

The Future of Arboviral Surveillance in Georgia



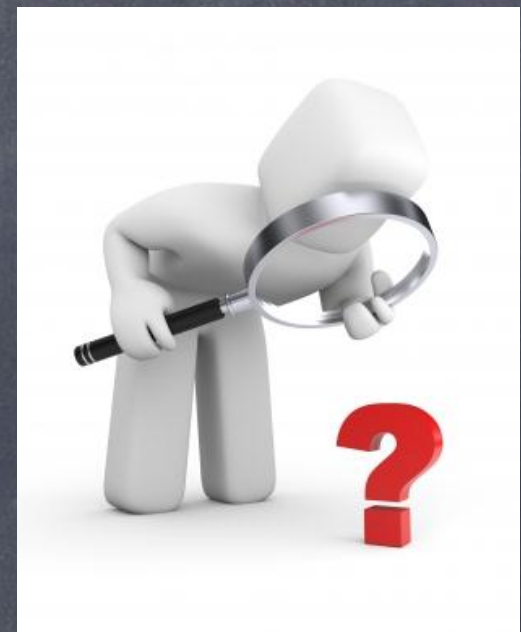
Rosmarie Kelly - GDPH

NO FUTURE

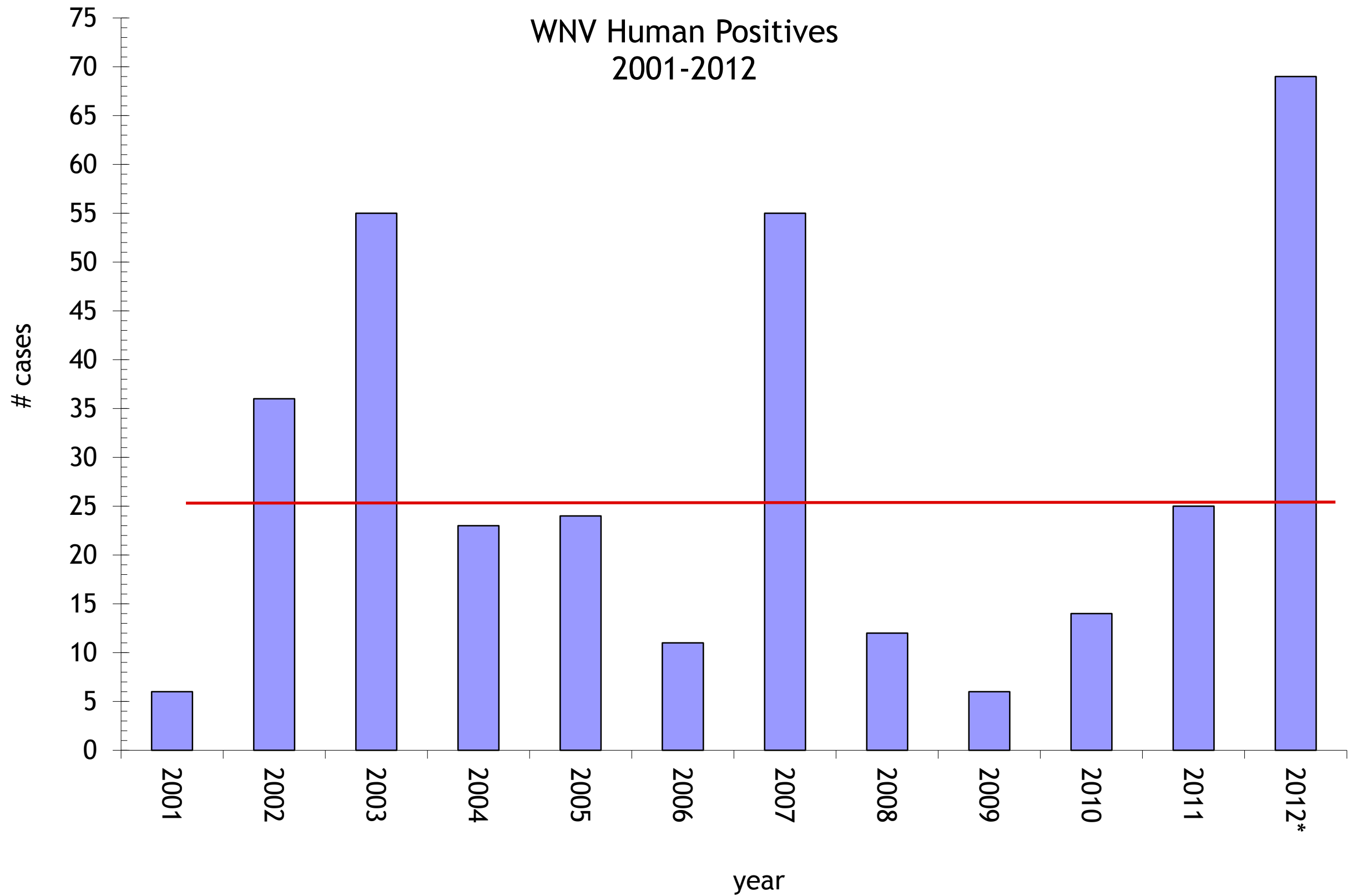


What have we lost?

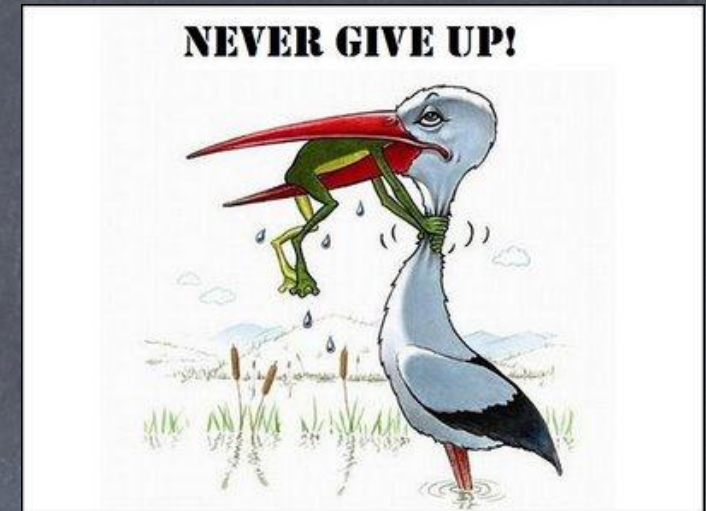
- Funding at the GDPH to support mosquito surveillance
- Funding for arboviral testing
- Basically, almost all the funding associated with arboviral surveillance in Georgia
- Current and future data



WNV Human Positives 2001-2012



Before we give up completely...



1. What historic data are currently available?
2. What resources are still available?
3. How can these things be combined to provide at least some prediction of risk?

