



Florida Arbovirus Surveillance Week 30: July 26-August 1, 2015

Arbovirus surveillance in Florida includes endemic mosquito-borne viruses such as West Nile virus (WNV), Eastern equine encephalitis virus (EEEV), and St. Louis encephalitis virus (SLEV), as well as exotic viruses such as dengue virus (DENV), chikungunya virus (CHIKV) and California encephalitis group viruses (CEV). Malaria, a non-viral mosquito-borne disease is also included. During the period of July 26-August 1, 2015 the following arboviral activity was recorded in Florida.

WNV activity: Two human cases of WNV infection were reported this week in Walton and Volusia Counties. No horses with WNV infection were reported this week. Nine sentinel chickens tested positive for antibodies to WNV this week in Flagler, Hillsborough, Pinellas, Putnam and Walton Counties. WNV was isolated from six mosquito pools in Bay County this week. In 2015, positive samples from three humans, six mosquito pools, and 33 sentinel chickens have been received from ten counties.

SLEV activity: No human cases of SLEV infection were reported this week. No sentinel chickens tested positive for antibodies to SLEV this week. In 2015, a positive sample from two sentinel chickens has been received from two counties.

EEEV activity: No human cases of EEEV infection were reported this week. Two horses with EEEV infection were reported this week in Jefferson and Marion Counties. Five sentinel chickens tested positive for antibodies to EEEV this week in Nassau, Seminole, and Walton Counties. In 2015, positive samples from 56 sentinel chickens, 18 horses, and one goat have been received from 21 counties.

International Travel-Associated Dengue Fever Cases: No cases of dengue fever were reported this week in persons that had international travel. In 2015, 25 travel-associated cases have been reported.

Dengue Fever Cases Acquired in Florida: No cases of locally acquired dengue fever were reported this week. In 2015, no cases of locally acquired dengue fever have been reported.

International Travel-Associated Chikungunya Fever Cases: Two cases of chikungunya fever were reported this week in persons that had international travel. In 2015, 36 travel-associated cases have been reported.

Chikungunya Fever Cases Acquired in Florida: No cases of locally acquired chikungunya fever were reported this week. In 2015, no cases of locally acquired chikungunya fever have been reported.

Advisories/Alerts: Bay, Gadsden, Hillsborough, Polk, and Volusia Counties are currently under mosquito-borne illness advisory. Walton County is currently under mosquito-borne illness alert. No other counties are currently under mosquito-borne illness advisory or alert. A CDC Health Alert Network (HAN) health advisory was issued in December 2013 for the Caribbean region announcing the first locally acquired cases of chikungunya fever in the Americas. There is a Level 1 (Watch) Travel Health Notice from the CDC for multiple countries in the Caribbean, Mexico, Central and South America, as well as the Pacific Islands, related to the transmission of chikungunya. There are also similar CDC Travel Health Notices for dengue transmission in Brazil and Malaysia. Additional information on travel health notices can be found at the following link: <http://wwwnc.cdc.gov/travel/notices>.

2015 Human Case Summary*

West Nile Virus Illnesses Acquired in Florida: A total of three human cases of WNV illness acquired in Florida have been reported in 2015; one in Volusia County (July) and two in Walton County (June).

International Travel-Associated Chikungunya Fever Cases: Thirty-six cases of chikungunya with onset in 2015 have been reported in individuals with travel history to a chikungunya endemic country or area experiencing an outbreak in the two weeks prior to onset. Countries of origin were: Bolivia, Colombia (10), Ecuador, El Salvador, Guatemala (2), Haiti (2), Honduras (2), India, Jamaica (2), Mexico (2), Nicaragua (6), Puerto Rico (3), Trinidad and Tobago, Venezuela, and Virgin Islands. Counties reporting cases were: Brevard, Broward (7), Collier, Hillsborough (2), Miami-Dade (12), Monroe, Orange (3), Osceola, Palm Beach (2), Pinellas, Sarasota, Seminole (3), and Volusia.

International Travel-Associated Dengue Fever Cases: Twenty-five cases of dengue with onset in 2015 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 (5), Colombia, Cuba (6), Dominican Republic (2), Haiti (2), Honduras, India, Jamaica, Philippines (2), Puerto Rico, Thailand, and Venezuela (2). Counties reporting cases were: Hillsborough (3), Broward (5), Lee, Miami-Dade (9), Monroe, Orange, Palm Beach, St. Johns, St. Lucie (2), and Seminole. Four cases were reported in non-Florida residents. In 2015, 12 of the 25 cases of dengue reported in Florida have been serotyped by PCR. Additional serotyping and strain typing are being conducted.

