



Florida Arbovirus Surveillance Week 28: July 6 – July 12, 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 6 – July 12, 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. No sentinel chickens tested positive for antibodies to WNV this week. In 2014, a positive sample from six sentinel chickens has been received from four counties.

EEEV activity: No human cases of EEE were reported this week. Three horses with EEEV infection were reported this week in Levy and Marion Counties. Two deers with EEEV infection were reported this week in Lafayette County. Eight sentinel chickens tested positive for antibodies to EEEV this week in Citrus, Duval, Flagler, Nassau, Polk, St. Johns, and Walton Counties. In 2014, positive samples from 85 sentinel chickens, 2 deers and 24 horses have been received from 23 counties.

International Travel-Associated Dengue Fever Cases: Two cases of dengue fever were reported this week in persons that had international travel: Orange and Volusia Counties. In 2014, 26 travel-associated cases have been reported.

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

International Travel-Associated Chikungunya Fever Cases: Fifteen cases of chikungunya fever were reported this week in persons that had international travel: Alachua, Broward (5), Miami-Dade, Okaloosa, Palm Beach (3), and Polk (4) Counties. In 2014, 81 travel-associated cases have been reported.

Advisories/Alerts: Alachua, Levy, Marion, Miami-Dade, 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: Twenty-six 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, Cuba (8), Dominican Republic (4), Guadeloupe, Honduras (2), Puerto Rico (3), Trinidad (2), and Venezuela (2). Counties reporting cases were: Alachua, Broward (2), Clay, Hillsborough (3), Marion, Miami-Dade (10), Orange (2), Osceola (3), Pinellas, Seminole, and Volusia. Four of the cases were reported in non-Florida residents. In 2014, 18 of the 26 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: Eighty-one 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 (15), Haiti (61), Martinique (2), and Puerto Rico. Counties reporting cases were: Alachua, Brevard, Broward (20), Charlotte, Clay (2), Duval (2), Flagler, Hillsborough (3), Lake, Lee, Leon (2), Miami-Dade (10), Okaloosa, Orange (6), Osceola (4), Palm Beach (13), Pasco, Pinellas, Polk (5), Santa Rosa, Sarasota, Seminole, St. Lucie, and Volusia. Eight of the cases were reported in non-Florida residents.

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

Eighteen cases (72%) were diagnosed with *Plasmodium falciparum*. Five cases (20%) were diagnosed with *Plasmodium vivax*. One case (4%) was diagnosed with *Plasmodium malariae*. One case (4%) was diagnosed with *Plasmodium ovale*.

