

Florida 2007 Arbovirus Activity by County

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Summary

In 2007, 12 of Florida's 67 counties reported West Nile virus (WNV) activity and 25 counties reported Eastern Equine Encephalitis virus (EEEV) activity. In comparison, 20 counties reported WNV activity and 22 counties reported EEEV activity in 2006. St. Louis Encephalitis virus (SLEV) activity was reported in two counties in 2007, compared to 8 in 2006. Highlands J virus (HJV) activity was reported in 7 counties in 2007, compared to 6 in 2006.

Two locally-acquired human cases of WNV disease were reported in Bay County in 2007. An additional case was reported in a Pinellas County resident who acquired the infection while visiting another state. A Hillsborough County resident was infected with La Crosse Encephalitis virus (LACV) while visiting another state. In 2006, no locally-acquired cases of mosquito-borne illness were confirmed in Florida residents.

In August 2007, Bay County issued a mosquito-borne illness alert in response to the two human WNV cases. Also in August, Nassau County issued a mosquito-borne illness advisory due to above-average levels of EEEV activity in sentinel chickens and horses. The alert and advisory were both lifted in December when the weather cooled and the level of virus activity returned to baseline.

Some areas of Latin America and the Caribbean experienced a large outbreak of dengue fever in 2007. This resulted in a dramatic increase in imported dengue cases reported in Florida. Fifty-three confirmed and probable cases were reported in 2007 compared to 21 cases in 2006.

Human Surveillance

Eastern equine encephalitis virus (Florida Reporting Codes 6220 and 6221)

None.

West Nile virus (Florida Reporting Codes 6630 and 6631)

Two cases of locally-acquired WNV encephalitis were confirmed in Bay County residents in August. The medical alert placed on Bay County for mosquito-borne illness was lifted late in the year, due to a return to baseline levels of activity and colder temperatures. One case of WNV encephalitis was confirmed in a resident of Pinellas County, though the infection was acquired out-of-state. This case was reported as a Florida case acquired out-of-state.

La Crosse virus (Florida Reporting Codes 6250 and 6251)

La Crosse encephalitis was confirmed in a Hillsborough County resident with travel history to North Carolina in September. This case was reported as a Florida case acquired out-of-state. La Crosse virus is a member of the California Encephalitis group of viruses.

Dengue virus (Florida Reporting Code 6100)

In 2007, 53 cases of imported dengue fever were reported in Florida. Of these, three were confirmed and the remaining cases were probable. Thirty-six percent of cases reported recent travel to Puerto Rico, and 23% reported travel to the Dominican Republic. The remaining cases were acquired in various locations in Latin America, the Caribbean, Asia, and Africa. The following counties reported dengue cases in 2007: Alachua (1), Brevard (2), Broward (16), Charlotte (1), Collier (2), Duval (1),

Flagler (1), Hillsborough (3), Lee (3), Miami-Dade (4), Okaloosa (1), Orange (6), Osceola (1), Palm Beach (5), Pinellas (1), Polk (1), Seminole (3), and St. Lucie (1).

Table 1. Human arbovirus cases reported in Florida, 2001-2007

Human Cases	2007	2006	2005	2004	2003	2002	2001
WNV	2 (1)*	0	21 (4)	42 (7)	94 (29)	35 (17)	11 (8)
EEEV	0	0	5 (5)	0	3 (3)	1	3 (3)
SLEV	0	0	0	0	0	1	0
DENV	53 (18)	21 (8)	18 (8)	12 (10)	15 (8)	21 (6)	21 (5)

*Number of counties in parentheses

Animal Surveillance

Eastern equine encephalitis virus

Positive samples from 113 live wild birds, 110 sentinel chickens, 18 horses and 1 antelope were received. In 2007, 25 of Florida's 67 counties reported EEEV activity in an animal. Date of disease onset (horses, other mammals), date of death (birds), and date of first known antibody positive bleed (sentinels, live wild birds**) is shown in parentheses.

