



## Florida Arbovirus Surveillance Week 35: August 29-September 4, 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 29-September 4, 2010, the following arboviral activity was recorded in Florida:

**DENV activity:** Three 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:** Four EEEV-confirmed positive horses were reported in Walton, Duval, Hardee and Jefferson counties. Three sentinel chickens from Leon and Nassau counties tested positive for antibodies to EEEV. In 2010, positive samples from four humans, 87 equines, 141 sentinel chickens, 30 live wild birds, and six mosquito pools have been received from 42 of Florida's 67 counties.

**WNV activity:** Eighteen sentinel chickens from Brevard, Lee, Orange, Palm Beach, St. Johns, and Walton counties tested positive for antibodies to WNV. In 2010, positive samples from two humans, six equines, 111 sentinel chickens, and one live wild bird (flavivirus positive) have been received from 14 counties.

**HJV activity:** Nine sentinel chickens from Citrus, Flagler, Leon, Nassau, Orange, and Pasco counties tested positive for antibodies to HJV. In 2010, positive samples from 57 sentinel chickens have been received from 12 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, Jefferson, Wakulla, Leon, Madison, Broward, Marion, Putnam, Orange, 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 (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 38 cases of dengue have been reported as acquired in Key West. Of the Key West cases, 29 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 17, 2010.

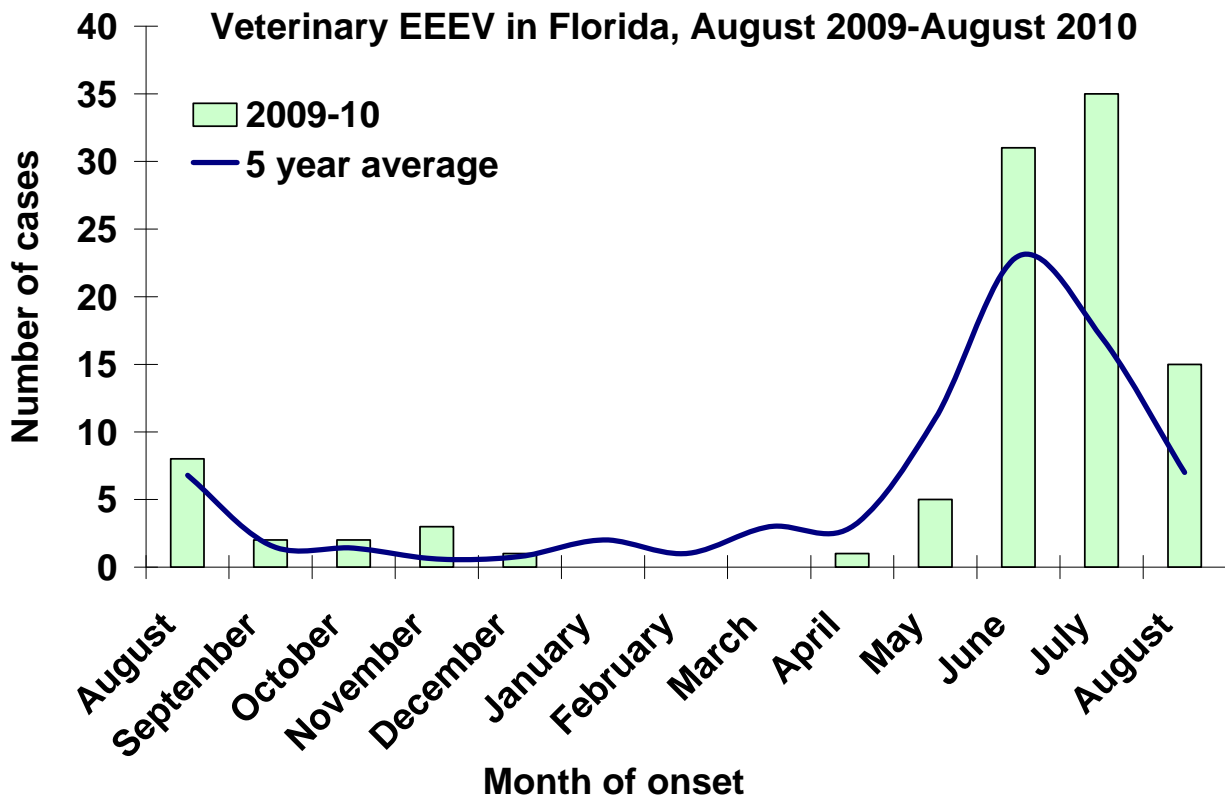
**Imported Dengue:** Eighty-four cases of dengue with onset in 2010 have been reported in individuals with travel history to a dengue endemic country in the two weeks prior to onset. Countries of origin were: Brazil, Colombia (7), Costa Rica (4), Dominican Republic (12), Ecuador, El Salvador, Guatemala (2), Haiti (5), Honduras (5), Jamaica (4), Nicaragua (2), Philippines, Puerto Rico (26), 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 (14), Collier (2), Duval (2), Escambia, Flagler, Hendry, Hillsborough (5), Lake, Lee, Marion, Miami-Dade (26), Monroe, Orange (7), Osceola (4), Palm Beach (7), Pasco, Pinellas, Seminole (2), St. Lucie (2), and Volusia (2).

