



Florida Arbovirus Surveillance Week 51: December 17-23, 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 December 17-23, 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. No sentinel chickens tested positive for antibodies to WNV this week. No mosquito pools tested positive for WNV this week. In 2023, positive samples from nine humans, three asymptomatic blood donors, 258 sentinel chickens, one pheasant, and two horses have been reported from 22 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, eight sentinel chickens have been reported from seven counties.

EEEV activity: No human cases of EEEV infection were reported this week. One horse with EEEV infection was reported this week in Volusia County. One sentinel chicken tested positive for antibodies to EEEV this week in Orange County. In 2023, positive samples from 155 sentinel chickens, 17 horses, one sparrow, one laughing gull, and two humans have been reported from 23 counties.

International Travel-Associated Dengue: Twenty-six cases of dengue were reported this week in persons that had international travel. In 2023, 563 travel-associated dengue cases have been reported.

Dengue Cases Acquired in Florida: Three cases of locally acquired dengue were reported this week. In 2023, positive samples from 175 humans and one mosquito pool have been reported from five counties.

International Travel-Associated Chikungunya Fever Cases: One case of chikungunya fever was reported this week in a person that had international travel. In 2023, three cases of travel-associated chikungunya fever have 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: Orange, Palm Beach, Polk, and Walton counties are currently under a mosquito-borne illness advisory. Broward, Escambia, Hardee, 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	Africa	Africa
Burkina Faso	Colombia	Bangladesh	Burkina Faso	Nigeria
Chad	Costa Rica	Cambodia		
Côte d'Ivoire	Dominican Republic	Laos		
Ethiopia	French Guiana	Malaysia		
Mali	Guadeloupe	Pakistan		
Sudan	Guatemala	Philippines		
	Jamaica	Sri Lanka		
	Martinique	Taiwan		
	Nicaragua	Thailand		
	Panama	Vietnam		
	Peru			
	Saint Barthelemy			
	Saint Martin			

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, nine cases of WNV illness acquired in Florida have been reported in 2023 from Brevard (October), Escambia (July (2) and August (3)), Okaloosa (September), Sarasota (September), and Wakulla (October) counties. Three asymptomatic positive blood donors have been reported in Bay (August), Hillsborough (August), and Walton (September) counties.

2023 International Travel-Associated Chikungunya cases: Three cases with onset in 2023 have been reported in individuals with travel history to a chikungunya-endemic area in the two weeks prior to onset. Counties reporting cases were: Broward, Duval, and Lee. Countries of origin were: Brazil (2) and India.

2023 International Travel-Associated Dengue Cases: Five hundred and sixty-three 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 (3), Bay, Brevard (2), Broward (54), Charlotte, Collier (6), Duval (6), Escambia, Hendry (2), Hernando, Highlands, Hillsborough (32), Indian River (2), Lee (15), Leon, Manatee (2), Marion, Miami-Dade (330), Monroe (5), Nassau, Okaloosa, Orange (17), Osceola (7), Palm Beach (32), Pasco (4), Pinellas (4), Polk (8), Sarasota (3), Seminole (3), St. Johns (4), St. Lucie (8), and Volusia (5). Thirty cases were reported in non-Florida residents. Seven 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, 468 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			3						3
Bangladesh		1	1						2
Bolivia		5							5

Brazil	9							5	14
Central America			2					1	3
Colombia	1		1			1		2	5
Costa Rica	1		4					2	7
Cuba	1	1	266	14		1	2	40	325
Cuba/Curacao			1						1
Dominican Republic		1	43			1	1	5	51
Dominican Republic/Haiti								1	1
Ecuador								1	1
El Salvador	1								1
Guatemala	3	2	4					3	12
Guyana			4					4	8
Haiti			9					4	13
Honduras	1		4	2				1	8
India	1	2	4		1			2	10
Indonesia		1							1
Jamaica		23						4	27
Maldives	1								1
Mexico		1	12					10	23
Nicaragua		1	2	6				4	13
Panama	1							1	2
Peru	6	3	1					1	11
Philippines	1								1
Puerto Rico	3	2	1					1	7
Saint Barthelemy								2	2
Saint Barthelemy/Saint Martin			1						1
South America		1							1
Turks and Caicos			1						1
Venezuela				1					1
Total	30	44	364	23	1	3	3	95	563