Historic data

2001-2011	human cases	veterinary cases	mosquito pools	positive bird
total	272	1269	311	1894
mean	24.7	115.4	28.3	172.2

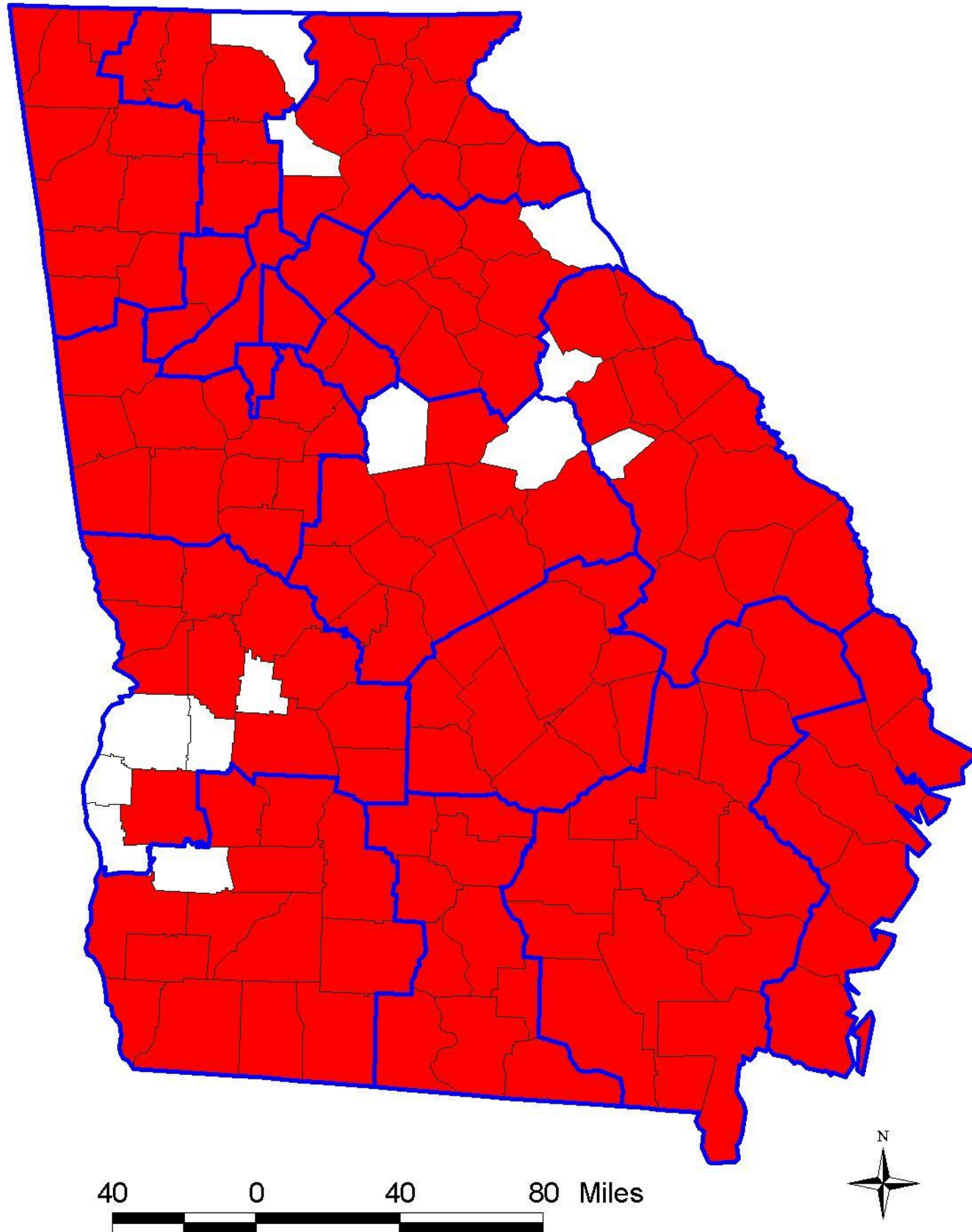
- There are mosquito data from 98 out of the 159 Georgia counties.
- The GDA has provided data on livestock cases in 109 counties since 2001.
- There are dead bird data from 151 counties.
- The GDPH has collected human case data from 66 counties.

year	WNV+ pools	counties doing surveillance	# positive counties	total mosquitoes pools tested	% WNV+
2001	30	2	1	597	5.03%
2002	91	11	6	4044	2.25%
2003	106	27	6	6206	1.71%
2004	126	60	7	10166	1.24%
2005	67	59	5	15263	0.44%
2006	81	26	5	4786	1.69%
2007	75	28	7	6513	1.15%
2008	51	28	5	6386	0.80%
2009	24	26	4	4447	0.54%
2010	99	22	5	5991	1.65%
2011	438	18	7	9584	4.57%
2012*	114	6	5	4658	2.45%

Current resources

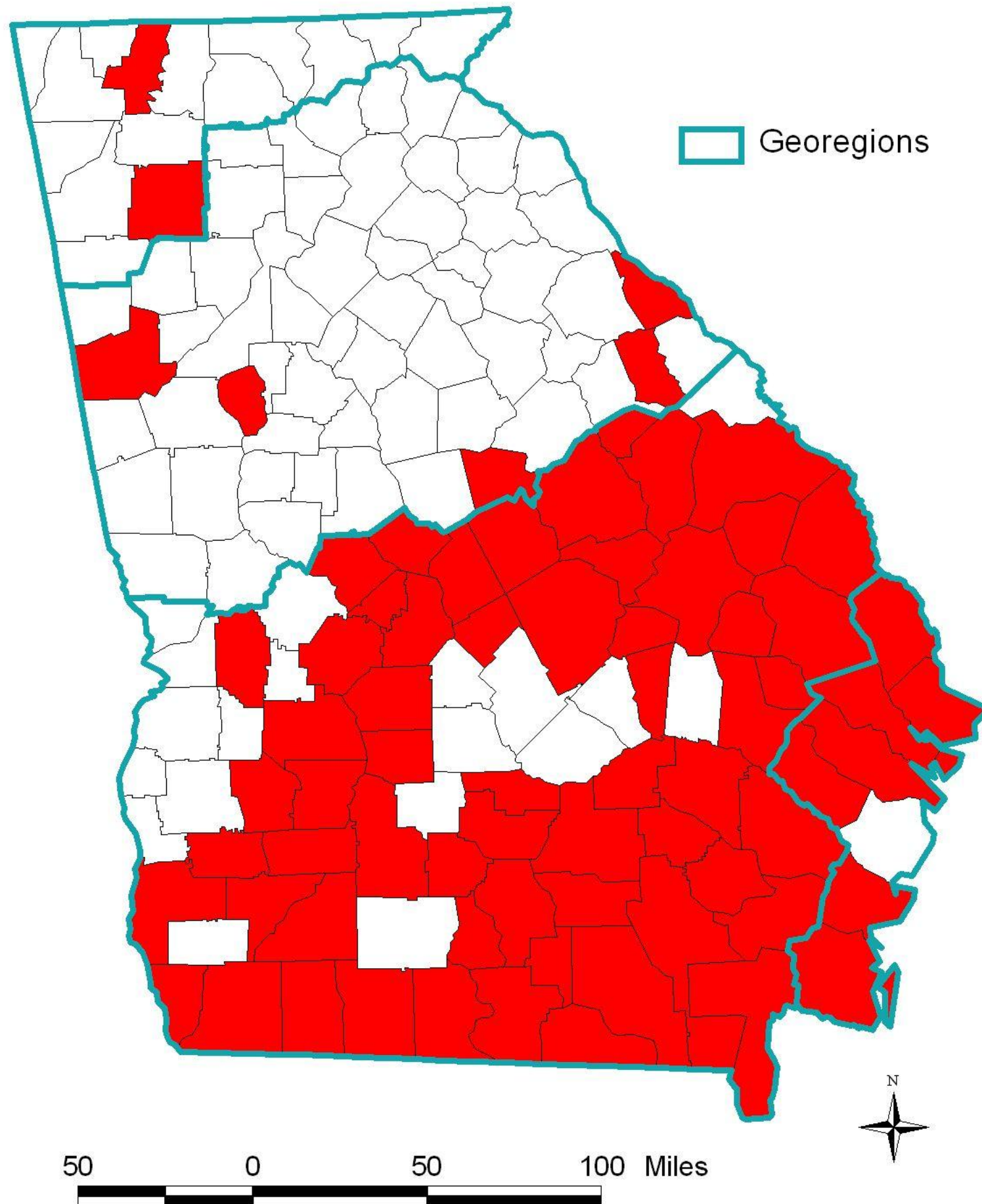
- In Georgia, 6 counties and one city are doing surveillance AND sending mosquito pools for testing
- At least 4 counties have submitted mosquito surveillance data to the GDPH, even though the mosquitoes are not being tested for virus
- GDA is still supplying test data from livestock (mostly horses)
- GDPH continues to collect human case data
- Blood banks are sharing PVBD information

