

Florida 2005 Arbovirus Activity by County

Rebecca Shultz, Caroline Collins, Daneshia Roberts, Calvin DeSouza and Carina Blackmore, DVM, PhD, State Public Health Veterinarian

During 2005, 35 of Florida's 67 counties reported confirmed West Nile (WN) virus activity, and 50 counties reported confirmed Eastern Equine Encephalitis (EEE) virus activity. In 2004 35 counties also reported confirmed WN virus activity, and 37 counties reported confirmed EEE virus activity. Twenty-one cases of WN virus and 5 cases of EEE virus were confirmed in residents during 2005, compared to 42 WN cases and no EEE cases reported in 2004. Four counties reported SLE activity in 2005, the same number as last year; 16 counties reported HJ activity, compared to 15 in 2004.

In December, Florida Department of Health Secretary M. Rony François, M.D., M.S.P.H., Ph.D. lifted the medical alerts for WN virus that had covered Duval, Pasco, and Pinellas counties. He also lifted the medical advisories that had been issued for Alachua, Brevard, Hillsborough, Nassau and Walton counties. The medical alert issued for Marion County was lifted in early January, 2006. Prior medical alerts issued for EEE in Gadsden, Leon, Polk, and Suwannee counties were lifted in October 2005.

1. Human Surveillance

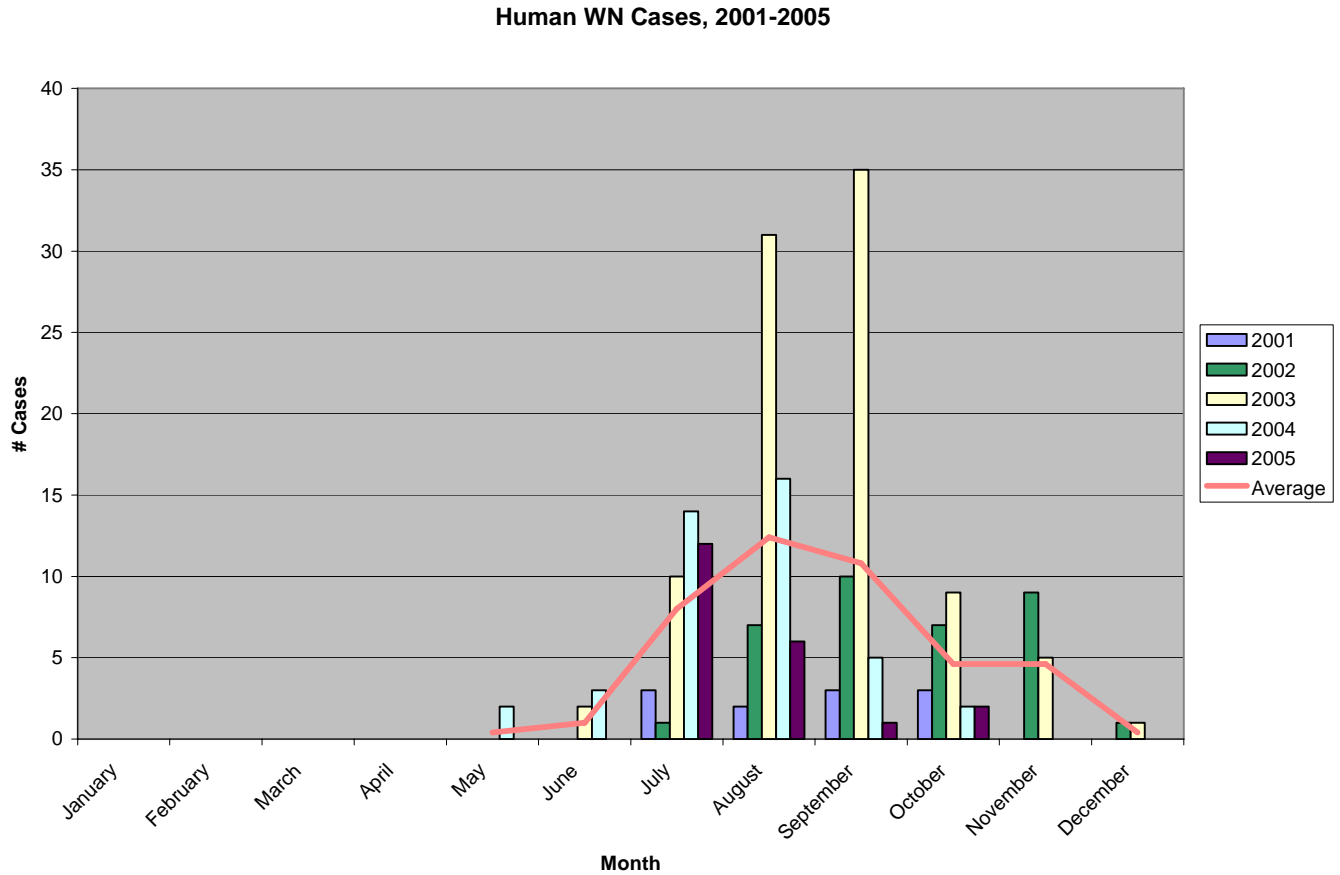
Eastern Equine Encephalitis (ICD9 Code 6220)

Five human cases were identified in Gadsden, Leon, Pasco, Polk and Suwannee counties. Four had onset of symptoms in July and one had onset in August. The median age of the individuals was 12, and ranged from 1 to 78 years. The female to male gender ratio was 2:3. There were three EEE-related deaths. In 2004, there were no human EEE cases.

West Nile Virus (ICD9 Codes 6630 and 6631)

As of December 31, 2005, 21 cases of West Nile virus infection were confirmed in residents of 4 Florida counties. Eighteen cases were identified in Pinellas County residents, each with onset dates between early July and mid August. One case was identified in a Pasco County resident, with onset in early September. One case was identified in a Duval County resident, and one case was identified in a Marion County resident, each with onsets in mid-October. The mean age of the individuals was 57. The female to male gender ratio was 6:15 and the diagnostic classifications were 10 neuro-invasive (ICD-9 code 6630) and 11 fever (ICD-9 code 6631) cases. There was one WN-related death. Please refer to Figure 1 for a representation of Florida's West Nile virus cases from 2001-2005.

