



Florida Arbovirus Surveillance Week 44: October 31-November 6, 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 31-November 6, 2010, the following arboviral activity was recorded in Florida:

DENV activity: Two cases of dengue associated with Key West were reported this week. In 2010, there have been 57 locally-acquired cases in Key West and one in Broward County.

EEEV activity: One sentinel chicken in Flagler County tested positive for antibodies to EEEV. In 2010, positive samples from four humans, 93 equines, 160 sentinel chickens, 34 live wild birds, and six mosquito pools have been received from 45 of Florida's 67 counties.

WNV activity: One WNV-confirmed positive horse was reported from Union County. Forty sentinel chickens in Brevard, Citrus, Duval, Flagler, Hillsborough, Indian River, Lee, Leon, Manatee, Martin, Orange, Palm Beach, Putnam, Sarasota, St. Lucie, Volusia counties tested positive for antibodies to WNV. In 2010, positive samples from 12 humans, 22 equines, 1 reptile, 452 sentinel chickens, and one live wild bird (flavivirus positive) have been received from 38 counties.

SLEV activity: No SLEV activity was reported this week. In 2010, positive samples from five sentinel chickens have been received from one county.

HJV activity: Six sentinel chickens in Leon, Orange, Putnam, Volusia counties tested positive for antibodies to HJV. In 2010, positive samples from 81 sentinel chickens have been received from 14 counties.

Advisories/Alerts: Brevard, Collier, Hillsborough, Monroe, and Orange counties are under mosquito-borne illness alerts. Broward, Clay, De Soto, Duval, Flagler, Glades, Hendry, Highlands, Indian River, Jackson, Jefferson, Lake, Leon, Madison, Marion, Martin, Miami-Dade, Osceola, Palm Beach, Polk, Putnam, St. Lucie, Volusia, Walton, Wakulla, and Washington 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: Eleven human cases of WNV have been reported in 2010 in Osceola, Orange (2), Collier (2), Broward, Duval, De Soto, Suwannee, Brevard, and Highlands counties with onset in July (2), August (4), September (3), and October (2). The Suwannee County case had travel outside the county, primarily in Florida. 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 57 cases of dengue have been reported as acquired in Key West (Monroe

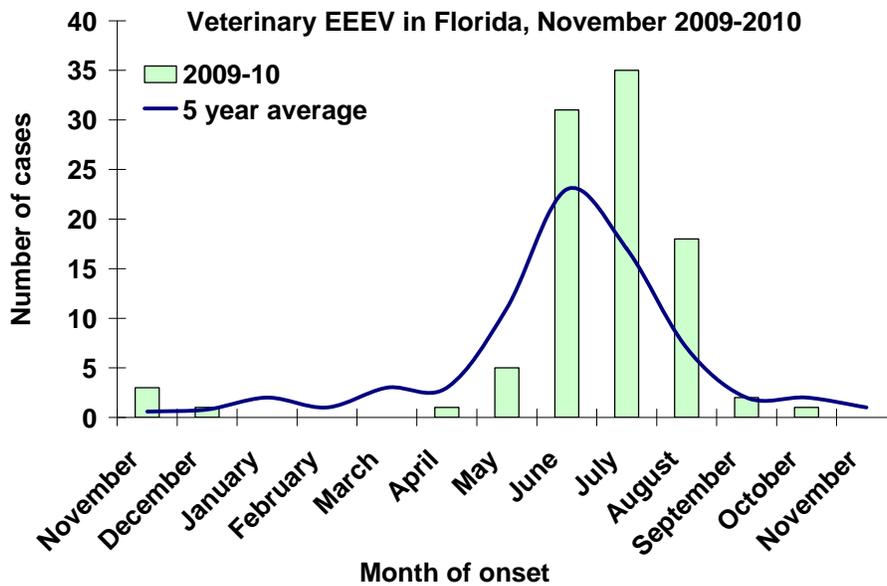
County). Of the Key West cases, 49 are Key West residents, eight are residents of other Florida counties, and one resides out of state. Onset dates ranged from March 17 to October 28, 2010.

