



Florida Arbovirus Surveillance Week 33: August 10 – 16, 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 August 10 - 16, 2014 the following arboviral activity was recorded in Florida.

WNV activity: One asymptomatic blood donor was identified as WNV positive in Santa Rosa County. No horses with WNV infection were reported this week. Six sentinel chickens tested positive for antibodies to WNV this week in Putnam, Seminole, St. Johns and Volusia Counties. In 2014, positive samples from 24 sentinel chickens, 1 horse, and 1 blood donor have been received from 11 counties.

EEEV activity: No human cases of EEE were reported this week. No horse with EEEV infection were reported this week. Nine sentinel chickens tested positive for antibodies to EEEV this week in Alachua, Citrus, Orange and Walton Counties. In 2014, positive samples from 139 sentinel chickens, 2 deer, and 39 horses have been received from 27 counties.

International Travel-Associated Dengue Fever Cases: Six cases of dengue fever were reported this week in persons that had international travel. In 2014, 47 travel-associated cases have been reported.

Dengue Fever Cases Acquired in Florida: No cases of locally acquired dengue fever were reported this week. In 2014, a total of one case of locally acquired dengue fever has been reported.

International Travel-Associated Chikungunya Fever Cases: Twenty-one cases of chikungunya fever were reported this week in persons that had international travel. In 2014, 169 travel-associated cases have been reported.*

Chikungunya Fever Cases Acquired in Florida: Two cases of locally acquired chikungunya fever were reported this week in Palm Beach County. In 2014, a total of six cases of locally acquired chikungunya fever have been reported.

Advisories/Alerts: Alachua, Levy, Lafayette, Marion, Miami-Dade, Pasco, St. Lucie, Santa Rosa, Volusia and Washington Counties are currently under a mosquito-borne illness advisory. Palm Beach County is 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://wwwnc.cdc.gov/travel/notices/watch/chikungunya-caribbean>

2014 Human Case Summary*

International Travel-Associated Dengue Fever Cases: Forty-seven 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: Bolivia, Brazil (2), Caribbean, Columbia, Costa Rica (2), Cuba (17), Cuba/Bahamas, Dominican Republic (8), Guadeloupe, Haiti, Honduras (2), Mexico, Puerto Rico (4), Sri Lanka, Trinidad (2), and Venezuela (2). Counties reporting cases were: Alachua, Brevard, Broward (5), Clay, Highlands, Hillsborough (3), Manatee (2), Marion, Miami-Dade (20), Orange (3), Osceola (4), Pinellas, Seminole, St. Lucie (2), and Volusia. Five of the cases were reported in non-Florida residents. In 2014, 24 of the 47 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	8
DENV-2	9
DENV-3	1
DENV-4	5
DEN-1&2	1
	24

Dengue Fever Cases Acquired in Florida: In 2014, a total of one case of locally acquired dengue fever has been reported. One case of dengue in a Miami-Dade resident with onset in June, 2014 has been reported as acquired in Miami-Dade County.

International Travel-Associated Chikungunya Fever Cases: One hundred and sixty-nine 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: Caribbean, Dominica, Dominican Republic (54), Guyana (2), Haiti (95), Martinique (2), Phillipines, and Puerto Rico (13). Counties reporting cases were: Alachua (2), Brevard (3), Broward (30), Charlotte (2), Clay (2), Duval (3), Escambia, Flagler, Hernando, Hillsborough (13), Indian River, Lake, Lee (3), Leon (2), Manatee (2), Miami-Dade (30), Okaloosa (2), Orange (18), Osceola (5), Palm Beach (28), Pasco (2), Pinellas (3), Polk (6), Santa Rosa, Sarasota, Seminole (3), St. Lucie (2), and Volusia. Fourteen of the cases were reported in non-Florida residents.*

Chikungunya Fever Cases Acquired in Florida: In 2014, a total of six cases of locally acquired chikungunya fever have been reported. One case of chikungunya fever in a Miami-Dade resident with onset in June, 2014 has been reported as acquired in Miami-Dade County. Four cases of chikungunya fever in Palm Beach residents with onset in July, 2014 have been reported as acquired in Palm Beach County. One case of chikungunya fever in a St. Lucie resident with onset in July, 2014 has been reported as acquired in St. Lucie County.

