



Florida Arbovirus Surveillance Week 37: September 8 - 14, 2013

Arbovirus surveillance in Florida includes endemic mosquito-borne viruses such as 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 8 - 14, 2013 the following arboviral activity was recorded in Florida:

WNV activity: No human cases of WNV infection have been reported this week. No horse cases of WNV infection were reported this week. Eleven sentinel chickens tested positive this week for antibodies to WNV in Duval, Flagler, Nassau, St. Johns and Walton counties. In 2013, positive samples from one human, two equines and 89 sentinel chickens have been received from 13 counties.

EEEV activity: No human cases of EEEV infection were reported this week. No horse cases of EEEV infection were reported this week. Twelve sentinel chickens tested positive for antibodies to EEEV this week in Indian River, Orange, St. Johns, Volusia and Walton counties. In 2013, positive samples from two humans, four birds, 31 equines, and 140 sentinel chickens have been received from 27 counties.

DENV activity: Three cases of locally acquired dengue have been reported this week in residents of Martin County (2) and a visitor to Martin County from another Florida county (1) this week. In 2013, a total of 19 cases of locally acquired dengue have been reported in 17 Florida residents and two out-of-state-residents. Exposures occurred in two counties (Martin or Miami-Dade).

SLEV activity: Seven sentinel chickens tested positive for antibodies to SLEV this week in Hillsborough, Lee and Palm Beach counties. In 2013, nine positive samples have been received from five counties.

HJV activity: One sentinel chickens tested positive for antibodies to HJV this week in Walton County. In 2013, 28 positive samples have been received from eight counties.

Advisories/Alerts: Bradford, Duval, Gilchrist, Hillsborough, Levy, Marion, Miami-Dade, and St. Lucie counties are currently under a mosquito-borne illness advisory. Martin County is currently under a mosquito-borne illness alert. No other counties are currently under mosquito-borne illness advisory or alert.

2013 Human Case Summary*

WNV infection Acquired in Florida: One human case of WNV illness with onset in August has been reported in 2013 in Duval County. One asymptomatic positive blood donor was identified in August. The donor is a resident of Florida and has outdoor exposure in multiple North-East Florida counties.

EEEV Infection Acquired in Florida: Two human cases of EEEV infection with onset in January (1) and March (1) have been reported in 2013 in Levy (1) and Hillsborough (1) County residents.

Dengue Infection Acquired in Florida: In 2013, a total of 19 cases of locally acquired dengue have been reported.

Eighteen cases of dengue have been reported as acquired in Martin County with onsets in July (4) and August (14), 2013. Of these 18 cases, eleven are residents of Martin County; four are residents of St. Lucie County; one is a resident of another Florida county and two are out-of-state visitors.

One case of dengue has been reported as acquired in Miami-Dade County by a Miami-Dade resident with onset in August, 2013.

Imported Dengue: Seventy-five cases of dengue with onset in 2013 have been reported in individuals with travel history to a dengue endemic country in the two weeks prior to onset. Countries of origin were: Angola, Bangladesh (2), Barbados, Bolivia, Brazil (3), The Caribbean, Columbia (4), Costa Rica (3), Dominica, Dominican Republic (6), Haiti (2), Honduras, Indonesia, Jamaica (4), Nicaragua, Nigeria, Panama, Philippines (2), Puerto Rico (37) and Saint Martin (2). Counties reporting cases were: Alachua, Brevard, Broward (8), Clay, Duval, Indian River, Lake, Lee, Miami-Dade (23), Nassau, Orange (12), Osceola (5), Palm Beach (8), Pasco, Pinellas, Santa Rosa, Seminole (3), St. Lucie (2) and Volusia (3). Nine of the cases were reported in non-Florida residents.

In 2013, 59 of the 90 cases of dengue reported in Florida have been serotyped by PCR. Additional serotyping and strain typing are being conducted.