Alachua: 1 horse (6/28), 1 sentinel chicken (9/17)

Brevard: 1 sentinel chicken (9/12)

Duval: 1 sentinel chicken (8/7)

Flagler: 1 sentinel chicken (7/2), 1 horse (8/2)

Gulf: 2 sentinel chickens (7/2x2)

Hillsborough: 3 sentinel chickens (4/3, 5/29, 6/5)

Holmes: 2 horses (5/29, 6/25)

Indian River: 1 sentinel chicken (10/11)

Jackson: 1 horse (6/26)

Lake: 1 horse (2/25)

Leon: 1 sentinel chicken (5/7)

Manatee: 1 sentinel chicken (7/23)

Marion: 2 horses (4/13, 7/13)

Nassau: 32 sentinel chickens (6/11, 6/25, 7/2x2, 7/9x2, 7/23x2, 7/30 x2, 8/13 x7, 8/20 x4, 9/3 x3, 9/10x2, 9/17, 10/1 x5), 1 antelope (8/24), 1 horse (10/26)

Okaloosa: 49 live wild birds (2 Sparrows 1/1, 3/19; 8 Cardinals 1/24, 1/29, 6/21, 7/12, 7/26, 7/30, 11/29, 12/12; 35 Blue Jays 1/29 x2, 2/5, 2/8, 3/5, 3/6, 3/12, 3/19 (also flavi-reactive), 4/9 x2, 4/16, 5/2 x2, 5/7, 5/9, 5/28, 6/4, 6/12 x3, 6/20, 6/25, 6/27x2, 7/5x2, 7/11, 7/25, 8/2, 8/8, 8/13, 8/15, 8/20, 8/29, 9/3; 1 Brown Thrasher 3/15; 3 Common Grackles 4/19, 6/28, 7/25)

Okeechobee: 1 horse (7/15)

Orange: 18 sentinel chickens (1/4, 1/11, 1/18, 1/25 x2, 2/1 x3, 2/8, 3/5 x2, 7/9, 8/3, 8/30, 12/13 x2, 12/20, 12/27), 1 horse (4/7)

Osceola: 4 sentinel chickens (1/4, 7/5, 11/1, 11/15), 1 horse (8/12)

Polk: 2 horses (1/02, 10/23)

Putnam: 4 sentinel chickens (5/11, 6/14, 8/16, 8/30)

Santa Rosa: 29 live wild birds (6 Sparrows 1/11, 1/24 x2, 1/29, 2/7, 12/3; 9 Cardinals 1/15, 4/4, 5/15 (also flavi-reactive), 5/22, 7/5, 11/27 x2, 12/3, 12/11; 9 Blue Jays 5/1, 5/2, 5/15, 5/28, 6/5, 6/12 (also flavi-reactive), 7/17, 7/24, 9/5; 2 Red-winged Blackbirds 6/12, 6/19; 1 Brown-headed Cowbird 6/26; 2 Brown Thrashers 7/3, 9/5)

