



## Florida Arbovirus Surveillance Week 30: July 20 – July 26, 2014

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), chikungunya virus (CHIKV) and California encephalitis group viruses (CEV). Malaria, a non-viral mosquito-borne disease is also included. During the period of July 20 – July 26, 2014 the following arboviral activity was recorded in Florida.

**WNV activity:** No human cases of WNV illness were reported this week. One horse with WNV infection was reported this week in Volusia County. Two sentinel chickens tested positive for antibodies to WNV this week in Flager and Volusia Counties. In 2014, a positive sample from eight sentinel chickens and 1 horse have been received from six counties.

**EEEV activity:** No human cases of EEE were reported this week. Five horses with EEEV infection were reported this week in Baker, Clay, Marion and Washington Counties. Thirteen sentinel chickens tested positive for antibodies to EEEV this week in Alachua, Citrus, Hernando, Leon, Nassau, Orange, Pasco, Putnam and Walton Counties. In 2014, positive samples from 113 sentinel chickens, 2 deers and 32 horses have been received from 26 counties.

**International Travel-Associated Dengue Fever Cases:** Six cases of dengue fever were reported this week in persons that had international travel. In 2014, 33 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-eight cases of chikungunya fever were reported this week in persons that had international travel. In 2014, 115 travel-associated cases have been reported.

**Chikungunya Fever Cases Acquired in Florida:** No cases of locally acquired chikungunya fever were reported this week. In 2014, a total of two cases of locally acquired chikungunya fever have been reported.

**Advisories/Alerts:** Alachua, Levy, Lafayette, Marion, Miami-Dade, Palm Beach, Pasco, and Volusia County are currently under a mosquito-borne illness advisory. 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 seven countries in the Caribbean related to the continued transmission of chikungunya.

<http://wwwnc.cdc.gov/travel/notices/watch/chikungunya-saint-martin>

## 2014 Human Case Summary\*

**International Travel-Associated Dengue Fever Cases:** Thirty-three 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, Costa Rica, Cuba (12), Dominican Republic (6), Guadeloupe, Honduras (2), Puerto Rico (3), Trinidad (2), and Venezuela (2). Counties reporting cases were: Alachua, Brevard, Broward (3), Clay, Hillsborough (3), Marion, Miami-Dade (14), Orange (2), Osceola (3), Pinellas, Seminole, St. Lucie, and Volusia. Four of the cases were reported in non-Florida residents. In 2014, 18 of the 33 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	6
DENV-2	7
DENV-3	1
DENV-4	3
DEN-1&2	1
	18

**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 fifteen 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: Dominica, Dominican Republic (32), Haiti (77), Martinique (2), and Puerto Rico (3). Counties reporting cases were: Alachua, Brevard (2), Broward (27), Charlotte, Clay (2), Duval (2), Flagler, Hernando, Hillsborough (5), Indian River, Lake, Lee (2), Leon (2), Miami-Dade (16), Okaloosa, Orange (11), Osceola (4), Palm Beach (20), Pasco (2), Pinellas (2), Polk (6), Santa Rosa, Sarasota, Seminole, St. Lucie, and Volusia. Ten of the cases were reported in non-Florida residents.

**Chikungunya Fever Cases Acquired in Florida:** In 2014, a total of two 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. One case of chikungunya fever in a Palm Beach resident with onset in July, 2014 has been reported as acquired in Palm Beach County.

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

Twenty cases (69%) were diagnosed with *Plasmodium falciparum*. Six cases (21%) were diagnosed with *Plasmodium vivax*. Two case (7%) was diagnosed with *Plasmodium malariae*. One case (3%) was diagnosed with *Plasmodium ovale*.

