

Florida Mosquito-Borne Disease Summary for 2003

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Disclaimer: Please note that numbers are subject to change with confirmatory information.

During the period January 1 - December 31, 2003, the following arboviral activity (St. Louis encephalitis [SLE] virus, eastern equine encephalomyelitis [EEE] virus, West Nile [WN] virus and dengue virus) was recorded for Florida:

Human: A total of 94 WN cases were confirmed in residents of 29 counties, three EEE cases in residents of Bay, Okaloosa and Orange counties, and eight locally-acquired malaria cases in Palm Beach County residents. There were six fatalities among the WN cases, none among the EEE or malaria cases. In 2002, there were 35 cases of WN, one case of EEE and one case of SLE. On January 5, 2004, Florida Department of Health (DOH) Secretary John O. Agwunobi, M.D., M.B.A., announced the lifting of medical alerts for mosquito-borne disease which covered 29 counties throughout the state, while stressing the need for continued precautions against mosquito bites year-round.

Sentinel Chickens: A total of 273 EEE sentinel seroconversions were reported from 20 counties, 1,247 seroconversions to WN virus were reported from 34 counties, and ten seroconversions to SLE virus were reported from six counties. Over 4,300 individual sentinel birds were tested this year, represented by over 44,400 serum samples collected from 37 counties.

Bird Mortality: A total of 20 dead birds from 14 counties tested positive for EEE virus, 487 birds from 42 counties tested positive for WN virus, and three birds in three counties tested positive for Highlands J virus. Individual birds totaling 6,160 were reported to the bird mortality web site www.wildflorida.org/bird/. Over 2,300 bird specimens were received from throughout the state for testing by the DOH Tampa Branch Laboratory.

Equine* and other mammals: A total of 117 horses were confirmed with WN infection from 38 counties. Three other mammals (two canines and a gazelle) were confirmed with WN from three counties. A total of 207 horses in 50 counties were confirmed with EEE infection. A total of 727 horses were processed through the Department of Agriculture and Consumer Services Kissimmee Diagnostic Laboratory and the University of Florida laboratories for arboviral testing during 2003. An additional 78 mammals, including 59 horses, were tested by DOH Tampa Branch Lab. So, 15% of the horses tested were confirmed with WN infection while 26% resulted in a confirmation of EEE infection.

Wild and Captive Birds:** Sera from 1,272 non-sentinel birds from 15 counties were tested by DOH Tampa Branch Laboratory, resulting in the detection of 116 with

antibodies to EEE, and 34 with antibodies to WN virus. Since antibodies can persist for long periods of time, it is often difficult to pinpoint time of infection in randomly captured wild birds. A time estimate is more feasible in juveniles or re-captured, previously negative, marked birds.

Mosquito Pools: Over 5,600 mosquito pools were tested by the DOH Tampa Branch Laboratory. One mosquito pool (*Ochlerotatus infirmatus*) tested positive for EEE virus from Escambia County and one mosquito pool (*Culiseta melanura*) tested positive for Highlands J virus from Sarasota County. Sixty-two mosquito pools tested positive for WN virus from six counties (Collier, Escambia, Lee, Monroe, Palm Beach, and Volusia). See Part 3, Mosquito Surveillance, for details on species and collection dates.

In summary, 52 of Florida's 67 counties reported EEE virus activity during 2003, compared to 27 counties reporting EEE during 2002. Sixty counties reported WN virus activity, compared to 56 in 2002. Six counties reported SLE activity, compared to two in 2002. Three counties reported Highlands J activity, compared to none in 2002.

For more detailed surveillance information and maps, please see the DOH web site at: <http://www.doh.state.fl.us/Environment/hsee/arbo/index.htm> or call the Disease Outbreak Information Hotline for updates on medical alert status and surveillance at **888-880-5782**.

*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. For more information, go to <http://www.pherec.org/DECS>, and click on "Arbovirus Ecology" to download the database, then the "Bird Serology" tab.

2003 Cumulative Arbovirus Activity by County

1. Human Surveillance

Onset dates are shown in parentheses. **Bolded** counties were placed under medical alert.

Eastern Equine Encephalomyelitis (ICD Code 6220)

Three cases of EEE counties were reported to the State Health Office:

Bay (July), **Okaloosa** (December) and **Orange** (July).

