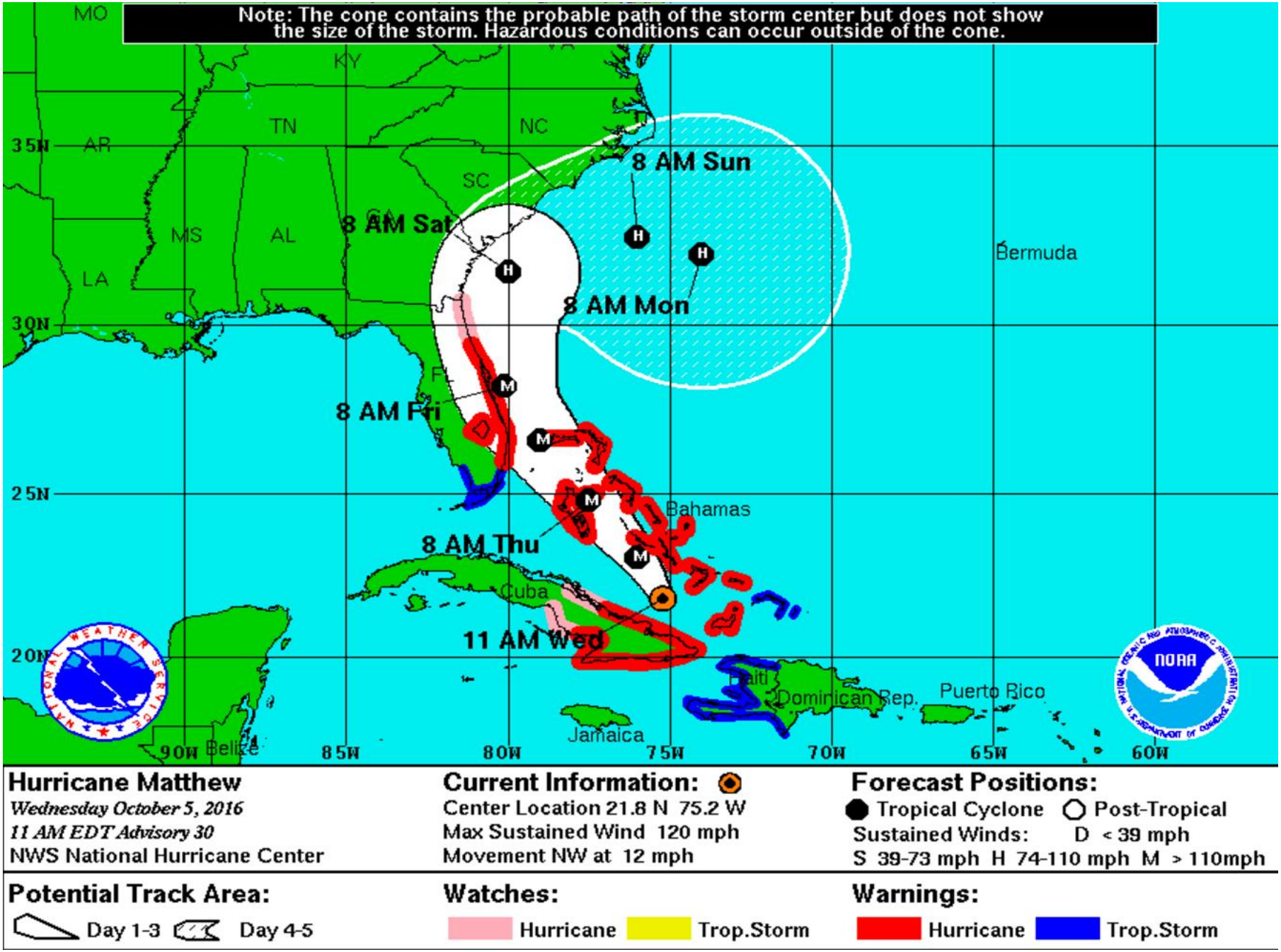
Georgia Department of Public Health

2016

So, What Else Happened in 2016?

Rosmarie Kelly, PhD MPH
GDPH-EH

http://www.onthisday.com/events/date/2016



Hurricane Matthew
Wednesday October 5, 2016
11 AM EDT Advisory 30
NWS National Hurricane Center

Current Information:
Center Location 21.8 N 75.2 W
Max Sustained Wind 120 mph
Movement NW at 12 mph

Forecast Positions:
Tropical Cyclone Post-Tropical
Sustained Winds: D < 39 mph
S 39-73 mph H 74-110 mph M > 110mph

Potential Track Area:
Day 1-3 Day 4-5

Watches:
Hurricane Trop.Storm

Warnings:
Hurricane Trop.Storm

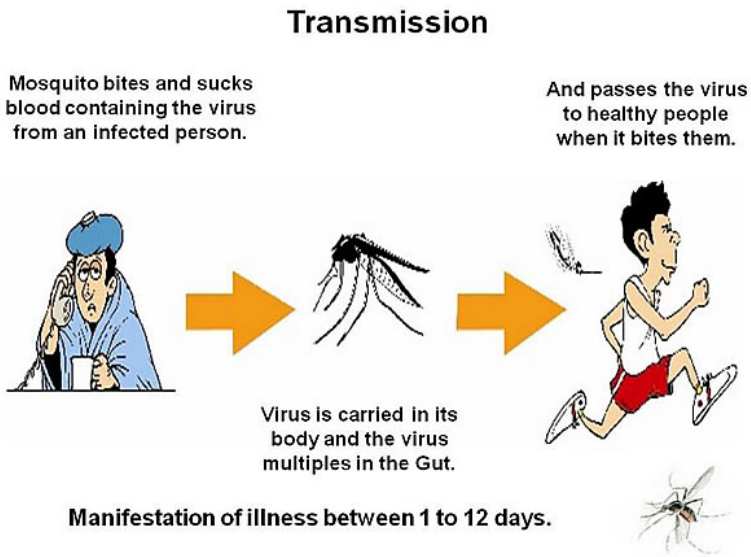
Mosquitoes & the EXOTIC Diseases they Transmit