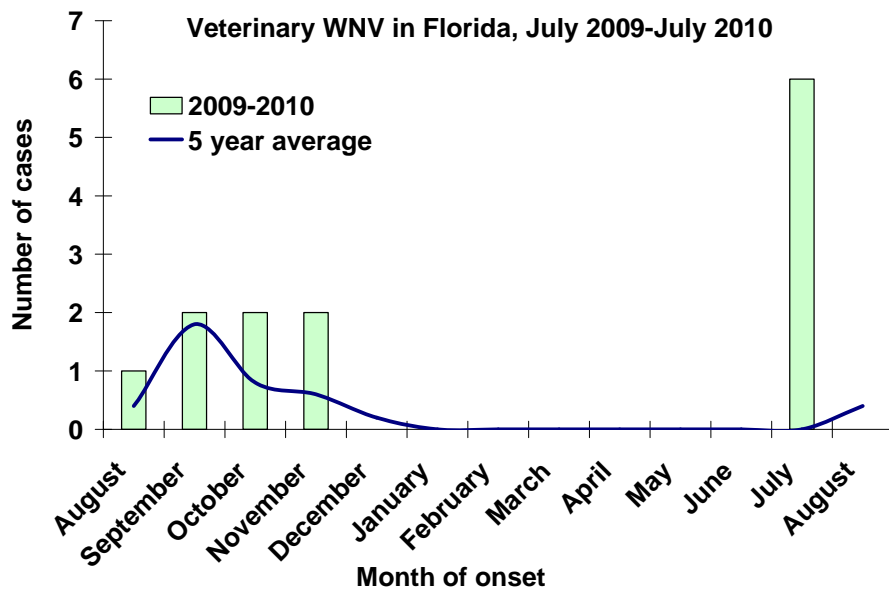
**Imported Malaria:** Seventy-eight imported cases of malaria with onset in 2010 have been reported. Countries of origin were: Angola, Dominican Republic, Ghana (4), Guyana, Haiti (48), Honduras (3), India (5), Ivory Coast, Malawi, Nigeria (6), Philippines, South Africa, Togo, Uganda, West Africa, Zambia/South Africa, and unknown. Counties reporting cases were: Brevard (2), Broward (11), Charlotte, Citrus, Collier (4), Duval (2), Escambia (2), Hillsborough (4), Miami-Dade (16), Manatee, Orange (15), Osceola (3), Palm Beach (10), Pinellas, Polk, Seminole, St. Lucie, Volusia, and Wakulla.

**Veterinary Cases**

Four horses in Walton, Duval, Hardee, and Jefferson counties tested positive for EEE this week. In 2010, six WNV positive horses and 87 EEEV positive horses have been reported.

County	Onset Date	Species	Virus	Status	County YTD
Duval	08/18/2010	Equine	EEE	Euthanized	1 EEE
Walton	08/05/2010	Equine	EEE	Euthanized	1 EEE
Hardee	08/22/2010	Equine	EEE	Alive	1 EEE
Jefferson	08/25/2010	Equine	EEE	Euthanized	1 EEE

