



Florida Arbovirus Surveillance Week 1: December 30, 2012 – January 5, 2013

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 December 30, 2012 – January 5, 2013 the following arboviral activity was recorded in Florida:

There have been no reports in 2013 of arbovirus cases in humans or horses and no antibody positive sentinels. Numbers here are for onsets in the 2012 calendar year unless otherwise noted.

DENV activity: No cases of locally acquired dengue were reported this week. A total of three locally acquired dengue cases have been reported in 2012. No locally acquired dengue cases have been reported in 2013.

EEEV activity: No sentinel chickens tested positive this week for antibodies to EEEV. No horse cases of EEEV infection were reported this week. In 2012, positive samples from 1 human, 34 equines, and 95 sentinel chickens have been received from 30 counties. In 2013, no positive samples have been received.

WNV activity: No human cases of WNV infection were reported this week. No horse cases of WNV infection were reported this week. Six sentinel chickens in Orange and Walton counties tested positive for antibodies to WNV. In 2012, positive samples from 68 humans, 18 horses, 490 sentinel chickens, 4 mosquito pools, and 3 birds have been received from 39 counties. In 2013, no positive samples have been received.

SLEV activity: No sentinel chickens tested positive this week for antibodies to SLEV. In 2012, positive samples from 84 sentinel chickens, 1 mosquito pool, and 1 bird have been received from 13 counties. In 2013, no positive samples have been received.

HJV activity: No sentinel chickens tested positive for antibodies to HJV this week. In 2012, positive samples from 28 sentinel chickens have been received from 9 counties. In 2013, no positive samples have been received.

Advisories/Alerts: Miami-Dade County is currently under mosquito-borne illness alert. Osceola County is currently under mosquito-borne illness advisory. No other counties are currently under mosquito-borne illness advisory or alert.

2012 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-eight human cases of WNV infection were acquired in Florida in 2012. Twenty-nine with onset in June (4), July (7), August (11), September (3), and October (4) were reported in Duval County, three of which were presumptive positive blood donors who developed symptoms. Fifteen cases with onset in July (2), August (8), and September (5), and an asymptomatic presumptive positive blood donor were reported in Escambia County. Four cases

with onset in September (2), October, and November were reported in Walton 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 October (2) and November were reported in Holmes County. Two cases with onset in August (1) and October (1) were reported in Leon County. Two presumptive positive blood donors in October were reported in Suwannee County. Two cases with onset in September were reported in Jackson County. Two cases with onset in September (1) and October (1) were reported in Washington 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 and Hamilton counties, and one case with onset in October was reported in Nassau County. Four Florida residents in Broward, Manatee, Santa Rosa 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: Three local cases of dengue have been reported in 2012; Two in Miami-Dade (August, October) and Osceola (October) counties.

Imported Dengue: One hundred and forty-three 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 (29), Dominican Republic (18), Ecuador (4), El Salvador (2), Ghana, Guatemala, Guyana (2), Haiti (19), Honduras, India, Jamaica (24), Mexico (2), Nicaragua (2), Panama, Philippines (4), Portugal, Puerto Rico (19), South Africa, Sri Lanka, St. Vincent, Suriname, Trinidad (4), Turks & Caicos, and Virgin Islands. Counties reporting cases were Brevard (3), Broward (23), Collier, Duval (3), Flagler, Hillsborough (6), Lee (3), Marion, Miami-Dade (52), Okaloosa, Orange (19), Osceola (5), Palm Beach (9), Pinellas (4), Polk (2), Sarasota (2), Seminole (4), St. Johns, St. Lucie, and Volusia (2). Eleven of the cases were reported in non-Florida residents.