Mosquito Species

- *Aedes aegypti*
- *Aedes albopictus*

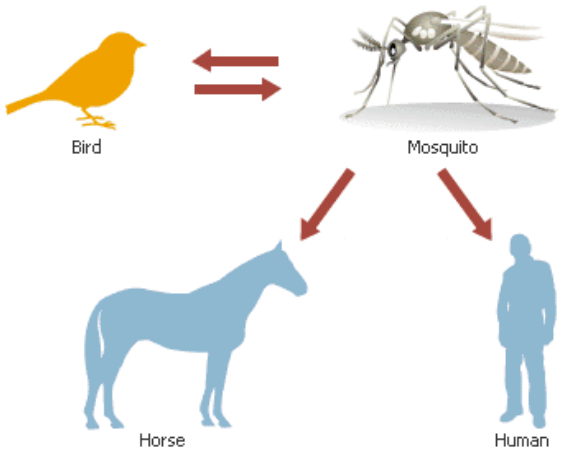
Disease Organism

- Chikungunya
- Dengue
- **Zika**

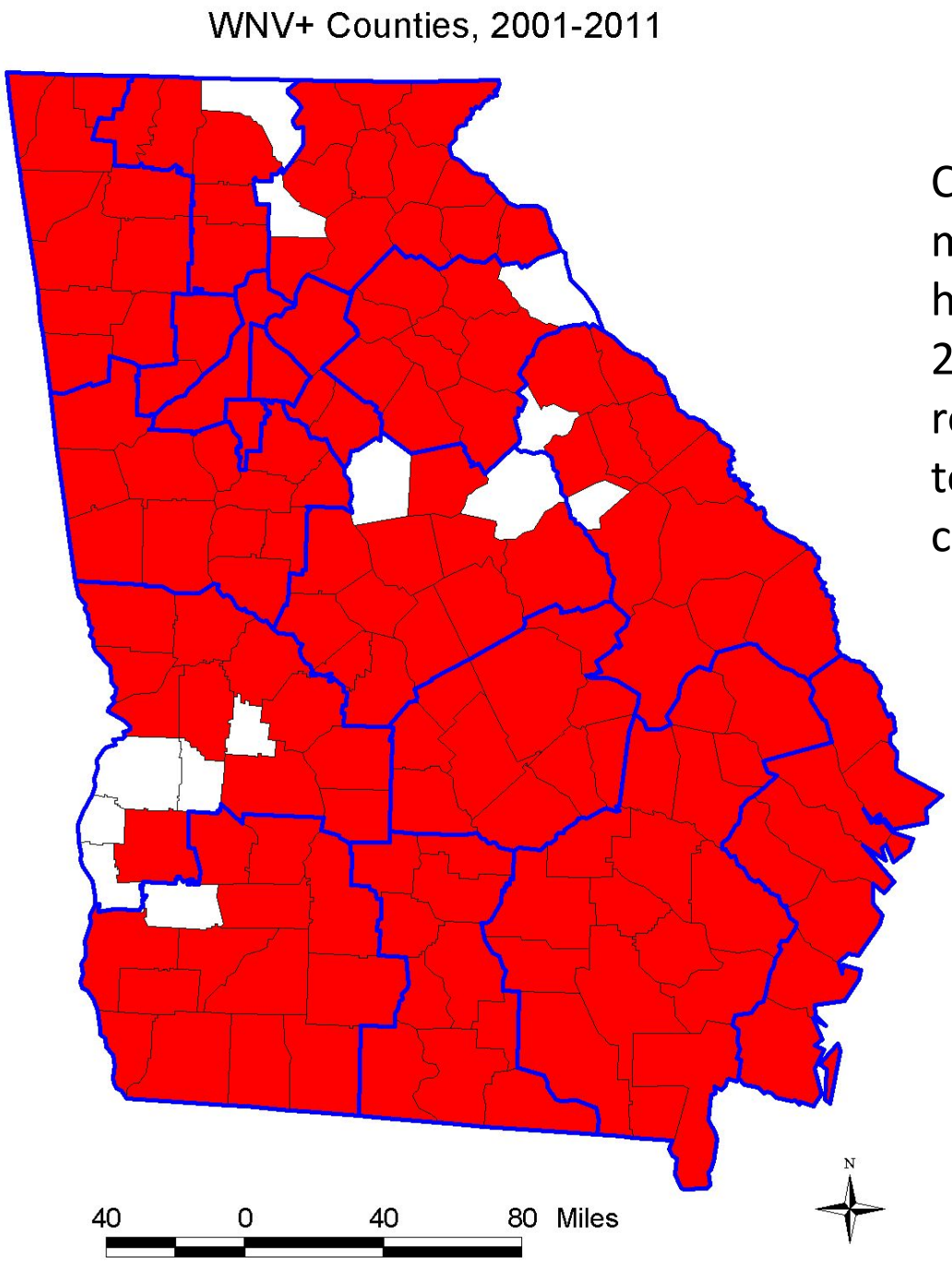


Common Arboviral Diseases in Georgia

- West Nile Virus* - *Culex quinquefasciatus*
- Lacrosse Encephalitis* - *Aedes triseriatus*
- Eastern Equine Encephalitis* - *Culiseta melanura* (and others)

