



Florida Arbovirus Surveillance Week 38: September 14– September 20, 2014

Arbovirus surveillance in Florida includes endemic mosquito-borne viruses such as West Nile virus (WNV), Eastern equine encephalitis virus (EEEV), and St. Louis encephalitis virus (SLEV), as well as exotic viruses such as dengue virus (DENV), chikungunya virus (CHIKV) and California encephalitis group viruses (CEV). Malaria, a non-viral mosquito-borne disease is also included. During the period of September 14- 20, 2014 the following arboviral activity was recorded in Florida.

WNV activity: No human cases of WNV illness were reported this week. No horses with WNV infection were reported this week. Twelve sentinel chickens tested positive for antibodies to WNV this week in Bay, Flagler, Orange, Putnam, St. Johns and Volusia Counties. In 2014, positive samples from 91 sentinel chickens, 5 horses, 5 human cases, and 1 blood donor have been received from 23 counties.

EEEV activity: No human cases of EEE were reported this week. Two horses with EEEV infection were reported this week in Gadsden and Jackson Counties. Two sentinel chickens tested positive for antibodies to EEEV this week in Citrus and St. Johns Counties. In 2014, positive samples from 154 sentinel chickens, 2 deer, and 52 horses have been received from 32 counties.

International Travel-Associated Dengue Fever Cases: Two cases of dengue fever were reported this week in persons that had international travel. In 2014, 54 travel-associated cases have been reported.

Dengue Fever Cases Acquired in Florida: One new case of locally acquired dengue fever was reported this week in Miami-Dade County. In 2014, a total of five cases of locally acquired dengue fever have been reported.

International Travel-Associated Chikungunya Fever Cases: Twenty-six cases of chikungunya fever were reported this week in persons that had international travel. In 2014, 238 travel-associated cases have been reported.

Chikungunya Fever Cases Acquired in Florida: Two new cases of locally acquired chikungunya fever was reported this week in Broward and St. Lucie Counties. In 2014, a total of 11 cases of locally acquired chikungunya fever have been reported.

Advisories/Alerts: Alachua, Broward, Clay, Columbia, Duval, Jefferson, Leon, Levy, Lafayette, Marion, Pasco, Santa Rosa, Suwannee, Volusia and Washington Counties are currently under a mosquito-borne illness advisory. Escambia, Miami-Dade, Palm Beach and St. Lucie Counties are currently under a mosquito-borne illness alert. No other counties are currently under mosquito-borne illness advisory or alert. A CDC Health Alert Network (HAN) health advisory was issued in December for the Caribbean region announcing the first locally acquired cases of chikungunya fever in the Americas. There is a Level 1 (Watch) Travel Health Notice from the CDC for multiple countries in the Caribbean related to the continued transmission of chikungunya which was updated August 11, 2014.

<http://www.ncdc.gov/travel/notices/watch/chikungunya-caribbean>

2014 Human Case Summary*

West Nile Virus Illnesses Acquired in Florida: A total of five human cases of WNV illness acquired in Florida have been reported in 2014; two in Escambia County (July, August), one in Duval County

(August), one in Leon County (August), and one in Volusia County (August). One asymptomatic positive blood donor was reported from Santa Rosa County in July.

International Travel-Associated Dengue Fever Cases: Fifty-four cases of dengue with onset in 2014 have been reported in individuals with travel history to a dengue endemic country in the two weeks prior to onset. Countries of origin were: Bangladesh, Bolivia, Brazil (2), Caribbean, Columbia, Costa Rica (3), Cuba (19), Cuba/Bahamas, Dominican Republic (8), El Salvador, Guadeloupe, Haiti, Honduras (4), Mexico, Puerto Rico (4), Sri Lanka, Trinidad (2), and Venezuela (2). Counties reporting cases were: Alachua, Brevard, Broward (6), Clay, Collier, Highlands, Hillsborough (3), Lee, Manatee (2), Marion, Miami-Dade (22), Orange (3), Osceola (4), Palm Beach (2), Pinellas, Seminole, St. Lucie (2), and Volusia. Five of the cases were reported in non-Florida residents. In 2014, 27 of the 54 cases of dengue reported in Florida have been serotyped by PCR. Additional serotyping and strain typing are being conducted.

	# of cases per serotype – 2014
DENV-1	9
DENV-2	10
DENV-3	1
DENV-4	6
DEN-1&2	1
	27

Dengue Fever Cases Acquired in Florida: In 2014, a total of five cases of locally acquired dengue fever have been reported. Five cases of dengue in Miami-Dade residents with onset in June and August have been reported as acquired in Miami-Dade County.