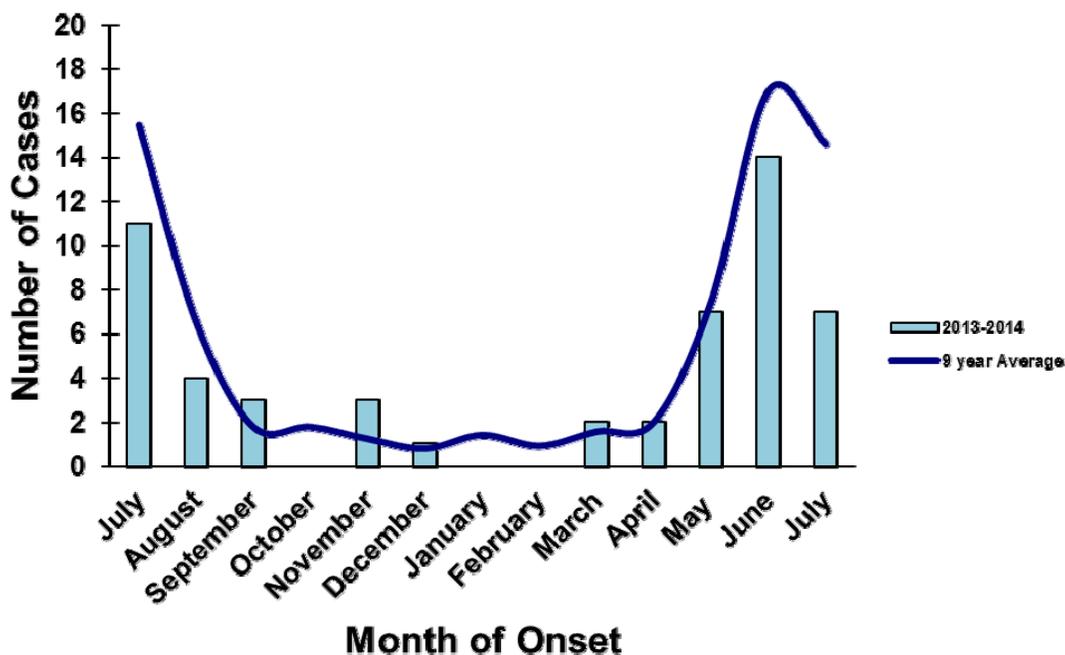
## Veterinary Cases\*

\*Veterinary cases are reported by date of onset

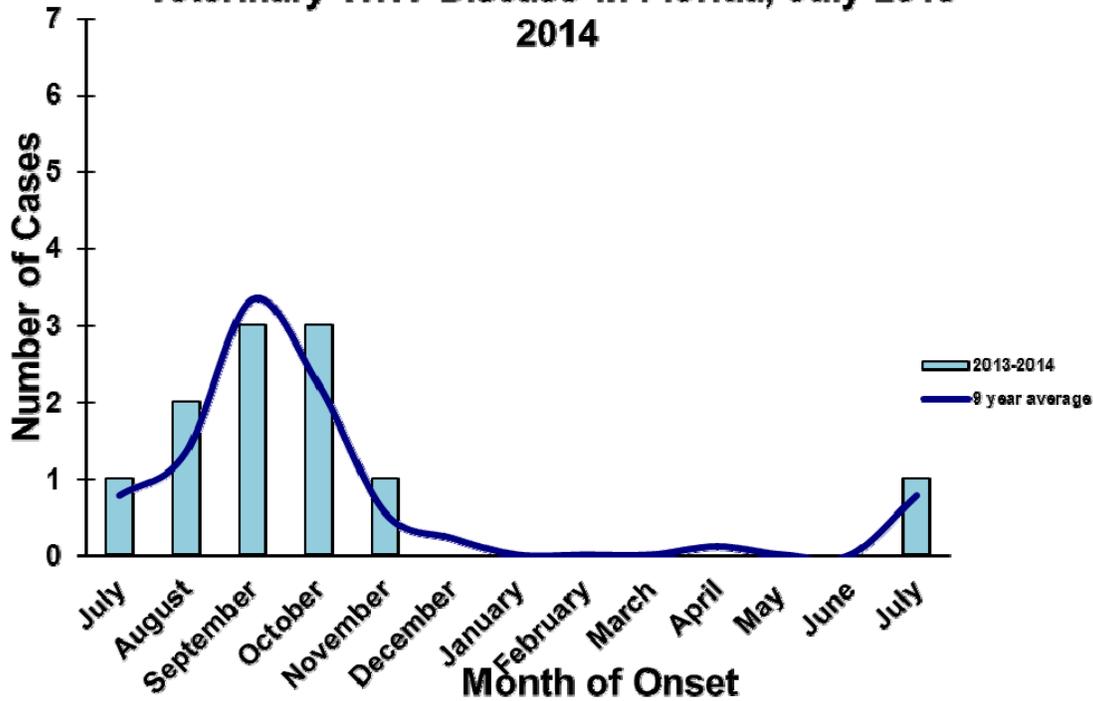
Five horses with EEEV infection were reported this week in Baker, Clay, Marion and Washington Counties. One horse with WNV infection was reported this week in Volusia County.

