



Florida Arbovirus Surveillance Week 44: October 28- November 3, 2012

Arbovirus surveillance in Florida includes endemic mosquito-borne viruses West Nile virus (WNV), Eastern equine encephalitis virus (EEEV), St. Louis encephalitis virus (SLEV), and Highlands J virus (HJV) and exotic viruses such as Dengue virus (DENV) and California encephalitis group viruses (CEV). Malaria, a non-viral mosquito-borne disease is also included. During the period of October 28- November 3, the following arboviral activity was recorded in Florida:

DENV activity: One case of locally acquired dengue was reported this week in Seminole County. One human case of locally acquired dengue was reported in September in Miami-Dade County. In 2012, two locally acquired Dengue cases have been reported.

EEEV activity: Two sentinel chickens in Hernando and Walton Counties tested positive for antibodies to EEEV. One horse case of EEEV infection was reported in Wakulla County. In 2012, positive samples from 1 human, 29 equines, and 70 sentinel chickens have been received from 28 counties.

WNV activity: One human case of WNV infection was reported this week in Hamilton County. Seventeen sentinel chickens in Bay, Citrus, Duval, Flagler, Orange, Polk, Putnam, Sarasota, St. Johns, and Walton counties tested positive for antibodies to WNV. Three horses were reported as testing positive for WNV this week in Walton, Gadsden, and Jefferson Counties. In 2012, positive samples from 55 humans, 17 horses, 391 sentinel chickens, 4 mosquito pools, and 1 bird have been received from 38 counties.

SLEV activity: Thirteen sentinel chickens in Charlotte, Hillsborough, Lee, Martin, Palm Beach, Sarasota, and St. Lucie Counties tested positive for antibodies to SLEV. In 2012, positive samples from 57 sentinel chickens, 1 mosquito pool, and 1 bird have been received from 13 counties

HJV activity: One sentinel chicken in Alachua County tested positive for antibodies to HJV. In 2012, positive samples from 26 sentinel chickens have been received from 9 counties.

Advisories/Alerts: Duval, Escambia, Okaloosa, Santa Rosa, and Walton counties are currently under mosquito-borne illness alerts. Alachua, Bay, Gadsden, Hamilton, Hillsborough, Holmes, Indian River, Jackson, Jefferson, Leon, Miami-Dade, Orange, Seminole, St. Johns, Suwannee, and Wakulla, Washington counties are under mosquito-borne illness advisories. No other counties are currently under mosquito-borne illness advisory or alert.

Year to Date Human Case Summary*

EEEV Infection Acquired in Florida: One human case of EEEV infection with onset in June was reported in 2012 in a Holmes County resident who spent time in Washington County.

WNV Infection Acquired in Florida: Fifty-five human cases of WNV infection were acquired in Florida in 2012. Twenty-six with onset in June (4), July (7), August (11), September (3), and October were reported in Duval County, three of which were presumptive positive blood donors who developed symptoms. Fourteen with onset in July (2), August (7), and September (5), and a presumptive positive blood donor were reported in Escambia County. Three with onset in August (2) and September were reported in Santa Rosa County. Two with onset in August and one in

September were reported in Okaloosa County and two with onset in September in Walton County. One case with onset in August was reported in Hillsborough, Gadsden, and Leon counties (latter spent time in Jefferson County), and one with onset in September was reported in Bay, Hamilton, Jackson, and Washington counties. Three Florida residents in Broward, Manatee, and Volusia counties obtained WNV infection in the U.S. outside Florida. Two human cases of WNV infection in non-Florida residents who traveled to Florida were acquired in Oklahoma and South Carolina.

Dengue Infection Acquired in Florida: Two human cases of dengue with onset in September and October were reported in 2012 in Miami-Dade County and Seminole County, respectively.

