



Florida Arbovirus Surveillance Week 31: August 1-7, 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 August 1-7, 2010, the following arboviral activity was recorded in Florida:

DENV activity: One locally-acquired cases of dengue associated with Key West was reported this week in a traveler from another Florida county. In 2010, there have been 25 locally-acquired cases in Key West.

EEEV activity: Six EEEV-confirmed positive horses were reported in Okaloosa, Holmes, Marion, Hendry, Alachua, and Jefferson counties. Eighteen sentinel chickens from Alachua, Duval, Flagler, Nassau, Orange, Pinellas, Putnam, Volusia, and Walton counties and one live wild bird from Okaloosa County tested positive for antibodies to EEEV. In 2010, positive samples from 69 equines, 113 sentinel chickens, 26 live wild birds, and three mosquito pools have been received from 40 of Florida's 67 counties.

WNV activity: Four WNV-confirmed positive horses were reported in Osceola County. Six sentinel chickens from Orange and Walton counties tested positive for antibodies to WNV. In 2010, positive samples from six equines, 65 sentinel chickens, and one live wild bird (flavivirus positive) have been received from 11 counties.

HJV activity: Six sentinel chickens from Nassau, Orange, St. Johns, and Walton counties tested positive for antibodies to HJV. In 2010, positive samples from 42 sentinel chickens have been received from 11 counties.

Advisories/Alerts: Monroe and Hillsborough counties are under mosquito-borne illness alerts. Walton, Volusia, Clay, Osceola, Miami-Dade, Collier, Glades, Polk, Lake, Jackson, Washington, Wakulla, Leon, and Madison 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 (1) and July (3).

Dengue Acquired in Florida: Twenty-five cases of dengue have been reported as acquired in Key West in 2010. Of these, 18 are Key West residents, six are residents of other Florida counties, and one resides out of state. Onset dates ranged from March 17 to July 22, 2010.

Imported Dengue: Fifty-seven 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 (7), Costa Rica (3), Dominican Republic (10), Ecuador, El Salvador, Guatemala (2), Haiti (3), Honduras (3), Jamaica (2), Nicaragua (2), Philippines, Puerto Rico (13), Venezuela (6), Malaysia/Dubai/Bangladesh, and

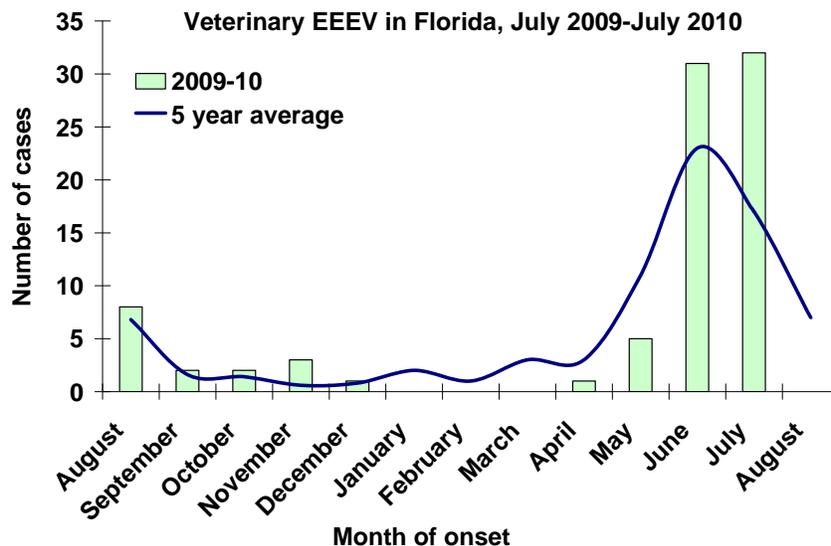
Panama/Venezuela (slash indicates travel to more than one country). Counties reporting cases were Alachua (2), Broward (8), Collier, Duval, Escambia, Hillsborough (4), Lee, Marion, Miami-Dade (19), Monroe, Orange (5), Osceola (4), Palm Beach (5), Pasco, Pinellas, Seminole, and St. Lucie.

