

**Florida Arbovirus Surveillance**  
**Week 49: December 04 – December 10, 2011**

Arbovirus surveillance in Florida includes endemic mosquito-borne viruses such as 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 December 04 - December 10, 2011, the following arboviral activity was recorded in Florida:

**DENV activity:** No new cases of locally acquired dengue were reported this week. In 2011, there have been two locally acquired cases each in Miami-Dade and Palm Beach counties, and one case each in Martin and Hillsborough counties.

**EEEV activity:** Two equine cases of EEE were reported in Lake County. Three sentinel chickens in Citrus, Orange and Volusia counties tested positive for antibodies to EEEV. In 2011, positive samples from six equines, 36 sentinel chickens and 19 live wild birds have been received from 17 counties.

**WNV activity:** Two new cases of locally acquired WNV infection were reported in Duval and Palm Beach counties. Eleven sentinel chickens in Hillsborough, Orange, Pinellas and Sarasota counties tested positive for antibodies to WNV. In 2011, positive samples from 27 humans, 199 sentinel chickens, three equines and one live wild bird (flavivirus positive) have been received from 24 counties.

**SLEV activity:** One sentinel chicken in Hillsborough County tested positive for antibodies to SLEV. In 2011, positive samples from 59 sentinel chickens have been received from five counties.

**HJV activity:** No HJV activity was reported this week. In 2011, positive samples from 13 sentinel chickens have been received from four counties.

**Advisories/Alerts:** Duval and Palm Beach counties are under mosquito-borne illness alert. Clay, Hillsborough, Lake, Leon, Miami-Dade, Martin and Pinellas counties are under mosquito-borne illness advisory. The Bahamas has also issued an alert due to high dengue activity: <http://wwwnc.cdc.gov/travel/notices/outbreak-notice/dengue-bahamas.htm>

**Year to Date Human Case Summary**

**West Nile Virus Infection Acquired in Florida:** Twenty-four human cases of WNV infection have been acquired in Florida in 2011 with onset in June (1), July (8), Aug (8), Sep (5) and Oct (2). Twenty cases were exposed in Duval; 18 of these cases were Duval County residents, one was a Leon County resident, and one case was a New Jersey resident. Four additional cases were acquired in Clay (1), Leon (1), Miami-Dade (1) and Palm Beach (1) counties. Three positive asymptomatic blood donors were reported in Duval County.

**Dengue Acquired in Florida:** In 2011, six cases of locally acquired dengue have been reported in Miami-Dade (January and August), Martin (July), Hillsborough (September) and Palm Beach (2 cases in September) counties.