West Nile Virus (ICD Codes 6630 and 6631)

Ninety-four cases of WN virus infection were reported to the State Health Office:

Alachua: 1 (September); **Bay: 14** (3x August, 10x September, 1 November); **Brevard: 1** (July); **Broward: 4** (2x July, 2x August); **Calhoun: 2** (2x September); **Citrus: 2** (2x September); **Collier: 2** (1 July, 1 September); **DeSoto: 1** (September), **Duval: 6** (1 July, 1 August, 4x September); **Escambia: 12** (5x August, 2x September, 5x October); **Franklin: 1** (October); **Gulf: 4** (1 July, 1 August, 2x September); **Hillsborough: 1** (November), **Holmes: 2** (1 September, 1 October), **Lafayette: 1** (August), **Lee: 3** (1 July, 2x August), **Marion: 2** (1 September, 1x October), **Miami-Dade: 6** (1 June, 4x August, 1 September), **Monroe: 1** (September), **Okaloosa: 8** (1 June, 3x July, 3x August, 1 November), **Santa Rosa: 10** (5x August, 3x September, 1 October, 1 November), **Sarasota: 1** (August), **Seminole: 2** (2x September), **St.**

Johns: 1 (August), **Suwannee: 1** (November), **Union: 1** (August), **Volusia: 1** (August), **Walton: 1** (September), and **Washington: 2** (1 August, 1 September).

2. Animal Surveillance

Eastern Equine Encephalomyelitis Virus

Positive samples from **207 horses in 50 counties**, **20 dead birds in 14 counties**, and **273 sentinel chickens in 20 counties** were received. In 2003, 52 of Florida's 67 counties reported EEE virus activity, including the 51 listed below plus Okaloosa (live wild birds, see July 7th summary). Date of disease onset (**horses**), date of death (**birds**) and date of first known positive bleed (**sentinels**) is shown in parentheses. **Bolded** counties were placed under medical alert.

Alachua: 15 horses (3/20, 3/25, 3/30, 4/13, 5/1, 5/9, 6/6, 6/10, 6/11, 6/13, 6/20, 6/21, 7/3, 7/9, 8/14), **26 sentinel chickens** (4/14, 4/15, 4/21x2, 5/6, 5/13x2, 5/27x4, 5/28x2, 6/2x3, 6/30, 7/8, 7/14x4, 7/21x2, 8/11, 9/16), **2 dead birds** (pigeon 4/22; cowbird 6/26)

Baker: 3 horses (3/28, 3/29, 6/8)

Bay: 15 sentinel chickens (5/6, 7/8x4, 7/15x4, 7/22x3, 7/29, 8/4x2), **2 horses** (6/24, 8/22)

Bradford: 6 horses (3/14, 3/25, 3/29, 4/27, 6/8, 7/23)

Charlotte: 2 horses (6/19, 8/28)

Citrus: 2 sentinel chickens (7/21, 12/1), **1 horse** (10/2)

Clay: 9 horses (4/1, 4/13, 4/16, 5/25, 6/13, 6/14, 6/18, 7/22, 8/27)

Columbia: 1 dead bird (quail 5/28), **3 horses** (6/1, 6/12, 6/21)

Dixie: 2 horses (4/28, 5/6)

Duval: 11 sentinel chickens (5/16, 5/27, 6/10x3, 6/23, 7/22x2, 7/29, 12/1x2), **4 horses** (6/3, 6/9, 6/21, 6/24); **1 dead bird** (chicken 7/14)

Escambia: 3 horses (6/8, 8/9, 8/11)

Flagler: 7 sentinel chickens (4/7, 6/2, 6/9, 6/16x2, 6/30, 7/14), **1 horse** (11/18)

Gilchrist: 8 horses (3/24, 3/25, 3/27, 3/29, 4/7, 4/12, 4/15, 4/24)

Glades: 3 horses (7/10, 8/9, 8/30)

Hamilton: 1 dead bird (cardinal 4/3), **1 horse** (5/6)

Hendry: 1 horse (5/18)

Hernando: 1 dead bird (blue jay 6/2), **4 horses** (6/5, 6/26, 7/1, 11/24)

Hillsborough: 12 sentinel chickens (3/17, 3/31, 4/21, 5/19, 5/27, 6/2x2, 6/9x4, 6/16); **2 horses** (5/17, 6/16)

Holmes: 7 horses (5/31, 6/2, 6/10x3, 6/28, 6/30)

Jackson: 2 horses (6/18, 7/25), **1 sentinel chicken** (11/13)

Jefferson: 4 horses (5/31, 6/9, 6/11, 6/17), **1 dead bird** (zebra finch 6/4); **6 sentinel chickens** (6/30, 7/27x4, 10/19)

Lafayette: 1 horse (3/23)

