



Florida Arbovirus Surveillance

Week 33: August 16-22, 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 August 16-22, 2015 the following arboviral activity was recorded in Florida.

WNV activity: One human case of WNV infection was reported this week in Escambia County. No horses with WNV infection were reported this week. Sixteen sentinel chickens tested positive for antibodies to WNV this week in Bay, Hillsborough, Manatee, Orange, Pinellas, and Walton Counties. WNV was isolated from two mosquito pools in Bay and Walton Counties this week. In 2015, positive samples from five humans, eight mosquito pools, and 76 sentinel chickens have been received from 14 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, positive samples from two sentinel chickens have been received from two counties.

EEEV activity: No human cases of EEEV infection were reported this week. No horses with EEEV infection were reported this week. Three sentinel chickens tested positive for antibodies to EEEV this week in Flagler, Leon, and Walton Counties. In 2015, positive samples from 62 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, 29 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: Six cases of chikungunya fever were reported this week in persons that had international travel. In 2015, 44 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, Orange, Pinellas, Polk, and Volusia Counties are currently under mosquito-borne illness advisory. Escambia and Walton Counties are 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 five human cases of WNV illness acquired in Florida have been reported in 2015; two in Escambia County (July), one in Volusia County (July), and two in Walton County (June).

International Travel-Associated Chikungunya Fever Cases: Forty-four 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 (11), Ecuador, El Salvador, Guatemala (2), Haiti (2), Honduras (4), India (2), Jamaica (2), Mexico (4), Nicaragua (8), Puerto Rico (3), Trinidad and Tobago, Venezuela, and Virgin Islands. Counties reporting cases were: Brevard, Broward (7), Collier, Hillsborough (3), Lake, Martin, Miami-Dade (14), Monroe, Orange (3), Osceola, Palm Beach (4), Pinellas, Sarasota, Seminole (3), and Volusia (2).

International Travel-Associated Dengue Fever Cases: Twenty-nine 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, Costa Rica, Cuba (7), Dominican Republic (2), Haiti (3), Honduras, India, Jamaica, Mexico, Philippines (2), Puerto Rico, Thailand, and Venezuela (2). Counties reporting cases were: Clay, Hillsborough (3), Broward (5), Lee, Miami-Dade (11), Monroe (2), Orange, Palm Beach, St. Johns, St. Lucie (2), and Seminole. Four cases were reported in non-Florida residents. In 2015, 14 of the 29 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	5
DENV-2	4
DENV-3	2
DENV-4	2
DENV-1 and 3	1
	14

International Travel-Associated Malaria Cases: Thirty-one cases of malaria with onset in 2015 have been reported. Countries of origin were: Angola, Cameroon (3), Dominican Republic (2), Egypt, Eritrea, Gabon, Ghana (5), Guatemala, Haiti (4), India (3), Malawi, Nigeria (4), South Sudan, Sudan, Tanzania, and Uganda. Counties reporting cases were: Broward (6), Charlotte, Collier, Duval, Escambia, Hillsborough (2), Lee, Monroe, Miami-Dade (9), Orange (2), Osceola, Pinellas, Palm Beach (3), and Sarasota. Eight of the cases were reported in non-Florida residents.

