



Florida Arbovirus Surveillance Week 40: October 1-7, 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 October 1-7, 2023, the following arboviral activity was recorded in Florida.

WNV activity: One human case of WNV infection was reported this week in Okaloosa County. One horse with WNV infection was reported this week in Palm Beach County. Six sentinel chickens tested positive for antibodies to WNV this week in Duval, Palm Beach, Seminole, Volusia, and Walton counties. No mosquito pools tested positive for WNV this week. In 2023, positive samples from five humans, two asymptomatic blood donors, 131 sentinel chickens, one pheasant, and two horses 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 Volusia County. In 2023, 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 2023, positive samples from 124 sentinel chickens, 11 horses, one sparrow, one laughing gull, and two humans have been reported from 21 counties.

International Travel-Associated Dengue: Seventeen cases of dengue were reported this week in persons that had international travel. In 2023, 351 travel-associated dengue cases have been reported.

Dengue Cases Acquired in Florida: Fifteen cases of locally acquired dengue were reported this week. In 2023, 53 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: Bay, Hardee, Hillsborough, Jefferson, Nassau, Okaloosa, Orange, Palm Beach, Polk, St. Johns, Suwannee, and Walton counties are currently under a mosquito-borne illness advisory. Broward, Escambia, and Miami-Dade 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			Yellow Fever
Africa and the Middle East	Americas	Asia and the Pacific Islands	Africa and the Middle East
Chad	Argentina	Bangladesh	Nigeria
Côte d'Ivoire	Colombia	Cambodia	
Egypt	Cuba	Laos	
Mauritius	Guadeloupe	Malaysia	
Sudan	Guatemala	Myanmar (Burma)	
	Jamaica	Pakistan	
	Martinique	Philippines	
	Nicaragua	Sri Lanka	
	Panama	Taiwan	
	Peru	Thailand	
		Vietnam	

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

Eastern Equine Encephalitis Acquired in Florida: In 2023, two cases of EEEV acquired in Florida have been reported in St. Johns (June) and Suwannee (July) counties.

West Nile Virus Illnesses Acquired in Florida: In 2023, six cases of WNV illness acquired in Florida have been reported in 2023 from Escambia (July (2) and August (3)) and Okaloosa (September) counties. Two asymptomatic positive blood donors have been reported in Bay (August) and Hillsborough counties (August).

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: Three hundred and fifty-one 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: Alachua (2), Bay, Brevard, Broward (32), Collier (5), Duval (5), Escambia, Hendry (2), Hernando, Highlands, Hillsborough (20), Indian River (2), Lee (11), Leon, Manatee, Marion, Miami-Dade (207), Monroe (5), Nassau, Orange (11), Osceola (4), Palm Beach (13), Pasco (2), Pinellas (3), Polk (3), Sarasota (2), Seminole (3), St. Johns (2), St. Lucie (4), and Volusia (4). Sixteen cases were reported in non-Florida residents. Six cases 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, 293 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-1/ DENV-2	DENV-1/ DENV-3	DENV-2/ DENV-3	DENV-3/ DENV-4	Unknown	Total
Argentina									1	1
Bahamas			2							2
Bangladesh		1	1							2
Bolivia		5								5
Brazil	9								4	13
Colombia	1		1							2
Costa Rica	1		4						2	7
Cuba	1	1	180	9		1	1	1	26	220

Cuba/Curacao			1							1
Dominican Republic	1		15					1	4	21
Dominican Republic/Haiti									1	1
Ecuador									1	1
Guatemala	3	2	2						1	8
Guyana			4						1	5
Haiti			7						4	11
Honduras			3							3
India	1	1	2		1				1	6
Indonesia		1								1
Jamaica		3							1	4
Maldives	1									1
Mexico			7						8	15
Nicaragua			1	4					2	7
Peru	6	3							1	10
Puerto Rico	2	1								3
South America		1								1
Total	25	20	230	13	1	1	1	2	58	351

2023 Dengue Cases Acquired in Florida: In 2023, 53 cases of locally acquired dengue have been reported in Broward (3), Hardee, Miami-Dade (47), Palm Beach, and Polk counties with onsets in January, March, June (3), July (10), August (19), and September (19). Two cases were reported in non-Florida residents. Forty-seven cases have been serotyped by PCR. Please see the table below for a breakdown of cases by county and serotype.