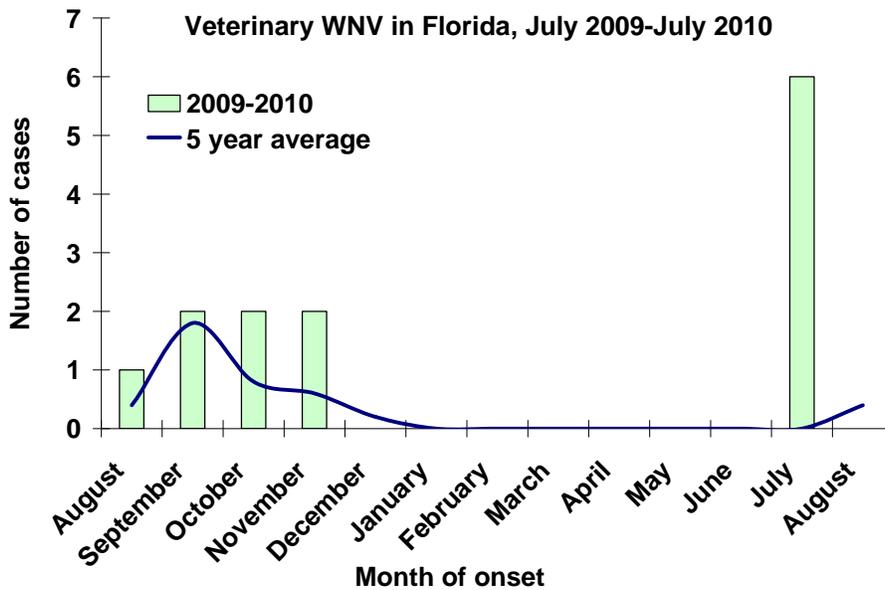
Imported Malaria: Sixty-five imported cases of malaria with onset in 2010 have been reported. Countries of origin were: Angola, Dominican Republic, Ghana (3), Guyana, Haiti (41), Honduras (3), India, Ivory Coast, Nigeria (6), Philippines, South Africa, Togo, Uganda, West Africa, Zambia/South Africa, and unknown. Counties reporting cases were: Brevard, Broward (10), Charlotte, Citrus, Collier (2), Duval (2), Escambia (2), Hillsborough (3), Miami-Dade (15), Orange (12), Osceola (3), Palm Beach (8), Pinellas, Polk, Seminole, Volusia, and Wakulla.

Veterinary Cases

Four horses in Osceola County tested positive for WNV this week and six in Okaloosa, Holmes, Marion, Hendry, Alachua, and Jefferson counties tested positive for EEE. In 2010, six WNV positive horses and 69 EEEV positive horses have been reported.

County	Onset Date	Species	Virus	Status	County YTD
Osceola	07/26/2010	Equine	WNV	Alive	5 WNV, 7 EEE
	07/24/2010	Equine	WNV	Euthanized	
	07/20/2010	Equine	WNV	Alive	
	07/15/2010	Equine	WNV	Euthanized	
Okaloosa	07/25/2010	Equine	EEE	Dead	1 EEE
Holmes	07/23/2010	Equine	EEE	Alive	1 EEE
Marion	07/22/2010	Equine	EEE	Euthanized	2 EEE
Hendry	07/21/2010	Equine	EEE	Euthanized	1 EEE
Alachua	07/21/2010	Equine	EEE	Euthanized	1 EEE
Jefferson	07/20/2010	Equine	EEE	Euthanized	1 WNV, 1 EEE