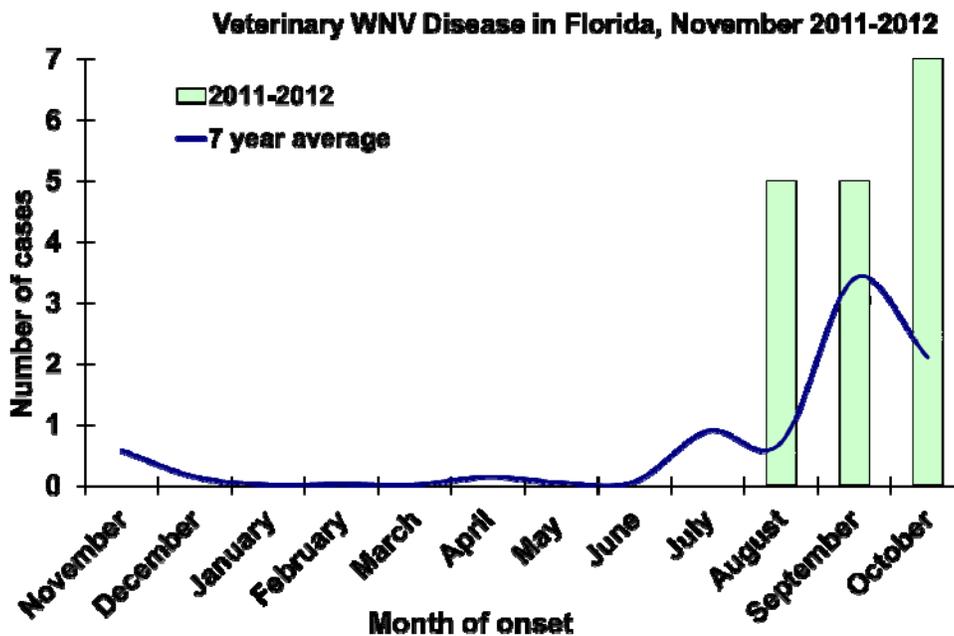
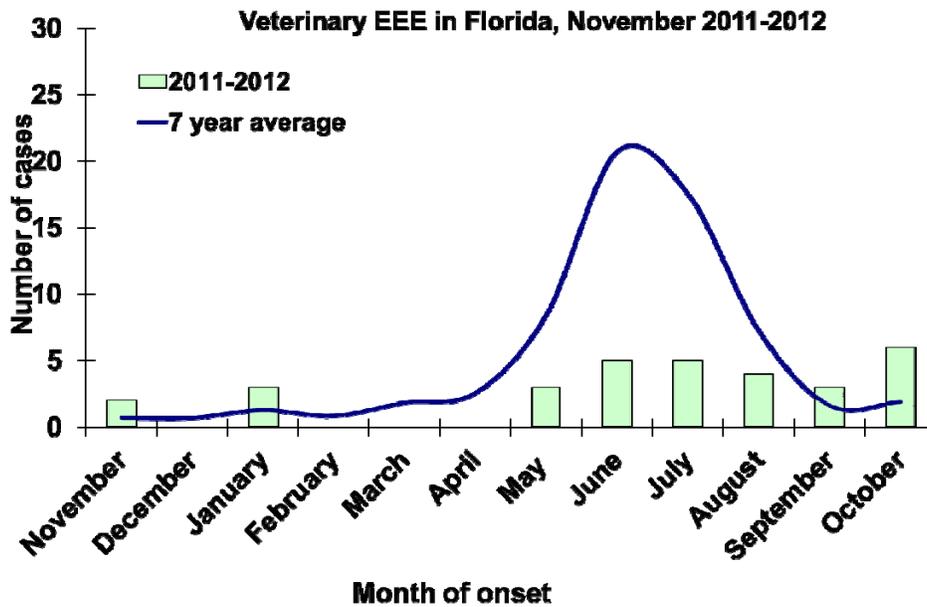
Imported Dengue: Ninety-four cases of dengue with onset in 2012 have been reported in individuals with travel history to a dengue endemic country in the two weeks prior to onset. Countries of origin were Brazil, Colombia, Cuba (21), Dominican Republic (9), Ecuador (4), El Salvador (2), Ghana, Guyana (2), Haiti (14), Honduras, India, Jamaica (17), Mexico (2), Nicaragua, Panama, Philippines, Puerto Rico (6), South Africa, Sri Lanka, St. Vincent, Suriname, Trinidad (4), and Turks & Caicos. Counties reporting cases were Brevard (3), Broward (17), Collier, Duval (2), Hillsborough (4), Lee (2), Marion, Miami-Dade (36), Orange (12), Palm Beach (6), Pinellas (2), Polk, Sarasota (2), Seminole (3), and Volusia (2). Nine of the cases were reported in non-Florida residents.