2023 Dengue Cases Acquired in Florida: In 2023, 175 cases of locally acquired dengue have been reported in Broward (4), Hardee (13), Miami-Dade (156), Palm Beach, and Polk counties with onsets in January, March, June (3), July (10), August (19), September (49), October (69), November (22), and December. Three cases were reported in non-Florida residents. One hundred and fifty-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	4			9	13
Miami-Dade	1	7	133	15	156
Palm Beach		1			1
Polk			1		1
Total	5	11	135	24	175

2023 International Travel-Associated Malaria Cases: Seventy-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: Brevard, Broward (9), Collier, Duval (3), Hillsborough (9), Jackson, Lake (2), Lee (3), Leon (3), Manatee, Miami-Dade (11), Okaloosa, Orange (5), Osceola (2), Palm Beach, Pasco (2), Pinellas (4), Polk (3), Sarasota (3), Seminole (2), St. Lucie (2), Volusia (2), and Walton. Fifteen cases were reported in non-Florida residents. Please see the table below for a breakdown of cases by country of origin and *Plasmodium* species.

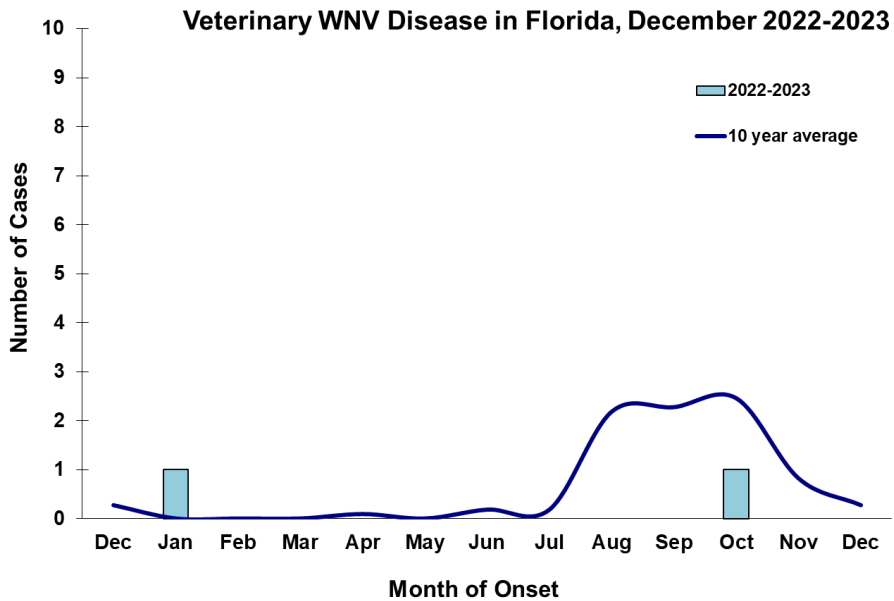
Country of Exposure	<i>Plasmodium falciparum</i>	<i>Plasmodium vivax</i>	<i>Plasmodium malariae</i>	<i>Plasmodium ovale</i>	Total
Angola			1		1
Burkina Faso	1				1
Burundi	1				1
Cameroon	4				4
Côte D'Ivoire	2				2
Democratic Republic of the Congo	2				2