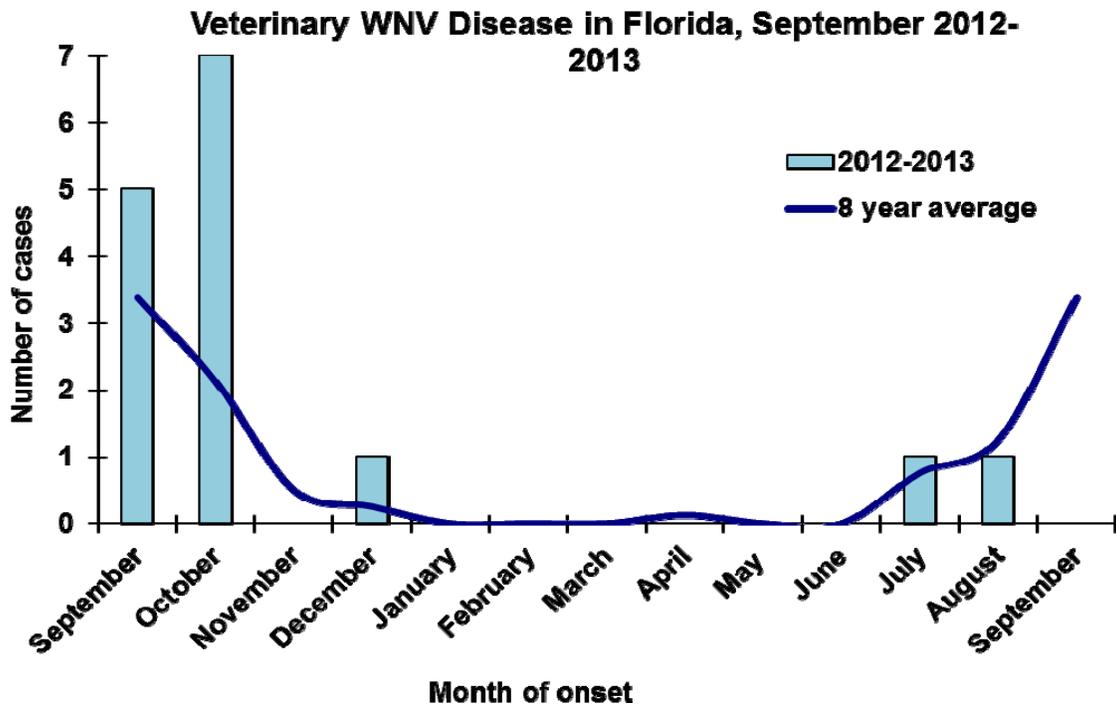
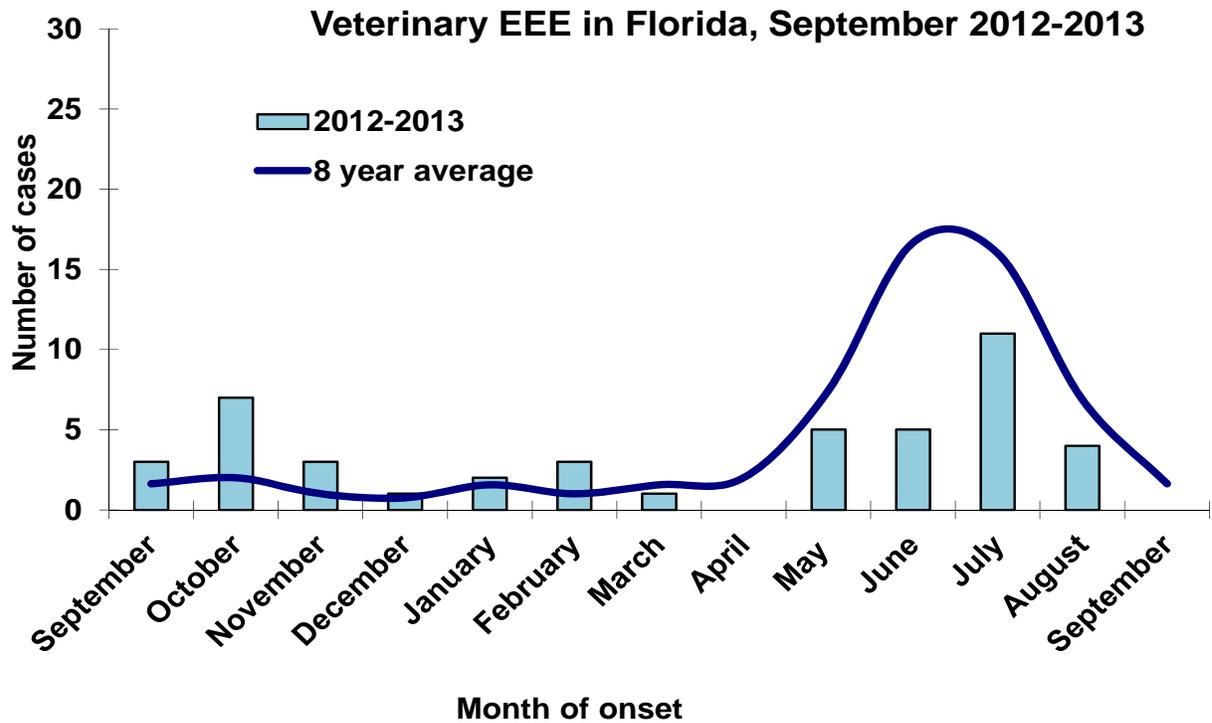
	# of cases per serotype – 2013
DENV-1	44
DENV-2	1
DENV-3	3
DENV-4	11
	59