Imported Malaria: Fifty-three imported cases of malaria with onset in 2012 have been reported. Countries of origin were: Afghanistan (2), Cameroon, Central African Republic, Colombia, Costa Rica, Ethiopia, Ghana (5), Guyana (2), Haiti (9), Honduras (3), India, Ivory Coast (3), Kenya, Liberia (2), Nigeria (8), Pakistan, Peru, Sierra Leone (2), South Africa, Sub Saharan Africa, Sudan, Togo, Uganda, Zambia, and multiple African countries (2). Counties reporting cases were: Alachua, Brevard, Broward (8), Charlotte, Duval (6), Hillsborough (6), Lake (2), Leon, Manatee, Marion, Martin, Miami-Dade (7), Orange (5), Osceola (2), Palm Beach (4), Pinellas (3), Polk, Seminole, and Volusia. Five of the cases were reported in non-Florida residents.

Veterinary Cases

Three horses were reported as testing positive for WNV this week in Walton, Gadsden, and Jefferson Counties. One horse was reported as testing positive for EEEV in Wakulla County.

County	Onset Date	Species	Virus	Status	County YTD
Walton	9/29/2012	Equine	WNV	Recovered	2 WNV
Gadsden	10/14/2012	Equine	WNV	Recovered	1 WNV
Wakulla	10/22/2012	Equine	EEEV	Euthanized	3 EEEV
Jefferson	10/25/2012	Equine	WNV	Euthanized	1 WNV, 1 EEEV