	# of cases per serotype – 2015
DENV-1	4
DENV-2	3
DENV-3	2
DENV-4	2
DENV-1 and 3	1
	12

International Travel-Associated Malaria Cases: Twenty-nine cases of malaria with onset in 2015 have been reported. Countries of origin were: Angola, Cameroon (3), Dominican Republic (2), Egypt, Eritrea, Gabon, Ghana (4), Guatemala, Haiti (4), India (3), Malawi, Nigeria (3), South Sudan, Sudan, Tanzania, and Uganda. Counties reporting cases were: Broward (6), Charlotte, Collier, Duval, Escambia, Hillsborough (2), Lee, Monroe, Miami-Dade (8), Orange (2), Pinellas, Palm Beach (3), and Sarasota. Eight of the cases were reported in non-Florida residents.

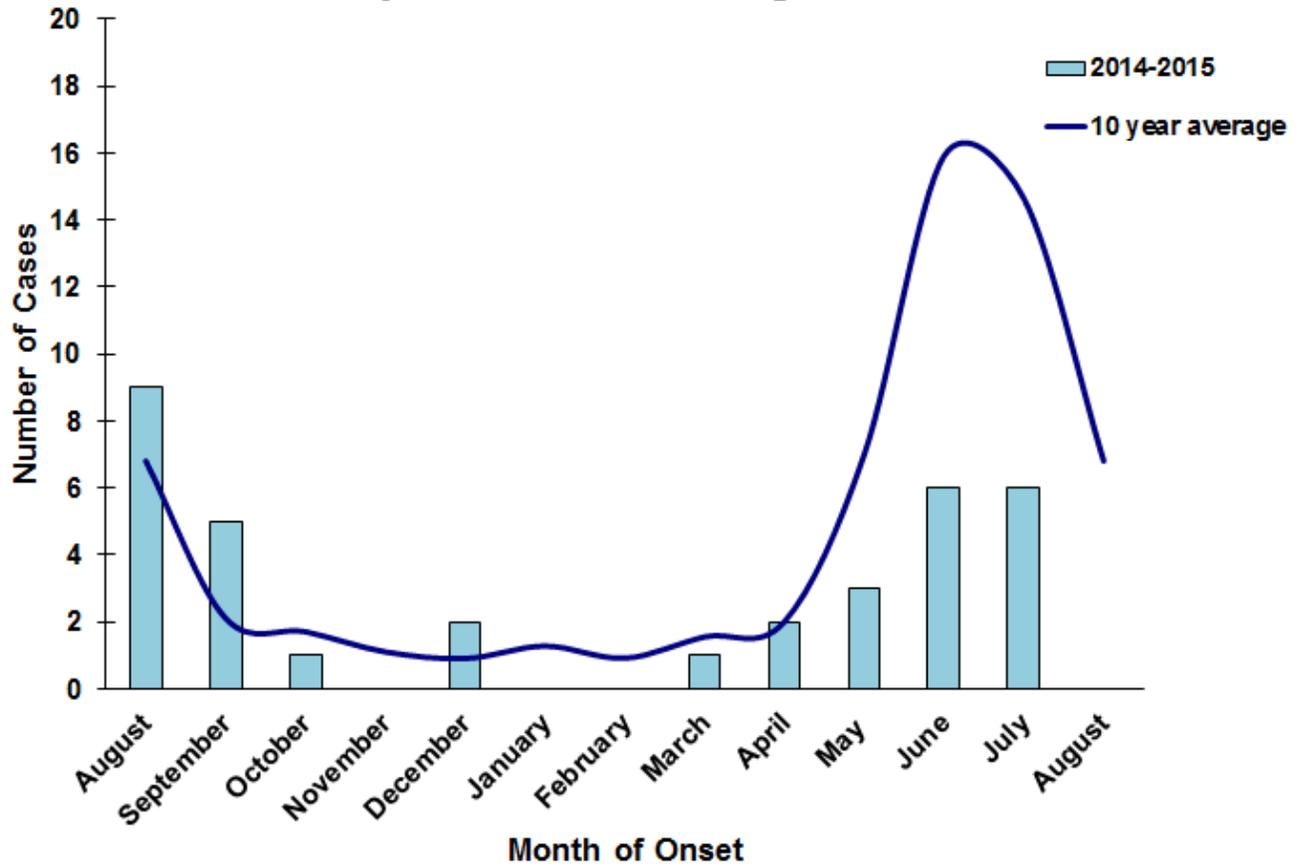
Twenty-three cases (79%) were diagnosed with *Plasmodium falciparum*. Five cases were diagnosed with *Plasmodium vivax* (17%). One case (3%) was diagnosed with *Plasmodium malariae*.

