



Florida Arbovirus Surveillance Week 46: November 11 - 17, 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 November 11 - 17, the following arboviral activity was recorded in Florida:

DENV activity: One case of locally acquired dengue was reported this week in Miami County. Three human cases of locally acquired dengue were previously reported this year, one each in Miami-Dade, Osceola and Seminole counties. A total of four locally acquired dengue cases have been reported in 2012.

EEEV activity: Three sentinel chickens in Leon and St. Johns Counties tested positive for antibodies to EEEV. Two horse cases of EEE infection were reported in Holmes and Citrus Counties. In 2012, positive samples from 1 human, 33 equines, and 76 sentinel chickens have been received from 29 counties.

WNV activity: 6 human case of WNV infection was reported this week in Duval, Holmes, Nassau, and Walton Counties. Eleven sentinel chickens in Duval, Lee, Leon, Putnam, St. Johns, Volusia, and Walton counties tested positive for antibodies to WNV. In 2012, positive samples from 62 humans, 17 horses, 413 sentinel chickens, 4 mosquito pools, and 3 birds have been received from 38 counties.

SLEV activity: Eight sentinel chickens in Charlotte, Lee, Palm Beach, and Sarasota Counties tested positive for antibodies to SLEV, positive samples from 68 sentinel chickens, 1 mosquito pool, and 1 bird have been received from 13 counties

HJV activity: There were no sentinel chickens that tested positive for antibodies to HJV this week. In 2012, positive samples from 26 sentinel chickens have been received from 9 counties.

Advisories/Alerts: Duval, Escambia, Holmes, Leon, Miami-Dade, Okaloosa, Santa Rosa, Suwannee and Walton counties are currently under mosquito-borne illness alerts. Alachua, Bay, Gadsden, Hamilton, Hillsborough, Indian River, Jackson, Jefferson, Nassau, Osceola, Orange, Seminole, St. Johns, Wakulla, 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 EEE 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: Sixty-two human cases of WNV infection were acquired in Florida in 2012. Twenty-eight with onset in June (4), July (7), August (11), September (3), and October (3) were reported in Duval County, three of which were presumptive positive blood donors who developed symptoms. Fourteen cases with onset in July (2), August (7), and September (5), and an asymptomatic presumptive positive blood donor were reported in Escambia County. Three cases with onset in August (2) and September were reported in Santa Rosa County. Three cases with

onset in August (2) and one in September were reported in Okaloosa County. Three cases with onset in September (2) and October were reported in Walton County. Two cases with onset in October were reported in Holmes County. Two cases with onset in August and October were reported in Leon County. Two presumptive positive blood donors in October were reported in Suwannee County. One case each with onset in August was reported in Hillsborough and Gadsden counties, one case each with onset in September was reported in Bay, Hamilton, Jackson, and Washington counties, and one case with onset in October was reported in Nassau County. Three Florida residents in Broward, Manatee, and Volusia counties acquired 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: Four local cases of dengue have been reported in 2012; Two in Miami-Dade (August, October) and one each in Seminole (September) and Osceola (October) counties.