Figure 1. Human cases of West Nile virus infection in Florida by month, 2001-2005



St. Louis Encephalitis (ICD9 Code 6230)

No human cases were reported in 2005.

Dengue (ICD9 Code 6100)

In 2005, eighteen imported cases of dengue were reported in residents who had traveled to dengue-endemic countries. Of these, 2 were confirmed and the remaining cases were probable. These cases were reported in residents of Alachua (1), Broward (3), Miami-Dade (3), Hillsborough (3), Orange (1), Palm Beach (3), Pinellas (3), and Seminole (1).

Please refer to Figure 2 for a representation of Florida’s human arboviral case onsets for 2005, and to Table 1 for a summary of human activity from 2001-2005.

Figure 2. Human onset of arboviral illness in Florida by month, 2005

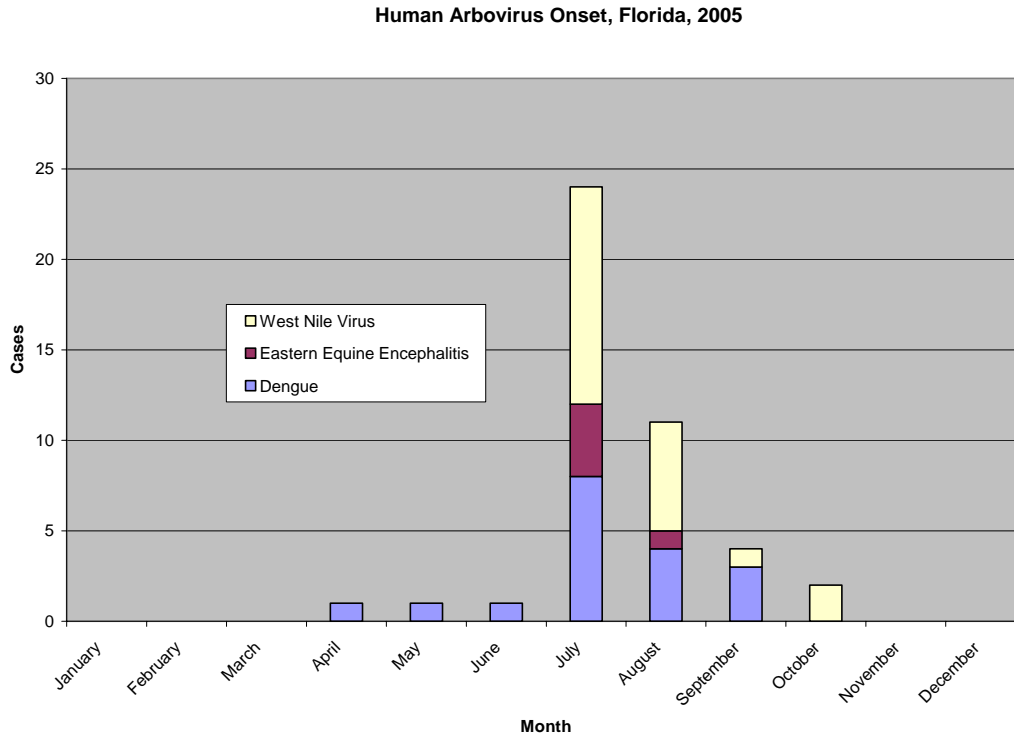


Table 1. Human arbovirus activity, Florida, 2001-2005

Comparison to Past Years:

Human Cases	2005	2004	2003	2002	2001
WN	21 (4)*	42 (7)	94 (29)	35 (17)	11 (8)
EEE	5 (5)	0	3 (3)	1	3 (3)
SLE	0	0	0	1	0
Dengue	18 (8)	12 (10)	15 (8)	21 (6)	21 (5)

*Number of affected counties in parentheses

2. Animal Surveillance

Eastern Equine Encephalitis Virus

Positive samples from 315 sentinel chickens in 24 counties, 244 live wild birds in four counties, 150 horses* in 43 counties and 2 dead birds in 2 counties were received. In 2005, 49 of Florida's 67 counties reported EEE virus activity in animals (plus one county, Monroe, reported only mosquito EEE activity, see below). In 2004, 38 counties reported EEE virus activity. Date of disease onset (horses), date of death (birds), and date of first known antibody positive bleed (sentinels, live wild birds**) is shown in parentheses.

Eastern Equine Encephalitis Virus						
COUNTIES	Humans	Dead Birds	Sentinels	Horses	Live Wild Birds	Mosquito Pools
ALACHUA		1	47	9		
BAKER				1		
BAY			10	1		
BRADFORD				3		
BREVARD			5	1		
BROWARD						
CALHOUN						
CHARLOTTE						
CITRUS			1			
CLAY				2		
COLLIER						
COLUMBIA				1		
DESOTA						
DIXIE						
DUVAL			5	4		
ESCAMBIA				5		4
FLAGLER			3	2		
FRANKLIN						
GADSDEN	1			1		
GILCHRIST				7		
GLADES				1		
GULF						
HAMILTON						
HARDEE				4		
HENDRY			1	2		
HERNANDO				1		
HIGHLANDS				6		
HILLSBOROUGH			3	1		
HOLMES				3		
INDIAN RIVER			1			
JACKSON			1	1		
JEFFERSON			3	2		
LAFAYETTE						
LAKE				14		
LEE						
LEON	1		20	2		
LEVY				6		
LIBERTY						
MADISON				1		
MANATEE			6	2		
MARION				14		
MARTIN						
MIAMI/DADE						
MONROE						2
NASSAU			28			

