



## Florida Arbovirus Surveillance Week 34: August 22-28, 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 22-28, 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 35 locally-acquired cases in Key West and one in Broward.

**EEEV activity:** Two EEEV-confirmed positive horses were reported in Seminole and Escambia counties. Nine sentinel chickens from Leon, Nassau, Putnam, and Walton counties tested positive for antibodies to EEEV. Three confirmed positive mosquito pools were reported in Volusia County. In 2010, positive samples from four humans, 83 equines, 138 sentinel chickens, 30 live wild birds, and six mosquito pools have been received from 42 of Florida's 67 counties.

**WNV activity:** One human case of WNV was reported in Orange County. Thirteen sentinel chickens from Alachua, Brevard, Lee, Palm Beach, and St. Johns counties tested positive for antibodies to WNV. In 2010, positive samples from two humans, six equines, 94 sentinel chickens, and one live wild bird (flavivirus positive) have been received from 14 counties.

**HJV activity:** One sentinel chicken from Putnam County tested positive for antibodies to HJV. In 2010, positive samples from 48 sentinel chickens have been received from 11 counties.

**Advisories/Alerts:** Orange and Flagler counties issued mosquito-borne illness advisories this week. Monroe and Hillsborough counties are under mosquito-borne illness alerts. Walton, Volusia, Clay, Osceola, Miami-Dade, Collier, Glades, Polk, Lake, Jackson, Washington, Jefferson, Wakulla, Leon, Madison, Broward, Marion, and Putnam 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).

**West Nile Virus Infection Acquired in Florida:** Two human cases of WNV have been reported in 2010 in Osceola and Orange counties with onset in July.

**Dengue Acquired in Florida:** In 2010, one case of dengue has been reported as acquired in Broward County and 35 cases of dengue have been reported as acquired in Key West. Of the Key West cases, 26 are Key West residents, eight are residents of other Florida counties, and one resides out of state. Onset dates ranged from March 17 to August 12, 2010.

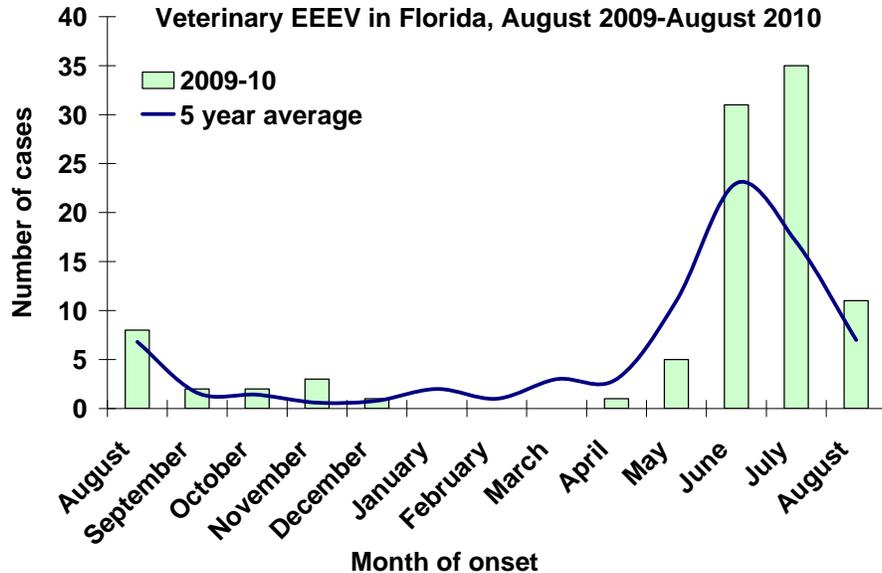
**Imported Dengue:** Seventy-seven cases of dengue with onset in 2010 have been reported in individuals with travel history to a dengue endemic country in the two weeks prior to onset. Countries of origin were: Brazil, Colombia (7), Costa Rica (4), Dominican Republic (11), Ecuador, El Salvador, Guatemala (2), Haiti (3), Honduras (4), Jamaica (4), Nicaragua (2), Philippines, Puerto Rico (23), St. Thomas, Venezuela (10), Malaysia/Dubai/Bangladesh, and Panama/Venezuela (slash indicates travel to more than one country). Counties reporting cases were Alachua (2), Broward (12), Collier, Duval, Escambia, Flagler, Hendry, Hillsborough (5), Lake, Lee, Marion, Miami-Dade (25), Monroe, Orange (6), Osceola (4), Palm Beach (7), Pasco, Pinellas, Seminole (2), St. Lucie, and Volusia (2).