Imported Malaria: Thirty-three cases of malaria with onset in 2013 have been reported. Countries of origin were: Benin, Chad, Democratic Republic of the Congo, Equatorial Guinea, Guinea, Ghana (3), Guyana (6), Haiti (5), India (2), Kenya, Liberia, Nigeria (3), Peru, Sierra Leone (2), Solomon Islands, Uganda (2), and undetermined African country. Counties reporting cases were: Alachua, Broward, Duval, Hillsborough (5), Lake, Lee (2), Miami-Dade (7), Orange (7), Palm Beach (5), Pinellas and Seminole (2). Two of the cases were reported in a non-Florida resident.

Twenty-four cases (73%) were diagnosed with *Plasmodium falciparum*, seven (21%) with *Plasmodium vivax*, one with *Plasmodium ovale* (3%), and one mixed *Plasmodium falciparum*/*Plasmodium vivax* (3%).

Veterinary Cases

No horses with EEEV or WNV infection were reported this week.



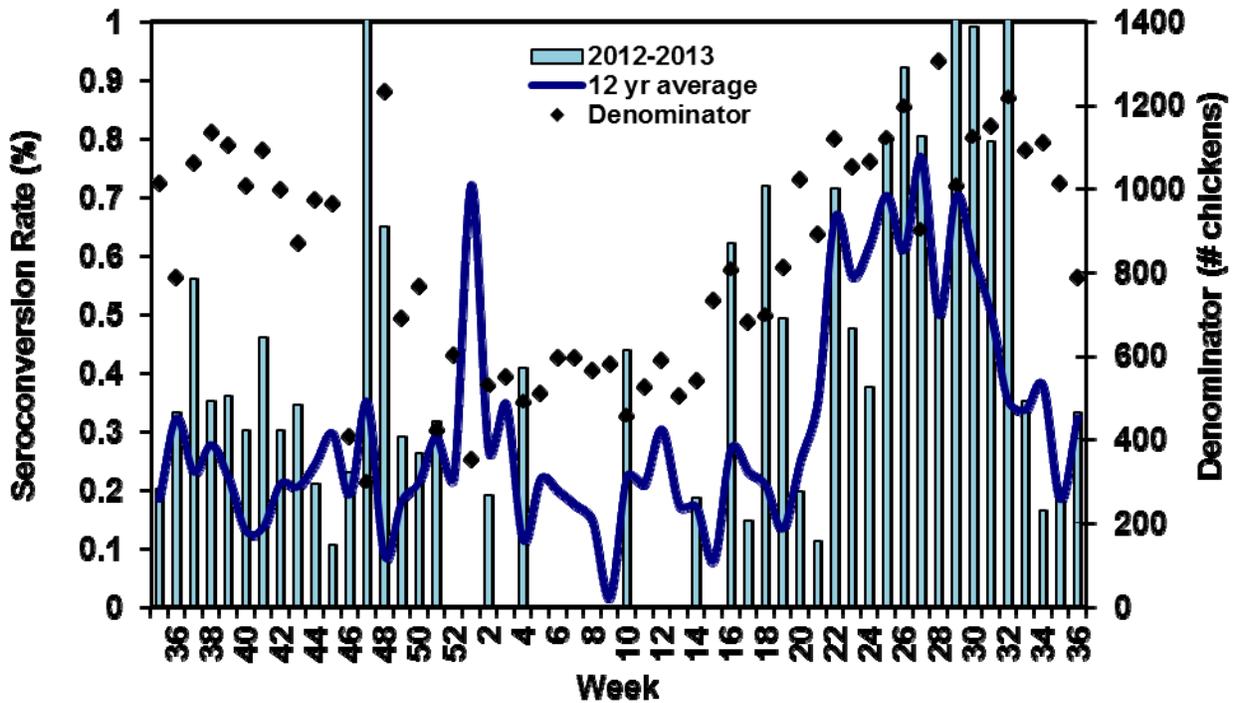
Sentinel Chickens

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.

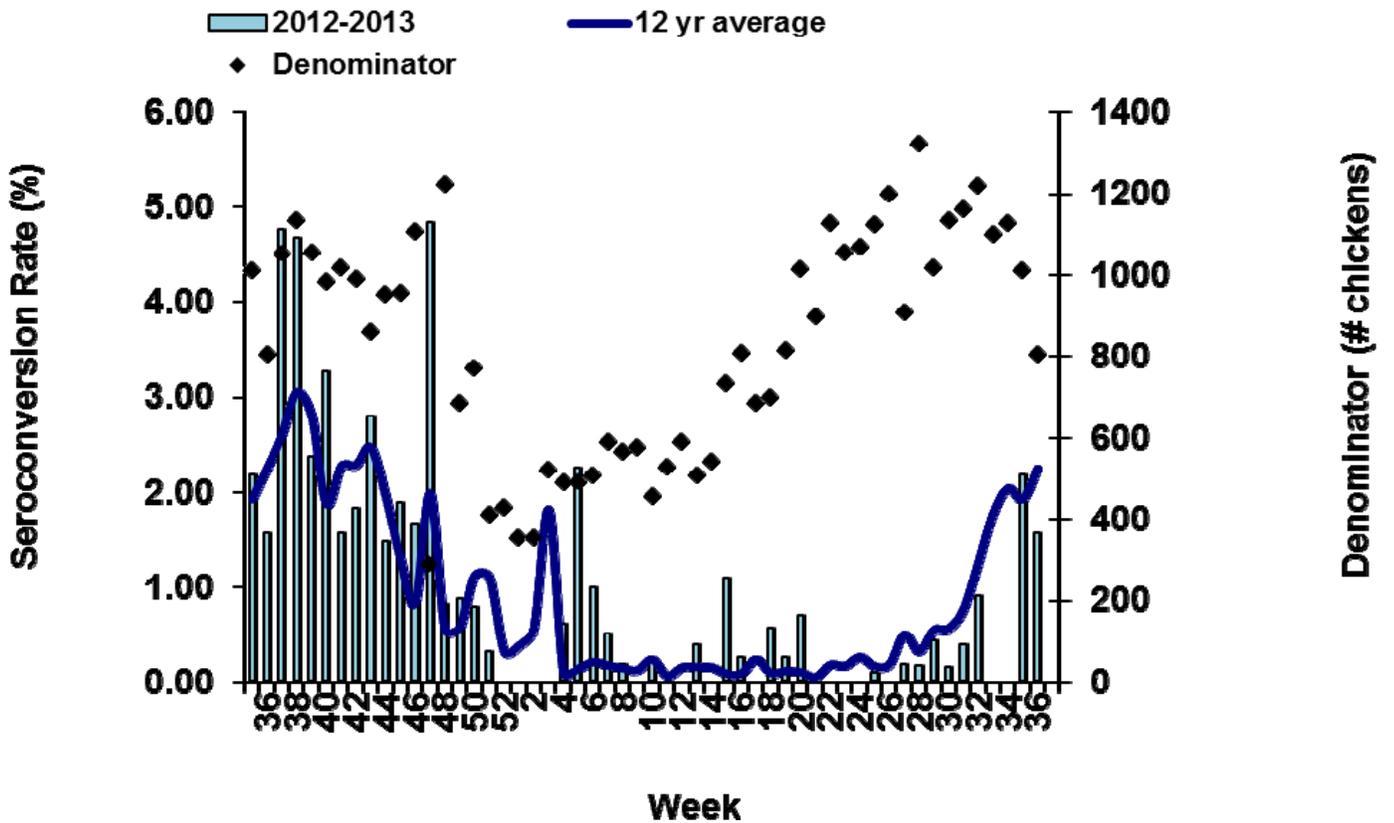
Eleven sentinel chickens tested positive for antibodies to WNV this week in Duval, Flagler, Nassau, St. Johns and Walton counties. Nine sentinel chickens tested positive for antibodies to EEEV this week in Indian River, Orange, St. Johns, Volusia and Walton counties. Six sentinel chickens tested positive for antibodies to SLEV this week in Hillsborough, Lee and Palm Beach counties. One sentinel chicken tested positive for antibodies to HJV this week in Walton County.

