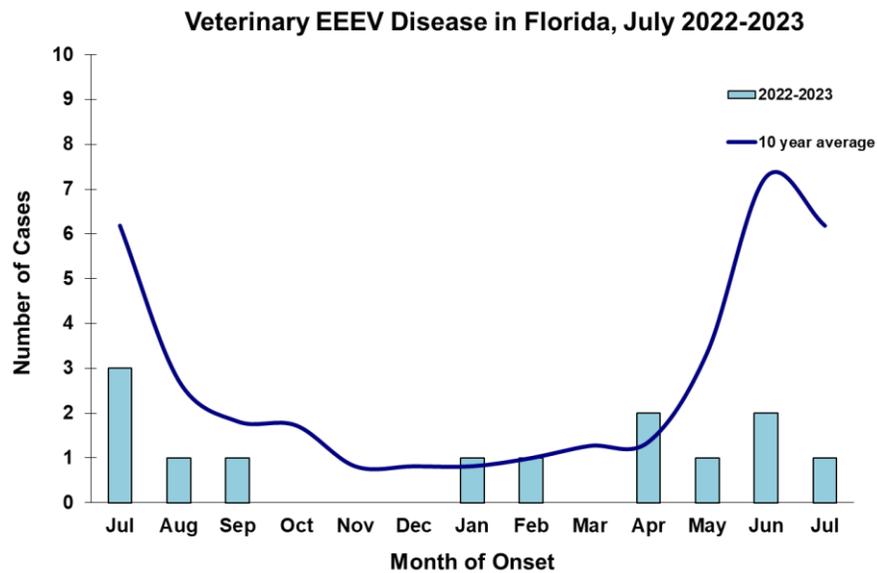
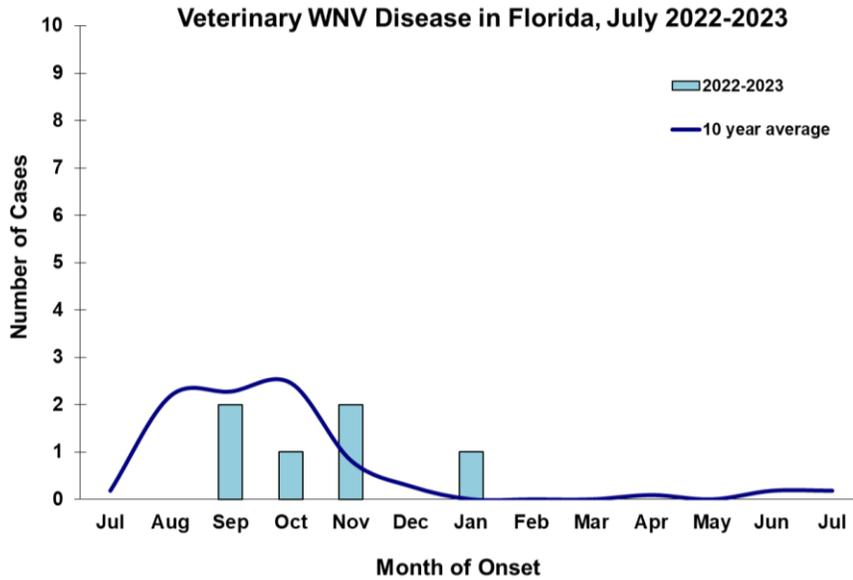
2023 International Travel-Associated Malaria Cases: Twenty-eight cases of malaria with onset in 2023 have been reported in individuals with a travel history to a malaria-endemic area. Counties reporting cases were: Broward (5), Duval, Hillsborough (4), Lee (2), Leon (2), Miami-Dade (5), Orange (2), Osceola (2), Pinellas (3), Sarasota, and Volusia. Eight cases were reported in non-Florida residents. Please see the table below for a breakdown of cases by country of origin and *Plasmodium* species.