County	Onset Date	Species	Virus	Status	County YTD
Baker	7/10/2014	Equine	EEEV	Euthanized	3 EEEV
	7/16/2014	Equine	EEEV	Alive	
Clay	7/16/2014	Equine	EEEV	Euthanized	2 EEEV
Marion	7/4/2014	Equine	EEEV	Euthanized	6 EEEV
Volusia	7/15/2014	Equine	WNV	Alive	1 WNV, 3 EEEV
Washington	7/15/2014	Equine	EEEV	Euthanized	1 EEEV

### Veterinary EEE in Florida, July 2013-2014



## Veterinary WNV Disease in Florida, July 2013-2014



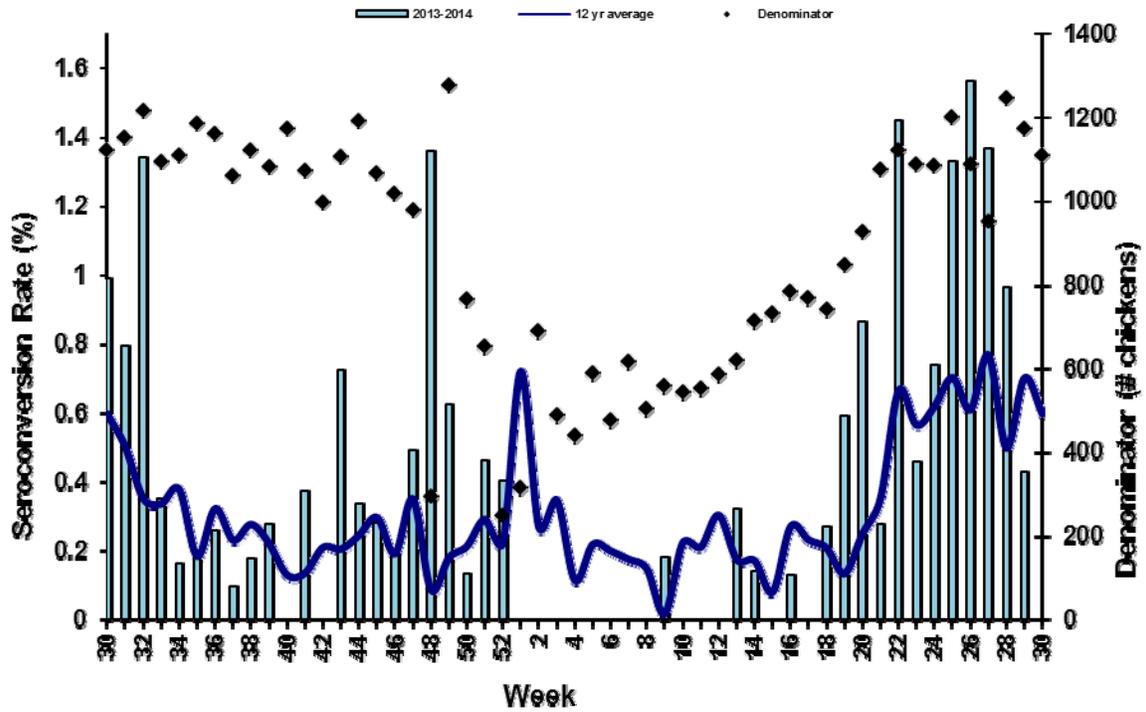
### Sentinel Chickens

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.