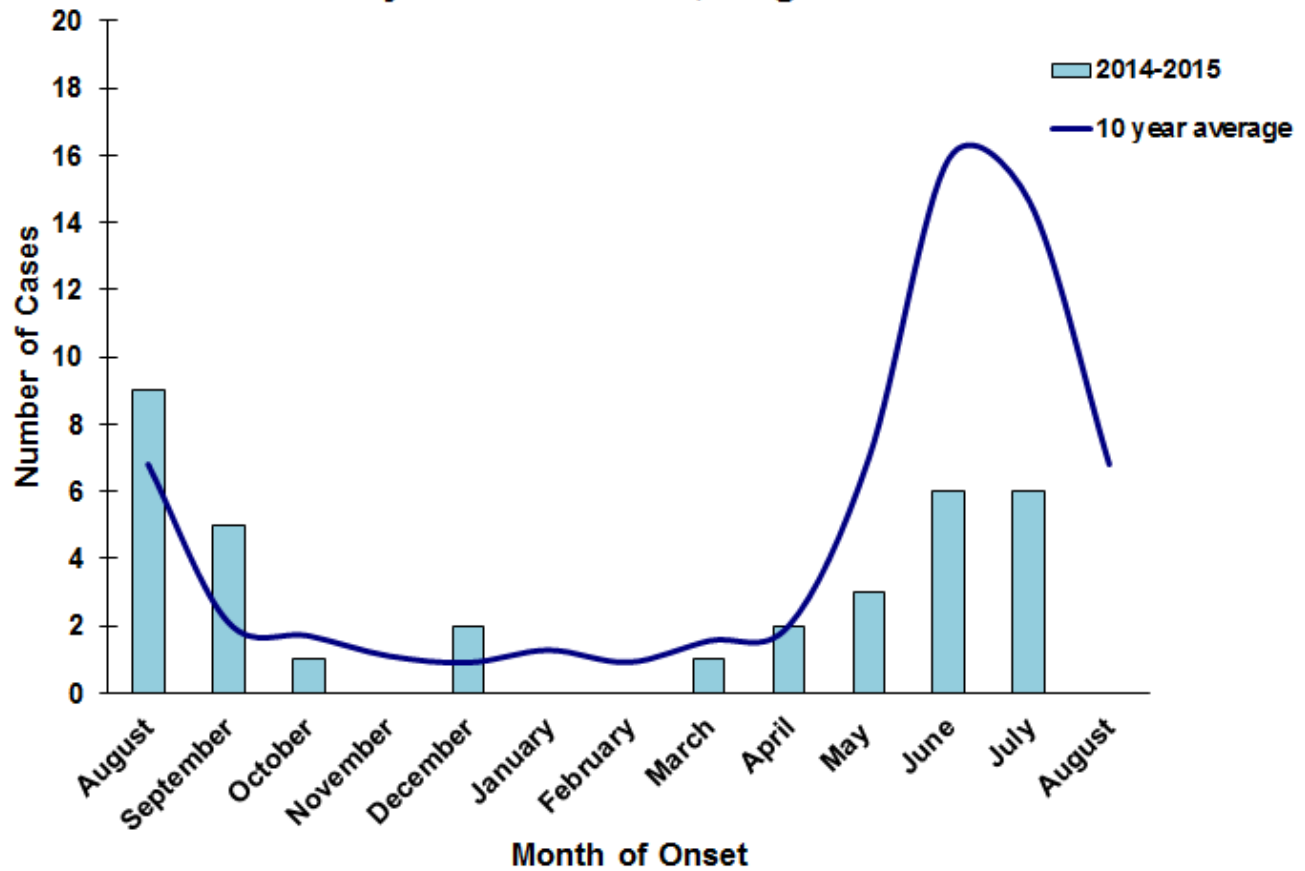
Twenty-five cases (81%) were diagnosed with *Plasmodium falciparum*. Five cases were diagnosed with *Plasmodium vivax* (16%). One