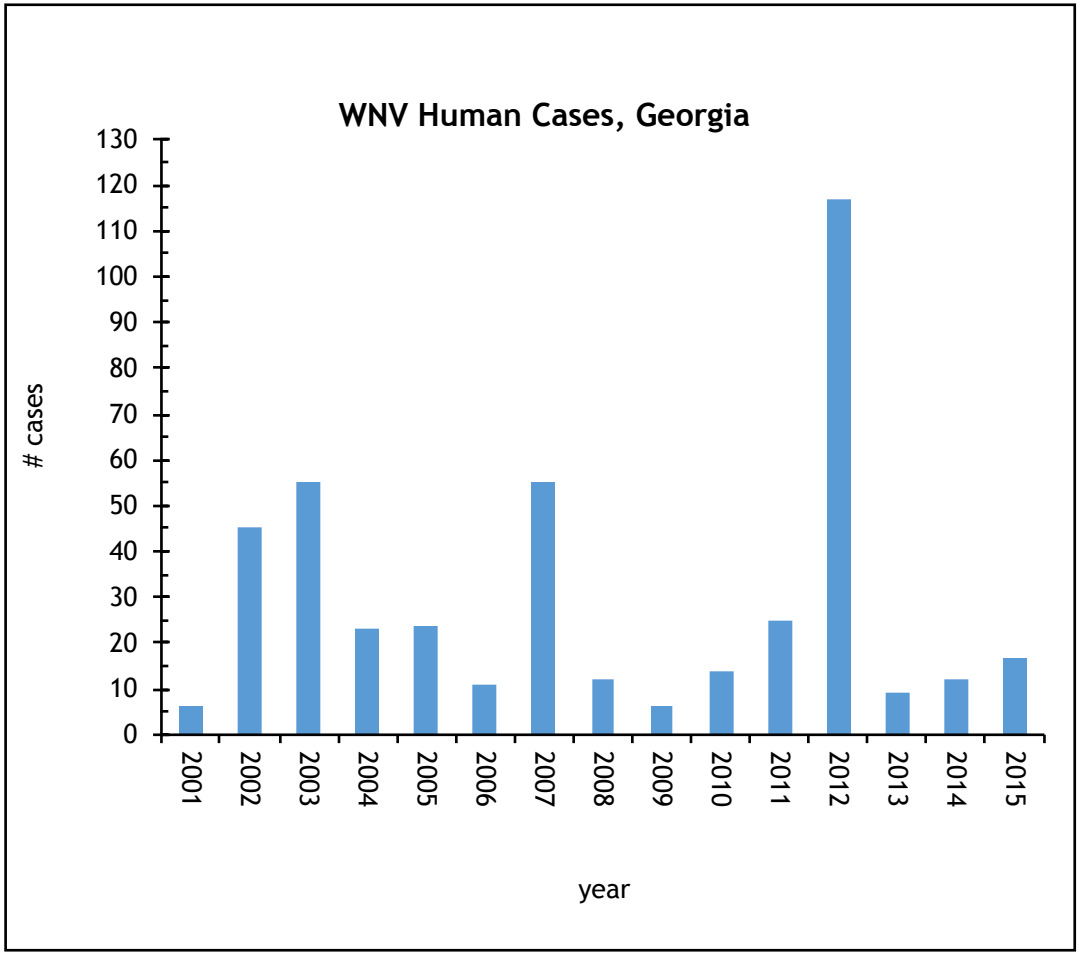


*zoonotic diseases



Counties in Georgia with WNV+ mosquitoes, birds, horses, or human cases reported between 2001-2011. Counties with no reported positives have done little to no surveillance; WNV is considered endemic in Georgia.

Human Arboviral Cases - WNV



WNV in Georgia		
year	**# human positives**	**all deaths**
2001	6	1
2002	44	7
2003	55	4
2004	23	1
2005	24	2
2006	11	1
2007	55	1
2008	12	
2009	6	2
2010	14	
2011	25	3
2012	117	6
2013	9	
2014	13	1
2015	16	2
2016**	2	

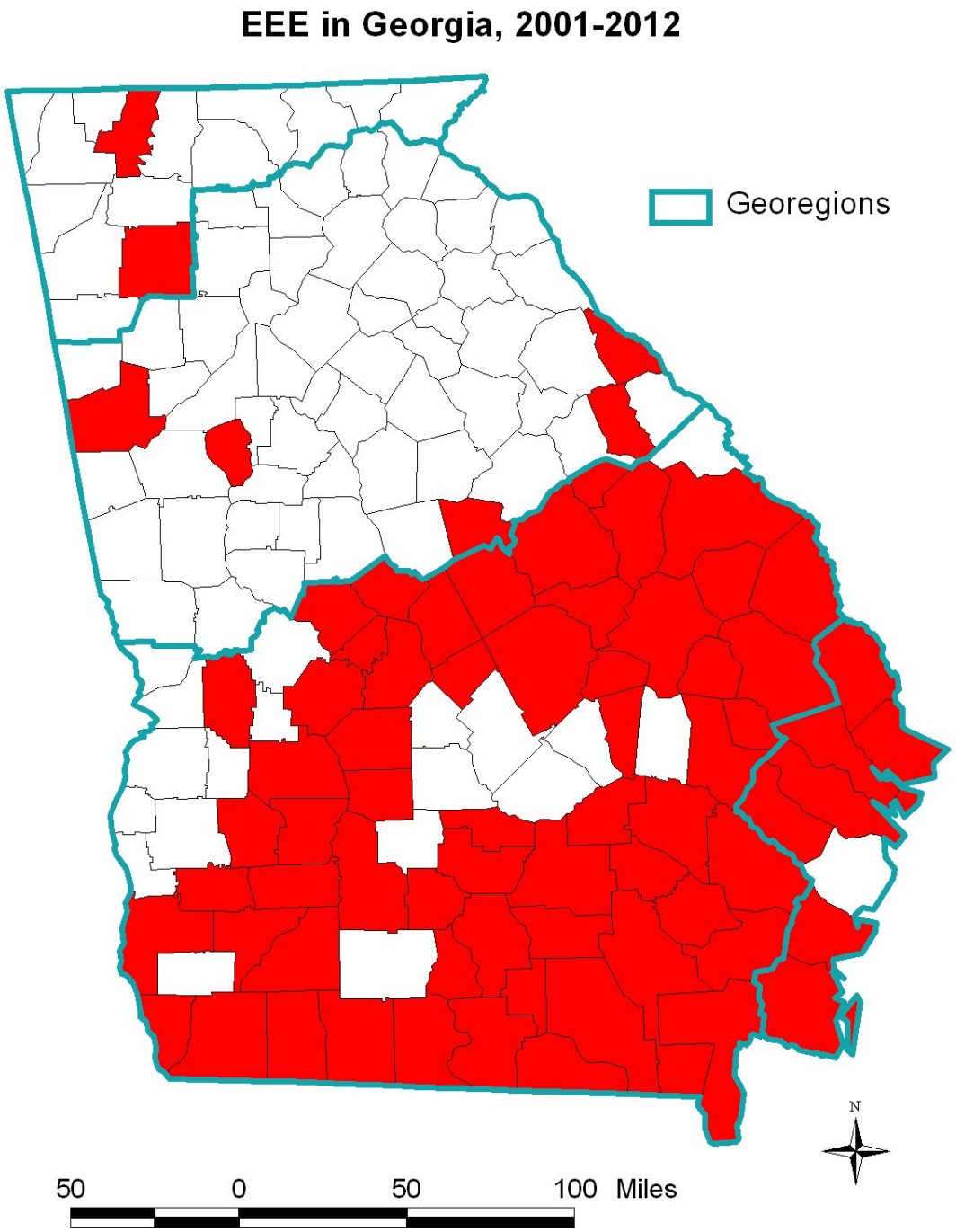
** to date

*Presumptive viremic blood donors (PVDs) are people who had no symptoms at the time of donating blood through a blood collection agency, but whose blood tested positive when screened for the presence of West Nile virus. Although we report WNV PVD to the CDC for epidemiological tracking purposes, we do not count these as cases in our state.