WNV+ Counties, 2001-2011



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.

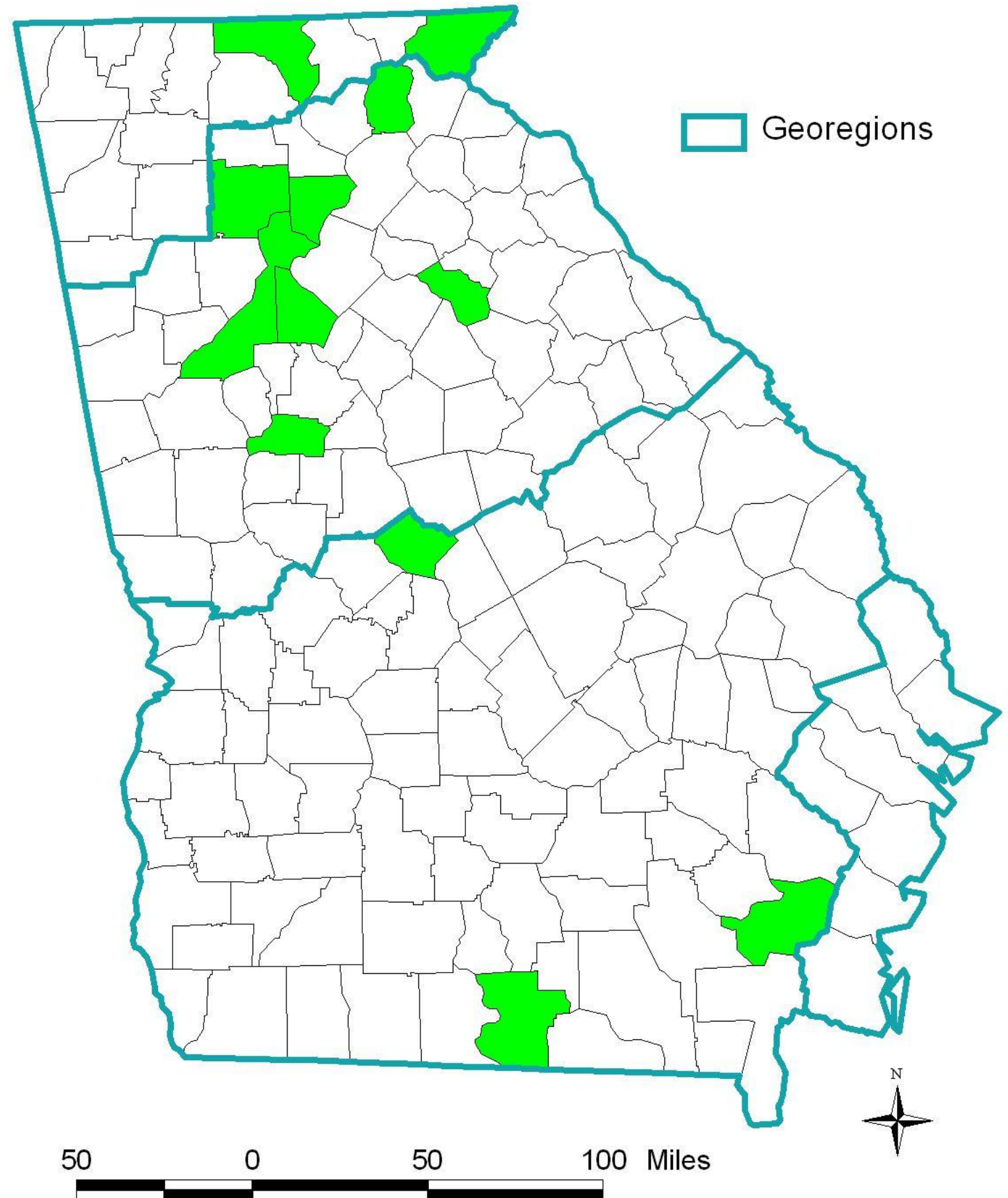
EEE in Georgia, 2001-2012



EEE is endemic
in south Georgia.

LAC in Georgia, 2001-2012

LAC is very
under-reported
in Georgia.



Using the data - what are other states doing?

