



Florida Arbovirus Surveillance Week 40: September 30- October 6, 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 September 30- October 6 2012, the following arboviral activity was recorded in Florida:

DENV activity: One human case of locally acquired dengue was reported in September in Miami-Dade County. This was the first locally acquired case reported in 2012.

EEEV activity: Three sentinel chickens in Alachua, Flagler, and Leon counties tested positive for antibodies to EEEV. One horse case of EEEV infection was reported in Jackson County. In 2012, positive samples from 1 human, 23 equines, and 56 sentinel chickens have been received from 24 counties.

WNV activity: Three human cases of WNV infection were reported in Bay, Jackson, and Okaloosa counties. Twenty-four sentinel chickens in Citrus, Hillsborough, Indian River, Leon, Manatee, Nassau, Orange, Putnam, Sarasota, Seminole, and Walton counties tested positive for antibodies to WNV. In 2012, positive samples from 48 humans, 6 horses, 284 sentinel chickens, 4 mosquito pools, and 1 bird have been received from 34 counties.

SLEV activity: Two sentinel chicken in Manatee, and Sarasota Counties tested positive for antibodies to SLEV. In 2012, positive samples from 18 sentinel chickens, 1 mosquito pool, and 1 bird have been received from 8 counties

HJV activity: Two sentinel chickens in Alachua, and Nassau counties tested positive for antibodies to HJV. In 2012, positive samples from 22 sentinel chickens have been received from 9 counties.

Advisories/Alerts: Duval, Escambia, Okaloosa, and Santa Rosa counties are currently under mosquito-borne illness alerts. Alachua, Bay, Gadsden, Hillsborough, Holmes, Indian River, Jackson, Jefferson, Leon, Miami-Dade, St. Johns, Walton, and 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: Forty-eight human cases of WNV infection were acquired in Florida in 2012. Twenty-three with onset in June (4), July (7), August (11), and September were reported in Duval County, three of which were presumptive positive blood donors who developed symptoms. Twelve with onset in July (2), August (6), and September (4) 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, and two with onset in August and one in September were reported in Okaloosa 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, Jackson, Walton, 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: One human case of dengue with onset in September was reported in 2012 in a Miami-Dade County resident.

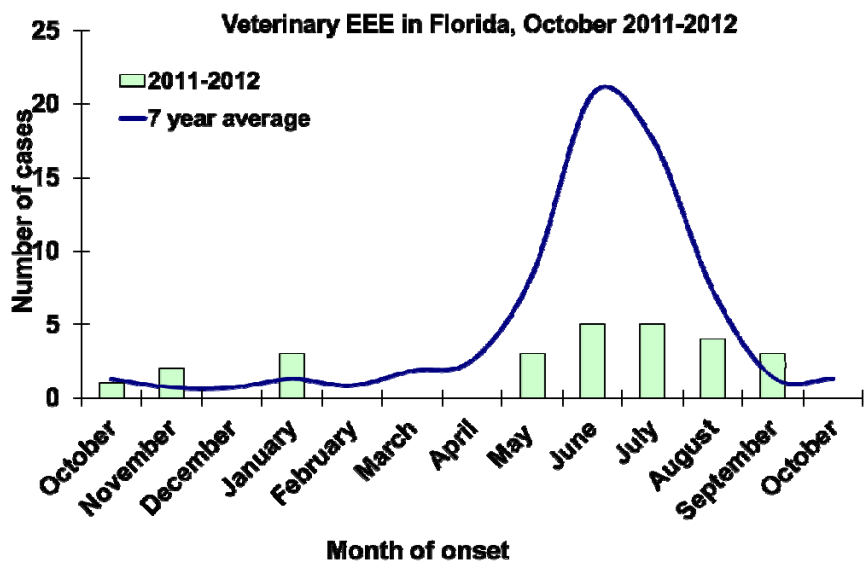
Imported Dengue: Seventy-six cases of dengue with onset in 2012 have been reported in individuals with travel history to a dengue endemic country in the two weeks prior to onset. Countries of origin were Brazil, Colombia, Cuba (17), Dominican Republic (7), Ecuador (4), El Salvador (2), Ghana, Guyana, Haiti (11), Jamaica (15), Mexico, Panama, Philippines, Puerto Rico (5), South Africa, Sri Lanka, St. Vincent, Suriname, Trinidad (3), and Turks & Caicos. Counties reporting cases were Brevard (3), Broward (15), Collier, Duval, Hillsborough (3), Lee (2), Marion, Miami-Dade (28), Orange (10), Palm Beach (4), Pinellas (2), Polk, Sarasota (2), Seminole (2), and Volusia. Eight of the cases were reported in non-Florida residents.