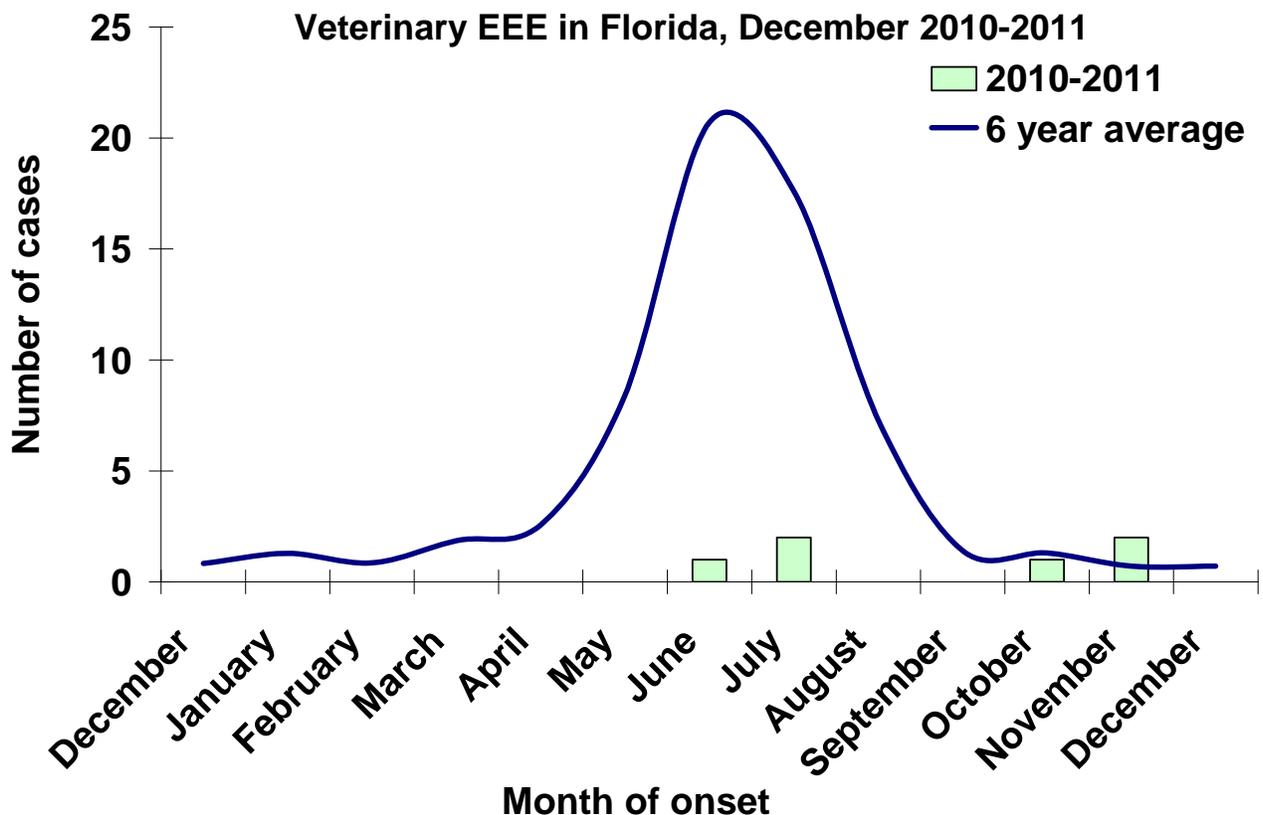
**Imported Dengue:** Fifty-six cases of dengue with onset in 2011 have been reported in individuals with travel history to a dengue endemic country in the two weeks prior to onset. Countries of origin were Aruba, Bahamas (14), Bangladesh (3), Brazil (2), Colombia, Cuba (3), Dominican Republic, Guyana, Haiti (2), India, Jamaica (2), Nicaragua (2), Pakistan, Panama (2), Puerto Rico (11), St. Lucia (2), Trinidad (4), Turks and Caicos Islands, Venezuela and Vietnam. Counties reporting cases were Brevard (2), Broward (3), Clay (2), Flagler (2), Gulf, Hendry, Hillsborough (3), Lee, Marion, Martin, Miami-Dade (16), Orange (4), Osceola, Palm Beach (9), Pasco, Pinellas, St. Johns (3), St. Lucie (3) and Washington.