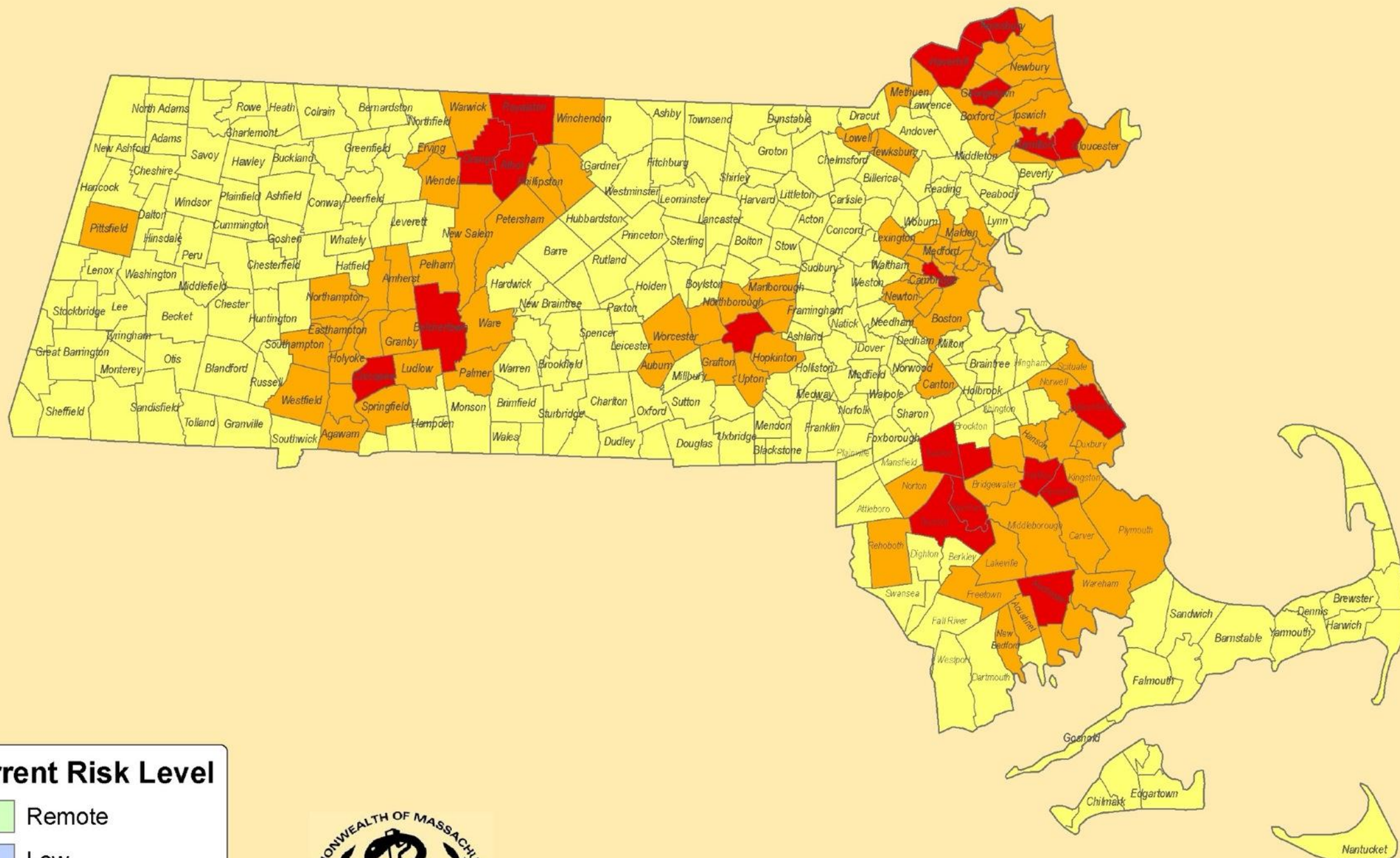


Massachusetts -

<http://westnile.ashtonweb.com/index.asp>

- Predictions of risk are based on a number of different factors including weather, current and past instances of human or animal disease, mosquito habitat, recent findings of virus in mosquitoes and estimates of mosquito population levels.