County of Exposure	DENV-1	DENV-2	DENV-3	Unknown	Total
Broward		3			3
Hardee	1				1
Miami-Dade		2	39	6	47
Palm Beach		1			1
Polk			1		1
Total	1	6	40	6	53

2023 International Travel-Associated Malaria Cases: Fifty-four 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 (9), Collier, Duval (2), Hillsborough (6), Jackson, Lake, Lee (3), Leon (2), Manatee, Miami-Dade (7), Okaloosa, Orange (4), Osceola (2), Palm Beach, Pasco, Pinellas (4), Polk (2), Sarasota (2), St. Lucie (2), Volusia, and Walton. Thirteen cases were reported in non-Florida residents. Please see the table below for a breakdown of cases by country of origin and *Plasmodium* species.

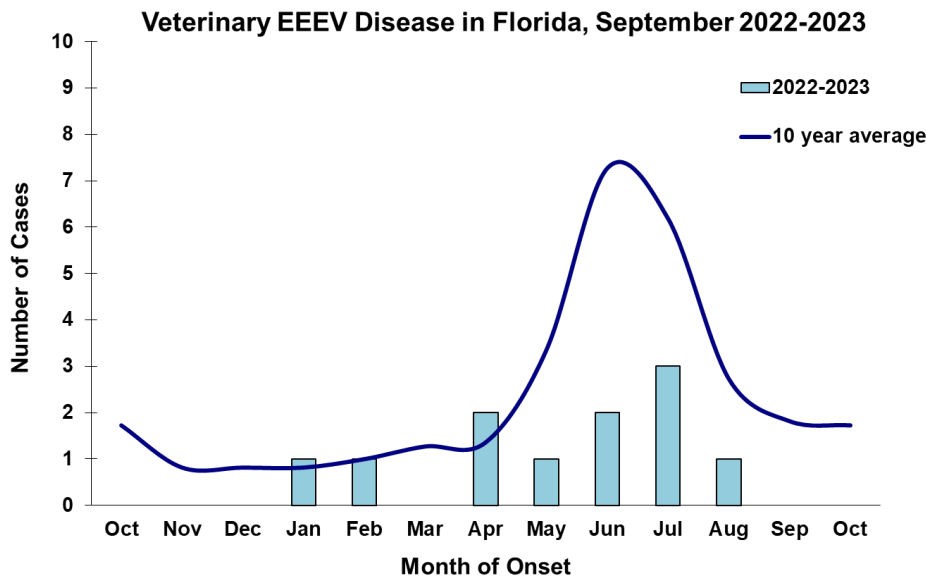
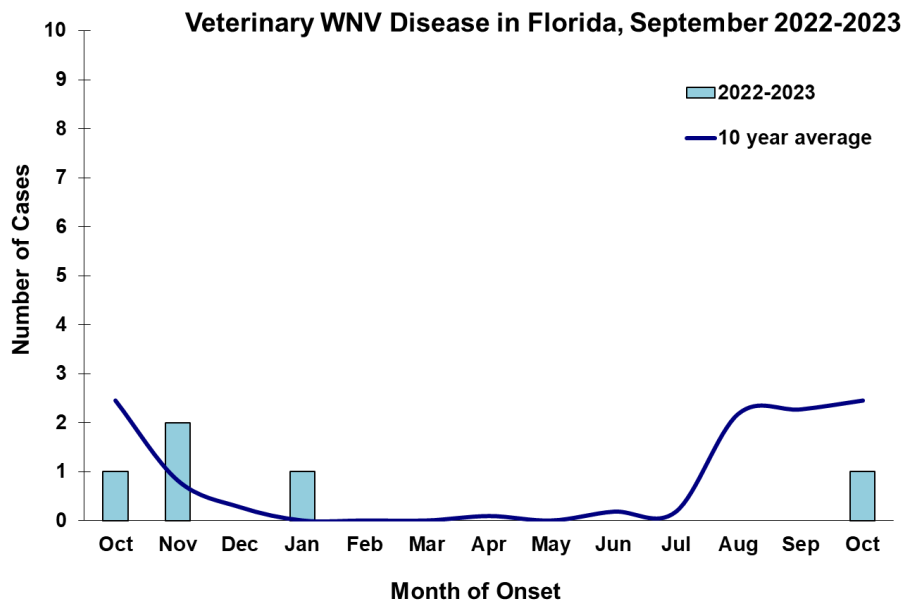
Country of Exposure	<i>Plasmodium falciparum</i>	<i>Plasmodium vivax</i>	<i>Plasmodium malariae</i>	Total
Angola			1	1
Burundi	1			1
Cameroon	4			4
Côte D'Ivoire	2			2
Democratic Republic of the Congo	2			2
Equatorial Guinea	1			1
Ghana	4			4
Guinea	2			2
Haiti	1			1
Honduras		1		1
Kenya			1	1
Liberia	1			1
Mozambique	1			1
Nicaragua		3		3
Nigeria	12			12
Pakistan		1		1