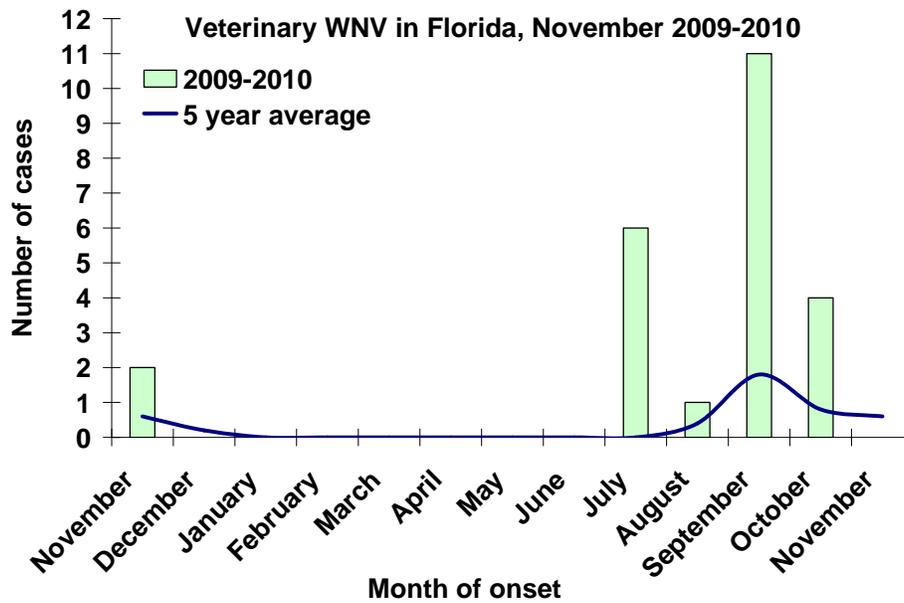
Imported Dengue: One hundred and eighteen cases of dengue with onset in 2010 have been reported in individuals with travel history to a dengue endemic country in the two weeks prior to onset. Countries of origin were: Bangladesh, Brazil, Colombia (8), Costa Rica (4), Dominican Republic (13), Ecuador, El Salvador, Ghana, Grenada (4), Guatemala (2), Haiti (5), Honduras (6), Jamaica (5), Martinique (2), Mexico, Nicaragua (8), Pakistan, Philippines, Puerto Rico (33), Trinidad, Venezuela (14), Virgin Islands (3), Malaysia/Dubai/Bangladesh, and Panama/Venezuela (slash indicates travel to more than one country). Counties reporting cases were Alachua (2), Broward (20), Collier (2), Duval (3), Escambia, Flagler, Hendry, Hillsborough (7), Lake, Lee, Manatee, Marion, Miami-Dade (41), Monroe, Orange (9), Osceola (5), Palm Beach (10), Pasco, Pinellas, Polk, Seminole (3), St. Lucie (2), and Volusia (3).

Imported Malaria: One hundred and three imported cases of malaria with onset in 2010 have been reported. Countries of origin were: Angola, Cameroon, Dominican Republic, Ghana (4), Guyana, Haiti (59), Honduras (4), India (8), Indonesia, Ivory Coast, Malawi (2), Nigeria (7), Pakistan (2), Peru, Philippines, South Africa, Togo, Uganda, West Africa (2), Zambia/South Africa, Africa, and unknown (2). Counties reporting cases were: Alachua, Brevard (2), Broward (18), Charlotte, Citrus, Collier (4), Duval (4), Escambia (3), Hillsborough (4), Lake, Lee, Leon, Miami-Dade (20), Manatee (2), Orange (15), Osceola (3), Palm Beach (12), Pasco, Pinellas, Polk (2), Sarasota, Seminole, St. Lucie, Volusia (2), and Wakulla.

Veterinary Cases

No positive horses were reported this week. In 2010, 22 WNV positive horses, one WNV positive reptile, and 93 EEEV positive horses have been reported.