International Travel-Associated Malaria Cases: Thirty-seven cases of malaria with onset in 2014 have been reported. Countries of origin were: Angola (3), Cameroon, Dominican Republic, Equatorial New Guinea (2), Ghana, Ghana/Rwanda, Guatemala, Guyana, Haiti, Honduras, India (3), Ivory Coast (2), Kenya (2), Nigeria (4), Nigeria/Ethiopia, Peru, Sierra Leone (5), Sudan, Uganda (2), and multiple sub-Saharan African countries (3). Counties reporting cases were: Broward (6), Duval, Escambia, Hernando, Hillsborough (7), Leon, Miami-Dade (7), Okaloosa, Orange (4), Osceola (2), Palm Beach (2), Pasco, Pinellas (2), and Santa Rosa. Seven of the cases were reported in non-Florida residents.

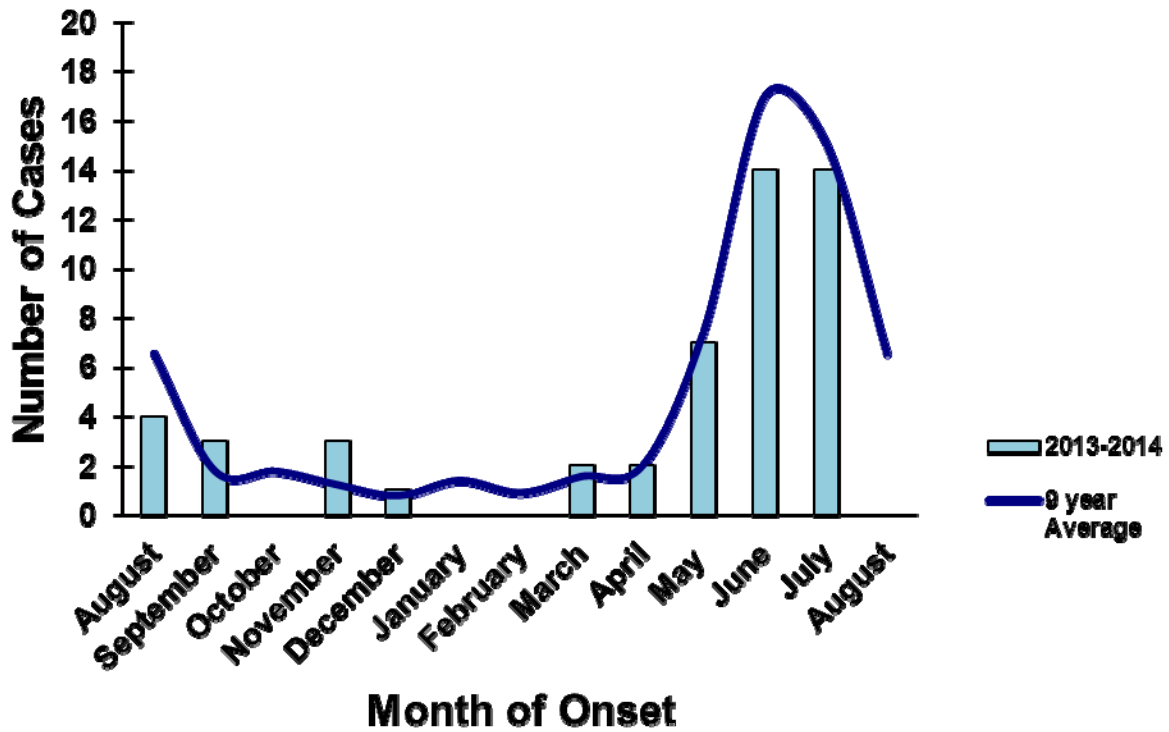
Twenty-six cases (70%) were diagnosed with *Plasmodium falciparum*. Seven cases (19%) were diagnosed with *Plasmodium vivax*. Two case (6%) was diagnosed with *Plasmodium malariae*. Two cases (5%) were diagnosed with *Plasmodium ovale*.