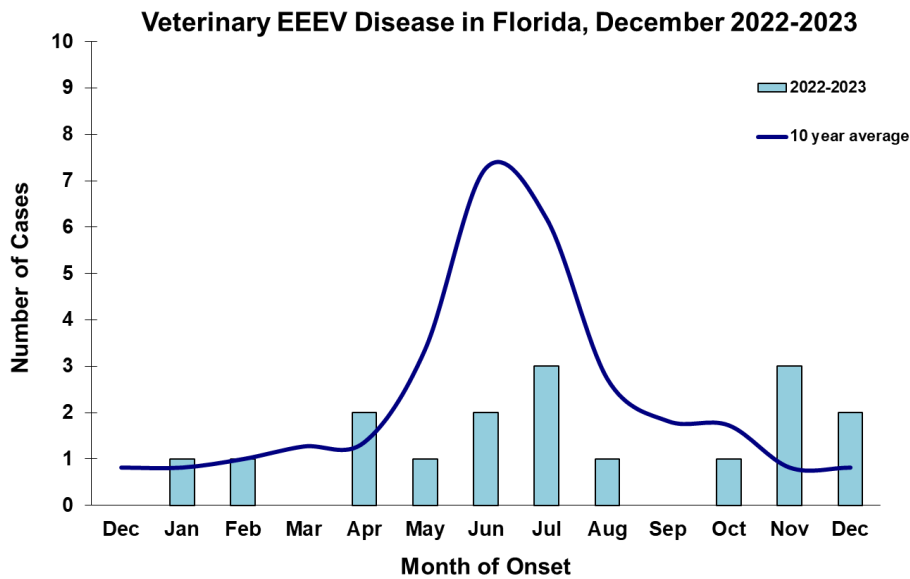
Equatorial Guinea	1				1
Ghana	5				5
Guinea	2				2
Haiti	1				1
Honduras		1			1
India	1	1			2
Kenya	1		1		2
Liberia	1				1
Mexico		1			1
Mozambique	1			1	2
Nicaragua		3			3
Nigeria	19				19
Pakistan		1			1
Sierra Leone	2		1		3
Sudan		1			1
Tanzania	1				1
Uganda	7				7
Venezuela		1			1
Multiple countries		7			7
Total	52	16	3	1	72

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 Volusia County.