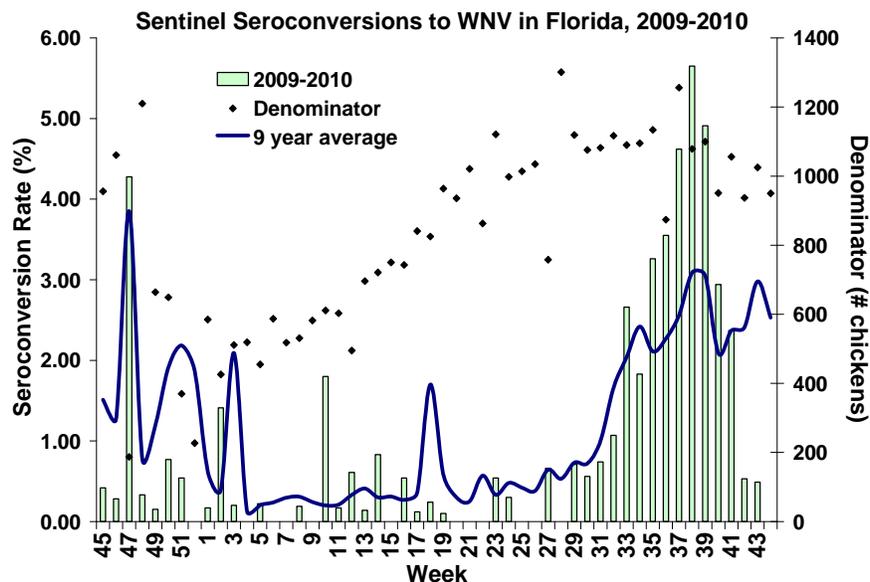
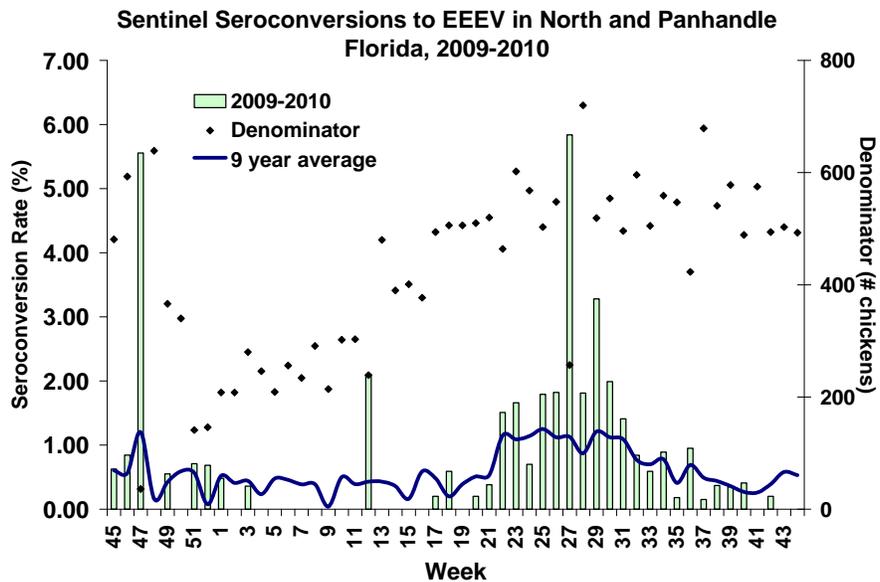


Sentinel Chickens

There was one seroconversion to EEEV in a sentinel chicken from Flagler County, 40 to WNV in Brevard, Citrus, Duval, Flagler, Hillsborough, Indian River, Lee, Leon, Manatee, Martin, Orange, Palm Beach, Putnam, Sarasota, St. Lucie, Volusia counties, and six to HJV in Leon, Orange, Putnam, and Volusia counties this week. Seroconversion rates are calculated by week and include previously reported results.