2016 Human Cases

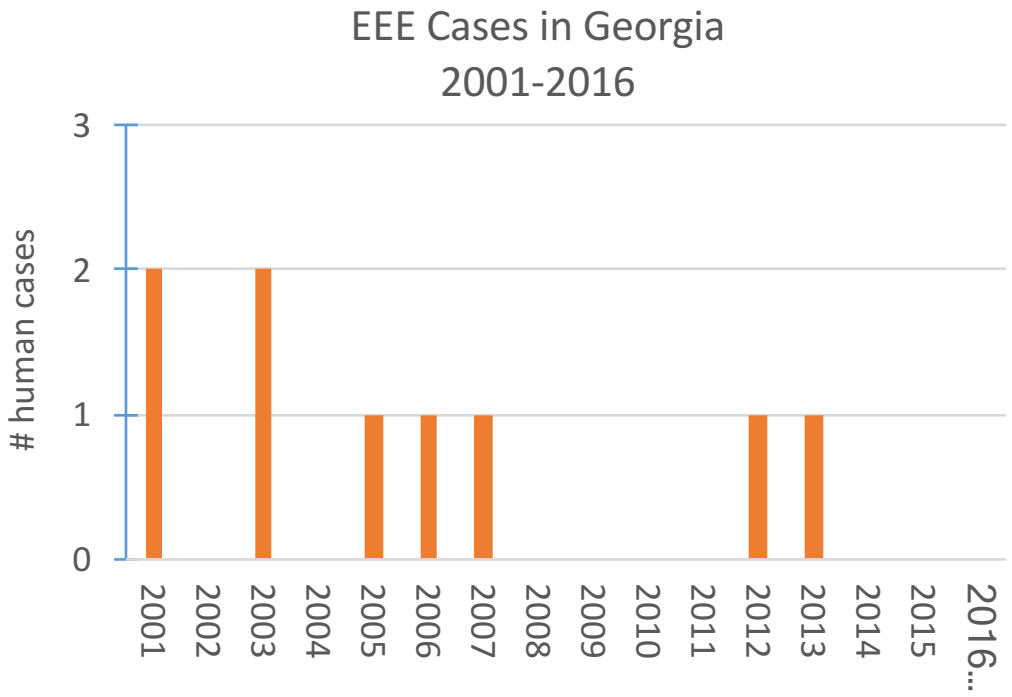
WNV+ - Douglas County

2 WNV PVD* - Cobb County



EEE is endemic in south Georgia.