International Travel-Associated Chikungunya Fever Cases: Two hundred and thirty-eight cases of chikungunya with onset in 2014 have been reported in individuals with travel history to a chikungunya endemic country or area experiencing an outbreak in the two weeks prior to onset. Countries of origin were: Antigua (2), Antigua/Barbuda, Bequia, Cuba, Dominca/Gaudalupe, Dominican Republic (77), Guyana (7), Haiti (102), Haiti/Dominican Republic, Honduras, Jamaica (4), Martinique (2), Philippines, Puerto Rico (33), Puerto Rico/Dominican Republic (2), St. Lucia, and St. Thomas/St. Martin/Bahamas. Counties reporting cases were: Alachua (2), Brevard (3), Broward (42), Charlotte (2), Clay (2), Duval (6), Escambia, Flagler, Hernando, Highlands, Hillsborough (17), Indian River, Lake (2), Lee (6), Leon (2), Manatee (2), Marion, Miami-Dade (44), Monroe, Nassau, Okaloosa (2), Orange (29), Osceola (8), Palm Beach (32), Pasco (3), Pinellas (5), Polk (10), Santa Rosa, Sarasota (2), Seminole (4), St. Johns, St. Lucie (2), and Volusia. Eighteen of the cases were reported in non-Florida residents.

Chikungunya Fever Cases Acquired in Florida: In 2014, a total of eleven cases of locally acquired chikungunya fever have been reported. One case of chikungunya fever with onset in July was acquired in Broward County. Two cases of chikungunya fever with onset in June were acquired in Miami-Dade County. Four cases of chikungunya fever with onset in July were acquired in Palm Beach County. Four cases of chikungunya fever with onset in July and August were acquired in St. Lucie County.

International Travel-Associated Malaria Cases: Forty-five cases of malaria with onset in 2014 have been reported. Countries of origin were: Angola (3), Cameroon, Dominican Republic, East Africa, Equatorial Guinea (2), Ghana, Ghana/Rwanda, Ghana/Senegal, Ghana/Togo, Guatemala, Guyana, Haiti, Honduras, India (4), Ivory Coast (3), Kenya (2), Nigeria (6), Nigeria/Ethiopia, Papua New Guinea, Peru, Sierra Leone (5), Sudan, Uganda (2), and multiple sub-Saharan African countries (3). Counties reporting cases were: Broward (6), Clay, Duval, Escambia, Hernando, Hillsborough (8), Leon, Miami-Dade (8), Okaloosa (2), Orange (6), Osceola (2), Palm Beach (3), Pasco, Pinellas (2), Santa Rosa, and Seminole. Nine of the cases were reported in non-Florida residents.