Veterinary Cases*

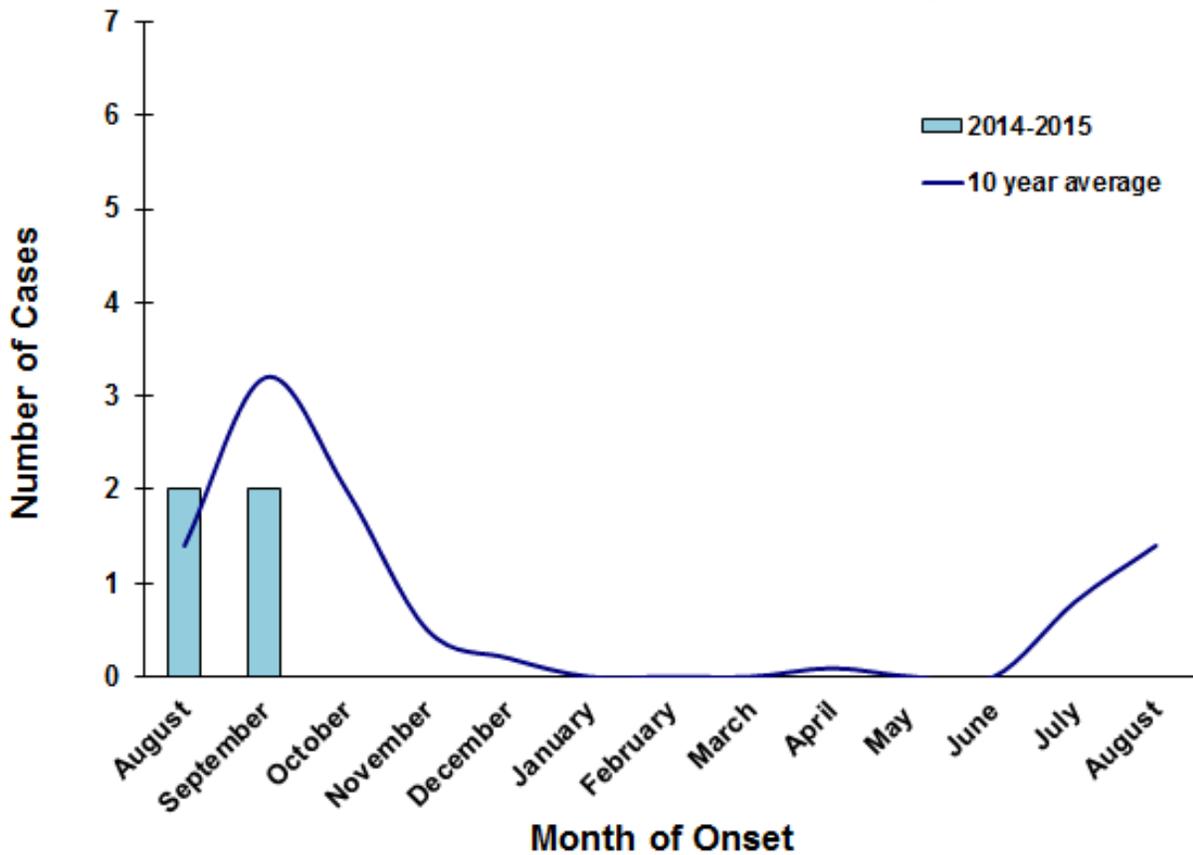
*Veterinary cases are reported by date of onset

Two horses with EEEV infection were reported this week in Jefferson and Marion Counties.