case (3%) was diagnosed with *Plasmodium malariae*.

Veterinary Cases*

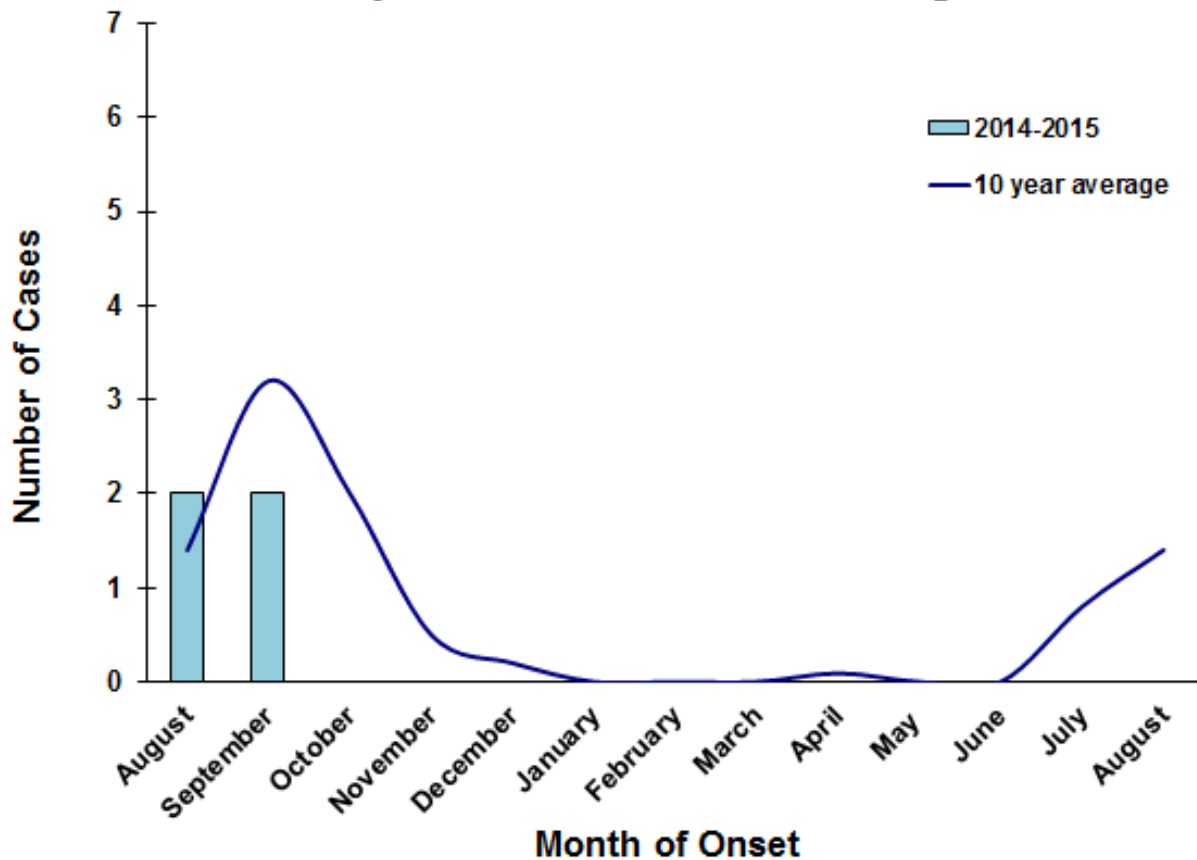
*Veterinary cases are reported by date of onset