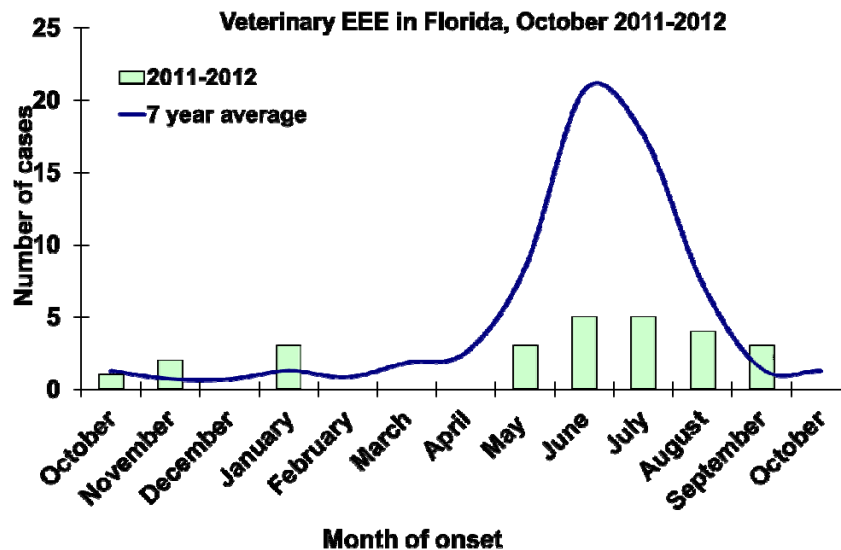
Imported Malaria: Fifty-three imported cases of malaria with onset in 2012 have been reported. Countries of origin were: Afghanistan (2), Cameroon, Central African Republic, Colombia, Costa Rica, Ethiopia, Ghana (5), Guyana (2), Haiti (9), Honduras (3), India, Ivory Coast (3), Kenya, Liberia (2), Nigeria (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

One horse in Jackson was reported as testing positive for EEEV this week

County	Onset Date	Species	Virus	Status	County YTD
Jackson	09/09/12	Equine	EEEV	Alive	1 EEEV





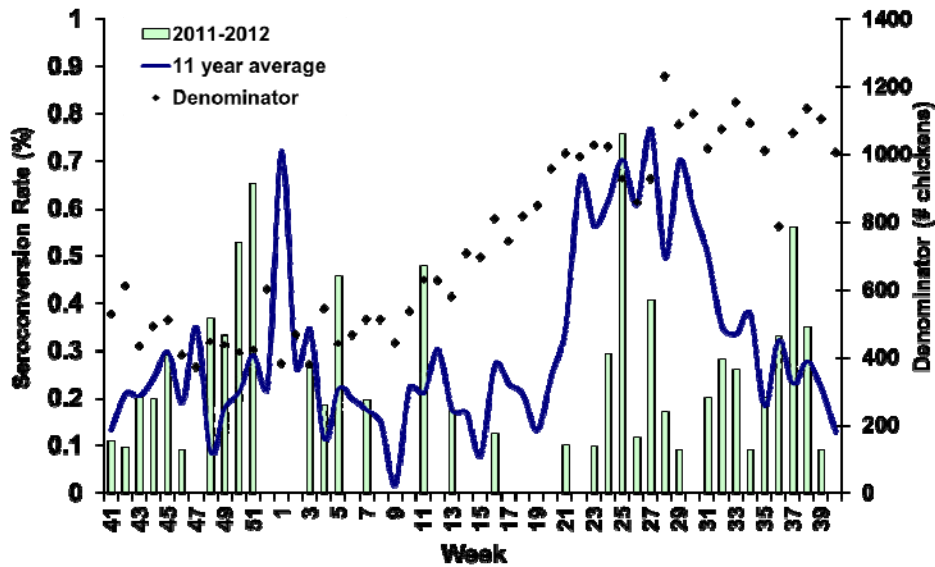
Sentinel Chickens

Three sentinel chickens in Alachua, Flagler, and Leon counties tested positive for antibodies to EEEV, twenty-four sentinel chickens in Citrus, Hillsborough, Indian River, Leon, Manatee, Nassau, Orange, Putnam, Sarasota, Seminole, and Walton counties tested positive for antibodies to WNV, two sentinel chicken in Manatee, and Sarasota Counties tested positive for antibodies to SLEV, and two sentinel chickens in Alachua, and Nassau counties tested positive for antibodies to HJV. Seroconversion rates are calculated by week and include previously reported results.