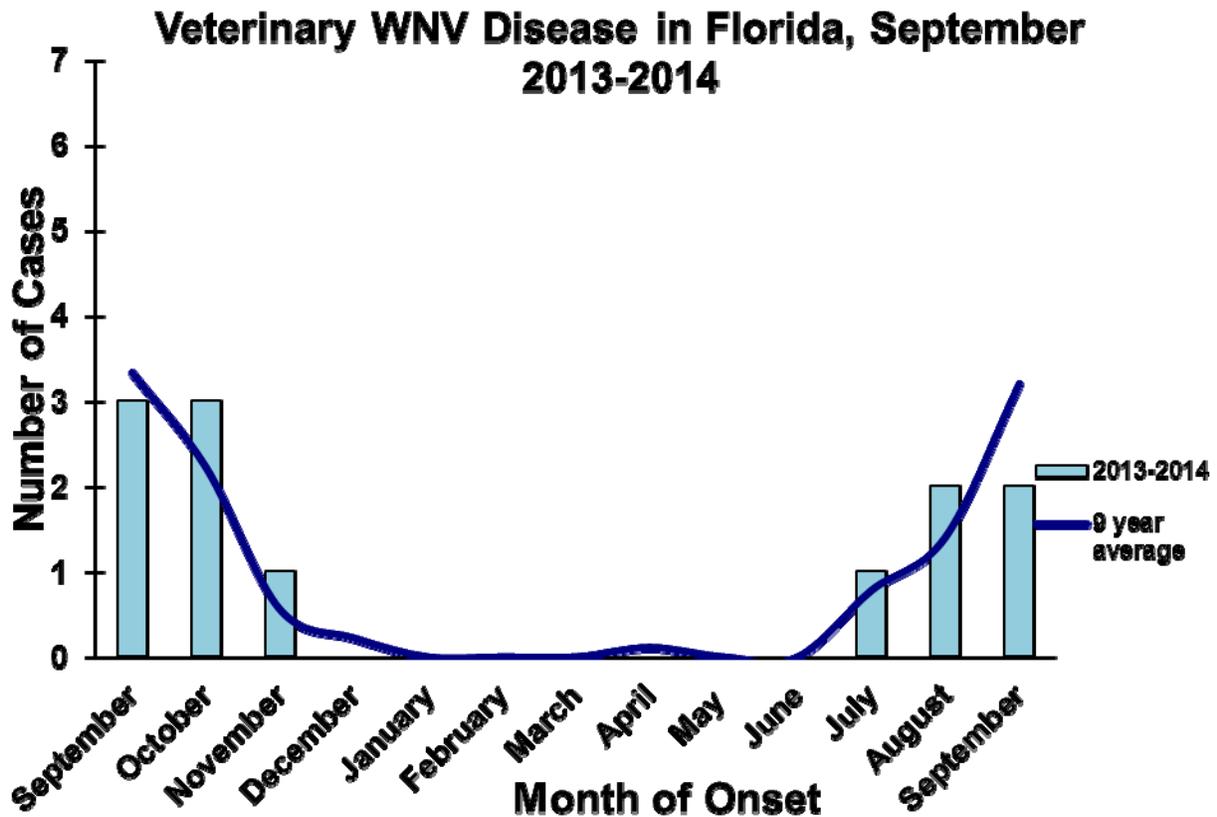
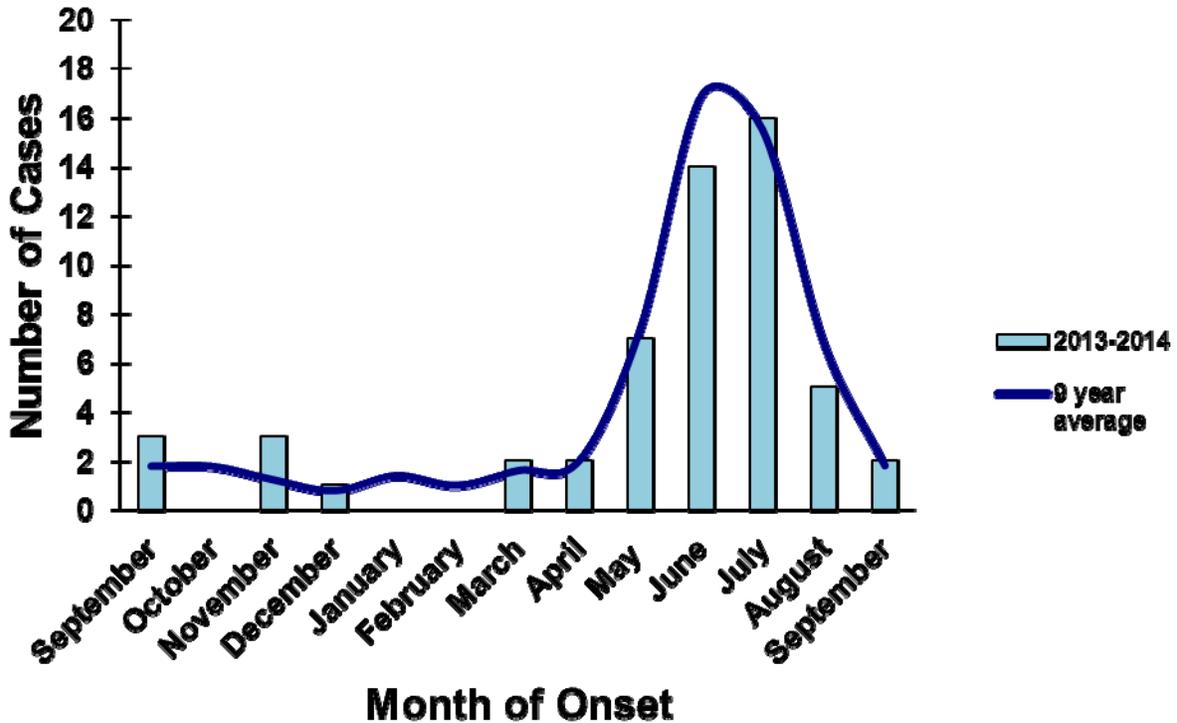
Thirty-two cases (72%) were diagnosed with *Plasmodium falciparum*. Nine cases (20%) were diagnosed with *Plasmodium vivax*. Two cases (4%) were diagnosed with *Plasmodium malariae*. Two cases (4%) were diagnosed with *Plasmodium ovale*.

Veterinary Cases*

*Veterinary cases are reported by date of onset

Two horses with EEEV infection were reported this week in Gadsden and Jackson Counties.