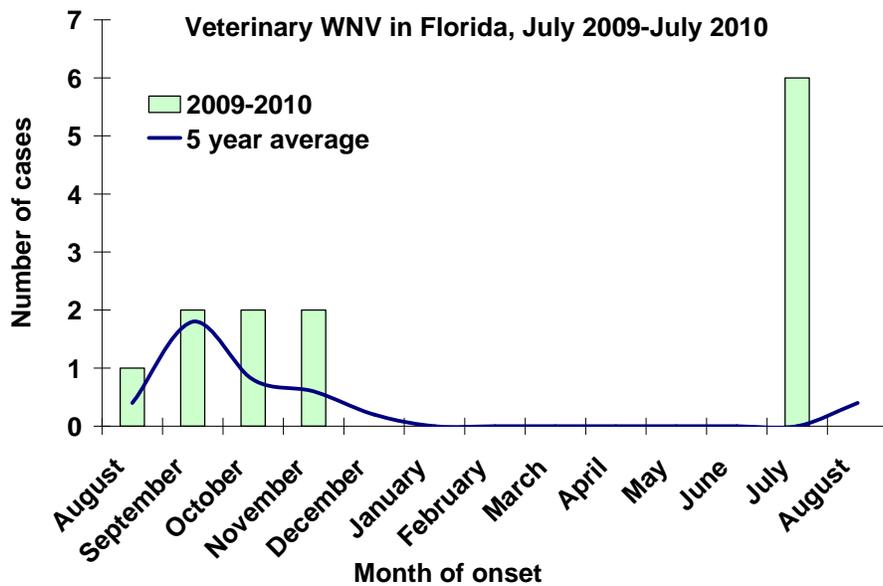
**Imported Malaria:** Seventy-six imported cases of malaria with onset in 2010 have been reported. Countries of origin were: Angola, Dominican Republic, Ghana (4), Guyana, Haiti (48), Honduras (3), India (3), Ivory Coast, Malawi, Nigeria (6), Philippines, South Africa, Togo, Uganda, West Africa, Zambia/South Africa, and unknown. Counties reporting cases were: Brevard (2), Broward (10), Charlotte, Citrus, Collier (4), Duval (2), Escambia (2), Hillsborough (4), Miami-Dade (16), Manatee, Orange (14), Osceola (3), Palm Beach (10), Pinellas, Polk, Seminole, St. Lucie, Volusia, and Wakulla.

**Veterinary Cases**

Two horses in Seminole and Escambia counties tested positive for EEE this week. In 2010, six WNV positive horses and 83 EEEV positive horses have been reported.

County	Onset Date	Species	Virus	Status	County YTD
Escambia	08/16/2010	Equine	EEE	Dead	1 EEE
Seminole	08/14/2010	Equine	EEE	Dead	3 EEE