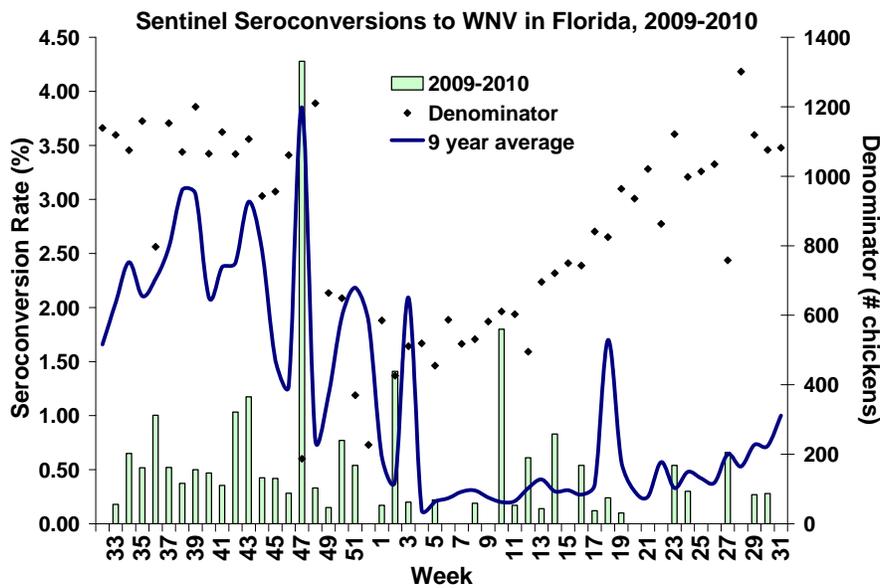
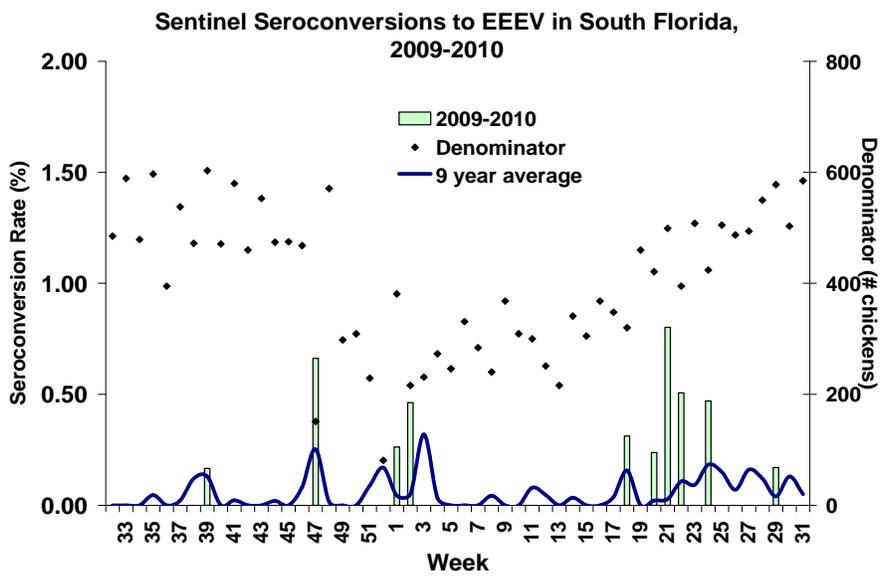
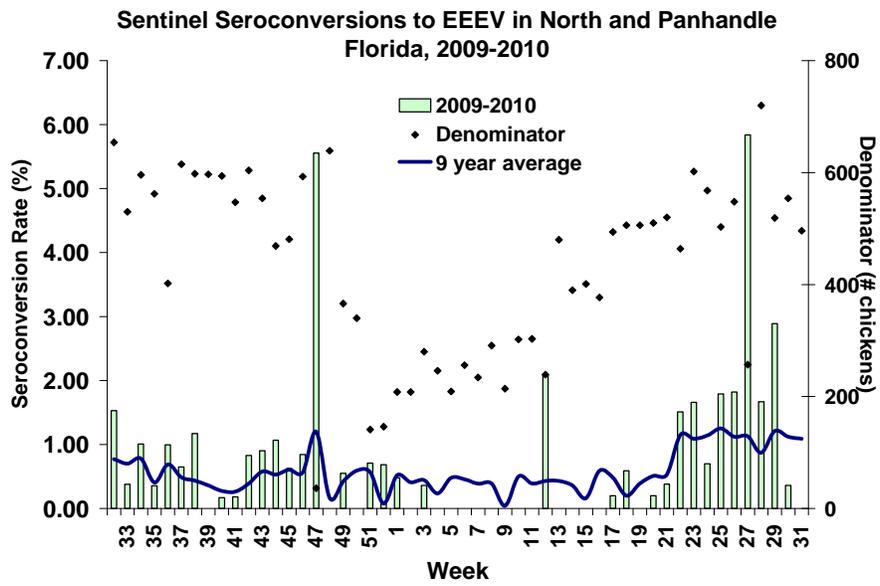




