



Florida Arbovirus Surveillance Week 37: September 12-18, 2010

Arbovirus surveillance in Florida includes endemic mosquito-borne viruses 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 September 12-18, 2010, the following arboviral activity was recorded in Florida:

DENV activity: Five cases of dengue associated with Key West were reported this week. In 2010, there have been 44 locally-acquired cases in Key West and one in Broward.

EEEV activity: Two EEEV-confirmed positive horses were reported in De Soto and Gulf counties. Seven sentinel chickens in Orange and Walton counties tested positive for antibodies to EEEV. In 2010, positive samples from four humans, 91 equines, 149 sentinel chickens, 30 live wild birds, and six mosquito pools have been received from 45 of Florida's 67 counties.

WNV activity: Three human cases of WNV were reported in Collier (2) and Broward counties this week. Forty-nine sentinel chickens in Alachua, Brevard, Hendry, Indian River, Lee, Manatee, Martin, Nassau, Orange, Palm Beach, Seminole, Volusia, and Walton counties tested positive for antibodies to WNV. In 2010, positive samples from six humans, seven equines, 177 sentinel chickens, and one live wild bird (flavivirus positive) have been received from 23 counties.

HJV activity: Three sentinel chickens in Leon, Nassau, and Orange counties tested positive for antibodies to HJV. In 2010, positive samples from 60 sentinel chickens have been received from 13 counties.

Advisories/Alerts: Collier County issued a mosquito-borne illness alert this week in response to two human cases of WNV. Monroe, Hillsborough, and Orange counties are also under mosquito-borne illness alerts and Walton, Volusia, Clay, Osceola, Miami-Dade, Collier, Glades, Polk, Lake, Jackson, Washington, Jefferson, Wakulla, Leon, Madison, Broward, Marion, Putnam, and Flagler counties are under mosquito-borne illness advisories.

Year to Date Human Case Summary

Eastern Equine Encephalitis Acquired in Florida: Four human cases of EEE have been reported in 2010 in Hillsborough (2), Wakulla, and Leon counties with onset dates in June and July (3).

West Nile Virus Infection Acquired in Florida: Six human cases of WNV have been reported in 2010 in Osceola, Orange (2), Collier (2), and Broward counties with onset in July (2) and August (4).

Dengue Acquired in Florida: In 2010, one case of dengue has been reported as acquired in Broward County and 44 cases of dengue have been reported as acquired in Key West (Monroe County). Of the Key West cases, 35 are Key West residents, eight are residents of other

Florida counties, and one resides out of state. Onset dates ranged from March 17 to September 6, 2010.

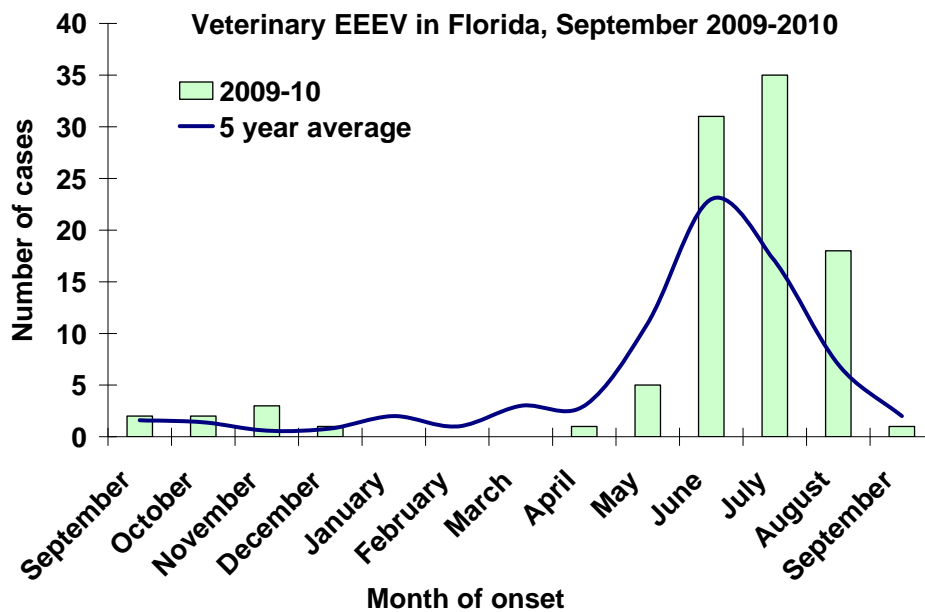
Imported Dengue: Ninety-eight cases of dengue with onset in 2010 have been reported in individuals with travel history to a dengue endemic country in the two weeks prior to onset. Countries of origin were: Brazil, Colombia (8), Costa Rica (4), Dominican Republic (12), Ecuador, El Salvador, Grenada, Guatemala (2), Haiti (5), Honduras (6), Jamaica (4), Martinique, Nicaragua (4), Philippines, Puerto Rico (32), St. Thomas, Venezuela (12), Malaysia/Dubai/Bangladesh, and Panama/Venezuela (slash indicates travel to more than one country). Counties reporting cases were Alachua (2), Broward (15), Collier (2), Duval (2), Escambia, Flagler, Hendry, Hillsborough (7), Lake, Lee, Marion, Miami-Dade (32), Monroe, Orange (9), Osceola (4), Palm Beach (8), Pasco, Pinellas, Polk, Seminole (3), St. Lucie (2), and Volusia (2).