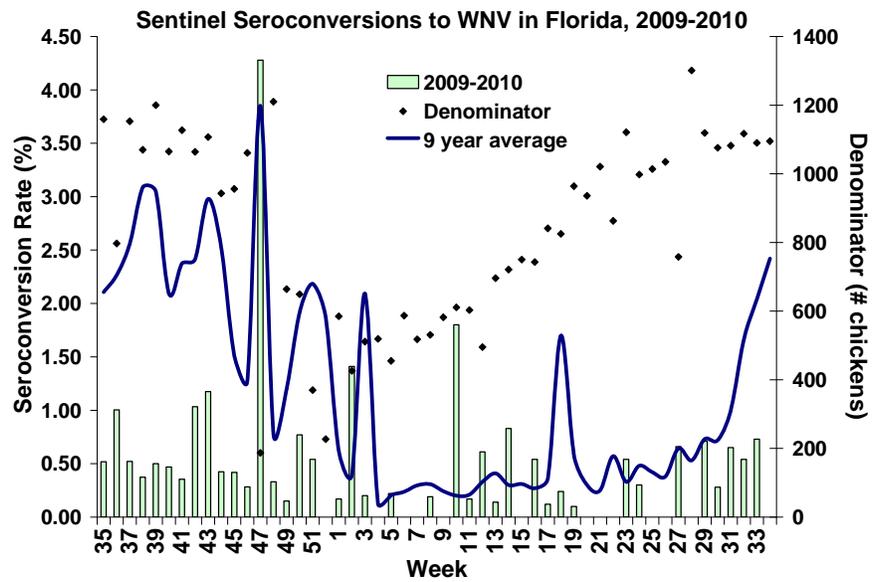
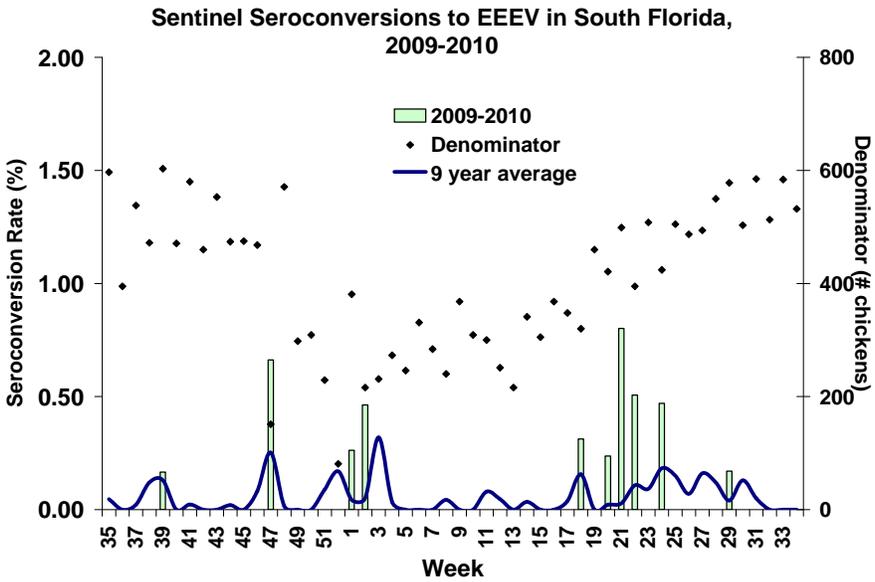
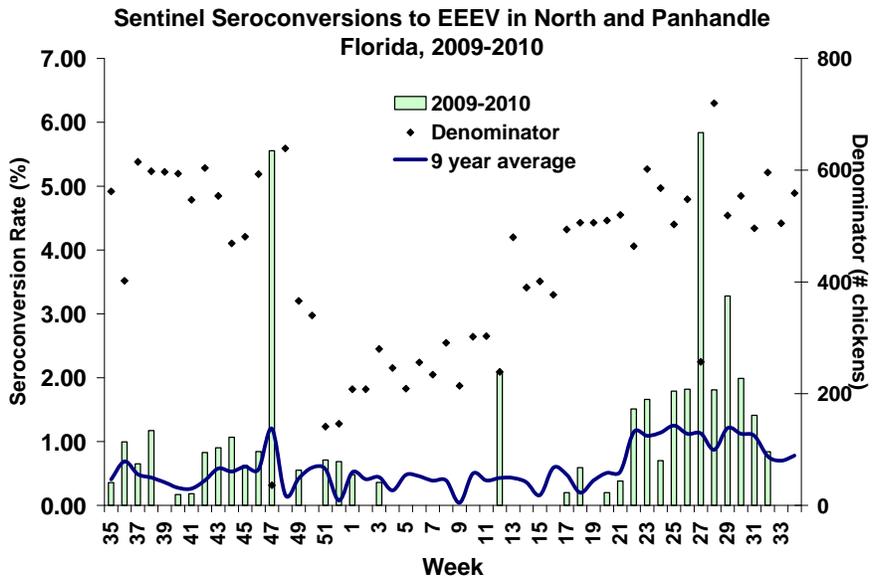