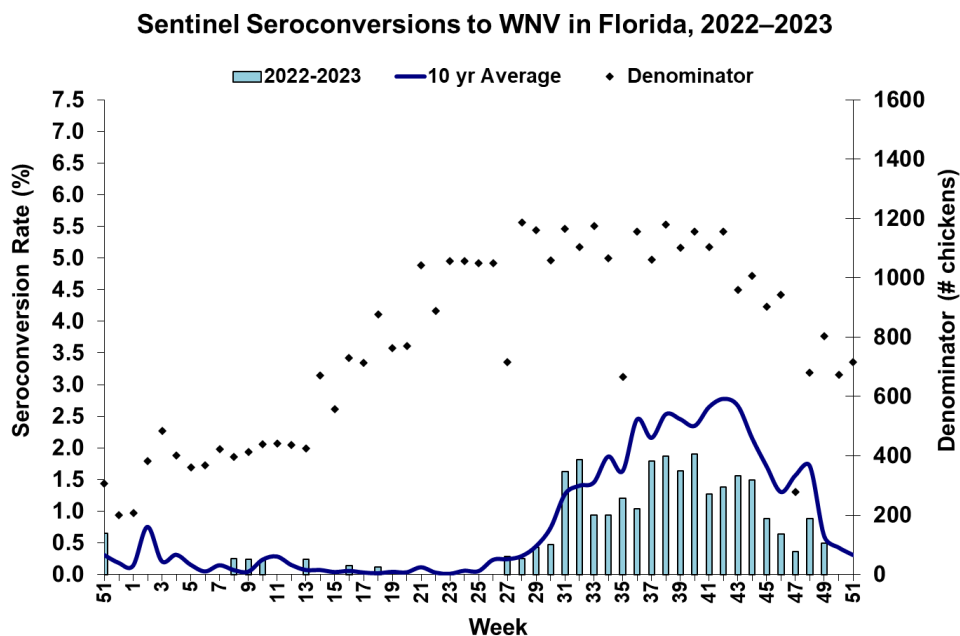


Sentinel Chickens

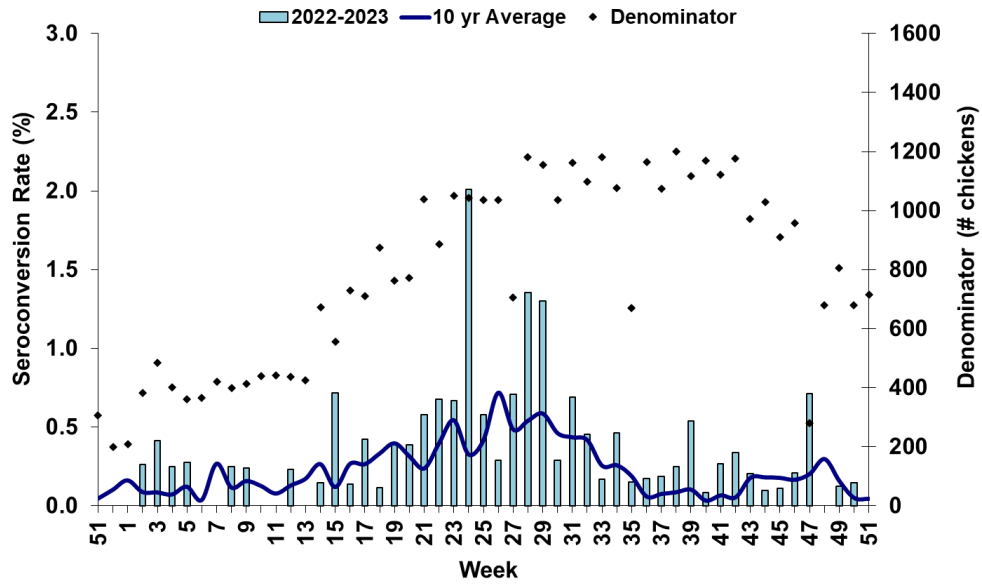
The table below is for the reporting of confirmatory laboratory results from this week. Some of the samples were collected at earlier dates. The date of collection is recorded for samples collected on that day along with the total number of positives and the corresponding seroconversion rate for the week the sample was collected.

One sentinel chicken tested positive for antibodies to EEEV this week in Orange County.

County	Collection Date	Seroconversion Rates (%)						County Totals	
		Flavi	SLEV	WNV	Alpha	EEEV	HJV	Collection Week	YTD
Orange	12/11/2023				2.00	2.00		1 EEEV	4 WNV, 23 EEEV, 1 HJV