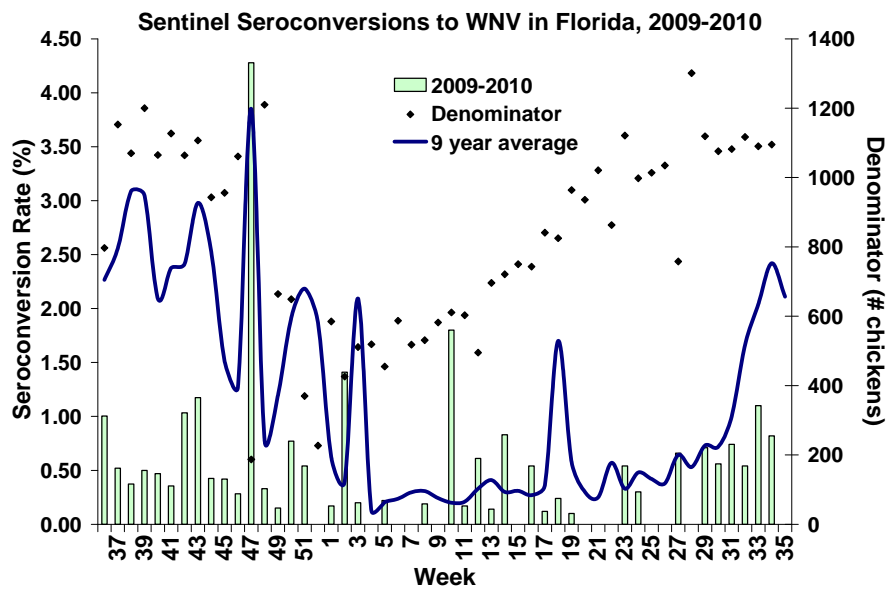
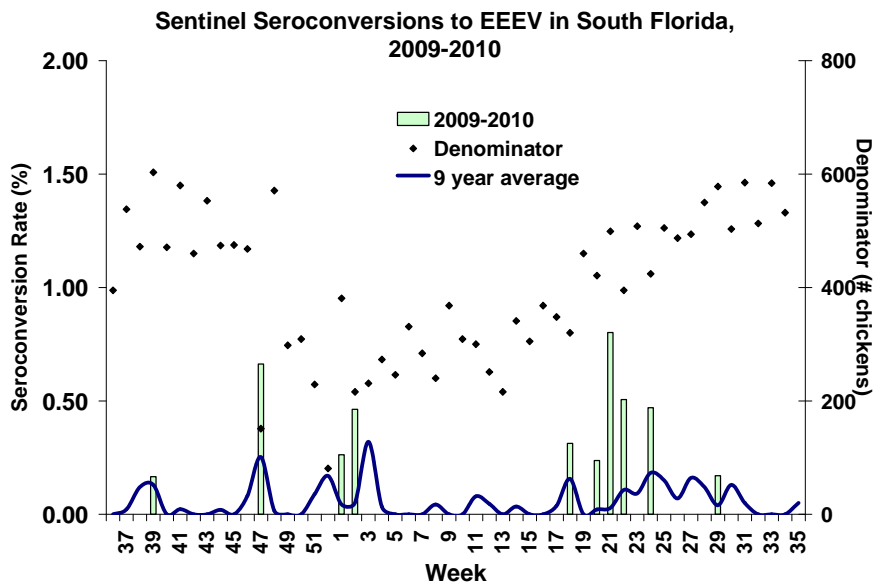
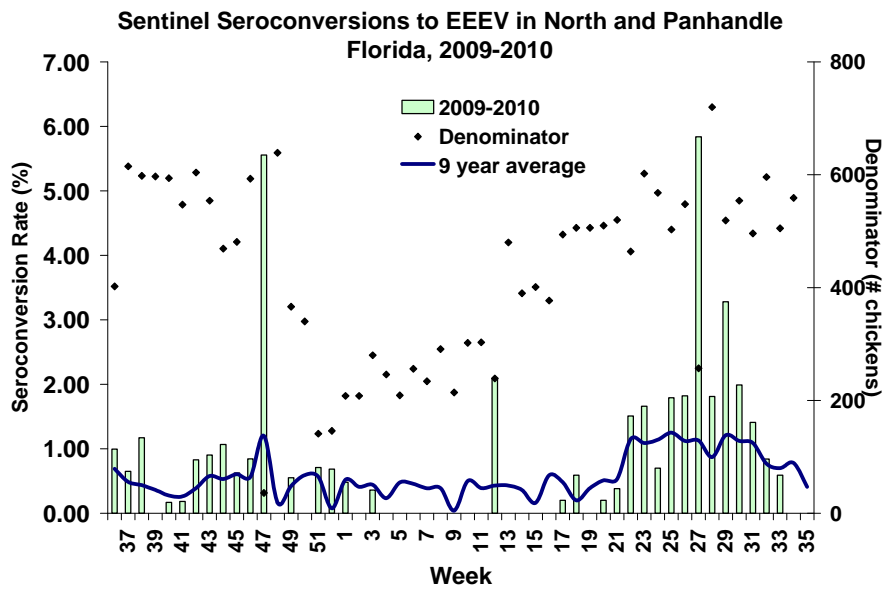