Mosquito-Borne Illness Risk Map



Current Risk Level

- Remote
- Low
- Moderate
- High
- Critical



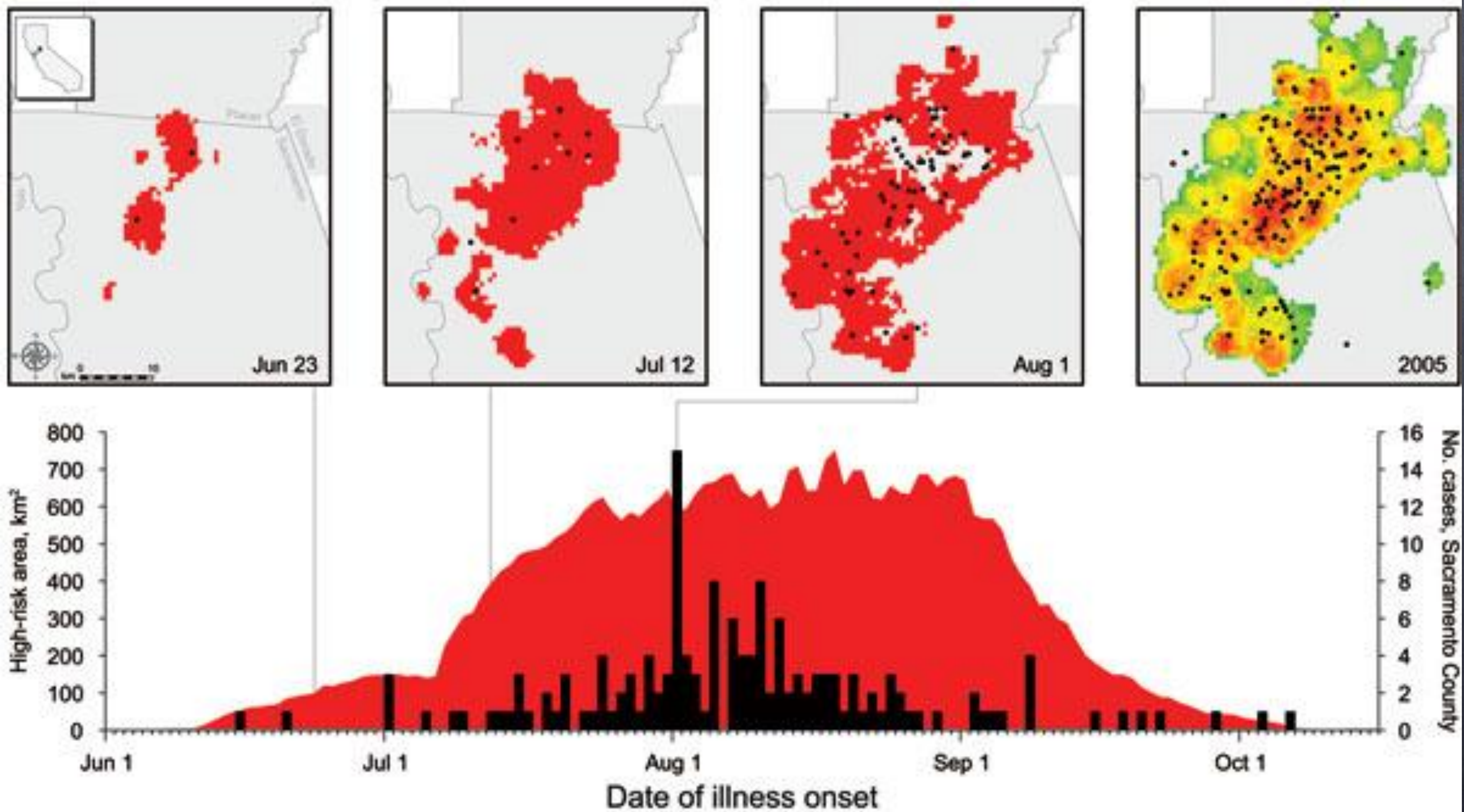
Effective October 1, 2012

State Laboratory Institute
Arbovirus Surveillance Program

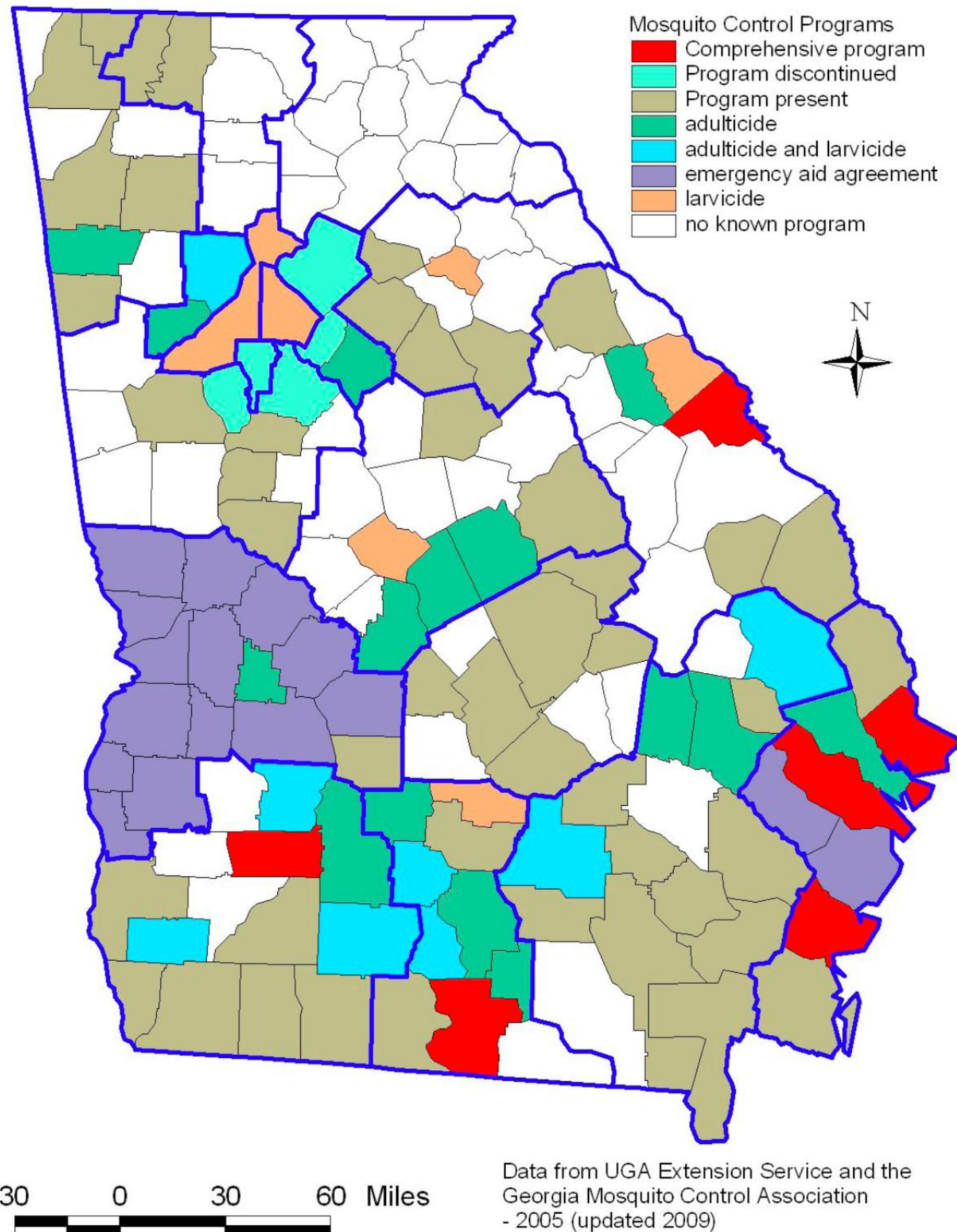
California: <http://westnile.ca.gov/>

- CDPH has coordinated a statewide mosquito-borne encephalitis surveillance program since 1969 to detect western equine encephalitis (WEE), St. Louis encephalitis (SLE), and other viruses.
- In 2000, CDPH and other agencies expanded the program to enhance the state's ability to detect WNV.
- Reporting and testing of dead birds and tree squirrels were added to the existing California surveillance system, which includes encephalitis case detection, mosquito testing, and monitoring of sentinel chickens.

Dynamic Continuous-Area Space-Time (DYCAST) risk maps (top) and timeline (bottom) of West Nile virus epidemic in Sacramento County, California, 2005



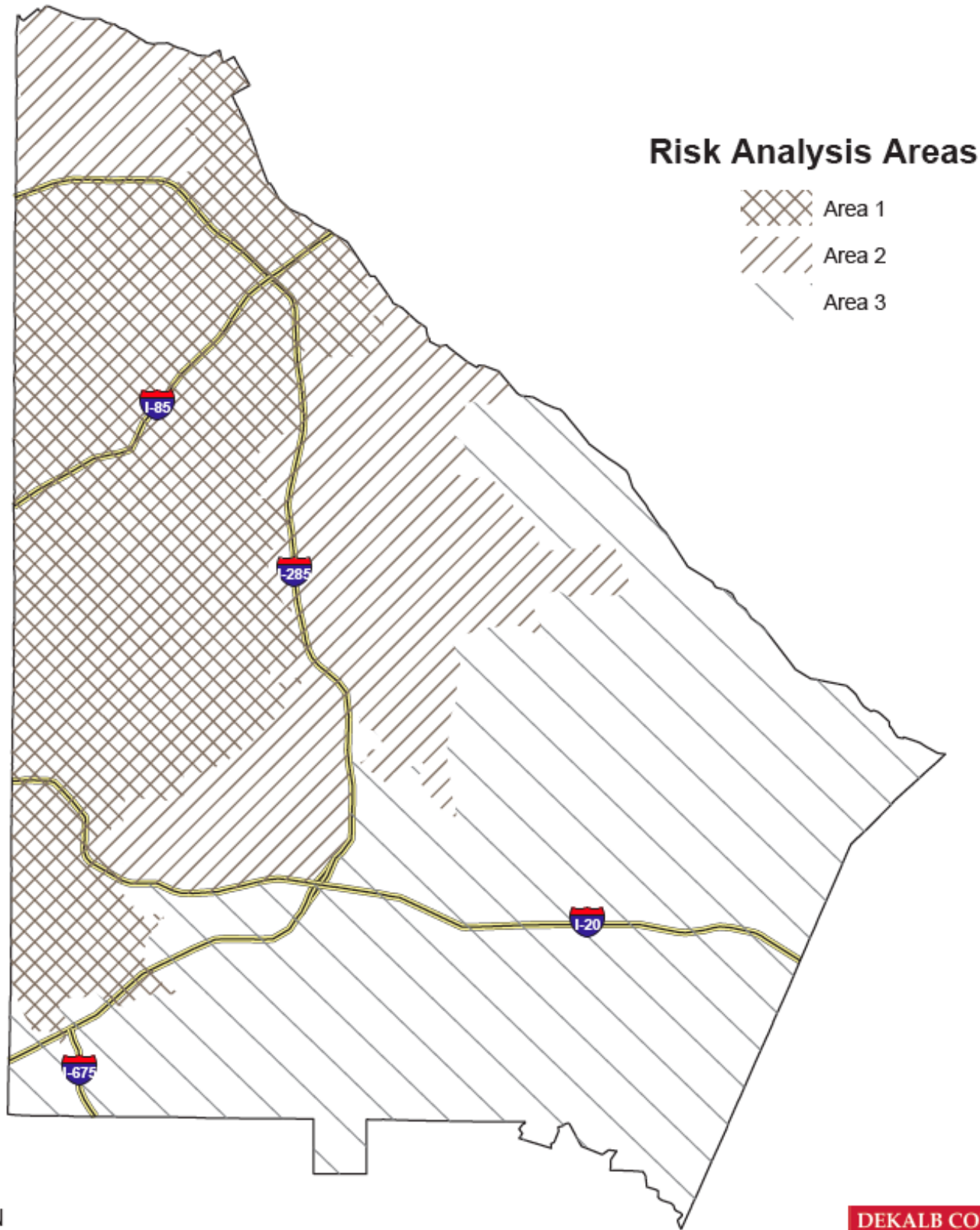
Counties with Mosquito Control Programs



What sorts of data applications are being used in Georgia?

It varies widely from county to county.

Areas of West Nile Virus (WNV) Risk Analysis
DeKalb County, Georgia
2012



Created: September 7, 2012
Source: Division of Environmental Health
Projection: NAD 1983 State Plane GA West

DeKalb County,
GA

Mosquito
Bird
Human cases

West Nile virus Action Plan

The “Hot Zone”

In 2007, the treatment area was expanded based on high *Culex* numbers and increased WNV activity outside of the historic areas.