Sierra Leone	2		1	3
Sudan		1		1
Tanzania	1			1
Uganda	5			5
Multiple countries		6		6
Total	39	12	3	54

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 WNV infection was reported this week in Palm Beach County.



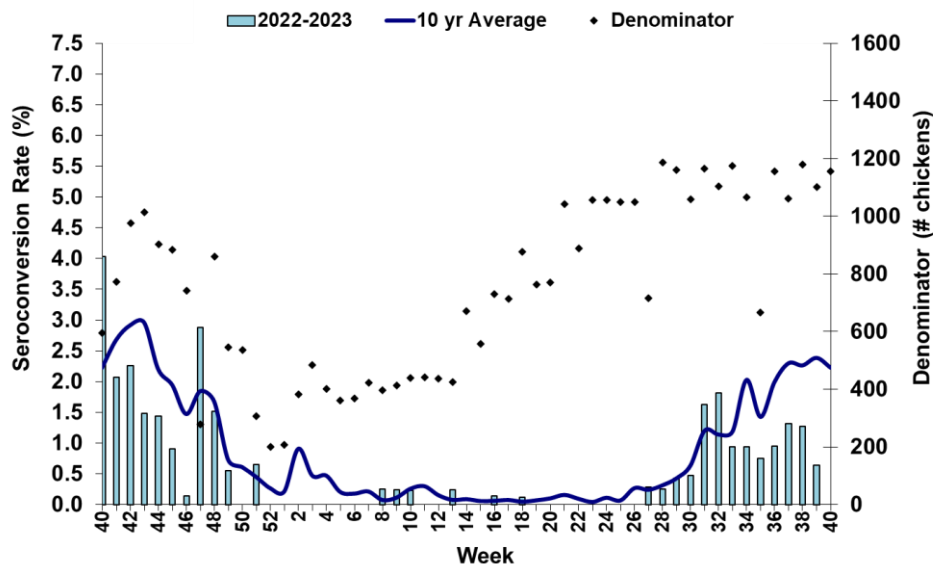
Sentinel Chickens

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.