No horses with EEEV or WNV infection were reported this week.

Veterinary EEE in Florida, August 2014-2015



Veterinary WNV Disease in Florida, August 2014-2015



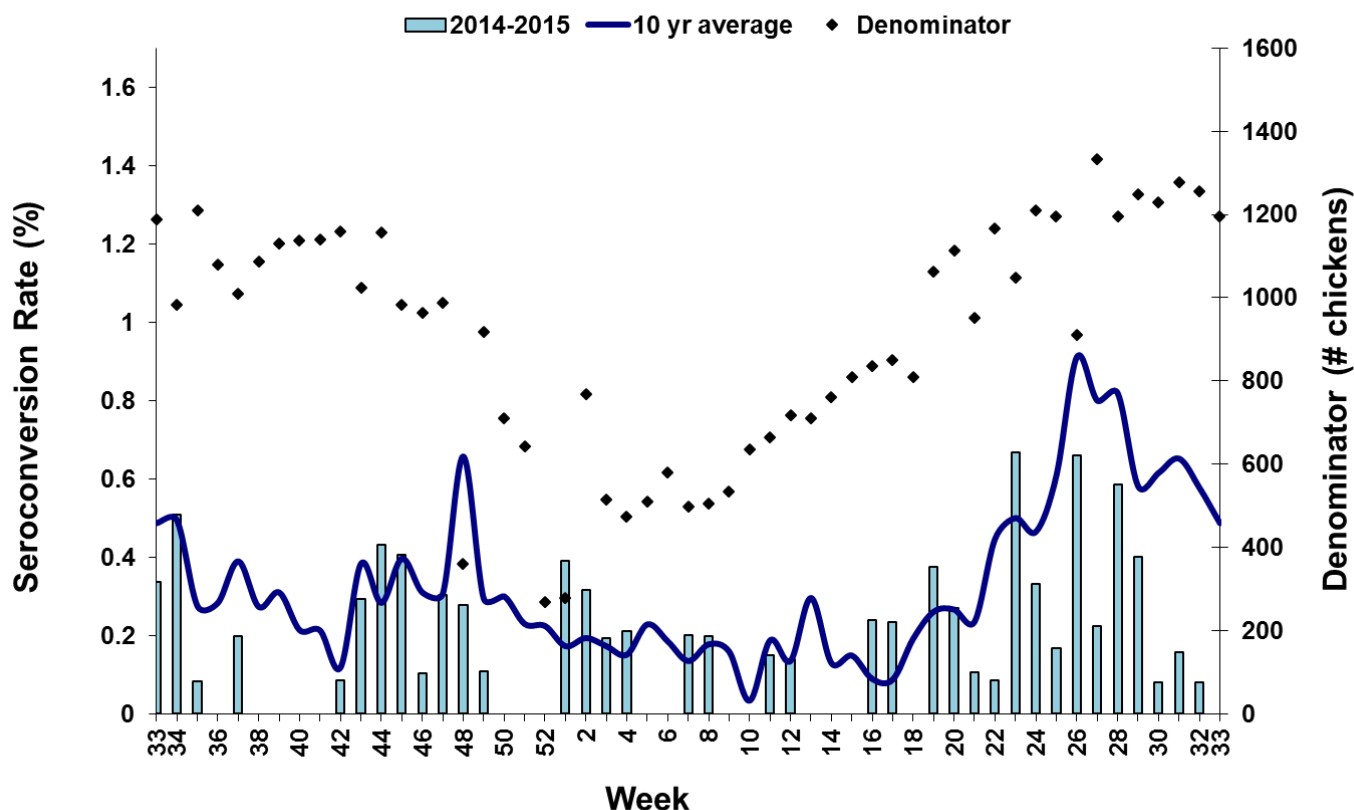
Sentinel Chickens*

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.