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

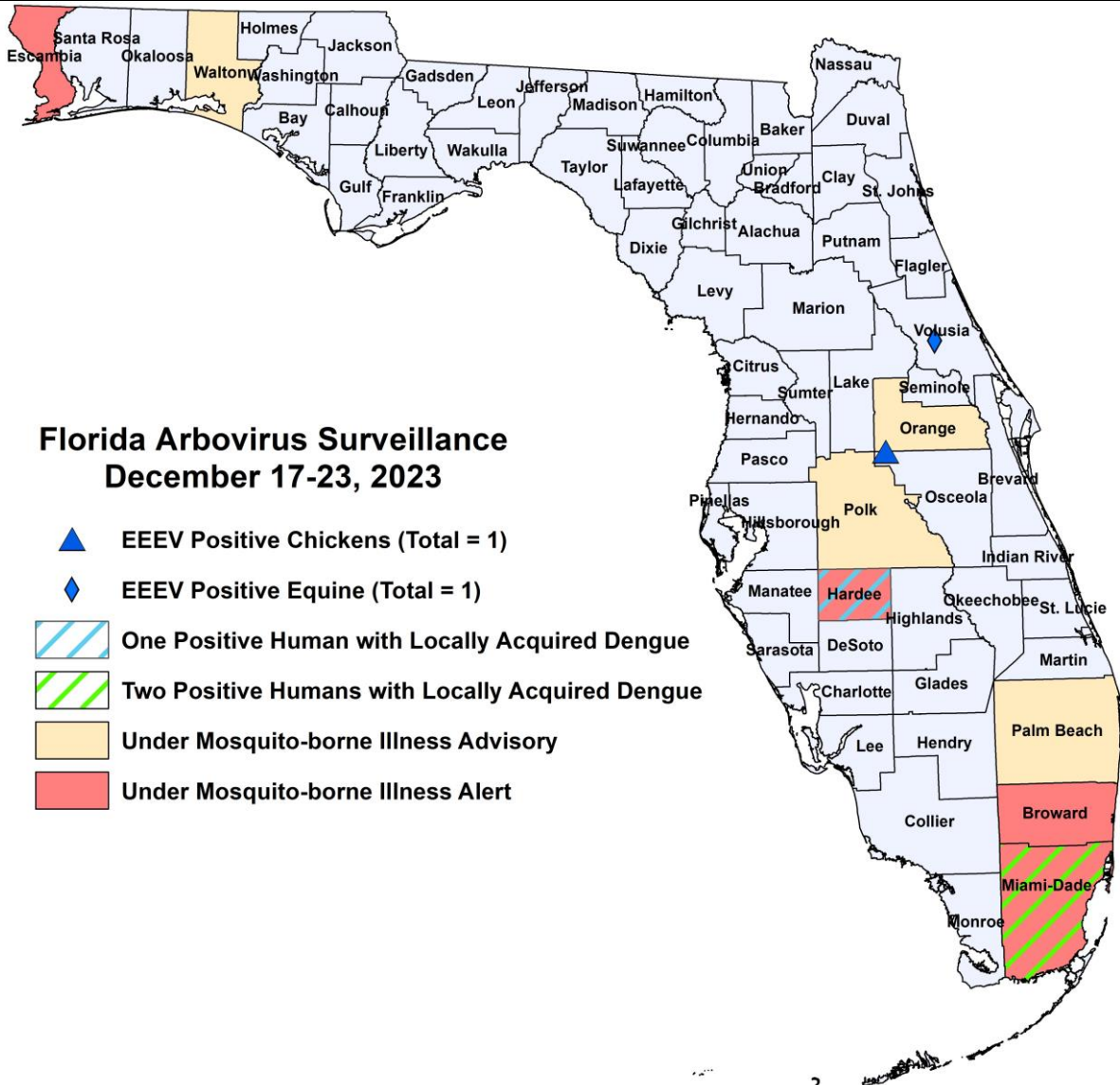
The Fish and Wildlife Conservation Commission (FWC) collects reports of dead birds, which can be an indication of arbovirus circulation in an area. This week, 20 reports representing a total of 26 dead birds, including four raptors, were received from 13 counties.

