



Florida Arbovirus Surveillance Week 43: October 22-28, 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 22-28, 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. Fourteen sentinel chickens tested positive for antibodies to WNV this week in Alachua, Bay, Citrus, Lee, Martin, Nassau, Palm Beach, Sarasota, St. Johns, and Walton counties. No mosquito pools tested positive for WNV this week. In 2023, positive samples from seven humans, three asymptomatic blood donors, 194 sentinel chickens, one pheasant, and two horses have been reported from 20 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 Hernando County. In 2023, four sentinel chickens have been reported from four counties.

EEEV activity: No human cases of EEEV infection were reported this week. No horses with EEEV infection were reported this week. Four sentinel chickens tested positive for antibodies to EEEV this week in Leon and Nassau counties. In 2023, positive samples from 130 sentinel chickens, 12 horses, one sparrow, one laughing gull, and two humans have been reported from 22 counties.

International Travel-Associated Dengue: Thirty-one cases of dengue were reported this week in persons that had international travel. In 2023, 415 travel-associated dengue cases have been reported.

Dengue Cases Acquired in Florida: Twenty cases of locally acquired dengue were reported this week. In 2023, 98 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, Sarasota, 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
Burkina Faso	Argentina	Bangladesh	Nigeria
Chad	Colombia	Cambodia	
Côte d'Ivoire	Cuba	Laos	
Egypt	Guadeloupe	Malaysia	
Mali	Guatemala	Myanmar (Burma)	
Mauritius	Jamaica	Pakistan	
Sudan	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, seven cases of WNV illness acquired in Florida have been reported in 2023 from Escambia (July (2) and August (3)), Okaloosa (September), and Sarasota (September) counties. Three asymptomatic positive blood donors have been reported in Bay (August), Hillsborough (August), and Walton (September) counties.

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: Four hundred and fifteen 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 (37), Collier (5), Duval (6), Escambia, Hendry (2), Hernando, Highlands, Hillsborough (22), Indian River (2), Lee (12), Leon, Manatee, Marion, Miami-Dade (246), Monroe (5), Nassau, Orange (13), Osceola (5), Palm Beach (20), Pasco (2), Pinellas (3), Polk (6), Sarasota (3), Seminole (3), St. Johns (2), St. Lucie (6), and Volusia (4). Nineteen 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, 358 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
Central America			1							1

Colombia	1		1					1		3
Costa Rica	1		4						2	7
Cuba	1	1	205	10		2	1	1	25	246
Cuba/Curacao			1							1
Dominican Republic		1	27				1	1	4	34
Dominican Republic/Haiti									1	1
Ecuador									1	1
El Salvador	1									1
Guatemala	3	2	2						1	8
Guyana			4						2	6
Haiti			7						4	11
Honduras	1		4							5
India	1	2	4		1				1	9
Indonesia		1								1
Jamaica		12								12
Maldives	1									1
Mexico		1	9						8	18
Nicaragua			1	4					2	7
Panama	1									1
Peru	6	3	1						1	11
Philippines	1									1
Puerto Rico	3	1								4
South America		1								1
Venezuela				1					1	1
Total	30	31	274	15	1	2	2	3	57	415

2023 Dengue Cases Acquired in Florida: In 2023, 98 cases of locally acquired dengue have been reported in Broward (4), Hardee, Miami-Dade (91), Palm Beach, and Polk counties with onsets in January, March, June (3), July (10), August (19), September (43), and October (21). Two cases were reported in non-Florida residents. Ninety-one 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	1		4
Hardee	1				1
Miami-Dade		6	78	7	91
Palm Beach		1			1
Polk			1		1
Total	1	10	80	7	98

2023 International Travel-Associated Malaria Cases: Sixty-five 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: Brevard, Broward (9), Collier, Duval (2), Hillsborough (8), Jackson, Lake, Lee (3), Leon (3), Manatee, Miami-Dade (10), Okaloosa, Orange (4), Osceola (2), Palm Beach, Pasco, Pinellas (4), Polk (3), Sarasota (3), Seminole (2), St. Lucie (2), Volusia, and Walton. Fourteen cases were reported in non-Florida residents. Please see the table below for a breakdown of cases by country of origin and *Plasmodium* species.