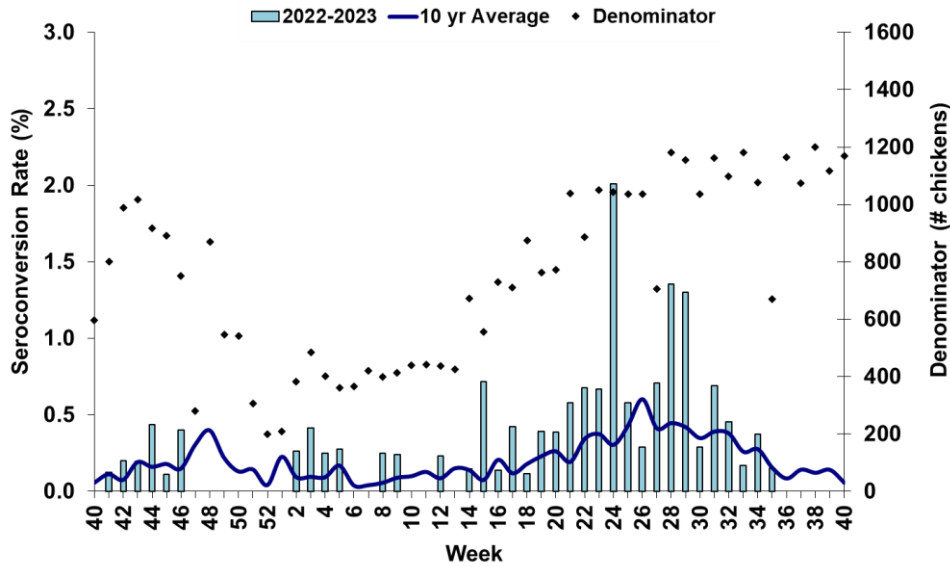
Six sentinel chickens tested positive for antibodies to WNV this week in Duval, Palm Beach, Seminole, Volusia, and Walton counties. One sentinel chicken tested positive for antibodies to SLEV this week in Volusia County.

County	Collection Date	Seroconversion Rates (%)						County Totals	
		Flavi	SLEV	WNV	Alpha	EEEV	HJV	Collection Week	YTD
Duval	9/25/2023	3.85		3.85				1 WNV	3 WNV
Palm Beach	9/25/2023	25.00		25.00				1 WNV	3 WNV
Seminole	9/26/2023	2.56		2.56				1 WNV	1 WNV
Volusia	9/25/2023	4.00	2.00	2.00				1 SLEV, 1 WNV	8 EEEV, 6 WNV, 1 SLEV
Walton	9/25/2023	2.44		2.44				2 WNV	32 WNV, 37 EEEV, 5 HJV, 1 SLEV