Veterinary EEE in Florida, August 2014-2015



Veterinary WNV Disease in Florida, August 2014-2015



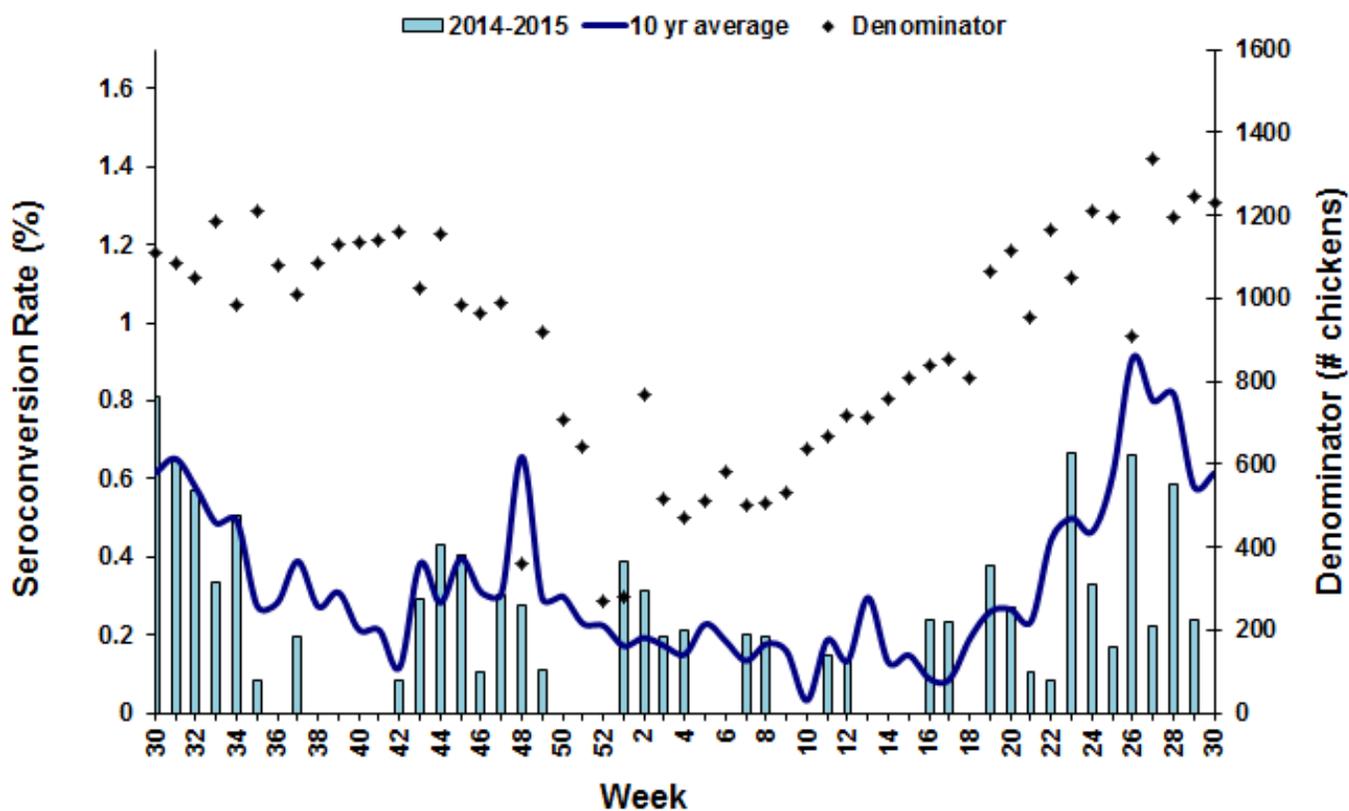
Sentinel Chickens*

The table below is for the reporting of confirmatory laboratory results from this week. Some of the samples were collected at earlier dates. The date of collection is recorded for samples collected on that day along with the total number of positives and the corresponding seroconversion rate for the week the sample was collected.

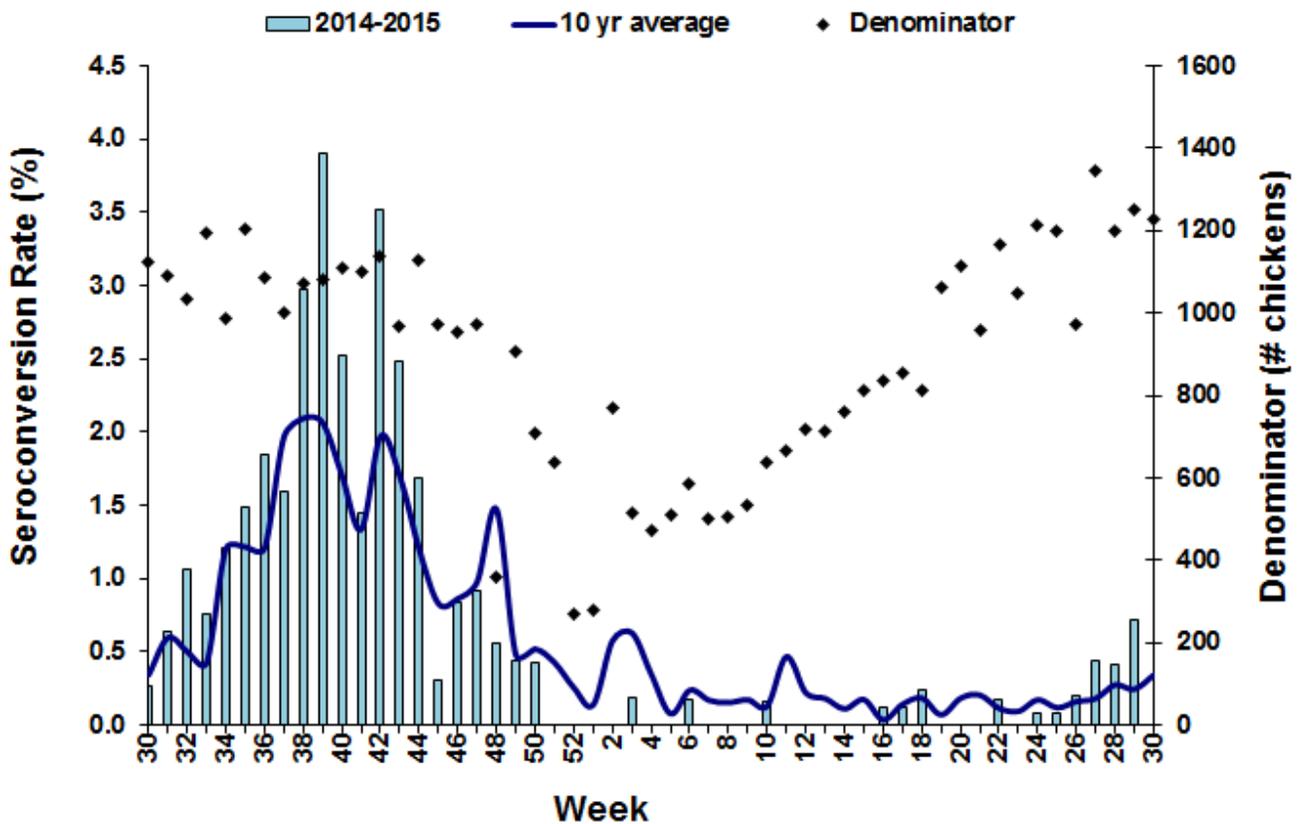
Nine sentinel chickens tested positive for antibodies to WNV this week in Flagler, Hillsborough, Pinellas, Putnam and Walton Counties. Five sentinel chickens tested positive for antibodies to EEEV this week in Nassau, Seminole, and Walton Counties.