Veterinary Cases*

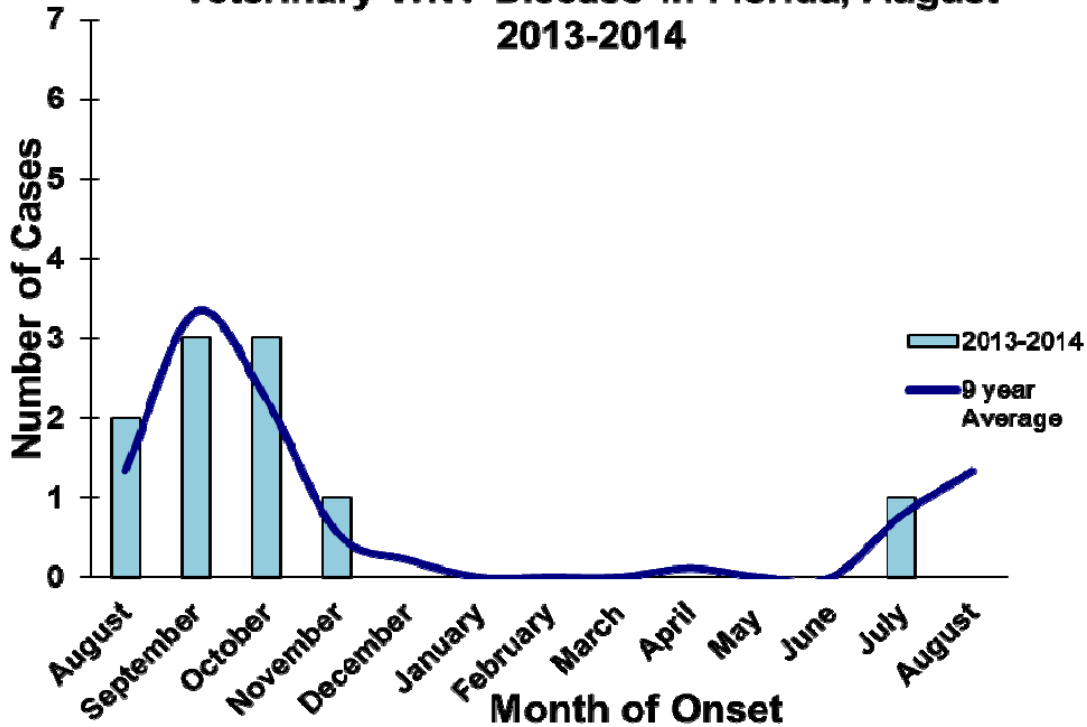
*Veterinary cases are reported by date of onset