### Sentinel Chickens

There were nine seroconversions to EEE in sentinel chickens from Leon, Nassau, Putnam, and Walton counties, 13 seroconversions to WNV in Alachua, Brevard, Lee, Palm Beach, and St. Johns counties, and one to HJV in Putnam County 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	08/17/2010	8.7			2 WNV	5 WNV
St. Johns	08/16/2010	8.5			5 WNV	5 WNV, 3 EEE, 3 HJV
Lee	08/16/2010	3.8			3 WNV	8 WNV
	08/02/2010	1.0			1 WNV	
Brevard	08/11/2010	1.8			1 WNV	4 WNV, 1 EEE
Walton (South)	08/09/2010		6.5		2 EEE	3 WNV, 16 EEE, 3 HJV
Nassau	08/09/2010		2.9		1 EEE	4 EEE, 6 HJV
Putnam	08/06/2010		7.1	7.1	1 EEE, 1 HJV	5 EEE, 2 HJV
Alachua	08/02/2010	6.7	6.7		1 WNV, 1 EEE	1 WNV, 3 EEE
Leon	08/02/2010		2.5		1 EEE	4 EEE
Walton (North)	07/26, 07/28/10		21.7		5 EEE	38 WNV, 22 EEE, 5 HJV



## Live Wild Birds

No live wild birds were reported positive this week.

## Mosquito Pools

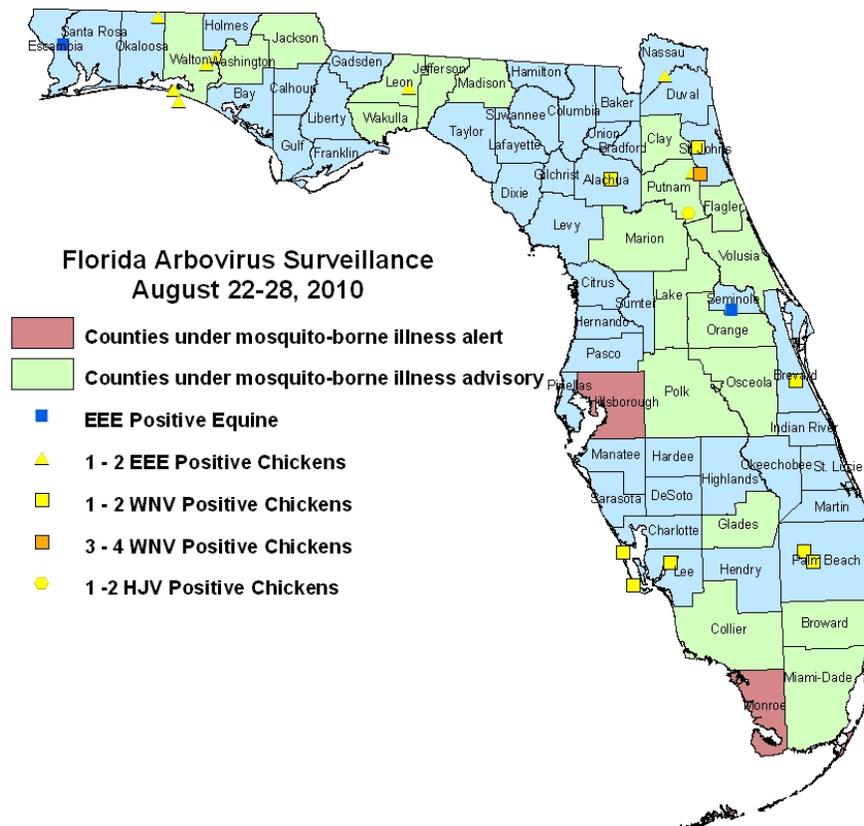
EEEV was isolated from three mosquito pools (*Culiseta melanura*) collected in Volusia County.