County	Collection Date	Seroconversion Rates (%)				County Totals	
		SLEV	WNV	EEEV	HJV	Week	YTD
Brevard	10/01/10		7.5			4 WNV	44 WNV, 1 EEE
	10/06, 10/07, 10/08/10		11.1			4 WNV	
Citrus	10/25/10		3.1			2 WNV	9 WNV, 5 EEE, 3 HJV
Duval	10/11/10		4.8			1 WNV	4 WNV, 5 EEE
Flagler	10/04/10		16.7	10.0		2 WNV, 1 EEE	5 WNV, 19 EEE, 4 HJV
Hillsborough	10/06/10		2.5			2 WNV	21 WNV, 2 EEE, 1 HJV
	10/12/10		4.8			4 WNV	
Indian River	09/30/10		8.9			4 WNV	42 WNV
	10/07/10		11.4			4 WNV	
	10/21/10		1.1			1 WNV	
Lee	10/04/10		8.6			3 WNV	53 WNV
	10/11/10		8.1			6 WNV	
Leon	10/04/10				2.4	1 HJV	6 WNV, 9 EEE, 4 HJV
	10/11/10				2.4	1 HJV	
	10/25/10		2.5			1 WNV	
Manatee	10/04/10		3.4			2 WNV	15 WNV
	10/11/10		3.5			2 WNV	
Martin	10/01/10		5.3			1 WNV	13 WNV, 2 EEE
Orange	10/04/10		1.1			1 WNV	38 WNV, 23 EEE, 23 HJV

County	Collection Date	Seroconversion Rates (%)			County Totals		
		SLEV	WNV	EEEV	HJV	Week	YTD
	10/11, 10/14/10		1.0			1 WNV	
Palm Beach	10/04/10		6.7			1 WNV	53 WNV
	10/11/10		7.1			1 WNV	
	10/18/10		5.9			1 WNV	
	10/26/10		18.1			2 WNV	
Putnam	10/01/10		18.2		16.7	2 WNV, 2 HJV	11 WNV, 7 EEE, 4 HJV
Sarasota	10/08/10		1.5			1 WNV	2 WNV, 3 EEE
St. Lucie	10/01/10		4.8			1 WNV	8 WNV
Volusia	10/04/10		9.0		4.8	2 WNV, 1 HJV	18 WNV, 16 EEE, 4 HJV
	10/11/10		5.6			1 WNV	



Live Wild Birds

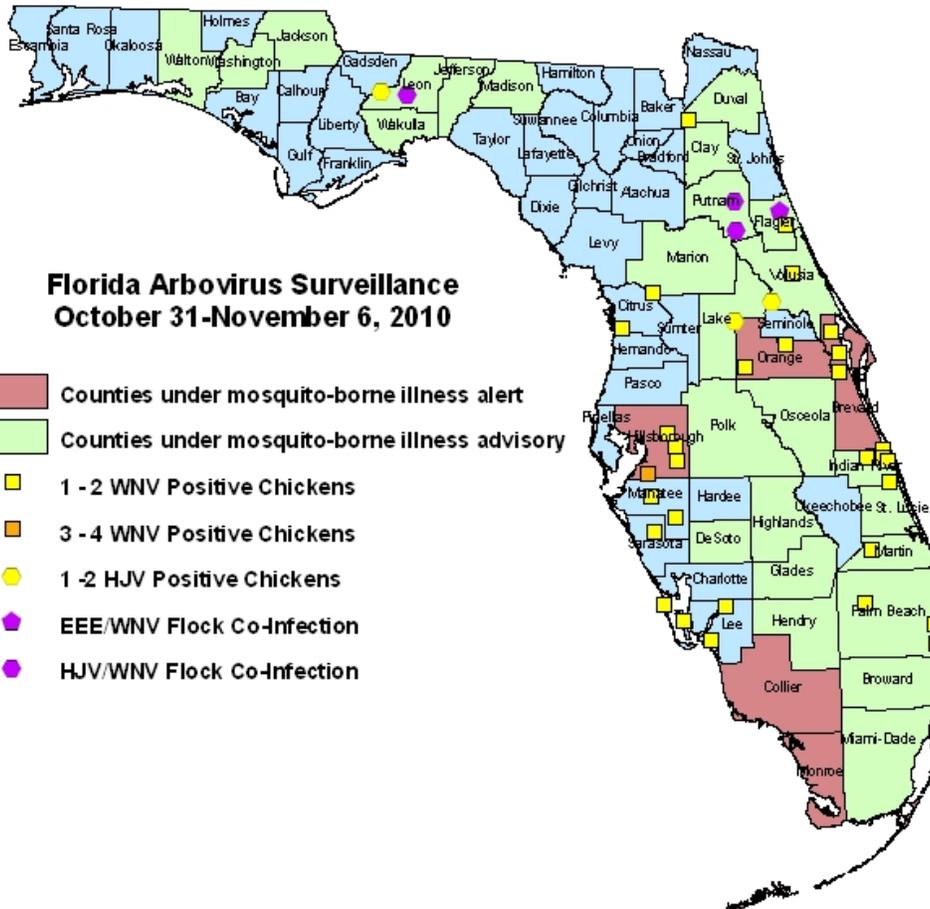
Out of nine live wild birds collected from Walton County on October 29, 2010, two cardinals tested positive for antibodies to EEEV.