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

Veterinary EEE in Florida, August 2013-2014



Veterinary WNV Disease in Florida, August 2013-2014



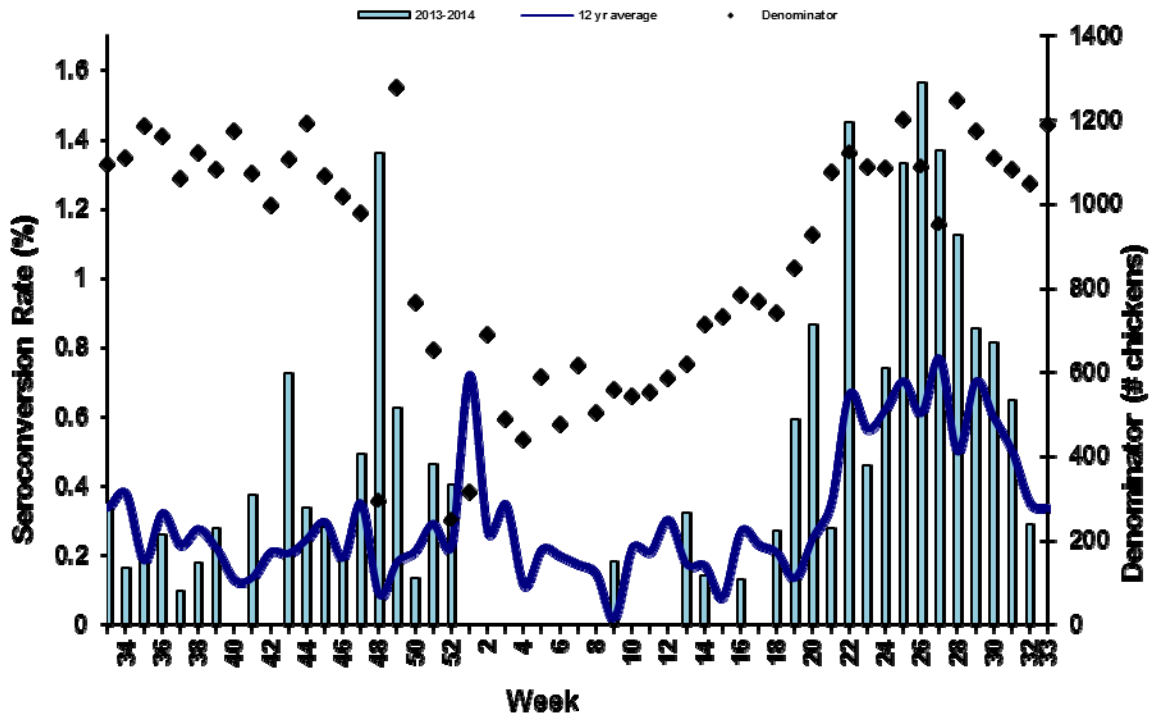
Sentinel Chickens

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.

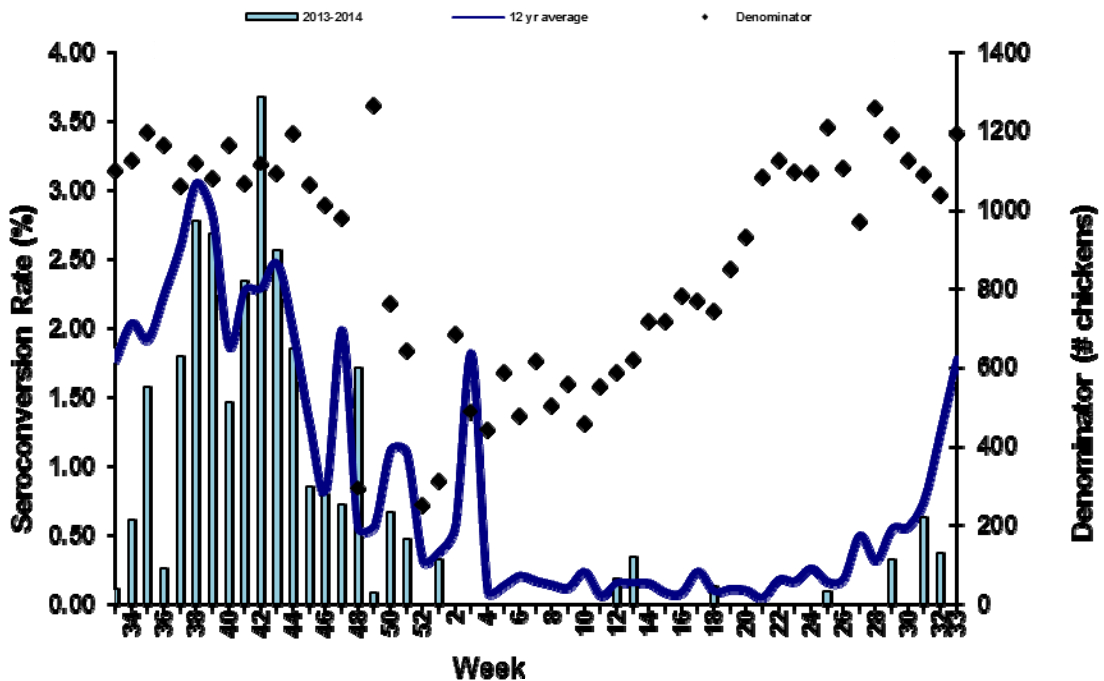
Nine sentinel chickens tested positive for antibodies to EEEV this week in Alachua, Citrus, Orange and Walton Counties. Six sentinel chickens tested positive for antibodies to WNV this week in Putnam, Seminole, St. Johns and Volusia Counties. Three sentinel chickens tested positive for antibodies to SLEV this week in Pinellas County. Four sentinel chickens tested positive for antibodies to HJV this week in Flagler, Pasco, St. Johns and Walton Counties.