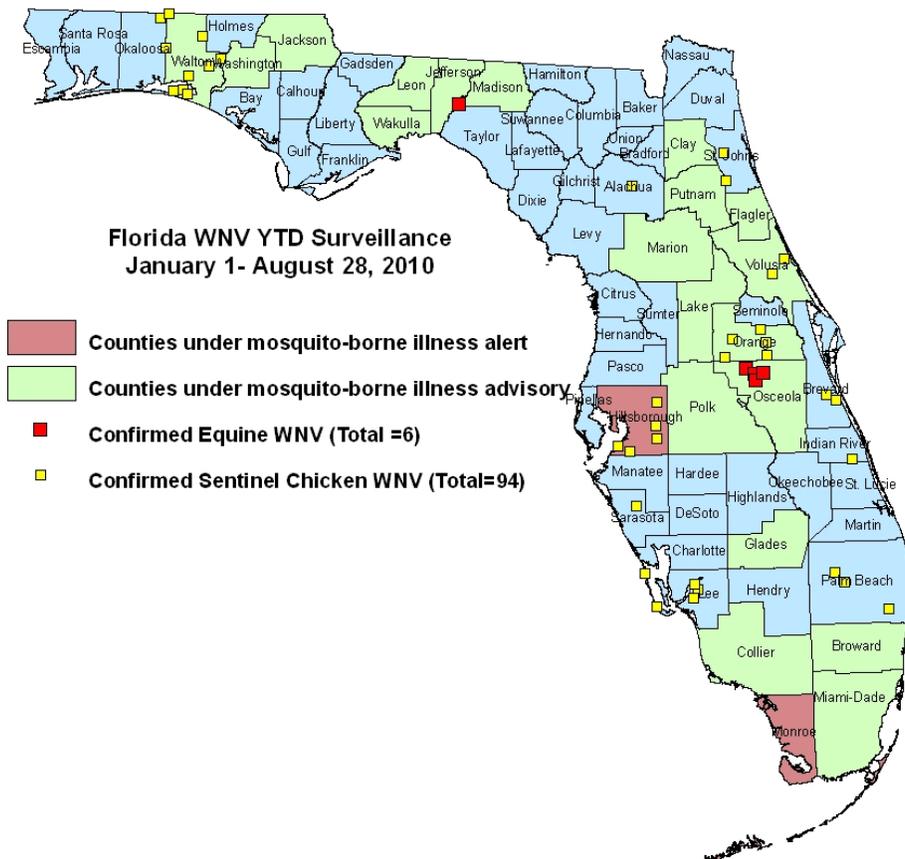
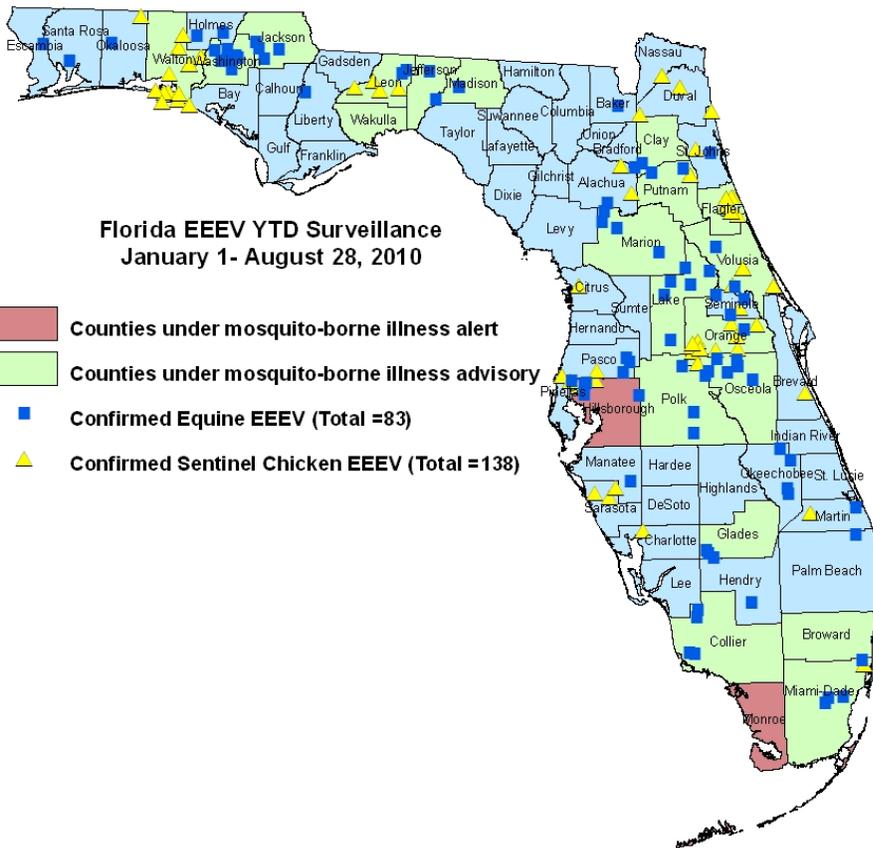
County	Collection Date	Number in Pool	Result	Species	County YTD
Volusia	06/29/2010	43	EEEV	<i>Culiseta melanura</i>	3 EEE
	06/22/2010	50	EEEV	<i>Culiseta melanura</i>	
	06/15/2010	37	EEEV	<i>Culiseta melanura</i>	