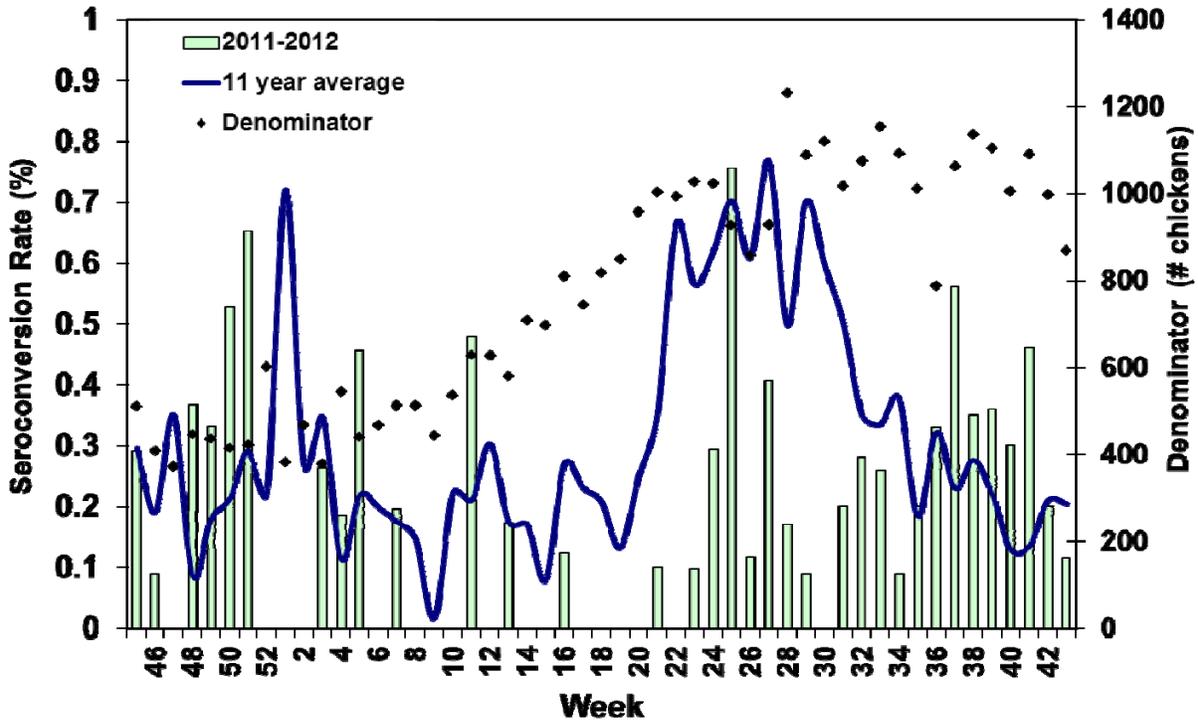


Sentinel Chickens

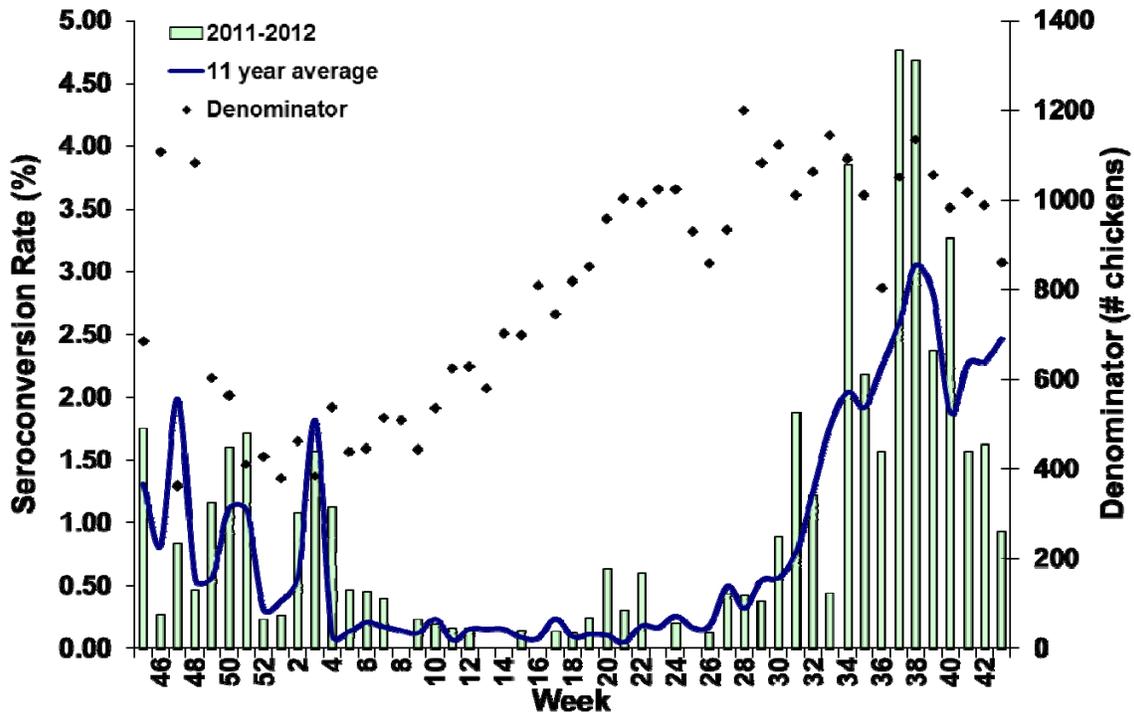
Two sentinel chickens in Hernando and Walton Counties tested positive for antibodies to EEEV, seventeen sentinel chickens in Bay, Citrus, Duval, Flagler, Orange, Polk, Putnam, Sarasota, St. Johns, and Walton counties tested positive for antibodies to WNV, thirteen sentinel chickens in Charlotte, Hillsborough, Lee, Martin, Palm Beach, Sarasota, and St. Lucie Counties tested positive for antibodies to SLEV, one sentinel chicken in Alachua County tested positive for antibodies to HJV. Seroconversion rates are calculated by week and include previously reported results.