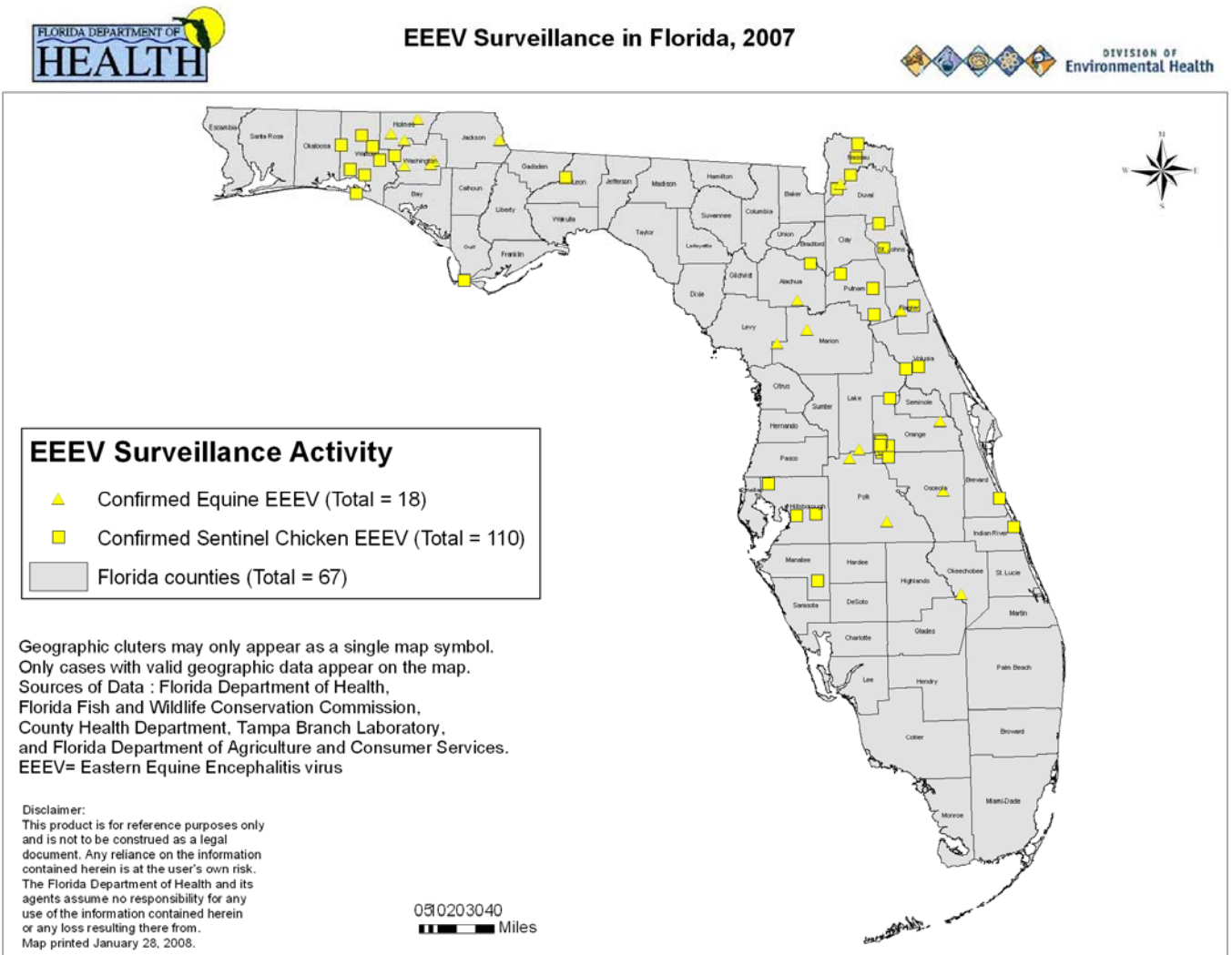
St. Johns: 1 sentinel chicken (8/13)

Volusia: 2 sentinel chickens (12/31 x2)

Walton: 37 sentinel chickens (1/11 x3, 1/24, 2/13, 3/21, 4/9 x2, 5/7 x2, 6/4, 6/11, 6/25 x2, 8/20 x3, 8/21, 9/4 x3, 9/24 x2, 10/12 x3, 11/27, 12/5 x5, 12/11 x5), 20 live wild birds (15 Cardinals 2/1 x3, 3/8, 3/15 x2, 4/12, 5/3 x2, 5/17, 6/14, 6/21, 9/6, 9/20, 9/28; 4 House Sparrows 5/31, 6/8, 6/28x2; 1 Blue Jay 7/6)

Washington: 15 live wild birds (11 Cardinals 1/18, 2/01, 4/19, 4/26, 5/10, 5/17, 5/24, 5/31, 6/8x2, 6/28; 1 Red-winged Blackbird 2/01, 2 Sparrows 1/25, 9/6; 1 Northern Cardinal 3/22), 4 horses (5/7, 6/17, 7/2, 7/14)

Figure 1. EEEV surveillance, Florida, 2007



Highlands J virus

Positive samples from 15 sentinel chickens were received from 6 counties.