OKALOOSA				1	83	
OKEECHOBEE				4		
ORANGE			29	2		
OSCEOLA			9	7		
PALM BEACH						
PASCO	1		1			
PINELLAS			1			
POLK	1			15		
PUTNAM			18	3		
SANTA ROSA				2	43	
SARASOTA			1	1		3
SEMINOLE			1	3		
ST. JOHNS			30			1
ST. LUCIE						
SUMTER						
SUWANNEE	1			1		
TAYLOR				1		
UNION				2		
VOLUSIA		1	12	6		2
WAKULLA				1		
WALTON			79	1	54	
WASHINGTON				3	64	
TOTALS	5	2	315	150	244	12

Alachua: 47 sentinel chickens (4/18 x2, 5/03, 5/24 x3, 6/07x2, 6/13 x3, 6/14 x2, 6/20 x3, 6/21, 6/27 x2, 7/05, 7/11 x3, 7/18, 8/15 x3, 8/16 x3, 8/29 x3, 9/6 x2, 9/12 x3, 9/20, 9/27, 10/03 x3, 10/18 x2, n/a, n/a), 9 horses (5/01, 5/08, 5/28, 6/9, 6/13, 6/22, 7/26, 7/29, 8/29); 1 dead bird (rock dove, 6/07)

Baker: 1 horse (4/01)

Bay: 10 sentinel chickens (4/05 x2, 6/14, 6/21, 7/05, 8/2, 8/23, 9/6 x2, 9/27) 1 horse (8/27)

Bradford: 3 horses (4/30, 5/01, 6/27)

Brevard: 5 sentinel chickens (7/7 x2, 7/14 x3); 1 horse (9/3)

Citrus: 1 sentinel chicken (8/15)

Clay: 2 horses (5/23, 7/01)

Columbia: 1 horse (6/02)

Duval: 5 sentinel chickens (5/16, 6/06, 7/01, 7/18, 8/29); 4 horses (6/11, 7/19, 7/21, 8/31)

Escambia: 5 horses (6/5, 6/13, 6/17, 7/29, 8/22)

Flagler: 3 sentinel chickens (5/02 x2, 6/13), 2 horses (5/29, 5/31)

Gadsden: 1 horse (7/03)

Gilchrist: 7 horses (4/20, 5/7, 5/21, 5/30 x2, 5/31, 6/22)

Glades: 1 horse (6/26)

Hardee: 4 horses (5/23, 7/15, 7/29, 8/26)

Hendry: 2 horses (6/26, 7/04); 1 sentinel chicken (7/18)

Hernando: 1 horse (6/23)

Highlands: 6 horses (5/31, 6/08, 6/23, 7/4, 7/07, 7/20)

Hillsborough: 3 sentinel chickens (7/05, 7/12 x2); 1 horse (8/13)

Holmes: 3 horses (6/22, 6/28, 7/14)

Indian River: 1 sentinel chicken (6/30)

Jackson: 1 horse (9/9); 1 sentinel chicken (10/18)

Jefferson: 3 sentinel chickens (6/19, 6/26, 7/02); 2 horses (6/23, 7/27)