County	Collection Date	Seroconversion Rates (%)				County Totals	
		SLEV	WNV	EEEV	HJV	Collection Week	YTD
Duval	8/28/2013		18.18			2 WNV	
	9/3/2013		3.03			1 WNV	1 EEEV, 11 WNV, 2 HJV
Flagler	8/19/2013		8.33			1 WNV	5 EEEV, 1 WNV, 4 HJV
Hillsborough	9/3/2013	3.45				3 SLEV	3 SLEV
Indian River	8/27/2013			2.08		1 EEEV	2 EEEV, 2 WNV
Lee	9/2/2013	2.33				2 SLEV	2 SLEV
Nassau	8/16/2013		3.33			1 WNV	
	8/30/2013		6.06			2 WNV	12 EEEV, 13 WNV, 3 HJV
Orange	8/12/2013			1.80		2 EEEV	
	8/26/2013			1.79		2 EEEV	22 EEEV
Palm Beach	9/3/2013	3.57				1 SLEV	1 SLEV
St. Johns	8/26/2013			3.77		1 EEEV	
	9/3/2013		1.82	3.70		2 EEEV, 1 WNV	24 EEEV, 1 WNV, 3 HJV
Volusia	9/3/2013			2.08		1 EEEV	2 EEEV
Walton	8/6/2013		0.94	0.95		1 EEEV, 1 WNV	
	8/19/2013		0.85			1 WNV	
	8/20/2013				0.90	1 HJV	
	8/27/2013			2.80		2 EEEV	
	9/3/2013		0.92			1 WNV	50 EEEV, 51 WNV, 11 HJV