Country of Exposure	<i>Plasmodium falciparum</i>	<i>Plasmodium vivax</i>	<i>Plasmodium malariae</i>	Total
Burundi	1			1
Cameroon	1			1
Côte D'Ivoire	1			1
Democratic Republic of the Congo	2			2
Equatorial Guinea	1			1
Ghana	3			3
Kenya			1	1
Nicaragua		2		2
Nigeria	4			4
Pakistan		1		1
Sierra Leone	1		1	2
Sudan		1		1
Uganda	4			4
Multiple countries		4		4
Total	18	8	2	28

2023 Malaria Cases Acquired in Florida: In 2023, seven cases of locally acquired malaria have been reported in Sarasota County, with onsets in May, June (5), and July. The *Plasmodium* species reported were *Plasmodium vivax*.

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 Jefferson County.



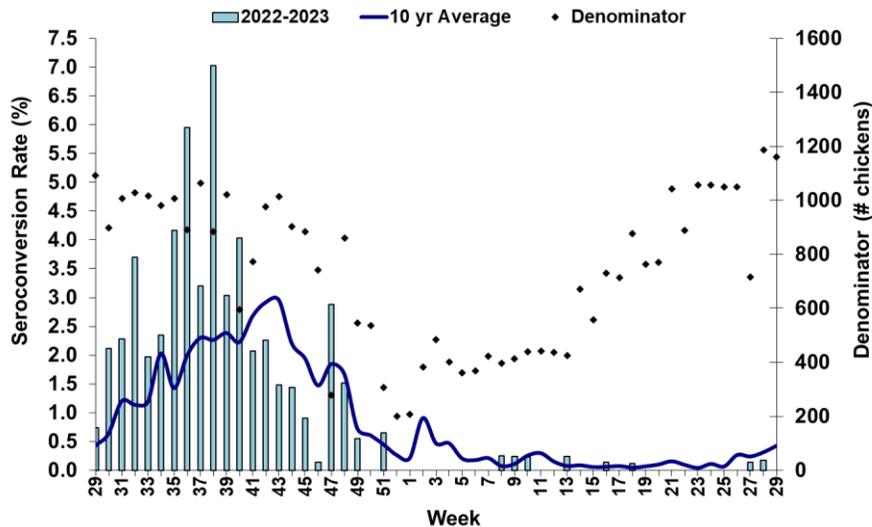
Sentinel Chickens

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.

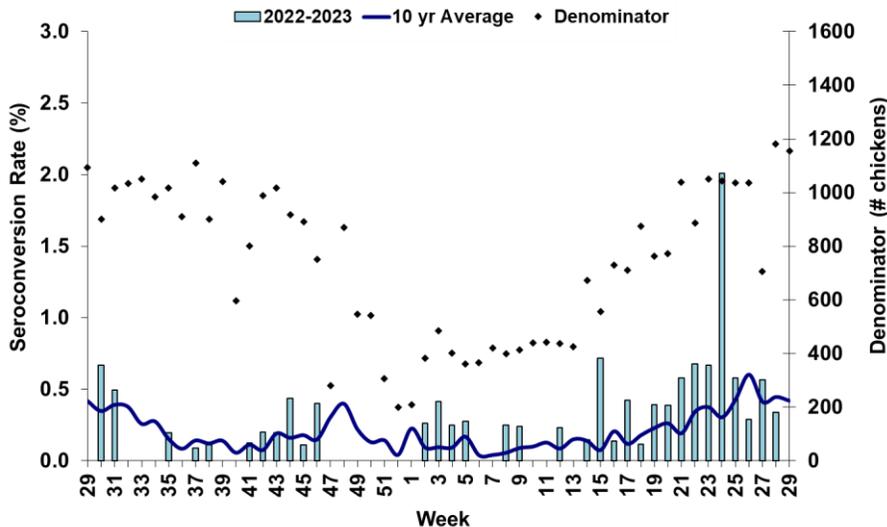
Six sentinel chickens tested positive for antibodies to EEEV this week in Leon, Nassau, Orange, and Walton counties. Three sentinel chickens tested positive for antibodies to WNV this week in Orange, St. Johns and Walton counties.