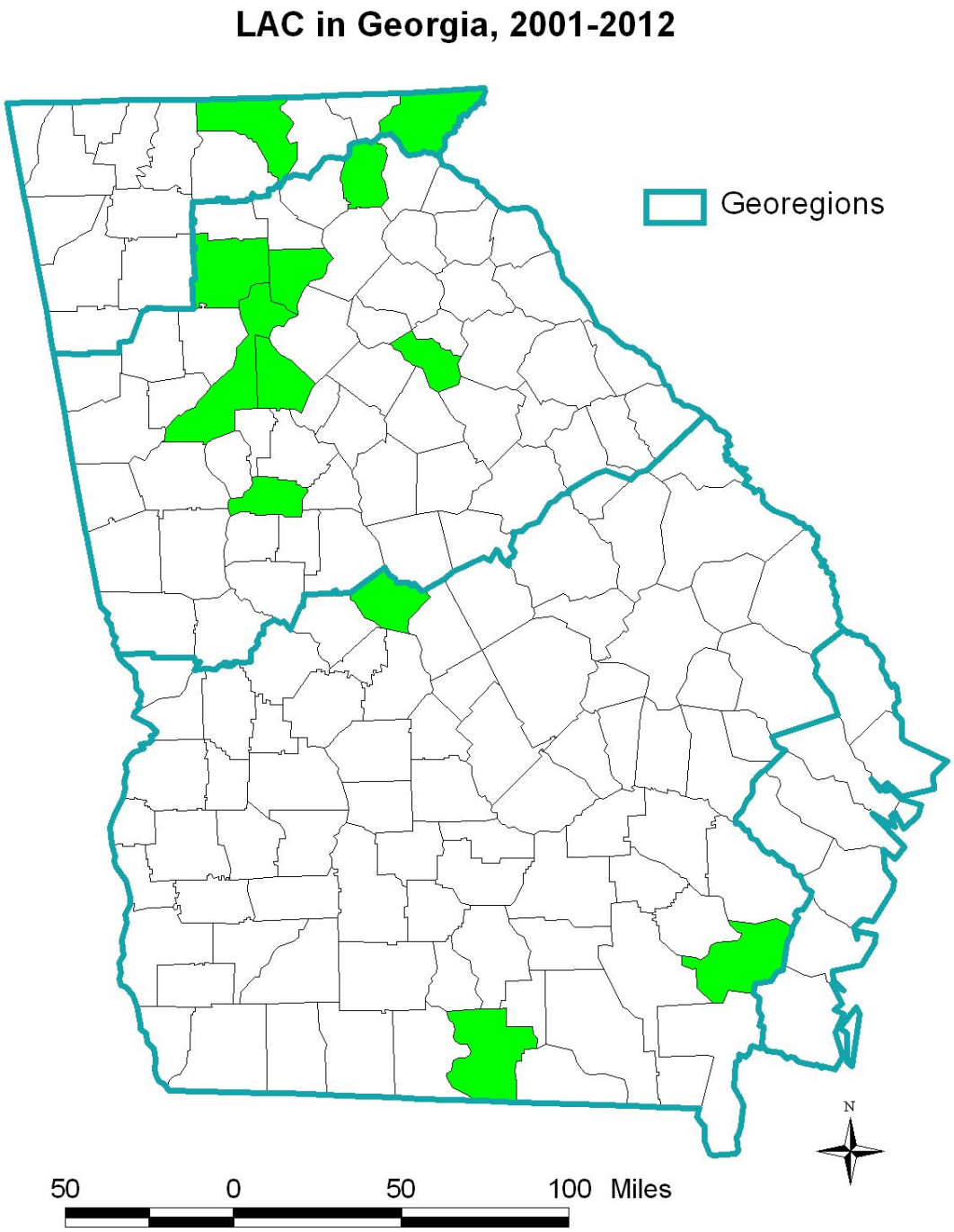
Human Arboviral Cases - EEE



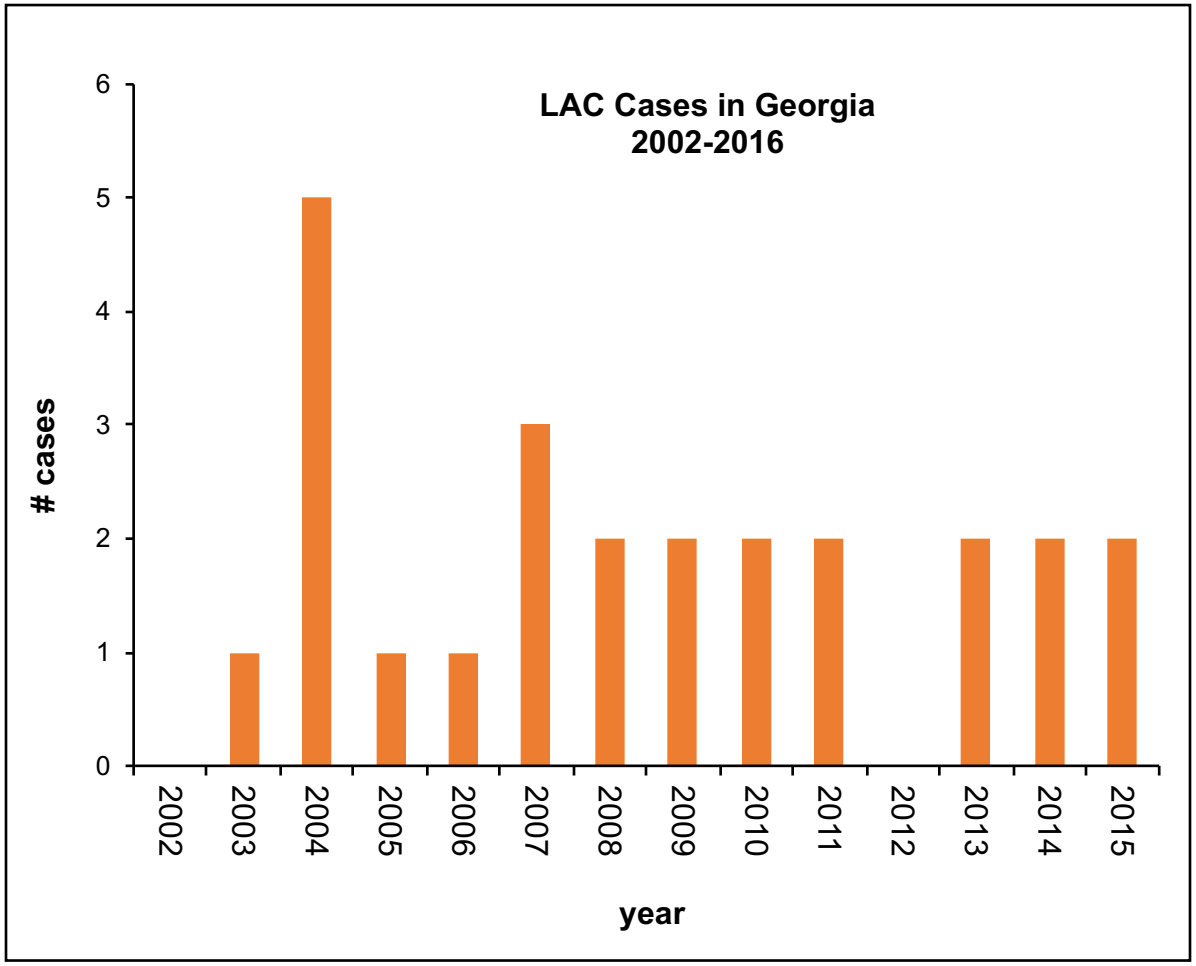
Year	# EEE cases
2001	2
2002	
2003	2
2004	
2005	1
2006	1
2007	1
2008	
2009	
2010	
2011	
2012	1
2013	1
2014	
2015	
2016**	

no EEE cases reported to date in Georgia in 2016

LAC is very under-reported in Georgia.



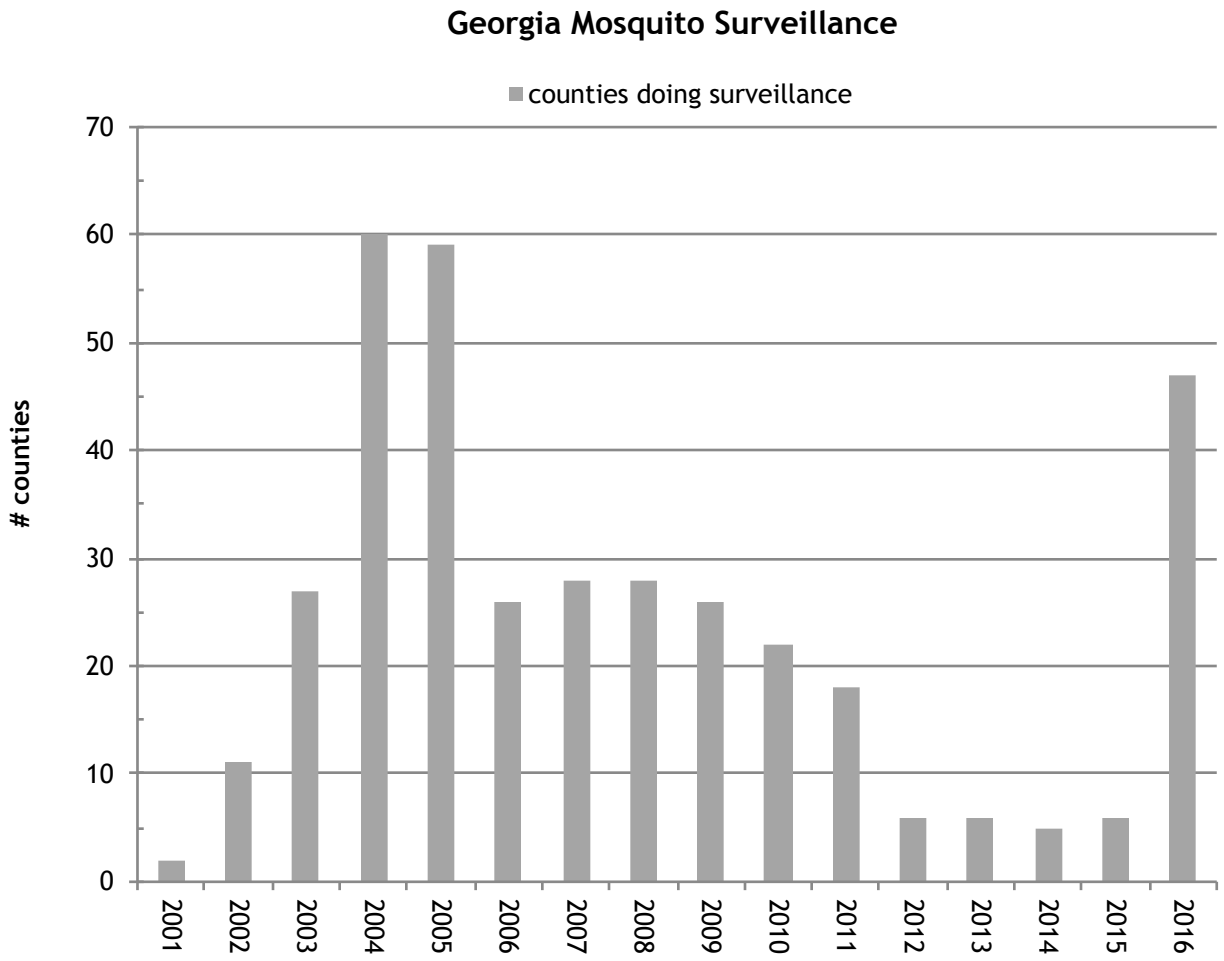
Human Arboviral Cases - LAC



LAC	
year	**# cases**
2002	
2003	1
2004	5
2005	1
2006	1
2007	3
2008	2
2009	2
2010	2
2011	2
2012	
2013	2
2014	2
2015	2
2016**	

no LAC cases have been reported to date in Georgia in 2016

Mosquito Surveillance



Only a few counties are currently doing mosquito surveillance, although that has increased due to a concerted effort by EH to follow-up on travel-related ZIKV cases.