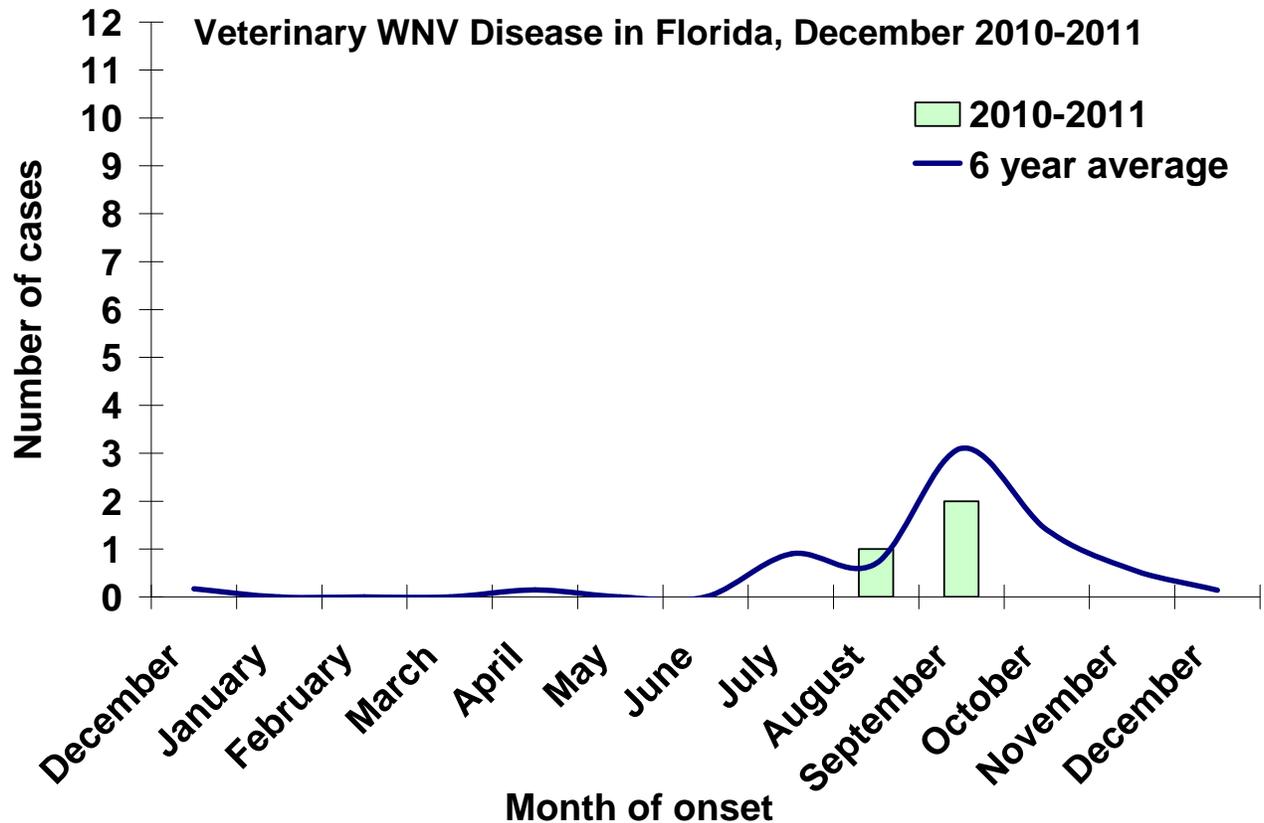
**Imported Malaria:** Ninety imported cases of malaria with onset in 2011 have been reported. Countries of origin were: Afghanistan (5), Brazil, Cameroon, East Timor, Ethiopia (2), Eritrea (2), French Guiana, Gabon, Ghana (6), Guinea Conakry, Guyana, Haiti (26), Honduras (4), India (14), Kenya, Liberia (2), Libya, Mali (2), Nigeria (7), New Guinea, Pakistan, Peru, Rwanda, Senegal, Uganda (4), Venezuela and West Africa. Counties reporting cases were: Alachua (2), Brevard (4), Broward (13), Citrus, Collier (2), Duval (8), Escambia, Gulf, Hillsborough (7), Indian River, Lee (5), Leon (2), Miami-Dade (18), Manatee (3), Okaloosa, Orange (5), Palm Beach (6), Pasco (2), Pinellas, Santa Rosa, Seminole, St. Johns and St. Lucie (4).

**Veterinary Cases**

Two horses in Lake County tested positive for EEEV this week.

County	Onset Date	Species	Virus	Status	County YTD
Lake	11/27/11	Equine	EEEV	Euthanized	
Lake	11/27/11	Equine	EEEV	Euthanized	2 EEEV