Sentinel Chickens

There were 18 seroconversions to EEE in sentinel chickens from Alachua, Duval, Flagler, Nassau, Orange, Pinellas, Putnam, Volusia, and Walton counties, six seroconversions to WNV in Orange and Walton counties, and six to HJV in Nassau, Orange, St. Johns, and Walton 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
Orange	07/26/2010	2.8			3 WNV	8 WNV, 20 EEE, 15 HJV
	07/19, 07/22/10	1.0	4.8	1.0	1 WNV, 5 EEE, 1 HJV	
	07/12/2010		1.4	0.7	2 EEE, 1 HJV	
	07/06, 07/08/10	0.9	3.8	2.9	1 WNV, 5 EEE, 1 HJV	
Flagler	07/26/2010		9.1		1 EEE	13 EEE, 2 HJV
	07/12/2010		7.7		1 EEE	
Walton (South)	07/26/2010		3.1		1 EEE	3 WNV, 13 EEE, 2 HJV
Putnam	07/23/2010		11.8		2 EEE	3 EEE, 1 HJV
Duval	07/21/2010		10.7		3 EEE	5 EEE
Alachua	07/19/2010		3.3		1 EEE	1 EEE
	07/19/2010		3.0	3.0	1 EEE, 1 HJV	3 EEE, 5 HJV
Nassau	07/13/2010		3.1	3.1	1 EEE, 1 HJV	
	07/19/2010		1.8		1 EEE	3 EEE, 2 HJV
Walton (North)	07/15/2010		2.1		1 EEE	34 WNV, 14 EEE, 5 HJV
	07/06, 07/08, 07/09/2010	7.5	7.5		3 WNV, 3 EEE	