Currently, we treat ~12,000 catch basins during a single treatment cycle.



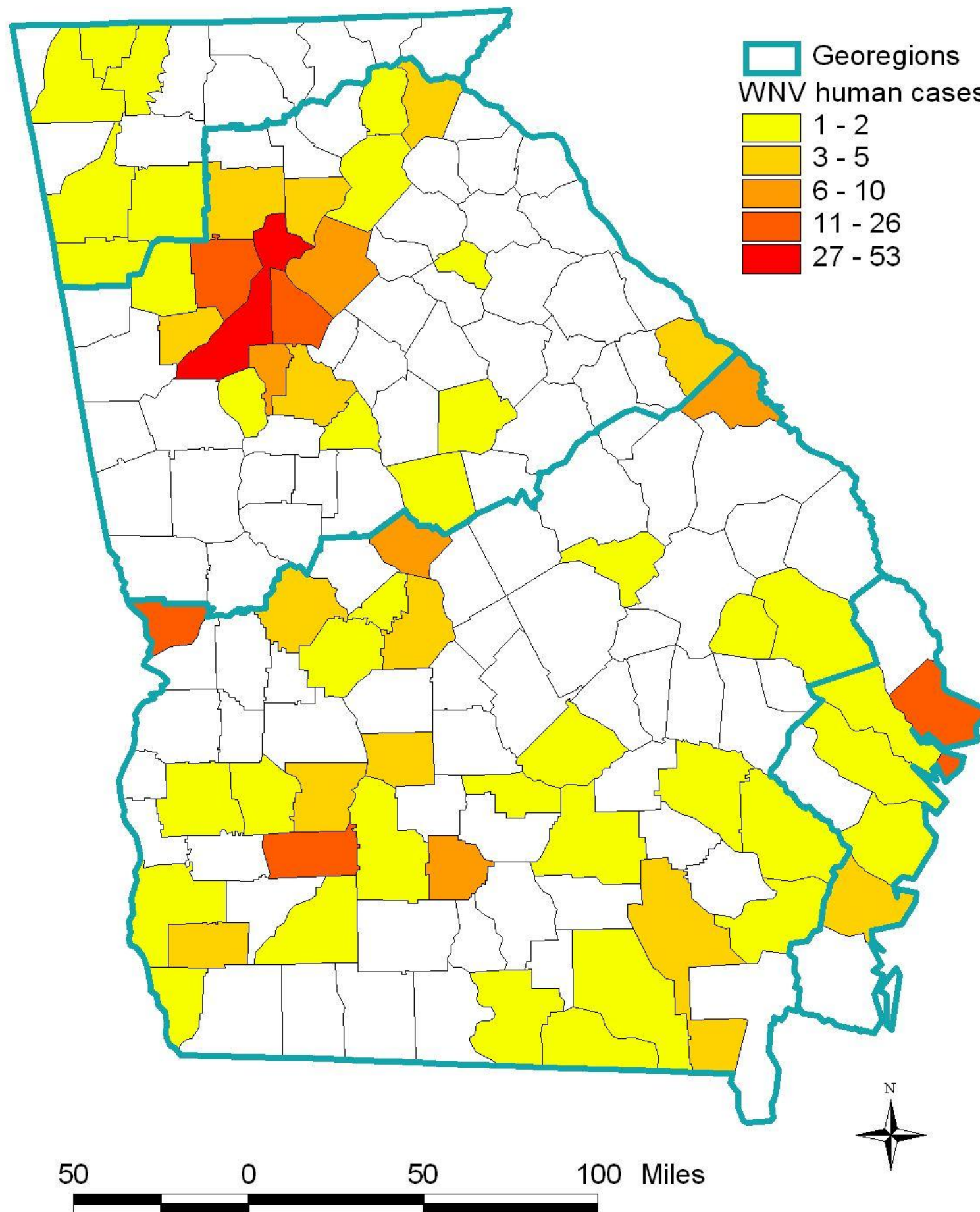
The expanded Hot Zone, 2007-present

How can we use our available data?