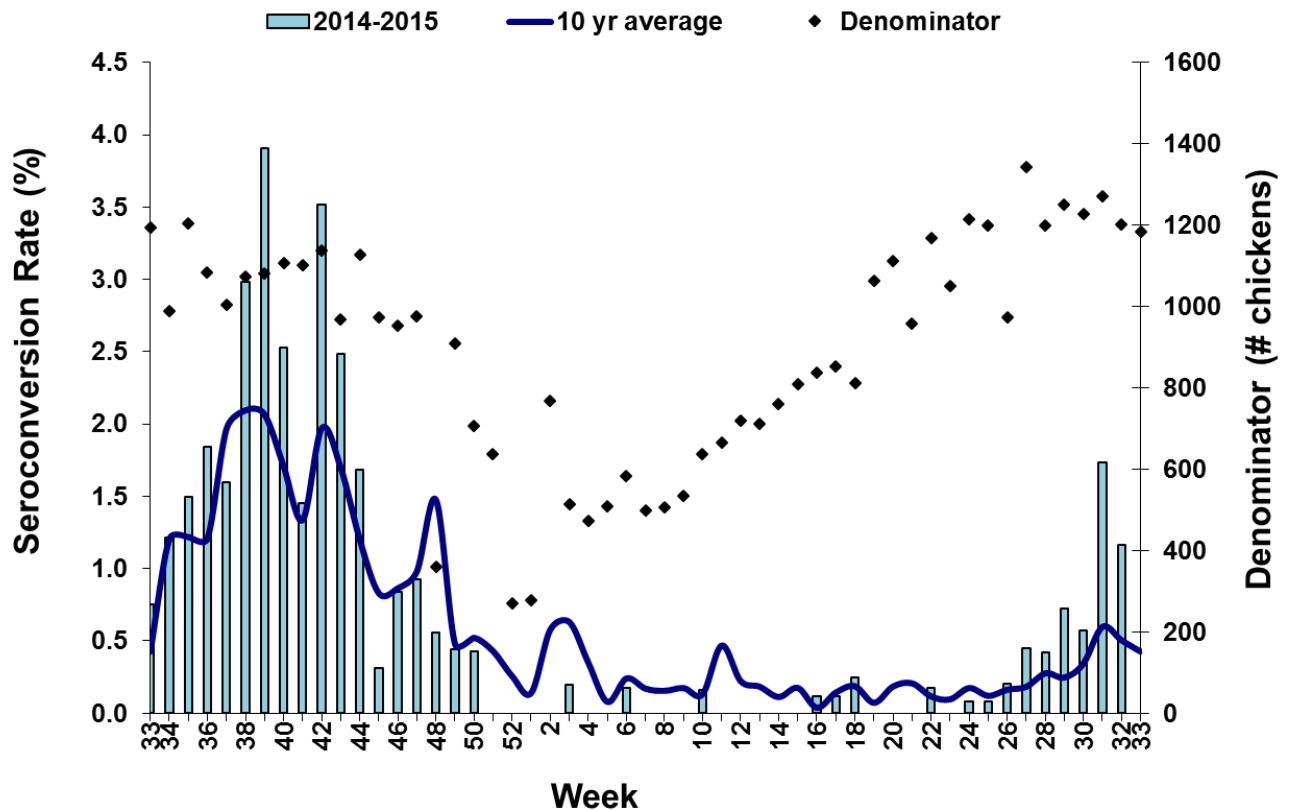
Sixteen sentinel chickens tested positive for antibodies to WNV this week in Bay, Hillsborough, Manatee, Orange, Pinellas, and Walton Counties. Three sentinel chickens tested positive for antibodies to EEEV this week in Flagler, Leon, and Walton Counties.