County	Collection Date	Seroconversion Rates (%)						County Totals	
		Flavi	SLEV	WNV	Alpha	EEEV	HJV	Collection Week	YTD
Alachua	07/21/14				14.29	14.29		2 EEEV	10 EEEV
Citrus	08/04/14				1.41	1.41		1 EEEV	13 EEEV, 2 HJV, 1 WNV
Flagler	07/21/14				9.09		9.09	1 HJV	11 EEEV, 1 WNV, 1 HJV
Orange	07/31/14				1.74	1.74		2 EEEV	15 EEEV, 3 HJV
Pasco	07/22/14				2.94		2.94	1 HJV	4 EEEV, 1 HJV
Pinellas	08/04/14	6.00	6.00					3 SLEV	12 SLEV
Putnam	08/05/14	10.00		10.00				1 WNV	6 EEEV, 1 WNV
Seminole	07/30/14	8.33		8.33				2 WNV	
	08/05/14	4.17		4.17				1 WNV	3 WNV
St. Johns	07/28/14				1.85		1.85	1 HJV	
	08/04/14	2.04		2.04				1 WNV	19 EEEV, 4 WNV, 1 HJV
Volusia	08/04/14	2.78		2.78				1 WNV	3 EEEV, 7 WNV
Walton	07/15/14				3.77	2.83	0.94	3 EEEV, 1 HJV	
	07/28/14				2.78	2.78		3 EEEV	
	08/04/14				1.80	1.80		2 EEEV	28 EEEV, 7 HJV, 3 WNV

