



Florida Arbovirus Surveillance Week 40: October 3-9, 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 October 3-9, 2021, the following arboviral activity was recorded in Florida.

WNV activity: Two human cases of WNV infection were reported this week in Collier County. One horse with WNV infection was reported this week in Suwannee County. Five sentinel chickens tested positive for antibodies to WNV this week in Charlotte, Duval, Lee, Sarasota, and Walton counties. In 2021, positive samples from four humans, two horses, 96 sentinel chickens, and eight mosquito pools have been reported from 16 counties.

SLEV activity: No human cases of SLEV infection were reported this week. One sentinel chicken tested positive for antibodies to SLEV this week in Walton County. In 2021, positive samples from three sentinel chickens and one mosquito pool have been reported from three counties.

EEEV activity: No human cases of EEEV infection were reported this week. No horses with EEEV infection were reported this week. One emu with EEEV infection was reported this week in Lake County. One sentinel chicken tested positive for antibodies to EEEV this week in Walton County. In 2021, positive samples from 16 horses, 175 sentinel chickens, and one emu have been reported from 29 counties.

International Travel-Associated Dengue Fever Cases One case of dengue fever was reported this week in a person that had international travel. In 2021, nine 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: Bay, Citrus, Jefferson, Nassau, Orange, Pasco and Walton counties are currently under a mosquito-borne illness advisory. Collier County is 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 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. For a map of arboviral disease activity in the United States visit: www.cdc.gov/arbovet/maps/ADB_Diseases_Map/index.html.

2021 Human Case Summary

West Nile Virus Illnesses Acquired in Florida: Four human cases of WNV illness acquired in Florida have been reported in 2021: three in Collier County (August) and one in Miami-Dade (July) County.

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: Nine 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 (3) and Palm Beach (2): One case was reported in a non-Florida resident. In 2021, seven 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			2
Dominican Republic		1			1
Ecuador	1				1
Honduras				1	1
Mexico/Caribbean		1			1
Saint Barts	1				1
Total	3	3	1	2	9

International Travel-Associated Malaria Cases: Thirty-two 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 (7), Sierra Leone (5), Togo, Uganda (2) and Venezuela. Counties reporting cases were: Alachua (2), Brevard (2), Broward (5), Duval (4), Miami-Dade (5), Orange (2), Osceola (2), Palm Beach (2), Pinellas (2), Polk (2), Seminole (3) and St. Johns. Three cases were reported in non-Florida residents.

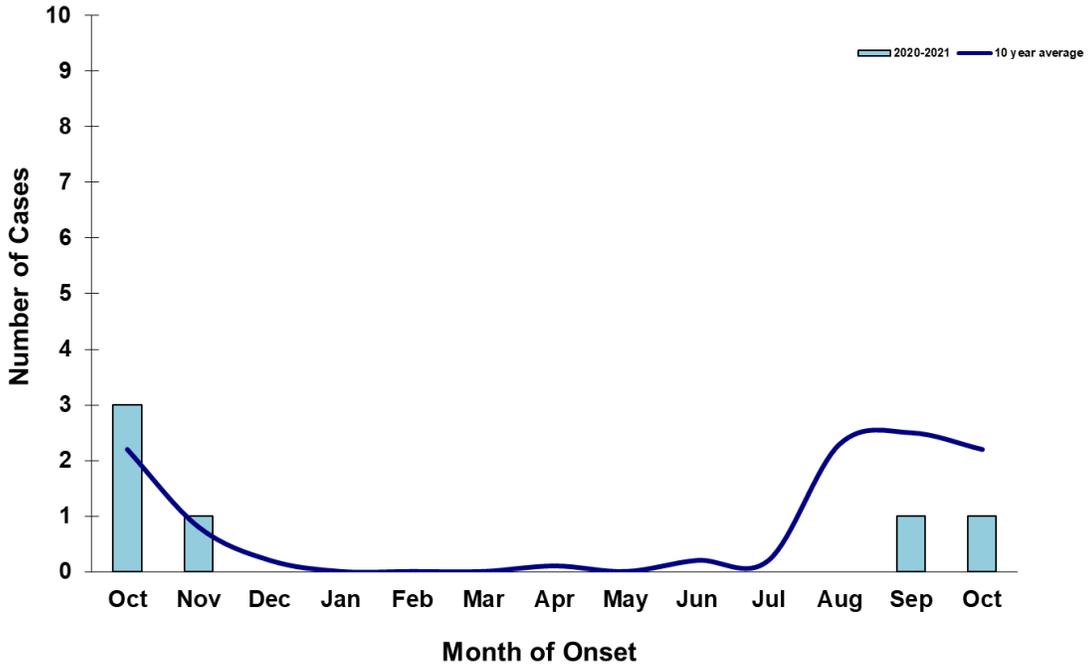
Twenty-nine cases (91%) were diagnosed with *Plasmodium falciparum*. One case (3%) was diagnosed with *Plasmodium malariae*. One case (3%) was diagnosed with *Plasmodium ovale*. One case (3%) was diagnosed with *Plasmodium vivax*.