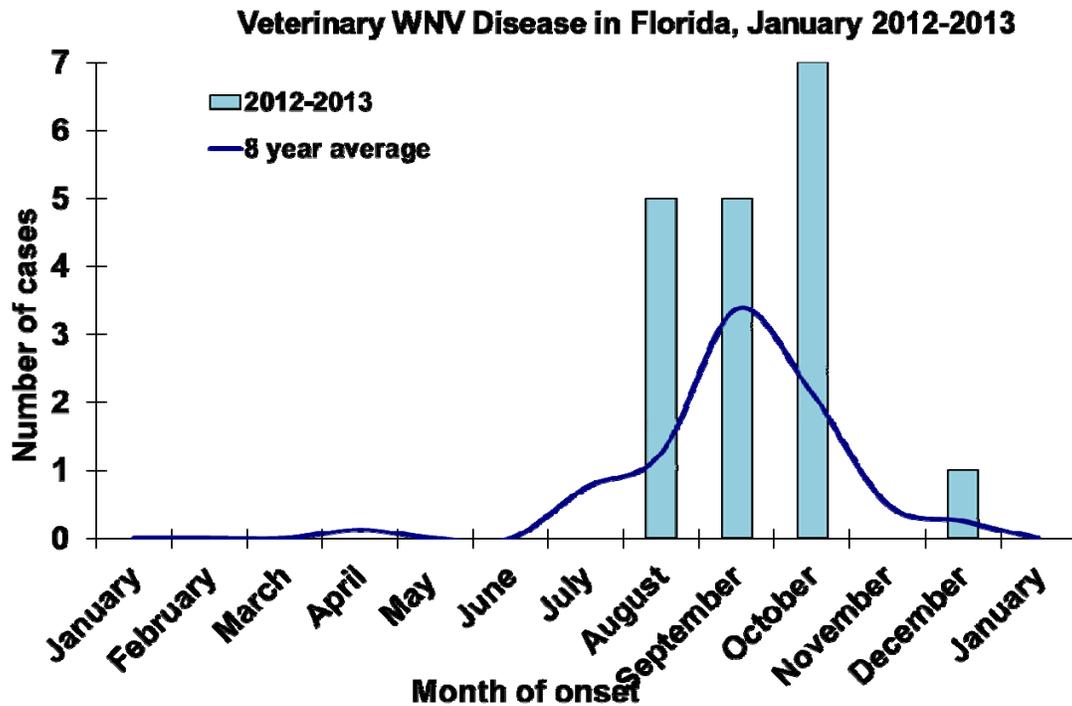
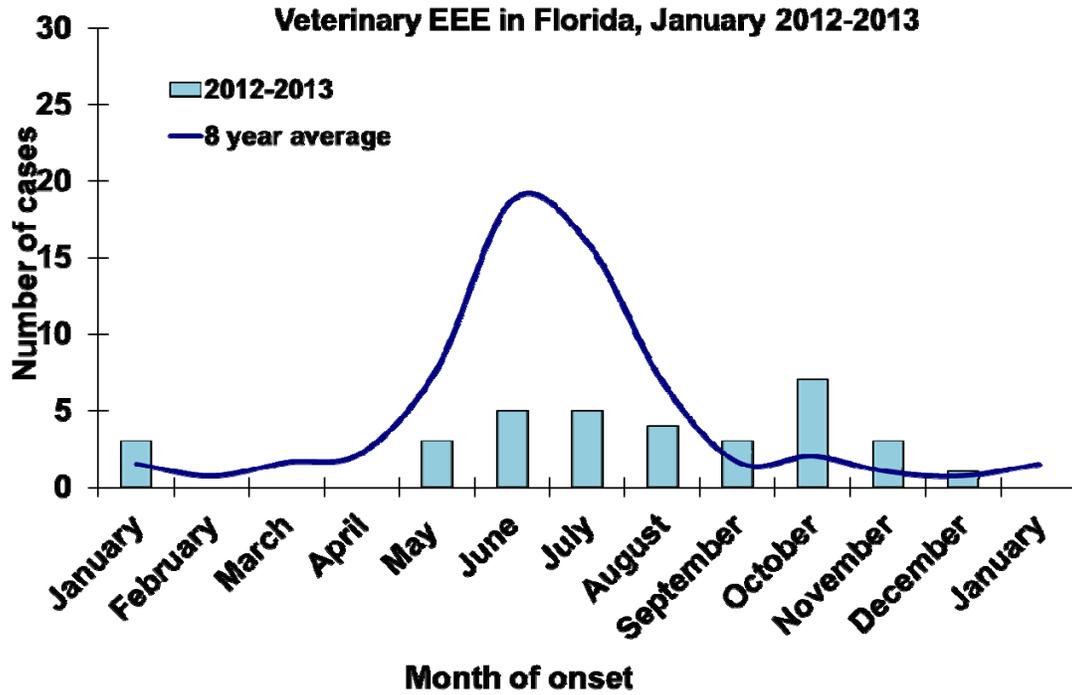
Seventy of the One hundred and forty-three cases of dengue reported in Florida have been serotyped by PCR. Additional serotyping and strain typing are being conducted.