County	Collection Date	Seroconversion Rates (%)					County Totals		
		Flavi	SLEV	WNV	Alpha	EEEV	HJV	Collection Week	YTD
Leon	7/6/2023				4.35	4.35		1 EEEV	1 EEEV
Nassau	7/7/2023				3.85	3.85		1 EEEV	11 EEEV
Orange	7/10/2023	0.90		0.90	0.90	0.90		1 WNV, 1 EEEV	2 WNV, 12 EEEV, 1 HJV
St. Johns	7/10/2023	2.04		2.04				1 WNV	2 EEEV, 1 WNV
Volusia	7/3/2023	1.96		1.96				1 WNV	7 EEEV, 1 WNV
Walton	7/11/2023				3.41	3.41		3 EEEV	1 WNV, 29 EEEV, 5 HJV

Sentinel Seroconversions to WNV in Florida, 2022–2023



Sentinel Seroconversions to EEEV in Florida, 2022–2023



Mosquito Pools

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

County	Collection Date	Result	Species	County YTD

Dead Birds

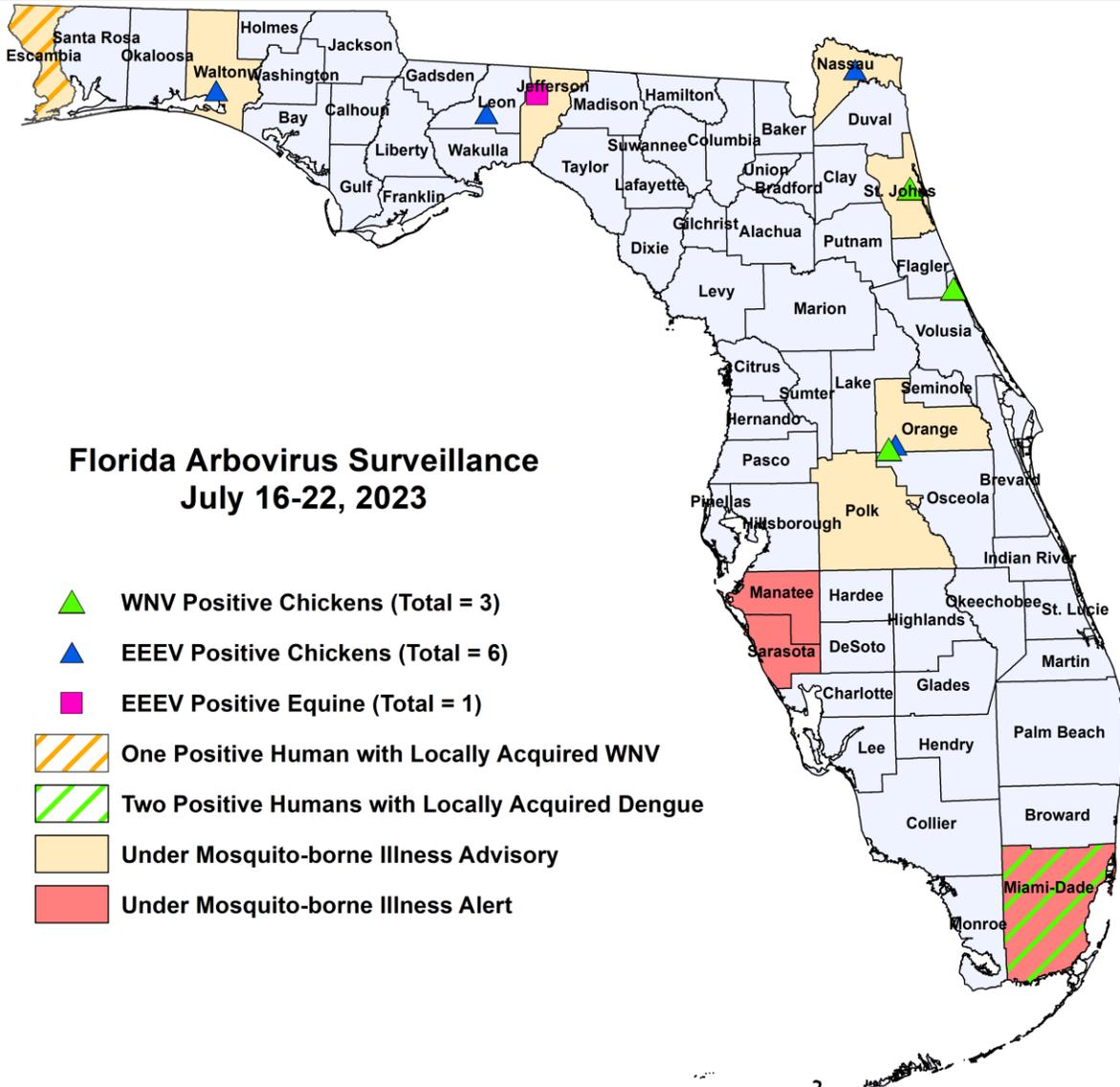
The Fish and Wildlife Conservation Commission (FWC) collects reports of dead birds, which can be an indication of arbovirus circulation in an area. This week, 8 reports representing a total of 12 dead birds, including two doves, were received from six counties.