Lake: 14 horses (4/03 x2, 5/16, 5/24 x2, 5/25, 6/01 x2, 6/9 x2, 6/22, 7/3, 7/4, 7/11)
Leon: 2 horses (6/06, 6/24); 20 sentinel chickens (6/24 x2, 7/05 x2, 7/22 x2, 7/29 x3, 8/05 x4, 8/12 x2, 8/19, 8/26, 9/2, 9/23, 10/20)
Levy: 6 horses (5/31, 6/1, 6/3, 6/7, 6/20, 7/11)
Madison: 1 horse (9/3)
Manatee: 6 sentinel chickens (6/27 x2, 7/11, 7/18, 9/19 x2); 2 horses (7/17, 7/19);
Marion: 14 horses (5/21, 5/23, 5/28, 6/03, 6/07, 6/09, 6/18, 6/20, 6/21, 7/07 x2, 7/11, 8/04, 8/05)
Nassau: 28 sentinel chickens (5/02, 5/16, 5/27, 6/5, 6/13, 6/20 x3, 6/25, 6/26 x2, 7/02, 7/9, 7/10 x2, 7/17 x5, 7/31, 8/08 x2, 8/15, 8/29, 9/12, 9/19, 9/26)
Okaloosa: 1 horse (6/13), 83 live wild birds (**51 blue jays** 1/07, 1/14, 2/03 x2, 5/04, 5/11, 5/12, 5/13, 5/20 x2, 5/25 x3, 5/30, 5/31, 6/08 x2, 6/15, 6/16 x2, 6/29, 7/4, 7/7, 7/12 x2, 7/15, 7/20, 7/21, 7/28, 7/29 x2, 8/18 x3, 8/25 x2, 8/30, 9/8, 9/9, 9/21, 10/5 x2, 10/26 x3, 10/28, 11/09, 11/17 x2, (one was also flavivirus-reactive) 12/7, 12/19; **21 cardinals** 1/14, 4/21, 5/12, 6/08, 6/16, 6/29, 7/5, 7/12, 7/14, 8/17, 9/8 x2, 9/14, 10/19, 11/2 x3, 11/11, 11/23, 11/30 x2; **7 brown thrashers** 5/19, 5/26, 5/30, 7/21, 7/29, 8/11, 12/7; **2 common grackles** 8/11, 8/18; **2 sparrows** 11/23, 12/19)
Okeechobee: 4 horses (6/02, 6/06, 7/01, 7/19)
Orange: 29 sentinel chickens (4/11, 4/18, 4/28 x2, 5/02, 5/26, 5/31 x2, 6/3, 6/6, 6/13 x3, 6/20, 6/23 x4, 6/27 x4, 7/01, 7/5, 7/6, 7/7 x2, 7/25, 11/3); 2 horses (5/01, 7/02)
Osceola: 9 sentinel chickens (6/14 x3, 6/21 x3, 7/05, 8/30 x2); 7 horses (6/10, 6/19, 6/21, 7/04, 7/05, 7/09, 7/15)
Pasco: 1 sentinel chicken (11/21)
Pinellas: 1 sentinel chicken (6/27)
Polk: 15 horses (5/22, 5/25, 6/9, 6/10, 6/13, 6/14, 6/15, 6/27, 6/28, 7/05 x2, 7/10, 7/13, 7/16, 7/19)
Putnam: 18 sentinel chickens (4/15, 4/22, 4/28, 4/29, 5/19, 5/26, 6/02 x2, 6/16, 6/20, 6/23, 6/30, 7/8 x3, 7/20, 9/1, 9/29); 3 horses (5/01, 6/28, 12/3)
Santa Rosa: 43 live wild birds (**29 blue jays** 4/20 (also flavivirus antibody positive), 4/27 x4, 5/18 (also flavivirus antibody positive), 5/25 x2, 5/26, 6/08 x4, 6/22 x2, 6/29, 9/7, 9/8, 9/13 x2, 9/20, 9/27, 9/28 x2 (one also flavivirus-reactive), 10/11, 11/1, 11/08, 11/22, 12/21; **9 cardinals** 5/25, 5/26, 6/08 x2, 6/22 x2, 9/13, 11/15, 12/21; **1 common grackle** 6/30; **2 brown thrashers** 6/30, 9/20; **1 mockingbird** 10/11; **1 sparrow** 12/20); 2 horses (7/24, 7/29);
Sarasota: 1 sentinel chicken (7/25); 1 horse (9/15)
Seminole: 1 sentinel chicken (6/07); 3 horses (5/02, 6/18, 6/29)
St. Johns: 30 sentinel chickens (1/10, 2/14, 2/21 x2, 3/21 x2, 4/04 x2, 4/25 x2, 5/09, 5/16, 5/23 x2, 5/24, 5/31, 6/6 x3, 6/13 x3, 6/20 x3, 6/27 x3, 7/5, 7/11)
Suwannee: 1 horse (6/21)
Taylor: 1 horse (6/19)
Union: 2 horses (3/4, 10/30)
Volusia: 12 sentinel chickens (3/21, 3/28, 4/25 x2, 5/09, 5/16, 5/23, 6/06, 6/13 x2, 6/21, 6/27); **1 dead bird (emu, 3/28)**; 6 horses (5/01, 4/09, 5/18, 5/20, 6/01, 6/27)
Wakulla: 1 horse (7/31)
Walton: 79 sentinel chickens (1/10, 1/31, 2/16 x4, 3/07 x5, 3/08, 3/28, 4/21 x2, 6/24, 6/25 x2, 6/28 x4, 7/6 x3, 7/25 x2, 7/29, 8/01, 8/03 x2, 8/05 x3, 8/22, 8/25, 9/07, 9/09, 9/22, 9/27 x 3, 9/29 x3, 9/30 x2, 10/3, 10/11 x4, 10/13 x2, 10/17, 10/18 x3, 10/19 x3, 10/20, 10/28 x3, 10/31, 11/03 x2, 11/8, 11/10 x3, 11/15, 12/02 x3, 12/09 x2, 12/14); 54 live wild birds (**7 sparrows** 2/04, 2/15, 2/18, 3/23 x2, 4/26 x2; **30 cardinals** 4/26 x2, 6/08, 7/07, 7/14, 8/4 x4, 8/18 x3, 9/2, 9/15 x4, 9/22 x2, 9/28 x2, 10/5 x3, 10/20, 10/27 x2, 11/5, 11/17, 12/8; **1 thrasher** 4/26; **13 blue jays** 5/26 x3, 6/15, 8/4 x4, 8/11, 8/24, 10/20 x2, 10/27; **1 mockingbird** 9/8; **2 doves** 10/12, 12/8); 1 horse (7/29)
Washington: 3 horses (7/8, 8/23 x2), 64 live wild birds (**4 blue jays** 7/14 x2, 8/18, 8/24; **7 sparrows** 1/21, 3/02, 9/15, 9/22, 10/27, 12/29 x2; **36 cardinals** 2/04, 2/11 x2, 3/02 x3, 6/29 x2, 7/14 x3, 8/04, 8/11 x3, 8/18 x2, 9/2 x2, 9/8, 9/15 x4, 9/22 x4, 9/28, 10/12 x2, 10/20, 10/27, 11/3, 11/10, 11/17; **1 mourning dove** 5/26; **10 common grackles** 6/22 x2, 6/29 x2, 7/07 x2, 7/28 x2, 8/18, 10/12; **6 mockingbirds** 7/28 x3, 8/11, 9/8, 9/22)