Veterinary Cases*

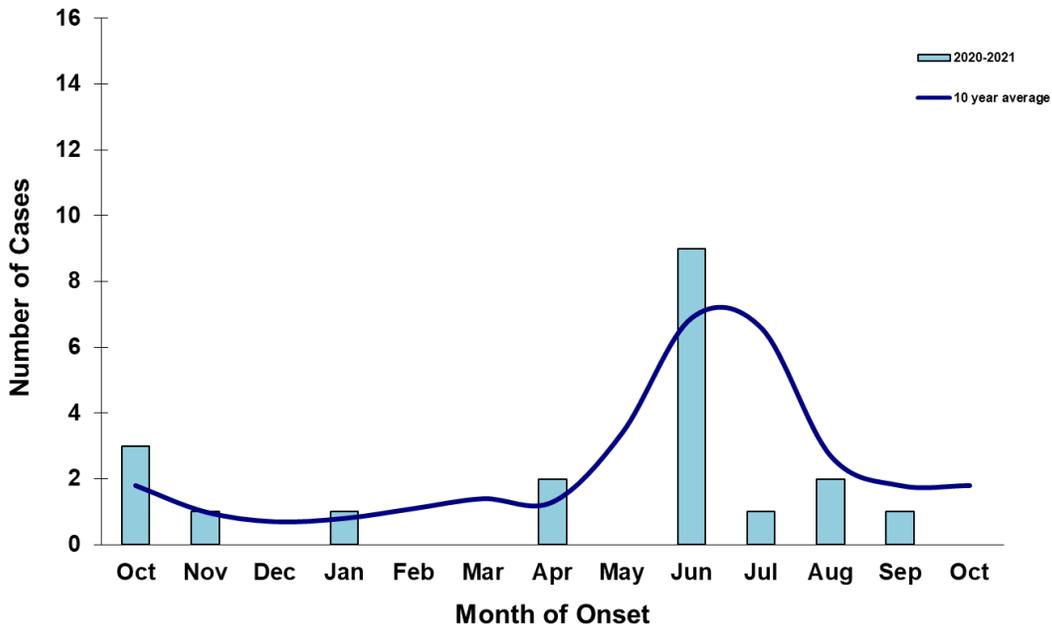
*Veterinary cases are reported by date of onset. Only mammalian veterinary cases are included in the graphs.

One horse with WNV infection was reported this week in Suwannee County. One emu with EEEV infection was reported this week in Lake County.