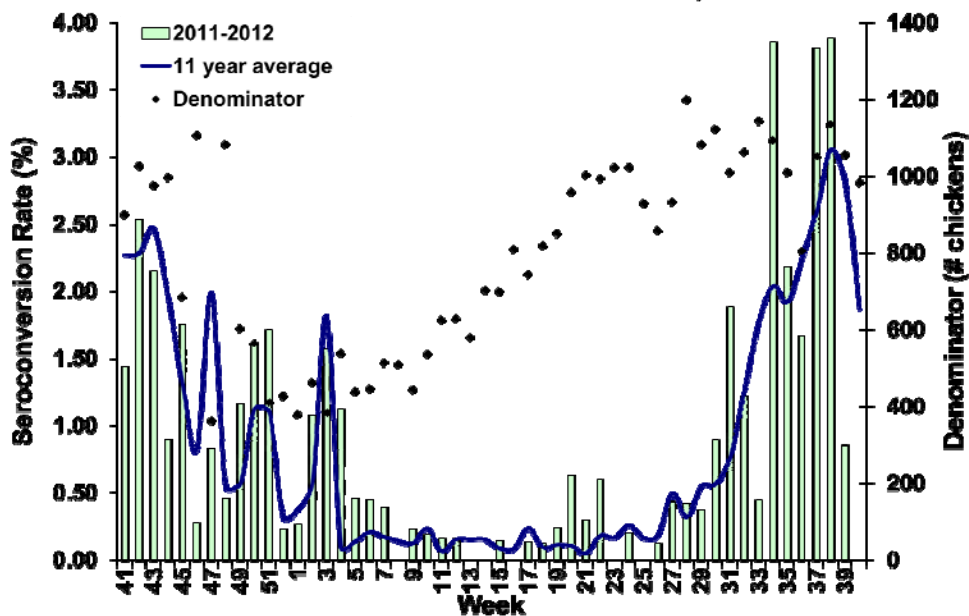
County	Collection Date	Seroconversion Rates (%)				County Totals	
		SLEV	WNV	EEEV	HJV	Week	YTD
Alachua	9/17,9/18/2012		10.71	3.57	3.57	3 WNV, 1 EEEV, 1 HJV	3 WNV, 2 EEEV, 1 HJV
Citrus	9/24/2012		1.52			1 WNV	6 WNV, 1 EEEV, 1 HJV
Flagler	9/24/2012			9.09		1 EEEV	1 WNV, 2 EEEV, 2 HJV
Hillsborough	9/25/2012		1.37			1 WNV	18 WNV, 4 SLEV, 4 EEEV
Indian River	9/20/2012		4.35			2 WNV	14 WNV
Leon	9/17, 9/22/2012		23.81	2.56		10 WNV, 1 EEEV	10 WNV, 3 EEEV, 3 HJV
Manatee	9/25/2012	1.39	1.39			1 WNV, 1 SLEV	7 WNV, 2 SLEV, 1 EEEV
Nassau	9/20/2012		9.09			3 WNV	29 WNV, 6 EEEV, 5 HJV
Nassau	9/14/2012		14.71	5.56	2.78	5 WNV, 2 EEEV, 1 HJV	
Orange	9/17, 9/19/2012		2.65			3 WNV	14 WNV, 16 EEEV
Putnam	9/25/2012		21.43			3 WNV	4 WNV, 2 EEEV
Sarasota	9/24/2012		3.23			2 WNV	22 WNV, 2 SLEV, 1 HJV
Sarasota	9/7/2012	1.37	2.74		1.49	2 WNV, 1 SLEV, 1 HJV	

County	Collection Date	Seroconversion Rates (%)				County Totals	
		SLEV	WNV	EEEV	HJV	Week	YTD
Seminole	9/25/2012		5.00			1 WNV	3 WNV
Walton	9/24/2012		1.37			1 WNV	68 WNV, 14 EEEV, 6 HJV
Walton	9/10/2012		19.64	1.79		11 WNV, 1 EEEV	
Walton	9/6/2012		5.36	1.79	1.79	3 WNV, 1 EEEV, 1 HJV	

Sentinel Seroconversions to EEEV in Florida, 2011-2012



Sentinel Seroconversions to WNV in Florida, 2011-2012



Mosquito Pools

SLEV was isolated from one mosquito pool collected in Bay County.