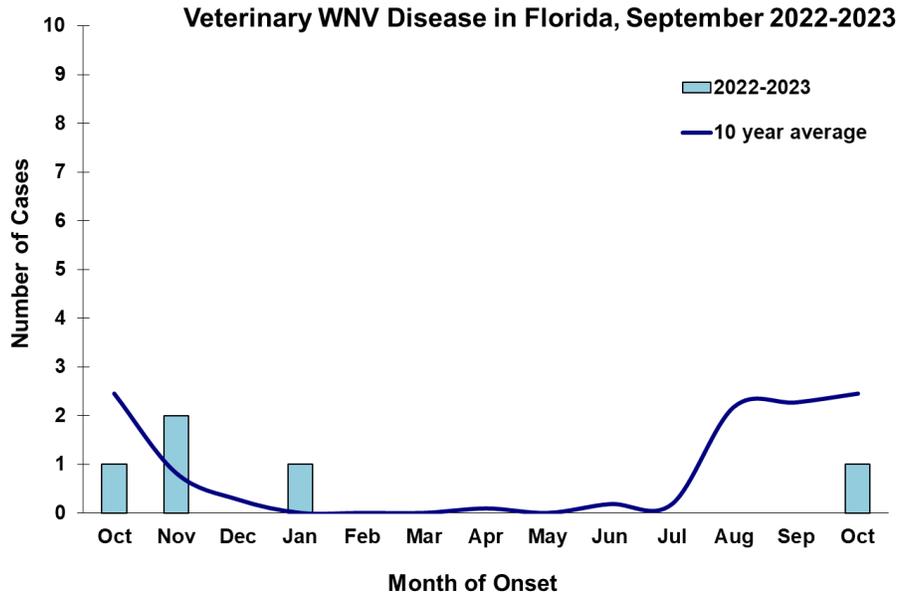
Country of Exposure	<i>Plasmodium falciparum</i>	<i>Plasmodium vivax</i>	<i>Plasmodium malariae</i>	<i>Plasmodium ovale</i>	Total
Angola			1		1
Burkina Faso	1				1
Burundi	1				1
Cameroon	4				4
Côte D'Ivoire	2				2
Democratic Republic of the Congo	2				2
Equatorial Guinea	1				1
Ghana	5				5
Guinea	2				2

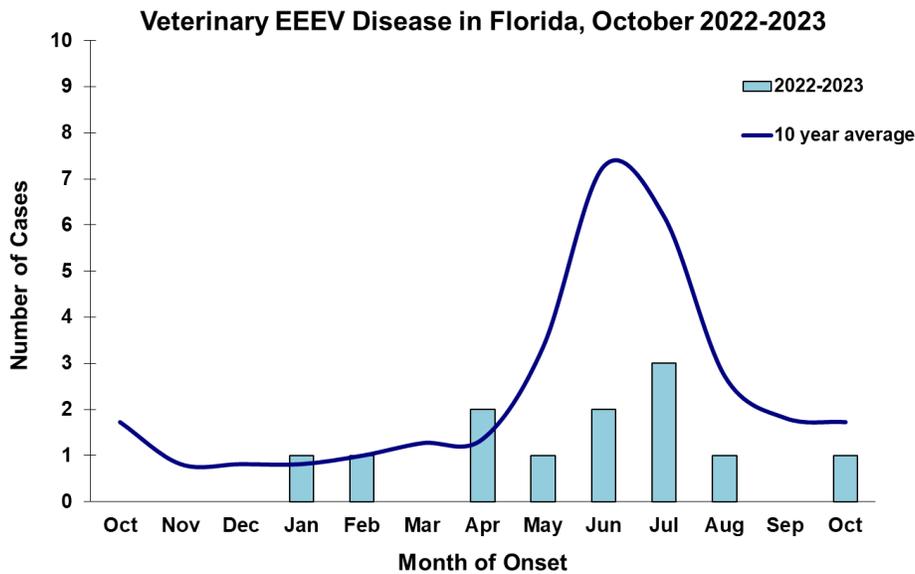
Haiti	1				1
Honduras		1			1
India	1				1
Kenya			1		1
Liberia	1				1
Mozambique	1			1	2
Nicaragua		3			3
Nigeria	16				16
Pakistan		1			1
Sierra Leone	2		1		3
Sudan		1			1
Tanzania	1				1
Uganda	6				6
Venezuela		1			1
Multiple countries		7			7
Total	47	14	3	1	65

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.





