



Florida Arbovirus Surveillance Week 40: October 3-9, 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 October 3-9, 2010, the following arboviral activity was recorded in Florida:

DENV activity: Four new cases of dengue associated with Key West were reported this week. In 2010, there have been 49 locally-acquired cases in Key West and one in Broward County.

EEEV activity: Three sentinel chickens in Flagler, Leon, and Putnam counties tested positive for antibodies to EEEV. In 2010, positive samples from four humans, 91 equines, 156 sentinel chickens, 34 live wild birds, and six mosquito pools have been received from 45 of Florida's 67 counties.

WNV activity: One human case of WNV was reported in De Soto County this week and a positive asymptomatic human blood donor was reported in Brevard County. One WNV-confirmed positive horse was reported from Palm Beach County. Seventy-eight sentinel chickens in Alachua, Brevard, Charlotte, Citrus, Duval, Flagler, Hendry, Hernando, Indian River, Lee, Leon, Manatee, Martin, Orange, Palm Beach, Pinellas, Seminole, St. Johns, and St. Lucie counties tested positive for antibodies to WNV. In 2010, positive samples from eight humans, 17 equines, 325 sentinel chickens, and one live wild bird (flavivirus positive) have been received from 32 counties.

SLEV activity: Two sentinel chickens in Miami-Dade County tested positive for antibodies to SLEV. In 2010, positive samples from four sentinel chickens have been received from one county.

HJV activity: Eight sentinel chickens in Flagler, Nassau, and Walton counties tested positive for antibodies to HJV. In 2010, positive samples from 71 sentinel chickens have been received from 13 counties.

Advisories/Alerts: Indian River County issued a mosquito-borne illness advisory this week. Monroe, Hillsborough, Orange and Collier counties are under mosquito-borne illness alerts and Walton, Volusia, Clay, Osceola, Miami-Dade, Glades, Polk, Lake, Jackson, Washington, Jefferson, Wakulla, Leon, Madison, Broward, Marion, Putnam, Palm Beach, Flagler, Duval, De Soto, Hendry, and Martin 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: Eight human cases of WNV have been reported in 2010 in Osceola, Orange (2), Collier (2), Broward, Duval, and De Soto counties with

onset in July (2), August (4), and September (2). One positive asymptomatic blood donor was reported in Brevard County.

Dengue Acquired in Florida: In 2010, one case of dengue has been reported as acquired in Broward County and 49 cases of dengue have been reported as acquired in Key West (Monroe County). Of the Key West cases, 40 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 25, 2010.

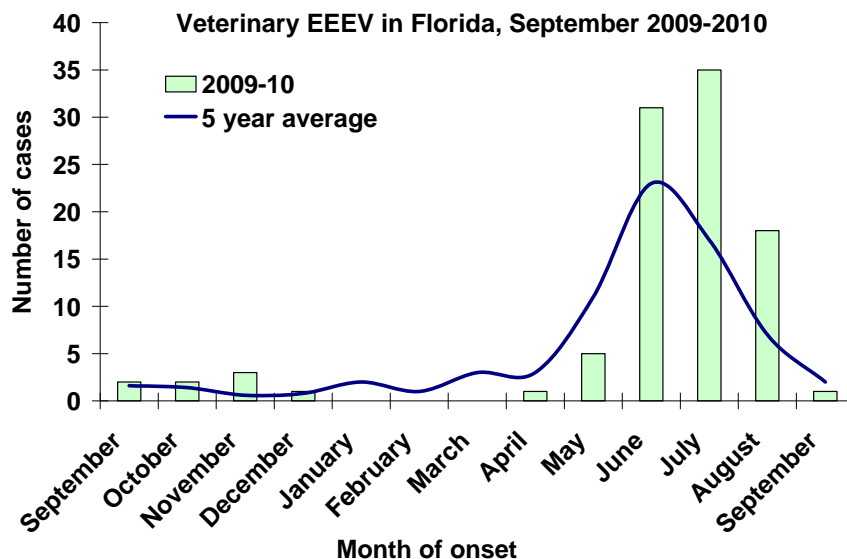
Imported Dengue: One hundred and nine cases of dengue with onset in 2010 have been reported in individuals with travel history to a dengue endemic country in the two weeks prior to onset. Countries of origin were: Brazil, Colombia (8), Costa Rica (4), Dominican Republic (12), Ecuador, El Salvador, Grenada (3), Guatemala (2), Haiti (5), Honduras (6), Jamaica (5), Martinique, Nicaragua (7), Philippines, Puerto Rico (33), Trinidad, Venezuela (13), Virgin Islands (3), Malaysia/Dubai/Bangladesh, and Panama/Venezuela (slash indicates travel to more than one country). Counties reporting cases were Alachua (2), Broward (19), Collier (2), Duval (2), Escambia, Flagler, Hendry, Hillsborough (7), Lake, Lee, Marion, Miami-Dade (38), Monroe, Orange (9), Osceola (4), Palm Beach (8), Pasco, Pinellas, Polk, Seminole (3), St. Lucie (2), and Volusia (3).