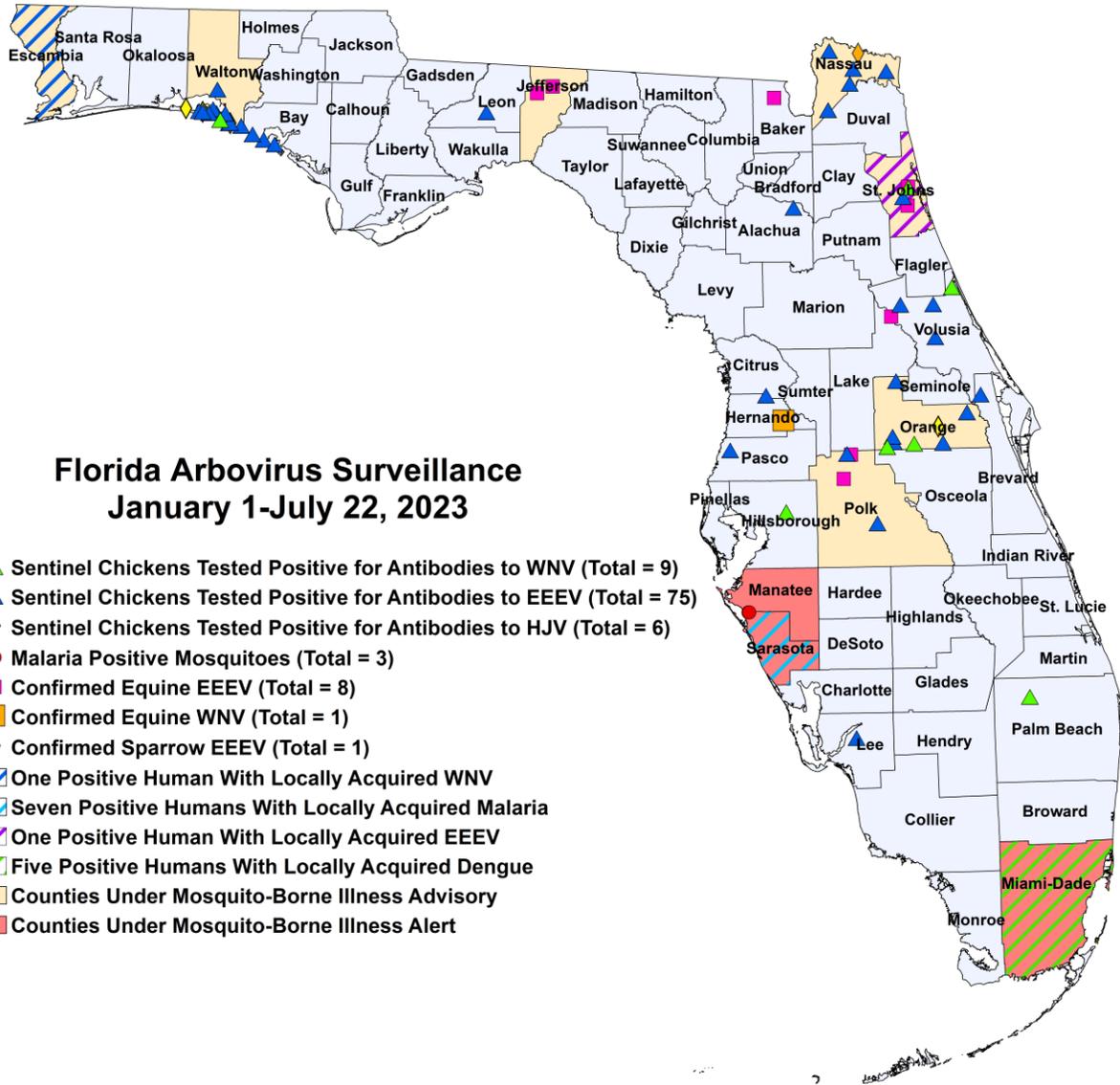
In 2023, 606 reports representing a total of 1420 dead birds (46 crows, 46 jays, 108 raptors, 138 doves) were received from 49 of Florida's 67 counties.