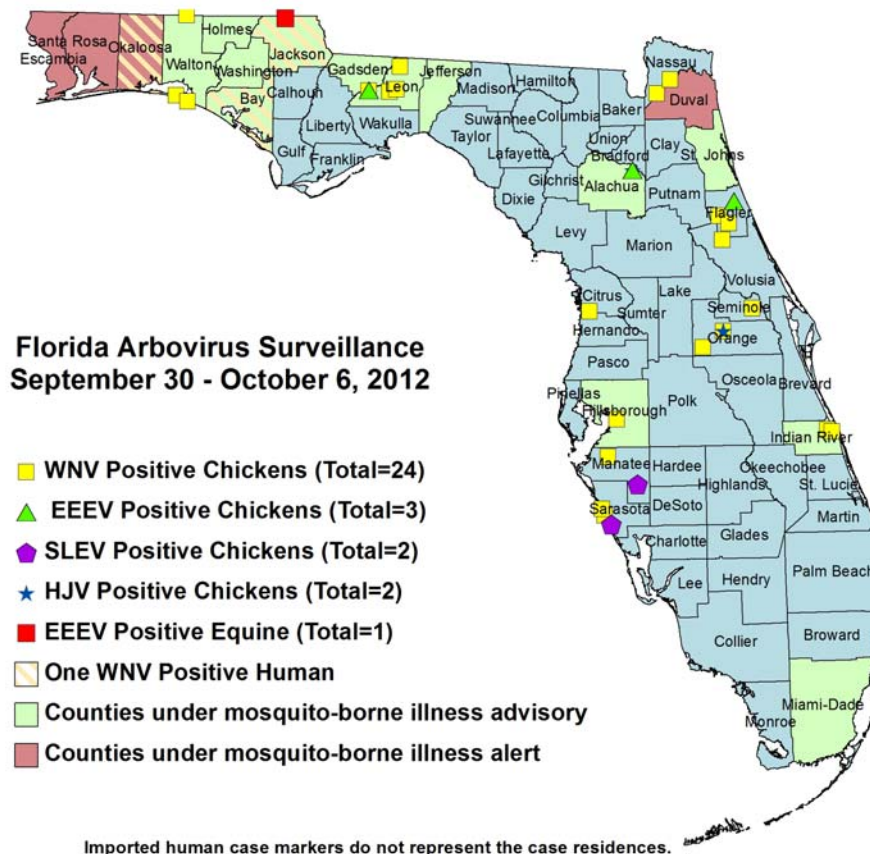
County	Collection Date	Result	Species	County YTD
Bay	10/02/12	SLEV	<i>Anopheles crucians</i>	2 WNV, 1 SLEV