**Sentinel Chickens**

There were three seroconversions to EEE in sentinel chickens from Leon and Nassau counties, 18 to WNV in Brevard, Lee, Orange, Palm Beach, St. Johns, and Walton counties, and nine to HJV in Citrus, Flagler, Leon, Nassau, Orange, and Pasco counties this week. Seroconversion rates are calculated by week and include previously reported results. One sentinel from Orange County reported August 21 with collection August 9 was mistakenly included in the surveillance totals and has been removed.

County	Collection Date	Seroconversion Rates (%)			County Totals	
		WNV	EEEV	HJV	Week	YTD
Lee	08/24/2010	3.0			1 WNV	9 WNV
Palm Beach	08/23/2010	12.9			4 WNV	10 WNV
Orange	08/09/2010	3.8			1 WNV	
	08/23/2010	2.9			3 WNV	13 WNV, 21 EEE, 21 HJV
St. Johns	08/16/2010			2.8	3 HJV	
	08/02, 08/05/10	2.0		1.9	2 WNV, 2 HJV	
	08/23/2010	1.7			1 WNV	6 WNV, 3 EEE, 3 HJV
Brevard	08/18, 08/20/10	6.5			4 WNV	9 WNV, 1 EEE
	08/04/2010	3.1			2 WNV	
Leon	08/16/2010		5.0	2.5	2 EEE, 1 HJV	6 EEE, 1 HJV
Nassau	08/16/2010		3.1		1 EEE	5 EEE, 7 HJV
Flagler	08/16/2010			9.1	1 HJV	17 EEE, 3 HJV
Pasco	08/16/2010			4.2	1 HJV	3 EEE, 3 HJV
Citrus	08/04/2010			1.5	1 HJV	5 EEE, 3 HJV
Walton (North)	07/28, 07/30/10	8.8			3 WNV	41 WNV, 22 EEE, 5 HJV



## Live Wild Birds

No live wild birds were reported positive this week.

## 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, thirteen reports representing thirty-one dead birds were received from eleven counties. Two were identified as crows; none were identified as jays and 2 were raptors. In 2010, 246 reports representing a total of 761 dead birds (44 crows, 10 jays, 43 raptors, 559 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/)

## 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: 9 sentinels (7/7, 7/21, 8/4, 8/11, 8/18, 8/20) 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: 3 sentinels (5/17, 5/24, 8/9)
<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: 1 horse (8/18); 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: 3 sentinels (6/14, 6/28, 8/16)
<b>Glades</b>	EEE : 3 horses (6/20, 6/24, 7/26)
<b>Hardee</b>	EEE : 1 horse (8/22)
<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: 3 horses (7/20, 8/1, 8/25)
<b>Lake</b>	EEE: 6 horses (5/20, 6/29, 7/4, 7/9, 7/15, 7/17)
<b>Lee</b>	WNV: 9 sentinels (3/30, 4/20, 8/2, 8/9, 8/16, 8/24)
<b>Leon</b>	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: 1 sentinel (8/16)
<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: 29 humans (acquired in Key West)
<b>Nassau</b>	EEE: 5 sentinels (6/28, 7/13, 7/19, 8/9, 8/16)

	HJV: 5 sentinels (6/28, 7/13, 7/19, 7/26, 8/16)
<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); 13 sentinels (6/14, 7/6, 7/19, 7/26, 8/2, 8/23) 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: 21 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)
<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: 10 sentinels (3/15, 8/2, 8/9, 8/17, 8/23) EEE: 1 horse (6/22)
<b>Pasco</b>	EEE: 3 horses (6/11, 7/16, 8/7); 3 sentinels (7/6, 7/12) HJV: 3 sentinels (6/28, 7/6, 8/16)
<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: 6 sentinels (8/16, 8/23) 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: 44 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) EEE: 1 horse (8/5); 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.