Sentinel Seroconversions to EEEV In Florida, 2012-2013



Sentinel Seroconversions to WNV in Florida, 2012-2013



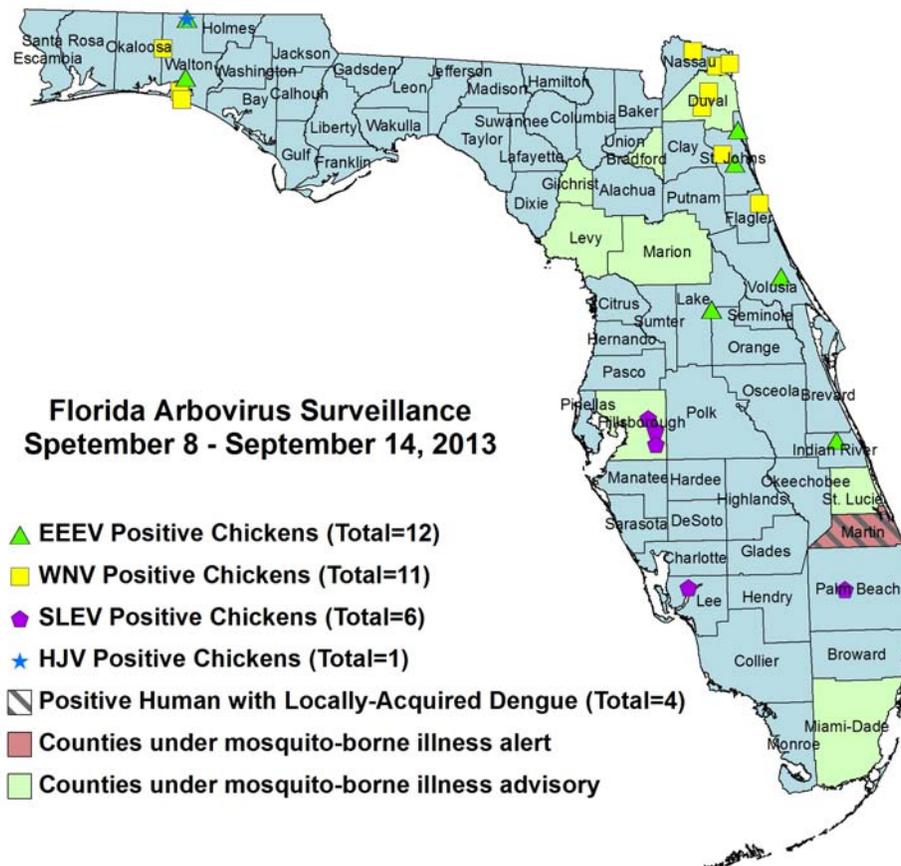
Dead Birds

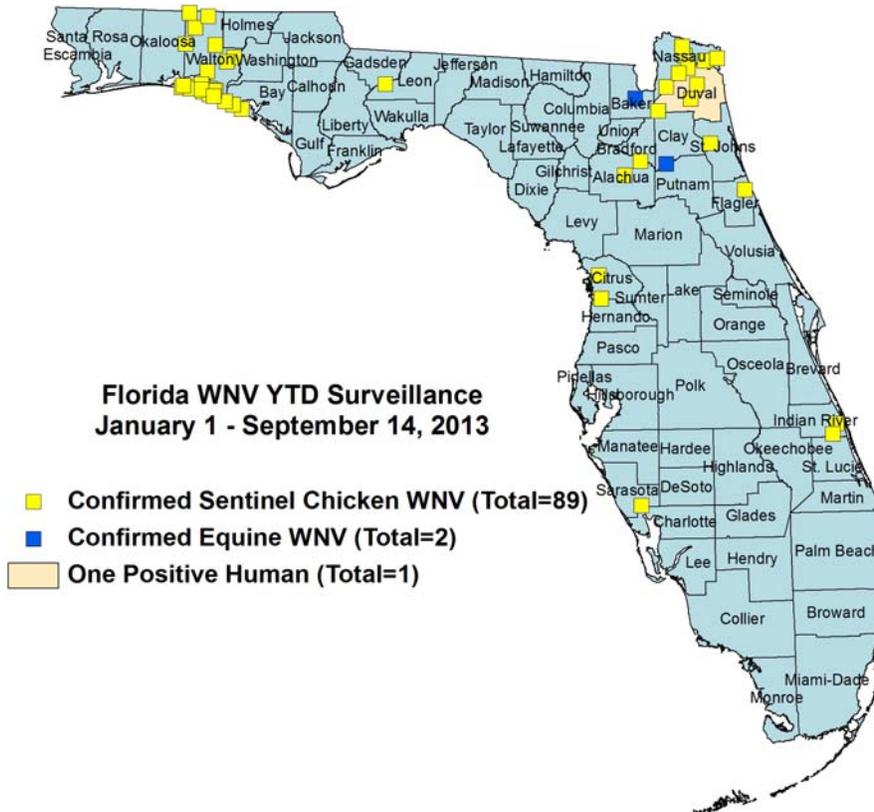
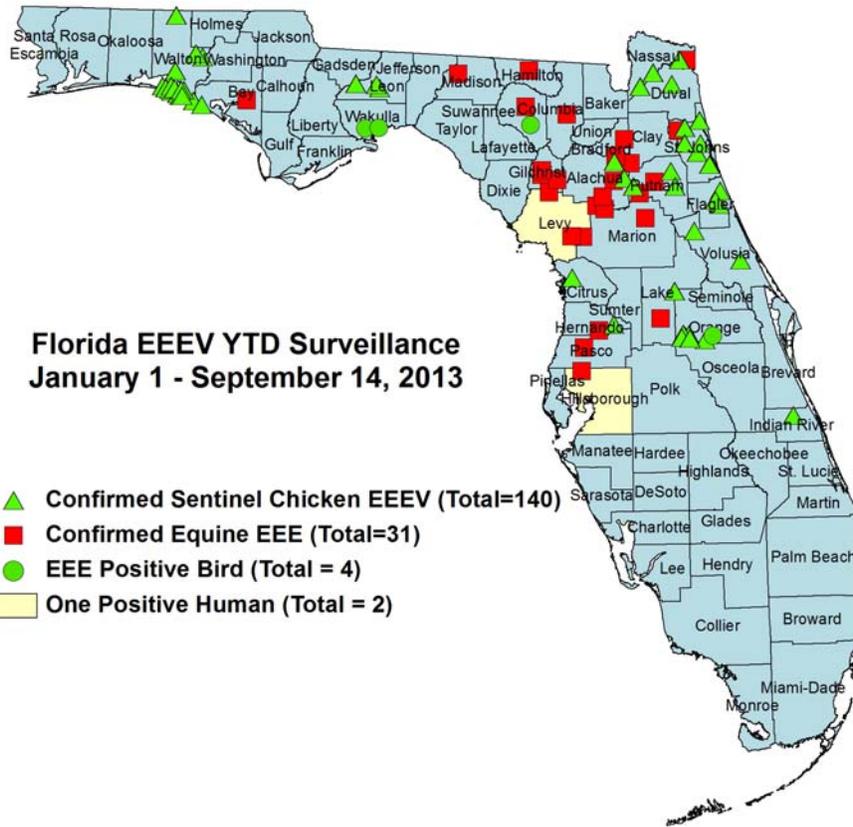
The Fish and Wildlife Conservation Commission (FWC) collects reports of dead birds, which can be an indication of arbovirus circulation in an area. This week, 8 reports representing 24 dead birds, including 1 raptor and 2 doves were received from 7 counties.

In 2013, 546 reports representing a total of 1760 dead birds (22 crow, 15 jays, 106 raptors, 36 doves) were received from 48 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	Dove
Brevard	1	0	0	0	0
Dade	1	0	0	0	1
Hillsborough	1	0	0	0	1
Pinellas	4	0	0	0	0
Sarasota	1	0	0	0	0
Seminole	1	0	0	1	0
Sumter	15	0	0	0	0