Veterinary EEE in Florida, September 2013-2014



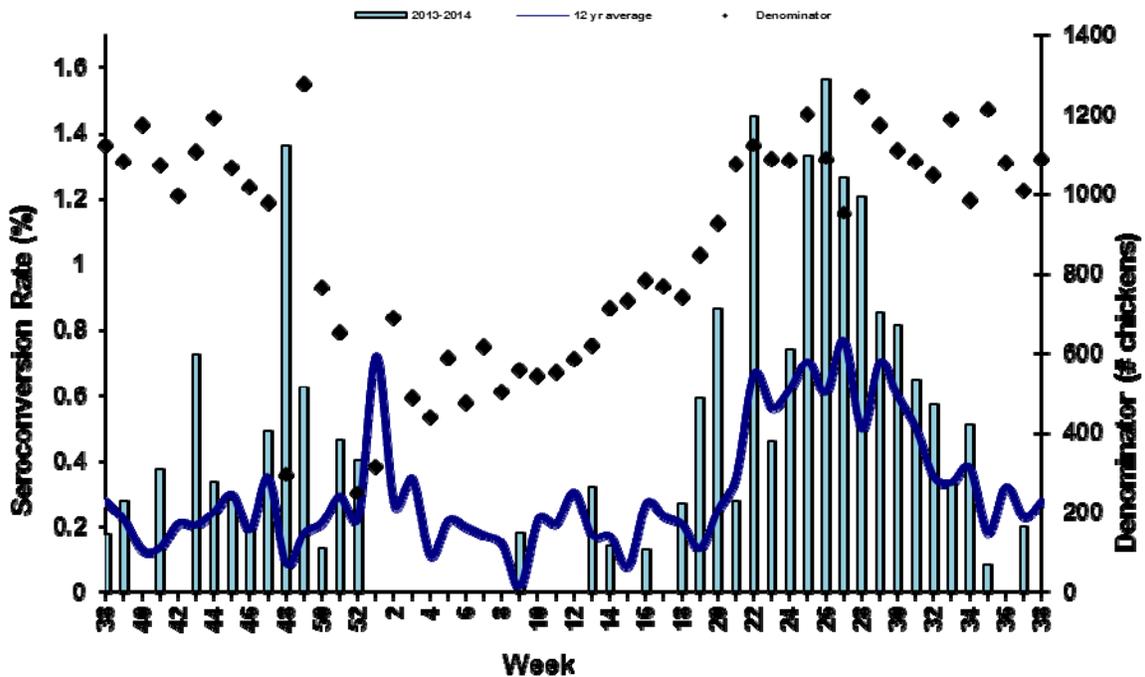
Sentinel Chickens

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.

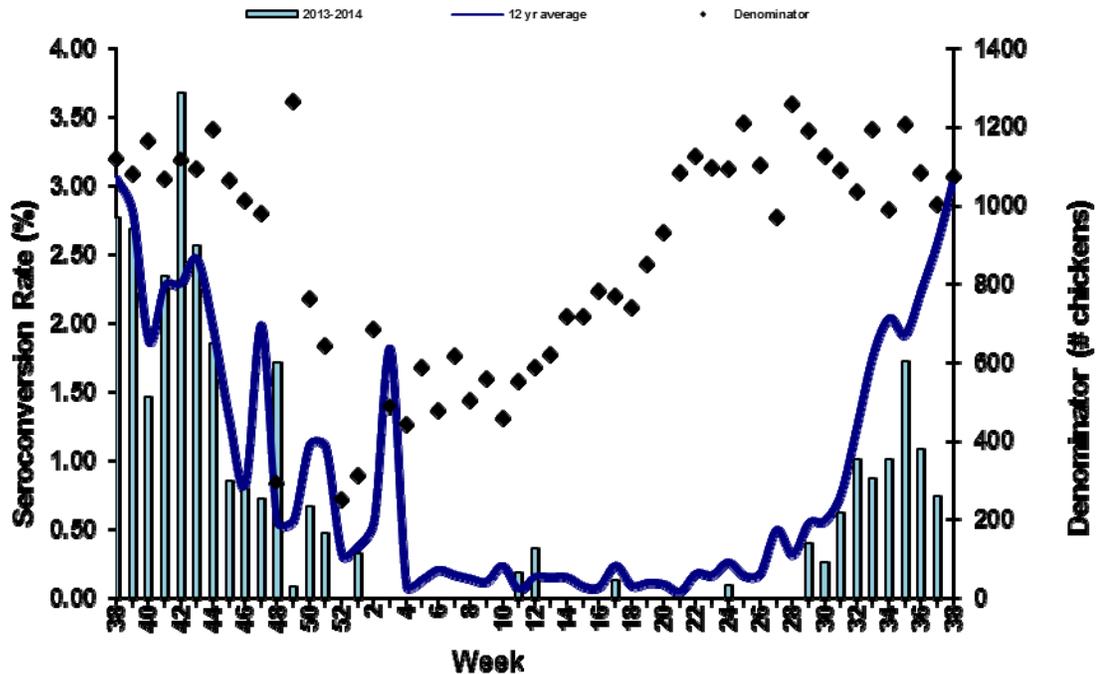
Twelve sentinel chickens tested positive for antibodies to WNV this week in Bay, Flagler, Orange, Putnam, St. Johns and Volusia Counties. Two sentinel chickens tested positive for antibodies to EEEV this week in Citrus and St. Johns Counties. Five sentinel chickens tested positive for antibodies to SLEV this week in Hillsborough and Pinellas Counties (state total of 43 positives for 2014). One sentinel chicken tested positive for antibodies to HJV this week in Walton County (state total of 58 positives for 2014).