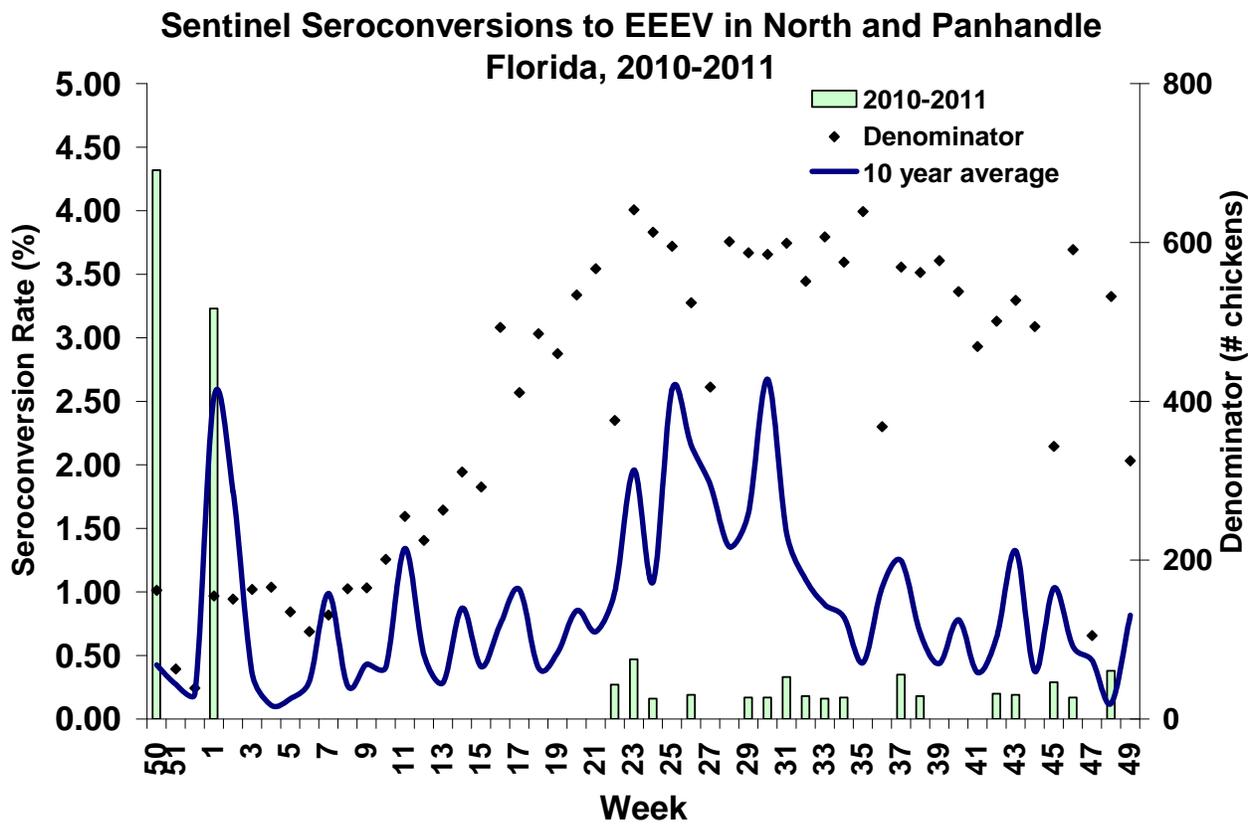


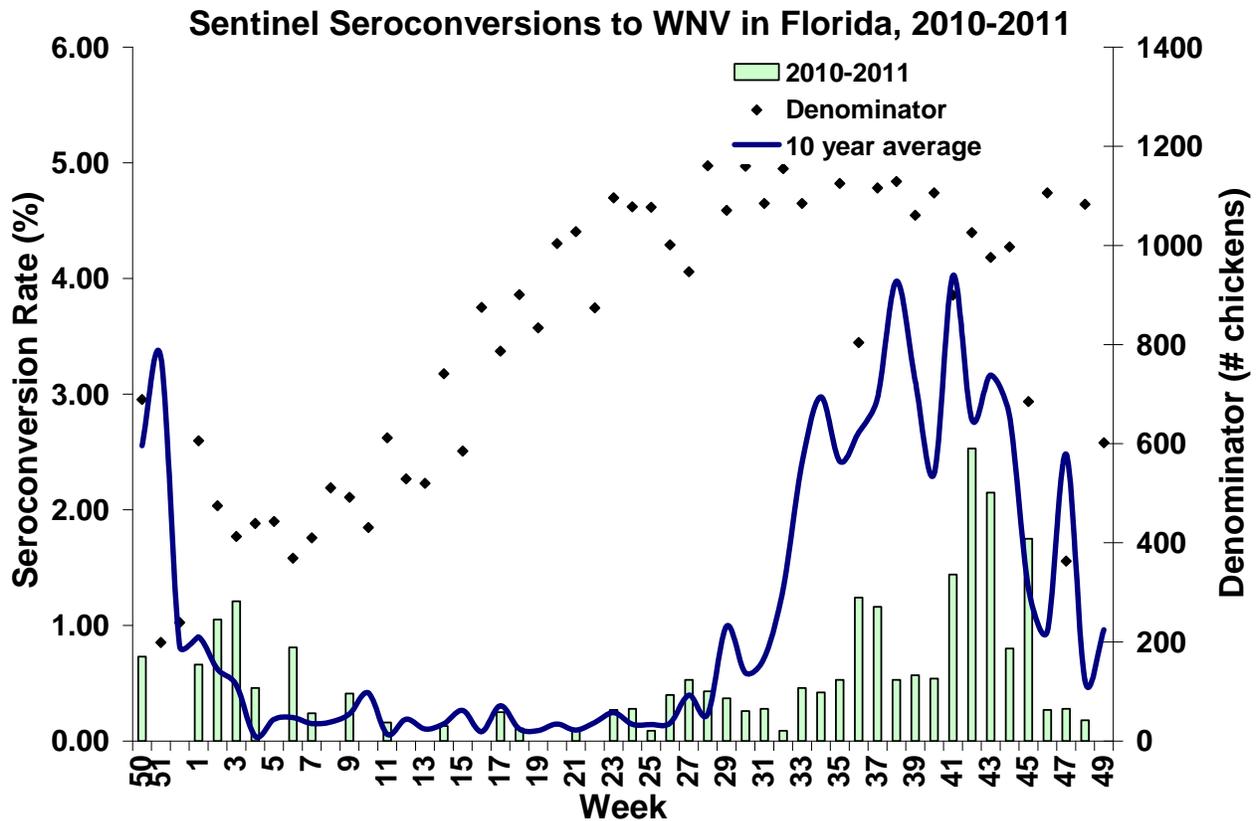
### Sentinel Chickens

Eleven sentinel chickens in Hillsborough, Orange, Pinellas and Sarasota counties tested positive for antibodies to WNV. Three sentinel chickens in Citrus, Orange and Volusia counties tested positive for antibodies to EEEV. One sentinel chicken in Hillsborough County tested positive for antibodies to SLEV. Seroconversion rates are calculated by week and include previously reported results.

County	Collection Date	Seroconversion Rates (%)				Week	County Totals YTD
		SLEV	WNV	EEEV	HJV		
Citrus	11/28/11			0.73		1 EEEV	5HJV, 6 EEEV, 4WNV
Hillsborough	11/08/11	1.96	17.65			1 SLEV	
Hillsborough	11/09/11		17.65			9 WNV,	
Hillsborough	11/15/11	1.28	1.28			1 WNV, 1 SLEV	50 WNV, 11 SLEV, 1EEEV
Orange/Reedy	11/10/11		2.50			1 WNV	3 EEEV, 3 HJV, 15 WNV
Orange	11/28/11			2.04		1 EEEV	2 EEEV, 4 WNV

County	Collection Date	Seroconversion Rates (%)				Week	County Totals	
		SLEV	WNV	EEEV	HJV		YTD	
Pinellas	11/28/11		0.93			1 WNV	39 SLEV, 7 WNV	
Sarasota	11/10/11		1.35			1 WNV		
Sarasota	11/18/11		2.70			2 WNV		
Sarasota	11/28/11		0.76			1 WNV	26 WNV, 1 EEEV	
Volusia	11/14/11			2.94		1 EEEV	1 EEEV	





#### Live Wild Birds

No positive live wild birds were reported this week.