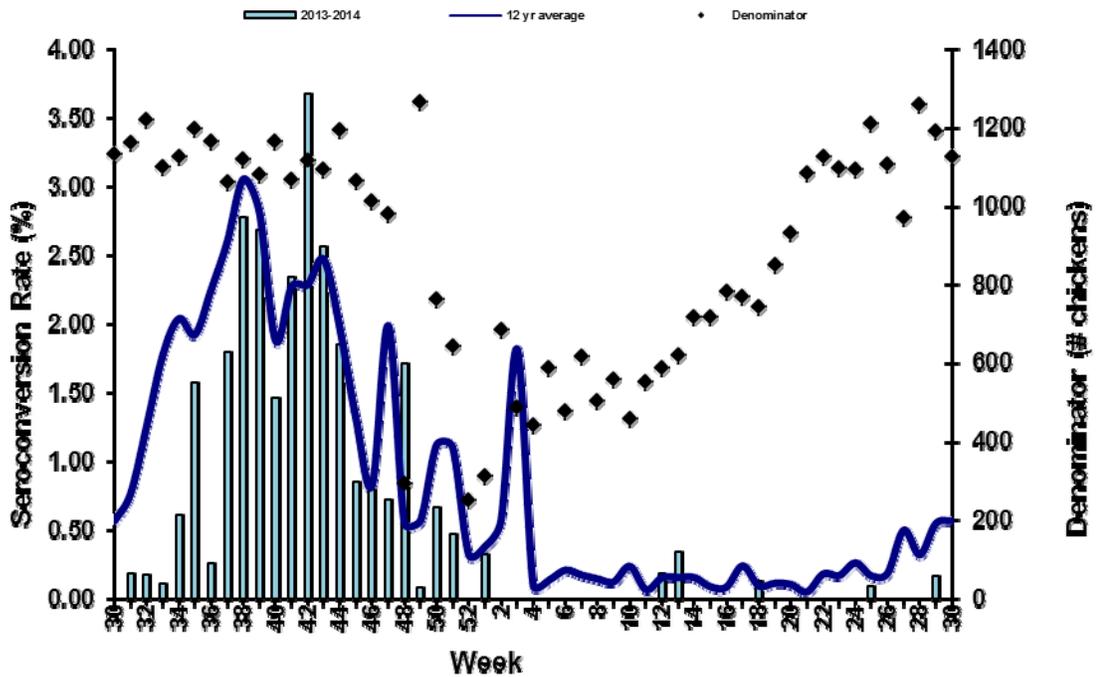
Thirteen sentinel chickens tested positive for antibodies to EEEV this week in Alachua, Citrus, Hernando, Leon, Nassau, Orange, Pasco, Putnam and Walton Counties. Two sentinel chickens tested positive for antibodies to WNV this week in Flagler and Volusia Counties.

County	Collection Date	Seroconversion Rates (%)						County Totals	
		Flavi	SLEV	WNV	Alpha	EEEV	HJV	Collection Week	YTD
Alachua	07/07/14				16.67	16.67		3 EEEV	6 EEEV
Citrus	07/14/14				1.45	1.45		1 EEEV	11 EEEV, 2 HJV, 1 WNV
Flagler	07/14/14	9.09		9.09				1 WNV	11 EEEV, 1 WNV
Hernando	07/09/14				5.00	5.00		1 EEEV	2 EEEV
Leon	07/14/14				2.38	2.38		1 EEEV	1 EEEV
Nassau	06/27/14				8.57	8.57		3 EEEV	
	07/11/14				2.94	2.94		1 EEEV	8 EEEV
Orange	07/10/14				2.54	2.54		3 EEEV	11 EEEV, 3 HJV
Pasco	07/15/14				5.56	5.56		2 EEEV	4 EEEV
Putnam	07/08/14				8.33	8.33		1 EEEV	
	07/15/14				11.11	11.11		1 EEEV	5 EEEV
Volusia	07/14/14	2.13		2.13				1 WNV	3 EEEV, 1 WNV
Walton	06/30/14				4.95	3.96		4 EEEV	19 EEEV, 5 HJV, 3 WNV