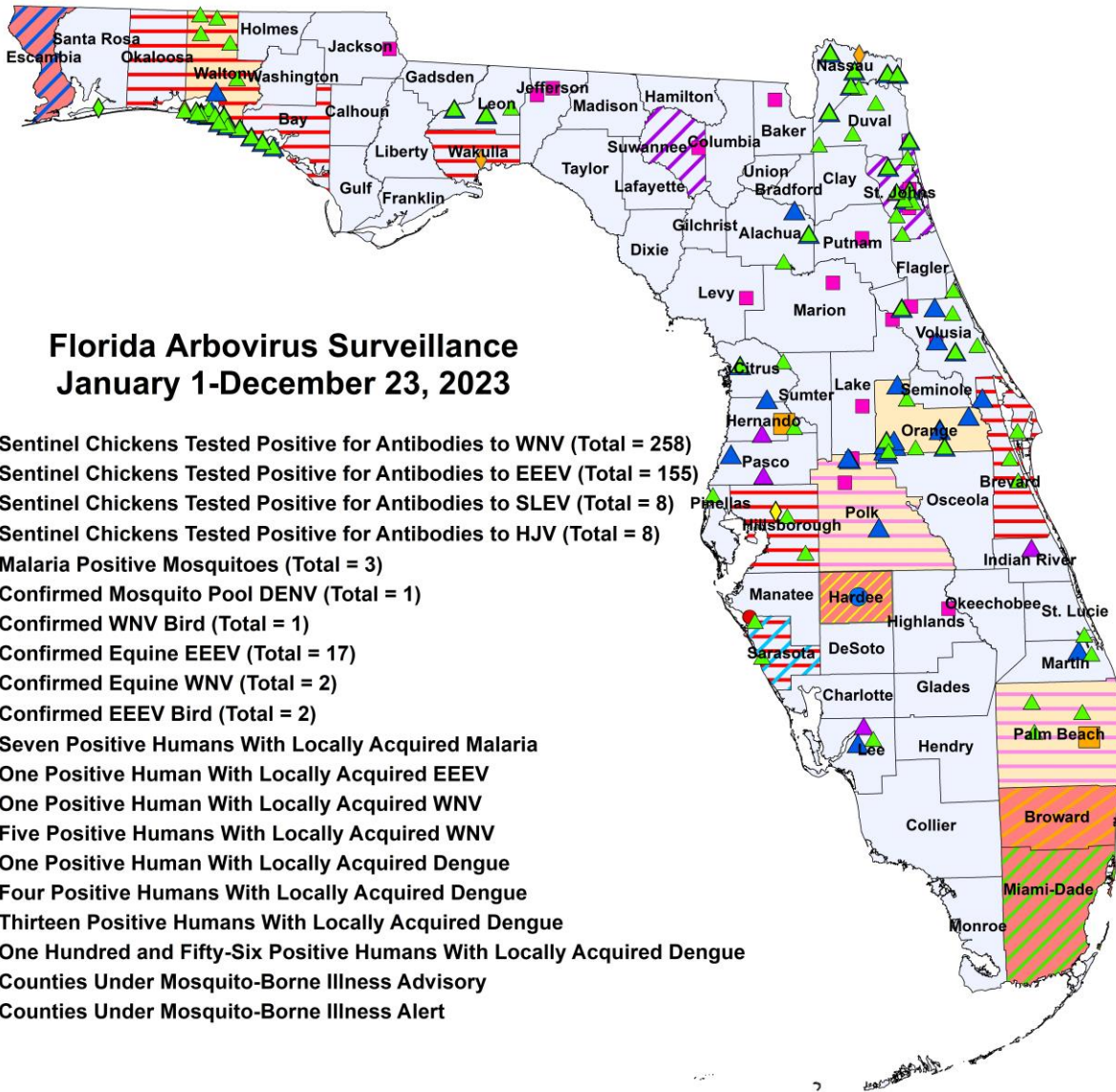
In 2023, 1019 reports representing a total of 2692 dead birds (55 crows, 53 jays, 161 raptors, 177 doves) were received from 54 of Florida's 67 counties.

2023

County	Total Dead Birds	Crows	Jays	Raptors	Doves
Alachua	1	0	0	0	0
Charlotte	1	0	0	0	0
Citrus	1	0	0	0	0
Columbia	1	0	0	1	0
Duval	9	0	0	1	0
Escambia	1	0	0	0	0
Hillsborough	1	0	0	1	0
Marion	1	0	0	1	0
Okaloosa	3	0	0	0	0
Palm Beach	3	0	0	0	0
Pinellas	1	0	0	0	0
Sarasota	2	0	0	0	0
Seminole	1	0	0	0	0