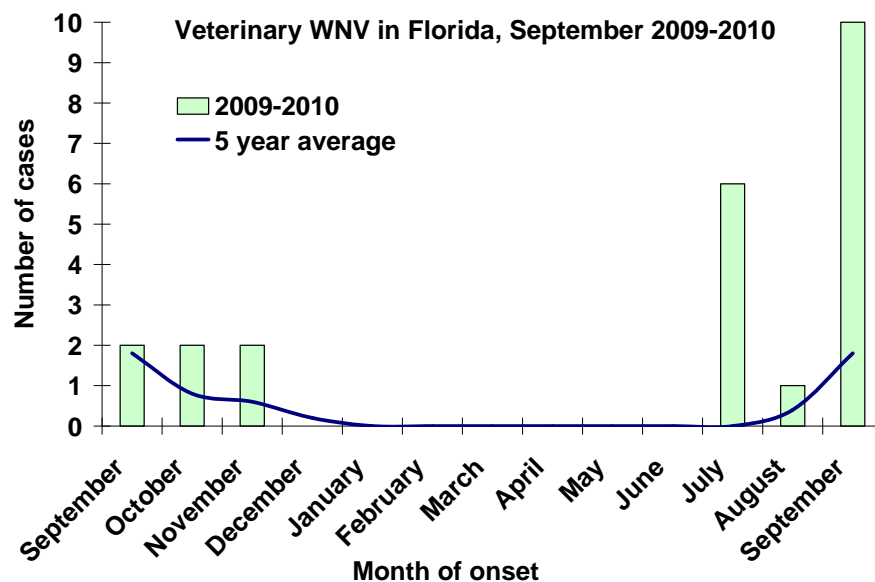
Imported Malaria: Ninety-seven imported cases of malaria with onset in 2010 have been reported. Countries of origin were: Angola, Dominican Republic, Ghana (4), Guyana, Haiti (56), Honduras (4), India (7), Indonesia, Ivory Coast, Malawi (2), Nigeria (7), Pakistan, Peru, Philippines, South Africa, Togo, Uganda, West Africa (2), Zambia/South Africa, Africa, and unknown (2). Counties reporting cases were: Brevard (2), Broward (16), Charlotte, Citrus, Collier (4), Duval (4), Escambia (3), Hillsborough (4), Lake, Lee, Leon, Miami-Dade (18), Manatee (2), Orange (15), Osceola (3), Palm Beach (12), Pasco, Pinellas, Polk (2), Sarasota, Seminole, St. Lucie, Volusia, and Wakulla.

Veterinary Cases

One horse in Palm Beach County tested positive for WNV. In 2010, 17 WNV positive horses and 91 EEEV positive horses have been reported.

County	Onset Date	Species	Virus	Status	County YTD
Palm Beach	09/21/2010	Equine	WNV	Alive	2 WNV, 2 EEE