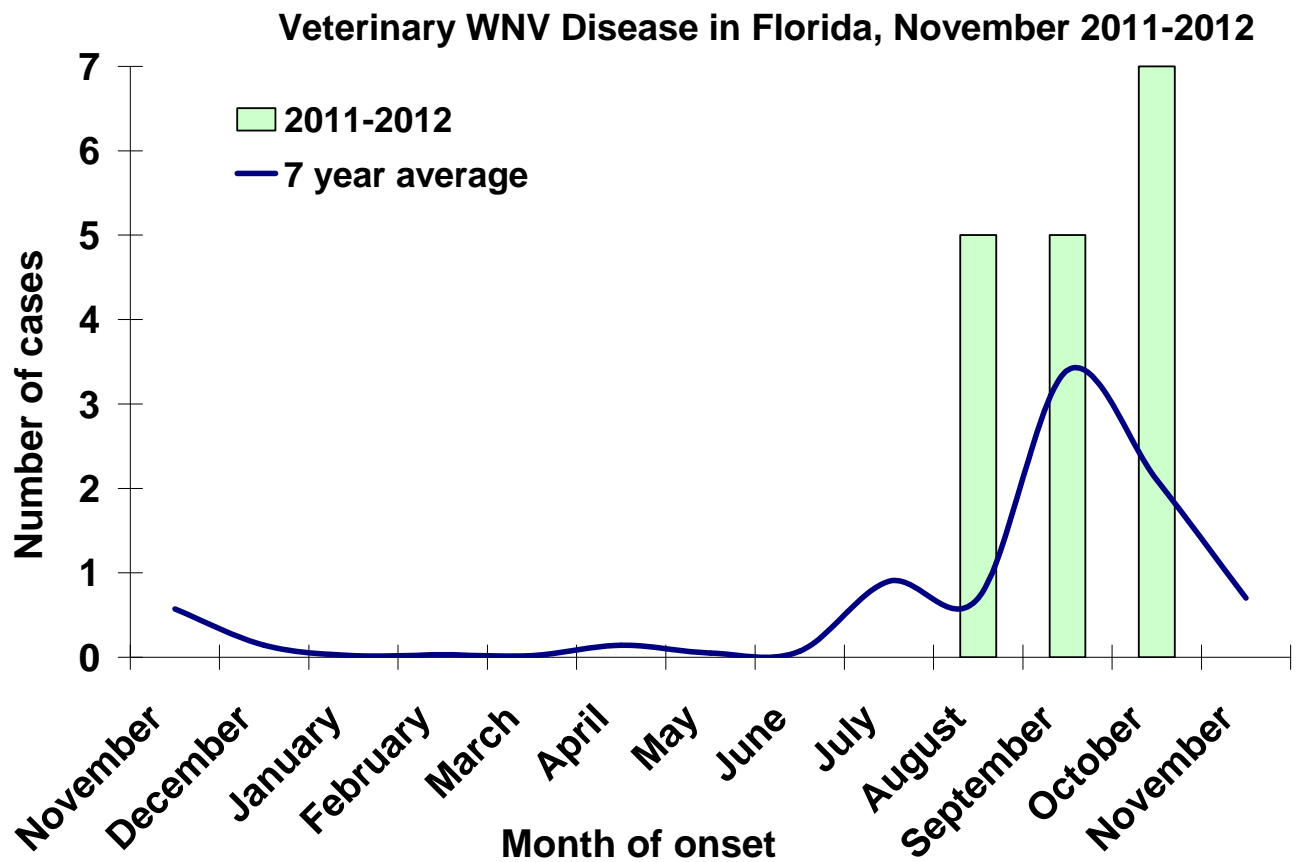
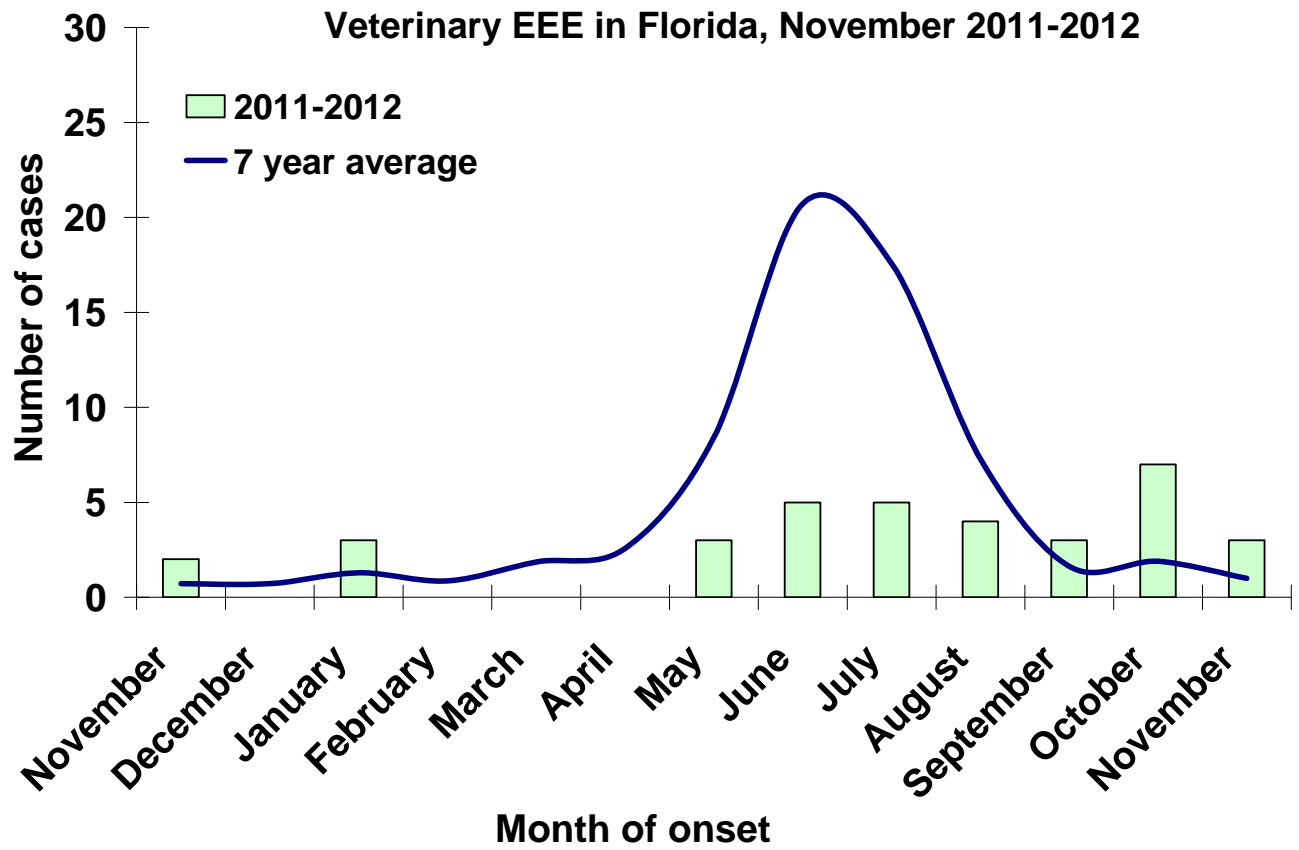
Imported Dengue: One hundred and five cases of dengue with onset in 2012 have been reported in individuals with travel history to a dengue endemic country in the two weeks prior to onset. Countries of origin were Brazil, Colombia, Cuba (24), Dominican Republic (11), Ecuador (4), El Salvador (2), Ghana, Guyana (2), Haiti (15), Honduras, India, Jamaica (18), Mexico (2), Nicaragua, Panama, Philippines, Portugal, Puerto Rico (9), South Africa, Sri Lanka, St. Vincent, Suriname, Trinidad (4), and Turks & Caicos. Counties reporting cases were Brevard (3), Broward (19), Collier, Duval (2), Hillsborough (5), Lee (2), Marion, Miami-Dade (39), Orange (15), Palm Beach (7), Pinellas (2), Polk, Sarasota (2), Seminole (3), St. Lucie, and Volusia (2). Nine of the cases were reported in non-Florida residents.