Lake: 5 horses (3/12, 5/29, 6/27, 7/5, 7/21)

Lee: 1 horse (7/2)

Leon: 3 horses (6/12, 7/28, 8/19), **1 dead bird** (finch 6/26); **20 sentinel chickens** (7/7x2, 7/14, 7/18x2, 7/25x2, 8/1x3, 8/8, 8/22x5, 8/29, 10/31, 11/13, 11/21)

Levy: 9 horses (3/15, 3/20, 4/4, 4/6, 4/10, 5/7, 5/9, 6/4, 8/11)

Liberty: 1 horse (7/28)

Madison: 4 horses (4/2, 4/19, 6/21, 7/16), **2 dead birds** (orchard oriole 5/2; Eurasian collared-dove 5/6)

Manatee: 2 horses (5/7, 7/14)

Marion: 27 horses (3/17, 3/24, 4/1x2, 4/11, 4/14, 5/2x2, 5/14, 5/25, 6/2, 6/10, 6/11, 6/13x2, 6/16x2, 6/17x2, 6/30, 7/4, 7/6, 7/8, 7/16, 11/14, 11/19, zebra 11/15), 1 sentinel chicken (7/27)

Miami-Dade: 3 horses (7/6, 11/1, 12/10)

Nassau: 37 sentinel chickens (5/25x2, 6/9x5, 6/23x3, 7/7, 7/14x18, 7/21, 7/28x2, 8/4x2, 8/11, 8/18x2), 1 dead bird (crow 5/30), 3 horses (6/15, 6/15, 6/21)

Okeechobee: 2 horses (7/1, 8/16), 1 sentinel chicken (8/25)

Orange: 47 sentinel chickens (3/27x2, 4/17x3, 4/28, 5/1, 5/8x3, 5/12, 5/15x5, 5/22x4, 5/27, 5/30x4, 6/5, 6/16, 6/19, 6/26x4, 6/30, 7/2, 7/3, 7/10x10, 8/4, 8/7), 5 horses (4/22, 5/6, 6/18, 6/20, 7/6)

Osceola: 8 horses (3/31, 4/8, 4/21, 4/25, 5/12, 5/13, 5/13, 7/06); 6 sentinel chickens (4/29, 5/28, 7/20x2, 7/31, 11/10)

Pasco: 4 sentinel chickens (4/22, 6/9x2, 6/23), 2 horses (5/7, 6/25)

Pinellas: 2 sentinel chickens (3/31, 6/2)

Polk: 6 horses (3/21, 4/15, 5/10, 6/1, 6/5, 7/3)

Putnam: 2 horses (3/22, 6/22), 20 sentinel chickens (4/24, 4/25, 5/1, 5/16, 5/29x2, 5/30, 6/6, 6/13, 6/19x2, 6/26, 7/3, 7/10x3, 7/24, 8/8, 9/18x2)

Santa Rosa: 5 dead birds (2 mourning doves 4/23, 7/28; wren 4/29; black-headed grosbeak 5/13; finch 6/25); 3 horses (6/28, 6/16, 7/17)

Sarasota: 2 horses (7/8, 12/15)

St. Johns: 1 horse (3/26), 12 sentinel chickens (6/9, 6/16x3, 6/23, 7/7, 7/14x2, 7/28, 10/20, 11/17x2)

Seminole: 3 horses (5/12, 5/18, 7/12)

Sumter: 1 horse (3/24)

Suwannee: 1 dead bird (emu 3/24), 4 horses (4/11, 5/13, 5/28, 5/31)

Taylor: 1 horse (5/25), 1 dead bird (Eurasian collared-dove 6/3)

Union: 6 horses (4/15x2, 4/22, 5/2, 6/11, 7/1), 1 dead bird (European starling 5/19)

Volusia: 5 horses (3/30, 5/10, 6/17, 6/21, 6/23), 4 sentinel chickens (5/19, 5/27, 7/21x2)

Wakulla: 2 horses (6/29, 7/20)

Walton: 39 sentinel birds (3/24x2, 5/27x2, 6/2, 6/9, 6/23, 6/30x5, 7/7x3, 7/14x4, 7/21, 7/23, 7/28x5, 8/18, 9/11, 10/23, 10/31x2, 11/13, 11/17, 12/16x6), 3 horses (5/1, 6/27, 7/1), 1 dead bird (warbler 8/22)

Washington: 9 horses (6/11, 6/15, 6/18, 6/19, 6/25, 6/26x2, 7/4, 11/14)

Highlands J Virus

Highlands J is a close relative to EEE but is not as pathogenic in humans nor as virulent in animals. Positive samples from three dead birds in three counties were received.