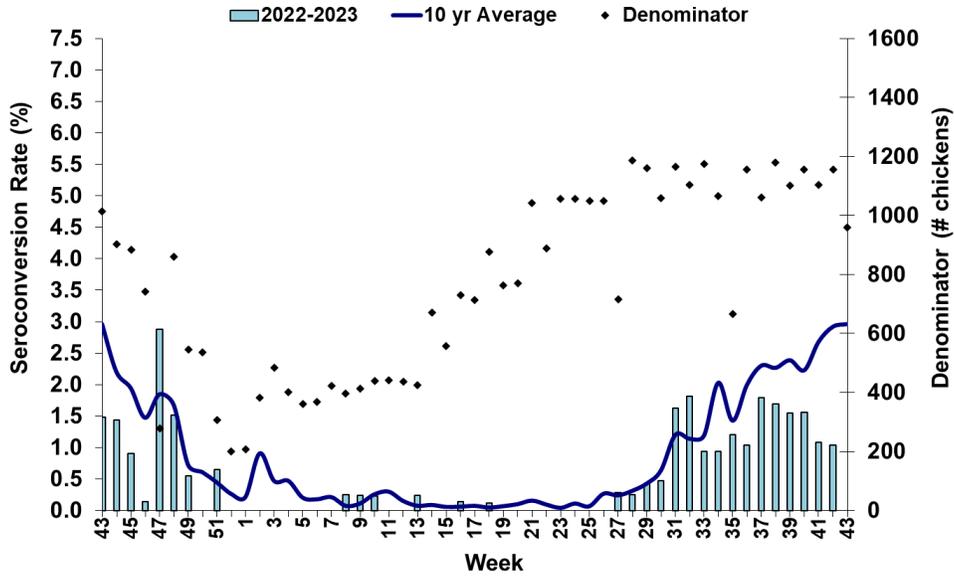
Sentinel Chickens

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.

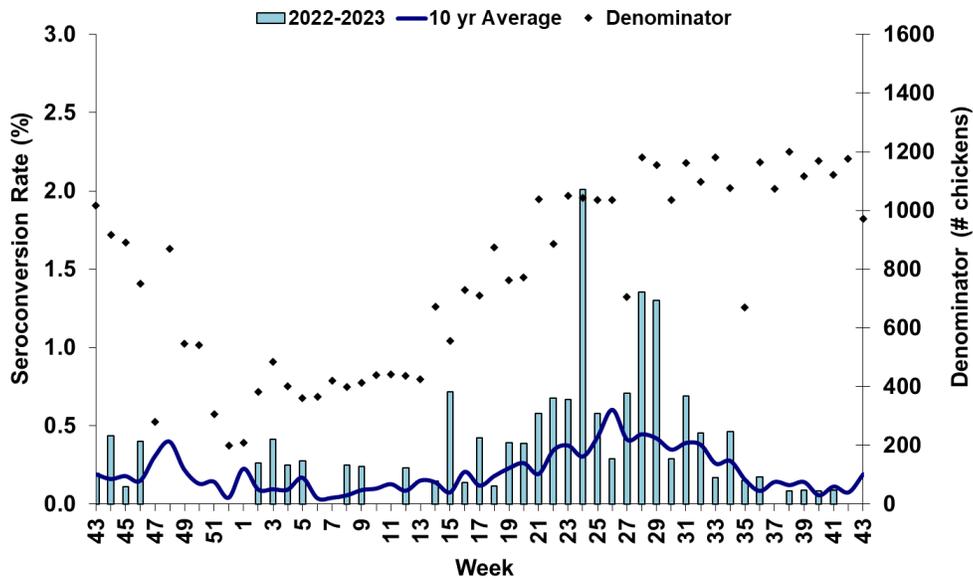
Fourteen sentinel chickens tested positive for antibodies to WNV this week in Alachua, Bay, Citrus, Lee, Martin, Nassau, Palm Beach, Sarasota, St. Johns, and Walton counties. One sentinel chicken tested positive for antibodies to SLEV this week in Hernando County. Four sentinel chickens tested positive for antibodies to EEEV this week in Leon and Nassau counties.