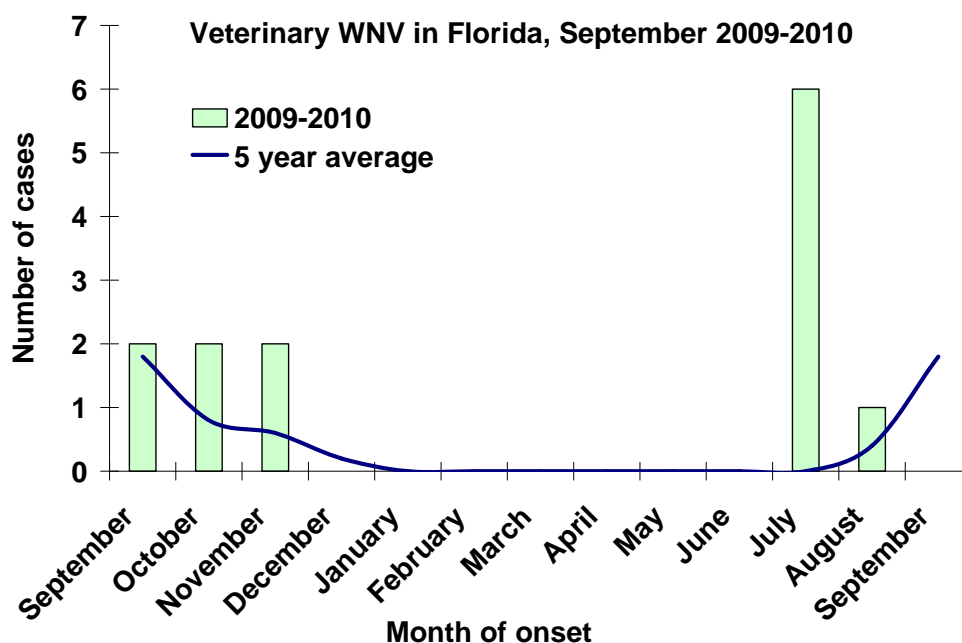
Imported Malaria: Eighty-four imported cases of malaria with onset in 2010 have been reported. Countries of origin were: Angola, Dominican Republic, Ghana (4), Guyana, Haiti (50), Honduras (3), India (6), Ivory Coast, Malawi (2), Nigeria (7), Philippines, South Africa, Togo, Uganda, West Africa, Zambia/South Africa, Africa, and unknown. Counties reporting cases were: Brevard (2), Broward (12), Charlotte, Citrus, Collier (4), Duval (4), Escambia (2), Hillsborough (4), Leon, Miami-Dade (16), Manatee (2), Orange (15), Osceola (3), Palm Beach (11), Pinellas, Polk, Seminole, St. Lucie, Volusia, and Wakulla.

Veterinary Cases

Two horses in De Soto and Gulf counties tested positive for EEEV. In 2010, seven WNV positive horses and 91 EEEV positive horses have been reported.