Figure 3. Comprehensive EEEV Surveillance, Florida, 2005

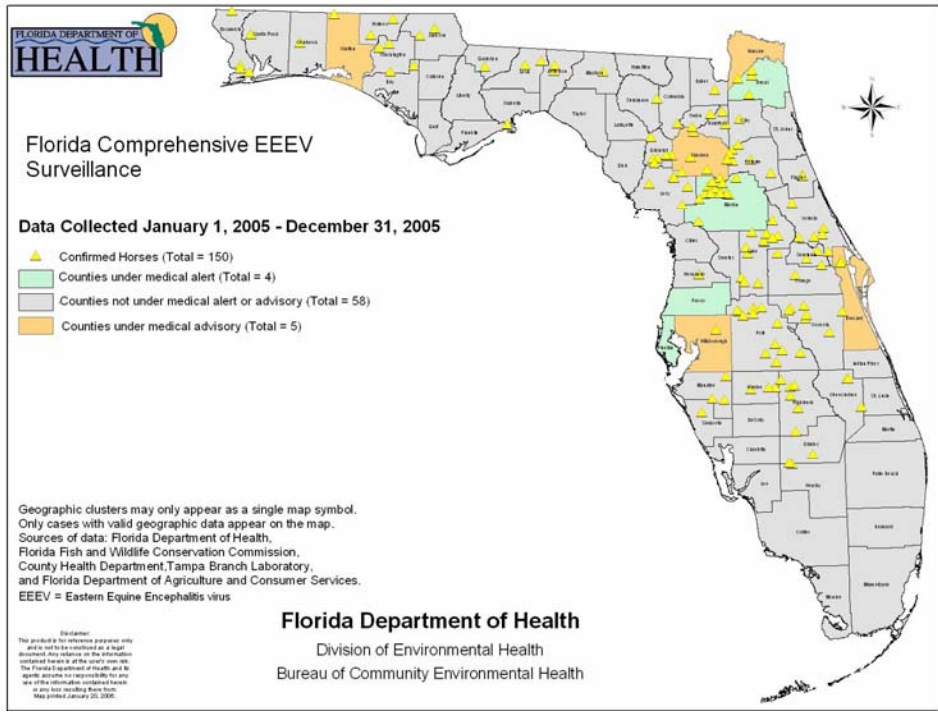
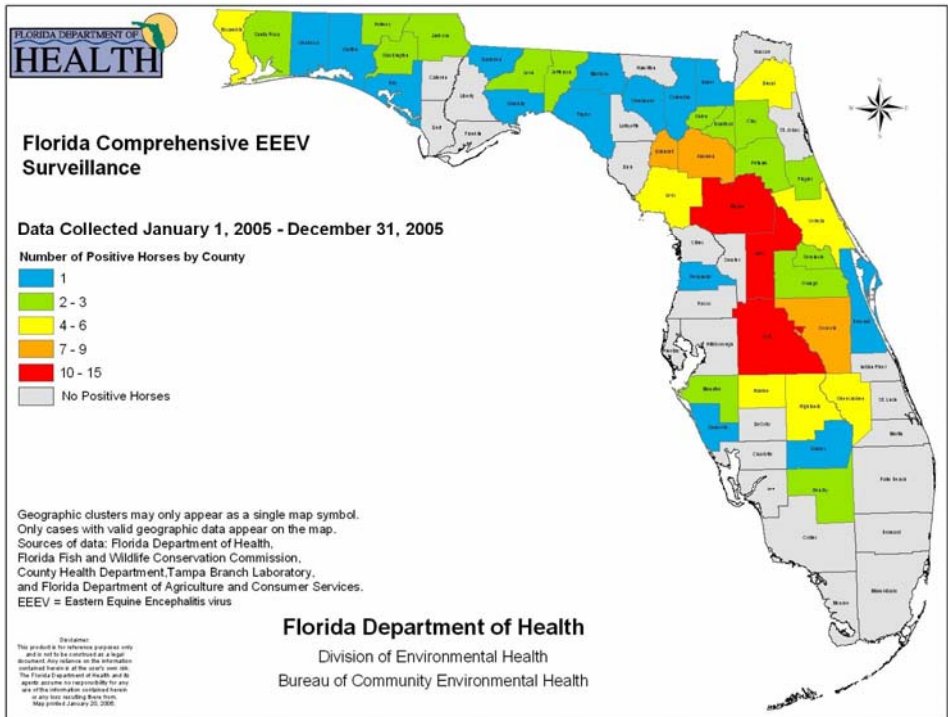


Figure 4. EEEV Positive Horses by County, Florida, 2005

The highest concentration of positive horses is seen in the central area of the state. This map represents the raw numbers rather than a rate of infection.



Highlands J Virus

Highlands J virus is a close relative to EEEV but is not as pathogenic in humans or as virulent in animals. Positive samples from 104 sentinel chickens in 16 counties were received in 2005. 15 counties reported HJ virus activity in 2004. Date of first known antibody positive bleed (sentinels) is shown in parentheses.

Alachua: 3 sentinel chickens (6/07, 6/14 x2)

Bay: 5 sentinel chickens (6/07 x2, 7/26, 8/09, 8/23)

Duval: 4 sentinel chickens (6/06, 6/06, 7/24, 7/25)

Flagler: 5 sentinel chickens (6/06 x2, 7/25, 8/01, 10/10)

Glades: 1 sentinel chicken (1/28)

Indian River: 1 sentinel chicken (10/20)

Jackson: 1 sentinel chicken (10/18)

Jefferson: 2 sentinel chickens (8/7, 10/30)

Leon: 9 sentinel chickens (6/24, 7/5, 7/8 x2, 7/15, 8/05 x4)

Nassau: 13 sentinel chickens (6/05, 6/12, 6/13, 6/20, 7/9, 7/17 x4, 7/24, 7/31, 8/21, 8/22)

Orange: 12 sentinel chickens (6/09 x3, 6/16, 7/8, 7/11, 7/14 x2, 7/18, 8/15, 8/25, 10/17)

Osceola: 6 sentinel chickens (6/14 x2, 6/28, 10/26 x3)

Putnam: 17 sentinel chickens (4/28, 4/29, 6/02 x2, 6/03, 6/20, 6/23, 6/24, 6/30, 7/1 x2, 7/7, 7/14 x2, 7/15, 7/20, 8/25)

St. Johns: 9 sentinel chickens (2/07, 4/04, 5/02, 6/27, 7/5, 7/18, 7/25 x2, 8/08)

Volusia: 6 sentinel chickens (6/13 x2, 6/27, 7/18, 8/01, 12/05)

Walton: 10 sentinel chickens (1/24, 4/04, 6/28, 8/02, 8/05, 8/08, 8/22, 9/06 x2, 10/28)

St. Louis Encephalitis Virus

In 2005, 4 of Florida's 67 counties reported SLE virus activity. (Besides Manatee and Sarasota counties shown below, there was also an SLE-positive mosquito pool from Lee County, see page 12). In addition, many of the live wild birds reported under the West Nile virus heading below, tested positive to indeterminate flavivirus, so it is not clear whether they are reactive to antibody to SLE or WN virus. During 2004, four counties reported SLE virus activity. Date of first known antibody positive bleed (sentinels) is shown in parentheses.