Locally

State-wide

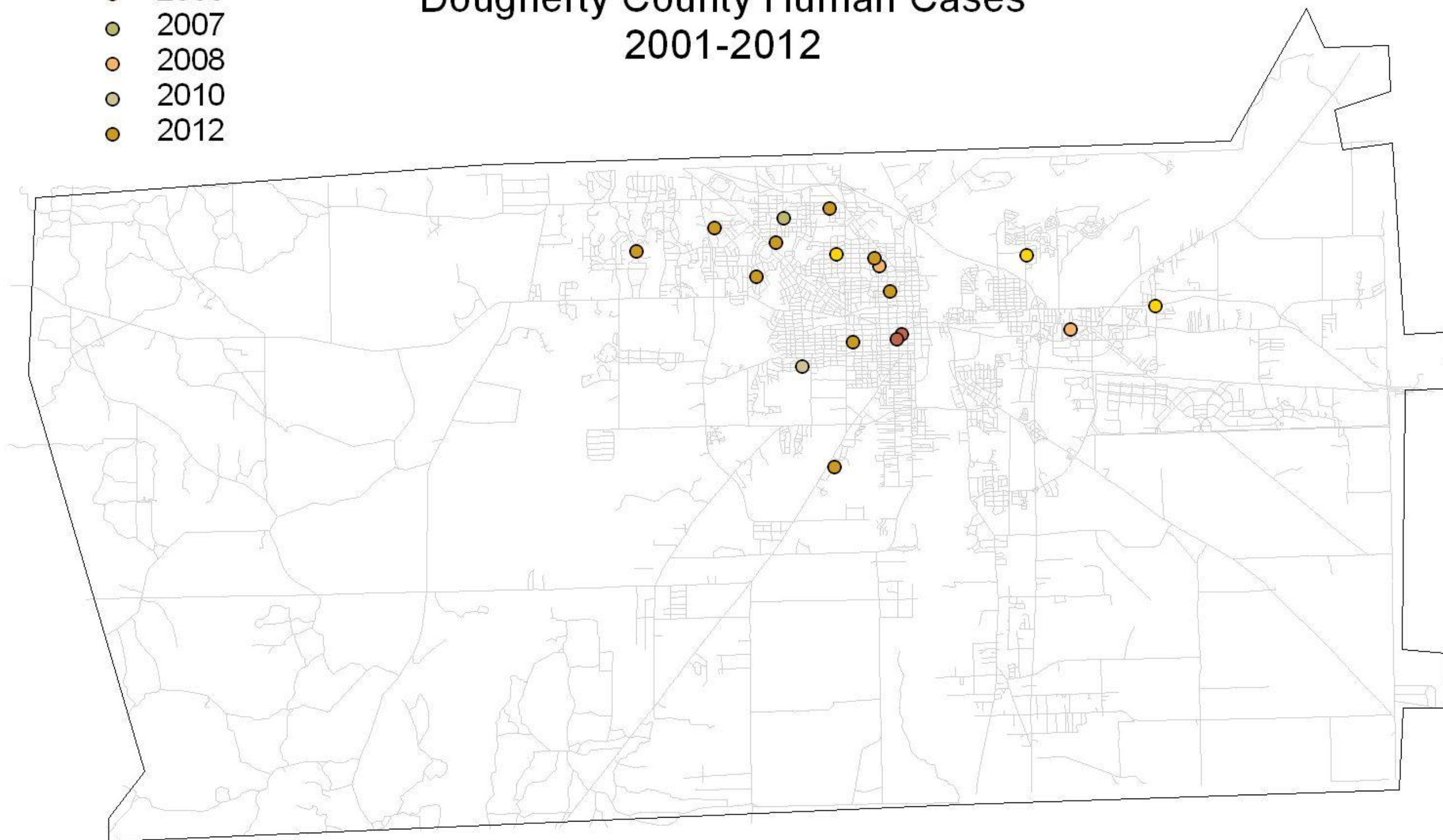
WNV human cases in Georgia, 2001-2012



cases by year

- 2003
- 2006
- 2007
- 2008
- 2010
- 2012

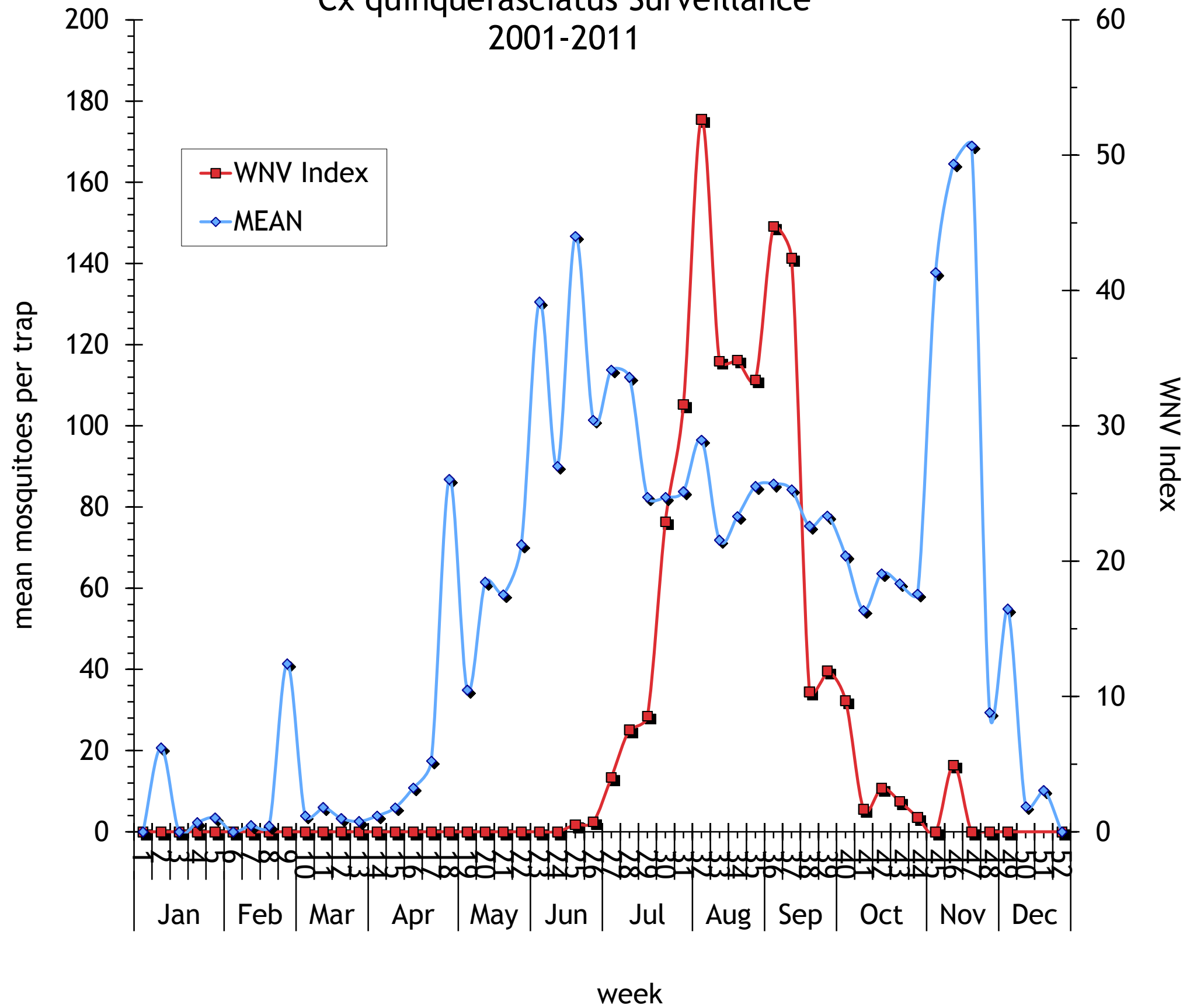
Dougherty County Human Cases 2001-2012



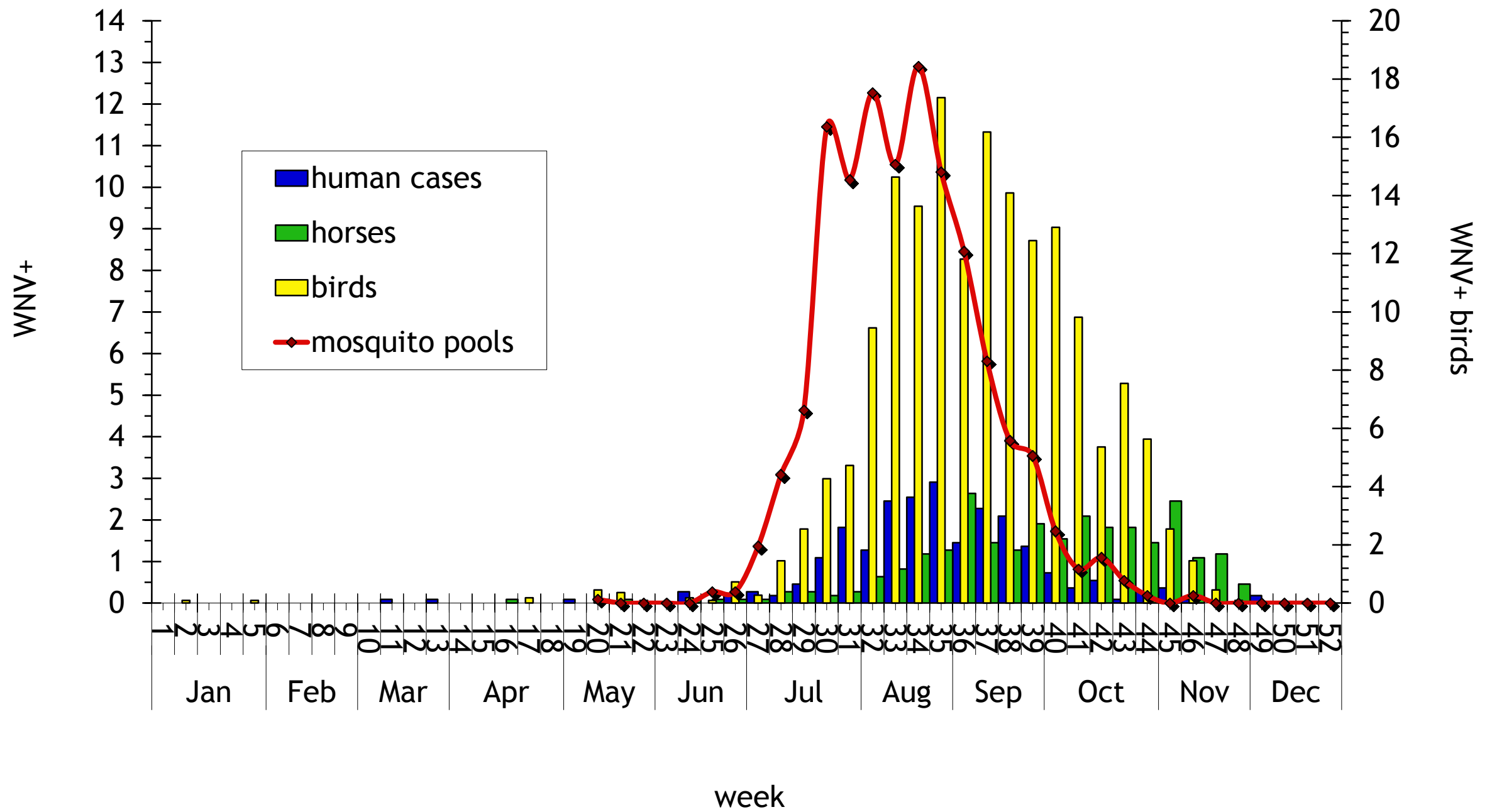
3 0 3 6 Miles



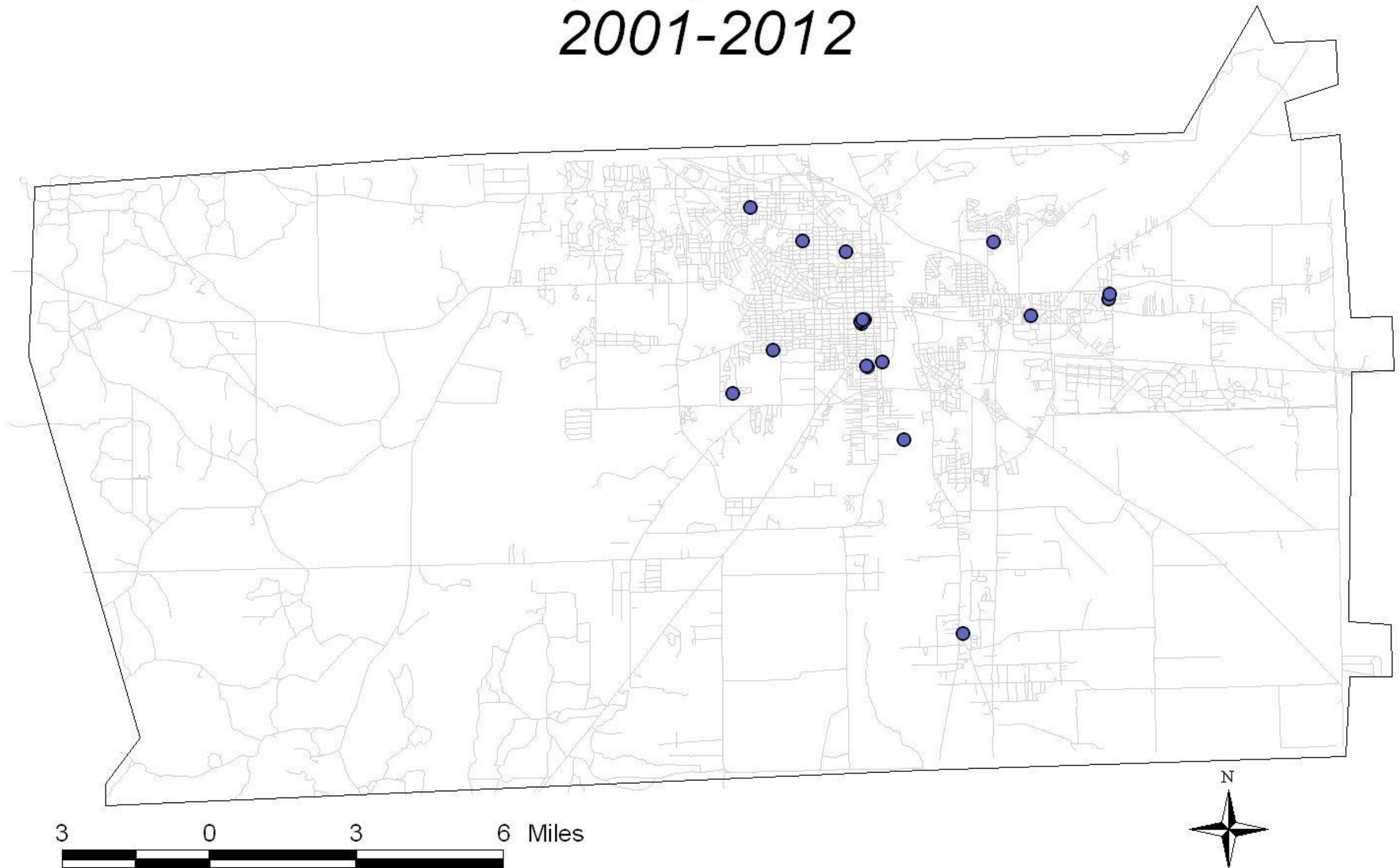
Cx quinquefasciatus Surveillance 2001-2011



Average Epi Curve, 2001-2011



Dougherty County
Culex quinquefasciatus
2001-2012



In conclusion,

- The future of arboviral surveillance in Georgia is far from ensured
- It may take some creativity, but we do have enough existing and historic data to help make somewhat informed decisions
- Some counties are better off than others, but their data can be helpful to a wider area

Stay informed!

Hum
Cou

Bartow

Bibb

Candler

Cherokee

Cobb