County	Onset Date	Species	Virus	Status	County YTD
Gulf	09/05/2010	Equine	EEE	Euthanized	1 EEE
De Soto	08/23/2010	Equine	EEE	Euthanized	1 EEE



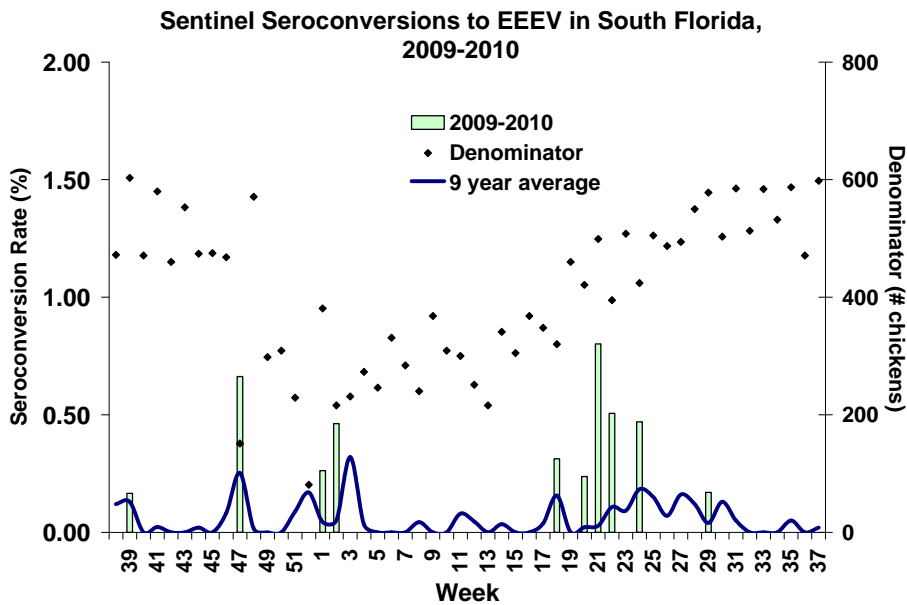
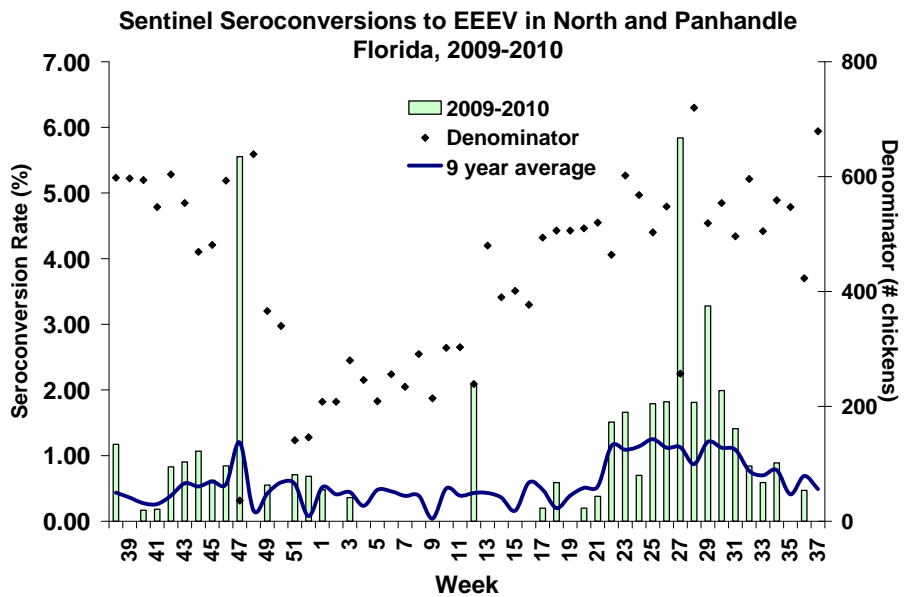