Citrus: 1 dead bird (grey catbird 10/22)

Hamilton: 1 dead bird (turkey 6/23)

Jefferson: 1 dead bird (Eurasian collared-dove 6/20)

St. Louis Encephalitis Virus

Positive samples from 10 sentinel chickens in six counties were received. No other SLE activity was reported in 2003. Date of first known positive bleed is shown in parentheses. **Bolded** counties were placed under medical alert.

Charlotte: 4 sentinel chickens (10/3, 10/17, 10/31, 12/12)

Hillsborough: 1 sentinel chicken (11/10)

Lee: 1 sentinel chicken (12/8)
Manatee: 1 sentinel chicken (11/4)
Miami-Dade: 1 sentinel chicken (10/28)
Sarasota: 2 sentinel chickens (10/6, 11/17)

West Nile Virus

Positive samples from 1,247 sentinel chickens in 34 counties, 117 horses in 38 counties, 487 dead birds in 42 counties, and three other animals in three counties were received. In all, 60 of Florida's 67 counties reported WN virus activity. Date of first known positive bleed (sentinels), date of death (birds) and date of disease onset (horses, others) is shown in parentheses. **Bolded** counties were placed under medical alert or advisory.

Alachua: 13 dead birds (10 crows 6/2, 6/18, 8/7, 8/28, 9/8, 9/11, 9/15, 10/6, 10/16, 10/27; duck 8/13; warbler 9/11; red-tailed hawk 10/9), 26 sentinel chickens (8/11x4, 8/18x5, 9/8x5, 9/16x2, 9/23, 10/13x4, 10/20x4, 10/27), 4 horses (8/28, 9/12, 9/13, 11/6)

Bay: 37 sentinel chickens (1/7x2, 7/15, 7/22x2, 8/12x2, 8/19, 8/26x8, 9/2, 9/16x10, 10/7x2, 10/21x5, 10/28x2, 11/18), 108 dead birds (103 blue jays 7/14x2, 7/21, 7/24x2, 7/25, 7/28, 7/29, 7/30x3, 7/31x2, 8/1, 8/4x7, 8/5x2, 8/6, 8/7, 8/8x4, 8/9, 8/11x7, 8/12x2, 8/13x2, 8/14x2, 8/15x4, 8/18x2, 8/19x2, 8/20x6, 8/21, 8/25x9, 8/26, 8/27x5, 8/28x6, 9/3x2, 9/4x2, 9/5, 9/9x2, 9/10, 9/11, 9/12, 9/13, 9/15, 9/16x2, 9/19, 9/29, 9/30, 10/2, 10/15, 10/16x2, 10/20, 11/14, 11/26; carolina chickadee 8/20; crow 7/14; 2 loggerhead shrikes 7/26, 10/15; goose 8/28), 10 horses (7/20, 7/25, 7/29, 7/31, 8/11, 8/14, 8/18, 8/27, 9/5x2)

Bradford: 5 dead birds (dove 8/11; crow 8/25; blue jay 8/25; common nighthawk 9/12; tufted titmouse 9/15)

Brevard: 26 sentinel chickens (4/24x3, 5/29, 7/31, 8/7, 8/21x2, 8/22x2, 9/4, 9/12x3, 9/19x2, 10/10, 10/17, 10/23, 10/30, 11/6, 11/13x5)

Broward: 9 dead birds (9 blue jays 7/17, 7/24, 7/28, 7/31x5, 8/7)

Calhoun: 8 dead birds (5 blue jays 6/4, 7/28, 8/22, 8/29, 9/5; hermit thrush 8/5; 2 crows 8/15, 8/29), 1 horse (8/27)

Charlotte: 45 sentinel chickens (5/30, 6/9, 7/25, 8/1, 8/8x4, 8/15x4, 8/22x8, 8/29x2, 9/5x2, 9/12x2, 9/19x9, 9/26x3, 10/17x2, 10/24x2, 12/12x3)

Citrus: 25 sentinel chickens (8/11, 8/18x3, 8/25x4, 9/8x6, 9/29, 10/6x3, 10/10, 10/13x2, 10/27, 11/10x2, 12/8), 2 dead birds (cardinal 8/12; crow 9/2), 2 horses (10/3, 10/21)

Clay: 4 dead birds (juv. loggerhead shrike 6/25; 3 crows 8/18, 9/16, 9/19), 1 horse (9/16)