County	Collection Date	Seroconversion Rates (%)					County Totals		
		Flavi	SLEV	WNV	Alpha	EEEV	HJV	Collection Week	YTD
Flagler	07/20/15	10.00		10.00				1 WNV	4 EEEV, 1 WNV
Hillsborough	07/21/15	2.44		2.44				2 WNV	13 WNV
Nassau	07/13/15				2.86	2.86		1 EEEV	4 EEEV
Pinellas	07/20/15	1.79		1.79				1 WNV	3 WNV
Putnam	07/21/15	8.33		8.33				1 WNV	1 WNV
Seminole	07/20/15				1.59	1.59		1 EEEV	3 EEEV
Walton	07/14/15				0.92	0.92		1 EEEV	
	07/20/15	3.64		3.64	1.82	1.82		2 EEEV, 4 WNV	19 EEEV, 3 HJV, 10 WNV

Sentinel Seroconversions to EEEV in Florida, 2014-2015



Sentinel Seroconversions to WNV in Florida, 2014-2015



Mosquito Pools

WNV was isolated from six mosquito pools collected in Bay County.

County	Collection Date	Result	Species	County YTD
Bay	07/29/2015	WNV	<i>Cx. quinquefasciatus</i>	6 WNV

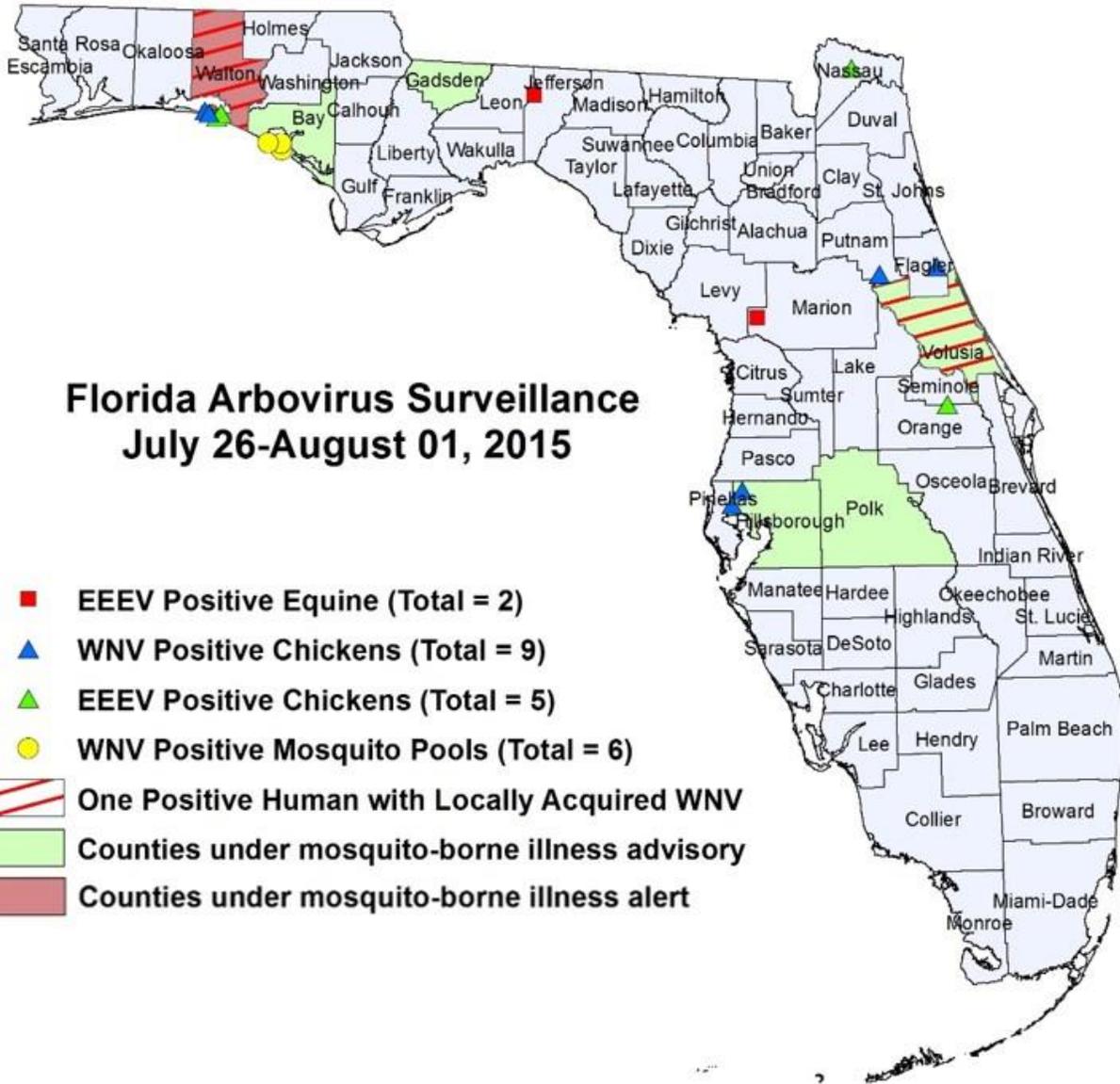
Dead Birds

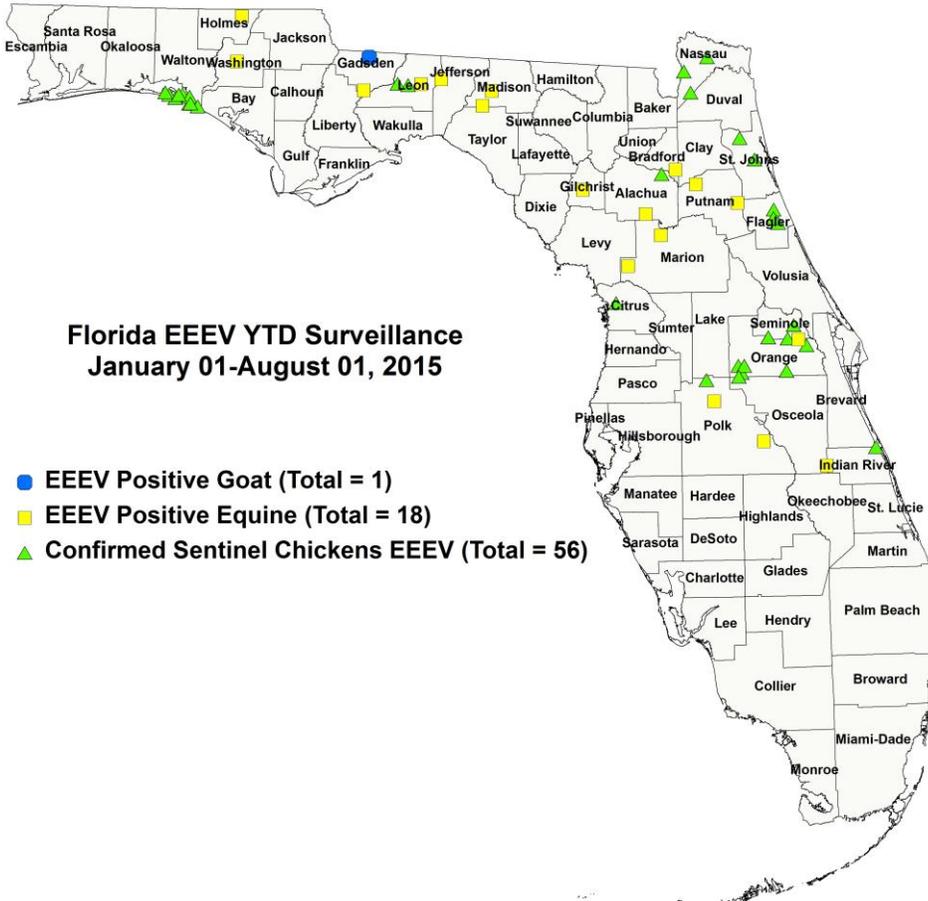
The Fish and Wildlife Conservation Commission (FWC) collects reports of dead birds, which can be an indication of arbovirus circulation in an area. This week, 6 reports representing 12 dead birds, including 1 crow were received from 5 counties.

In 2015, 229 reports representing a total of 568 dead birds (27 crows, 18 jay, 45 raptors, and 19 doves) 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/.