County	Collection Date	Seroconversion Rates (%)						County Totals	
		Flavi	SLEV	WNV	Alpha	EEEV	HJV	Collection Week	YTD
Bay	09/09/14	21.43		21.43				3 WNV	3 WNV
Citrus	09/08/14				1.45	1.45		1 EEEV	1 EEEV
Flagler	09/08/14	10.00		10.00				1 WNV	1 WNV
Hillsborough	09/09/14	2.70	2.70					2 SLEV	2 SLEV
Orange	08/25/14	0.86		0.86				1 WNV	1 WNV, 1 HJV
Pinellas	08/25/14	7.55	7.55					1 SLEV	4 SLEV, 1 HJV
Pinellas	09/08/14	3.70	3.70					2 SLEV	2 SLEV
Putnam	09/09/14	25.00		25.00				2 WNV	2 WNV
St. Johns	08/25/14	8.16		8.16				2 WNV	4 WNV, 4 HJV
St. Johns	09/08/14	3.92		3.92				2 WNV	
St. Johns	09/09/14				2.04	2.04		1 EEEV	2 WNV, 1 EEEV
Volusia	08/25/14	2.50		2.50				1 WNV	1 WNV
Walton	09/02/14						0.98	1 HJV	1 HJV

Sentinel Seroconversions to EEEV in Florida, 2013-2014



Sentinel Seroconversions to WNV In Florida, 2013-2014



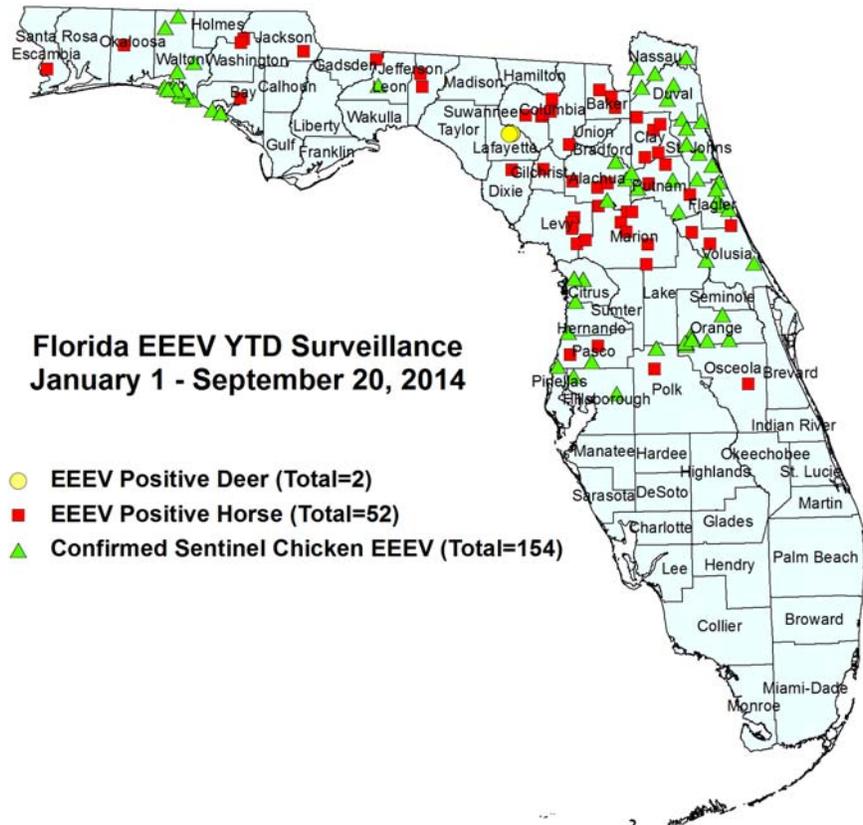
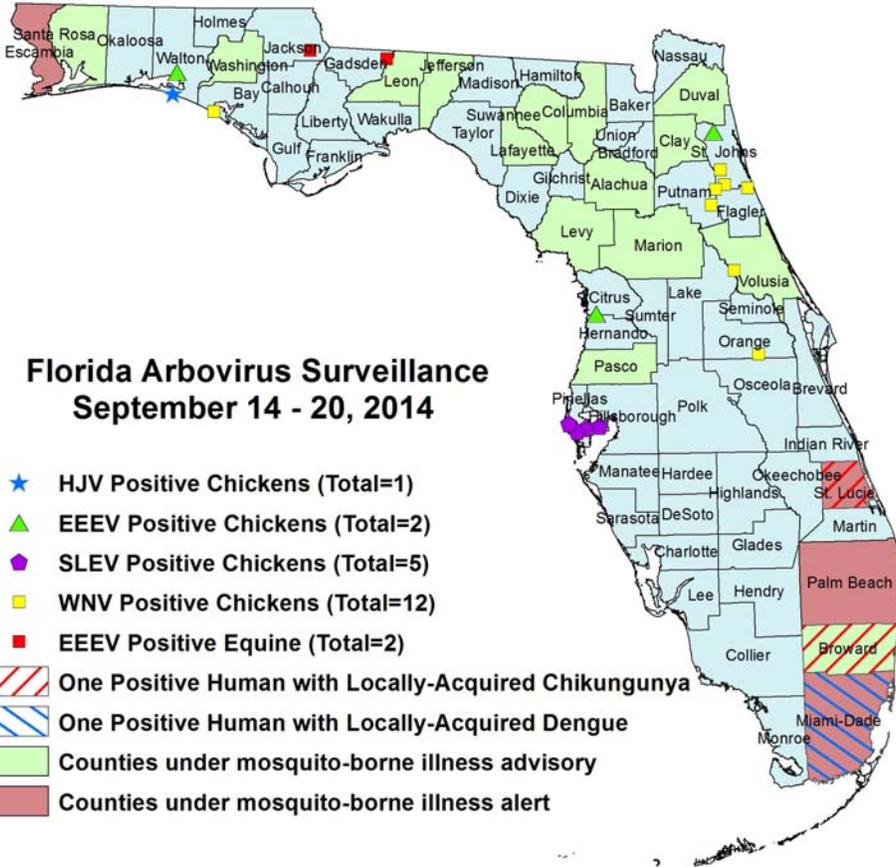
Dead Birds