	# of cases per serotype
DENV-1	41
DENV-2	5
DENV-3	1
DENV-4	23
	70

Imported Malaria: Sixty-one imported cases of malaria with onset in 2012 have been reported. Countries of origin were: Afghanistan (2), Cameroon, Central African Republic, Colombia, Congo, Costa Rica, Ethiopia (2), Ghana (6), Guyana (2), Haiti (11), Honduras (3), India (2), Ivory Coast (3), Kenya, Liberia (2), Nigeria (9), 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 (2), Brevard, Broward (9), Charlotte, Duval (8), Hillsborough (7), Lake (2), Leon, Manatee, Marion, Martin, Miami-Dade (8), Orange (6), Osceola (2), Palm Beach (4), Pinellas (3), Polk, Seminole, and Volusia (2). Six of the cases were reported in non-Florida residents.

Veterinary Cases

No horses were reported as testing positive this week.



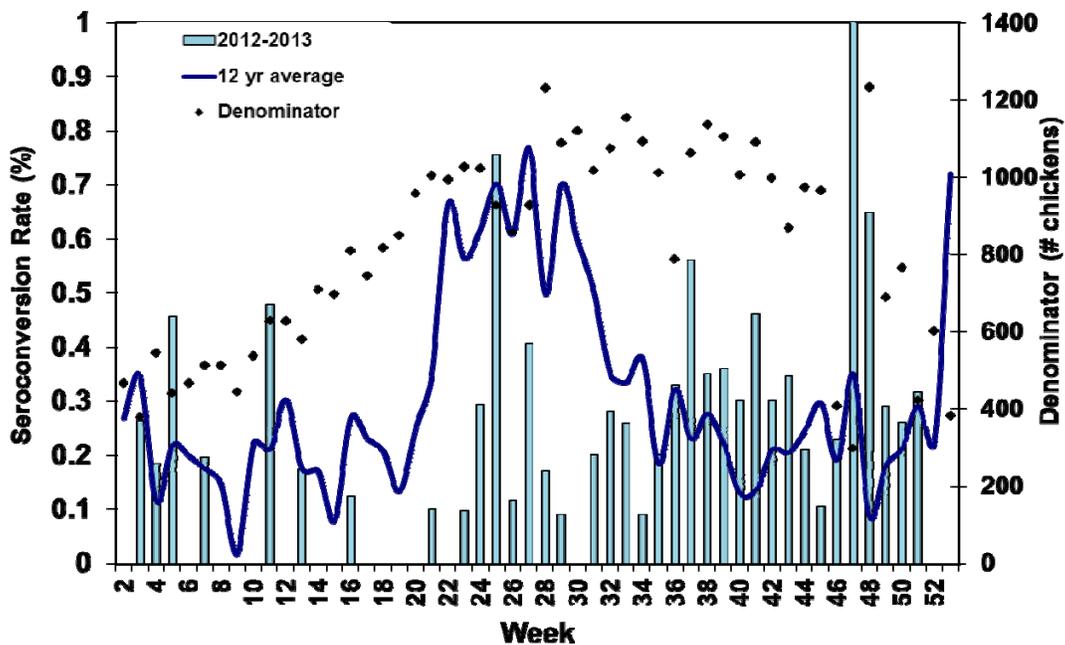
Sentinel Chickens

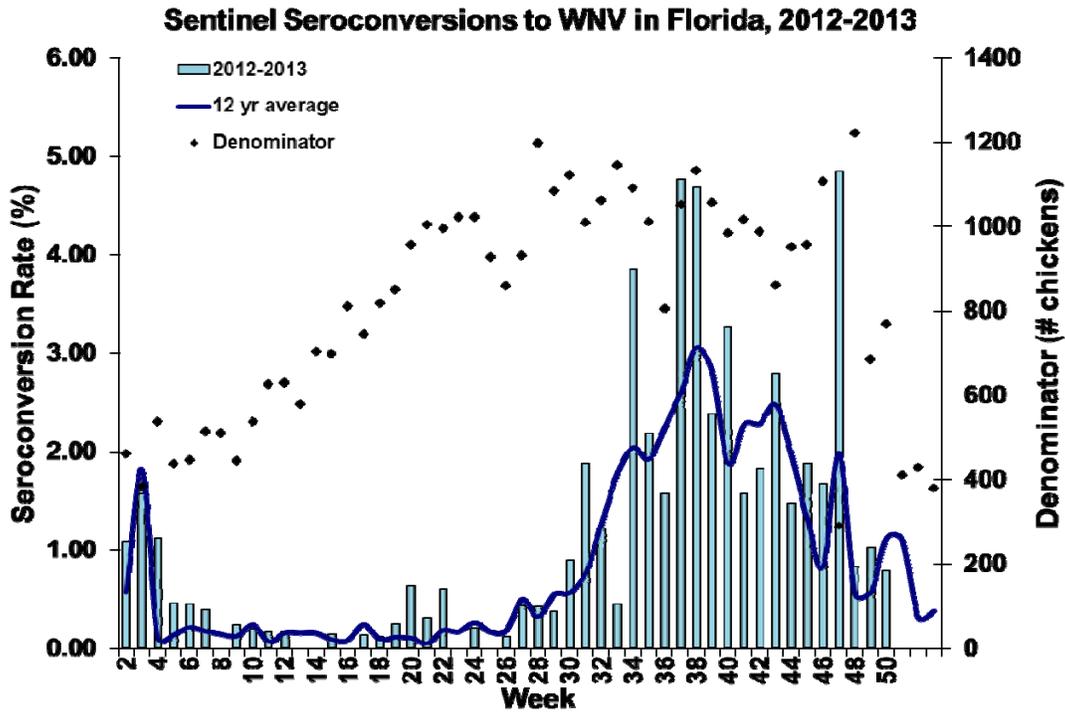
The table below is for the reporting of confirmatory laboratory results from this week. Some of the samples were collected at earlier dates. The date of collection is recorded for samples collected on that day along with the total number of positives and the corresponding seroconversion rate for the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

Six sentinel chickens in Orange and Walton counties tested positive for antibodies to WNV.

County	Collection Date	Seroconversion Rates (%)				Collection Week	County Totals YTD
		SLEV	WNV	EEEV	HJV		
Orange	12/10/12		1.80			2 WNV	20 WNV, 27 EEEV, 3 SLEV
Walton	12/4/12		6.15			1 EEEV, 4 WNV	
Walton	12/10/12		1.23			2 EEEV, 1 WNV	132 WNV, 21 EEEV, 7 HJV, 2 Flavi*

Sentinel Seroconversions to EEEV in Florida, 2012-2013





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, 9 reports representing 10 dead birds, including 1 raptor were received from 8 counties. In 2012, 537 reports representing a total of 1431 dead birds (70 crows, 41 jays, 76 raptors, 61 dove) were received from 56 of Florida’s 67 counties. . In 2013, 2 reports representing a total of 2 dead birds (0 crows, 0 jays, 0 raptors, 0 dove) were received from 2 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/