County	Collection Date	Seroconversion Rates (%)						County Totals	
		Flavi	SLEV	WNV	Alpha	EEEV	HJV	Collection Week	YTD
Bay	08/11/15	6.25		6.25				1 WNV	3 WNV
Flagler	08/10/15				11.11	11.11		1 EEEV	6 EEEV, 1 WNV
Hillsborough	08/12/15	4.55		4.55				3 WNV	27 WNV
Leon	08/11/15				2.38	2.38		1 EEEV	3 EEEV
Manatee	08/05/15	1.23		1.23				1 WNV	1 WNV
Orange	08/10/15	1.72		1.72				2 WNV	15 EEEV, 1 HJV, 5 WNV
Pinellas	08/10/15	14.29		14.29				7 WNV	19 WNV
Walton	08/03/15	1.98		1.98	0.99	0.99		1 EEEV, 2 WNV	20 EEEV, 3 HJV, 13 WNV
	08/10/15	0.89		0.89				1 WNV	

Sentinel Seroconversions to EEEV in Florida, 2014-2015



Sentinel Seroconversions to WNV in Florida, 2014-2015



Mosquito Pools

WNV was isolated from two mosquito pools collected in Bay and Walton Counties.

County	Collection Date	Result	Species	County YTD
Bay	08/12/2015	WNV	<i>Cx. quinquefasciatus</i>	7 WNV
Walton	08/7/2015	WNV	<i>Cx. quinquefasciatus</i>	1 WNV

Dead Birds

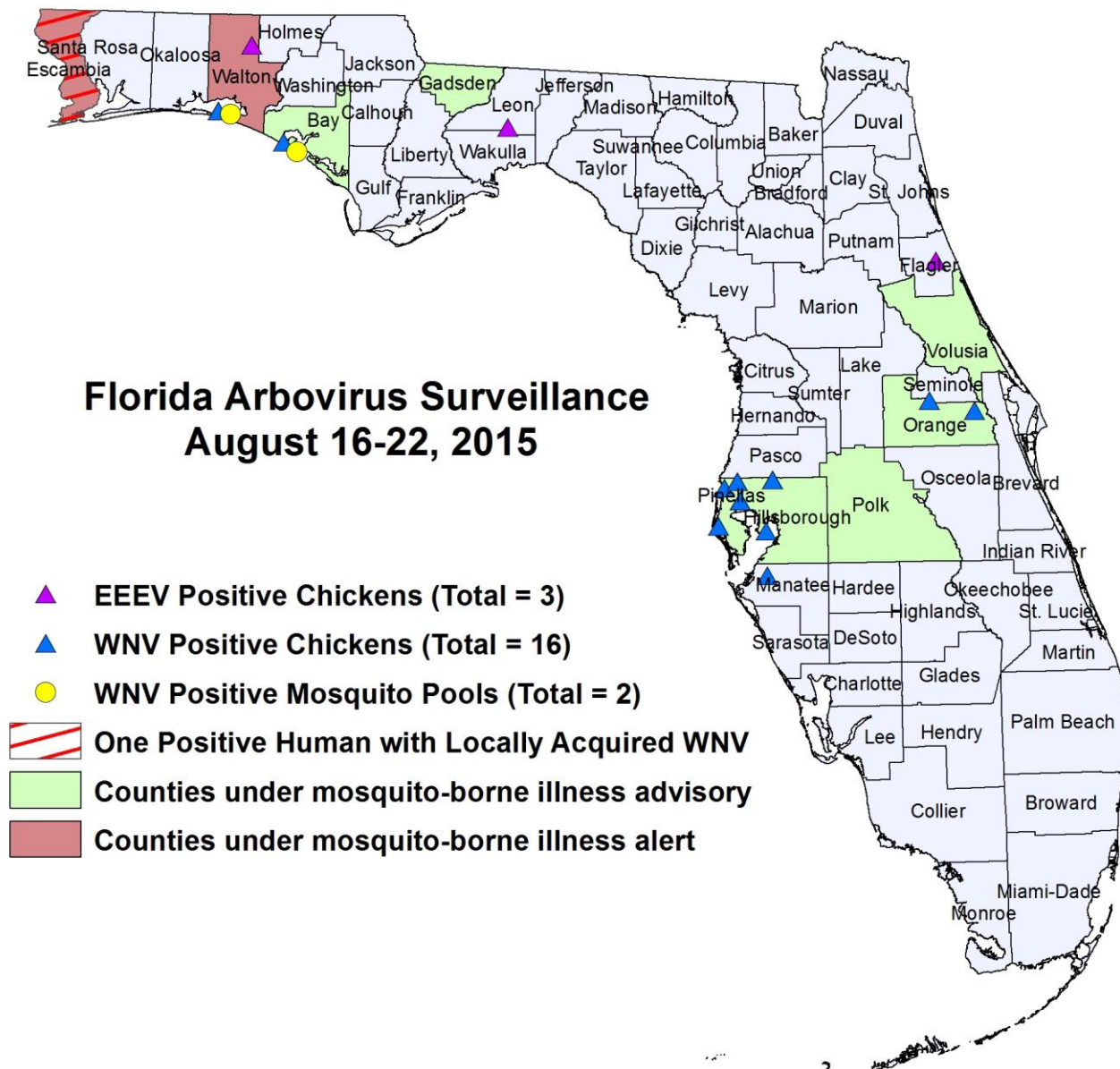
The Fish and Wildlife Conservation Commission (FWC) collects reports of dead birds, which can be an indication of arbovirus circulation in an area. This week, 7 reports representing 39 dead birds, including 4 raptors were received from 4 counties.