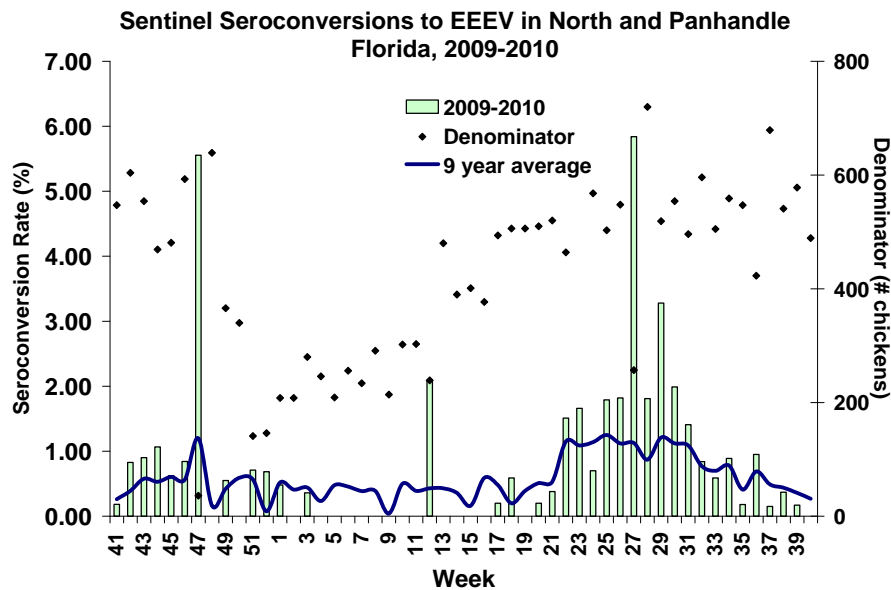


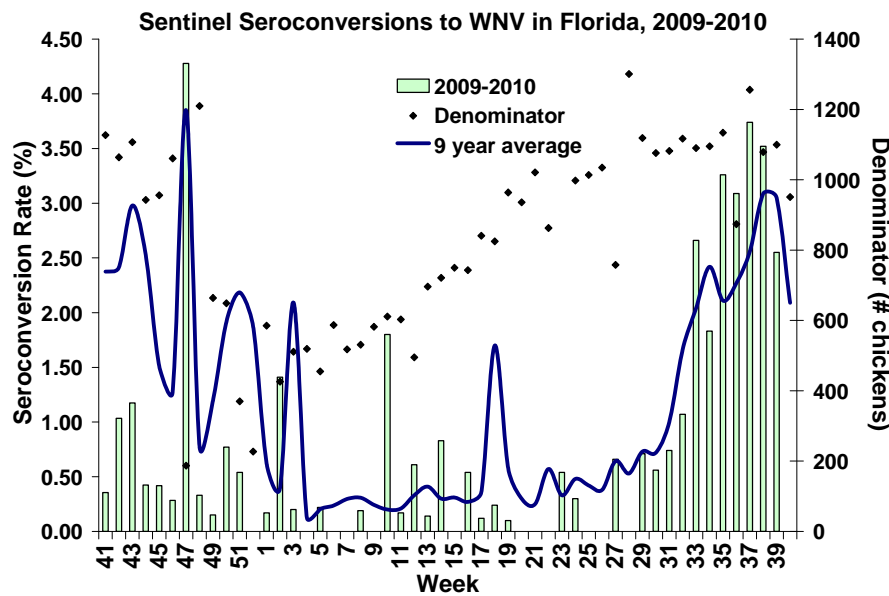
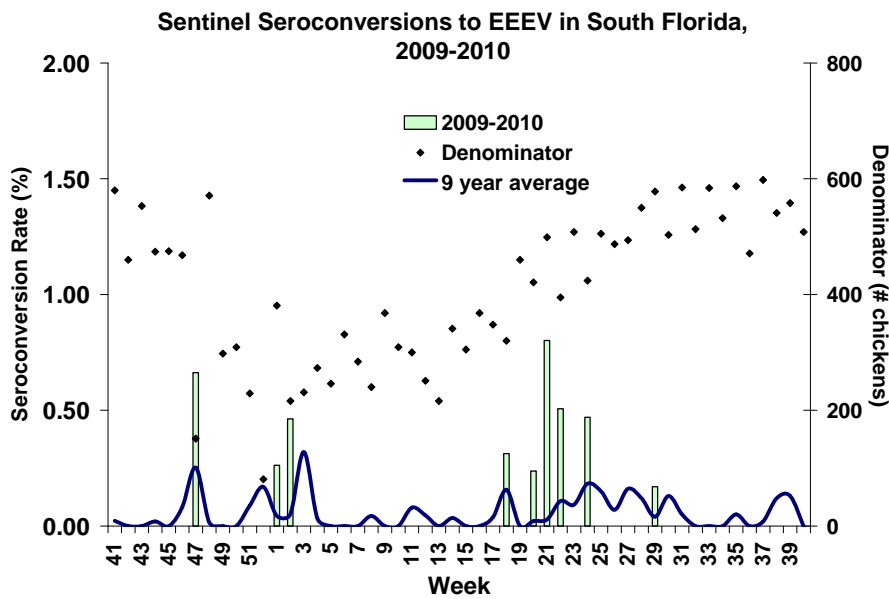
Sentinel Chickens