Imported Malaria: Fifty-five 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 (2), Ivory Coast (3), Kenya, Liberia (2), Nigeria (8), Pakistan, Peru, Sierra Leone (2), South Africa, Sub Saharan Africa, Sudan, Togo, Uganda, Zambia, and multiple or unspecified African countries (3). Counties reporting cases were: Alachua, Brevard, Broward (8), Charlotte, Duval (7), Hillsborough (6), Lake (2), Leon, Manatee, Marion, Martin, Miami-Dade (7), Orange (6), Osceola (2), Palm Beach (4), Pinellas (3), Polk, Seminole, and Volusia. Six of the cases were reported in non-Florida residents.

Veterinary Cases

Two horses were reported as testing positive for EEE in Holmes and Citrus Counties.

County	Onset Date	Species	Virus	Status	County YTD
Holmes	11/2/2012	Equine	EEEV	Alive	3 WNV, 3 EEEV
Citrus	11/5/2012	Equine	EEEV	Euthanized	1 EEEV



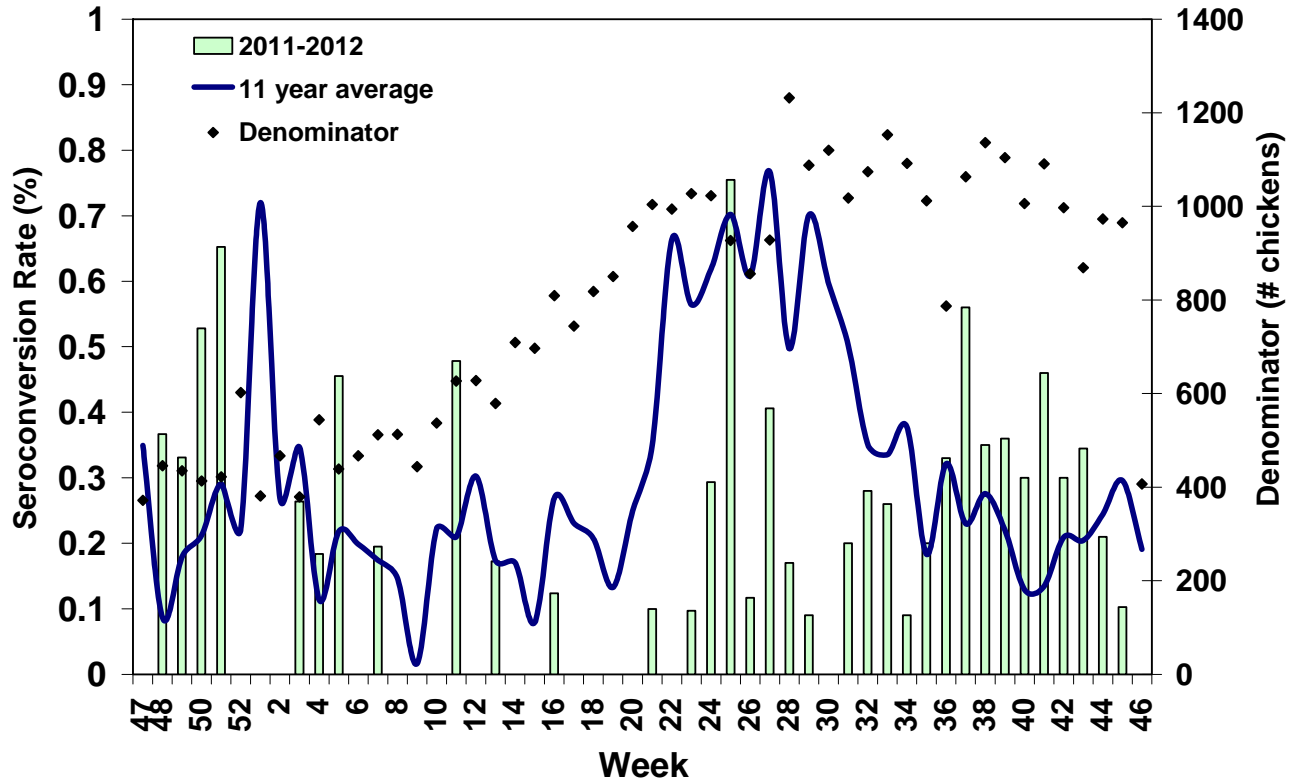
Sentinel Chickens

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.