County	Total Dead Birds	Crows	Jays	Raptors	Dove
Hillsborough	2	0	0	0	0
Osceola	1	0	0	0	0
Palm Beach	7	0	0	0	0
Polk	1	0	0	0	0
Volusia	1	1	0	0	0

Maps





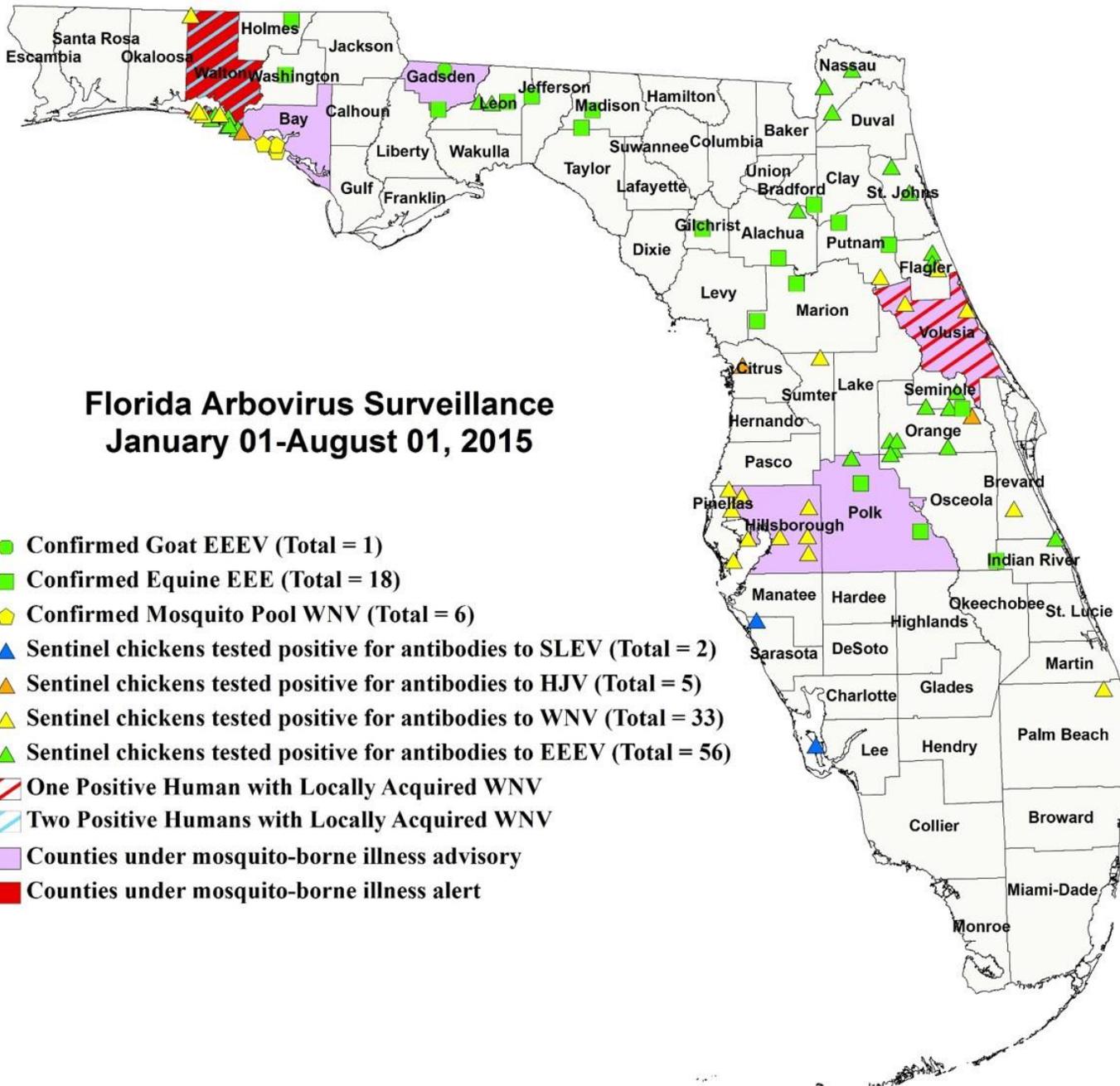
**Florida EEEV YTD Surveillance
January 01-August 01, 2015**

- EEEV Positive Goat (Total = 1)
- EEEV Positive Equine (Total = 18)
- ▲ Confirmed Sentinel Chickens EEEV (Total = 56)



**Florida Arbovirus Surveillance
January 01-August 01, 2015**

- WNV Mosquito Pool (Total = 6)
- ▲ Confirmed Sentinel Chickens WNV (Total = 33)
- ▨ One Positive Human with Locally Acquired WNV
- ▨ Two Positive Humans with Locally Acquired WNV