Collier: 58 sentinel chickens (5/27, 6/2x2, 6/9x2, 6/23, 6/30, 7/7x2, 7/14x3, 7/21x3, 7/28x3, 8/4x3, 8/11x4, 8/19x2, 8/25x4, 9/2x2, 9/8x2, 9/15, 9/22, 9/29, 9/30, 10/6, 10/13x3, 10/20x2, 10/27x3, 11/3, 11/10x2, 11/17x4, 12/8x2, 12/31), 3 dead birds (2 blue jays 7/22, 8/12; dove 8/5)

Columbia: 6 dead birds (5 crows 6/17, 7/9, 7/21, 7/28, 9/18; mockingbird 8/19), 4 horses (9/2, 10/1, 10/9, 11/3)

Dixie: 1 horse (8/23)

Duval: 34 sentinel chickens (7/22, 8/12, 8/19x6, 9/2, 9/8, 9/15x10, 9/22x5, 9/29x2, 10/27, 11/13, 11/17x4, 12/8), 2 dead birds (2 blue jays 8/26, 9/22), 1 horse (10/24)

Escambia: 75 dead birds (5 mourning doves 6/5, 8/5x3, 9/4; 1 ground dove 8/28; 1 dove 9/11; 43 blue jays 6/26, 7/3, 7/7, 7/21x4, 7/28x4, 7/31x3, 8/5x4, 8/7x3, 8/14x4, 8/21x4, 8/28, 9/4x6, 9/11x2, 9/18, 9/25x3, 10/9; 5 grackles 7/3, 7/28, 8/21, 8/28, 9/4; 4 mockingbirds 7/3, 8/5, 8/7, 8/21; 1 thrush 8/5; 3 tufted titmouses 7/3, 7/28, 9/25; 6 crows 7/21x2, 7/28, 8/21, 9/11, 10/9; 3 cardinals 8/14, 9/4, 10/30; 2 finches 8/28, 10/16; 1 warbler 9/4), 3 horses (7/30, 9/18, 10/1)

Flagler: 6 sentinel chickens (9/29, 10/9, 10/20, 10/27, 11/7, 11/17)

Franklin: 2 dead birds (2 blue jays 8/18, 10/15)

Gadsden: 1 horse (9/15)