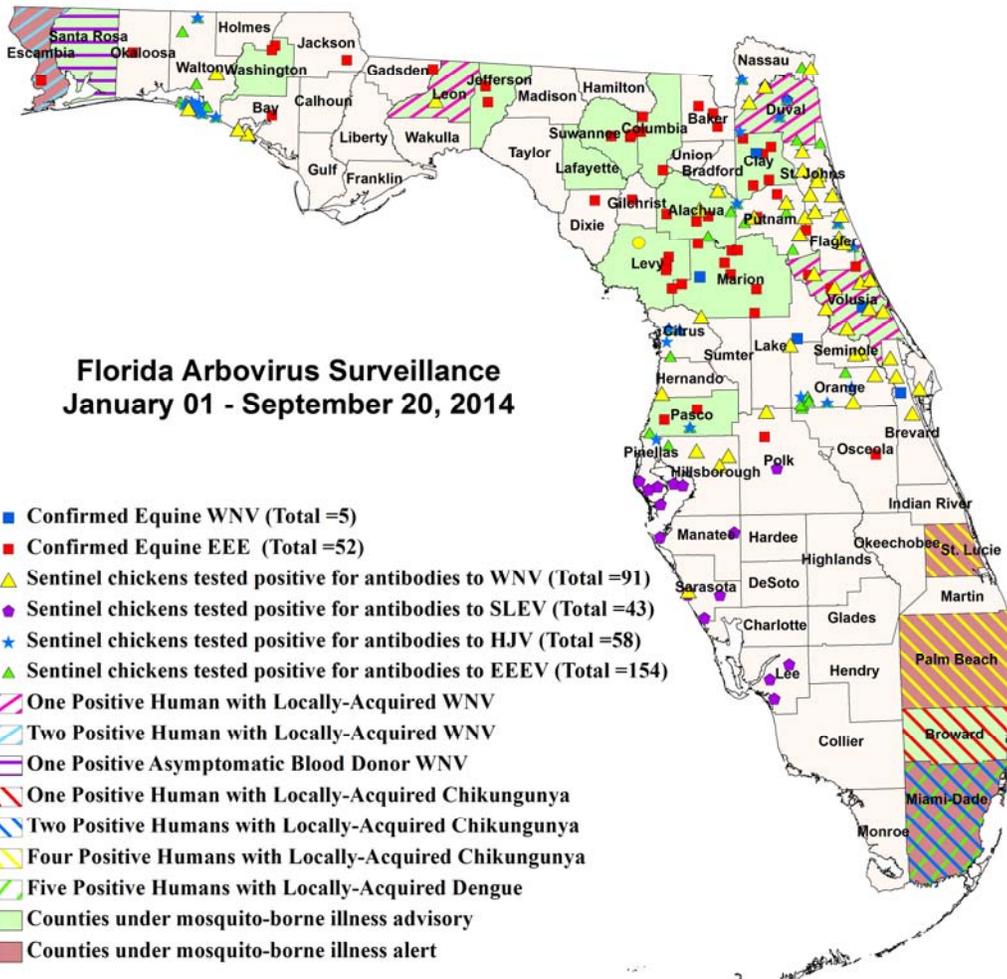
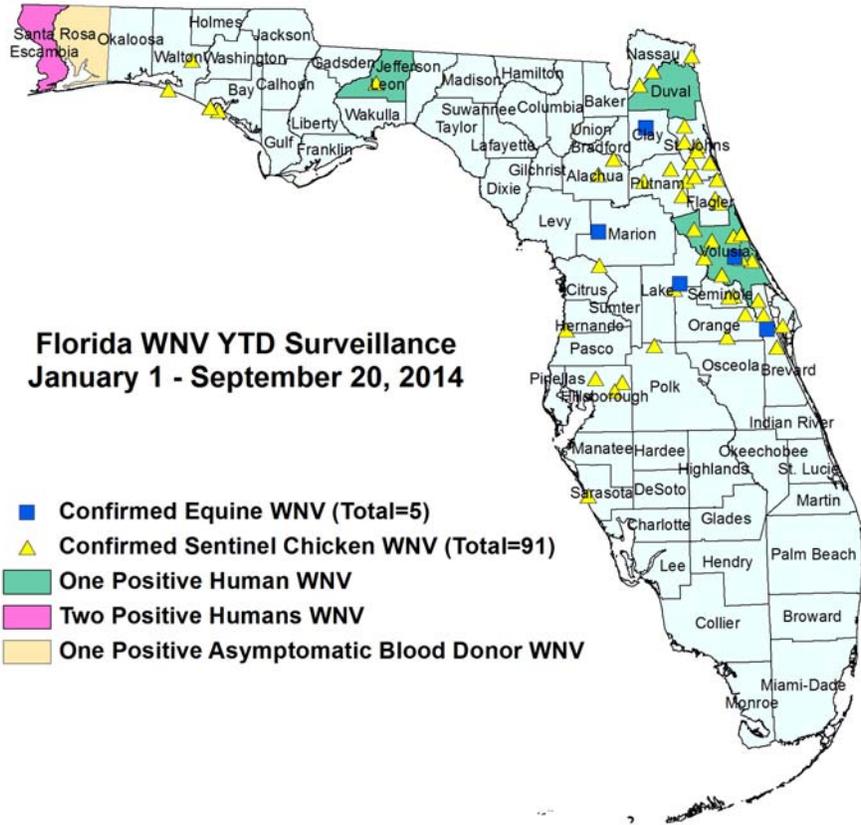
The Fish and Wildlife Conservation Commission (FWC) collects reports of dead birds, which can be an indication of arbovirus circulation in an area. This week, 5 reports representing 17 dead birds including 1 raptor and 1 dove were received from 4 counties.