Veterinary WNV Disease in Florida, October 2020-2021



Veterinary EEEV Disease in Florida, October 2020-2021



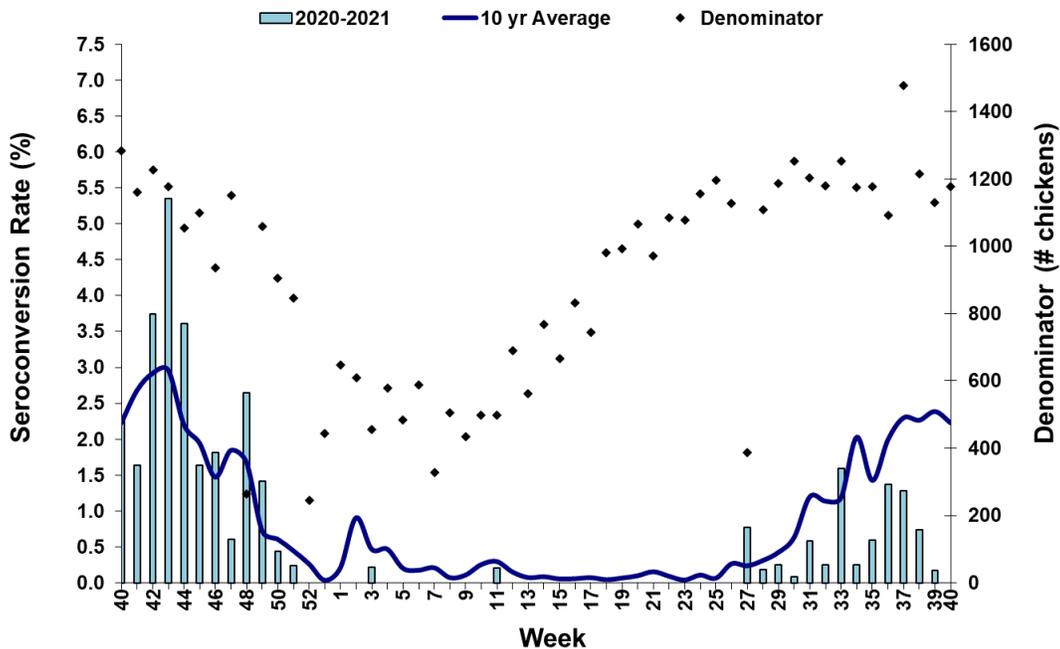
Sentinel Chickens

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.

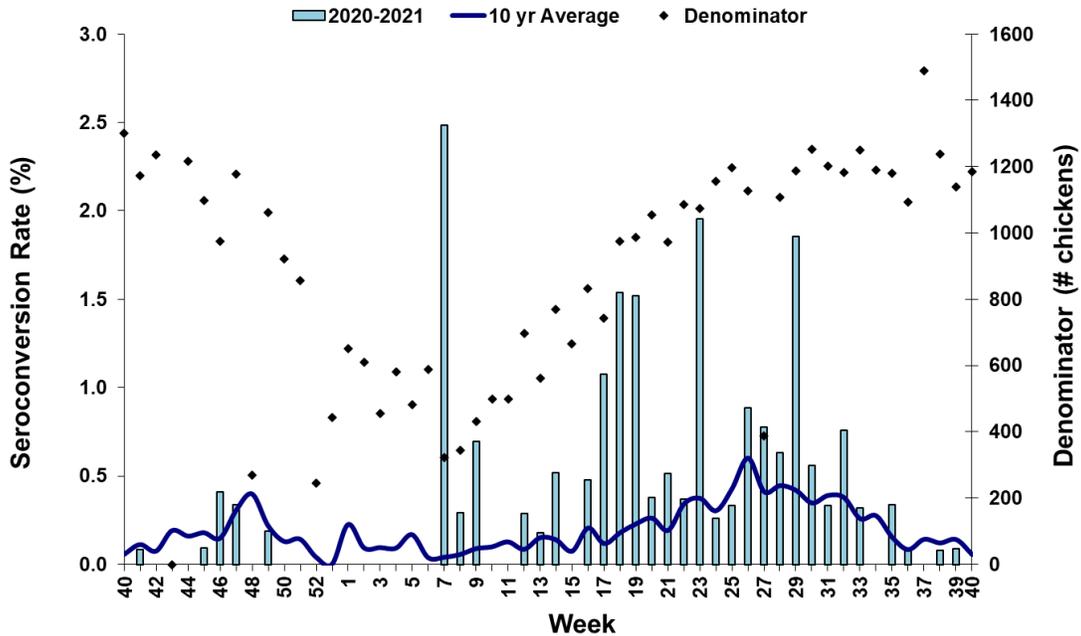
Five sentinel chickens tested positive for antibodies to WNV this week in Charlotte, Duval, Lee, Sarasota, and Walton counties. One sentinel chicken tested positive for antibodies to SLEV this week in Walton County. One sentinel chicken tested positive for antibodies to EEEV this week in Walton County.

County	Collection Date	Seroconversion Rates (%)						County Totals	
		Flavi	SLEV	WNV	Alpha	EEEV	HJV	Collection Week	YTD
Charlotte	9/17/2021	4.76		4.76				1 WNV	1 WNV, 1 EEEV
Duval	9/27/2021	3.57		3.57				1 WNV	2 WNV
Lee	9/27/2021	1.16		1.16				1 WNV	26 WNV, 1 EEEV
Sarasota	9/24/2021	1.39		1.39				1 WNV	2 WNV, 6 EEEV
Walton	9/13/2021	14.41		14.41				17 WNV	45 WNV, 57 EEEV, 1 SLEV
	9/27/2021-9/28/2021	1.19	1.19		1.14	1.14		1 EEEV, 1 SLEV	