Gilchrist: 2 dead birds (blue jay 8/18; crow 9/9), 1 horse (9/15)
Glades: 1 dead bird (crow 9/5), 8 sentinel chickens (8/8x2, 8/15, 8/22, 9/12x2, 10/24, 11/7)
Hamilton: 1 dead bird (crow 6/27)
Hendry: 34 sentinel chickens (6/2x2, 7/11, 7/25, 7/28, 8/1, 8/8x2, 8/11x5, 8/12, 8/25, 9/8x6, 9/12x2, 9/26x2, 10/17, 10/21x3, 10/24x2, 11/5x2, 12/12), 1 horse (7/27)
Hernando: 1 dead bird (mourning dove 8/11), 2 horses (9/16, 9/26), 1 canine (Arctic wolf 9/29)
Hillsborough: 41 sentinel chickens (7/21, 8/4, 8/11x4, 8/18x2, 8/25x9, 9/8, 9/15x3, 9/29x6, 10/6x3, 10/13x2, 11/3, 11/10, 11/18x5, 11/25, 12/9), 2 horses (8/8, 9/22), 3 dead birds (golden eagle 10/10; 2 blue jays 9/23, 10/9)
Holmes: 5 horses (7/30, 8/4, 8/16, 8/20, 9/24), 5 dead birds (2 blue jays 8/11, 9/15; grackle 8/11; sparrow 8/24; crow 9/28)
Indian River: 46 sentinel chickens (1/9, 5/1x3, 5/8, 6/12x3, 6/19x2, 8/7, 8/15x2, 8/21x7, 8/28x2, 9/11x5, 10/2, 10/9x2, 10/16x4, 10/23, 10/30, 11/6x6, 11/20x3, 12/30)
Jackson: 36 dead birds (14 crows 5/7, 7/24, 8/6, 8/18, 8/29x3, 9/2, 9/10, 9/12, 9/15x2, 9/23, 10/7; 17 blue jays 7/16, 7/26, 7/30, 7/31, 8/7, 8/11, 8/18x2, 8/25, 8/28, 9/2x2, 9/18, 9/25, 9/30, 10/9, 12/19; cardinal 8/6; hawk 8/6; 2 mockingbirds 8/6x2; 1 house finch 9/19), 17 sentinel chickens (8/12, 9/2x2, 9/16, 9/18x2, 9/23, 10/7, 10/9, 10/28, 11/18x4, 11/20x3), 2 horses (9/13, 10/24)
Jefferson: 3 dead birds (3 crows 8/18x2, 9/30), 18 sentinel chickens (8/10, 8/17x2, 9/14x4, 9/20x4, 9/28, 10/5x2, 10/12, 10/19x2, 10/26)
Lake: 2 horses (6/3, 9/10)
Lee: 114 sentinel chickens (1/7, 1/9x4, 1/21, 2/12, 4/8, 4/29, 6/17, 7/8x3, 7/14x4, 7/15, 7/21x3, 7/29x9, 8/4x12, 8/10x9, 8/18x6, 8/25x6, 8/26x6, 9/8x6, 9/9x10, 9/16x3, 9/23x12, 10/6x6, 10/13, 11/4, 11/11, 11/17x3, 12/2, 12/16)
Leon: 43 sentinel chickens (7/25, 8/1, 8/15, 9/4x6, 9/12x4, 9/18, 9/19x3, 9/25x4, 10/3x5, 10/10x2, 10/17x3, 10/23x6, 10/31, 11/7x2, 11/20, 11/21, 12/1), 10 dead birds (2 cardinals 7/30, 10/2; 4 crows 8/27, 9/5, 9/10, 10/30; mourning dove 8/20; 3 blue jays 8/25, 10/9, 10/21), 3 horses (9/1, 10/9, 10/27)
Levy: 7 horses (3/27, 8/8, 8/25, 9/1, 9/5, 9/20, 9/29), 11 dead birds (7 crows 6/26, 6/28, 7/14x2, 8/20, 8/26, 9/16; 2 blue jays 7/7, 8/25; 1 red-shouldered hawk 8/12; 1 rock dove 11/4)
Liberty: 2 dead birds (blue jay 9/17; warbler 9/17)
Madison: 4 dead birds (2 crows 7/8, 8/8; 2 blue jays 7/24, 8/9), 1 horse (9/5)
Manatee: 61 sentinel chickens (1/17, 3/10, 5/2, 7/11, 8/1x2, 8/8x7, 8/22x10, 8/29x6, 9/5x2, 9/8x5, 9/10x3, 9/11, 9/15, 9/25x2, 10/8, 10/20x2, 10/22x5, 10/28, 11/3x2, 11/5x2, 11/12, 11/19x2, 12/8, 12/15)
Marion: 20 horses (7/22, 7/31, 8/05, 8/13, 8/18, 9/2, 9/11, 9/15x2, 9/17, 9/20, 9/26, 10/3, 10/9, 10/14, 10/17, 10/24x2, 11/1, 12/12), 20 sentinel chickens (8/17, 8/30x2, 9/21, 9/28, 10/18x4, 10/25x2, 10/26, 11/1x3, 11/9, 11/16, 12/6x2, 12/7), 2 dead birds (cuckoo 10/7; crow 11/19)
Martin: 28 sentinel chickens (7/7, 7/18x2, 7/28, 8/1, 8/15x5, 8/25, 9/5x2, 9/12x10, 9/22, 9/26, 10/3, 10/17, 11/7), 1 dead bird (Mottled duck 8/5)
Miami-Dade: 25 dead birds (2 Canada geese 6/30, 7/4; 1 goose 7/2; 12 blue jays 7/24, 7/29, 8/7, 8/8, 8/13, 8/22, 8/25, 8/28, 9/3x3, 9/11; 1 crow 8/28; 3 doves 8/4, 8/5, 8/11; 2 grackles 8/1, 8/11; 1 owl 8/11; 3 mockingbirds 8/1x2, 8/12), 17 sentinel chickens (7/15, 7/21, 7/29, 8/4x2, 8/11, 8/18x2, 8/25x2, 9/2x3, 9/16x2, 9/29x2), 2 horses (8/5, 9/28)
Monroe: 2 dead birds (1 grackle 7/5; 1 chicken 8/7)
Nassau: 29 sentinel chickens (6/30, 7/21, 7/28x2, 8/11, 8/18, 8/25x2, 9/1x4, 9/8x11, 9/15x5, 9/22); 1 dead bird (1 cooper's hawk 7/18)
Okaloosa: 58 dead birds (35 blue jays 7/7x2, 7/15, 7/28, 8/8, 8/10x2, 8/11, 8/12, 8/13x2, 8/19x2, 8/20, 8/22, 8/25, 8/29, 9/2, 9/6x2, 9/7, 9/9x2, 9/12x3, 9/15, 9/18, 9/19x2, 10/14, 10/19, 10/20, 10/26, 11/2; 8 crows 7/16, 8/14, 8/17, 8/19, 8/25, 9/5, 9/11, 9/22; 3 mourning doves 7/30, 8/11, 8/20; 1 northern mockingbird 7/31; 1 Eurasian-collared dove 8/19; 1 house finch 8/25; 2 grackles 8/28, 9/4; 1 dove 9/8; 1 red-tailed hawk 8/14; 1 tufted titmouse 9/17; 1 sparrow 9/12; 1 brown thrasher 9/17; 1 limpkin 9/24; 1 gray catbird 10/15), 4 horses (8/11, 9/11, 9/26, 10/12)