Sentinel Seroconversions to EEEV In Florida, 2013-2014



Sentinel Seroconversions to WNV In Florida, 2013-2014



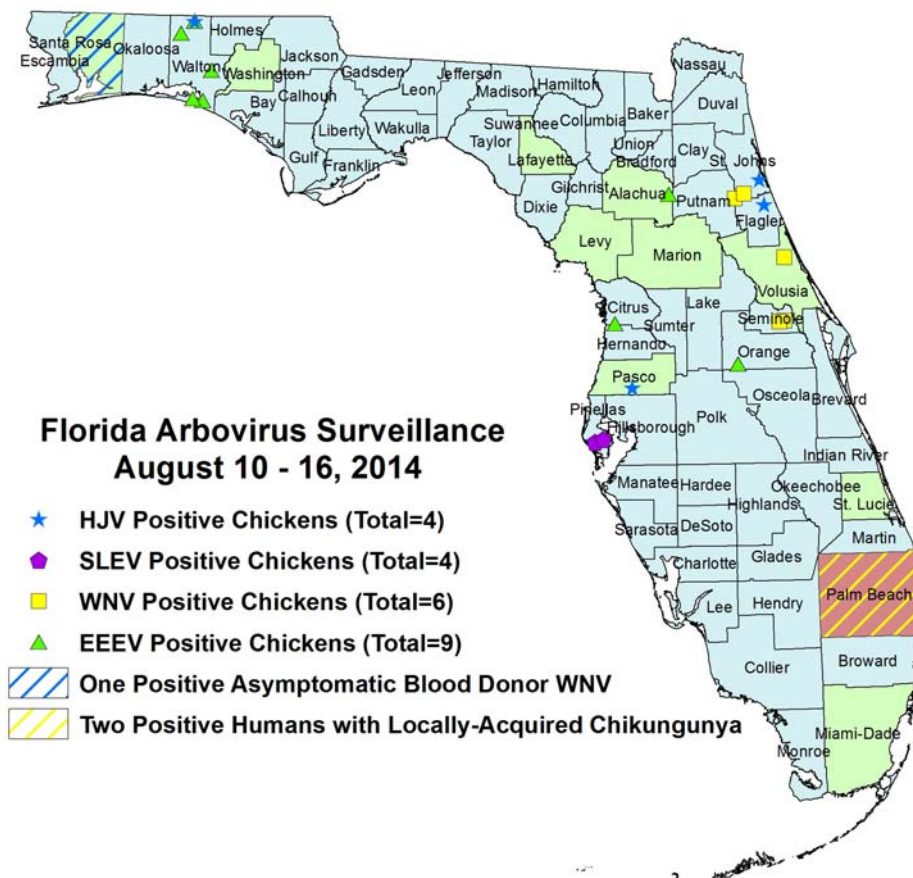
Dead Birds

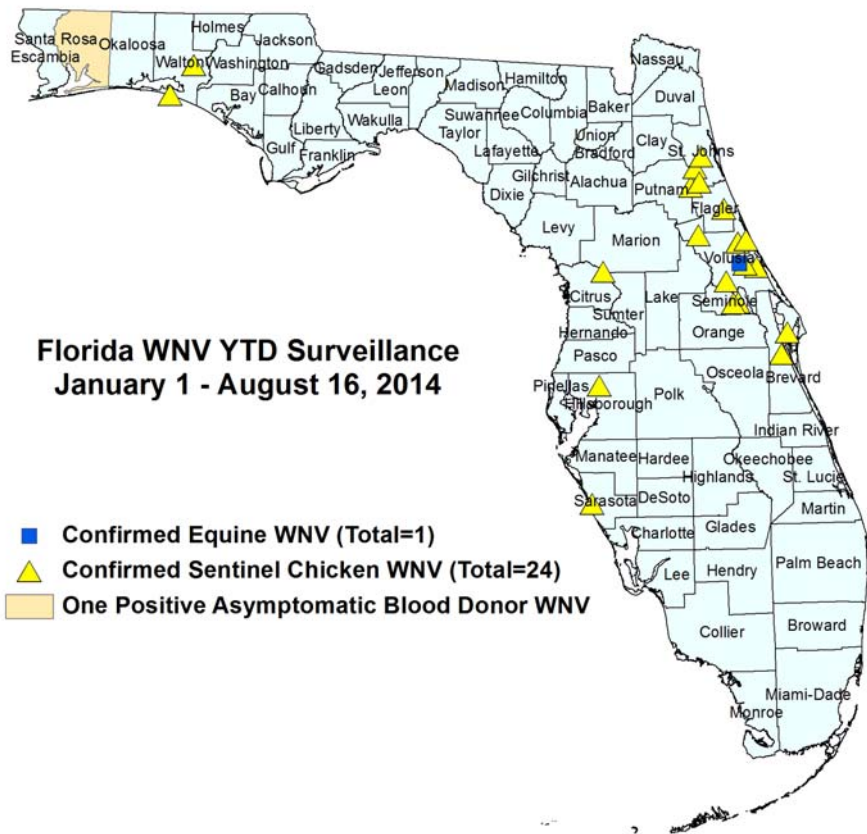
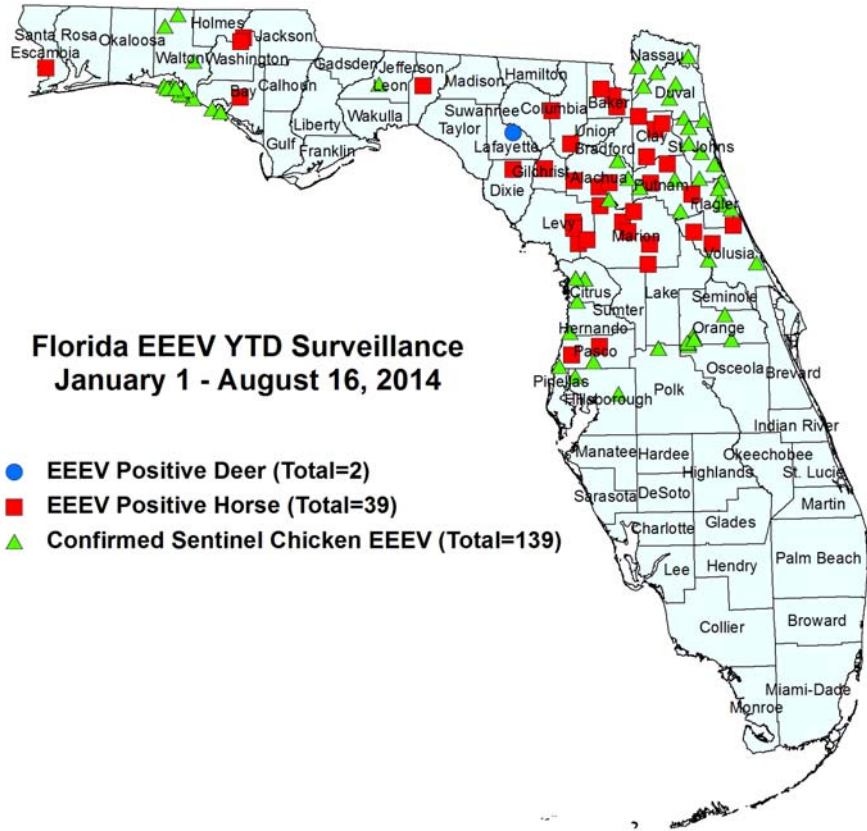
The Fish and Wildlife Conservation Commission (FWC) collects reports of dead birds, which can be an indication of arbovirus circulation in an area. This week, 5 reports representing 10 dead birds, including 1 dove were received from 4 counties.

