



Florida Arbovirus Surveillance Week 39: September 24-30, 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 September 24-30, 2023, 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. Sixteen sentinel chickens tested positive for antibodies to WNV this week in Bay, Duval, Leon, Palm Beach, St. Johns, and Walton counties. No mosquito pools tested positive for WNV this week. In 2023, positive samples from five humans, two asymptomatic blood donors, 125 sentinel chickens, one pheasant, and one horse have been reported from 14 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, one sentinel chicken has been reported from one county.

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: Eighteen cases of dengue were reported this week in persons that had international travel. In 2023, 334 travel-associated dengue cases have been reported.

Dengue Cases Acquired in Florida: Seven cases of locally acquired dengue were reported this week. In 2023, 38 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, Orange, 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			Chikungunya	Yellow Fever
Africa and the Middle East	Americas	Asia and the Pacific Islands	Americas	Africa and the Middle East
Chad	Argentina	Bangladesh	Paraguay	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, five cases of WNV illness acquired in Florida have been reported in Escambia County with onset in July (2) and August (3). 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 thirty-four 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 (28), Collier (5), Duval (5), Escambia, Hendry (2), Hernando, Highlands, Hillsborough (20), Indian River (2), Lee (10), Leon, Manatee, Marion, Miami-Dade (196), Monroe (5), Nassau, Orange (10), Osceola (4), Palm Beach (13), Pasco (2), Pinellas (3), Polk (3), Sarasota (2), Seminole (3), St. Johns (2), St. Lucie (4), and Volusia (4). Fifteen 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, 280 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-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	174	9		1	1	24	211
Cuba/Curacao			1						1

Dominican Republic		1	11					4	16
Dominican Republic/Haiti								1	1
Ecuador								1	1
Guatemala	3	2	2					1	8
Guyana			4					1	5
Haiti			6					4	10
Honduras			3						3
India	1	1	2		1			1	6
Indonesia		1							1
Jamaica		3							3
Maldives	1								1
Mexico			7					8	15
Nicaragua			1	4				1	6
Peru	6	3						1	10
Puerto Rico	2	1							3
South America		1							1
Total	25	20	219	13	1	1	1	54	334

2023 Dengue Cases Acquired in Florida: In 2023, 38 cases of locally acquired dengue have been reported in Broward (3), Hardee, Miami-Dade (33), and Polk counties with onsets in January, March, June (3), July (10), August (16), and September (7). Two cases were reported in non-Florida residents. Thirty-four 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		1	28	4	33
Polk			1		1
Total	1	4	29	4	38

2023 International Travel-Associated Malaria Cases: Fifty-two 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 (8), Collier, Duval (2), Hillsborough (6), Jackson, Lake, Lee (3), Leon (2), Manatee, Miami-Dade (7), Okaloosa, Orange (4), Osceola (2), 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.