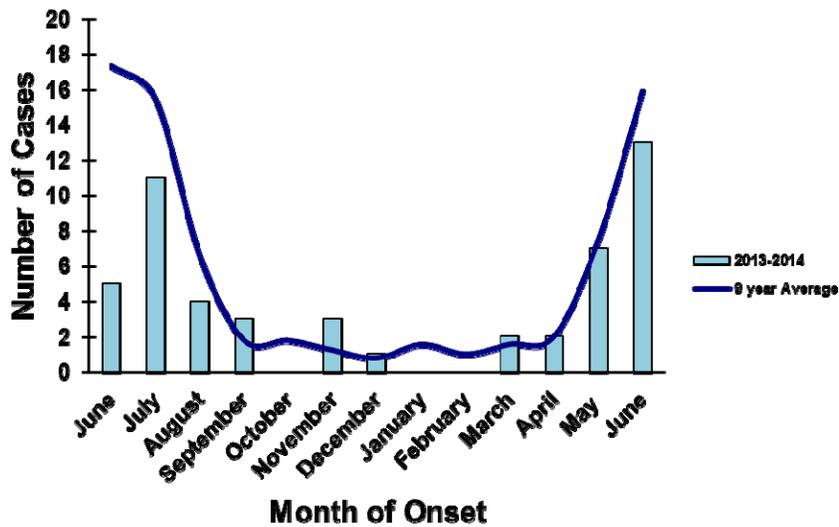
Veterinary Cases*

*Veterinary cases are reported by date of onset

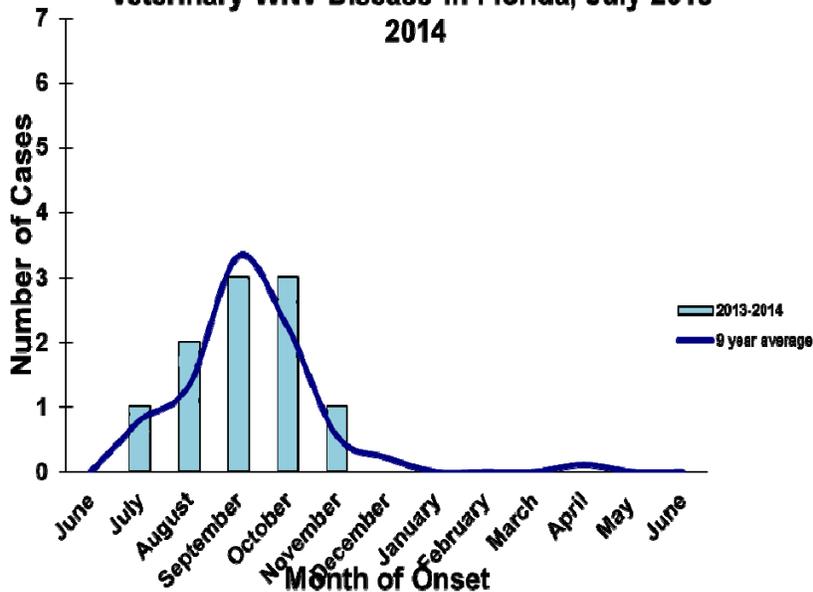
Three horses with EEEV infection were reported this week in Levy and Marion Counties.

County	Onset Date	Species	Virus	Status	County YTD
Levy	6/27/2014	Equine	EEEV	Euthanized	
Levy	6/28/2014	Equine	EEEV	Euthanized	4 EEEV
Marion	6/29/2014	Equine	EEEV	Dead	4 EEEV

Veterinary EEE in Florida, July 2013-2014



Veterinary WNV Disease in Florida, July 2013-2014



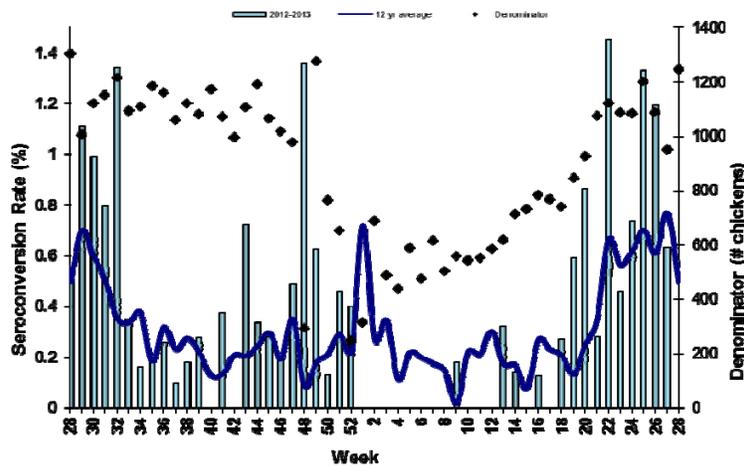
Sentinel Chickens

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.

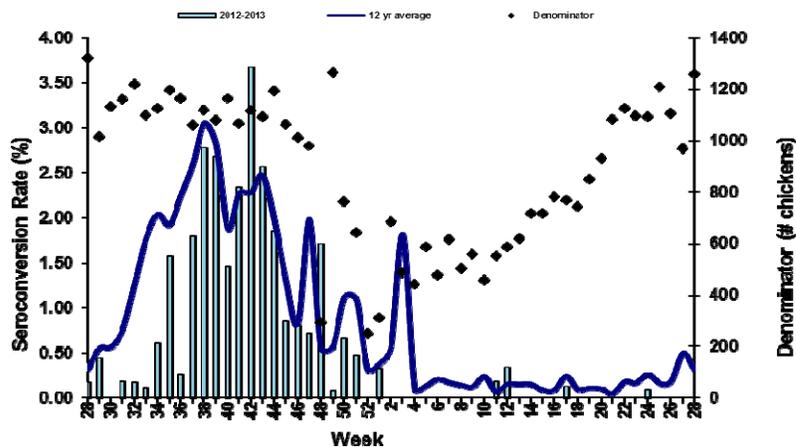
Eight sentinel chickens tested positive for antibodies to EEEV this week in Citrus, Duval, Flagler, Nassau, Polk, St. Johns, and Walton Counties.