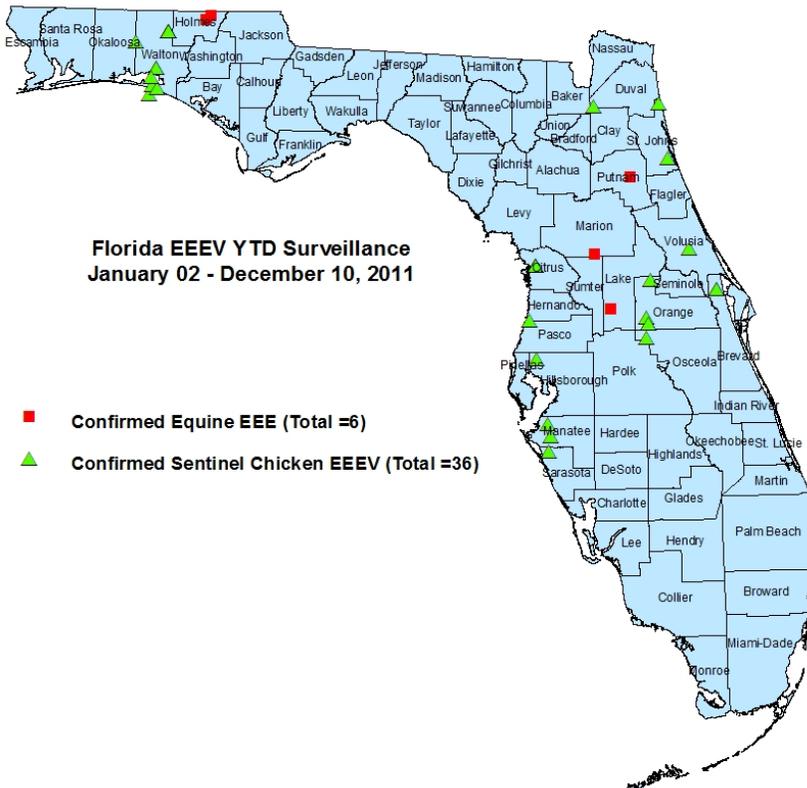
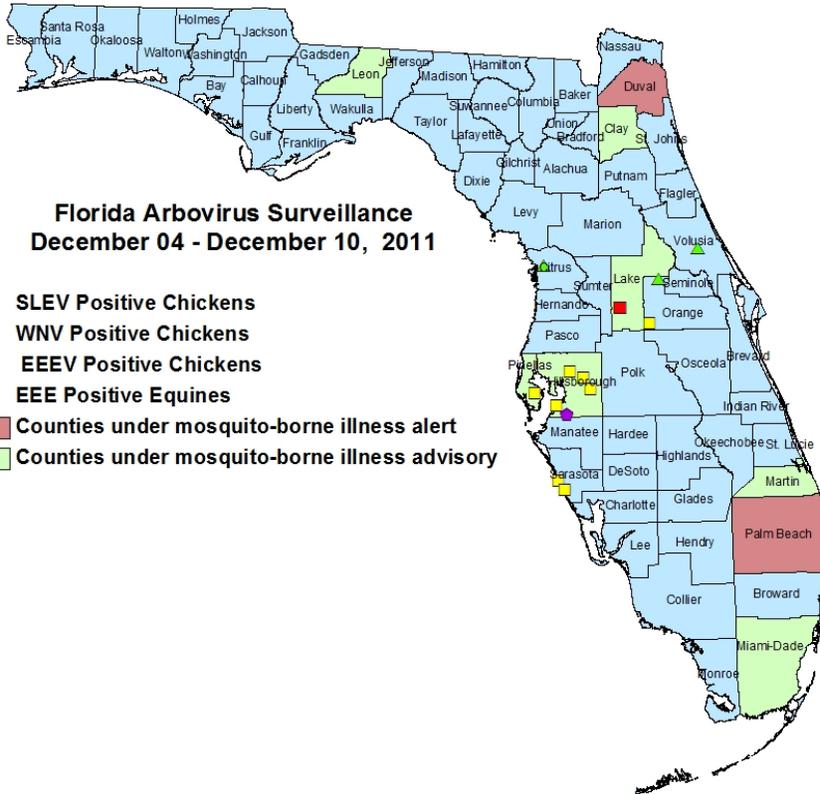
#### Mosquito Pools