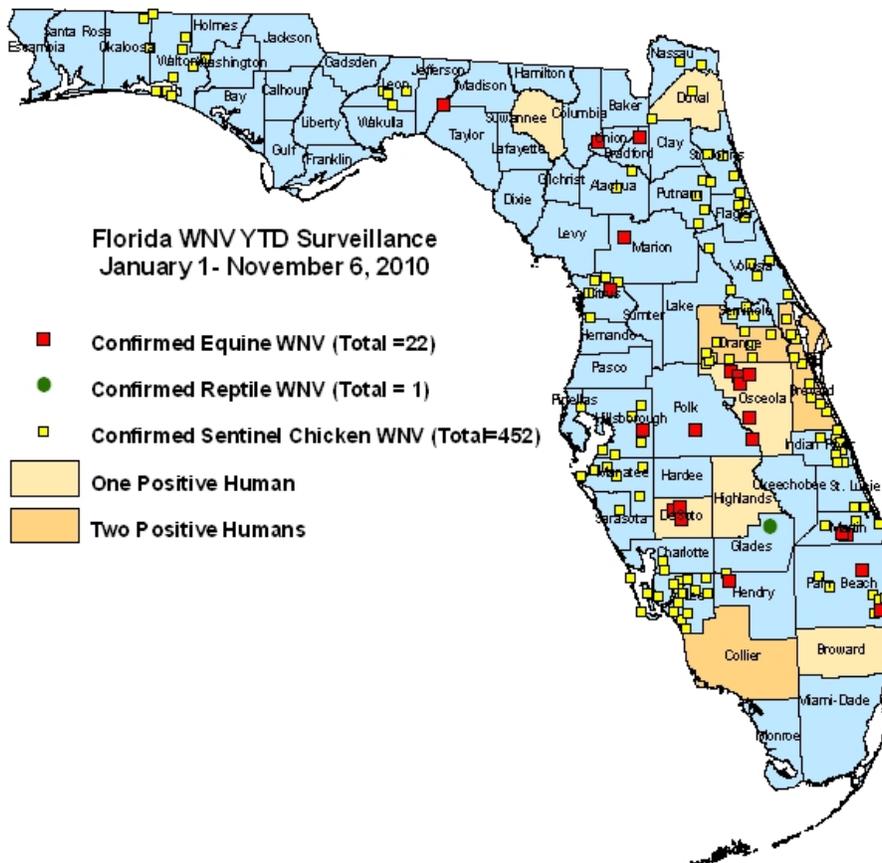
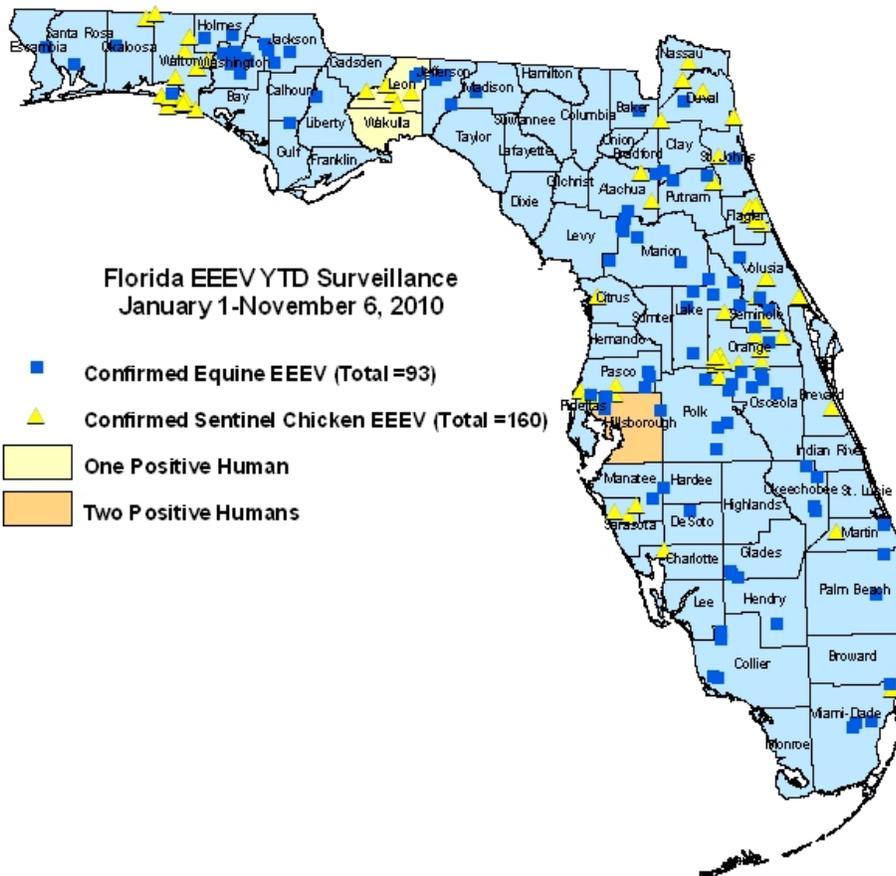
County	Collection Date	EEEV	Flavi	Species	EEEV Rate	Flavi Rate	County YTD
Walton	10/29/10	2		2 Cardinals	2 out of 9	N/A	8 EEE