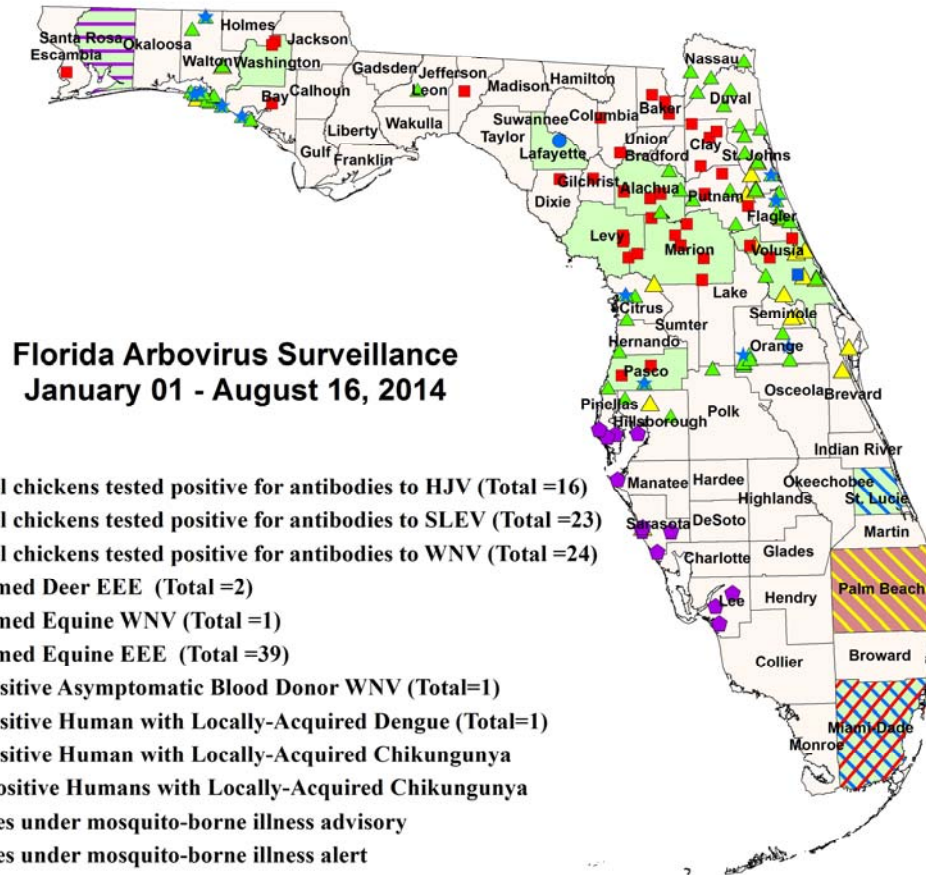
In 2014, 279 reports representing a total of 792 dead birds (26 crows, 3 jay, 57 raptors, and 28 doves) were received from 44 of Florida's 67 counties. Please note that FWC collects reports of birds that have died from a variety of causes, not only arboviruses. Dead birds should be reported to www.myfwc.com/bird/