Collier: 1 sentinel chicken (3/19)

Leon: 1 sentinel chicken (6/25)

Nassau: 2 sentinel chickens (8/27, 9/10)

Orange: 4 sentinel chickens (6/07, 6/21, 6/28, 7/9)

St Johns: 1 sentinel chicken (5/21)

Walton: 6 sentinel chickens (3/21 x2, 4/9, 5/21, 7/9 x2)

St. Louis encephalitis virus

Positive samples from 5 sentinel chickens were received from 2 counties.

Lee: 2 sentinel chickens (7/9, 9/4)

Orange: 3 sentinel chickens (1/2 x3)

West Nile virus

Positive samples from 13 live wild birds (flavivirus-reactive**) and 59 sentinel chickens were received. Flavivirus-reactive samples are indeterminate for SLEV or WNV antibodies. To date, 12 counties have reported WNV (or undetermined flavivirus) activity.

Bay: 7 sentinel chickens (8/21, 9/4 x2, 9/11, 10/16, 10/30 x2)

Duval: 1 sentinel chicken (7/9)

Escambia: 3 sentinel chickens (9/4, 10/9, 10/16)

Gulf: 1 sentinel chicken (7/2)

Okaloosa: 4 live wild birds (1 White-Throated Sparrow 2/5**; 2 House Sparrows 2/19**, 3/19**; 1 Blue Jay 3/19** (also positive for EEEV antibodies))

Orange: 1 sentinel chicken (6/14)

Palm Beach: 1 sentinel chicken (11/5)

Putnam: 4 sentinel chickens (6/21, 6/28, 10/13, 10/26)

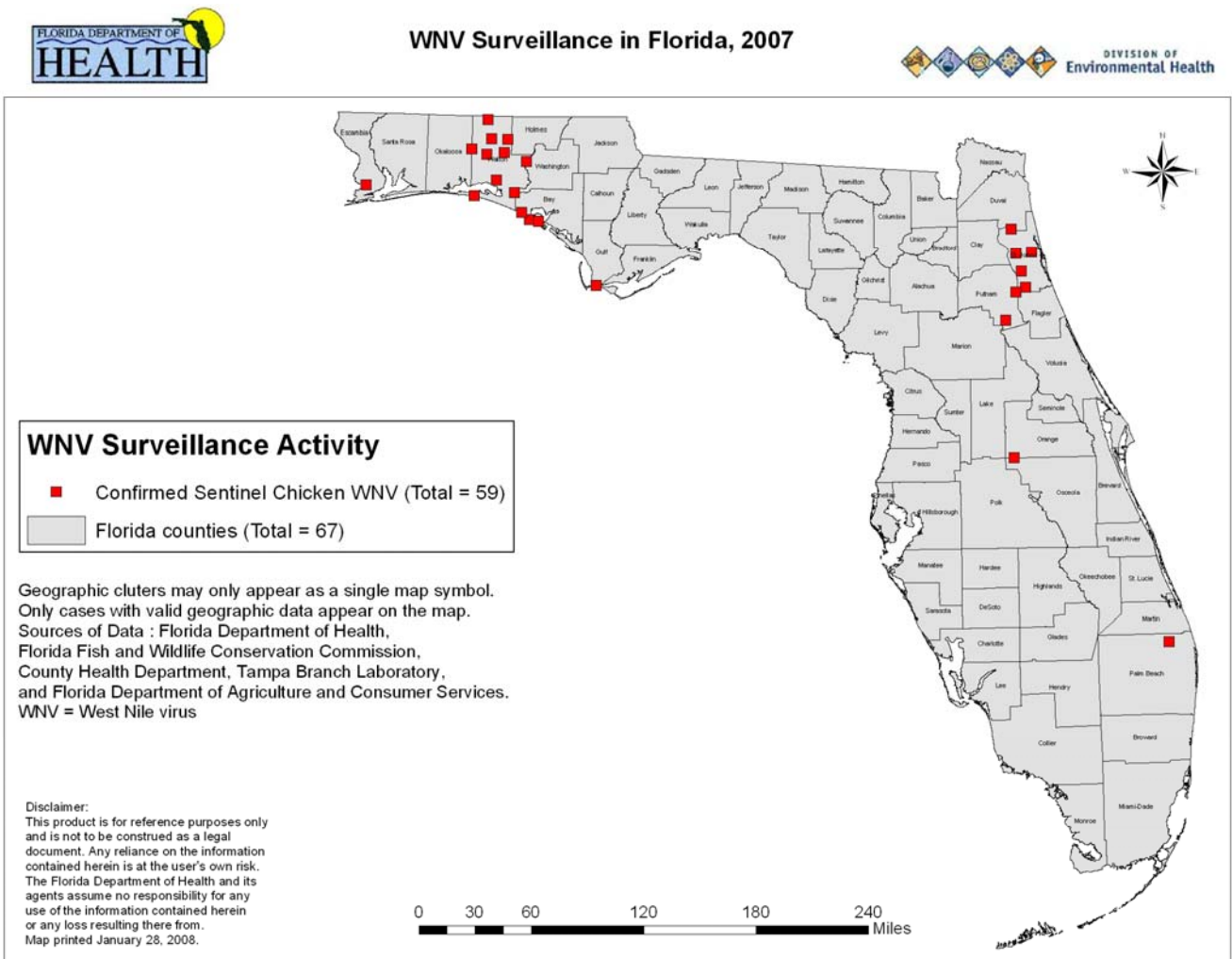
Santa Rosa: 7 live wild birds (1 Sparrow 1/29**; 5 Blue Jays 5/1**, 5/8**, 5/15** also EEEV positive, 6/12**, 6/12** also EEEV positive; 1 Cardinal 10/9**)