Live Wild Birds

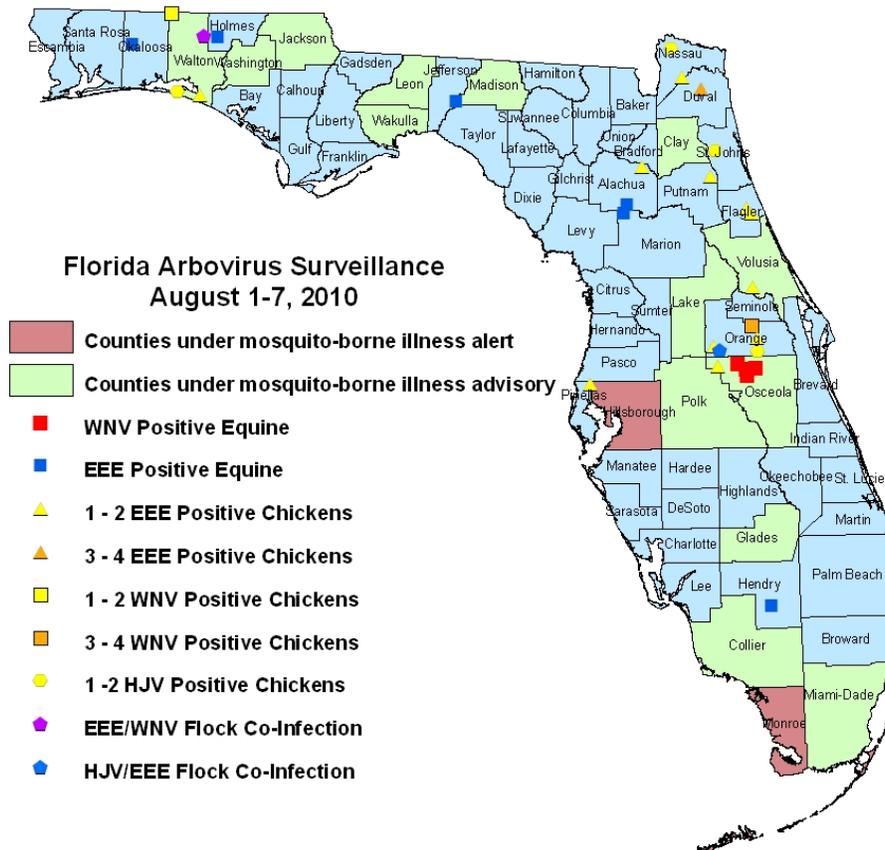
Out of 14 live wild birds collected from two counties on July 19-22, 2010, and seven collected from one county on July 30, one from Okaloosa County tested positive for antibodies to EEEV.