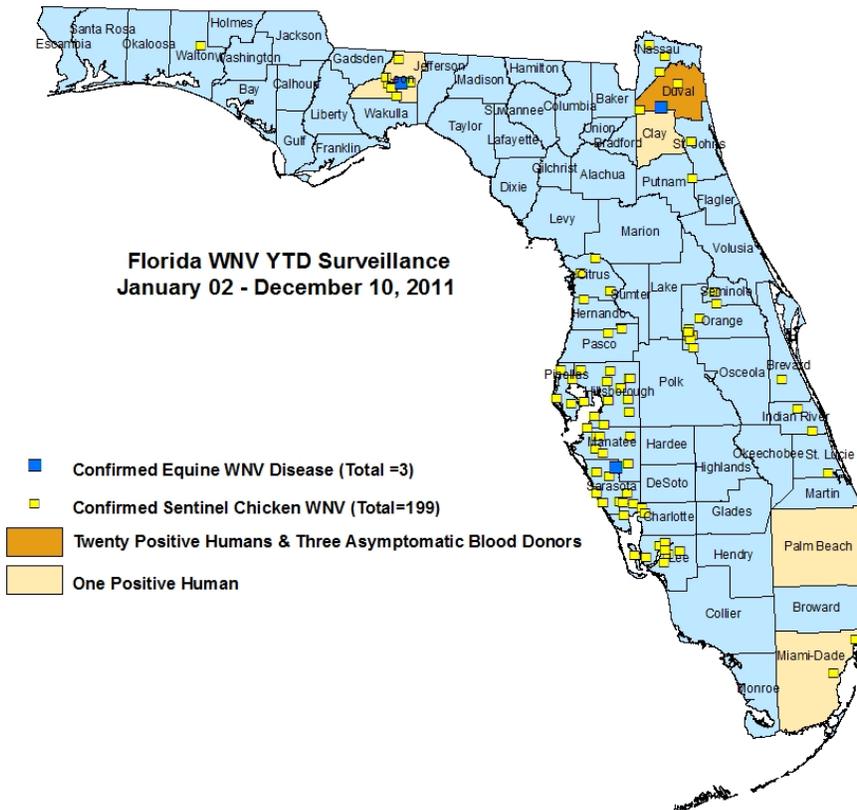
No positive mosquito pools were reported this week.

#### 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, nine reports representing 22 dead birds were received from nine counties. Seven birds were identified as crows, four as jays and two as raptors. In 2011, three hundred and nineteen reports representing a total of 928 dead birds (46 crows, 57 jays, 70 raptors, 755 others) were received 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/](http://www.myfwc.com/bird/)

## Maps





### YTD Arbovirus Activity by County

County	Arbovirus Activity
<b>Brevard</b>	WNV: 1 sentinel (10/12) EEEV: 2 sentinels (5/20, 5/27)
<b>Citrus</b>	WNV: 4 sentinels (1/3, 1/11, 10/24) EEEV: 6 sentinels (8/15, 9/12, 9/19, 10/24, 11/7, 11/28) HJV: 5 sentinels (9/12, 9/19, 9/27, 10/17)
<b>Charlotte</b>	WNV: 7 sentinels (7/1, 9/9, 10/14, 10/28)
<b>Clay</b>	WNV: 1 human (September),
<b>Dade</b>	DENV: 2 humans (acquired in Miami; January and August) WNV: 1 human (acquired in Miami; August), 2 sentinels (1/18, 6/22)
<b>Duval</b>	WNV: 23 humans including 3 asymptomatic blood donors [June (1), July (8), Aug (6), Sept (4), Oct (1)]; 5 sentinels (7/15, 9/16, 10/20); 1 horse (9/21) EEEV: 1 sentinel (6/11)
<b>Flagler</b>	CEV : 1 mosquito pool ( <i>Ochlerotatus infirmatus</i> , 11/16)
<b>Hernando</b>	WNV : 2 sentinels (8/1, 10/17) EEEV: 1 sentinel (6/6)
<b>Hillsborough</b>	DENV : 1 human (acquired in Hillsborough County, September) WNV: 50 sentinels (1/4, 1/11, 1/18, 1/25, 2/9, 3/1, 7/19, 8/30, 9/13, 9/27, 10/5, 10/11, 10/18, 10/25, 10/18, 11/01, 11/8, 11/9, 11/15, 11/21) EEEV: 1 sentinel (11/01) SLEV: 11 sentinels (8/23, 9/13, 9/20, 10/5, 10/11, 10/25, 11/8, 11/15)
<b>Holmes</b>	EEEV: 2 horses (7/3, 7/6)
<b>Indian River</b>	WNV: 3 sentinels (4/28, 8/18, 10/20)