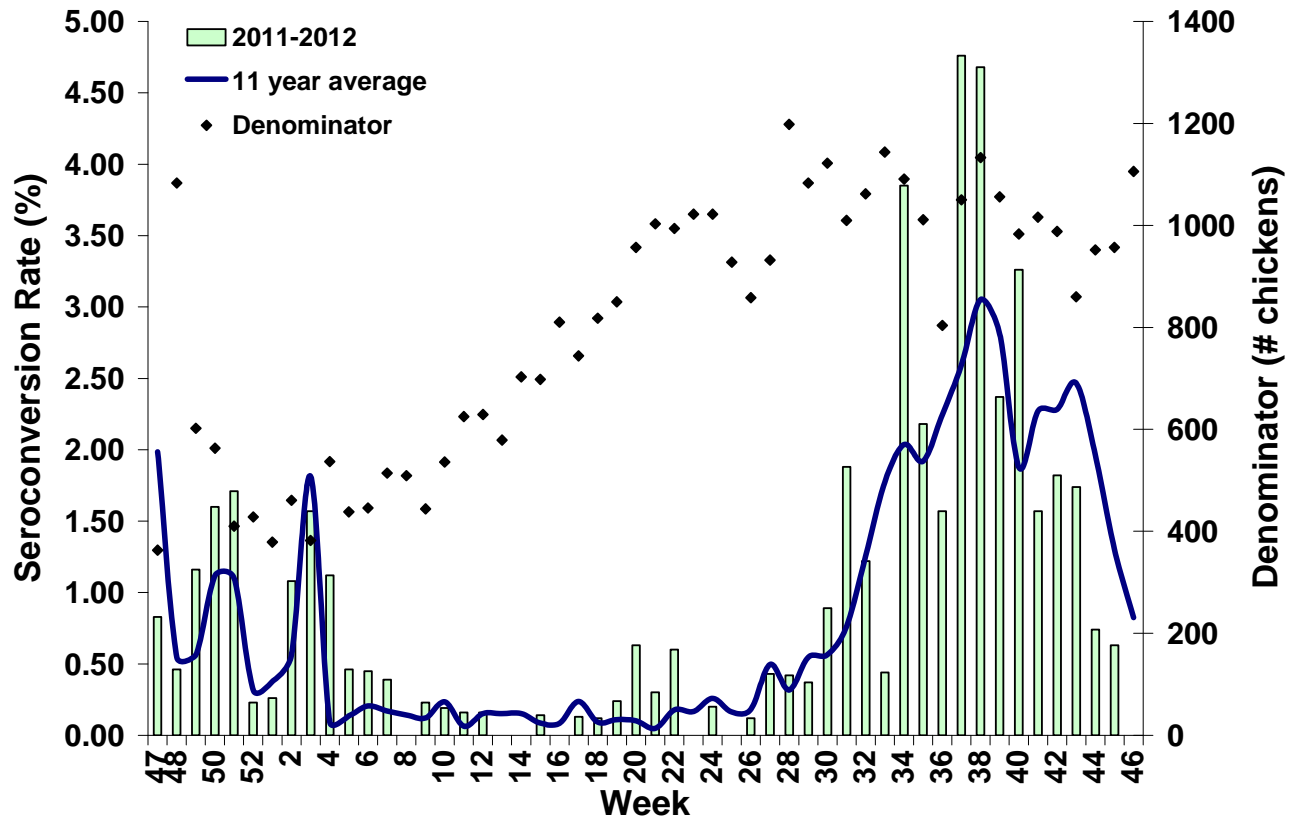
Three sentinel chickens in Leon and St. Johns Counties tested positive for antibodies to EEEV, Eleven sentinel chickens in Duval, Lee, Leon, Putnam, St. Johns, Volusia, and Walton counties tested positive for antibodies to WNV, Eight sentinel chickens in Charlotte, Lee, Palm Beach, and Sarasota Counties tested positive for antibodies to SLEV.

County	Collection Date	Seroconversion Rates (%)				Collection Week	County Totals
		SLEV	WNV	EEEV	HJV		YTD
Charlotte	10/19/12	9.52				2 SLEV	
Charlotte	11/2/12	5.26				1 SLEV	4 WNV, 1 SLEV
Duval	11/5/12		5.56			1 WNV	26 WNV
Lee	10/22, 10/23/12	11.11				7 SLEV	
Lee	10/23/12		1.59			1 WNV	5 WNV, 19 SLEV
Leon	10/29/12			2.50		2 EEEV	
Leon	11/5/12			2.94		1 EEEV	
Leon	11/5/12		3.13			1 WNV	27 WNV, 7 EEEV, 4 HJV
Palm Beach	10/22/12	11.54				3 SLEV	3 WNV, 11 SLEV
Putnam	10/23/12		36.36			4 WNV	19 WNV, 1 SLEV, 3 EEEV
Sarasota	11/2/12	1.52				1 SLEV	22 WNV, 11 SLEV, 1 HJV
St. Johns	10/29/12			2.44		1 EEEV	
St. Johns	11/5/12		7.32			3 WNV	52 WNV, 6 EEEV, 2 HJV
Volusia	11/5/12		3.57			1 WNV	4 WNV
Walton	10/29/12		3.30			3 WNV	103 WNV, 15 EEEV, 7 HJV