There were three seroconversions to EEE in sentinel chickens from Flagler, Leon, and Putnam counties, 78 to WNV in Alachua, Brevard, Charlotte, Citrus, Duval, Flagler, Hendry, Hernando, Indian River, Lee, Leon, Manatee, Martin, Orange, Palm Beach, Pinellas, Seminole, St. Johns, and St. Lucie counties, two to SLEV in Miami-Dade County, and eight to HJV in Flagler, Nassau, and Walton counties this week. Seroconversion rates are calculated by week and include previously reported results. One of the sentinels reported last week in Lee County was a duplicate and has been removed from the surveillance totals.

County	Collection Date	Seroconversion Rates (%)				County Totals	
		SLEV	WNV	EEEV	HJV	Week	YTD
Alachua	09/07/2010		4.5			1 WNV	7 WNV, 3 EEE
	09/20/2010		4.5			1 WNV	
	09/27/2010		3.4			1 WNV	
Brevard	09/08/2010		3.5			2 WNV	28 WNV, 1 EEE
	09/22, 09/23, 09/24/2010		16.3			8 WNV	
Charlotte	09/10/2010		4.5			1 WNV	2 WNV
Citrus	09/27/2010		3.0			2 WNV	4 WNV, 5 WNV, 3 HJV
Duval	09/27/2010		8.0			2 WNV	3 WNV, 5 EEE, 1 HJV
Flagler	09/20/2010				7.7	1 HJV	3 WNV, 18 EEE, 4 HJV
	09/27/2010		9.1	7.7		1 WNV, 1 EEE	
Hendry	09/13/2010		2.0			2 WNV	10 WNV
Hernando	09/27/2010		6.9			2 WNV	2 WNV
Indian	09/09/2010		8.7			4 WNV	21 WNV
	09/23/2010		16.7			7 WNV	
Lee	09/13, 09/14/2010		14.8			12 WNV	38 WNV
	09/27,		10.8			8 WNV	

County	Collection Date	Seroconversion Rates (%)				County Totals	
		SLEV	WNV	EEEV	HJV	Week	YTD
	09/28/2010						
Leon	09/20/2010		2.6	2.6		1 WNV, 1 EEE	4 WNV, 8 EEE, 2 HJV
	09/28/2010		7.7			3 WNV	
Manatee	09/27/2010		6.3			4 WNV	10 WNV
Martin	09/23/2010		26.3			5 WNV	9 WNV, 2 EEE
Miami-Dade	09/07/2010	11.8				2 SLE	4 SLE, 2 EEE
Nassau	09/20/2010		11.8		2.9	4 WNV, 1 HJV	5 WNV, 6 EEE, 9 HJV
Orange	09/27/2010		1.0			1 WNV	31 WNV, 23 EEE, 22 HJV
Palm Beach	09/13/2010		33.3			8 WNV	37 WNV
	09/27/2010		11.1			2 WNV	
Putnam	09/24/2010			7.7		1 EEE	4 WNV, 7 EEE, 2 HJV
Seminole	09/23/2010		7.7			1 WNV	3 WNV, 1 EEE, 1 HJV
St. Johns	09/13/2010		10.5			6 WNV	17 WNV, 3 EEE, 3 HJV
	09/27/2010		3.6			2 WNV	
St. Lucie	09/24/2010		4.3			1 WNV	5 WNV
Walton (North)	09/13,				9.3	4 HJV	50 WNV, 27 EEE,
	09/16/2010						11 HJV
Walton (South)	09/13/2010				1.8	1 HJV	3 WNV, 18 EEE, 5 HJV
	09/20/2010				1.9	1 HJV	