Columbia

DeKalb

Dougherty**

Early*

Fayette

Forsyth

Fulton

Lee

Miller

Mitche

Musco

Richm

Terrell

Wayne

Worth

* death

Internationally-Acquired Cases

Month	# cases	VIRUS	TRAVEL
June	1	Dengue	Jamaica
July	1	Dengue	not reported

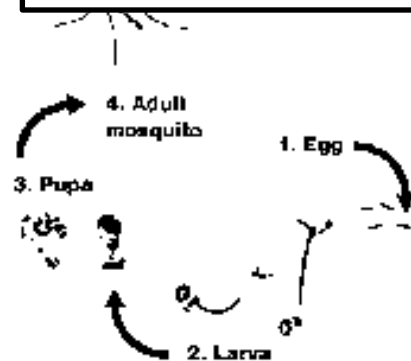


QUICK STATS

Mosquito Pools

Virus Isolation	County	# mosquitoes	# pools
Pending	Chatham	2276	209
	DeKalb	395	30
	Glynn	419	24
	Liberty	323	21
	Lowndes	625	43
HIEG	Chatham	26954	1555
	DeKalb	1922	93
	Glynn	1374	91
	Liberty	77	8

Sign up to receive the arboviral summary and notifications of positive mosquito pools, birds, or veterinary cases in your health district.



	Worth	1	WNV
9-2	Brantley	1	EEE
	Candler	1	EEE
	Pierce	1	EEE
	Wayne	1	EEE
	Appling	1	WNV

POS-WIIV	Chatham	500	21
	DeKalb	1245	52
	Fulton	258	7
	Glynn	73	4
	Lowndes	258	14

ANY QUESTIONS?