Sentinel Seroconversions to EEEV in Florida, 2011-2012



Sentinel Seroconversions to WNV in Florida, 2011-2012

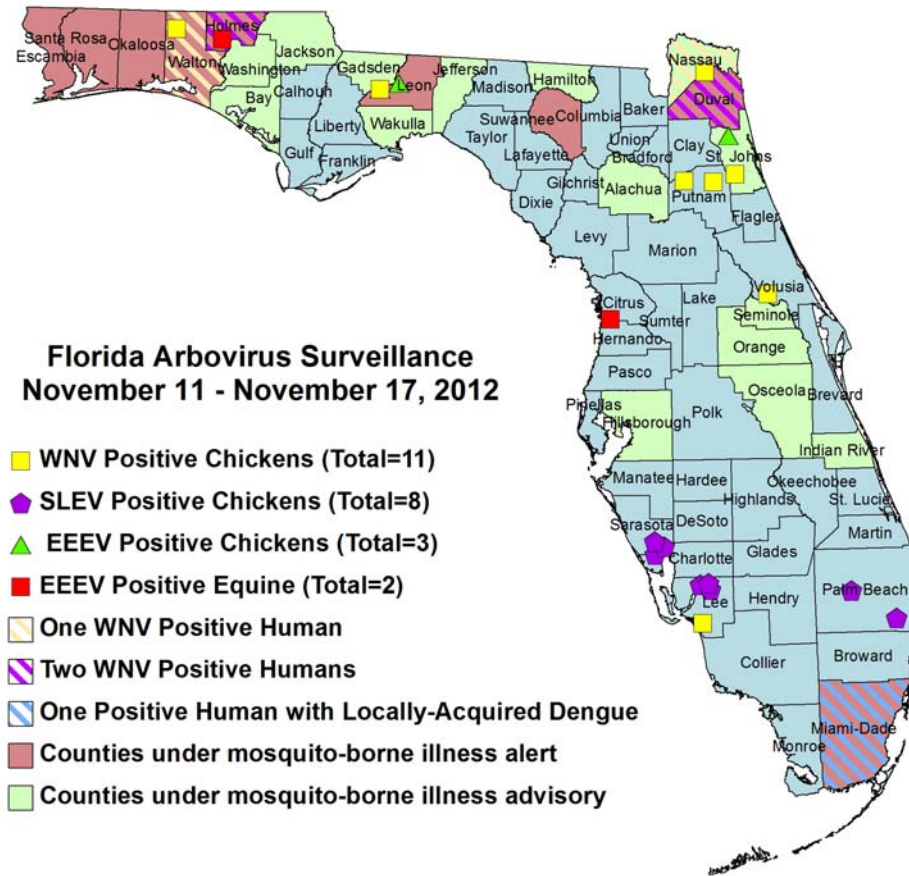


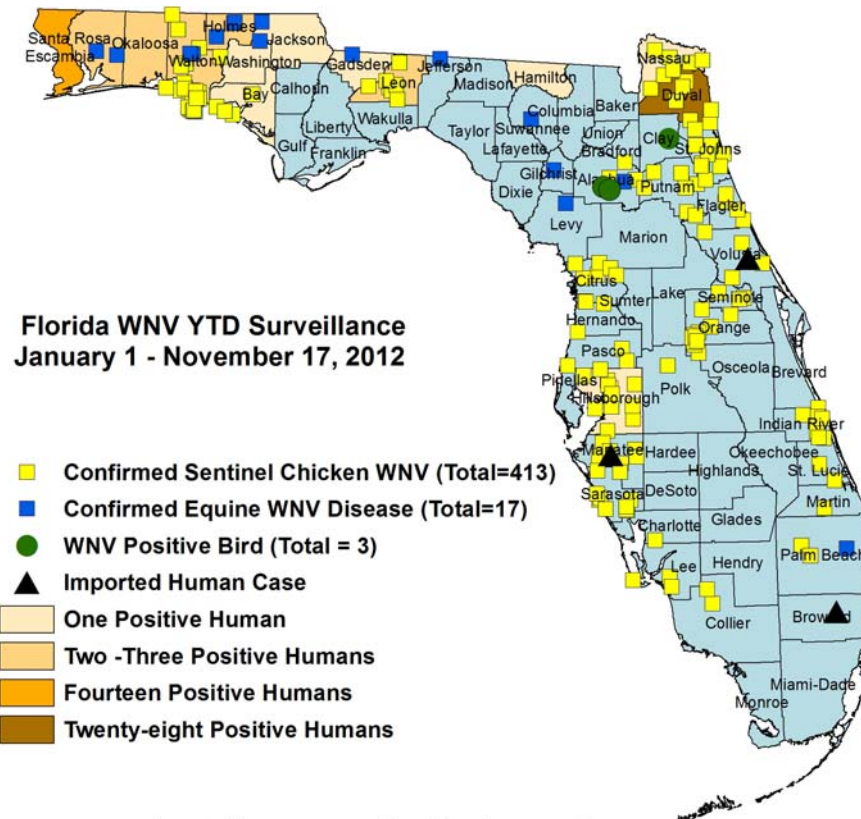
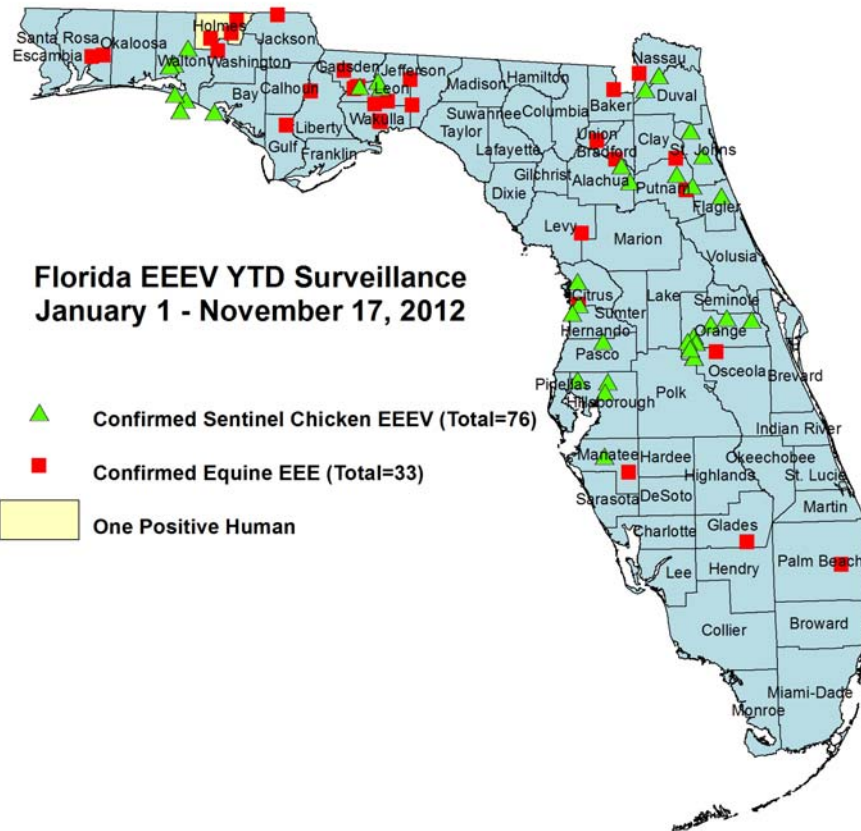
Dead Birds