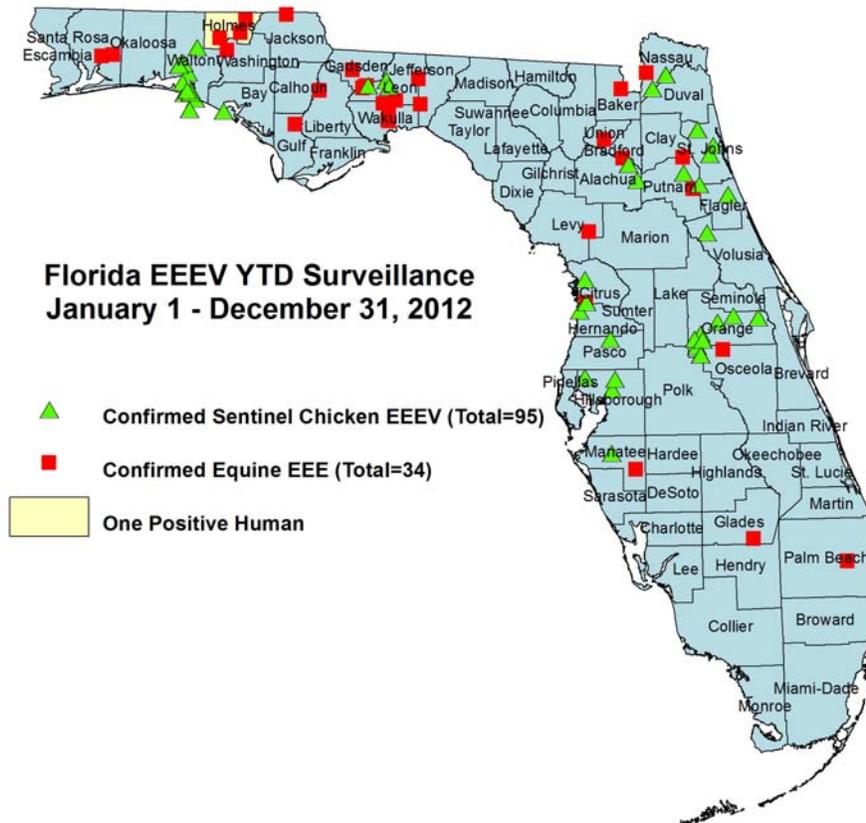
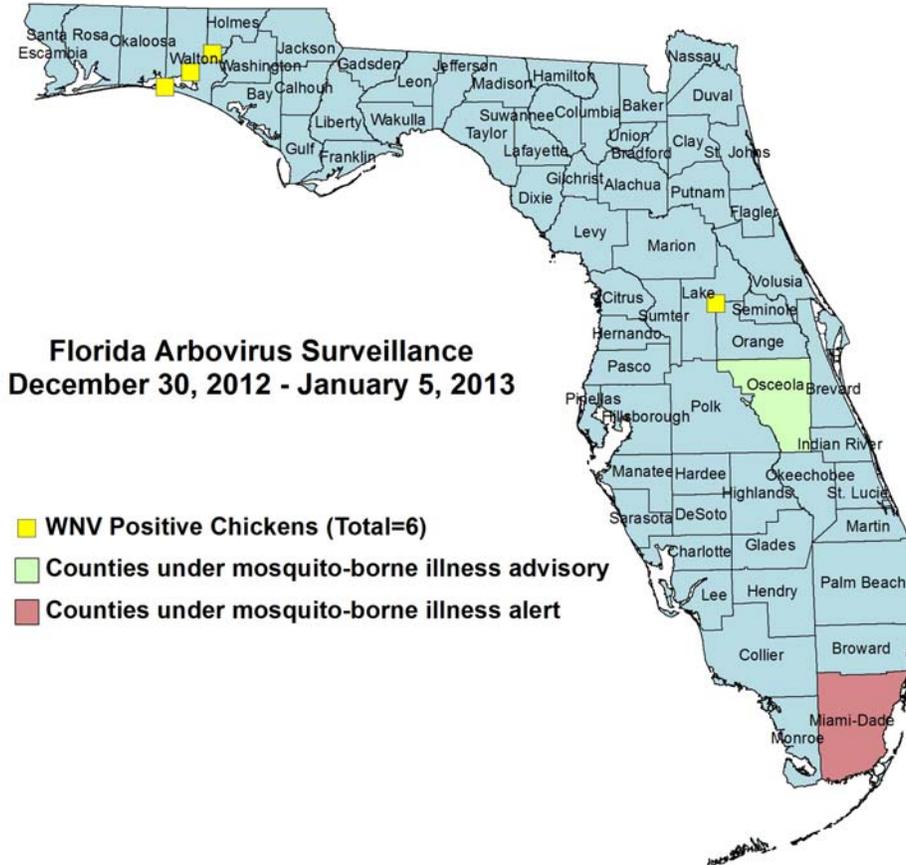
2012