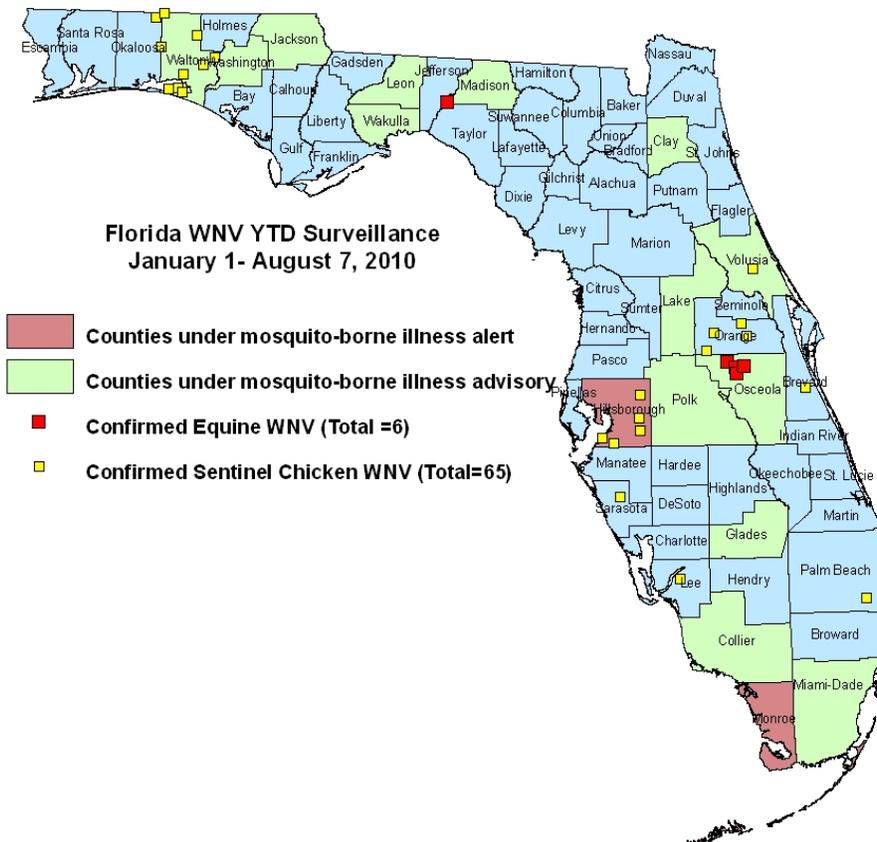
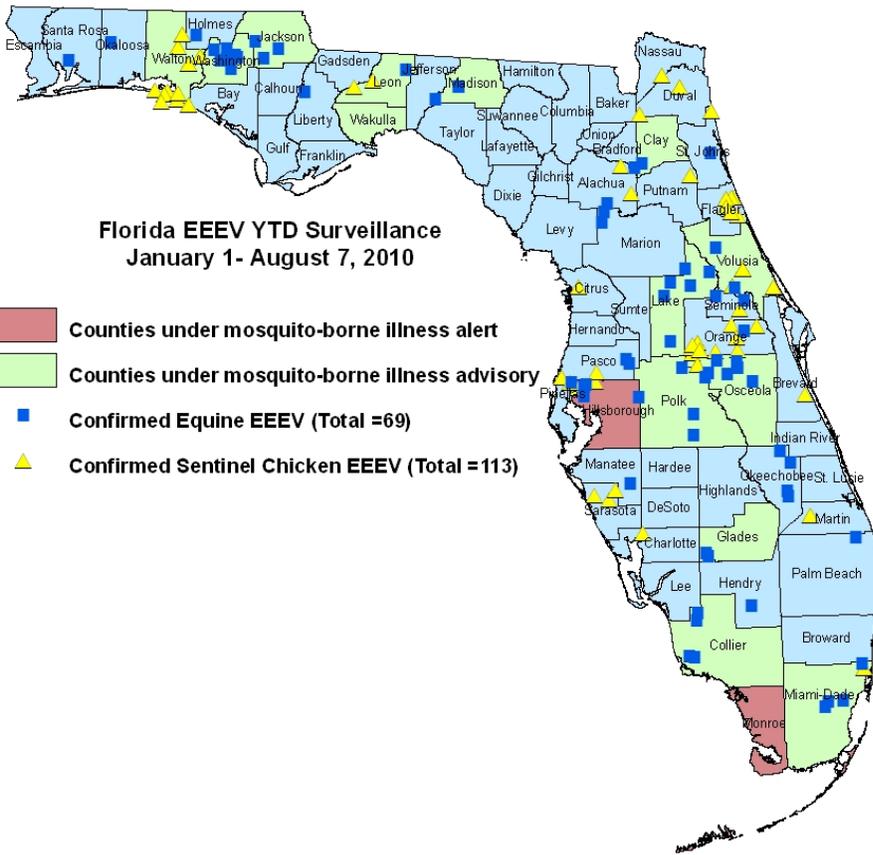
County	Collection Date	EEEV	Flavi	Species	EEEV Rate	Flavi Rate	County YTD
Okaloosa	07/22/10	1		Cardinal	1 out of 9	N/A	9 EEE