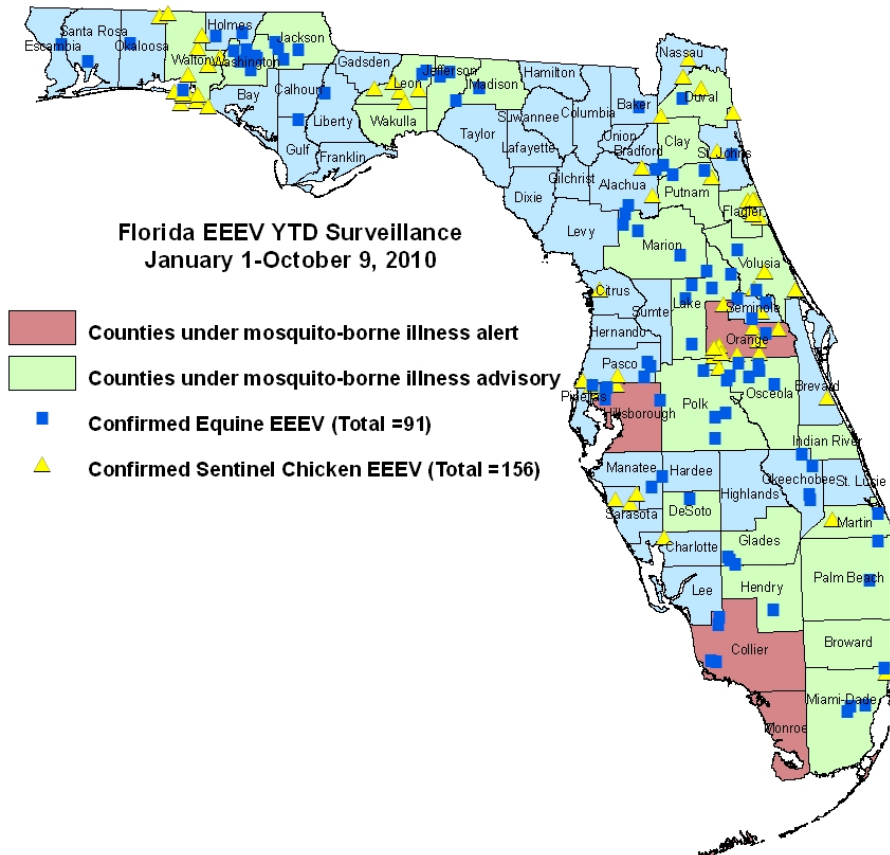
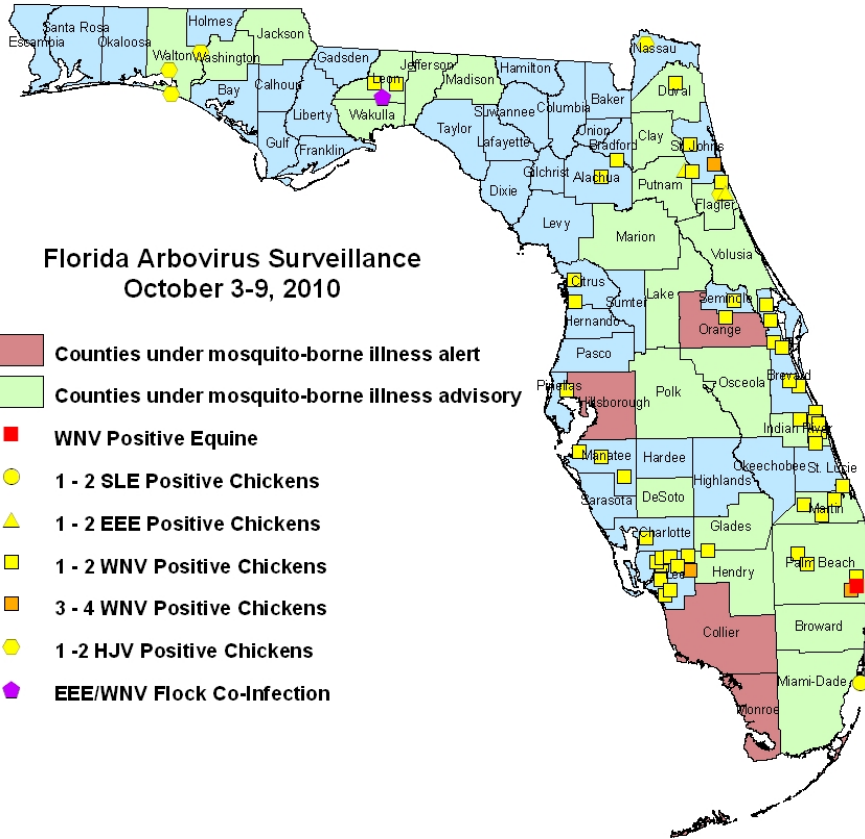