Mosquito Surveillance – Untested Mosquitoes

Untested Mosquitoes	
Species	**Total**
Ae. aegypti	12
Ae. albopictus	2935
Ae. albopictus (male)	25
Ae. japonicus	3
Ae. triseriatus	1
Ae. vexans	2114
Ae. vexans (male)	1
Aedes/Ochlerotatus spp.	92
An. crucians	1709
An. crucians (male)	8
An. punctipennis	361
An. punctipennis (male)	6
An. quadrimaculatus	203
An. quadrimaculatus (male)	3
Anopheles spp.	45
Cq. perturbans	2338
Cs. inornata	6
Cs. melanura	19
Culex spp.	510
Culex spp. (male)	33
Cx. coronator	228
Cx. erraticus	952
Cx. nigripalpus	327
Cx. quinquefasciatus	7118
Cx. quinquefasciatus (male)	11
Cx. restuans	48
Cx. restuans (male)	1
Cx. salinarius	2046
Cx. territans	33

Species	**Total**
Oc. canadensis	117
Oc. infirmatus	2
Oc. japonicus	20
Oc. mitchellae	8
Oc. sticticus	29
Oc. sticticus (male)	1
Oc. triseriatus	47
Oc. trivittatus	7
Or. signifera	17
Ps. ciliata	10
Ps. columbiae	104
Ps. cyanescens	24
Ps. ferox	78
Ps. howardii	28
Tx. rutilus	8
unknown	2072
Ur. lowii	12
Ur. sapphirina	88
Grand Total	**23860**

Mosquito Surveillance is the routine monitoring of both larval and adult mosquito populations over the course of an entire mosquito season. Such mosquito surveillance is critical to a successful municipal or commercial mosquito control program for several reasons:

1. Monitoring changes in mosquito populations
2. Identifying which mosquito species are present
3. Detecting mosquito-borne diseases
4. Determining what control measures need to be conducted

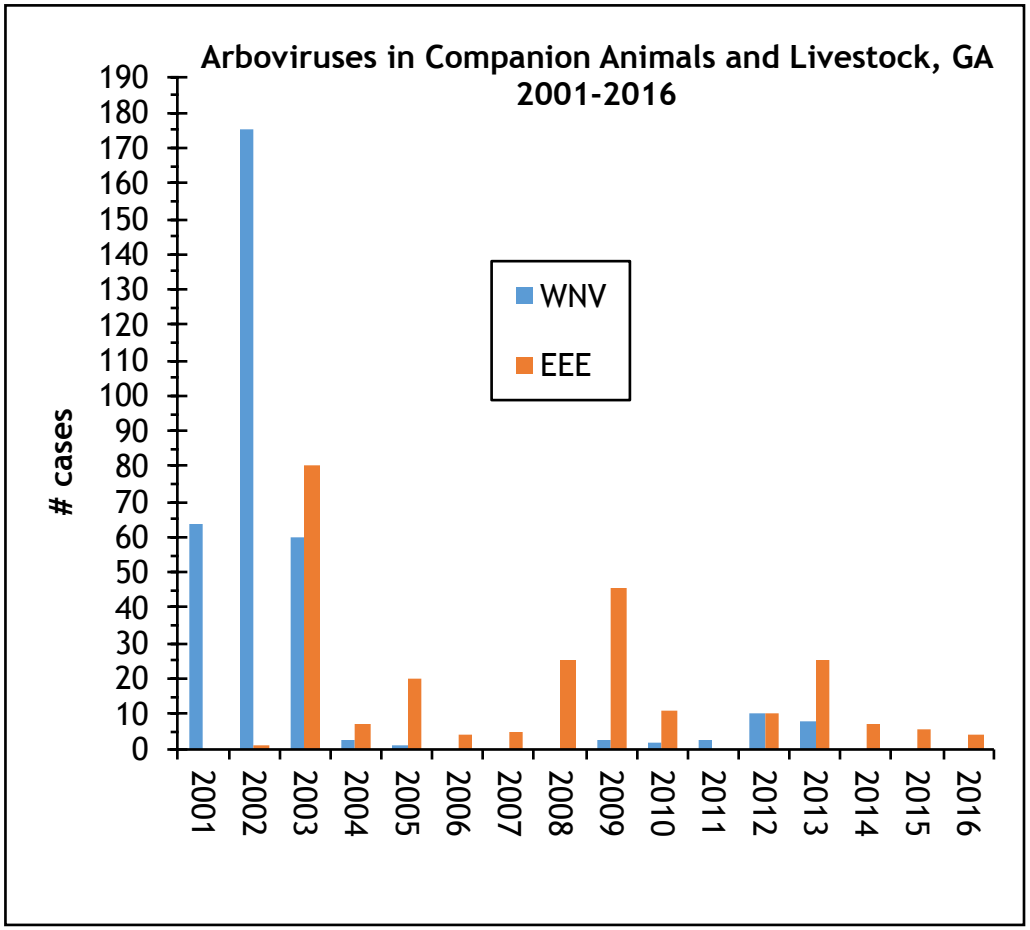
Species	Total
Ae. albopictus	688
Ae. triseriatus	6
Ae. vexans	3
An. punctipennis	26
Cq. perturbans	3057
Cs. inornata	5
Cs. melanura	518
Culex spp.	7624
Cx. coronator	13
Cx. erraticus	764
Cx. nigripalpus	6353
Cx. quinquefasciatus	70356
Cx. restuans	175
Cx. salinarius	378
Ma. titillans	6
Oc. atlanticus	530
Oc. infirmatus	2
Oc. japonicus	17
Oc. taeniorhynchus	5
Oc. triseriatus	9
Grand Total	**90535**

Mosquito Surveillance – Tested Mosquitoes

- In 2012, due to funding cuts, mosquito testing was no longer supported by the State Department of Public Health.
- Counties holding independent contracts for testing, with SCWDS or other agencies, continued doing mosquito surveillance; some of these data have been shared with the GDPH.
- To date, 29 mosquito pools have tested positive for WNV in 2 counties.