Okeechobee: 3 dead birds (3 crows 7/21, 8/5, 8/11), 1 horse (7/10), 14 sentinel chickens (8/18x4, 9/2, 9/8x3, 9/15, 9/22, 10/13, 11/3, 12/8x2)

Orange: 59 sentinel chickens (4/28, 6/19, 7/4, 7/14, 7/28, 8/7x4, 8/11, 8/15x3, 8/18x6, 8/22x3, 9/8x3, 9/15, 9/25, 9/29x3, 10/6x2, 10/10x3, 10/13x3, 10/15, 10/20, 10/23, 10/27x3, 11/10x2, 11/17x2, 11/24, 11/26, 12/1, 12/5x3, 12/8x3, 12/15x2), 1 horse (10/5)

Osceola: 24 sentinel chickens (2/4, 3/18, 8/15, 8/17x3, 8/22, 9/2x3, 9/14, 9/16x2, 9/21, 9/25x2, 10/12, 10/26x2, 11/3, 11/18, 11/23, 12/9x2); 1 dead bird (chicken jungle-fowl 3/3); 1 other (Thompson's gazelle 1/10), 1 horse (7/23)

Palm Beach: 85 sentinel chickens (7/14, 7/28x4, 8/4x5, 8/11x5, 8/18x5, 8/25x9, 9/2x2, 9/8, 9/15x13, 9/22x3, 9/28x3, 9/29x10, 10/6x2, 10/13x7, 10/20x8, 10/27, 11/10x2, 11/17x2, 12/8x2), 10 dead birds (2 Eurasian Collared Doves 7/30, 8/5; Purple Gallinule 7/29; mockingbird 8/20; 4 blue jays 8/8, 8/11, 9/15, 9/28; 1 Chinese goose 9/8; cockatoo 9/22), 8 horses (8/16, 8/22, 9/7, 9/8, 9/16, 9/17, 9/20, 11/1)

Pasco: 6 sentinel chickens (1/13, 8/4, 10/13, 10/21, 10/27x2); 1 dead bird (crow 7/7), 2 horses (8/3, 11/12)

Pinellas: 15 sentinel chickens (1/13, 6/16, 7/28x2, 8/18, 8/25, 9/2x5, 9/8x2, 9/15x2); 1 dead bird (blue jay 10/15)

Polk: 1 other (canine 3/19), 1 horse (9/11)

Putnam: 36 sentinel chickens (4/25x2, 5/15, 5/30, 7/2, 8/14x6, 8/15x2, 8/21x2, 8/28x3, 9/8x3, 9/11x3, 9/18x4, 9/25x2, 10/2x2, 10/16x2, 10/22, 10/30), 1 horse (10/19)

Santa Rosa: 38 dead birds (blue bird 7/17; 24 blue jays 7/1, 7/8, 8/20x10, 9/9x2, 9/19x5, 10/7x4, 10/29; 1 finch 7/11; 4 crows 8/20x2, 10/7, 12/3; 2 cardinals 8/20x2; 2 mourning doves 8/20, 9/19; 2 tufted titmouses 8/20x2; 1 ground dove 9/9; 1 Eurasian Collared Dove 9/9), 7 horses (7/23, 8/8, 8/11, 8/25x2, 8/30, 9/7)

Sarasota: 74 sentinel chickens (1/13, 2/18, 7/14, 8/4x5, 8/11x6, 8/18, 8/25x9, 9/2x5, 9/8x5, 9/22x8, 9/29x4, 10/13x2, 10/20x4, 10/27x3, 11/3x2, 11/17x7, 11/24x3, 12/1, 12/8x2, 12/15x2, 12/29x2), 1 dead bird (duck 8/8)

Seminole: 5 sentinel chickens (8/7, 8/8, 8/14x2, 10/2)