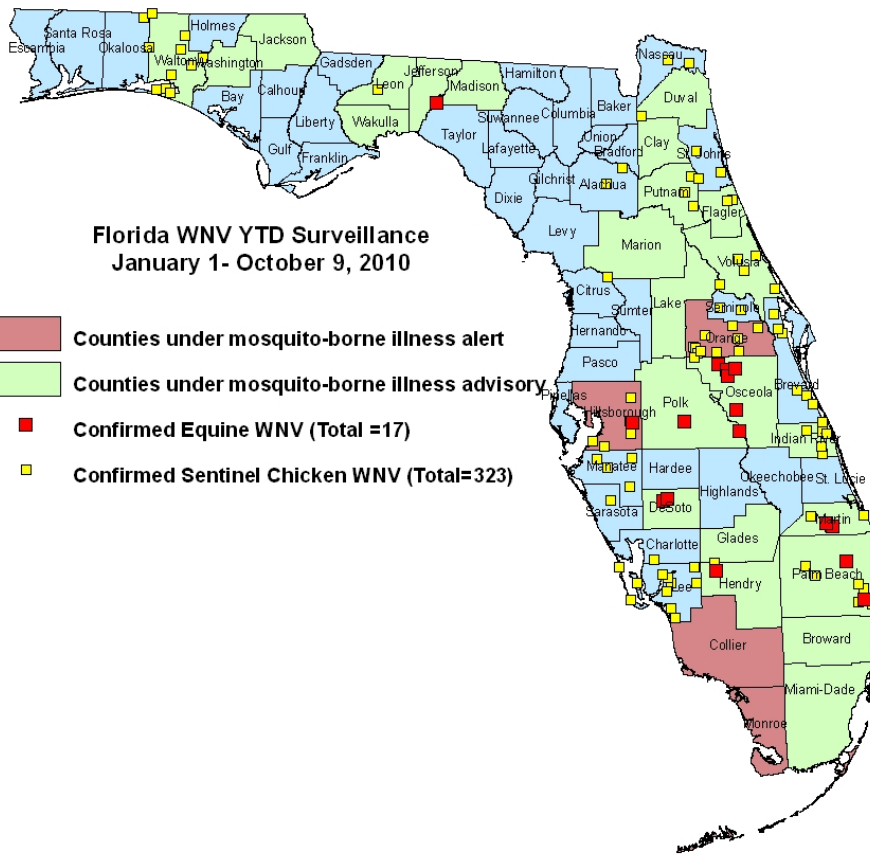


Dead Birds

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, four reports representing ten dead birds were received from four counties. None were identified as crows, jays or raptors. In 2010, 271 reports representing a total of 849 dead birds (47 crows, 12 jays, 44 raptors, 746 others) have been reported from 45 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: 47sentinels (8/2, 8/16, 9/7, 9/13, 9/20, 9/27) 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: 1 human blood donor; 28 sentinels (7/7, 7/21, 8/4, 8/11, 8/18, 8/20, 9/1, 9/3, 9/8, 9/17, 9/22, 9/23, 9/24) EEE: 1 sentinel (6/2)
Broward	DENV: 3 humans (1 acquired in Broward, 2 acquired in Key West) WNV: 1 human (August)
Charlotte	WNV: 2 sentinels (8/27, 9/10)
Citrus	WNV: 4 sentinels (9/20, 9/27) 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	WNV: 1 human (September); 2 horses (9/6, 9/10) EEE: 1 horse (8/23)
Duval	WNV: 1 human (September); 3 sentinels (9/13, 9/27) EEE: 1 horse (8/18); 5 sentinels (6/21, 7/8, 7/21)
Escambia	EEE: 1 horse (8/16)
Flagler	WNV: 3 sentinels (9/13, 9/27) EEE : 18 sentinels (3/22, 4/26, 5/3, 6/7, 6/21, 7/12, 7/19, 7/26, 8/2, 8/9, 9/27); 3 mosquito pools (<i>Culiseta melanura</i> 4/27, 5/11, 6/15) HJV: 4 sentinels (6/14, 6/28, 8/16, 9/20)
Glades	EEE : 3 horses (6/20, 6/24, 7/26)
Gulf	EEE : 1 horse (9/5)
Hardee	EEE : 1 horse (8/22)