County	Collection Date	Seroconversion Rates (%)				County Totals	
		SLEV	WNV	EEEV	HJV	Week	YTD
Alachua	10/8/2012				2.78	1 EEEV, 1 WNV, 1 HJV	5 WNV, 3 EEEV, 2 HJV
Bay	10/23/2012		5.56			1 WNV	20 WNV, 1 EEEV, 1 HJV
Charlotte	10/19/2012	4.76				1 SLEV	4 WNV, 1 SLEV
Citrus	10/22/2012		2.86			2 WNV	9 WNV, 2 EEEV, 1 HJV
Duval	10/18/2012		5.88			1 WNV	
Duval	10/22/2012		5.88			1 WNV	25 WNV
Flagler	10/22/2012		8.33			1 WNV	5 WNV, 2 EEEV, 2 HJV
Hernando	10/22/2012			5.00		1 EEEV	2 WNV, 2 EEEV
Hillsborough	10/9/2012	3.80				3 SLEV	18 WNV, 7 SLEV, 4 EEEV
Lee	10/22, 10/23/2012	6.35				4 SLEV	4 WNV, 16 SLEV
Martin	10/18/2012	5.56				1 SLEV	1 WNV, 4 SLEV
Orange	10/22/2012		1.33			1 WNV	15 WNV, 20 EEEV, 3 SLEV
Palm Beach	10/22/2012	3.85				1 SLEV	3 WNV, 9 SLEV
Polk	10/2/2012		22.22			2 WNV	4 WNV
Putnam	10/2/2012		7.69			1 WNV, 1 SLEV	
Putnam	10/23/2012		9.09			1 WNV	16 WNV, 1 SLEV, 3 EEEV
Sarasota	10/19/2012	1.79					
Sarasota	10/19/2012		1.79			1 WNV, 1 SLEV	22 WNV, 8 SLEV, 1 HJV
St. Johns	9/28/2012		26.19			11 WNV	
St. Johns	10/22/2012		2.33			1 WNV	49 WNV, 5 EEEV, 2 HJV
St. Lucie	10/22/2012	11.76				2 SLEV	1 WNV, 3 SLEV
Walton	10/1/2012		16.67			14 WNV, 1 HJV	
Walton	10/15/2012			1.35		1 WNV, 1 EEEV	98 WNV, 15 EEEV, 7 HJV