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

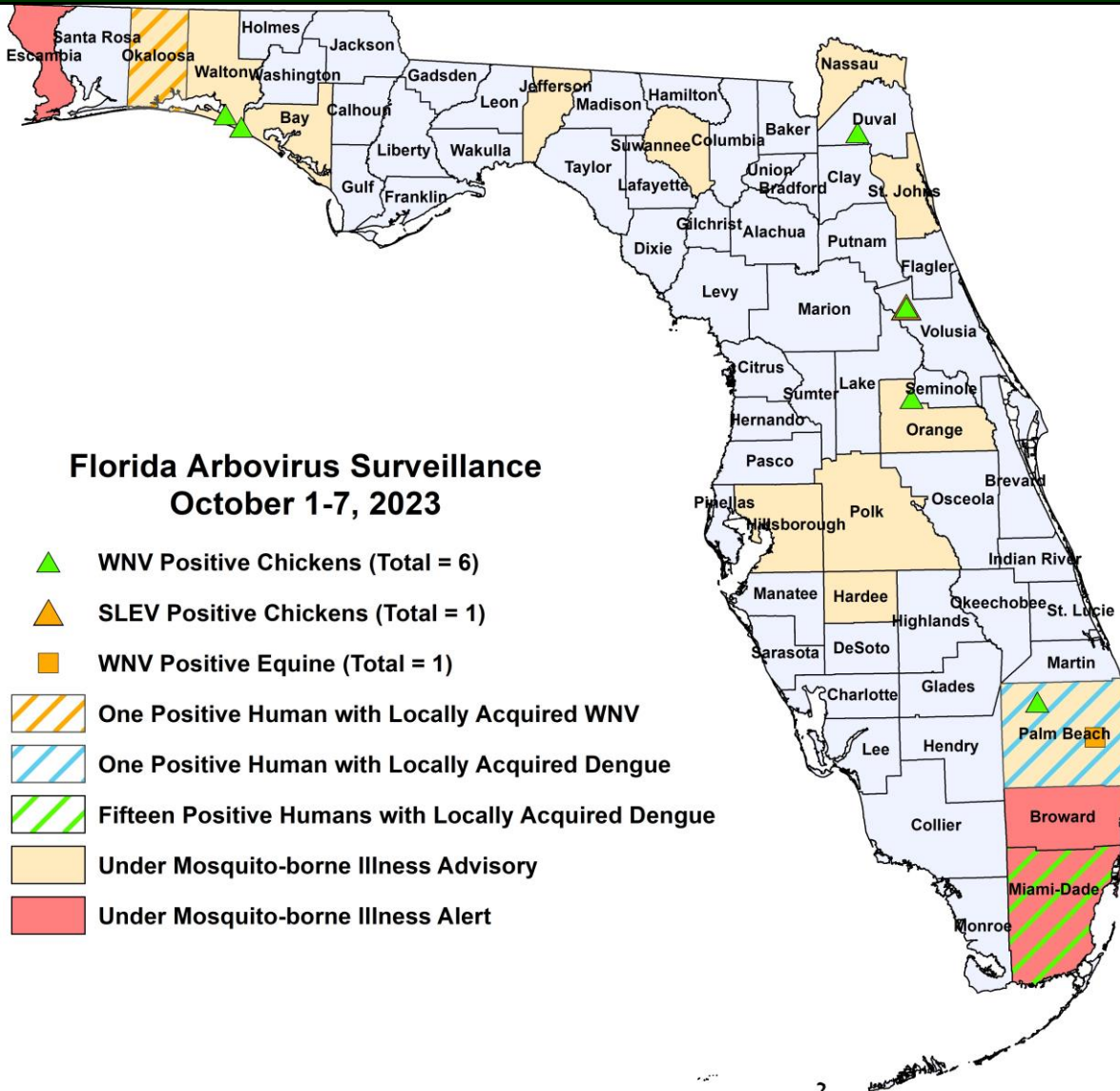
The Fish and Wildlife Conservation Commission (FWC) collects reports of dead birds, which can be an indication of arbovirus circulation in an area. This week, 24 reports representing a total of 88 dead birds, including three raptors, were received from 13 counties.