WNV+ pools			
County	**# mosquitoes submitted**	**# WNV+ pools**	**MIR**
Chatham	41671		
DeKalb	10506	28	2.67
Fulton	947	1	1.06
Glynn	20038		
Lowndes	19199		
Richmond	81		

Sentinel Animals - GDA

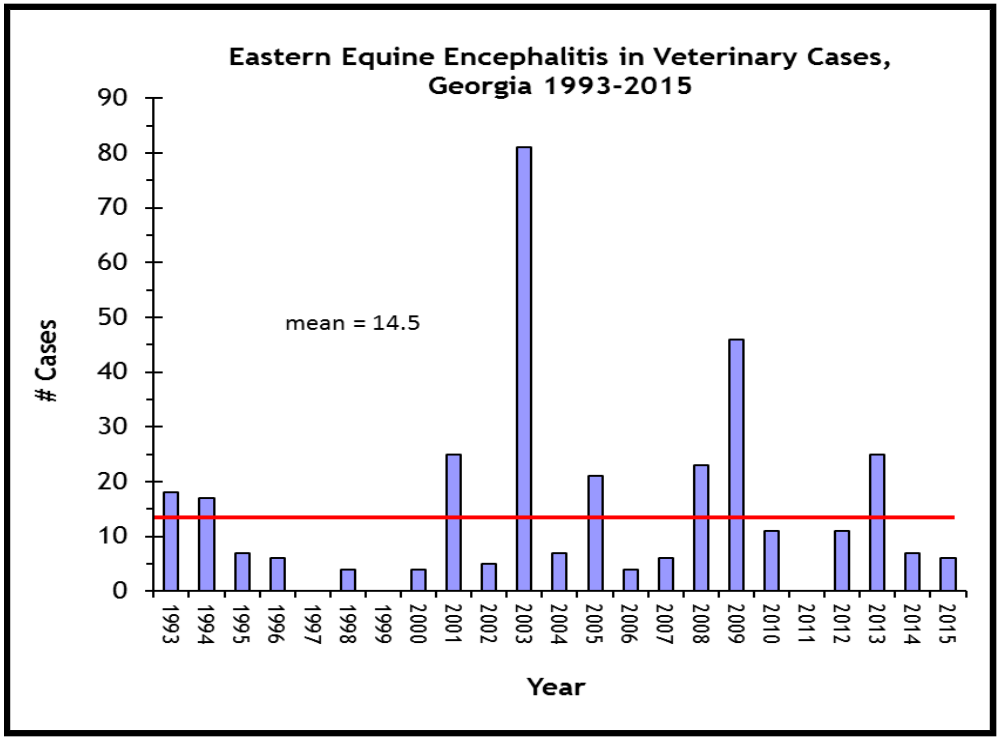


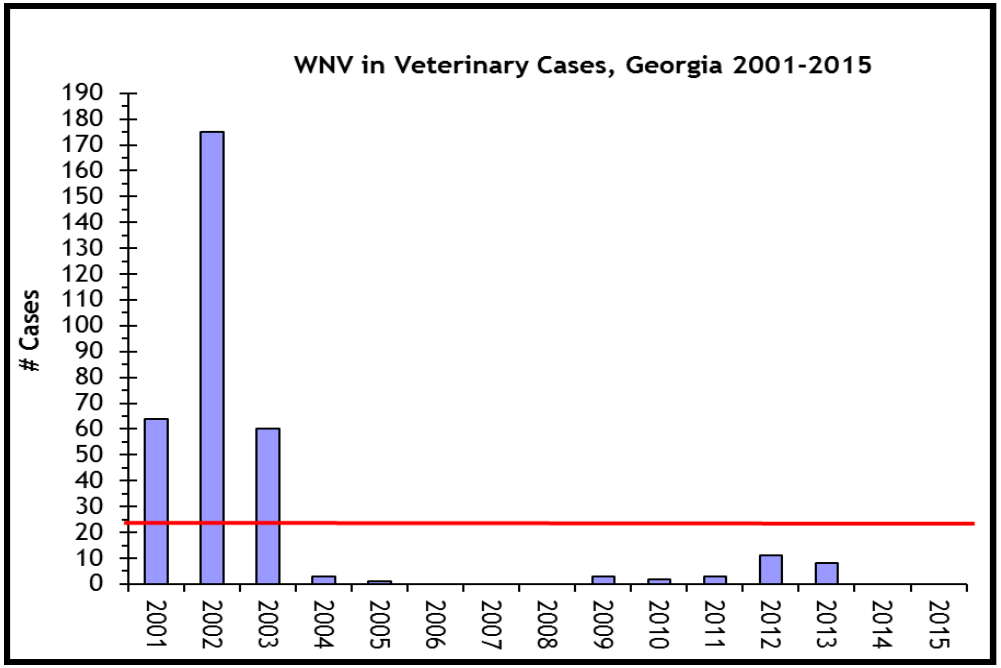
The Animal Health office governs the prevention, control and eradication of certain infectious and communicable diseases of livestock and other domestic animals.

Reportable Arboviral Diseases

- EEE
- WNV

year	WNV	EEE
2001	64	
2002	175	1
2003	60	80
2004	3	7
2005	1	20
2006		4
2007		5
2008		25
2009	3	46
2010	2	11
2011	3	
2012	10	10
2013	8	25
2014		7
2015		6
2016		5





Eastern equine encephalitis is endemic in the Coastal and Coastal Plains areas of Georgia. During an average year, four or five EEE+ horses are reported from these areas. The true number of horse cases is probably higher due primarily to under-testing, although subclinical infections can occur with EEE.

The number of reported cases of WNV in horses decreased rapidly after 2002, likely due to increased immunity, increased vaccination, and/or decreased testing.

Sentinel Animals - Chickens

Sentinel chickens are used primarily for detection of the mosquito-borne Eastern Equine Encephalitis virus.