	SLEV: 1 sentinel (6/23)
<b>Lake</b>	EEEV: 2 horses (11/27)
<b>Lee</b>	WNV: 23 sentinels (6/13, 6/27, 7/11, 7/25, 8/20, 10/17, 10/24, 10/31 )
<b>Leon</b>	WNV: 1 human (August), 23 sentinels (8/23, 8/30, 9/6,9/12, 9/19,9/26, 10/4, 10/17, 10/24); 1 horse (9/11)
<b>Manatee</b>	WNV: 13 sentinels (4/4, 7/20, 8/31, 10/11, 10/19, 10/26, 11/02) SLEV: 7 sentinels (9/14,9/28 10/19, 10/26, 11/02) EEEV: 2 sentinels (10/26, 11/8)
<b>Marion</b>	EEEV: 1 horse (6/21)
<b>Martin</b>	DENV: 1 human (acquired in Martin County; July)
<b>Nassau</b>	WNV: 4 sentinels (8/1,8/29, 9/19) HJV: 1 sentinel (5/23)
<b>Okaloosa</b>	WNV: 1 live wild bird (flavivirus positive, 1 blue jay 5/31) EEEV: 10 live wild birds (7 blue jays 1/10, 4/11, 4/25, 5/16, 5/19, 6/6, 6/8; 1 cardinal 1/ 11 and 2 brown thrashers 2/21, 4/20)
<b>Orange</b>	WNV: 19 sentinels (1/3, 1/18, 1/24, 7/7, 7/14, 7/ 28, 8/1, 8/11, 8/18,9/8,9/15, 10/6, 11/3, 11/10) EEEV: 5 sentinels (6/2, 6/9, 6/27, 7/28, 11/28) HJV: 3 sentinels (2/24, 7/7, 10/6)
<b>Palm Beach</b>	DENV : 2 humans (acquired in Palm Beach County, September) WNV: 1 human (acquired in Palm Beach; October),
<b>Pasco</b>	WNV: 1 sentinel (10/24) SLEV: 1 sentinel (9/26)
<b>Pinellas</b>	WNV: 7 sentinels (8/29, 9/12, 9/6, 10/10, 11/28) SLEV: 39 sentinels (7/18, 8/8, 8/22, 8/29, 9/6,9/12, 9/26, 10/3, 10/10, 10/17, 10/24, 11/7)
<b>Putnam</b>	WNV : 1 sentinel (10/14) EEEV: 1 horse (10/14)
<b>Santa Rosa</b>	EEEV: 7 live wild birds (1 house sparrow 1/05 and 6 blue jays 3/1, 2/1, 4/12, 5/10, 5/18)
<b>Sarasota</b>	WNV: 26 sentinels (1/4, 2/14, 3/14, 4/25, 5/2, 6/27, 7/5, 7/18, 8/22, 9/12,9/19, 9/30, 10/11, 10/17, 10/21, 10/28, 11/10, 11/18, 11/28); 1 horse (8/12) EEEV: 1 sentinel (10/28)
<b>Seminole</b>	WNV: 4 sentinels (6/7, 9/19)
<b>St. Johns</b>	WNV: 2 sentinels (9/12, 10/3) EEEV: 2 sentinels (6/13, 9/12)
<b>St. Lucie</b>	WNV: 1 sentinel (9/9)
<b>Volusia</b>	EEEV: 1 sentinel (11/14)
<b>Walton</b>	WNV: 1 sentinel (5/24) EEEV:14 sentinels (1/6, 7/18, 8/1, 8/8, 8/22, 9/19, 9/26, 10/10, 10/17) ; 2 live wild birds (2 cardinals 1/14, 1/21) HJV: 4 sentinels (1/14, 4/18,5/2, 10/24)

### Acknowledgements and Data Sources

Contributors: Leena Anil, Ph.D., Danielle Stanek, DVM, and Carina Blackmore, DVM, Ph.D., DOH Bureau of Environmental Public Health Medicine; Lillian Stark, Ph.D. 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.