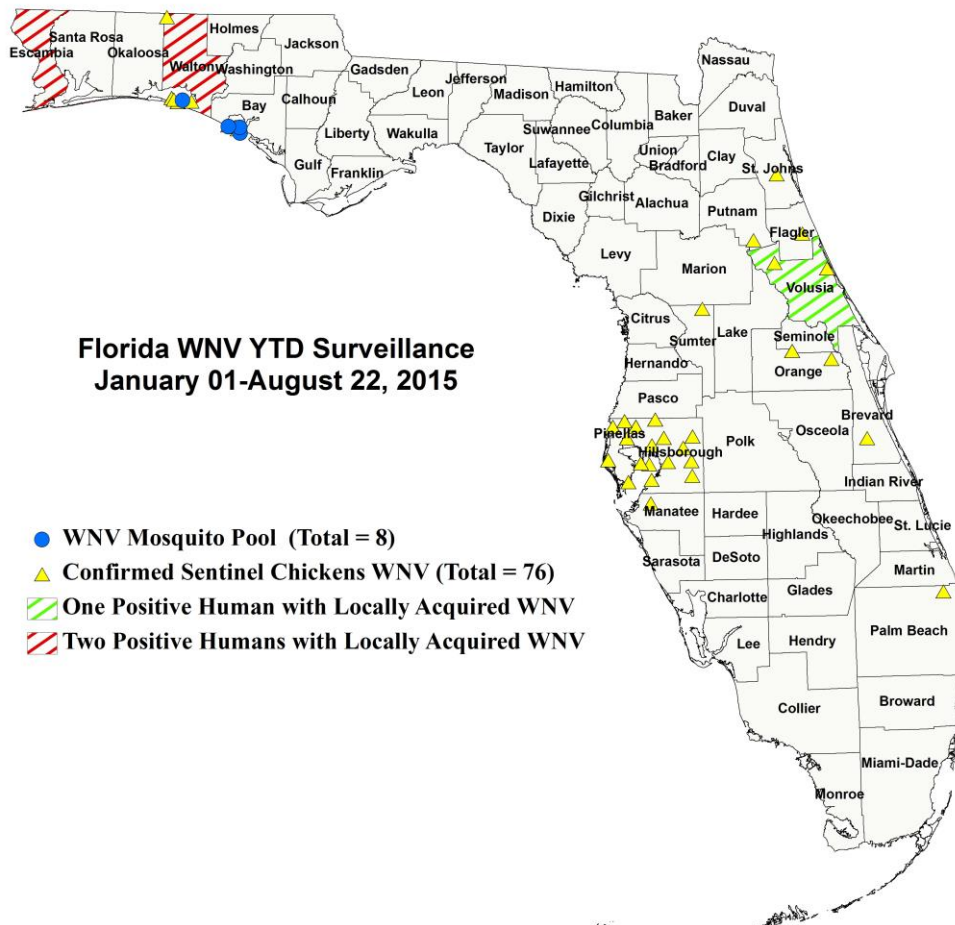
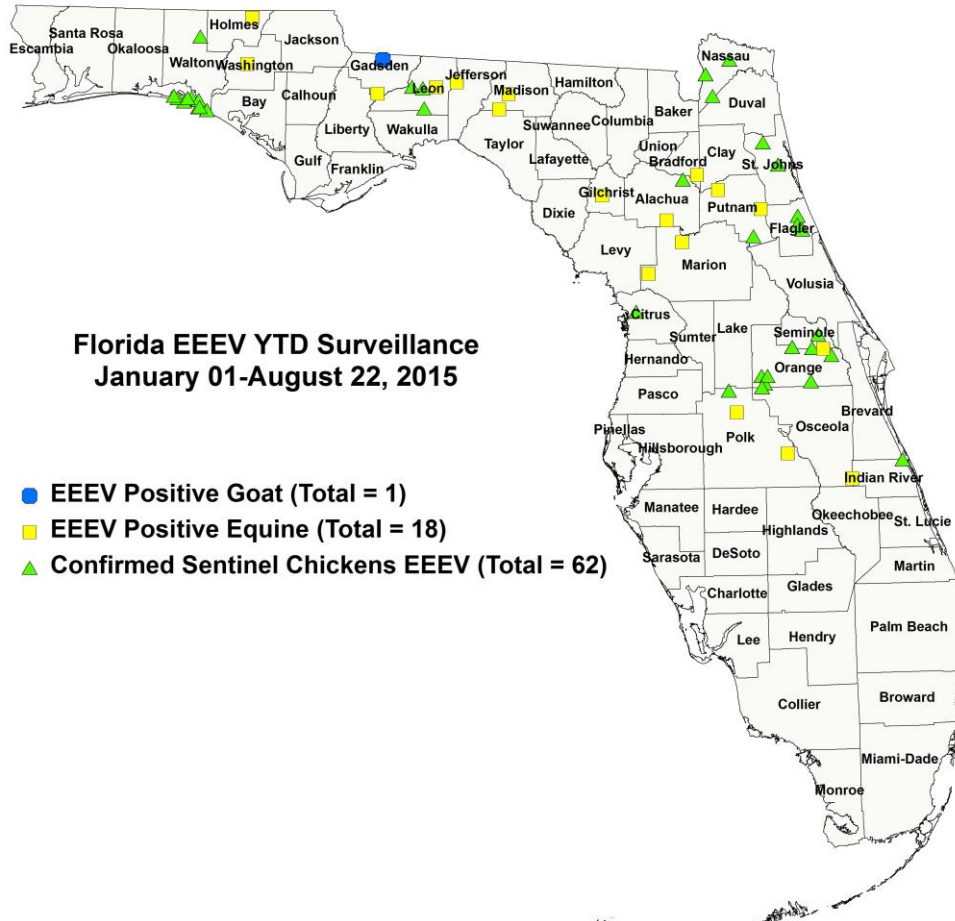
In 2015, 258 reports representing a total of 701 dead birds (30 crows, 18 jay, 54 raptors, and 24 doves) were received from 45 of Florida's 67 counties. Please note that FWC collects reports of birds that have died from a variety of causes, not only arboviruses. Dead birds should be reported to www.myfwc.com/bird/.