Indian River: 2 sentinel chickens (9/29, 10/13)

Manatee: 1 sentinel chicken (8/15)

Sarasota: 2 sentinel chickens (9/19 x2)

West Nile Virus

Positive samples from 385 sentinel chickens in 27 counties, 15 live wild birds in three counties, 11 dead birds in 3 counties, 12 horses* from 9 counties, and 2 alligators from one county were received. Many of the live wild birds tested positive to antibodies to indeterminate flavivirus (could be SLE or WN). In both 2004 and 2005, 35 of Florida's 67 counties reported WN virus (or indeterminate flavivirus) activity. Date of first known antibody positive bleed (sentinels, live wild birds), date of death (birds) and date of disease onset (horses) is shown in parentheses.

West Nile Virus						
COUNTIES	Human	Dead Birds	Sentinels	Horses/ Others	Live Wild Birds	Mosquito Pools
ALACHUA			16	1		
BAKER						
BAY			4			
BRADFORD						
BREVARD			7			
BROWARD						
CALHOUN						
CHARLOTTE			3			
CITRUS			1	1		
CLAY				1		
COLLIER						
COLUMBIA						
DESOTA						
DIXIE		1				
DUVAL	1		16			
ESCAMBIA						
FLAGLER			1			
FRANKLIN						
GADSDEN				1		
GILCHRIST						
GLADES			5			
GULF						
HAMILTON						
HARDEE						
HENDRY			2			
HERNANDO						
HIGHLANDS						
HILLSBOROUGH			55	1	2	
HOLMES						
INDIAN RIVER			19			
JACKSON			6			
JEFFERSON			9			
LAFAYETTE						
LAKE				2 alligators		
LEE			2			
LEON		1	16			
LEVY						
LIBERTY						
MADISON						
MANATEE			42			
MARION	1			3		
MARTIN						
MIAMI/DADE						
MONROE						1
NASSAU			11			

OKALOOSA						
OKEECHOBEE						
ORANGE			3			
OSCEOLA			1			
PALM BEACH						
PASCO	1		2			
PINELLAS	18	9	50			2
POLK						
PUTNAM			30	1		
SANTA ROSA					8	
SARASOTA			15			2
SEMINOLE			1			
ST. JOHN'S			47	2		
ST. LUCIE			5			
SUMTER						
SUWANNEE						
TAYLOR						
UNION				1		
VOLUSIA						
WAKULLA						
WALTON			16		5	
WASHINGTON						
TOTALS	21	11	385	12 horses, 2 alligators	15	5

Alachua: 16 sentinel chickens (8/22 x2, 9/13, 9/19, 9/26 x6, 10/3 x2, 10/17 x3, 11/1 x1); 1 horse (10/20)
Bay: 4 sentinel chickens (6/21, 9/13, 10/3, 10/11)
Brevard: 7 sentinel chickens (7/15, 9/14 x5, 9/28)
Charlotte: 3 sentinel chickens (10/7, 12/2 x2)
Citrus: 1 sentinel chicken (11/28) 1 horse (11/1)
Clay: 1 horse (9/02)
Dixie: 1 dead bird (crow 11/17)
Duval: 16 sentinel chickens (8/08 x2, 9/2, 9/12 x2, 9/15, 9/19, 9/22, 10/6 x2, 10/10 x3, 10/13, 10/25, 11/25)
Flagler: 1 sentinel chicken (4/25)
Gadsden: 1 horse (9/09)
Glades: 5 sentinel chickens (9/9 x2, 11/11 x2, 12/9)
Hendry: 2 sentinel chickens (11/07, 11/30)
Hillsborough: 55 sentinel chickens (1/11 x2, 4/26 x3, 5/31, 6/7, 7/19 x4, 8/02, 8/23 x5, 8/30 x4, 9/6 x2, 9/13 x6, 9/20 x10, 9/2, 10/4, 10/11 x3, 10/18 x2, 11/1, 11/08 x2, 12/6 x4, 12/13, 12/20); 2 live wild birds reactive to flavivirus antibody (1 vulture 7/27, 1 crane 11/30); 1 horse (10/17)
Indian River: 19 sentinel chickens (6/30 x2, 7/6, 7/7, 7/20 x4, 8/18, 9/9, 9/15, 10/6 x3, 10/13 x2, 10/20 x3)
Jackson: 6 sentinel chickens (4/25, 9/12, 9/27, 10/10, 10/17 x2)
Jefferson: 9 sentinel chickens (7/24, 9/10 x2, 10/2, 10/9, 10/16, 10/23 x2, 10/30)
Lake: 2 alligators (9/19 x2)
Lee: 2 sentinel chickens (7/25, 9/27)
Leon: 16 sentinel chickens (7/29 x2, 9/2 x3, 9/8 x3, 9/16, 10/7, 10/13 x3, 10/20, 10/28); 1 dead bird (blue jay 10/25)
Manatee: 42 sentinel chickens (8/01 x2, 8/15, 8/22, 9/5 x7, 9/12, 9/19, 9/25 x3, 10/2, 10/3 x2, 10/9 x5, 10/10 x3, 10/16 x2, 10/22 x2, 10/30, 11/6 x5, 11/14 x2, 11/18, 12/1, 12/20)