Maps





2023 Mosquito-Borne Disease Activity by County

County	Humans	Equines	Sentinel Chickens	Other
Alachua			8 EEEV (6/19, 7/17, 8/1, 8/9, 8/23, 10/19) 4 WNV (10/9, 11/14)	
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 WNV (October)		1 EEEV (3/24) 4 WNV (8/3, 10/5, 10/19)	
Broward	4 dengue (July (2), August, September)			
Citrus			3 EEEV (4/24, 11/6, 11/14) 3 WNV (10/16, 12/4)	

County	Humans	Equines	Sentinel Chickens	Other
Duval			12 WNV (7/17, 9/11, 9/18, 9/25, 10/2, 10/9)	
Escambia	5 WNV (July (2), August (3))			
Hardee	13 dengue (July, September, October (6), November (4), December)			1 dengue 1 mosquito (<i>Ae. aegypti</i> 11/20)
Hernando		1 WNV (1/6)	1 SLEV (10/16) 1 WNV (11/20)	
Hillsborough	1 WNV asymptomatic blood donor (August)		4 WNV (2/28, 3/7, 5/2, 11/6) 1 HJV (7/18)	
Indian River			2 SLEV (11/30)	
Jackson		1 EEEV (7/28)		
Jefferson		2 EEEV (6/22, 6/30)		
Lake		2 EEEV (1/29, 12/11)		
Lee			1 EEEV (1/9) 1 SLEV (10/9) 1 WNV (10/16)	
Leon			8 EEEV (7/6, 8/1, 8/7, 8/22, 9/19, 10/2, 10/31) 5 WNV (8/7, 8/15, 9/19, 10/2)	
Levy		1 EEEV (10/8)		
Marion		1 EEEV (11/21)		
Martin			1 EEEV (8/4) 2 WNV (10/6, 10/13)	
Miami-Dade	156 dengue (January, March, June (3), July (6), August (18), September (46), October (63), November (18))			
Nassau			48 EEEV (6/2, 6/16, 6/23, 7/7, 7/15, 7/21, 8/11, 8/18, 8/31, 9/8, 9/15, 9/22, 9/29, 10/14, 10/20, 10/27, 11/17) 55 WNV (8/4, 8/11, 8/18, 8/31, 9/8, 9/22, 9/29, 10/7, 10/14, 10/20, 10/27, 11/3, 11/10)	1 EEEV sparrow (6/24)
Okaloosa	1 WNV (September)			
Orange			4 WNV (2/20, 7/10, 8/28, 10/2) 23 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, 11/19, 11/20, 12/4, 12/11) 1 HJV (5/8)	
Palm Beach	1 dengue (September)	1 WNV (10/4)	11 WNV (4/18, 9/1, 9/18, 9/25, 10/9, 10/16, 10/23, 11/14)	
Pasco			1 EEEV (4/24) 1 SLEV (11/6)	
Pinellas			1 WNV (12/4)	
Polk	1 dengue (July)	2 EEEV (4/7, 4/10)	4 EEEV (5/22, 5/26, 7/24, 10/23)	
Putnam		1 EEEV (7/31)		
Santa Rosa				1 WNV pheasant (8/29)

County	Humans	Equines	Sentinel Chickens	Other
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) 58 WNV (7/5, 7/10, 7/17 7/31, 8/7, 8/14, 8/21, 8/28, 9/5, 9/11, 9/18, 9/25, 10/2, 10/9, 10/16, 10/23, 10/30, 11/6) 1 SLEV (10/30)	
Suwanee	1 EEE (July)	1 EEEV (8/21)		
Volusia		1 EEEV (12/12)	8 EEEV (1/17, 1/23, 1/30, 4/10, 4/17, 6/12, 7/17) 12 WNV (7/3,8/14, 9/5, 9/11, 9/25, 10/2, 10/30, 11/6, 11/13) 1 SLEV (9/25)	
Wakulla	1 WNV (October)			1 EEEV laughing gull (8/1)
Walton	1 WNV asymptomatic blood donor (September)		62 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, 10/3, 10/9, 10/16, 10/23, 10/30, 10/31, 11/6, 11/14, 11/27, 11/28, 12/4) 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.