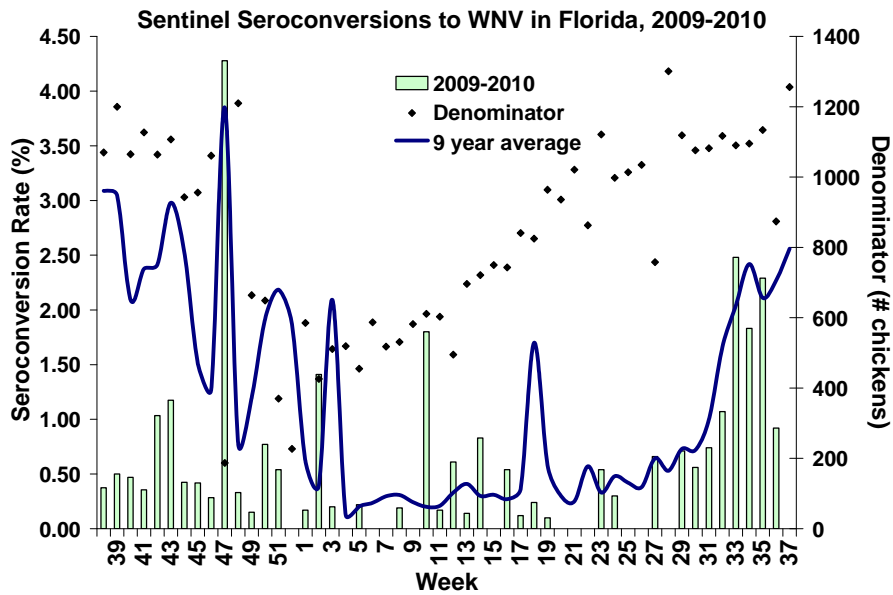
Sentinel Chickens

There were three seroconversions to EEE in sentinel chicken from Orange and Walton counties, 49 to WNV in Alachua, Brevard, Hendry, Indian River, Lee, Manatee, Martin, Nassau, Orange, Palm Beach, Seminole, Volusia, and Walton counties, and three to HJV in Leon, Nassau, and Orange counties this week. Seroconversion rates are calculated by week and include previously reported results.

County	Collection Date	Seroconversion Rates (%)			County Totals	
		WNV	EEEV	HJV	Week	YTD
Palm Beach	09/07/2010	14.3			3 WNV	19 WNV
	08/23/2010	19.4			6 WNV	
	08/17/2010	17.4			4 WNV	
Volusia	09/07/2010	8.7			2 WNV	8 WNV, 16 EEE, 2 HJV
	08/16/2010	4.8			1 WNV	
	08/09/2010	18.2	4.5		4 WNV, 1 EEE	
Manatee	09/07/2010	2.9			2 WNV	3 WNV
Walton (South)	09/07/2010		1.8		1 EEE	3 WNV, 18 EEE, 3 HJV
	07/12/2010		9.5		4 EEE	
Orange	09/07/2010		1.0		1 EEE	23 WNV, 22 EEE, 22 HJV
	8/23, 8/26/10	7.6			8 WNV	
	8/16, 8/19/10	2.0		3.7	2 WNV, 4 HJV	
Nassau	09/06/2010	2.9			1 WNV	1 WNV, 5 EEE, 8 HJV
	08/23/2010			2.8	1 HJV	
Indian River	09/02/2010	10.4			5 WNV	8 WNV
	08/19/2010	2.1			1 WNV	
	08/12/2010	4.2			1 WNV	
Seminole	09/02/2010	4.3			1 WNV	1 WNV, 1 EEE, 1 HJV
Brevard	9/01, 9/03/10	10.2			6 WNV	16 WNV, 1 EEE
	8/18, 8/20/10	1.6			5 WNV	

County	Collection Date	Seroconversion Rates (%)			County Totals	
		WNV	EEEV	HJV	Week	YTD
Hendry	08/31/2010	50.0			4 WNV	5 WNV
	08/18/2010	14.3			1 WNV	
Leon	08/23/2010			2.4	1 HJV	6 EEE, 2 HJV
Alachua	08/16/2010	7.7			1 WNV	2 WNV, 3 EEE
Lee	08/16/2010	6.3			5 WNV	15 WNV
	08/09/2010	13.6			3 WNV	
Martin	08/13/2010	4.8			1 WNV	2 WNV, 2 EEE
Walton (North)	8/23, 8/27/10		16.1		5 EEE	46 WNV, 27 EEE, 5 HJV
	8/19, 8/20/10	11.4			4 WNV	
	08/12/2010	2.9			1 WNV	