County	Collection Date	Seroconversion Rates (%)						County Totals	
		Flavi	SLEV	WNV	Alpha	EEEV	HJV	Collection Week	YTD
Citrus	06/30/14				1.39	1.39		1 EEEV	8 EEEV, 2 HJV, 1 WNV
Duval	06/19/14				7.14	7.14		2 EEEV	2 EEEV
Flagler	06/30/14				9.09	9.09		1 EEEV	9 EEEV
Nassau	06/23/14				2.86	2.86		1 EEEV	5 EEEV
Polk	06/30/14				25.00	25.00		2 EEEV	4 EEEV
St. Johns	06/30/14				1.96	1.96		1 EEEV	16 EEEV
Walton	06/30/14				0.99	0.99		1 EEEV	17 EEEV, 5 HJV, 3 WNV

Sentinel Seroconversions to EEEV in Florida, 2013-2014



Sentinel Seroconversions to WNV in Florida, 2013-2014



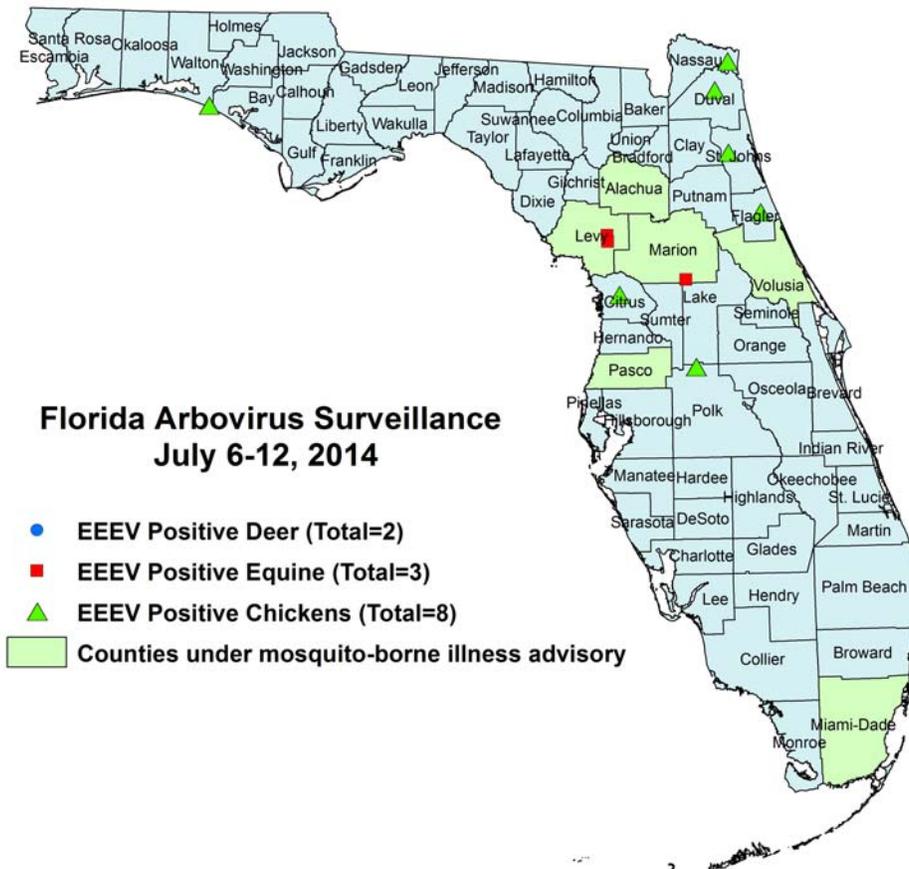
Dead Birds

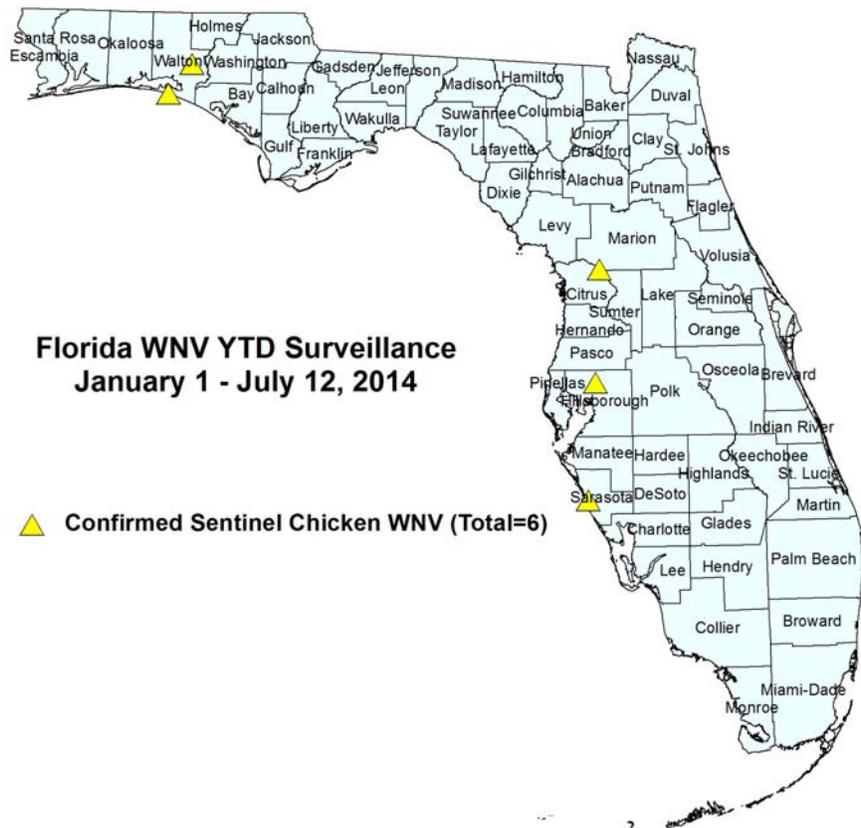
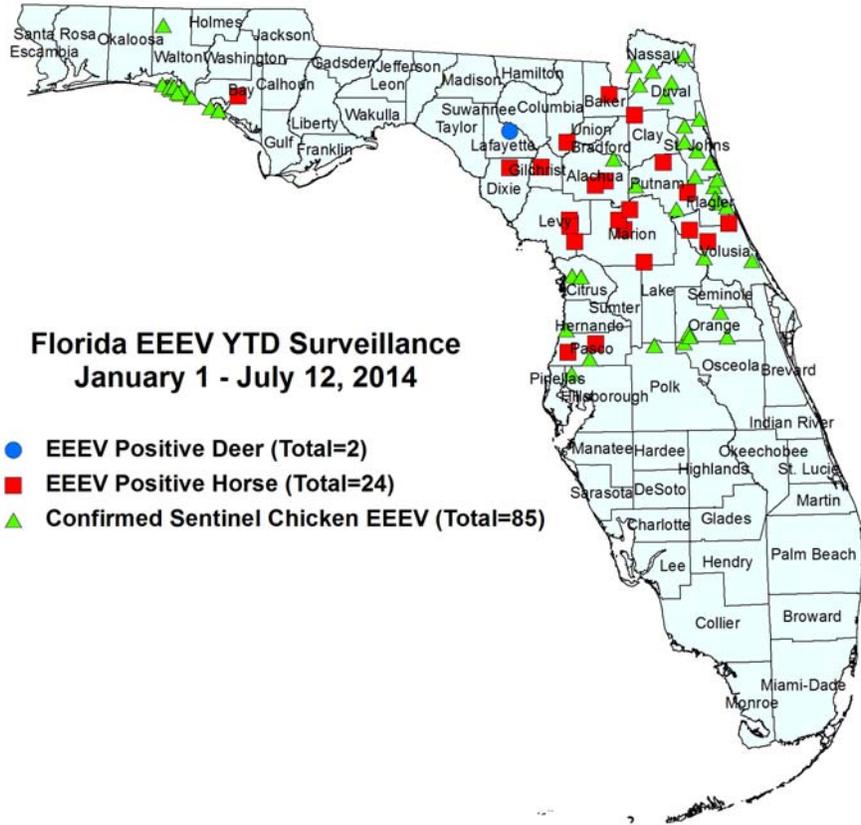
The Fish and Wildlife Conservation Commission (FWC) collects reports of dead birds, which can be an indication of arbovirus circulation in an area. This week, 11 reports representing 20 dead birds, including 3 crows, 3 raptors and 4 doves were received from 9 counties.