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, 7 reports representing 14 dead birds were received from 6 counties. In 2012, 446 reports representing a total of 1284 dead birds (67 crows, 40 jays, 64 raptors) were received from 55 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
Dade	2	0	0	0
Indian River	4	0	0	0
Monroe	4	0	0	0
Nassau	2	0	0	0
Orange	1	0	0	0
Santa Rosa	1	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 sentinels (7/9, 9/18, 10/8) WNV : 1 horse (9/11) ; 5 sentinels (9/17, 9/18, 10/8, 10/15), 2 wild birds (10/7) HJV : 2 sentinels (9/18, 10/8)
Bay	EEEV : 1 sentinel (7/10) WNV : 1 human (September) ; 21 sentinels (7/24, 7/31, 8/7, 8/14, 8/21, 9/4, 9/11, 9/18, 10/2, 10/23, 10/30) ; 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 sentinels (9/7, 9/14, 9/28) SLEV : 3 sentinel (10/19, 11/2)
Citrus	EEEV : 2 sentinels(1/30, 10/8), 1 horse (11/5) WNV: 10 sentinels (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: 28 humans (4 June, 7 July, 11 August, 3 September, 3 October); 26 sentinels (7/30, 8/3, 8/13, 8/20, 8/23, 8/28, 9/10, 9/13, 9/17, 10/1, 10/18, 10/22, 11/5); 2 mosquito pools (8/7, 8/8)
Escambia	WNV: 14 humans (2 July, 7 August, 5 September)
Flagler	EEEV: 2 sentinels (8/6, 9/24) WNV: 5 sentinels (9/4, 10/1, 10/9, 10/22) HJV: 2 sentinels (7/30, 8/27)
Gadsden	WNV: 1 human (August); 1 horse (10/14) EEEV: 1 horse (10/31)
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 sentinels (10/1, 10/22) WNV: 2 sentinels (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: 8 sentinels (1/3, 8/28, 10/9, 10/16)
Holmes	EEEV : 1 human (June); 3 horses (5/21, 6/25, 11/2) WNV : 2 human (October) ; 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)
Lee	WNV: 5 sentinels (1/24, 9/17, 9/18, 10/9, 10/23) SLEV: 19 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), 7 sentinels (8/13, 8/28, 9/22, 10/22, 10/29, 11/5) WNV : 2 humans (August, October), 27 sentinels (9/17, 9/22, 10/2, 10/15, 10/22, 10/29, 11/5) HJV : 4 sentinels (8/28, 9/4, 9/11, 10/2)
Levy	EEEV: 2 horses (1/2) WNV : 1 horse (9/3)

County	Arbovirus Activity
Liberty	EEEV: 1 horse (10/19)
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) SLEV: 4 sentinels (9/19, 9/25, 10/1, 10/16)
Martin	WNV: 1 sentinel (9/14) SLEV: 4 sentinels (9/28, 10/5, 10/18)
Miami-Dade	Dengue: 2 humans (August, October)
Nassau	EEEV : 1 horse (7/18) ; 9 sentinels (6/16, 6/23, 9/8, 9/14, 9/28, 10/15) WNV : 1 human (October) ; 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 : 21 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, 10/25) WNV: 16 sentinels (1/9, 1/12, 1/19, 1/25, 3/1, 7/26, 9/13, 9/17, 9/19, 10/22, 10/29) SLEV: 3 sentinels (10/1)
Osceola	EEEV : 1 horse (7/25) Dengue : 1 human (October)
Palm Beach	EEEV : 1 horse (6/20) WNV : 1 horse (8/29), 3 sentinels (8/17, 8/27, 10/15) SLEV : 11 sentinels (7/23, 8/20, 8/27, 9/17, 10/22)
Pasco	WNV : 2 sentinels (5/29, 9/19)
Polk	WNV : 4 sentinels (9/5, 9/18, 10/2)
Putnam	EEEV: 1 horse (1/1) ; 3 sentinels (7/20, 8/3, 10/9) WNV : 19 sentinels (9/18, 9/25, 10/2 10/9, 10/16, 10/23) SLEV : 1 sentinel (10/2)
Santa Rosa	EEEV : 2 horses (5/11, 11/1) WNV : 3 humans (2 August, 1 September) ; 2 horses (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: 11 sentinels (7/2, 9/7, 10/1, 10/19, 10/26, 11/2) HJV: 1 sentinel (9/7)
Seminole	WNV : 3 sentinels (8/7, 9/25) Dengue: 1 human (September)
St. Johns	EEEV : 6 sentinels (9/2, 9/11, 9/18, 10/8, 10/29) WNV : 52 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, 11/5) HJV : 2 sentinels (4/30, 7/3)
St. Lucie	WNV : 2 sentinels (9/14, 10/8) SLEV : 3 sentinels (10/8, 10/22)
Suwannee	WNV : 2 asymptomatic blood donors (October) 2 horses (10/15, 10/18)
Union	EEEV : 1 horse (5/12)
Volusia	WNV : 4 sentinels (5/29, 6/25, 9/17, 11/5)
Wakulla	EEEV : 3 horses (10/9, 10/21, 10/22)
Walton	WNV : 3 humans (2 September, October) ; 2 horses (9/16, 9/29); 103 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, 10/22, 10/29) 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.