County	Collection Date	Seroconversion Rates (%)						County Totals	
		Flavi	SLEV	WNV	Alpha	EEEV	HJV	Collection Week	YTD
Alachua	10/09/2023	8.33		8.33				2 WNV	7 EEEV, 2 WNV
Bay	10/16/2023	6.25		6.25				1 WNV	6 EEEV, 14 WNV
Citrus	10/16/2023	3.03		3.03				2 WNV	1 EEEV, 2 WNV
Hernando	10/16/2023	3.13	3.13					1 SLEV	1 SLEV
Lee	10/16/2023	1.00		1.00				1 WNV	1 EEEV, 1 SLEV, 1 WNV
Leon	9/19/2023				4.35	4.35		1 EEEV	7 EEEV, 4 WNV
	10/02/2023				3.33	3.33		1 EEEV	
Martin	10/13/2023	2.44		2.44				1 WNV	1 EEEV, 2 WNV
Nassau	9/8/2023				6.67	6.67		2 EEEV	32 EEEV, 37 WNV
	10/14/2023	6.25		6.25				1 WNV	
Palm Beach	10/16/2023	3.23		3.23				1 WNV	8 WNV
Sarasota	10/17/2023	1.47		1.47				1 WNV	2 WNV
St. Johns	10/16/2023	7.69		7.69				3 WNV	5 EEEV, 51 WNV
Walton	8/21/2023				2.27		2.27	1 HJ	40 WNV, 38 EEEV, 6 HJV, 1 SLEV
	10/16/2023	2.44		2.44				1 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
--------	-----------------	--------	---------	------------

Dead Birds

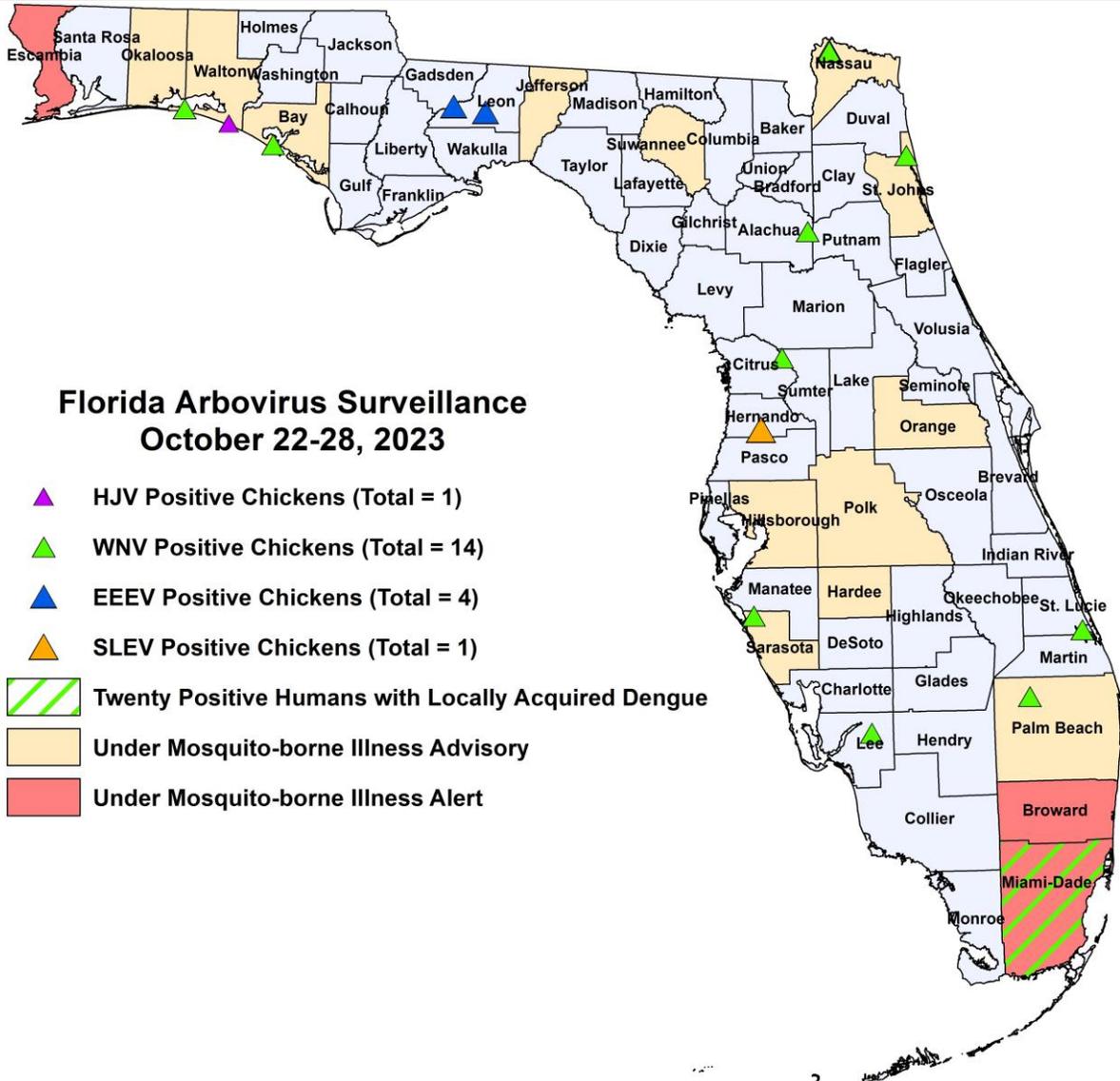
The Fish and Wildlife Conservation Commission (FWC) collects reports of dead birds, which can be an indication of arbovirus circulation in an area. This week, 11 reports representing a total of 27 dead birds, including three raptors, were received from 9 counties.