### Sentinel Seroconversions to EEEV In Florida, 2013-2014



### Sentinel Seroconversions to WNV In Florida, 2013-2014



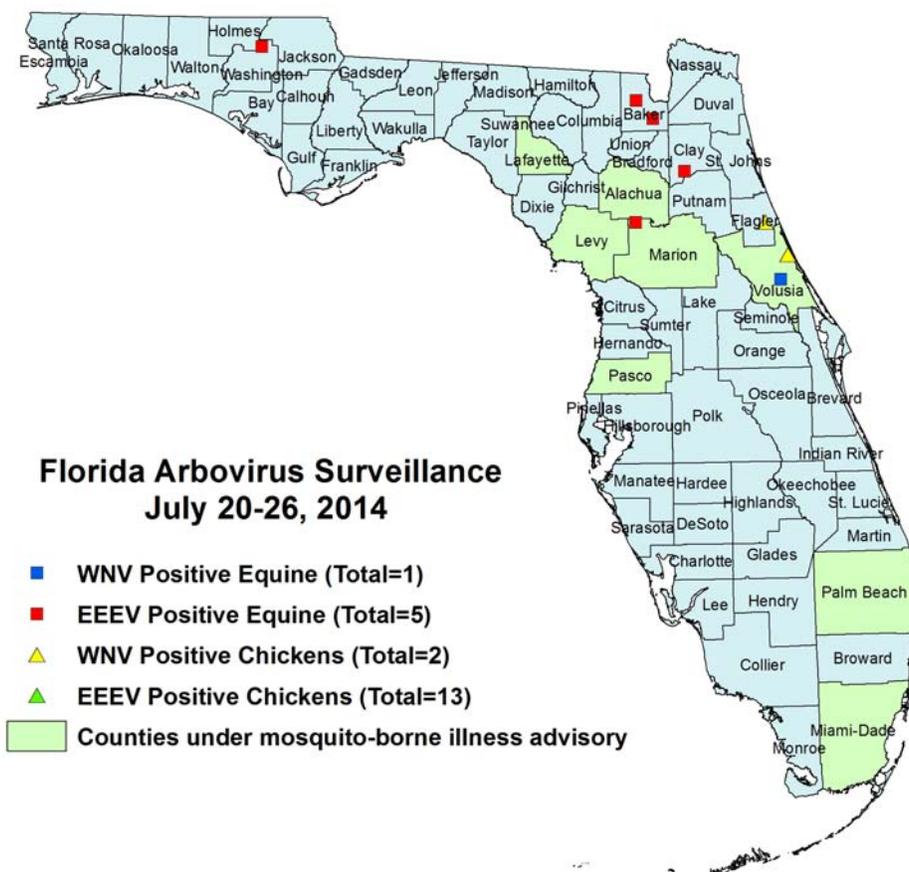
## Dead Birds

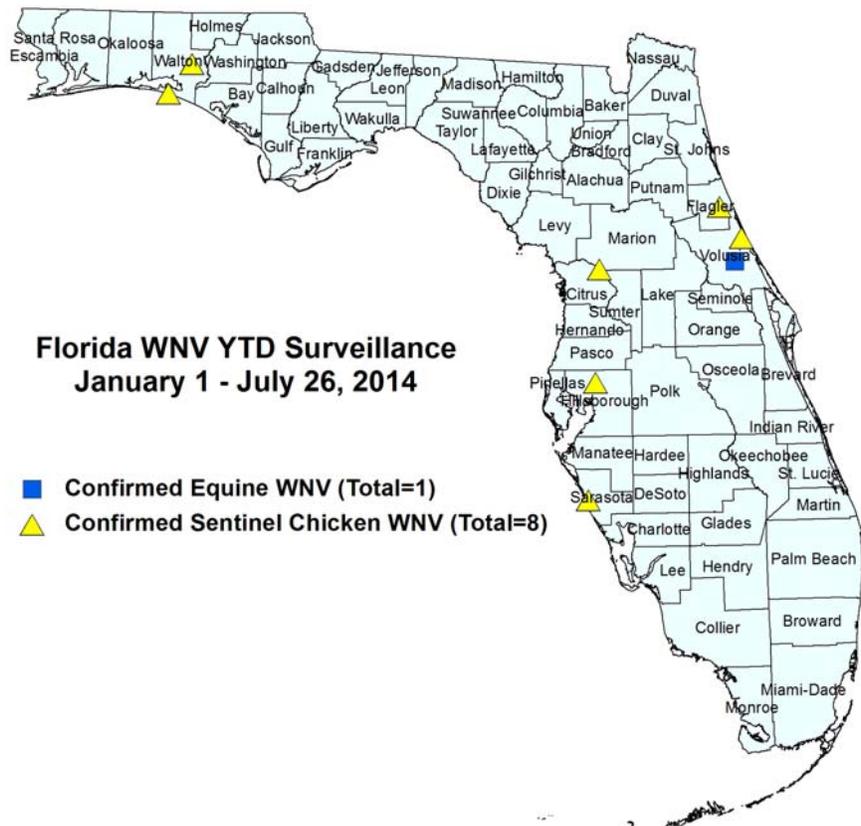
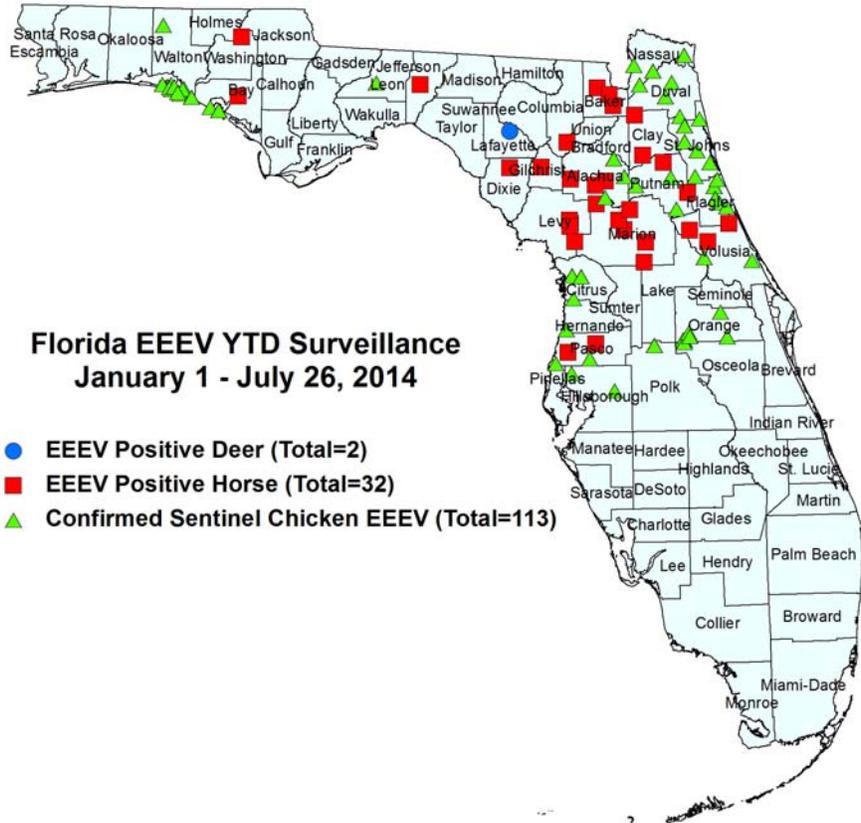
The Fish and Wildlife Conservation Commission (FWC) collects reports of dead birds, which can be an indication of arbovirus circulation in an area. This week, 4 reports representing 11 dead birds, including 1 raptor were received from 4 counties.