Sentinel Seroconversions to WNV in Florida, 2020-2021



Sentinel Seroconversions to EEEV in Florida, 2020-2021



Mosquito Pools

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

County	Collection Date	Result	Species	County YTD

Dead Birds

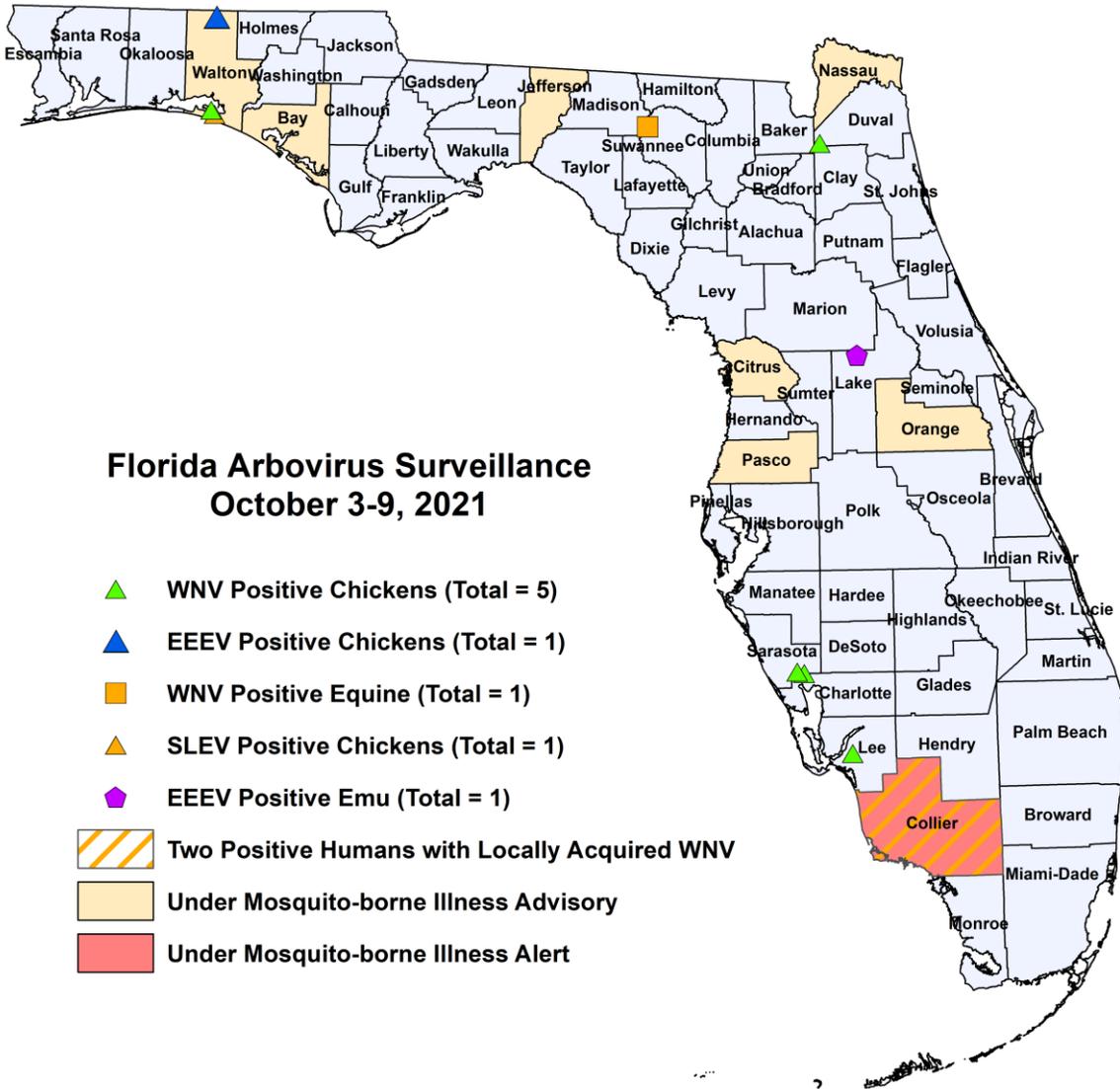
The Fish and Wildlife Conservation Commission (FWC) collects reports of dead birds, which can be an indication of arbovirus circulation in an area. This week, seven reports representing a total of eight dead birds, including one jay, one raptor, and two doves, were received from five counties.