St. Johns: 9 sentinel chickens (8/20, 9/10 x3, 9/17, 9/24, 10/3 x3)

Walton: 1 live wild bird (1 Cardinal 1/18**); 32 sentinel chickens (1/9, 1/11, 3/19, 5/1 x2, 5/9, 6/18x2, 7/9, 7/30, 8/13, 9/12 x2, 10/1, 10/3 x3, 10/5 x2, 10/8, 10/15, 10/17 x3, 10/29, 11/1 x3, 11/13 x2, 12/10, 12/17)

Washington: 1 live wild bird (1 Sparrow 1/11**)

Figure 2. WNV surveillance, Florida, 2007



Mosquito Surveillance

During 2007, 1,845 mosquito pools were received for testing from 9 counties (Bay, Duval, Escambia, Flagler, Hillsborough, Monroe, Pinellas, Sarasota, Walton).

Flagler: Highlands J virus was detected in a pool of *Culiseta melanura* collected on 5/2.

Sarasota: California serogroup virus was detected in a pool of *Anopheles crucians* collected on 3/2.

Bird Mortality Surveillance

During 2007, residents of 59 Florida counties reported dead birds to the website maintained by the Florida Fish and Wildlife Conservation Commission (www.myfwc.com/bird/). This resulted in 1,050 reports representing a total of 4,571 dead birds (55 crows, 55 jays, 98 raptors, and 4,363 others). In 2006, 1,745 reports representing a total of 3,299 birds were received from 64 counties. The DOH Bureau of Laboratories in Tampa accepts dead bird specimens for testing, as long as they are shipped in good condition. In 2007, 165 specimens from 26 counties were tested; all were negative.

For more surveillance information, please see the DOH web site at:
<http://www.MyFloridaEH.com/community/arboviral/index.html> or call the Disease Outbreak
Information Hotline which offers updates on medical alert status and surveillance at **888-880-5782**.

Acknowledgements and data sources: 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 Florida A&M University, John A. Mulrennan Sr., Public Health Entomology Research & Education Center. For more information, go to <http://www.pherec.org/DECS>, and click on "Arbovirus Ecology" to download the database, then the "Bird Serology" tab.