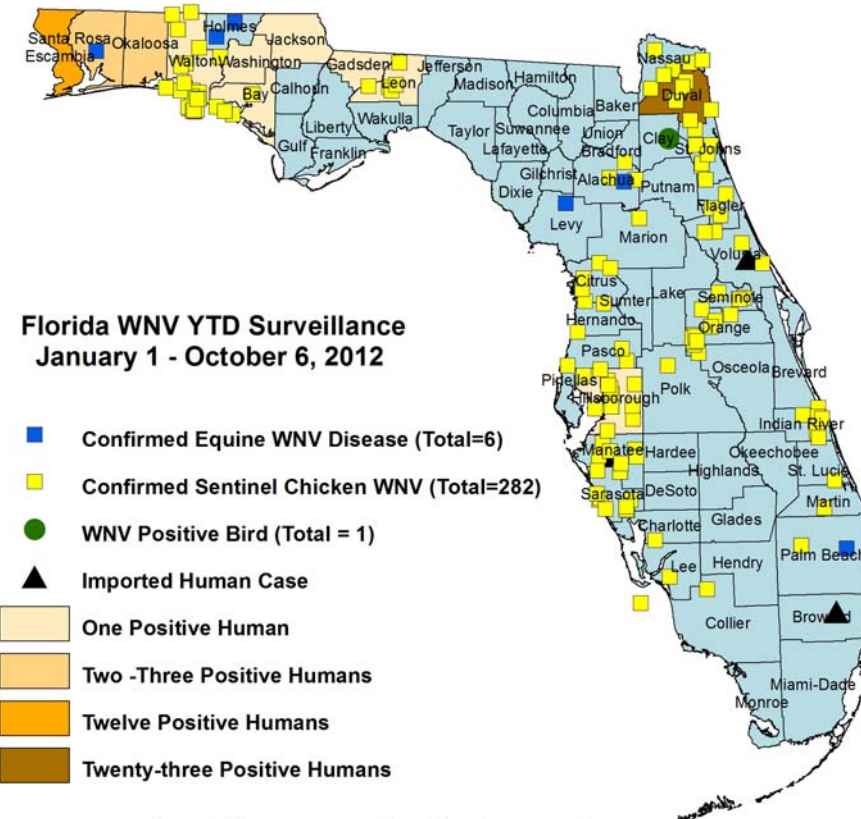
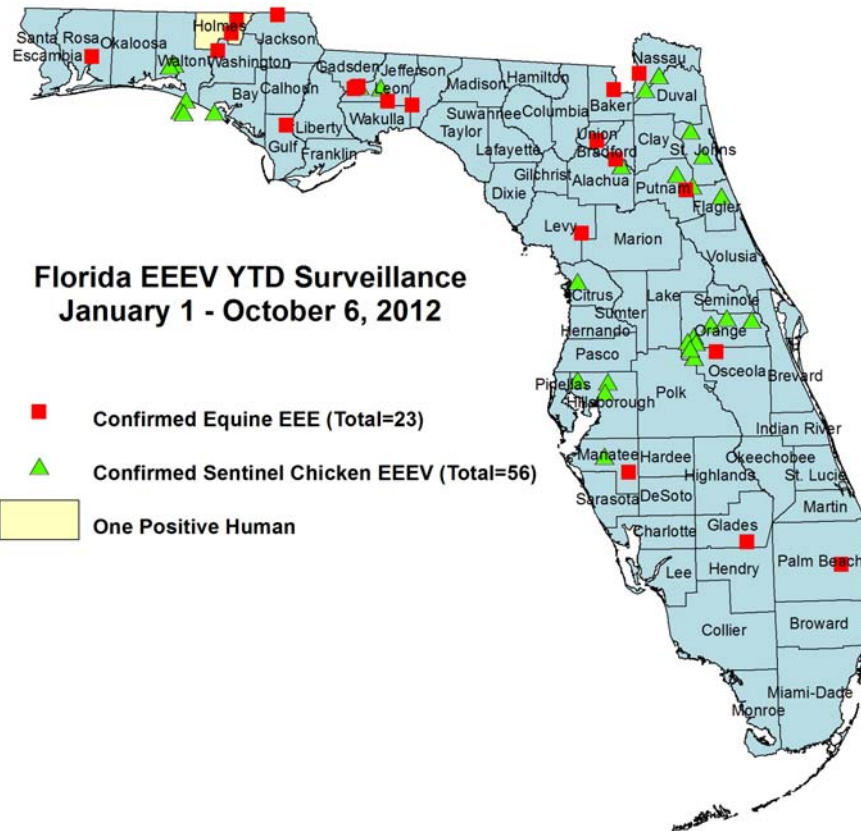
Dead Birds