Hendry	WNV : 1 horse (9/15) ; 10 sentinels (8/18, 8/31, 9/13) EEE : 1 horse (7/21)
Hernando	WNV : 2 sentinels (9/27)
Hillsborough	WNV : 1 horse (9/3) ; 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: 21 sentinels (7/22, 8/12, 8/19, 9/2, 9/9, 9/16, 9/23)
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: 37 sentinels (3/30, 4/20, 8/2, 8/9, 8/16, 8/24, 8/30, 9/7, 9/13, 9/14, 9/20, 9/27, 9/28)
Leon	DENV: 2 humans (acquired in Key West) WNV: 4 sentinels (9/20, 9/28) EEE: 1 human (July); 2 horses (6/29, 8/5); 8 sentinels (6/1, 6/21, 8/2, 8/9, 8/16, 9/7, 9/20) HJV: 2 sentinels (8/16, 8/23)
Liberty	EEE: 1 horse (7/11)
Madison	EEE: 2 horses (6/21, 7/3)
Manatee	WNV: 10 sentinels (8/30, 9/7, 9/13, 9/20, 9/27) EEE: 1 horse (7/21)
Marion	EEE: 4 horses (5/7, 7/22, 8/3)
Martin	WNV: 2 horses (9/11, 9/16); 9 sentinels (8/13, 8/27, 9/10, 9/16, 9/23) EEE: 1 horse (8/4); 2 sentinels (5/28)
Miami-Dade	DENV: 1 human (acquired in Key West) SLEV: 4 sentinels (8/23, 9/7, 9/20) EEE: 4 horses (6/7, 6/17, 7/4); 2 sentinels (6/14)
Monroe	DENV: 40 humans (acquired in Key West)
Nassau	WNV: 5 sentinels (9/6, 9/20) EEE: 6 sentinels (6/28, 7/13, 7/19, 8/9, 8/16, 8/31) HJV: 9 sentinels (6/28, 7/13, 7/19, 7/26, 8/16, 8/23, 9/20)
Okaloosa	WNV: 1 live wild bird (flavivirus positive, blue jay 6/14) EEE : 1 horse (7/25); 12 live wild birds (1 house sparrow 1/4, 8 blue jays 1/27, 4/19, 4/21, 4/26, 7/5, 7/26, 9/16, 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) ; 31 sentinels (6/14, 7/6, 7/19, 7/26, 8/2, 8/16, 8/23, 8/30, 9/2, 9/7, 9/16, 9/27) EEE : 1 horse (7/16); 23 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, 9/13) 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: 2 horses (9/9, 9/21); 37 sentinels (3/15, 8/2, 8/9, 8/17, 8/23, 8/30, 9/7, 9/13, 9/17, 9/20, 9/27) 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) WNV: 1 sentinel (9/27) EEE: 3 sentinels (5/24, 7/19) HJV: 2 sentinels (4/26, 7/6)
Polk	WNV: 2 horses (9/1, 9/10) EEE: 4 horses (4/28, 6/25, 6/28, 8/19)
Putnam	WNV: 4 sentinels (8/27, 9/17) EEE: 2 horses (7/26, 8/8); 7 sentinels (6/4, 7/23, 7/30, 8/6, 9/9, 9/24) HJV: 2 sentinels (5/14, 8/6)
St. Johns	WNV : 17 sentinels (8/16, 8/23, 8/30, 9/7, 9/13, 9/27) EEE: 1 horse (6/18); 3 sentinels (6/1, 7/12, 7/26) HJV: 3 sentinels (4/26, 5/3, 7/12)
St. Lucie	WNV: 5 sentinels (9/10, 9/17, 9/24)
Santa Rosa	EEE: 1 horse (6/29); 16 live wild birds (11 blue jays 2/2, 3/22, 4/13, 4/19, 5/11, 5/18, 7/13, 8/31, 9/14, 5 cardinals 6/22, 7/13, 7/27, 8/3, 8/31)
Sarasota	DENV: 2 humans (acquired in Key West) WNV: 1 sentinel (1/8) EEE: 3 sentinels (1/5, 1/11, 6/1)

Seminole	WNV : 3 sentinels (9/2, 9/16, 9/23) EEE : 3 horses (6/26, 7/15, 8/14) ; 1 sentinel (7/2) HJV : 1 sentinel (7/27)
Volusia	WNV : 13 sentinels (7/19, 8/9, 8/16, 8/30, 9/7, 9/13, 9/20) 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 : 3 sentinels (5/17, 7/12, 9/7)
Wakulla	EEE: 1 human (July)
Walton	WNV : 53 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, 9/2) 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 : 16 sentinels (3/22, 5/17, 6/23, 7/19, 8/2, 9/2, 9/13, 9/16, 9/20)
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.