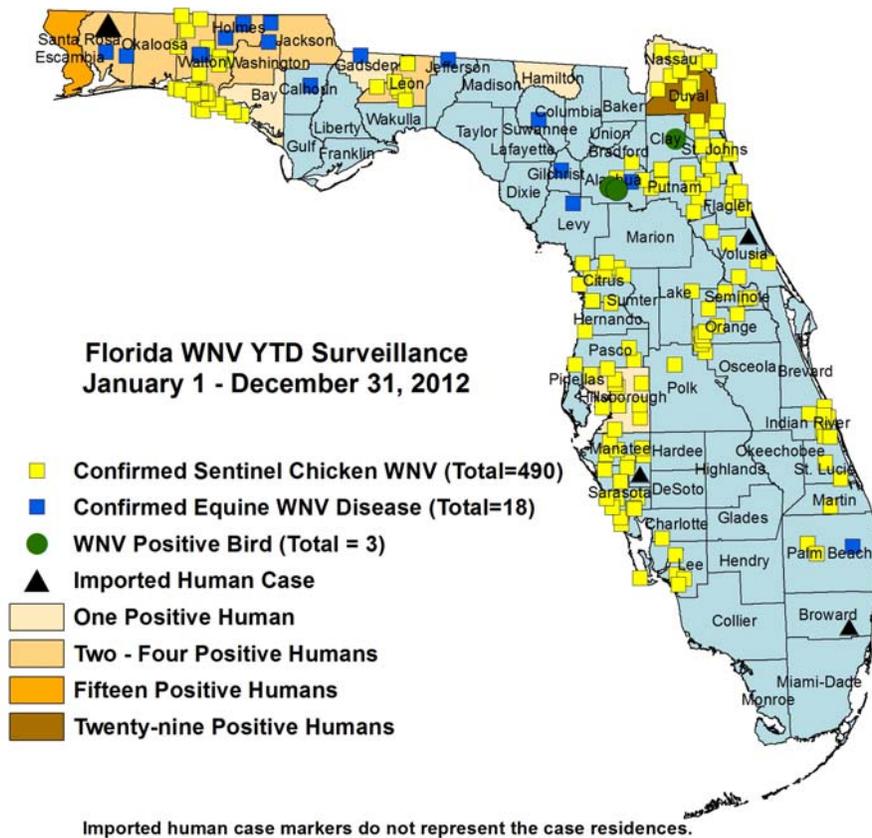
County	Total Dead Birds	Crows	Jays	Raptors
Duval	1	0	0	0
Lee	1	0	0	0
Pasco	1	0	0	1
Pinellas	1	0	0	0
Sarasota	1	0	0	0
St. Johns	2	0	0	0
Sumter	1	0	0	0

2013

County	Total Dead Birds	Crows	Jays	Raptors
Palm Beach	1	0	0	0
Sumter	1	0	0	0

Maps





Arbovirus Activity by County - 2012

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) ; 24 sentinels (7/24, 7/31, 8/7, 8/14, 8/21, 9/4, 9/11, 9/18, 10/2, 10/23, 10/30, 11/14, 11/27) ; 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)
Calhoun	WNV : 1 horse (12/8)
Charlotte	WNV : 4 sentinels (9/7, 9/14, 9/28) SLEV : 3 sentinels (10/19, 11/2)
Citrus	EEEV : 4 sentinels (1/30, 10/8, 11/26, 12/17), 1 horse (11/5) WNV: 16 sentinels (5/29, 8/27, 9/17, 9/24, 10/15, 10/22, 11/13, 11/26, 12/10) HJV: 1 sentinel (1/3)
Clay	EEEV: 1 horse (10/14) WNV: 1 goose
DeSoto	SLEV: 1 pigeon
Duval	WNV: 29 humans (4 June, 7 July, 11 August, 3 September, 4 October); 29 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, 11/7, 11/13); 2 mosquito pools (8/7, 8/8)
Escambia	WNV: 15 humans (2 July, 8 August, 5 September)
Flagler	EEEV: 2 sentinels (8/6, 9/24)