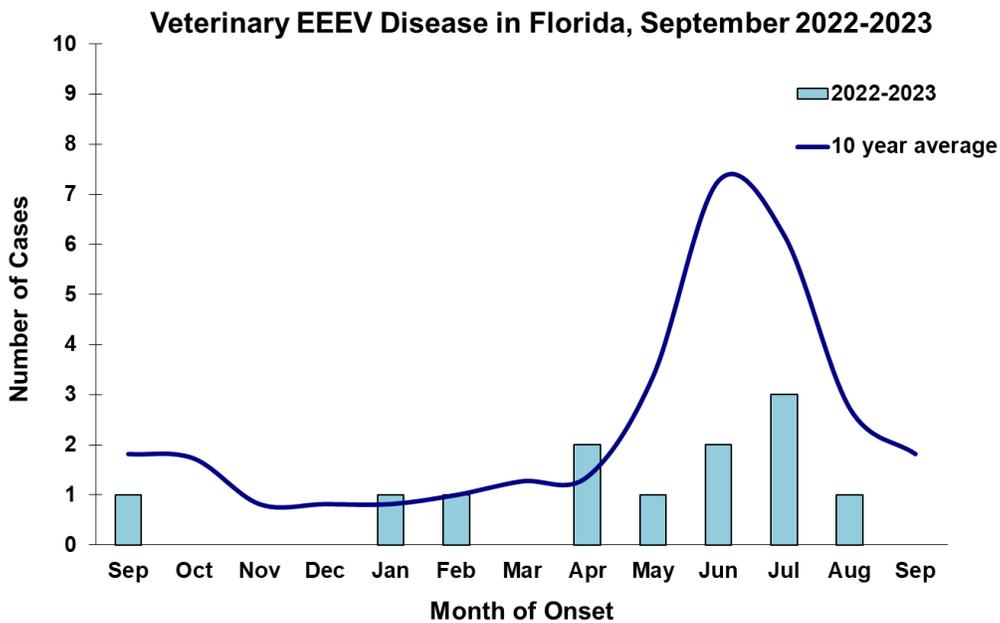
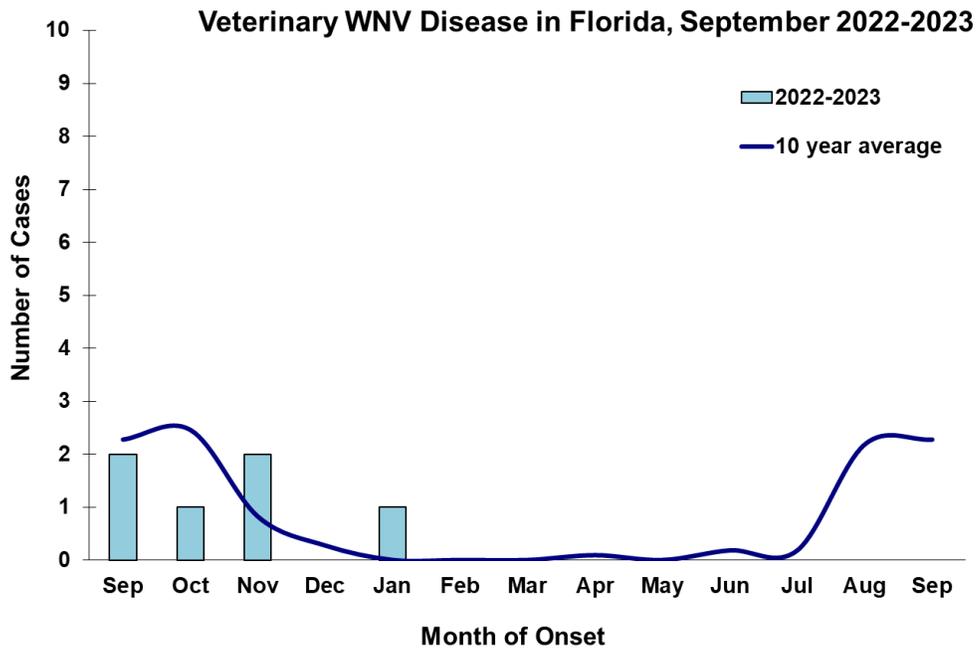
Country of Exposure	<i>Plasmodium falciparum</i>	<i>Plasmodium vivax</i>	<i>Plasmodium malariae</i>	Total
Angola			1	1
Burundi	1			1
Cameroon	4			4
Côte D'Ivoire	2			2
Democratic Republic of the Congo	2			2
Equatorial Guinea	1			1
Ghana	4			4
Guinea	2			2
Honduras		1		1
Kenya			1	1
Liberia	1			1
Mozambique	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		5		5
Total	38	11	3	52

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.

No veterinary cases were reported this week.