County	Total Dead Birds	Crows	Jays	Raptors	Dove
Alachua	2	0	0	0	0
Bay	1	0	0	0	1
Manatee	6	0	0	0	0
Volusia	2	0	0	0	0

Maps







2014 Arbovirus Activity by County

County	Arbovirus Activity
Alachua	EEEV: 3 horses (6/17, 6/20); 10 sentinels (6/9, 6/30, 7/7, 7/14, 7/21, 7/28)
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)
Brevard	WNV: 2 sentinels (7/17)
Citrus	EEEV: 13 sentinels (3/24, 3/31, 5/12, 5/26, 6/2, 6/30, 7/7, 7/14, 7/21, 8/4) HJV: 2 sentinels (2/17, 2/24) WNV: 1 sentinel (1/2)
Clay	EEEV: 4 horses (5/2, 7/16, 7/19, 7/20)
Columbia	EEEV: 2 horses (6/25, 7/18)
Dixie	EEEV: 1 horse (5/22)
Duval	EEEV: 3 sentinels (6/16, 6/19, 6/30)
Escambia	EEEV: 1 horse (7/16)
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) WNV: 1 sentinel (7/14) HJV: 1 sentinel (7/21)
Gilchrist	EEEV: 2 horses (5/18, 6/23)
Hernando	EEEV: 2 sentinels (6/9, 7/9)
Hillsborough	EEEV: 2 sentinels (5/13, 7/1) SLEV: 2 sentinels (1/7, 2/18) WNV: 1 sentinel (3/18)
Jefferson	EEEV: 1 horse (7/7)
Lafayette	EEEV: 2 deer (6/24)

Lee	SLEV: 4 sentinels (1/13, 1/14, 2/11, 3/25)
Leon	EEEV: 1 sentinel (7/14)
Levy	EEEV: 4 horses (6/7, 6/21, 6/27, 6/28)
Manatee	SLEV: 1 sentinel (7/29)
Marion	EEEV: 7 horses (4/12, 5/31, 6/19, 6/26, 6/29, 7/4, 7/14)
Miami-Dade	Chikungunya: 1 human (June) Dengue: 1 human (June)
Nassau	EEEV: 11 sentinels (5/27, 5/31, 6/13, 6/20, 6/23, 6/27, 7/11, 7/19)
Orange	EEEV: 15 sentinels (5/29, 6/5, 6/16, 6/19, 6/23, 6/25, 6/26, 7/7, 7/10, 7/21, 7/31) HJV: 3 sentinels (1/2, 2/17)
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: 12 sentinels (7/21, 7/25, 7/28, 8/4)
Polk	EEEV: 5 sentinels (6/23, 6/30, 7/7)
Putnam	EEEV: 2 horses (6/17, 7/28); 6 sentinels (5/27, 6/17, 6/24, 7/8, 7/15, 7/22) WNV: 1 sentinel (8/5)
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: 19 sentinels (5/5, 5/12, 5/27, 6/16, 6/23, 6/30, 7/21, 7/28) WNV: 4 sentinels (7/28, 8/4) HJV: 1 sentinel (7/28)
St. Lucie	Chikungunya: 1 human (July)
Volusia	EEEV: 3 horses (3/19, 5/19, 5/24); 3 sentinels (5/27, 6/9) WNV: 1 horse (7/15); 7 sentinels (7/14, 7/21, 7/28, 8/4)
Walton	EEEV: 28 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) HJV: 7 sentinels (3/10, 3/24, 5/12, 5/19, 6/16, 6/30, 7/15) WNV: 3 sentinels (3/10, 3/17, 6/9)
Washington	EEEV: 2 horses (7/15, 7/22)

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.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.

• The total number of imported chikungunya cases was changed from 171 to 169 on 8/25/2014.