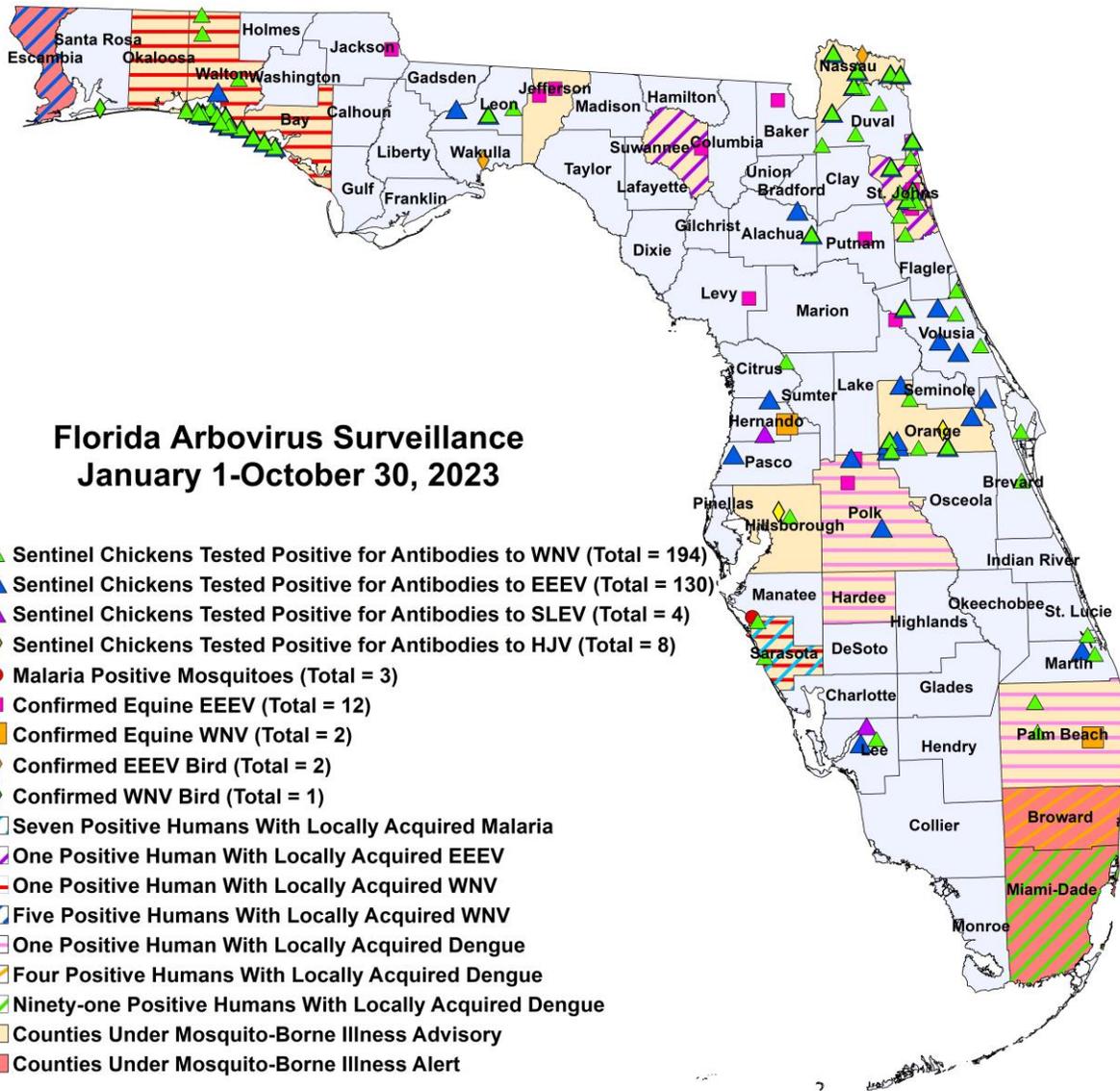
In 2023, 866 reports representing a total of 2272 dead birds (52 crows, 51 jays, 136 raptors, 161 doves) were received from 52 of Florida's 67 counties.