Sentinel Seroconversions to EEEV in Florida, 2011-2012



Sentinel Seroconversions to WNV in Florida, 2011-2012



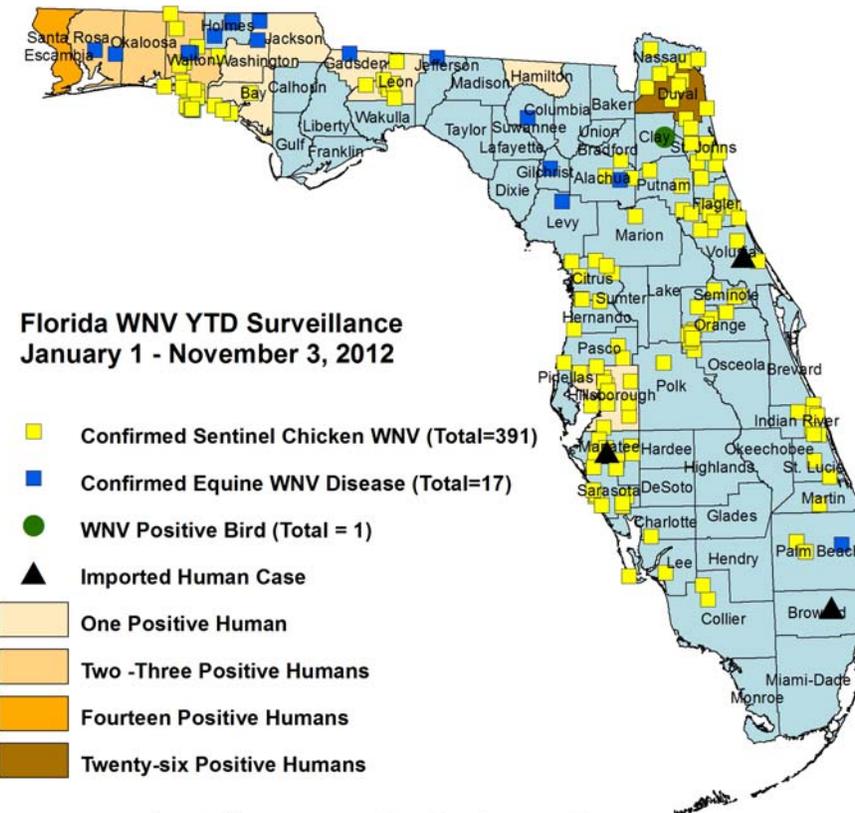
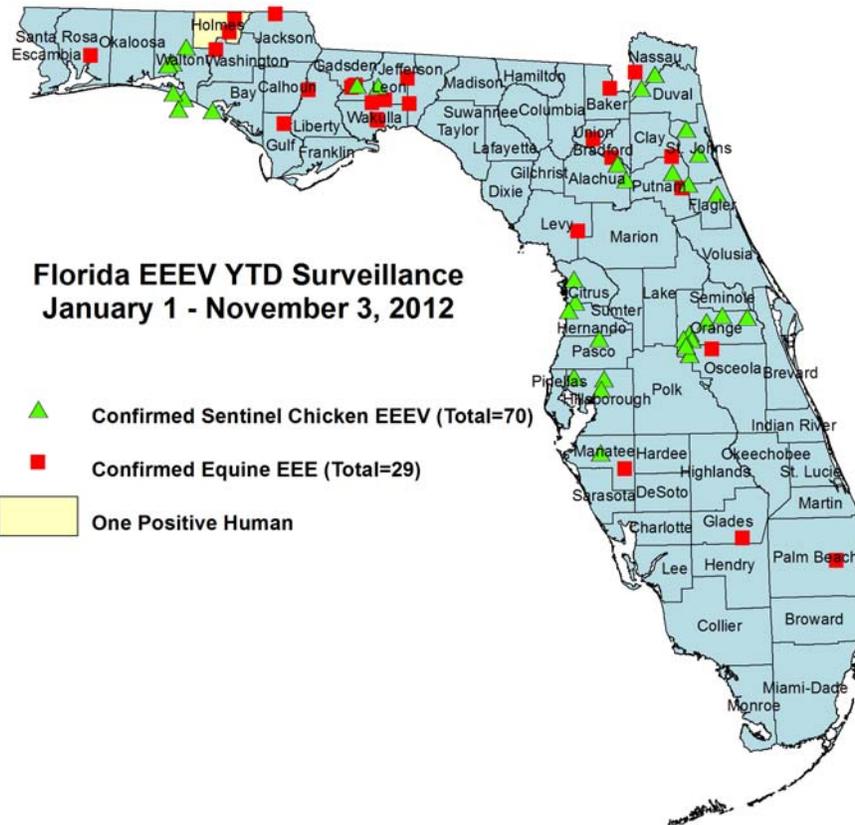
Dead Birds

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, 6 reports representing 23 dead birds were received from 5 counties. Sixteen were identified as crows and three were identified as raptors. In 2012, 427 reports representing a total of 1243 dead birds (65 crows, 40 jays, 62 raptors) were received from 54 of Florida's 67 counties. Please note that FWC collects reports of birds that have died from a variety of causes, not only arboviruses. Dead birds should be reported to www.myfwc.com/bird/

County	Total Dead Birds	Crows	Jays	Raptors
Alachua	1	1	0	0
Hillsborough	2	0	0	1
Orange	2	0	0	2
Palm Beach	15	15	0	0
Walton	3	0	0	0

Maps





Imported human case markers do not represent the case residences.