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, six reports representing 11 dead birds were received from six counties. Six were identified as crows; none were identified as jays or raptors. In 2010, 216 reports representing a total of 681 dead birds (35 crows, 10 jays, 39 raptors, 597 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	EEE: 1 horse (7/21); 1 sentinel (7/19)
Bradford	EEE: 1 horse (6/16)
Brevard	WNV: 1 sentinel (7/7) EEE: 1 sentinel (6/2)
Broward	DENV: 1 human (acquired in Key West)
Citrus	EEE: 5 sentinels (5/24, 6/7, 6/28, 7/12, 7/19) HJV: 2 sentinels (5/17, 5/24)
Clay	EEE: 1 horse (6/16)
Collier	EEE: 4 horses (6/9, 6/22, 6/29, 7/9)
Duval	EEE: 5 sentinels (6/21, 7/8, 7/21)
Flagler	EEE : 13 sentinels (3/22, 4/26, 5/3, 6/7, 6/21, 7/12/7/19); 3 mosquito pools (<i>Culiseta melanura</i> 4/27, 5/11, 6/15) HJV: 2 sentinels (6/14, 6/28)
Glades	EEE : 2 horses (6/20, 6/24)
Hendry	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: 1 horse (7/23)
Jackson	EEE: 3 horses (6/14, 6/28, 7/10)
Jefferson	WNV: 1 horse (7/4) EEE: 1 horse (7/20)
Lake	EEE: 6 horses (5/20, 6/29, 7/4, 7/9, 7/15, 7/17)
Lee	WNV: 2 sentinels (3/30, 4/20)
Leon	DENV: 2 humans (acquired in Key West) EEE: 1 human (July); 1 horse (6/29); 2 sentinels (6/1, 6/21)
Liberty	EEE: 1 horse (7/11)
Madison	EEE: 2 horses (6/21, 7/3)
Manatee	EEE: 1 horse (7/21)
Marion	EEE: 2 horses (5/7, 7/22)
Martin	EEE: 1 sentinel (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: 18 humans (acquired in Key West)
Nassau	EEE: 3 sentinels (6/28, 7/13, 7/19) HJV: 3 sentinels (6/28, 7/13, 7/19)
Okaloosa	WNV: 1 live wild bird (flavivirus positive, blue jay 6/14) EEE : 1 horse (7/25); 9 live wild birds (1 house sparrow 1/4, 6 blue jay 1/27, 4/19, 4/21, 4/26, 7/5, 2 cardinals 7/5, 7/22)
Okeechobee	EEE : 4 horses (6/14, 7/1, 7/7, 7/17)
Orange	WNV : 8 sentinels (6/14, 7/6, 7/19, 7/26) EEE : 1 horse (7/16); 20 sentinels (1/7, 5/3, 5/17, 6/7, 6/10, 6/14, 6/21, 7/6, 7/12, 7/19, 7/22) HJV : 15 sentinels (5/17, 6/7, 6/10, 6/14, 6/24, 7/6, 7/8, 7/15, 7/19)
Osceola	WNV: 5 horses (7/14, 7/15, 7/20, 7/24, 7/26) EEE: 7 horses (5/15 (donkey), 6/8, 6/10, 6/13, 7/9)
Palm Beach	WNV: 1 sentinel (3/15) EEE: 1 horse (6/22)
Pasco	EEE: 2 horses (6/11, 7/16); 3 sentinels (7/6, 7/12) HJV: 2 sentinels (6/28, 7/6)
Pinellas	DENV: 1 human (acquired in Key West) EEE: 3 sentinels (5/24, 7/19) HJV: 2 sentinels (4/26, 7/6)
Polk	EEE: 3 horses (4/28, 6/25, 6/28)
Putnam	EEE: 3 sentinels (6/4, 7/23) HJV: 1 sentinel (5/14)
St. Johns	EEE: 1 horse (6/18); 2 sentinel (6/1, 7/12) HJV: 3 sentinels (4/26, 5/3, 7/12)
Santa Rosa	EEE: 1 horse (6/29); 11 live wild birds (9 blue jays 2/2, 3/22, 4/13, 4/19, 5/11, 5/18, 7/13, 2 cardinals 6/22, 7/13)

Sarasota	DENV: 1 human (acquired in Key West) EEE: 3 sentinels (1/5, 1/11, 6/1) WNV : 1 sentinel (1/8)
Seminole	EEE : 2 horses (6/26, 7/15) ; 1 sentinel (7/2)
Volusia	WNV : 1 sentinel (7/19) EEE : 2 horses (5/7, 7/1) ; 15 sentinels (5/24, 6/1, 6/7, 6/14, 6/21, 6/28, 7/6, 7/12, 7/26) HJV : 2 sentinels (5/12)
Wakulla	EEE: 1 human (July)
Walton	WNV : 37 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) EEE : 27 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, 7/26) ; 6 live wild birds (5 cardinals 6/24, 7/16, 7/22, 1 blue jay 6/24) HJV : 7 sentinels (3/22, 5/17, 6/23, 7/19)
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.

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.