Marion: 3 horses (9/13, 9/15, 12/5)
 Nassau: 11 sentinel chickens (8/22, 8/28, 9/4 x4, 9/11, 9/18 x4)
 Orange: 3 sentinel chickens (1/21, 7/25, 10/17)
 Osceola: 1 sentinel chicken (10/11)
 Pasco: 2 sentinel chickens (6/20, 8/02)
 Pinellas: 50 sentinel chickens (1/10, 2/07 x2, 2/15, 6/01, 6/27, 7/05 x3, 7/11 x7, 7/25 x12, 8/1 x7, 8/08 x4, 8/15 x4, 8/22 x4, 8/29, 9/6 x2); 9 dead birds (1 duck, 7/21; 8 blue jays 6/27, 7/6 x2, 7/14, 7/18, 8/1, 8/11, 8/17)
 Putnam: 30 sentinel chickens (7/21, 8/26, 9/2 x4, 9/7, 9/12 x3, 9/15, 9/16 x2, 9/23 x3, 9/29 x2, 10/8 x2, 10/10 x2, 10/14 x2, 10/18 x2, 10/27, 10/28, 11/3, 11/4); 1 horse (9/28)
 Santa Rosa: 8 live wild birds (6 blue jays 4/20 x2, 5/18, 6/08 also EEE antibody positive, 6/22, 9/13 reactive to flavivirus antibody; 2 cardinals flavivirus-reactive 9/21, 10/4)
 Sarasota: 15 sentinel chickens (4/25 x2, 9/6, 9/12, 9/19, 10/10, 10/25 x3, 11/7 x5, 11/28)
 Seminole: 1 sentinel chicken (9/23)
 St. Johns: 47 sentinel chickens (8/15 x2, 8/22, 8/29, 9/6 x6, 9/12 x5, 9/19 x8, 9/26 x2, 10/3 x4, 10/10 x4, 10/17 x3, 10/24, 10/25 x2, 10/31 x2, 11/7 x3, 11/14, 11/21 x2); 2 horses (9/19, 9/24)
 St. Lucie: 5 sentinel chickens (7/28, 8/04, 9/2 x2, 10/14)
 Union: 1 horse (8/26)
 Walton: 16 sentinel birds (1/05, 1/06 x2, 1/31 x2, 3/07, 4/25, 5/16, 5/18, 5/20, 7/6, 7/25, 8/01, 8/17, 9/12, 12/13)
 Washington: 5 live wild birds reactive to flavivirus antibody (3 cardinals 6/1 x2, 8/24; 1 grackle 6/1; 1 blue jay 7/14)

Figure 5. Comprehensive West Nile (WN) Virus Equine Surveillance, Florida, 2005

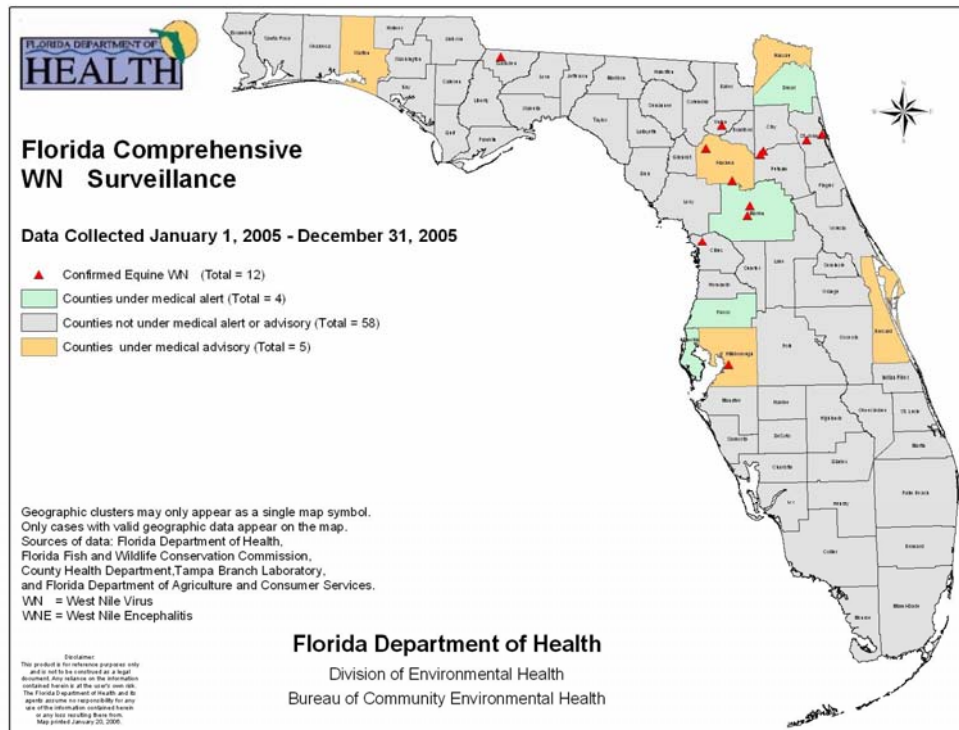
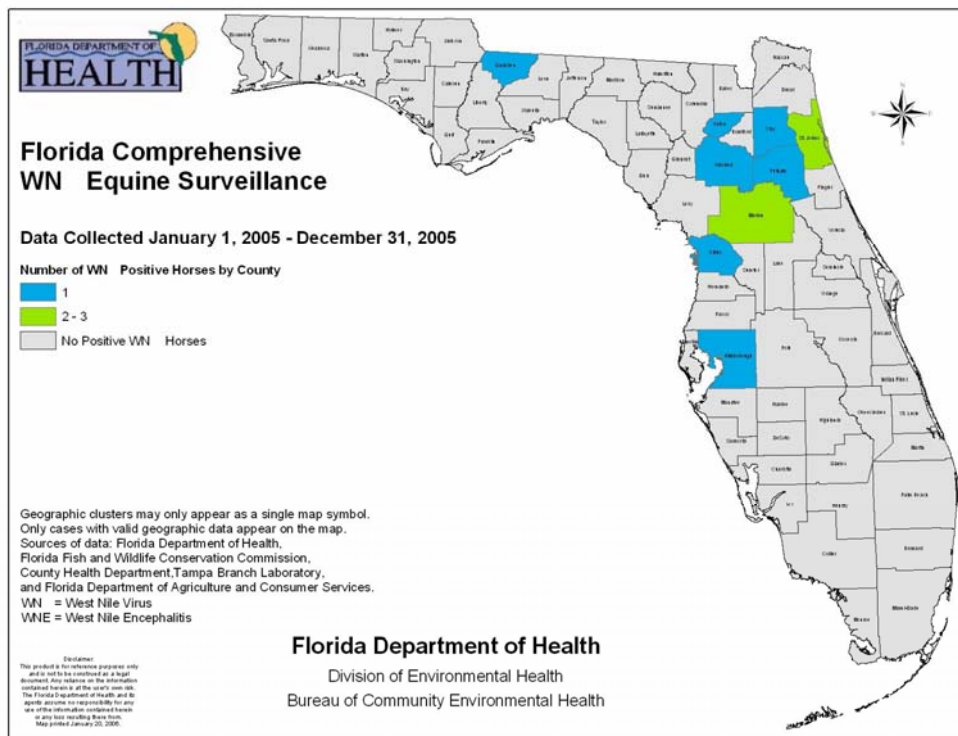


Figure 6. West Nile Positive Horses by County, Florida, 2005

The highest concentration of positive horses is seen in the northern area of the state. This map represents the raw numbers rather than a rate of infection.