In 2014, 307 reports representing a total of 862 dead birds (27 crows, 6 jays, 63 raptors, and 31 doves) were received from 44 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
Collier	12	0	0	0	0
Duval	3	0	0	0	0
Monroe	1	0	0	1	0
Palm Beach	1	0	0	0	1

Maps





2014 Arbovirus Activity by County

County	Arbovirus Activity
Alachua	EEEV: 3 horses (6/17, 6/20, 7/4); 10 sentinels (6/9, 6/30, 7/7, 7/14, 7/21, 7/28) HJV: 1 sentinel (8/4) WNV: 5 sentinels (8/12, 8/18, 8/25)
Baker	EEEV: 3 horses (3/13, 7/10, 7/16)
Bay	EEEV: 1 horse (6/15); 6 sentinels (4/28, 5/6, 5/13, 5/22, 5/30) HJV: 1 sentinel (2/18) WNV: 11 sentinels (8/19, 8/26, 9/2)
Brevard	WNV: 1 horse (8/1); 6 sentinels (7/17, 8/8, 8/15, 8/20)
Broward	Chikungunya: 1 human (July)
Citrus	EEEV: 16 sentinels (3/24, 3/31, 5/12, 5/26, 6/2, 6/30, 7/7, 7/14, 7/21, 8/4, 8/11, 9/8) HJV: 6 sentinels (2/17, 2/24, 8/11, 8/18) WNV: 1 sentinel (1/2)
Clay	EEEV: 5 horses (5/2, 7/16, 7/19, 7/20, 8/2) WNV: 1 horse (9/3)
Columbia	EEEV: 3 horses (6/25, 7/18, 8/1)
Dixie	EEEV: 1 horse (5/22)
Duval	EEEV: 3 sentinels (6/16, 6/19, 6/30) HJV: 6 sentinel (8/18, 8/21, 8/25) WNV: 1 human (August) SLEV: 1 sentinel (9/2)
Escambia	EEEV: 1 horse (7/16) WNV: 2 humans (July, August)
Flagler	EEEV: 1 horse (4/21); 11 sentinels (4/14, 4/28, 5/5, 5/27, 6/2, 6/16, 6/23, 6/30, 7/7) HJV: 5 sentinels (7/21, 8/18, 8/25) WNV: 3 sentinels (7/14, 8/18, 9/8)
Gadsden	EEEV: 1 horse (9/16)
Gilchrist	EEEV: 2 horses (5/18, 6/23)
Hernando	EEEV: 2 sentinels (6/9, 7/9) WNV: 2 sentinels (8/25)
Hillsborough	EEEV: 2 sentinels (5/13, 7/1) SLEV: 5 sentinels (1/7, 2/18, 9/2, 9/9) WNV: 4 sentinels (3/18, 9/2)
Jackson	EEEV: 1 horse (9/3)
Jefferson	EEEV: 2 horses (7/7, 8/25)
Lafayette	EEEV: 2 deer (6/24)
Lake	WNV: 1 horse (8/19)
Lee	SLEV: 4 sentinels (1/13, 1/14, 2/11, 3/25)
Leon	EEEV: 1 sentinel (7/14) WNV: 1 human (August), 1 sentinel (8/19)
Levy	EEEV: 4 horses (6/7, 6/21, 6/27, 6/28, 8/17)
Manatee	SLEV: 2 sentinels (7/29, 9/2)
Marion	EEEV: 8 horses (4/12, 5/31, 6/19, 6/26, 6/29, 7/4, 7/14, 7/30) WNV: 1 horse (9/5)
Miami-Dade	Chikungunya: 2 humans (June) Dengue: 5 humans (June, August)
Nassau	EEEV: 13 sentinels (5/27, 5/31, 6/13, 6/20, 6/23, 6/27, 7/11, 7/19, 8/22) HJV: 4 sentinels (7/25, 8/18, 8/22) WNV: 6 sentinel (8/8, 8/18, 8/22, 8/25, 9/2) SLEV: 1 sentinel (8/29)
Okaloosa	EEEV: 1 horse (8/15)
Orange	EEEV: 18 sentinels (5/29, 6/5, 6/16, 6/19, 6/23, 6/25, 6/26, 7/7, 7/10, 7/21, 7/31, 8/7, 8/18) HJV: 4 sentinels (1/2, 2/17, 8/25) WNV: 3 sentinels (8/4, 8/25)
Osceola	EEEV: 1 horse (7/30)
Palm Beach	Chikungunya: 4 humans (July)
Pasco	EEEV: 2 horses (5/31, 6/25); 4 sentinels (5/27, 6/10, 7/15) HJV: 1 sentinel (7/22)