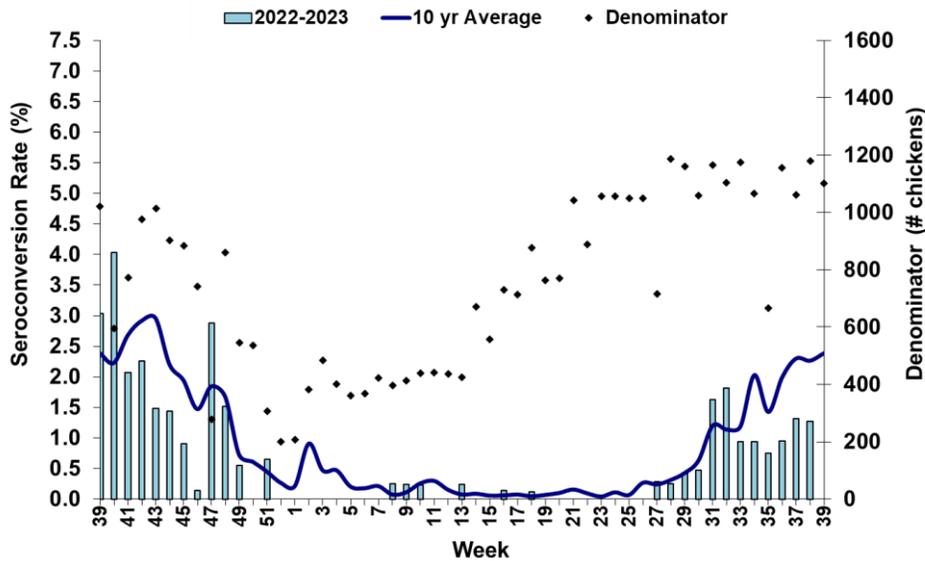
Sentinel Chickens

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.

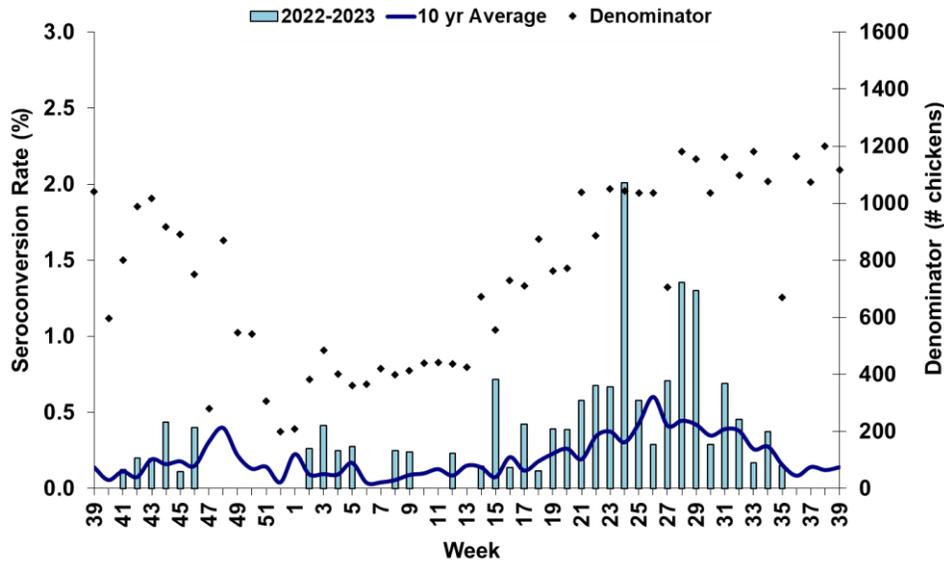
Sixteen sentinel chickens tested positive for antibodies to WNV this week in Bay, Duval, Leon, Palm Beach, St. Johns, and Walton counties.

County	Collection Date	Seroconversion Rates (%)						Collection Week	County Totals
		Flavi	SLEV	WNV	Alpha	EEEV	HJV		YTD
Bay	9/18/2023	5.88		5.88				1 WNV	6 EEEV, 9 WNV
Duval	9/18/2023	3.85		3.85				1 WNV	2 WNV
Leon	9/19/2023	4.35		4.35				1 WNV	5 EEEV, 3 WNV
Palm Beach	9/18/2023	7.14		7.14				2 WNV	4 WNV
St. Johns	9/18/2023	16.67		16.67				6 WNV	5 EEEV, 38 WNV
Walton	9/12/2023	2.50		2.50				1 WNV	30 WNV, 37 EEEV, 5 HJV, 1 SLEV
	9/18/2023	4.88		4.88				4 WNV	

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
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Dead Birds