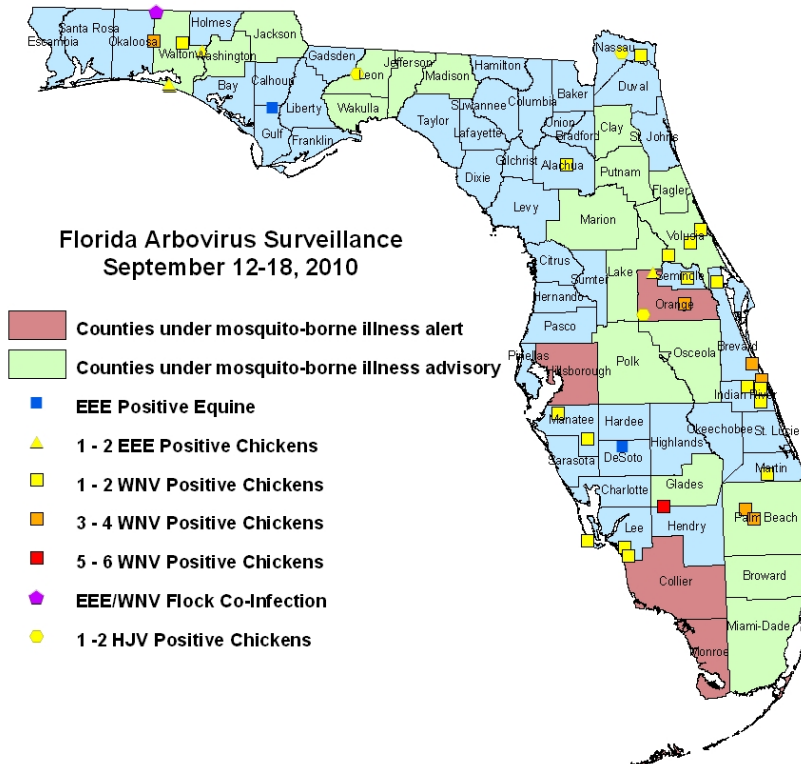


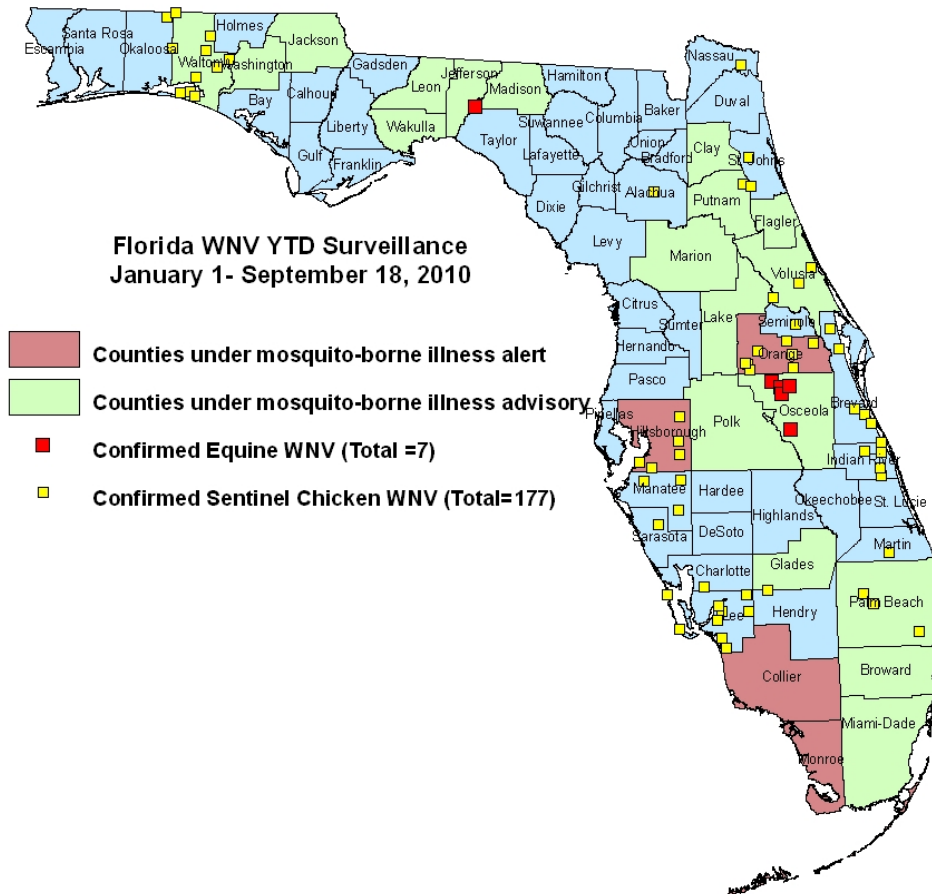
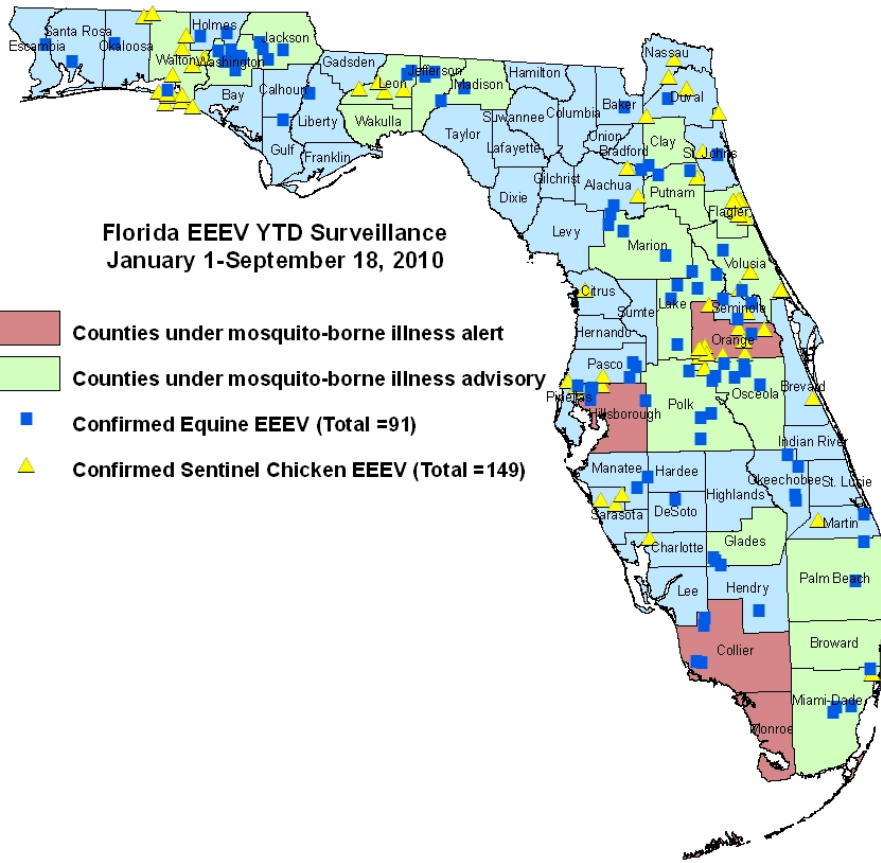


Dead Birds

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, five reports representing 24 dead birds were received from four counties. One was identified as a crow; none were identified as jays or raptors. In 2010, 257 reports representing a total of 808 dead birds (46 crows, 10 jays, 44 raptors, 708 others) have been reported 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/