Pinellas	SLEV: 25 sentinels (7/21, 7/25, 7/28, 8/4, 8/11, 8/18, 8/25, 9/2, 9/8) HJV: 1 sentinel (8/25)
Polk	EEEV: 5 sentinels (6/23, 6/30, 7/7); 1 horse (8/3) SLEV: 1 sentinel (8/25) WNV: 1 sentinel (9/2)
Putnam	EEEV: 2 horses (6/17, 7/28); 7 sentinels (5/27, 6/17, 6/24, 7/8, 7/15, 7/22, 8/5) WNV: 7 sentinels (8/5, 8/12, 8/26, 9/9) HJV: 6 sentinels (8/26)
Sarasota	SLEV: 4 sentinels (2/6, 2/14, 2/28, 7/28) WNV: 1 sentinel (4/25)
Santa Rosa	WNV: 1 asymptomatic blood donor (July)
Seminole	WNV: 3 sentinels (7/30, 8/5)
St. Johns	EEEV: 20 sentinels (5/5, 5/12, 5/27, 6/16, 6/23, 6/30, 7/21, 7/28, 9/9) HJV: 7 sentinels (7/28, 8/18, 8/25) WNV: 20 sentinels (7/21, 7/28, 8/4, 8/11, 8/18, 8/25, 9/2, 9/8)
St. Lucie	Chikungunya: 4 humans (July, August)
Suwannee	EEEV: 3 horses (8/5, 8/13, 8/15)
Volusia	EEEV: 3 horses (3/19, 5/19, 5/24); 3 sentinels (5/27, 6/9) HJV: 1 sentinel (8/18) WNV: 1 human (August); 1 horse (7/15); 14 sentinels (7/14, 7/21, 7/28, 8/4, 8/5, 8/12, 8/18, 8/25, 9/1)
Walton	EEEV: 34 sentinels (2/24, 5/12, 5/19, 5/27, 6/3, 6/9, 6/16, 6/23, 6/30, 7/7, 7/14, 7/15, 7/21, 7/28, 8/4, 8/11, 8/12, 8/18, 8/26) HJV: 15 sentinels (3/10, 3/24, 5/12, 5/19, 6/16, 6/30, 7/15, 8/4, 8/11, 8/18, 8/25, 9/2) WNV: 3 sentinels (3/10, 3/17, 6/9)
Washington	EEEV: 2 horses (7/15, 7/22)

Acknowledgements and Data Sources

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For more surveillance information, please see the DOH website at:

<http://www.floridahealth.gov/diseases-and-conditions/mosquito-borne-diseases/surveillance.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 by date of onset. Suspect cases are not included. 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.floridahealth.gov/diseases-and-conditions/disease-reporting-and-management/disease-reporting-and-surveillance/index.html>

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 Bureau of Public 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.