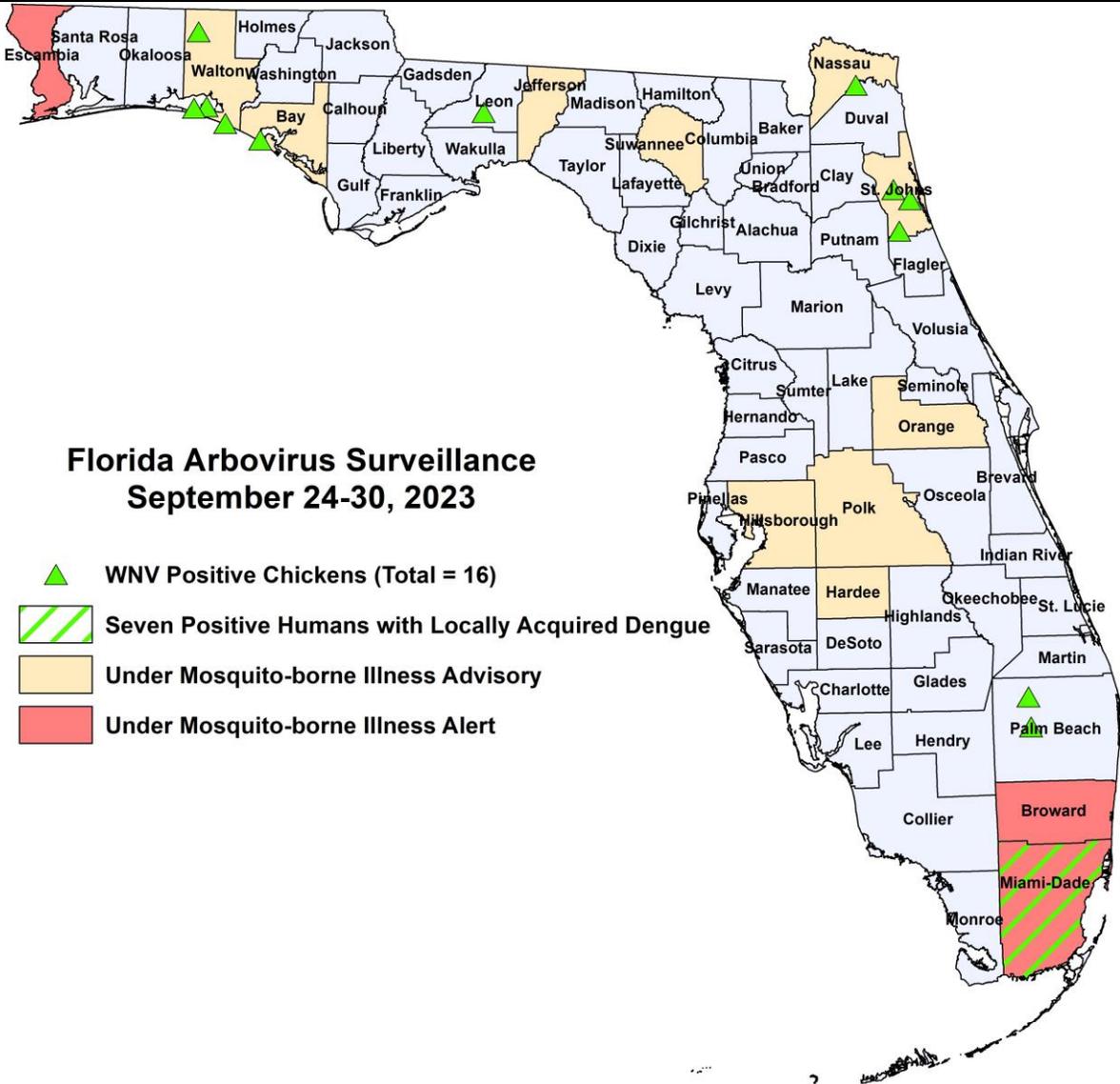
The Fish and Wildlife Conservation Commission (FWC) collects reports of dead birds, which can be an indication of arbovirus circulation in an area. This week, 21 reports representing a total of 46 dead birds, including one jay, two raptors, and one dove, were received from 13 counties.