Arbovirus Activity by County

County	Arbovirus Activity
Alachua	EEEV : 1 horse (7/27) ; 3 sentinel (7/9, 9/18, 10/8) WNV : 1 horse (9/11) ; 5 sentinel (9/17, 9/18, 10/8, 10/15) HJV : 2 sentinel (9/18, 10/8)
Bay	EEEV : 1 sentinel (7/10) WNV : 1 human (september) ; 20 sentinels (7/24, 7/31, 8/7, 8/14, 8/21, 9/4, 9/11, 9/18, 10/2, 10/23) ; 2 mosquito pools (9/6, 9/11) HJV : 1 sentinel (5/29) SLEV : 1 mosquito pool (10/2)
Baker	EEEV : 1 horse (6/21)
Brevard	SLEV : 1 sentinel (8/29)
Charlotte	WNV : 4 sentinel (9/7, 9/14, 9/28) SLEV : 1 sentinel (10/19)
Citrus	EEEV : 2 sentinel (1/30, 10/8) WNV: 9 sentinel (5/29, 8/27, 9/17, 9/24, 10/15, 10/22) HJV: 1 sentinel (1/3)
Clay	EEEV: 1 horse (10/14) WNV: 1 goose
DeSoto	SLEV: 1 pigeon
Duval	WNV: 26 humans (4 June, 7 July, 11 August, 3 September, October); 25 sentinel (7/30, 8/3, 8/13, 8/20, 8/23, 8/28, 9/10, 9/13, 9/17, 10/1, 10/18, 10/22); 2 mosquito pools (8/7, 8/8)
Escambia	WNV: 14 humans (2 July, 7 August, 5 September)
Flagler	EEEV: 2 sentinel (8/6, 9/24) WNV: 5 sentinel (9/4, 10/1, 10/9, 10/22) HJV: 2 sentinels (7/30, 8/27)
Gadsden	WNV: 1 human (August); 1 horse (10/14)
Gilchrist	WNV: 1 horse (10/12)
Glades	EEEV: 2 horses (6/25, 7/14)
Gulf	EEEV: 1 horse (8/21)
Hamilton	WNV: 1 human (September)
Hernando	EEEV: 2 sentinel (10/1, 10/22) WNV: 2 sentinel (1/23, 9/17)
Hillsborough	EEEV : 4 sentinels (2/14, 3/13, 4/17) WNV: 1 human (August); 18 sentinels (1/3, 1/17, 1/24, 1/31, 2/14, 3/6, 6/12, 8/28, 9/18, 9/25) SLEV: 7 sentinels (1/3, 8/28, 10/9)
Holmes	EEEV : 1 human (June); 2 horses (5/21, 6/25) WNV : 3 horses (8/11, 8/23, 9/26)
Indian River	WNV: 15 sentinels (5/24, 8/9, 8/30, 9/13, 9/20, 9/27)
Jackson	EEEV: 1 horse (9/9) WNV: 1 human (September), 1 horse (10/9)
Jefferson	EEEV: 1 horse (8/6) WNV: 1 horse (10/25)
Liberty	EEEV: 1 horse (10/19)
Lee	WNV: 4 sentinel (1/24, 9/17, 9/18, 10/9) SLEV: 16 sentinels (3/7, 8/30, 9/4, 9/10, 9/17, 9/18, 10/1, 10/2, 10/8, 10/9, 10/15, 10/22, 10/23)
Leon	EEEV : 5 horses (8/21, 8/30, 9/3, 9/4, 10/4), 3 sentinels (8/13, 8/28, 9/22) WNV : 1 human (August), 22 sentinels (9/17, 9/22, 10/2, 10/15) HJV : 4 sentinels (8/28, 9/4, 9/11, 10/2)
Levy	EEEV: 2 horses (1/2) WNV : 1 horse (9/3)
Manatee	EEEV: 1 horse (6/14); 1 sentinel (9/11) WNV: 8 sentinels (2/1, 3/14, 5/30, 8/15, 9/19, 9/25, 10/10)