Maps





YTD Arbovirus Activity by County

County	Arbovirus Activity
Alachua	WNV: 2 sentinels (8/2, 8/16) EEE: 1 horse (7/21); 3 sentinels (7/16, 7/19, 8/2)
Baker	EEE: 1 horse (7/26)
Bradford	EEE: 1 horse (6/16)
Brevard	WNV: 16 sentinels (7/7, 7/21, 8/4, 8/11, 8/18, 8/20, 9/1, 9/3) EEE: 1 sentinel (6/2)
Broward	DENV: 3 humans (1 acquired in Broward, 2 acquired in Key West) WNV: 1 human (August)
Charlotte	WNV: 1 setinel (8/27)
Citrus	EEE: 5 sentinels (5/24, 6/7, 6/28, 7/12, 7/19) HJV: 3 sentinels (5/17, 5/24, 8/9)
Clay	EEE: 1 horse (6/16)
Collier	WNV: 2 humans (August) EEE: 4 horses (6/9, 6/22, 6/29, 7/9)
De Soto	EEE: 1 horse (8/23)
Duval	EEE: 1 horse (8/18); 5 sentinels (6/21, 7/8, 7/21)
Escambia	EEE: 1 horse (8/16)
Flagler	EEE : 17 sentinels (3/22, 4/26, 5/3, 6/7, 6/21, 7/12, 7/19, 7/26, 8/2, 8/9); 3 mosquito pools (<i>Culiseta melanura</i> 4/27, 5/11, 6/15) HJV: 3 sentinels (6/14, 6/28, 8/16)
Glades	EEE : 3 horses (6/20, 6/24, 7/26)
Gulf	EEE : 1 horse (9/5)
Hardee	EEE : 1 horse (8/22)
Hendry	WNV : 5 sentinels (8/18, 8/31) EEE : 1 horse (7/21)
Hillsborough	WNV : 14 sentinels (1/12, 1/19, 2/22, 3/9, 3/22, 4/20, 5/11, 6/15) EEE: 2 humans (June, July) ; 5 horses (5/29, 6/11, 7/8, 7/17); 2 sentinels (5/4, 5/18) HJV : 1 sentinel (6/28)
Holmes	EEE: 2 horses (7/23, 8/9)
Indian River	WNV: 8 sentinels (7/22, 8/12, 8/19, 9/2)
Jackson	EEE: 4 horses (6/14, 6/28, 7/10, 8/1)
Jefferson	WNV: 1 horse (7/4) EEE: 3 horses (7/20, 8/1, 8/25)
Lake	EEE: 6 horses (5/20, 6/29, 7/4, 7/9, 7/15, 7/17)
Lee	WNV: 15 sentinels (3/30, 4/20, 8/2, 8/9, 8/16, 8/24, 8/30)
Leon	DENV: 2 humans (acquired in Key West) EEE: 1 human (July); 2 horses (6/29, 8/5); 6 sentinels (6/1, 6/21, 8/2, 8/9, 8/16) HJV: 2 sentinels (8/16, 8/23)
Liberty	EEE: 1 horse (7/11)
Madison	EEE: 2 horses (6/21, 7/3)
Manatee	WNV: 3 sentinels (8/30, 9/7) EEE: 1 horse (7/21)
Marion	EEE: 4 horses (5/7, 7/22, 8/3)
Martin	WNV: 2 sentinels (8/13, 8/27) EEE: 1 horse (8/4); 2 sentinels (5/28)
Miami-Dade	DENV: 1 human (acquired in Key West) EEE: 4 horses (6/7, 6/17, 7/4); 2 sentinels (6/14)
Monroe	DENV: 35 humans (acquired in Key West)
Nassau	WNV: 1 sentinel (9/6) EEE: 5 sentinels (6/28, 7/13, 7/19, 8/9, 8/16) HJV: 8 sentinels (6/28, 7/13, 7/19, 7/26, 8/16, 8/23)
Okaloosa	WNV: 1 live wild bird (flavivirus positive, blue jay 6/14) EEE : 1 horse (7/25); 11 live wild birds (1 house sparrow 1/4, 7 blue jays 1/27, 4/19, 4/21, 4/26, 7/5, 7/26, 3 cardinals 7/5, 7/22, 8/5)
Okeechobee	EEE : 4 horses (6/14, 7/1, 7/7, 7/17)
Orange	WNV : 2 humans (1 July, 1 August) ; 23 sentinels (6/14, 7/6, 7/19, 7/26, 8/2, 8/16, 8/23, 8/30) EEE : 1 horse (7/16); 22 sentinels (1/7, 5/3, 5/17, 6/7, 6/10, 6/14, 6/21, 7/6, 7/12, 7/19, 7/22, 7/29, 9/7) HJV : 22 sentinels (5/17, 6/7, 6/10, 6/14, 6/24, 7/6, 7/8, 7/15, 7/19, 7/22, 8/5, 8/16, 8/19)
Osceola	WNV: 1 human (July); 6 horses (7/14, 7/15, 7/20, 7/24, 7/26, 8/30)