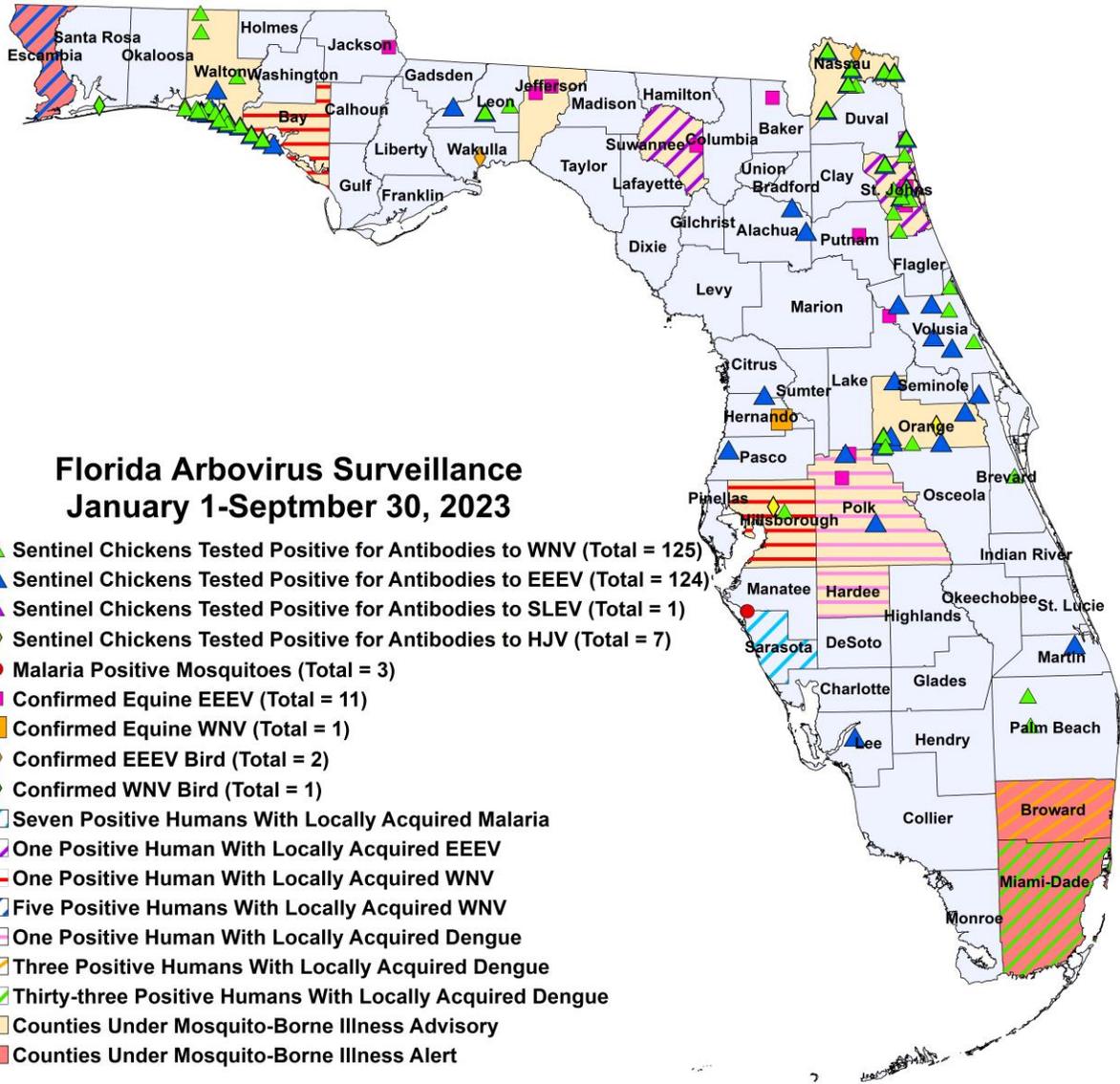
In 2023, 774 reports representing a total of 1960 dead birds (51 crows, 51 jays, 120 raptors, 147 doves) were received from 52 of Florida's 67 counties.

2023

County	Total Dead Birds	Crows	Jays	Raptors	Doves
Alachua	2	0	0	0	0
Bay	5	0	0	0	0
Broward	2	0	0	0	0
Charlotte	1	0	0	0	0
Duval	1	0	0	0	0
Hillsborough	13	0	0	0	0
Orange	7	0	0	0	0
Palm Beach	1	0	0	0	0
Pinellas	7	0	1	1	1
Santa Rosa	1	0	0	1	0
Sarasota	3	0	0	0	0
St. Lucie	2	0	0	0	0
Walton	1	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			2 WNV (7/17, 9/18)	
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	33 dengue (January, March, June (3), July (6), August (15), September (7))			
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)
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			4 WNV (4/18, 9/1, 9/18)	
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])
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) 5 WNV (7/3, 8/14, 9/5, 9/11)	
Wakulla				1 EEEV laughing gull (8/1)
Walton			30 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) 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.