County	Arbovirus Activity
	SLEV: 4 sentinel (9/19, 9/25, 10/1, 10/16)
Martin	WNV: 1 sentinel (9/14) SLEV: 4 sentinel (9/28, 10/5, 10/18)
Miami-Dade	Dengue: 1 human (September)
Nassau	EEEV : 1 horse (7/18) ; 9 sentinels (6/16, 6/23, 9/8, 9/14, 9/28, 10/15) WNV : 36 sentinels (8/6, 8/25, 8/31, 9/8, 9/10, 9/14, 9/20) HJV : 6 sentinels (7/13, 8/18, 8/31, 9/14, 9/28)
Okaloosa	WNV : 3 humans (2 August, 1 September)
Orange	EEEV : 20 sentinels (1/5, 1/9, 1/19, 1/23, 2/6, 3/15, 3/29, 5/21, 6/14, 7/2, 8/8, 8/13, 8/20, 9/10, 9/27, 10/1, 10/4, 10/8) WNV: 15 sentinels (1/9,1/12, 1/19, 1/25, 3/1, 7/26, 9/13, 9/17, 9/19, 10/22) SLEV: 3 sentinel (10/1)
Osceola	EEEV : 1 horse (7/25)
Palm Beach	EEEV : 1 horse (6/20) WNV : 1 horse (8/29), 3 sentinel (8/17, 8/27, 10/15) SLEV : 9 sentinel (7/23, 8/20, 8/27, 9/17, 10/22)
Pasco	WNV : 2 sentinels (5/29, 9/19)
Polk	WNV : 4 sentinel (9/5, 9/18, 10/2)
Putnam	EEEV: 1 horse (1/1) ; 3 sentinels (7/20, 8/3, 10/9) WNV : 16 sentinel (9/18, 9/25, 10/2 10/9, 10/16, 10/23) SLEV : 1 sentinel (10/2)
Santa Rosa	EEEV : 1 horse (5/11) WNV : 3 humans (2 August, 1 September) ; 2 horse (8/23, 8/29)
Sarasota	WNV: 22 sentinels (1/9, 2/6, 3/19, 5/7, 5/14, 7/9, 7/16, 7/27, 8/3, 8/24, 9/14, 9/17, 9/24, 10/19); 1 of the positives were flavivirus positive (8/31 tallied under WNV) SLEV: 8 sentinel (7/2, 9/7, 10/1, 10/19) HJV: 1 sentinel (9/7)
Seminole	WNV : 3 sentinels (8/7, 9/25) Dengue: 1 human (October)
St. Johns	EEEV : 5 sentinels (9/2, 9/11, 9/18, 10/8) WNV : 49 sentinels (5/14, 5/22, 5/29, 8/5, 8/20, 8/27, 9/2, 9/11, 9/18, 9/28, 10/8, 10/15, 10/22) HJV : 2 sentinels (4/30, 7/3)
St. Lucie	WNV : 1 sentinel (9/14, 10/8) SLEV : 3 sentinel (10/8, 10/22)
Suwannee	WNV : 2 horses (10/15, 10/18)
Union	EEEV : 1 horse (5/12)
Volusia	WNV : 3 sentinels (5/29, 6/25, 9/17)
Wakulla	EEEV : 3 horse (10/9, 10/21, 10/22)
Walton	WNV : 2 human (September) ; 2 horse (9/16, 9/29) ; 98 sentinels (4/9, 4/23, 4/30, 7/2, 7/3, 7/9, 7/10,7/16, 7/23, 7/30, 8/7, 8/13, 8/20, 8/21, 9/6, 9/10, 9/17, 9/18, 9/24, 10/1, 10/8, 10/15) EEEV : 15 sentinels (6/4, 6/18, 6/25, 7/2, 7/30, 9/6, 9/10, 10/15) HJV : 7 sentinels (5/14, 6/11, 6/18, 7/16, 7/23, 9/6, 10/1)
Washington	EEEV : 1 horse (7/1) WNV : 1 human (September), 1 horse (9/19)

Acknowledgements and Data Sources

Contributors: Stephanie Moody-Geissler, MPH, Elizabeth Radke, MPH, Shaiasia Itwaru-Womack, Danielle Stanek, DVM, and Carina Blackmore, DVM, Ph.D., DOH Bureau of Epidemiology; Holly Hughes, Ph.D. and Valerie Mock, DOH Bureau of Laboratories.

For more surveillance information, please see the DOH website at:
<http://www.doh.state.fl.us/Environment/medicine/arboviral/index.html>

For arbovirus surveillance information for the United States, please see the Centers for Disease Control and Prevention website at:

<http://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, and malaria. In addition, dengue and malaria tallies may also include suspect cases. 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:

http://www.doh.state.fl.us/Disease_ctrl/epi/surv/CaseDefinitions/2012CaseDef_FINAL.pdf

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 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.