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, seven reports representing 36 dead birds were received from six counties. Three were identified as raptors, none were identified as crows, or jays. In 2010, 305 reports representing a total of 977 dead birds (47 crows, 16 jays, 48 raptors, 765 others) have been reported from 48 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: 9 sentinels (8/2, 8/16, 9/7, 9/13, 9/20, 9/27, 10/18) EEE: 1 horse (7/21); 4 sentinels (7/16, 7/19, 8/2, 9/28) HJV: 1 sentinel (9/20)
Baker	EEE: 1 horse (7/26)
Bradford	WNV: 1 horse (10/06) EEE: 1 horse (6/16)
Brevard	WNV: 2 humans (1 case in October, 1 positive blood donor); 44 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, 10/1, 10/6, 10/7, 10/8) EEE: 1 sentinel (6/2)
Broward	DENV: 3 humans (1 acquired in Broward, 2 acquired in Key West) WNV: 1 human (August)
Charlotte	WNV: 3 sentinels (8/27, 9/10, 10/8)
Citrus	WNV: 1 horse (10/3); 9 sentinels (9/20, 9/27, 10/4, 10/11, 10/25) 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); 3 horses (9/6, 9/10, 9/21) EEE: 1 horse (8/23)
Duval	WNV: 1 human (September); 4 sentinels (9/13, 9/27, 10/11) EEE: 1 horse (8/18); 5 sentinels (6/21, 7/8, 7/21)
Escambia	EEE: 1 horse (8/16)
Flagler	WNV: 5 sentinels (9/13, 9/27, 10/4) EEE : 19 sentinels (3/22, 4/26, 5/3, 6/7, 6/21, 7/12, 7/19, 7/26, 8/2, 8/9, 9/27, 10/4); 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	WNV : 1 alligator (10/1) 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 : 3 sentinels (9/27, 10/12)
Highlands	WNV : 1 human (October)
Hillsborough	WNV : 1 horse (9/3) ; 21 sentinels (1/12, 1/19, 2/22, 3/9, 3/22, 4/20, 5/11, 6/15, 9/20, 10/6, 10/12) 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: 42 sentinels (7/22, 8/12, 8/19, 9/2, 9/9, 9/16, 9/23, 9/29, 9/30, 10/7, 10/14, 10/21)
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: 53 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, 10/4, 10/11)
Leon	DENV: 2 humans (acquired in Key West) WNV: 6 sentinels (9/20, 9/28, 10/25) EEE: 1 human (July); 2 horses (6/29, 8/5); 9 sentinels (6/1, 6/21, 8/2, 8/9, 8/16, 9/7, 9/20, 10/18) HJV: 4 sentinels (8/16, 8/23, 10/4, 10/11)
Liberty	EEE: 1 horse (7/11)
Madison	EEE: 2 horses (6/21, 7/3)
Manatee	WNV: 15 sentinels (8/30, 9/7, 9/13, 9/20, 9/27, 10/4, 10/11, 10/18) EEE: 1 horse (7/21)
Marion	WNV: 1 horse (10/1) EEE: 6 horses (5/7, 7/22, 8/3, 9/24, 10/11)
Martin	WNV: 2 horses (9/11, 9/16); 13 sentinels (8/13, 8/27, 9/10, 9/16, 9/23, 10/1, 10/15) EEE: 1 horse (8/4); 2 sentinels (5/28)
Miami-Dade	DENV: 1 human (acquired in Key West) SLEV: 5 sentinels (8/23, 9/7, 9/20, 9/27) EEE: 4 horses (6/7, 6/17, 7/4); 2 sentinels (6/14)