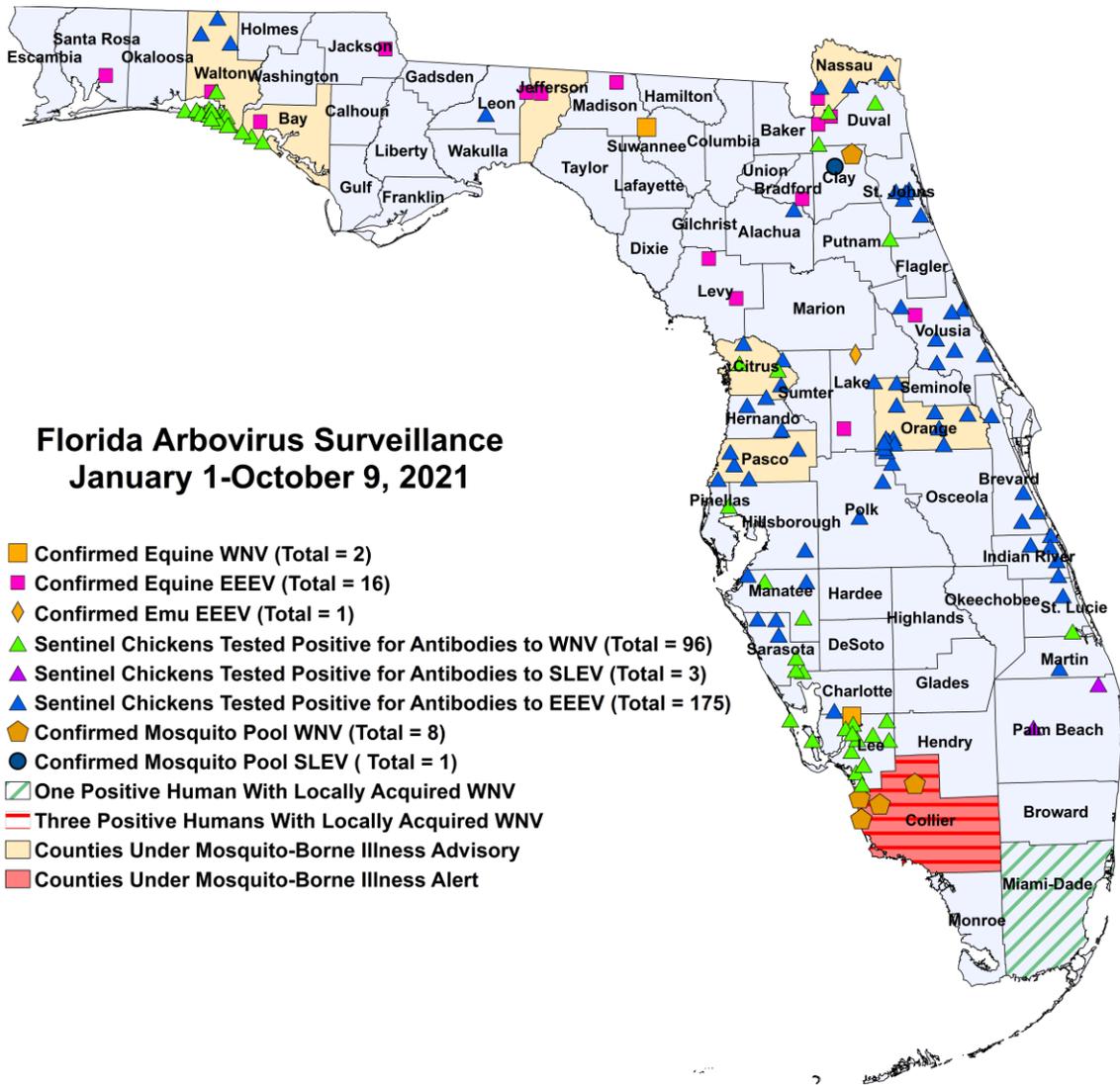
In 2021, 435 reports representing a total of 1,061 dead birds (63 crows, 27 jays, 86 raptors, 134 doves) were received from 50 of Florida's 67 counties.