Maps





2013 Arbovirus Activity by County

County	Arbovirus Activity
Alachua	EEEV: 2 horses (2/13, 7/11) ; 5 sentinels (6/17, 6/24, 7/15, 8/5) WNV: 2 sentinels (7/1, 8/19)
Baker	WNV: 1 horse (7/9)
Bay	EEEV: 1 horse (8/21) 1 sentinel (5/21) WNV: 3 sentinels (5/7, 8/26) HJV: 2 sentinels (5/7, 5/28)
Bradford	EEEV: 2 horses (5/27, 5/30)
Citrus	EEEV: 1 sentinel (4/15) WNV: 3 sentinels (1/21, 1/28) SLEV: 1 sentinel (1/21) HJV: 2 sentinels (3/25, 4/2)
Clay	EEEV: 1 horse (7/17) WNV: 1 horse (8/7)
Columbia	EEEV: 1 horse (5/4)
Duval	EEEV: 1 sentinel (8/22) WNV: 1 Human (August), 11 sentinels (7/1, 7/15, 7/29, 8/26, 8/28, 9/3) HJV: 2 sentinels (6/17, 7/8)
Flagler	EEEV: 5 sentinels (4/22, 6/24, 7/22, 7/29) WNV: 1 sentinel (8/19) HJV: 4 sentinels (6/17, 7/29, 8/5)
Gilchrist	EEEV: 4 horses* (2/6, 6/28, 6/29)
Hamilton	EEEV: 1 horse (5/30)
Hernando	EEEV: 1 horse (6/27) ; 1 sentinel (6/10)
Hillsborough	EEEV: 1 human (March), 1 horse (7/20) SLEV: 3 sentinels (9/3)
Indian River	EEEV: 2 sentinel (5/9,8/15) WNV: 2 sentinels (7/10, 7/31)
Lake	EEEV: 1 horse (1/30)
Lee	SLEV: 2 sentinels (9/2)
Leon	EEEV: 6 sentinels (6/3, 8/5, 8/12, 8/20) WNV : 1 sentinel (8/27)
Levy	EEEV : 1 human (January) ; 3 horses (1/7, 7/21, 7/27)
Madison	EEEV : 1 horse (2/16)
Marion	EEEV : 5 horses (7/11, 7/12, 7/18, 7/31, 8/7)
Martin	Dengue : 11 humans (July, August)
Miami Dade	Dengue : 1 human (August)
Nassau	EEEV : 1 horse (7/8) ; 12 sentinels (6/8, 6/15, 6/28, 7/1, 7/5, 7/12, 7/19, 7/26, 8/5, 8/10) WNV : 10 sentinels (7/19, 7/26, 8/3, 8/5, 8/23) HJV : 3 sentinels (6/28, 7/29)
Orange	EEEV : 22 sentinels (5/2, 5/30, 6/6, 6/13, 6/20, 6/24, 6/27, 7/1, 7/3, 7/11, 7/15, 7/23, 8/12, 8/22, 8/26) ; 1 bird (1/1)

County	Arbovirus Activity
Palm Beach	SLE : 1 sentinel (9/3)
Pasco	EEEV : 1 horse (7/16)
Putnam	EEEV : 2 horses (6/26, 8/8) ; 8 sentinels (7/16, 7/23, 7/30, 8/6)
Sarasota	WNV : 1 sentinel (5/3) SLEV : 1 sentinel (4/5)
Seminole	HJV : 1 sentinel (5/7)
St. Johns	EEEV : 1 horse (3/1) ; 24 sentinels (4/8, 5/6, 5/28, 6/3, 6/10, 6/17, 6/24, 7/22, 7/29, 8/5, 8/12, 8/26, 9/3) WNV : 1 sentinel (9/3) HJV : 3 sentinels (6/3, 6/17, 7/1)
St. Lucie	Dengue : 4 humans with exposure in Martin (July, August)
Suwannee	EEEV : 1 horse (8/9), 1 bird (8/11)
Volusia	EEEV : 2 sentinel (7/15, 9/3)
Wakulla	EEEV : 2 birds (4/8)
Walton	EEEV : 50 sentinels (1/7, 2/26, 3/25, 4/15, 4/29, 4/30, 5/6, 5/13, 5/28, 6/17, 6/24, 7/1, 7/8, 7/23, 7/30, 8/5, 8/6, 8/19, 8/26, 8/27) WNV : 51 sentinels (1/7, 1/14, 1/15, 1/23, 1/28, 2/4, 2/20, 3/11, 4/8, 4/9, 4/15, 4/29, 4/30, 5/7, 5/13, 5/14, 6/17, 7/8, 8/6, 8/19, 8/26, 9/3) HJV : 11 sentinels (5/13, 6/17, 7/1, 7/8, 7/29, 8/20)

*The equine listed as Gilchrist/Columbia for 5/29/13 had exposure in both counties during the 2 weeks prior to onset and is not listed in the table above.

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; Lea Heberlein-Larson and Valerie Mock, DOH Bureau of Public Health 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. 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:

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.