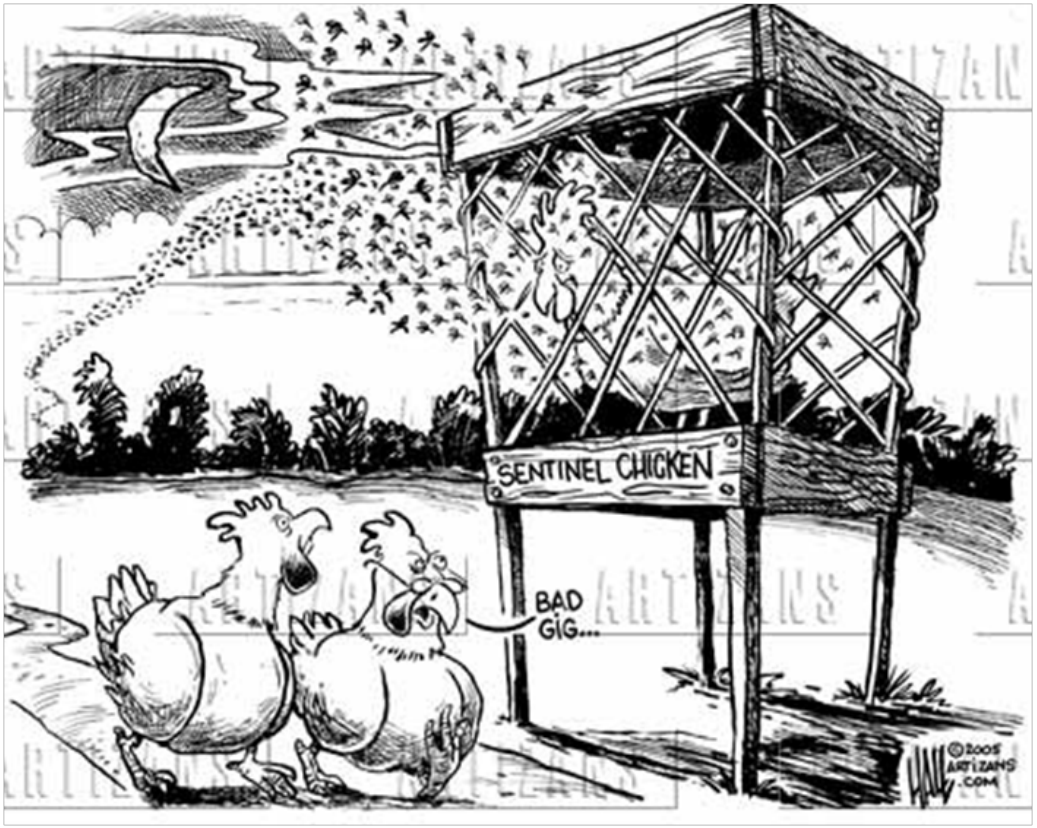
That's because chickens become infected with EEE if bitten by mosquitoes, but don't develop symptoms of the disease.

Their bodies develop antibodies to EEE within a week of being bitten by an infected mosquito.

Public health officials know that the potentially deadly disease is in a particular vicinity because of the sentinel chickens' response.

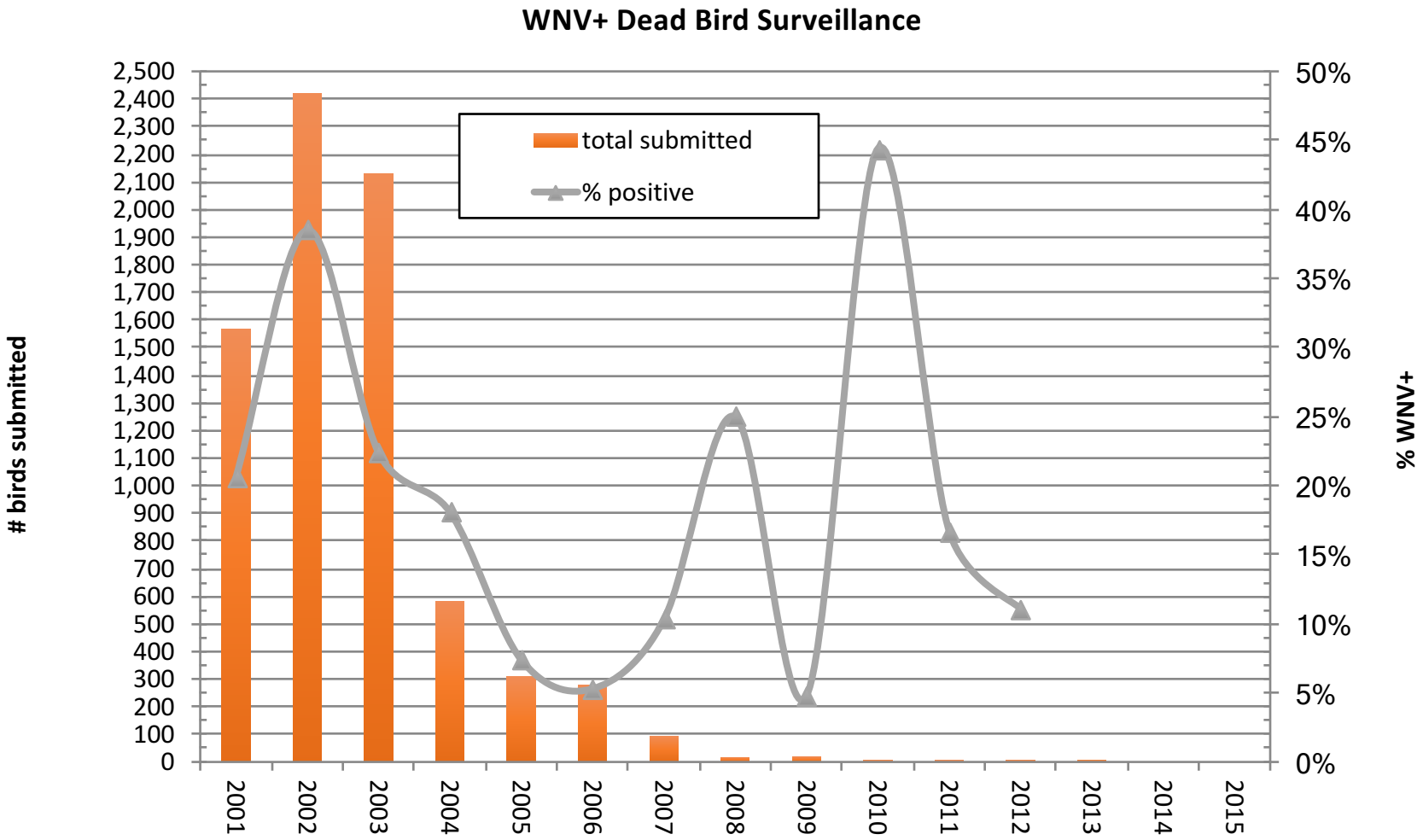
Chickens are also used to monitor for the presence of West Nile virus.

In Georgia, Chatham County Mosquito Control uses sentinel chickens for early detection of EEE.



25 EEE+ chickens have been reported from 6 locations in Savannah

Where Are The Birds?



year	WNV+	total submitted	% positive	% of total WNV+
2001	322	1566	20.6%	4.31%
2002	931	2421	38.5%	12.47%
2003	478	2131	22.4%	6.40%
2004	105	581	18.1%	1.41%
2005	23	311	7.4%	0.31%
2006	15	281	5.3%	0.20%
2007	10	97	10.3%	0.13%
2008	5	20	25.0%	0.07%
2009	1	21	4.8%	0.01%
2010	4	9	44.4%	0.05%
2011	1	6	16.7%	0.01%
2012	1	9	11.1%	0.01%
2013		11		
2014		0		
2015		0		

Dead bird surveillance is no longer a timely indicator of WNV activity in Georgia.

It can, however, provide information to counties that have no recourse to mosquito surveillance and testing.

To date no bird results have been reported to the GDPH.

ANY QUESTIONS?