## 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 six dead birds were received from five counties. Two were identified as crows; none were identified as jays or raptors. In 2010, 233 reports representing a total of 730 dead birds (342 crows, 10 jays, 41 raptors, 637 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/](http://www.myfwc.com/bird/)

## Maps





## YTD Arbovirus Activity by County

County	Arbovirus Activity
<b>Alachua</b>	WNV: 1 sentinel (8/2) EEE: 1 horse (7/21); 3 sentinels (7/16, 7/19, 8/2)
<b>Baker</b>	EEE: 1 horse (7/26)
<b>Bradford</b>	EEE: 1 horse (6/16)
<b>Brevard</b>	WNV: 4 sentinels (7/7, 7/21, 8/4, 8/11) EEE: 1 sentinel (6/2)
<b>Broward</b>	DENV: 3 humans (1 acquired in Broward, 2 acquired in Key West)
<b>Citrus</b>	EEE: 5 sentinels (5/24, 6/7, 6/28, 7/12, 7/19) HJV: 2 sentinels (5/17, 5/24)
<b>Clay</b>	EEE: 1 horse (6/16)
<b>Collier</b>	EEE: 4 horses (6/9, 6/22, 6/29, 7/9)
<b>Duval</b>	EEE: 5 sentinels (6/21, 7/8, 7/21)
<b>Escambia</b>	EEE: 1 horse (8/16)
<b>Flagler</b>	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: 2 sentinels (6/14, 6/28)
<b>Glades</b>	EEE : 3 horses (6/20, 6/24, 7/26)
<b>Hendry</b>	EEE : 1 horse (7/21)
<b>Hillsborough</b>	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)
<b>Holmes</b>	EEE: 2 horses (7/23, 8/9)
<b>Indian River</b>	WNV: 1 sentinel (7/22)
<b>Jackson</b>	EEE: 4 horses (6/14, 6/28, 7/10, 8/1)
<b>Jefferson</b>	WNV: 1 horse (7/4) EEE: 2 horses (7/20, 8/1)
<b>Lake</b>	EEE: 6 horses (5/20, 6/29, 7/4, 7/9, 7/15, 7/17)
<b>Lee</b>	WNV: 8 sentinels (3/30, 4/20, 8/2, 8/9, 8/16)
<b>Leon</b>	DENV: 2 humans (acquired in Key West) EEE: 1 human (July); 2 horses (6/29, 8/5); 4 sentinels (6/1, 6/21, 8/2, 8/9)
<b>Liberty</b>	EEE: 1 horse (7/11)
<b>Madison</b>	EEE: 2 horses (6/21, 7/3)
<b>Manatee</b>	EEE: 1 horse (7/21)
<b>Marion</b>	EEE: 4 horses (5/7, 7/22, 8/3)
<b>Martin</b>	EEE: 1 horse (8/4); 1 sentinel (5/28)