County	Arbovirus Activity
	WNV: 11 sentinels (9/4, 10/1, 10/9, 10/22, 10/29, 11/13, 11/19, 11/26, 12/3) HJV: 2 sentinels (7/30, 8/27) Flavi: 1 Sentinel (12/3)
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); 20 sentinels (1/3, 1/17, 1/24, 1/31, 2/14, 3/6, 6/12, 8/28, 9/18, 9/25, 10/30, 12/11) SLEV: 11 sentinels (1/3, 8/28, 10/9, 10/16, 10/30, 11/6)
Holmes	EEEV : 1 human (June); 3 horses (5/21, 6/25, 11/2) WNV : 3 human (2 October, November) ; 3 horses (8/11, 8/23, 9/26)
Indian River	WNV: 17 sentinels (5/24, 8/9, 8/30, 9/13, 9/20, 9/27, 11/8, 11/15)
Jackson	EEEV: 1 horse (9/9) WNV: 2 human (September), 1 horse (10/9)
Jefferson	EEEV: 1 horse (8/6) WNV: 1 horse (10/25)
Lee	WNV: 6 sentinels (1/24, 9/17, 9/18, 10/9, 10/23, 11/5) SLEV: 30 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, 10/29, 10/30, 11/5, 11/12, 11/20, 12/3, 12/4) Flavi: 1 sentinel (12/4)
Leon	EEEV : 5 horses (8/21, 8/30, 9/3, 9/4, 10/4), 10 sentinels (8/13, 8/28, 9/22, 10/22, 10/29, 11/5, 11/13, 11/26) WNV : 2 humans (August, October), 37 sentinels (9/17, 9/22, 10/2, 10/15, 10/22, 10/29, 11/5, 11/13, 11/19) HJV : 6 sentinels (8/28, 9/4, 9/11, 10/2, 12/10)
Levy	EEEV: 2 horses (1/2) WNV : 1 horse (9/3)
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, 9/28, 10/1) HJV : 6 sentinels (7/13, 8/18, 8/31, 9/14, 9/28)
Okaloosa	WNV : 3 humans (2 August, 1 September)
Orange	EEEV : 27 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, 11/15, 11/20, 11/26, 11/29, 12/6) WNV: 20 sentinels (1/9, 1/12, 1/19, 1/25, 3/1, 7/26, 9/13, 9/17, 9/19, 10/22, 10/29, 11/29, 12/3, 12/10) 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 (8/27, 9/17, 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)

County	Arbovirus Activity
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: 23 sentinels (1/9, 2/6, 3/19, 5/7, 5/14, 7/9, 7/16, 7/27, 8/3, 8/24, 8/31, 9/14, 9/17, 9/24, 10/19, 11/9) SLEV: 13 sentinels (7/2, 9/7, 10/1, 10/19, 10/26, 11/2, 11/9, 11/16) HJV: 1 sentinel (9/7) Flavi: 1 sentinel (8/31)
Seminole	WNV : 3 sentinels (8/7, 9/25)
St. Johns	EEEV : 7 sentinels (9/2, 9/11, 9/18, 10/8, 10/29, 11/27) WNV : 61 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, 11/13, 11/19, 12/10) 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 : 5 sentinels (5/29, 6/25, 9/17, 11/5, 11/19) EEEV : 1 sentinel (11/19)
Wakulla	EEEV : 4 horses (10/9, 10/21, 10/22, 12/15)
Walton	WNV : 4 humans (2 September, October, November) ; 2 horses (9/29, 10/16); 132 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, 8/21, 9/6, 9/10, 9/17, 9/18, 9/24, 10/1, 10/8, 10/15, 10/22, 10/29, 11/5, 11/19 11/26, 12/4, 12/10) EEEV : 21 sentinels (6/4, 6/18, 6/25, 7/2, 7/30, 9/6, 9/10, 10/15, 11/19, 11/26, 12/4, 12/10, 12/17) HJV : 7 sentinels (5/14, 6/11, 6/18, 7/16, 7/23, 9/6, 10/1) Flavi : 2 sentinels (11/26)
Washington	EEEV : 1 horse (7/1) WNV : 2 human (September, October), 1 horse (9/19)

Acknowledgements and Data Sources

Contributors: Stephanie Moody-Geissler, 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.