3. Mosquito Surveillance

Twelve EEE virus-positive samples were collected from Escambia (4), Monroe (2), Sarasota (3), St. Johns (1) and Volusia (2) counties. Five WN virus-positive pools were collected from Monroe (1), Pinellas (2) and Sarasota (2) counties. One SLE virus-positive pool was collected from Lee County. Five samples from Escambia (1) and Sarasota (4) counties tested positive for California Group virus (CAL). Results from the testing of over 1,600 mosquito pools from 12 counties have been reported this year.

Escambia: EEE Virus was detected in 3 pools of *Culiseta melanura*, collected on 6/28 and 7/18, and one pool of *Anopheles crucians* collected on 8/01. CAL was detected in one pool of *Ochlerotatus atlanticus* collected on 8/10.

Lee: SLE virus was detected in a pool of *Culex nigripalpus* collected on 7/27.

Monroe: EEE virus was detected in 2 pools of *Ochlerotatus taeniorhynchus*, collected on 7/13 and 8/04. WN Virus was detected in 1 pool of *Oc. taeniorhynchus* collected on 9/9.

Pinellas: WN virus was detected in 2 pools of *Cx. nigripalpus* collected on 8/08 and 8/12.

Sarasota: California Group virus was detected in two pools of *An. crucians* collected on 4/06, and 11/30, and two pools of *Oc. atlanticus* on 6/20, and 7/13. EEE virus was detected in 3 pools of *Oc. atlanticus* collected on 6/02, 6/22 and 6/29. WN virus was detected in 1 pool of *Mansonia titillans* collected on 8/24.

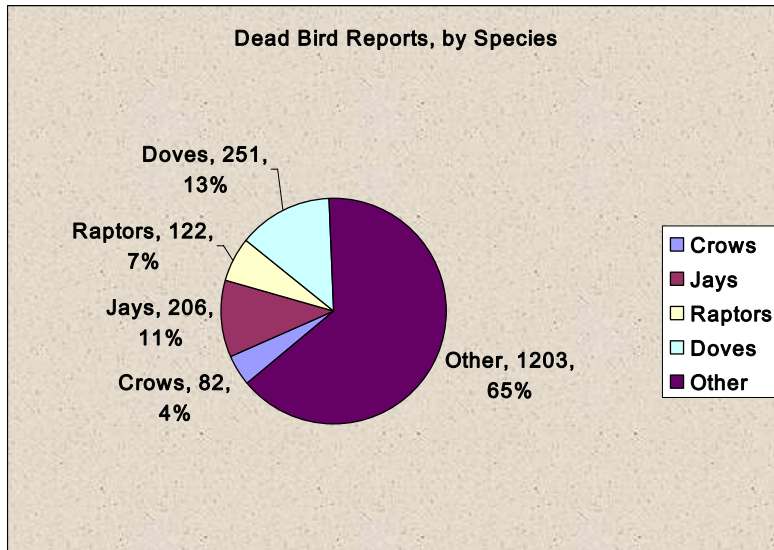
St. Johns: EEE virus was detected in a pool of *Ochlerotatus infirmatus* collected on 6/23.

Volusia: EEE virus was detected in 2 pools, *Cx. nigripalpus* and *Coquillettidia perturbans*, both collected on 5/26.

4. Bird Mortality Surveillance

During 2005, 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 992 reports for 1864 birds.

Figure 7. Dead birds reported in Florida in 2005, by species



Of the 181 dead birds tested at the Tampa State Laboratory, 11 were positive for antibodies to WN virus and 2 were positive for antibodies to EEE virus. The following guidelines for reporting and shipping birds for testing were promoted throughout the year.

Bird Mortality Reporting Guidelines

1. Report dead birds to www.myfwc.com/bird/. From that site, you can link to online bird identification sites. Under most circumstances, testing is not warranted. There is value in the reported information submitted even if the bird is not tested. The Florida Fish and Wildlife Conservation Commission (FWCC) tracks all clusters of wild bird mortality in the state.
 2. The DOH Lab in Tampa accepts dead bird specimens for testing as long as they are received in good condition. When there is a need to verify the cause of an increased corvid (i.e. crows and jays) or overall bird mortality, a representative sample may be submitted to the Tampa laboratory for arboviral testing. Instructions for submission of dead birds are found at: <http://www.doh.state.fl.us/environment/community/arboviral/index.html>. Select "How Do I Report?" and then choose "Protocol for Collecting and Shipping Bird Carcasses" under "Dead Birds" subtopic.
 3. Clusters of mortality of single non-corvid species or families of birds such as doves, ducks or pelicans are usually not caused by WN virus and should not be submitted for WN virus testing. However, FWCC still wants them reported to the website.
 4. If personnel are not able to offer pick-up service, yet they desire to collect specimens, determine a drop-off station and provide the caller with safe handling instructions. A county may modify their testing approach depending on the availability of other surveillance systems in the county.
-

Acknowledgements/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 John A. Mulrennan Public Health Entomology Research and Education Center. Some of the reports listed under WN are undetermined flavivirus; some listed under EEE are undetermined alphavirus. For more information, go to <http://www.pherec.org/DECS>, and click on "Arbovirus Ecology" to download the database, then the "Bird Serology" tab.

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