<b>Miami-Dade</b>	DENV: 1 human (acquired in Key West) EEE: 4 horses (6/7, 6/17, 7/4); 2 sentinels (6/14)
<b>Monroe</b>	DENV: 24 humans (acquired in Key West)
<b>Nassau</b>	EEE: 4 sentinels (6/28, 7/13, 7/19, 8/9) HJV: 4 sentinels (6/28, 7/13, 7/19, 7/26)
<b>Okaloosa</b>	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)
<b>Okeechobee</b>	EEE : 4 horses (6/14, 7/1, 7/7, 7/17)
<b>Orange</b>	WNV : 1 human (July) ; 11 sentinels (6/14, 7/6, 7/19, 7/26, 8/2, 8/9) EEE : 1 horse (7/16); 21 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) HJV : 16 sentinels (5/17, 6/7, 6/10, 6/14, 6/24, 7/6, 7/8, 7/15, 7/19, 7/22)
<b>Osceola</b>	WNV: 1 human (July); 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)
<b>Palm Beach</b>	WNV: 5 sentinels (3/15, 8/2, 8/17) EEE: 1 horse (6/22)
<b>Pasco</b>	EEE: 3 horses (6/11, 7/16, 8/7); 3 sentinels (7/6, 7/12) HJV: 2 sentinels (6/28, 7/6)
<b>Pinellas</b>	DENV: 1 human (acquired in Key West) EEE: 3 sentinels (5/24, 7/19) HJV: 2 sentinels (4/26, 7/6)
<b>Polk</b>	EEE: 3 horses (4/28, 6/25, 6/28)
<b>Putnam</b>	EEE: 2 horses (7/26, 8/8); 5 sentinels (6/4, 7/23, 7/30, 8/6) HJV: 2 sentinels (5/14, 8/6)

<b>St. Johns</b>	WNV : 5 sentinels (8/16) EEE: 1 horse (6/18); 3 sentinels (6/1, 7/12, 7/26) HJV: 3 sentinels (4/26, 5/3, 7/12)
<b>Santa Rosa</b>	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)
<b>Sarasota</b>	DENV: 2 humans (acquired in Key West) EEE: 3 sentinels (1/5, 1/11, 6/1) WNV : 1 sentinel (1/8)
<b>Seminole</b>	EEE : 3 horses (6/26, 7/15, 8/14) ; 1 sentinel (7/2)
<b>Volusia</b>	WNV : 3 sentinels (7/19, 8/9) 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)
<b>Wakulla</b>	EEE: 1 human (July)
<b>Walton</b>	WNV : 41 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) EEE : 38 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); 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)
<b>Washington</b>	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.