2023

County	Total Dead Birds	Crows	Jays	Raptors	Doves
Broward	1	0	0	0	1
Charlotte	1	0	0	0	0
Lee	2	0	0	0	1
Pinellas	3	0	0	0	0
Sarasota	4	0	0	0	0
Volusia	1	0	0	0	0

Maps





Florida Arbovirus Surveillance January 1-July 22, 2023

- ▲ Sentinel Chickens Tested Positive for Antibodies to WNV (Total = 9)
- ▲ Sentinel Chickens Tested Positive for Antibodies to EEEV (Total = 75)
- ◆ Sentinel Chickens Tested Positive for Antibodies to HJV (Total = 6)
- Malaria Positive Mosquitoes (Total = 3)
- Confirmed Equine EEEV (Total = 8)
- Confirmed Equine WNV (Total = 1)
- ◆ Confirmed Sparrow EEEV (Total = 1)
- ▨ One Positive Human With Locally Acquired WNV
- ▨ Seven Positive Humans With Locally Acquired Malaria
- ▨ One Positive Human With Locally Acquired EEEV
- ▨ Five Positive Humans With Locally Acquired Dengue
- Counties Under Mosquito-Borne Illness Advisory
- Counties Under Mosquito-Borne Illness Alert

2023 Arbovirus Activity by County

County	Humans	Equines	Sentinel Chickens	Other
Alachua			1 EEEV (6/19)	
Baker		1 EEEV (5/5)		
Bay			6 EEEV (5/15, 5/22, 5/30, 6/12)	
Brevard			1 EEEV (3/24)	
Citrus			1 EEEV (4/24)	
Escambia	1 WNV (July)			
Hernando		1 WNV (1/6)		
Hillsborough			3 WNV (2/28, 3/7, 5/2)	
Jefferson		2 EEEV (6/22, 6/30)		
Lake		1 EEEV (1/29)		
Lee			1 EEEV (1/9)	
Leon			1 EEEV (7/6)	
Miami-Dade	5 dengue (January, March, June (3))			
Nassau			11 EEEV (6/2, 6/16, 6/23, 7/7)	1 EEEV Sparrow (6/24)

County	Humans	Equines	Sentinel Chickens	Other
Orange			2 WNV (2/20, 7/10) 12 EEEV (1/17, 2/20, 2/27, 4/10, 4/24, 5/1, 5/15, 5/30, 6/5, 7/10) 1 HJV (5/8)	
Palm Beach			1 WNV (4/18)	
Pasco			1 EEEV (4/24)	
Polk		2 EEEV (4/7, 4/10)	2 EEEV (5/22, 5/26)	
Sarasota	7 malaria (May, June (5), July)			3 <i>Plasmodium vivax</i> mosquitoes (<i>Anopheles crucians</i> [6/1, 6/2, 6/5])
St. Johns	1 EEE (June)	1 EEEV (2/2, 7/6)	2 EEEV (6/12, 6/26) 1 WNV (7/10)	
Volusia			7 EEEV (1/17, 1/23, 1/30, 4/10, 4/17, 6/12) 1 WNV (73)	
Walton			1 WNV (3/27) 29 EEEV (4/3, 4/10, 5/8, 5/30, 6/5, 6/12, 6/19, 6/26, 6/28, 7/3, 7/11) 5 HJV (5/8, 5/22, 6/12)	

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

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.