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 9 dead birds were received from 6 counties. One was identified as a crow and two as jays. In 2012, 390 reports representing a total of 1156 dead birds (46 crows, 35 jays, 54 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
Charlotte	3	0	0	0
Duval	1	1	0	0
Escambia	1	0	1	0
Hillsborough	1	0	0	0
Wakulla	1	0	0	0
Washington	2	0	1	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) ; 2 sentinel (7/9, 9/18) WNV : 1 horse (9/11) ; 3 sentinel (9/17, 9/18) HJV : 1 sentinel (9/18)
Bay	EEEV : 1 sentinel (7/10) WNV : 1 human (september) ; 15 sentinels (7/24, 7/31, 8/7, 8/14, 8/21, 9/4, 9/11, 9/18) ; 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 : 2 sentinel (9/7, 9/14)
Citrus	EEEV : 1 sentinel (1/30) WNV: 6 sentinel (5/29, 8/27, 9/17, 9/24) HJV: 1 sentinel (1/3)
Clay	WNV: 1 goose
DeSoto	SLEV: 1 pigeon
Duval	WNV: 23 humans (4 June, 7 July, 11 August, 1 September); 22 sentinel (7/30, 8/3, 8/13, 8/20, 8/23, 8/28, 9/10, 9/13, 9/17); 2 mosquito pools (8/7, 8/8)
Escambia	WNV: 12 humans (2 July, 6 August, 4 September)
Flagler	EEEV: 2 sentinel (8/6, 9/24) WNV: 1 sentinel (9/4) HJV: 2 sentinels (7/30, 8/27)
Gadsden	WNV: 1 human (August)
Glades	EEEV: 2 horses (6/25, 7/14)
Gulf	EEEV: 1 horse (8/21)
Hernando	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: 4 sentinels (1/3, 8/28)
Holmes	EEEV : 1 human (June); 2 horses (5/21, 6/25) WNV : 2 horses (8/11, 8/23)
Indian River	WNV: 14 sentinels (5/24, 8/9, 8/30, 9/13, 9/20)
Jackson	EEEV: 1 horse (9/9) WNV: 1 human (September)
Jefferson	EEEV: 1 horse (8/6)
Lee	WNV: 3 sentinel (1/24, 9/17, 9/18) SLEV: 4 sentinels (3/7, 8/30, 9/4, 9/17)
Leon	EEEV : 4 horses (8/21, 8/30, 9/3, 9/4), 3 sentinels (8/13, 8/28, 9/22) WNV : 1 human (August), 10 sentinels (9/17, 9/22) HJV : 3 sentinels (8/28, 9/4, 9/11)
Levy	EEEV: 2 horses (1/2) WNV : 1 horse (9/3)
Manatee	EEEV: 1 horse (6/14); 1 sentinel (9/11) WNV: 7 sentinels (2/1, 3/14, 5/30, 8/15, 9/19, 9/25) SLEV: 2 sentinel (9/19, 9/25)
Martin	WNV: 1 sentinel (9/14)
Miami-Dade	Dengue: 1 human (September)
Nassau	EEEV : 1 horse (7/18) ; 6 sentinels (6/16, 6/23, 9/8, 9/14) WNV : 29 sentinels (8/6, 8/25, 8/31, 9/8, 9/10, 9/14, 9/20) HJV : 5 sentinels (7/13, 8/18, 8/31, 9/14)
Okaloosa	WNV : 3 humans (2 August, 1 September)
Orange	EEEV : 16 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)

County	Arbovirus Activity
	WNV: 14 sentinels (1/9,1/12, 1/19, 1/25, 3/1, 7/26, 9/13, 9/17, 9/19)
Osceola	EEEV : 1 horse (7/25)
Palm Beach	EEEV : 1 horse (6/20) WNV : 1 horse (8/29), 2 sentinel (8/17, 8/27) SLEV : 5 sentinel (7/23, 8/20, 8/27, 9/17)
Pasco	WNV : 2 sentinels (5/29, 9/19)
Polk	WNV : 1 sentinel (9/5)
Putnam	EEEV: 1 horse (1/1) ; 2 sentinels (7/20, 8/3) WNV : 4 sentinel (9/18, 9/25)
Santa Rosa	EEEV : 1 horse (5/11) WNV : 3 humans (2 August, 1 September) ; 1 horse (8/29)
Sarasota	WNV: 20 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); 2 of the positives were flavivirus positive (8/31, 9/7) tallied under WNV SLEV: 2 sentinel (7/2, 9/7) HJV: 1 sentinel (9/7)
Seminole	WNV : 3 sentinels (8/7, 9/25)
St. Johns	EEEV : 4 sentinels (9/2, 9/11, 9/18) WNV : 31 sentinels (5/14, 5/22, 5/29, 8/5, 8/20, 8/27, 9/2, 9/11, 9/18) HJV : 2 sentinels (4/30, 7/3)
St. Lucie	WNV : 1 sentinel (9/14)
Union	EEEV : 1 horse (5/12)
Volusia	WNV : 3 sentinels (5/29, 6/25, 9/17)
Walton	WNV : 1 human (September) ; 68 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) EEEV : 14 sentinels (6/4, 6/18, 6/25, 7/2, 7/30, 9/6, 9/10) HJV : 6 sentinels (5/14, 6/11, 6/18, 7/16, 7/23, 9/6)
Washington	EEEV : 1 horse (7/1) WNV : 1 human (September)

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.