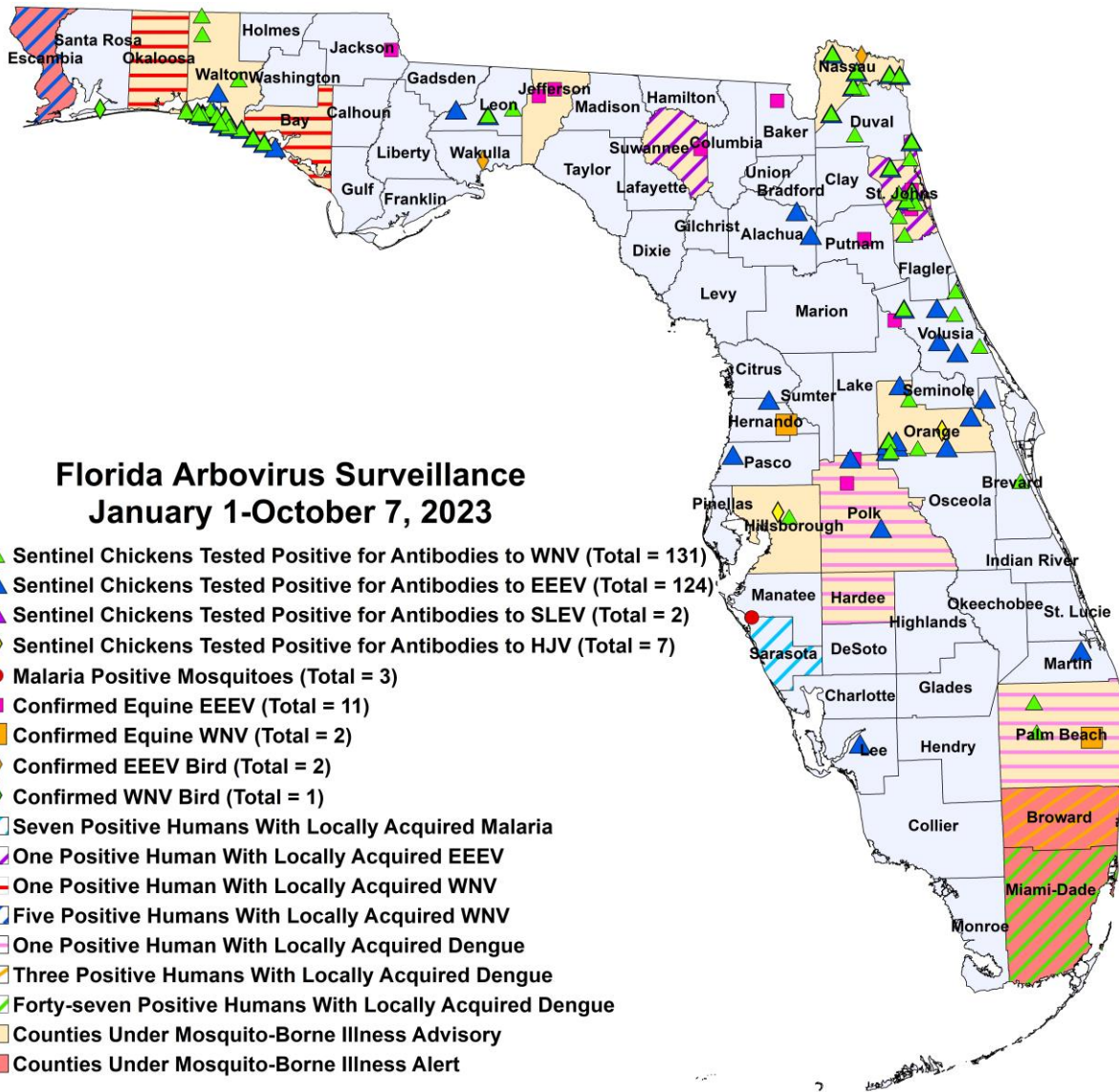
In 2023, 798 reports representing a total of 2048 dead birds (51 crows, 51 jays, 123 raptors, 147 doves) were received from 52 of Florida's 67 counties.

2023

County	Total Dead Birds	Crows	Jays	Raptors	Doves
Alachua	1	0	0	1	0
Bay	17	0	0	0	0
Brevard	1	0	0	0	0
Broward	6	0	0	0	0
Leon	1	0	0	1	0
Manatee	1	0	0	0	0
Marion	40	0	0	0	0
Martin	1	0	0	1	0
Okaloosa	2	0	0	0	0
Orange	1	0	0	0	0
Palm Beach	8	0	0	0	0
Pinellas	5	0	0	0	0
St. Johns	4	0	0	0	0