2023

County	Total Dead Birds	Crows	Jays	Raptors	Doves
Brevard	7	0	0	0	0
Broward	1	0	0	0	0
Citrus	1	0	0	0	0
Duval	1	0	0	1	0
Hendry	7	0	0	0	0
Lake	2	0	0	0	0
Miami-Dade	2	0	0	0	0
Okaloosa	3	0	0	0	0
Pinellas	3	0	0	2	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) 2 WNV (10/9)	
Baker		1 EEEV (5/5)		
Bay	1 WNV asymptomatic blood donor (August)		6 EEEV (5/15, 5/22, 5/30, 6/12) 14 WNV (7/17, 7/31, 8/21, 8/24, 9/11, 9/18, 10/2, 10/16)	
Brevard			1 EEEV (3/24) 3 WNV (8/3, 10/5)	
Broward	4 dengue (July (2), August, September)			
Citrus			1 EEEV (4/24) 2 WNV (10/16)	
Duval			10 WNV (7/17, 9/11, 9/18, 9/25, 10/2, 10/9)	
Escambia	5 WNV (July (2), August (3))			
Hardee	1 dengue (July)			
Hernando		1 WNV (1/6)	1 SLEV (10/16)	

County	Humans	Equines	Sentinel Chickens	Other
Hillsborough	1 WNV asymptomatic blood donor (August)		3 WNV (2/28, 3/7, 5/2) 1 HJV (7/18)	
Jackson		1 EEEV (7/28)		
Jefferson		2 EEEV (6/22, 6/30)		
Lake		1 EEEV (1/29)		
Lee			1 EEEV (1/9) 1 SLEV (10/9) 1 WNV (10/16)	
Leon			7 EEEV (7/6, 8/1, 8/7, 8/22, 9/19, 10/2) 4 WNV (8/7, 8/15, 9/19)	
Levy		1 EEEV (10/8)		
Martin			1 EEEV (8/4) 2 WNV (10/6, 10/13)	
Miami-Dade	91 dengue (January, March, June (3), July (6), August (18), September (41), October (21))			
Nassau			32 EEEV (6/2, 6/16, 6/23, 7/7, 7/15, 7/21, 8/11, 8/18, 8/31, 9/8) 37 WNV (8/4, 8/11, 8/18, 8/31, 9/8, 9/29, 10/7, 10/14)	1 EEEV sparrow (6/24)
Okaloosa	1 WNV (September)			
Orange			4 WNV (2/20, 7/10, 8/28, 10/2) 19 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, 10/2) 1 HJV (5/8)	
Palm Beach	1 dengue (September)	1 WNV (10/4)	8 WNV (4/18, 9/1, 9/18, 9/25, 10/9, 10/16)	
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) 1 WNV (September)		2 WNV (9/15, 10/17)	3 <i>Plasmodium vivax</i> mosquitoes (<i>Anopheles crucians</i> [6/1, 6/2, 6/5])
Seminole			2 WNV (9/11, 9/26)	
St. Johns	1 EEE (June)	2 EEEV (2/2, 7/6)	5 EEEV (6/12, 6/26, 7/31, 8/21) 51 WNV (7/5, 7/10, 7/17, 7/31, 8/7, 8/14, 8/21, 8/28, 9/5, 9/11, 9/18, 10/2, 10/9, 10/16)	
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) 8 WNV (7/3, 8/14, 9/5, 9/11, 9/25, 10/2) 1 SLEV (9/25)	
Wakulla				1 EEEV laughing gull (8/1)

County	Humans	Equines	Sentinel Chickens	Other
Walton	1 WNV asymptomatic blood donor (September)		40 WNV (3/27, 7/24, 7/31, 8/7, 8/8, 8/14, 8/15, 8/21, 8/22, 8/28, 8/30, 9/11, 9/12, 9/18, 9/25, 10/2, 10/9, 10/16) 38 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, 9/26) 6 HJV (5/8, 5/22, 6/12, 8/21) 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.