	EEE: 7 horses (5/15 (donkey), 6/8, 6/10, 6/13, 7/9)
Palm Beach	WNV: 19 sentinels (3/15, 8/2, 8/9, 8/17, 8/23, 8/30, 9/7) EEE: 2 horses (6/22, 8/31)
Pasco	EEE: 3 horses (6/11, 7/16, 8/7); 3 sentinels (7/6, 7/12) HJV: 3 sentinels (6/28, 7/6, 8/16)
Pinellas	DENV: 1 human (acquired in Key West) EEE: 3 sentinels (5/24, 7/19) HJV: 2 sentinels (4/26, 7/6)
Polk	EEE: 4 horses (4/28, 6/25, 6/28, 8/19)
Putnam	WNV: 2 sentinels (8/27) EEE: 2 horses (7/26, 8/8); 5 sentinels (6/4, 7/23, 7/30, 8/6) HJV: 2 sentinels (5/14, 8/6)
St. Johns	WNV : 7 sentinels (8/16, 8/23, 8/30) EEE: 1 horse (6/18); 3 sentinels (6/1, 7/12, 7/26) HJV: 3 sentinels (4/26, 5/3, 7/12)
Santa Rosa	EEE: 1 horse (6/29); 13 live wild birds (9 blue jays 2/2, 3/22, 4/13, 4/19, 5/11, 5/18, 7/13, 4 cardinals 6/22, 7/13, 7/27, 8/3)
Sarasota	DENV: 2 humans (acquired in Key West) WNV: 1 sentinel (1/8) EEE: 3 sentinels (1/5, 1/11, 6/1)
Seminole	WNV : 1 sentinel (9/2) EEE : 3 horses (6/26, 7/15, 8/14) ; 1 sentinel (7/2) HJV : 1 sentinel (7/27)
Volusia	WNV : 8 sentinels (7/19, 8/9, 8/16, 9/7) EEE : 2 horses (5/7, 7/1) ; 16 sentinels (5/24, 6/1, 6/7, 6/14, 6/21, 6/28, 7/6, 7/12, 7/26, 8/9) ; 3 mosquito pools (<i>Culiseta melanura</i> 6/15, 6/22, 6/29) HJV : 2 sentinels (5/17, 7/12)
Wakulla	EEE: 1 human (July)
Walton	WNV : 49 sentinels (1/14, 2/4, 3/8, 3/12, 3/22, 4/7, 4/8, 4/23, 4/30, 5/5, 5/20, 6/7, 6/11, 7/8, 7/9, 7/22, 7/30, 8/12, 8/19, 8/20) EEE : 1 horse (8/5); 45 sentinels (1/19, 3/22, 5/3, 6/8, 6/21, 7/6, 6/28, 6/30, 7/6, 7/12, 7/15, 7/18, 7/19, 7/20, 7/26, 7/28, 8/2, 8/3, 8/9, 8/23, 8/27, 9/7); 6 live wild birds (5 cardinals 6/24, 7/16, 7/22, 1 blue jay 6/24) HJV : 8 sentinels (3/22, 5/17, 6/23, 7/19, 8/2)
Washington	EEE : 7 horses (6/17, 6/22, 6/25, 6/28, 7/4, 7/16, 7/20)

Acknowledgements and Data Sources

Contributors: Elizabeth Radke, MPH, Danielle Stanek, DVM, and Carina Blackmore, DVM, PhD, DOH Bureau of Environmental Public Health Medicine; Lillian Stark, PhD and Valerie Mock, DOH Bureau of Laboratories.

For more surveillance information, please see the DOH website at:
<http://www.doh.state.fl.us/Environment/medicine/arboviral/index.html>

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 determined by the Department of Agriculture and Consumer Services. Wild captured bird information is provided by the John A. Mulrennan Public Health Entomology Research and Education Center.