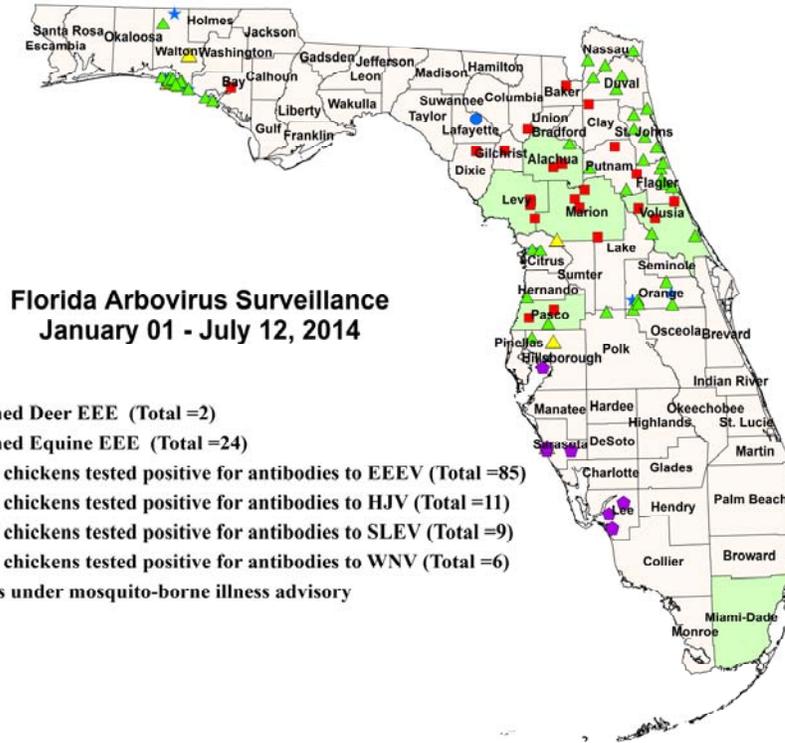
In 2014, 245 reports representing a total of 727 dead birds (25 crows, 1 jay, 47 raptors, and 26 doves) were received from 43 of Florida's 67 counties. Please note that FWC collects reports of birds that have died from a variety of causes, not only arboviruses. Dead birds should be reported to www.myfwc.com/bird/

County	Total Dead Birds	Crows	Jays	Raptors	Dove
Bay	3	0	0	0	0
Clay	4	0	0	0	0
Lake	4	0	0	0	4
Lee	2	0	0	0	0
Leon	1	0	0	1	0
Marion	3	3	0	0	0
Monroe	1	0	0	0	0
Palm Beach	1	0	0	1	0
Pinellas	1	0	0	1	0

Maps







2014 Arbovirus Activity by County

County	Arbovirus Activity
Alachua	EEE: 2 horses (6/17, 6/20); 2 sentinels (6/9)
Bay	EEE: 1 horse (6/15); 6 sentinels (4/28, 5/6, 5/13, 5/22, 5/30) HJV: 1 sentinel (2/18)
Baker	EEEV: 1 horse (3/13)
Citrus	EEEV: 8 sentinels (3/24, 3/31, 5/12, 5/26, 6/2, 6/30) HJV: 2 sentinels (2/17, 2/24) WNV: 1 sentinel (1/2)
Clay	EEEV: 1 horse (5/2)
Columbia	EEEV: 1 horse (6/25)
Dixie	EEEV: 1 horse (5/22)
Duval	EEEV: 2 sentinels (6/16, 6/19)
Flagler	EEEV: 1 horse (4/21); 9 sentinels (4/14, 4/28, 5/5, 5/27, 6/2, 6/16, 6/23, 6/30)
Gilchrist	EEEV: 2 horses (5/18, 6/23)
Hernando	EEEV: 1 sentinel (6/9)
Hillsborough	EEEV: 1 sentinel (5/13) SLEV: 2 sentinels (1/7, 2/18) WNV: 1 sentinel (3/18)
Lafayette	EEEV: 2 deer (6/24)
Lee	SLEV: 4 sentinels (1/13, 1/14, 2/11, 3/25)
Levy	EEEV: 2 horses (6/7, 6/21)
Marion	EEEV: 3 horses (4/12, 5/31, 6/19)
Miami-Dade	Dengue: 1 human (June)
Nassau	EEEV: 5 sentinels (5/27, 5/31, 6/13, 6/20, 6/23)
Orange	EEEV: 6 sentinels (5/29, 6/5, 6/16, 6/19, 6/23) HJV: 3 sentinels (1/2, 2/17)

Pasco	EEEV: 2 horses (5/31, 6/25); 2 sentinels (5/27, 6/10)
Polk	EEEV: 4 sentinels (6/23, 6/30)
Putnam	EEEV: 1 horse (6/17); 3 sentinels (5/27, 6/17, 6/24)
Sarasota	SLEV: 3 sentinels (2/6, 2/14, 2/28) WNV: 1 sentinel (4/25)
St. Johns	EEEV: 16 sentinels (5/5, 5/12, 5/27, 6/16, 6/23, 6/30)
Volusia	EEEV: 3 horses (3/19, 5/19, 5/24); 3 sentinels (5/27, 6/9)
Walton	EEEV: 17 sentinels (2/24, 5/12, 5/19, 5/27, 6/3, 6/9, 6/16, 6/23, 6/30) HJV: 5 sentinels (3/10, 3/24, 5/12, 5/19, 6/16) WNV: 3 sentinels (3/10, 3/17, 6/9)

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.