Florida Arbovirus Surveillance January 01-August 01, 2015

- Confirmed Goat EEEV (Total = 1)
- Confirmed Equine EEE (Total = 18)
- ◆ Confirmed Mosquito Pool WNV (Total = 6)
- ▲ Sentinel chickens tested positive for antibodies to SLEV (Total = 2)
- ▲ Sentinel chickens tested positive for antibodies to HJV (Total = 5)
- ▲ Sentinel chickens tested positive for antibodies to WNV (Total = 33)
- ▲ Sentinel chickens tested positive for antibodies to EEEV (Total = 56)
- ▨ One Positive Human with Locally Acquired WNV
- ▨ Two Positive Humans with Locally Acquired WNV
- Counties under mosquito-borne illness advisory
- Counties under mosquito-borne illness alert

2015 Arbovirus Activity by County

County	Arbovirus Activity
Alachua	EEEV: 1 horse (6/16); 2 sentinels (7/13)
Bay	WNV: 6 mosquito pools (7/29)
Brevard	WNV: 1 sentinel (6/24)
Bradford	EEEV: 1 horse (4/23)
Citrus	EEEV: 2 sentinels (5/12) HJV: 1 sentinel (7/6)
Flagler	EEEV: 4 sentinels (4/27, 6/1, 6/29) WNV: 1 sentinel (7/20)
Gadsden	EEEV: 1 goat (6/16); 1 horse (6/21)
Gilchrist	EEEV: 1 horse (4/18)
Hillsborough	WNV: 13 sentinels (3/10, 4/22, 5/5, 6/2, 7/7, 7/14, 7/21)
Holmes	EEEV: 1 horse (7/16)

Indian River	EEEV: 1 sentinel (4/30)
Jefferson	EEEV: 1 horse (7/25)
Lee	SLEV: 1 sentinel (1/12)
Leon	EEEV: 1 horse (5/20); 2 sentinels (6/8, 7/13)
Madison	EEEV: 2 horses (6/24, 7/19)
Marion	EEEV: 2 horses (6/14, 7/16)
Nassau	EEEV: 4 sentinels (5/29, 7/3, 7/10, 7/13)
Orange	EEEV: 1 horse (5/30); 14 sentinels (1/20, 1/29, 2/16, 2/23, 3/16, 4/20, 4/23, 5/18, 6/11, 6/29, 7/8, 7/13) HJV: 1 sentinel (5/15)
Osceola	EEEV: 1 horse (5/3)
Palm Beach	WNV: 1 sentinel (4/27)
Pinellas	WNV: 3 sentinels (6/29, 7/6, 7/20)
Polk	EEEV: 2 horses (6/30, 7/6); 2 sentinels (6/22)
Putnam	EEEV: 2 horses (3/16, 6/30) WNV: 1 sentinel (7/21)
Sarasota	SLEV: 1 sentinel (7/13)
St. Johns	EEEV: 3 sentinels (6/8, 6/15, 7/6)
Seminole	EEEV: 3 sentinels (6/8, 6/29, 7/20)
Sumter	WNV: 1 sentinel (1/20)
Volusia	WNV: 1 human (July); 2 sentinels (6/15, 7/13)
Walton	EEEV: 19 sentinels (1/5, 1/13, 3/23, 5/11, 5/18, 6/8, 6/15, 6/29, 7/14, 7/20) HJV: 3 sentinels (1/13, 5/18, 6/8) WNV: 2 humans (June); 10 sentinels (2/9, 6/1, 6/29, 7/6, 7/20)
Washington	EEEV: 1 horse (7/3)

Acknowledgements and Data Sources

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For more surveillance information, please see the DOH website at:

<http://www.floridahealth.gov/diseases-and-conditions/mosquito-borne-diseases/surveillance.html>

For arbovirus surveillance information for the United States, please see the Centers for Disease Control and Prevention website at: <http://www.cdc.gov/ncidod/dvbid/westnile/surv&control.htm>

**Case tallies included in the weekly Florida arbovirus surveillance report include confirmed and probable cases for EEE, WNV infection, SLE, dengue, and malaria by date of onset. Suspect cases are not included. Activity is mapped by county of exposure rather than county of residence. Case definitions being used in Florida are consistent with national criteria provided by the Council of State and Territorial Epidemiologists (CSTE) and may be viewed at: <http://www.floridahealth.gov/diseases-and-conditions/disease-reporting-and-management/disease-reporting-and-surveillance/index.html>. Case tallies reported by CDC do not include suspect cases and cases are reported by patient state of residence rather than where the exposure occurred. Data is provided by county health departments, Department of Health Bureau of Public Health Laboratories, Department of Agriculture and Consumer Services, mosquito control agencies, Florida Fish and Wildlife Conservation Commission, medical providers and veterinarians. Equine cases are provided by the Department of Agriculture and Consumer Services.