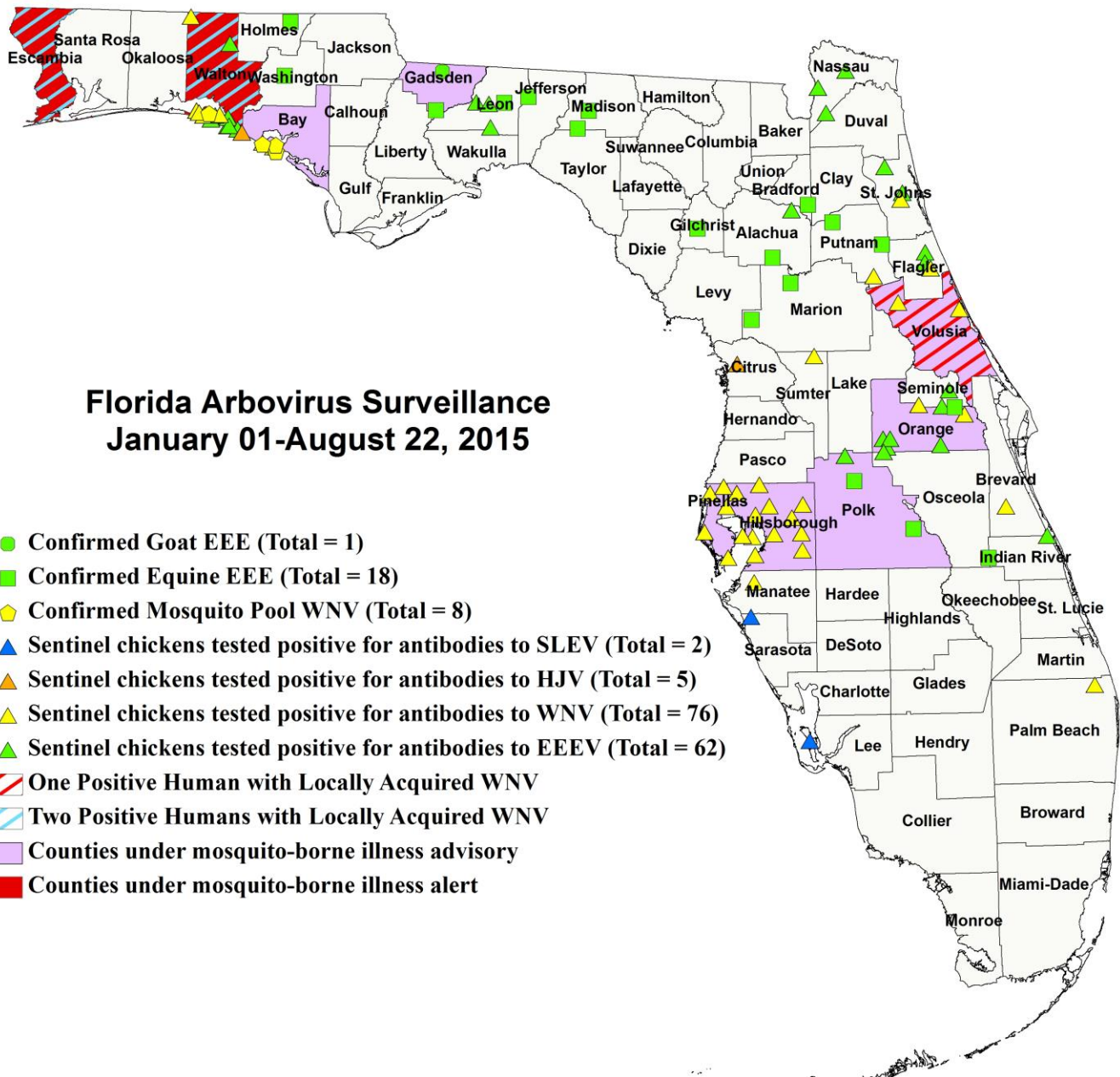
2015

County	Total Dead Birds	Crows	Jays	Raptors	Dove
Bay	6	0	0	2	0
Duval	1	0	0	1	0
Lee	1	0	0	1	0
Pinellas	31	0	0	0	0

Maps







Florida Arbovirus Surveillance January 01-August 22, 2015

- Confirmed Goat EEE (Total = 1)
- Confirmed Equine EEE (Total = 18)
- ◆ Confirmed Mosquito Pool WNV (Total = 8)
- ▲ 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 = 76)
- ▲ Sentinel chickens tested positive for antibodies to EEEV (Total = 62)
- ▨ 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); 3 sentinels (7/27, 8/4, 8/11)
Brevard	WNV: 1 sentinel (6/24)
Bradford	EEEV: 1 horse (4/23)
Citrus	EEEV: 2 sentinels (5/12) HJV: 1 sentinel (7/6)
Escambia	WNV: 1 human (July)
Flagler	EEEV: 6 sentinels (4/27, 6/1, 6/29, 7/20, 8/10) WNV: 1 sentinel (7/20)
Gadsden	EEEV: 1 goat (6/16); 1 horse (6/21)
Gilchrist	EEEV: 1 horse (4/18)
Hillsborough	WNV: 27 sentinels (3/10, 4/22, 5/5, 6/2, 7/7, 7/14, 7/21, 7/28, 8/4, 8/12)
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); 3 sentinels (6/8, 7/13, 8/11)
Madison	EEEV: 2 horses (6/24, 7/19)
Manatee	WNV: 1 sentinel (8/5)
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); 15 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, 7/30) HJV: 1 sentinel (5/15) WNV: 5 sentinels (8/3, 8/10)
Osceola	EEEV: 1 horse (5/3)
Palm Beach	WNV: 1 sentinel (4/27)
Pinellas	WNV: 19 sentinels (6/29, 7/6, 7/20, 7/27, 8/3, 8/10)
Polk	EEEV: 2 horses (6/30, 7/6); 2 sentinels (6/22)
Putnam	EEEV: 2 horses (3/16, 6/30); 1 sentinel (7/21) WNV: 1 sentinel (7/21)
Sarasota	SLEV: 1 sentinel (7/13)
St. Johns	EEEV: 3 sentinels (6/8, 6/15, 7/6) WNV: 1 sentinel (7/27)
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: 20 sentinels (1/5, 1/13, 3/23, 5/11, 5/18, 6/8, 6/15, 6/29, 7/14, 7/20, 8/4) HJV: 3 sentinels (1/13, 5/18, 6/8) WNV: 2 humans (June); 13 sentinels (2/9, 6/1, 6/29, 7/6, 7/20, 8/3, 8/10)
Washington	EEEV: 1 horse (7/3)

Acknowledgements and Data Sources

Contributors: Andrea Bingham, PhD, MSPH, Shaiasia Itwaru-Womack, MPH, Katherine Kendrick, MPH, Danielle Stanek, DVM, and Carina Blackmore, DVM, Ph.D., DOH Bureau of Epidemiology; Lea Heberlein-Larson, Lylah Seaton, and Valerie Mock, DOH Bureau of Public Health Laboratories.

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, chikungunya, 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.