Monroe	DENV: 49 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); 13 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; 1 northern mockingbird 10/4)
Okeechobee	EEE: 4 horses (6/14, 7/1, 7/7, 7/17)
Orange	WNV: 2 humans (1 July, 1 August); 38 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, 10/4, 10/11, 10/14, 10/21) 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: 23 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, 10/11)
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); 53 sentinels (3/15, 8/2, 8/9, 8/17, 8/23, 8/30, 9/7, 9/13, 9/17, 9/20, 9/27, 10/4, 10/11, 10/18, 10/25) 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: 10 sentinels (8/27, 9/9, 9/17, 9/24, 10/1) EEE: 2 horses (7/26, 8/8); 7 sentinels (6/4, 7/23, 7/30, 8/6, 9/9, 9/24) HJV: 4 sentinels (5/14, 8/6, 10/1)
St. Johns	WNV: 21 sentinels (8/16, 8/23, 8/30, 9/7, 9/13, 9/20, 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: 8 sentinels (9/10, 9/17, 9/24, 10/1, 10/8)
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: 2 sentinels (1/8, 10/8) EEE: 3 sentinels (1/5, 1/11, 6/1)
Seminole	WNV: 5 sentinels (9/2, 9/16, 9/23, 10/7) EEE: 3 horses (6/26, 7/15, 8/14); 1 sentinel (7/2) HJV: 1 sentinel (7/27)
Suwannee	WNV: 1 human (September)
Union	WNV: 1 horse (10/13)
Volusia	WNV: 18 sentinels (7/19, 8/9, 8/16, 8/30, 9/7, 9/13, 9/20, 9/27, 10/4, 10/11) 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: 4 sentinels (5/17, 7/12, 9/7, 10/4)
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); 46 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, 10/4); 8 live wild birds (7 cardinals 6/24, 7/16, 7/22, 10/29, 1 blue jay 6/24) HJV: 19 sentinels (3/22, 5/17, 6/23, 7/19, 8/2, 9/2, 9/13, 9/16, 9/20, 9/23, 9/27)
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.