2021

County	Total Dead Birds	Crows	Jays	Raptors	Doves
Charlotte	1	0	0	1	0
Orange	1	0	0	0	0
Palm Beach	3	0	0	0	2
Pinellas	2	0	1	0	0
Sarasota	1	0	0	0	0

Maps





Florida Arbovirus Surveillance January 1-October 9, 2021

- Confirmed Equine WNV (Total = 2)
- Confirmed Equine EEEV (Total = 16)
- ◆ Confirmed Emu EEEV (Total = 1)
- ▲ Sentinel Chickens Tested Positive for Antibodies to WNV (Total = 96)
- ▲ Sentinel Chickens Tested Positive for Antibodies to SLEV (Total = 3)
- ▲ Sentinel Chickens Tested Positive for Antibodies to EEEV (Total = 175)
- ◆ Confirmed Mosquito Pool WNV (Total = 8)
- Confirmed Mosquito Pool SLEV (Total = 1)
- ▨ One Positive Human With Locally Acquired WNV
- ▨ Three Positive Humans With Locally Acquired WNV
- Counties Under Mosquito-Borne Illness Advisory
- Counties Under Mosquito-Borne Illness Alert

2021 Arbovirus Activity by County	
County	Arbovirus Activity
Alachua	EEEV: 1 sentinel (7/6)
Bay	WNV: 11 sentinels (8/16, 8/23, 9/7, 9/13, 9/20) EEEV: 1 horse (6/28), 3 sentinels (6/21, 7/19, 8/9)
Bradford	EEEV: 1 horse (9/18)
Brevard	EEEV: 5 sentinels (4/2, 6/9, 6/16, 7/14, 9/1)
Charlotte	WNV: 1 sentinel (9/17) EEEV: 1 sentinel (6/18)
Citrus	WNV: 2 sentinels (3/16, 9/21) EEEV: 8 sentinels (3/2, 4/20, 5/3, 5/25, 8/10)
Clay	WNV: 1 mosquito pool (<i>Cx. quinquefasciatus</i> [9/21]) SLEV: 1 mosquito pool (<i>Cx. quinquefasciatus</i> [9/8])
Collier	WNV: 3 humans (August), 7 mosquito pools (<i>Cx. nigripalpus</i> [7/13, 8/24, 8/27], <i>Cx. quinquefasciatus</i> [8/6, 8/20, 8/27])
Duval	WNV: 2 sentinels (9/7, 9/27) EEEV: 1 horse (8/6)
Hernando	EEEV: 3 sentinels (6/7)
Hillsborough	EEEV: 1 sentinel (8/10)
Indian River	EEEV: 8 sentinels (4/8, 4/22, 5/7, 5/20, 7/22, 8/13)
Jackson	EEEV: 1 horse (6/16)

Jefferson	EEEV: 2 horses (6/22, 6/27)
Lake	EEEV: 1 horse (6/3), 1 emu (9/29)
Lee	WNV: 1 horse (9/2), 26 sentinels (7/7, 7/13, 7/19, 7/26, 8/2, 8/3, 8/16, 8/17, 9/6, 9/7, 9/27) EEEV: 1 sentinel (6/1)
Leon	EEEV: 1 horse (6/6), 2 sentinels (8/10)
Levy	EEEV: 2 horses (4/18, 6/7)
Madison	EEEV: 1 horse (6/17)
Manatee	WNV: 2 sentinels (1/20, 8/10) EEEV: 4 sentinels (3/24, 4/7, 5/12, 5/19)
Martin	EEEV: 2 sentinels (5/28, 7/23)
Miami-Dade	WNV: 1 human (July)
Nassau	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)
Orange	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)
Palm Beach	SLEV: 2 sentinels (4/19, 4/20)
Pasco	EEEV: 8 sentinels (5/10, 6/6, 6/14, 6/21, 7/26)
Pinellas	WNV: 1 sentinel (8/2)
Polk	EEEV: 3 sentinels (5/14, 5/28, 7/23)
Putnam	WNV: 1 sentinel (9/20)
Santa Rosa	EEEV: 1 horse (8/1)
Sarasota	WNV: 2 sentinels (8/13, 9/24) EEEV: 6 sentinels (5/4, 5/18, 6/11)
St. Johns	EEEV: 9 sentinels (4/26, 5/3, 6/1, 6/28, 9/20)
St. Lucie	WNV: 1 sentinel (9/9) EEEV: 2 sentinels (5/26)
Suwannee	WNV: 1 horse (10/3)
Volusia	EEEV: 1 horse (1/11), 10 sentinels (2/15, 4/19, 4/26, 5/3, 6/1, 6/7, 8/16, 8/30)
Walton	WNV: 45 sentinels (8/2, 8/17, 8/23, 8/24, 8/30, 9/7, 9/13, 9/14, 9/20) EEEV: 1 horse (7/25), 57 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, 9/28) SLEV: 1 sentinel (9/27)

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.