St. Johns: 37 sentinel chickens (6/16, 7/21, 7/28x2, 8/4x6, 8/11x3, 8/18, 8/25x3, 9/2, 9/15x2, 9/22x2, 9/29, 10/6x4, 10/13, 10/20x2, 10/27x4, 11/4, 11/17, 12/1), 3 horses (8/19, 8/28, 9/24)

St. Lucie: 13 sentinel chickens (7/3, 8/8x2, 8/14x2, 9/5x3, 9/11, 9/18, 9/25, 10/9, 10/16), 1 dead bird (blue jay 8/12)

Suwannee: 1 horse (9/28)

Taylor: 8 dead birds (2 crows 7/8, 8/9; 6 blue jays 7/18x2, 8/4, 8/9, 8/11, 8/25)

Union: 2 dead birds (2 blue jays 8/12x2), 1 horse (9/23)

Volusia: 16 sentinel chickens (1/13x2, 3/3, 7/21, 8/4, 8/11, 8/18x2, 8/25, 9/29, 10/6, 10/13, 11/10x2, 11/12, 12/15), 2 horses (7/29, 9/17)

Wakulla: 3 dead birds (blue jay 7/17; ground dove 7/23; crow 7/30), 1 horse (9/7)

Walton: 130 sentinel birds (6/20, 7/7, 7/14x3, 7/21x2, 7/28, 7/30, 8/3x3, 8/6, 8/7x4, 8/10, 8/25x4, 8/28x3, 9/2x3, 9/3, 9/8x9, 9/10, 9/11, 9/12, 9/15x4, 9/22, 9/23x4, 9/25x7, 9/29x5, 10/1, 10/3, 10/6x3, 10/15x3, 10/20x6, 10/21x4, 10/22x3, 10/23, 10/27x4, 10/30x2, 10/31x2, 11/3x8, 11/5x3, 11/6, 11/7, 11/11x2, 11/14x2, 11/19x2, 11/20, 11/21, 11/24x2, 12/1, 12/2, 12/4, 12/8x4, 12/10x3, 12/11x2), 5 dead birds (2 blue jays 8/25, 10/7; crow 8/25; wren 9/2; cardinal 9/17), 6 horses (9/5, 9/22, 9/23, 9/25, 10/8, 11/4)

Washington: 8 dead birds (3 blue jays 7/8, 8/13x2; eastern phoebe 8/18; dove 9/10; titmouse 9/23; crow 9/23; thrasher 9/29), 1 horse (8/16)

3. Mosquito Surveillance

Bolded counties were placed under medical alert; collection dates are shown in parentheses.

EEE: One mosquito pool tested positive for EEE virus.

Escambia: 1 *Ochlerotatus infirmatus* (6/10)

Highlands J: One mosquito pool tested positive for HJ virus.
Sarasota: 1 *Culiseta melanura* (5/21)

WN: Sixty-two mosquito pools tested positive for WN virus.

Collier: 13 *Culex nigripalpus* (7/24x2, 8/6, 8/13x2, 8/15x3, 8/21x3, 8/26, 8/28)

Escambia: 3 *Culex nigripalpus* (8/13, 8/27, 9/3)

Lee: 6 *Cx. nigripalpus* (8/15x3, 8/22x2, 9/4)

Monroe: 2 *Culex nigripalpus* (5/9, 6/24), 5 *Oc. taeniorhynchus* (6/10, 6/19, 7/17, 8/10, 9/3), 1 *Oc. condolegens* (5/13), 1 *Cx. erraticus* (7/21), 1 *Cx. quinquefasciatus* (7/14)

Palm Beach: 28 *Culex nigripalpus* (7/16, 7/18, 7/25x2, 7/30x2, 8/1x2, 8/6x4, 8/8x12, 8/13x2, 10/8, 10/29), 1 *Cx. quinquefasciatus* (8/6)

Volusia: 1 *Cx. nigripalpus* (8/18)

Bird Mortality Reporting Guidelines:

1. Report dead birds to www.wildflorida.org/bird/. From that site, you can link to online bird identification sites. There is value in the information submitted even if the bird is not tested, especially for those counties which don't have sentinel chickens or who have sites situated sparsely in the county.
2. The DOH Lab in Tampa will test anything that's shipped in good condition. Instructions for submission of dead birds are found at: <http://www.doh.state.fl.us/Environment/hsee/arbo/index.htm> Select "How Do I Report?", then choose "Protocol for Collecting and Shipping Bird Carcasses" under "Dead Birds" subtopic.
3. If local agency must cut back on bird submissions, consider only sending crows and jays.
4. If personnel are not able to offer pick-up service, have a drop off station and provide the caller with clear 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.