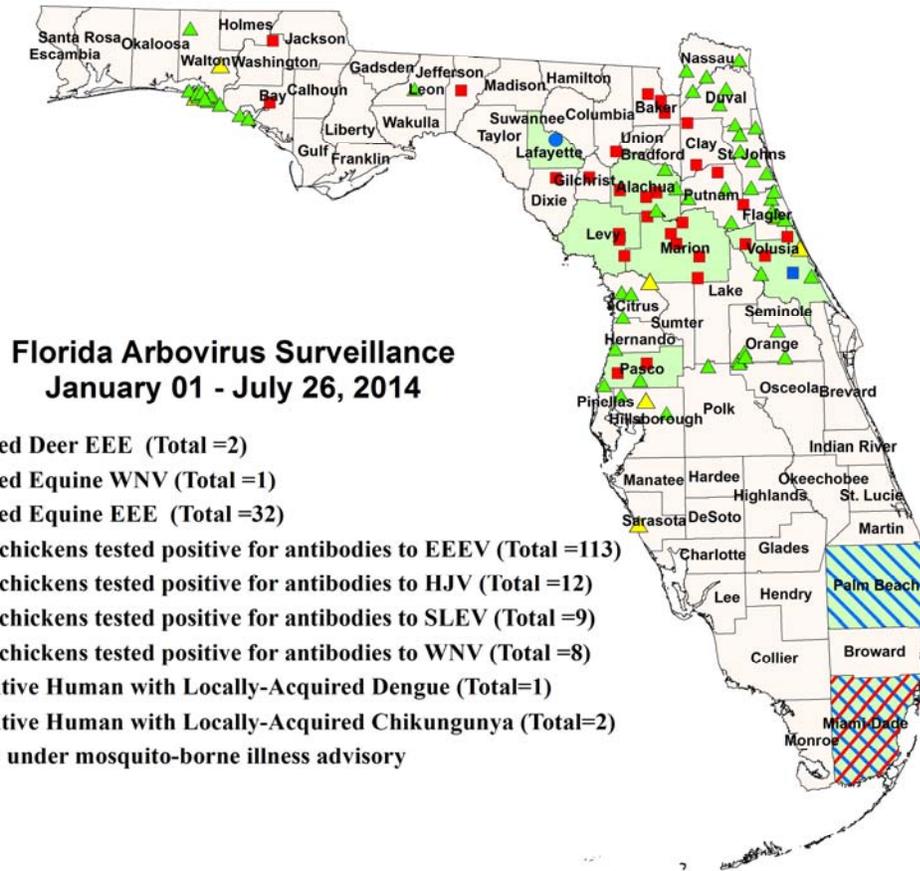
In 2014, 254 reports representing a total of 745 dead birds (25 crows, 3 jay, 48 raptors, and 26 doves) were received from 43 of Florida's 67 counties. Please note that FWC collects reports of birds that have died from a variety of causes, not only arboviruses. Dead birds should be reported to [www.myfwc.com/bird/](http://www.myfwc.com/bird/)