Maps





2023 Mosquito-Borne Disease Activity by County

County	Humans	Equines	Sentinel Chickens	Other
Alachua			7 EEEV (6/19, 7/17, 8/1, 8/9, 8/23)	
Baker		1 EEEV (5/5)		
Bay	1 WNV asymptomatic blood donor (August)		6 EEEV (5/15, 5/22, 5/30, 6/12) 9 WNV (7/17, 7/31, 8/21, 8/24, 9/11, 9/18)	
Brevard			1 EEEV (3/24) 2 WNV (8/3)	
Broward	3 dengue (July (2), August)			
Citrus			1 EEEV (4/24)	
Duval			3 WNV (7/17, 9/18, 9/25)	
Escambia	5 WNV (July (2), August (3))			
Hardee	1 dengue (July)			
Hernando		1 WNV (1/6)		
Hillsborough	1 WNV asymptomatic blood donor (August)		3 WNV (2/28, 3/7, 5/2) 1 HJV (7/18)	

County	Humans	Equines	Sentinel Chickens	Other
Jackson		1 EEEV (7/28)		
Jefferson		2 EEEV (6/22, 6/30)		
Lake		1 EEEV (1/29)		
Lee			1 EEEV (1/9)	
Leon			5 EEEV (7/6, 8/1, 8/7, 8/22) 3 WNV (8/7, 8/15, 9/19)	
Martin			1 EEEV (8/4)	
Miami-Dade	47 dengue (January, March, June (3), July (6), August (18), September (18))			
Nassau			30 EEEV (6/2, 6/16, 6/23, 7/7, 7/15, 7/21, 8/11, 8/18, 8/31) 26 WNV (8/4, 8/11, 8/18, 8/31, 9/8)	1 EEEV sparrow (6/24)
Okaloosa	1 WNV (September)			
Orange			3 WNV (2/20, 7/10, 8/28) 18 EEEV (1/17, 2/20, 2/27, 4/10, 4/24, 5/1, 5/15, 5/30, 6/5, 7/10, 7/17, 8/1) 1 HJV (5/8)	
Palm Beach	1 dengue (September)	1 WNV (10/4)	5 WNV (4/18, 9/1, 9/18, 9/25)	
Pasco			1 EEEV (4/24)	
Polk	1 dengue (July)	2 EEEV (4/7, 4/10)	3 EEEV (5/22, 5/26, 7/24)	
Putnam		1 EEEV (7/31)		
Santa Rosa				1 WNV pheasant (8/29)
Sarasota	7 malaria (May, June (5), July)			3 <i>Plasmodium vivax</i> mosquitoes (<i>Anopheles crucians</i> [6/1, 6/2, 6/5])
Seminole			1 WNV (9/26)	
St. Johns	1 EEE (June)	2 EEEV (2/2, 7/6)	5 EEEV (6/12, 6/26, 7/31, 8/21) 38 WNV (7/5, 7/10, 7/17 7/31, 8/7, 8/14, 8/21, 9/5, 9/11, 9/18)	
Suwanee	1 EEE (July)	1 EEEV (8/21)		
Volusia			8 EEEV (1/17, 1/23, 1/30, 4/10, 4/17, 6/12, 7/17) 6 WNV (7/3, 8/14, 9/5, 9/11, 9/25) 1 SLEV (9/25)	
Wakulla				1 EEEV laughing gull (8/1)
Walton			32 WNV (3/27, 7/24, 7/31, 8/7, 8/8, 8/14, 8/15, 8/21, 8/22, 8/28, 9/11, 9/12, 9/18, 9/25) 37 EEEV (4/3, 4/10, 5/8, 5/30, 6/5, 6/12, 6/19, 6/26, 6/28, 7/3, 7/11, 7/17, 7/24, 8/8, 8/14) 5 HJV (5/8, 5/22, 6/12) 1 SLEV (7/31)	

Acknowledgements and Data Sources

Contributors: Andrea Morrison, PhD, MSPH, Rebecca Zimler, PhD, MPH, and Danielle Stanek, DVM, DOH Bureau of Epidemiology; Lea Heberlein, DrPH; Alexis LaCrue, PhD, MS; Maribel Castaneda, and Amanda Davis, 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.