County	Total Dead Birds	Crows	Jays	Raptors	Dove
Bay	2	0	0	0	0
Broward	7	0	0	0	0
Pasco	1	0	0	0	0
Polk	1	0	0	1	0

## Maps







### 2014 Arbovirus Activity by County

County	Arbovirus Activity
Alachua	EEE: 3 horses (6/17, 6/20); 6 sentinels (6/9, 6/30, 7/7)
Baker	EEEV: 3 horses (3/13, 7/10, 7/16)
Bay	EEE: 1 horse (6/15); 6 sentinels (4/28, 5/6, 5/13, 5/22, 5/30) HJV: 1 sentinel (2/18)
Citrus	EEEV: 11 sentinels (3/24, 3/31, 5/12, 5/26, 6/2, 6/30, 7/7, 7/14) HJV: 2 sentinels (2/17, 2/24) WNV: 1 sentinel (1/2)
Clay	EEEV: 2 horses (5/2, 7/16)
Columbia	EEEV: 1 horse (6/25)
Dixie	EEEV: 1 horse (5/22)
Duval	EEEV: 3 sentinels (6/16, 6/19, 6/30)
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)
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)

<b>County</b>	<b>Arbovirus Activity</b>
<b>Alachua</b>	EEE: 3 horses (6/17, 6/20); 6 sentinels (6/9, 6/30, 7/7)
<b>Baker</b>	EEEV: 3 horses (3/13, 7/10, 7/16)
<b>Bay</b>	EEE: 1 horse (6/15); 6 sentinels (4/28, 5/6, 5/13, 5/22, 5/30) HJV: 1 sentinel (2/18)
<b>Levy</b>	EEEV: 4 horses (6/7, 6/21, 6/27, 6/28)
<b>Marion</b>	EEEV: 6 horses (4/12, 5/31, 6/19, 6/26, 6/29, 7/4)
<b>Miami-Dade</b>	Chikungunya: 1 human (June) Dengue: 1 human (June)
<b>Nassau</b>	EEEV: 8 sentinels (5/27, 5/31, 6/13, 6/20, 6/23, 6/27, 7/11)
<b>Orange</b>	EEEV: 11 sentinels (5/29, 6/5, 6/16, 6/19, 6/23, 6/25, 6/26, 7/7, 7/10) HJV: 3 sentinels (1/2, 2/17)
<b>Palm Beach</b>	Chikungunya: 1 human (July)
<b>Pasco</b>	EEEV: 2 horses (5/31, 6/25); 4 sentinels (5/27, 6/10, 7/15)
<b>Polk</b>	EEEV: 5 sentinels (6/23, 6/30, 7/7)
<b>Putnam</b>	EEEV: 1 horse (6/17); 5 sentinels (5/27, 6/17, 6/24, 7/8, 7/15)
<b>Sarasota</b>	SLEV: 3 sentinels (2/6, 2/14, 2/28) WNV: 1 sentinel (4/25)
<b>St. Johns</b>	EEEV: 16 sentinels (5/5, 5/12, 5/27, 6/16, 6/23, 6/30)
<b>Volusia</b>	EEEV: 3 horses (3/19, 5/19, 5/24); 3 sentinels (5/27, 6/9) WNV: 1 horse (7/15); 1 sentinel (7/14)
<b>Walton</b>	EEEV: 19 sentinels (2/24, 5/12, 5/19, 5/27, 6/3, 6/9, 6/16, 6/23, 6/30, 7/7) HJV: 5 sentinels (3/10, 3/24, 5/12, 5/19, 6/16) WNV: 3 sentinels (3/10, 3/17, 6/9)
<b>Washington</b>	EEEV: 1 horse (7/15)

### 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.