

Georgia Arboviral State Report, 2024

GMCA Annual Meeting

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17 Oct 24



Atlanta GA - 2024

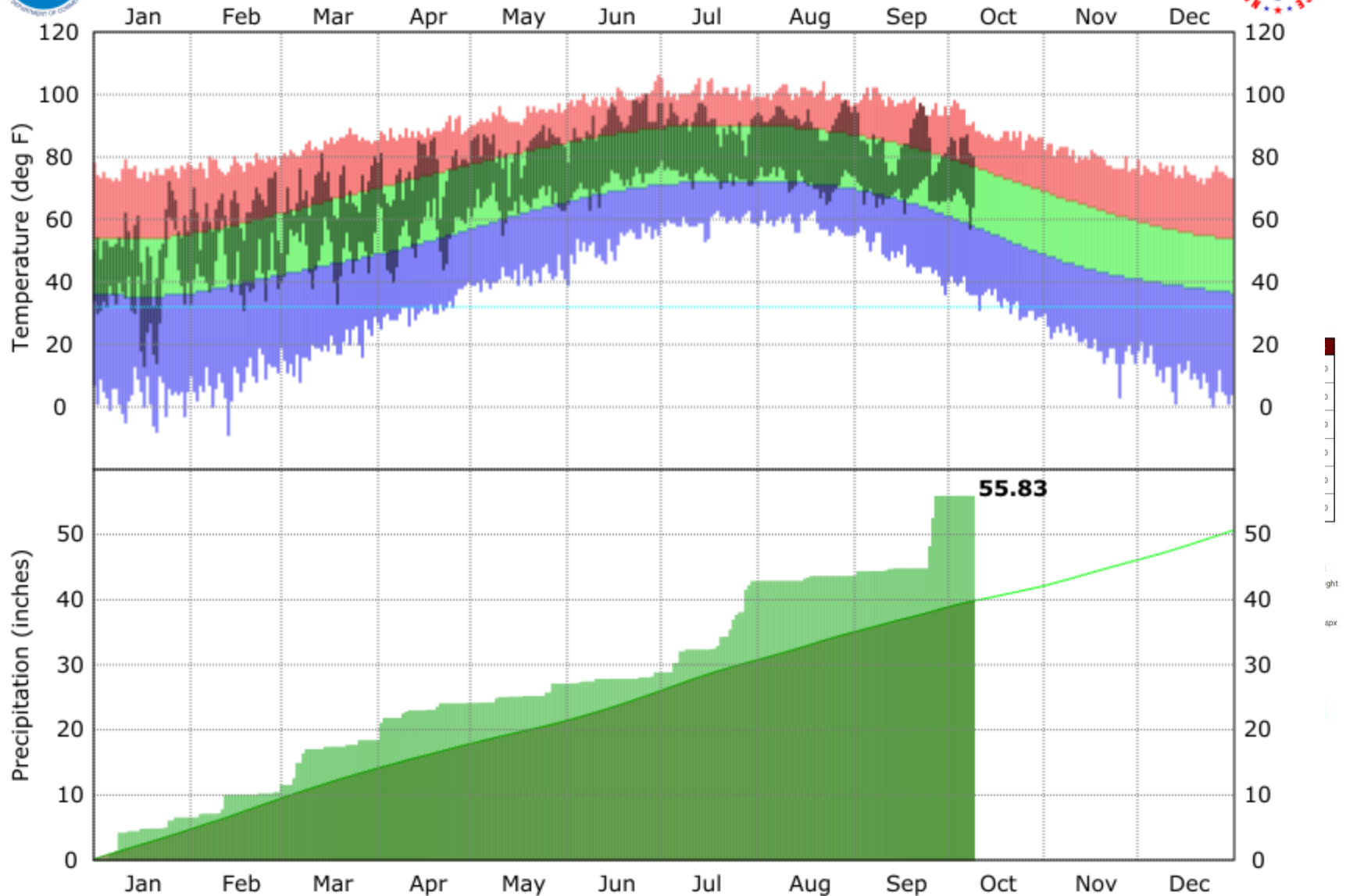


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Speaking of Hurricanes

I did some surveillance in Laurens County (Dublin) after Helene. They had some flooding and some trees down, but nowhere near the damage the southern and coastal counties saw. This is what I got in my traps...



Mosquito Species, 2024

Species	Count	Species	Count
<i>Ae. albopictus</i>	2112	<i>Oc. fulvus pallens</i>	1
<i>Ae. cinereus</i>	7	<i>Oc. infirmatus</i>	44
<i>Ae. vexans</i>	1274	<i>Oc. japonicus</i>	204
<i>An. crucians</i>	1273	<i>Oc. mitchellae</i>	1
<i>An. punctipennis</i>	89	<i>Oc. sollicitans</i>	46
<i>An. quadrimaculatus</i>	110	<i>Oc. sticticus</i>	15
<i>Cq. perturbans</i>	1861	<i>Oc. taeniorhynchus</i>	543
<i>Cs. inornata</i>	2	<i>Oc. thibaulti</i>	1
<i>Cs. melanura</i>	855	<i>Oc. triseriatus</i>	107
<i>Cx. coronator</i>	641	<i>Oc. trivittatus</i>	12
<i>Cx. erraticus</i>	3274	<i>Oc. tormentor</i>	2
<i>Cx. nigripalpus</i>	5001	<i>Or. signifera</i>	9
<i>Cx. quinquefasciatus</i>	107088	<i>Ps. ciliata</i>	45
<i>Cx. restuans</i>	2369	<i>Ps. columbiae</i>	800
<i>Cx. salinarius</i>	2138	<i>Ps. cyanescens</i>	50
<i>Cx. territans</i>	14	<i>Ps. ferox</i>	130
<i>Ma. titillans</i>	9	<i>Ps. horrida</i>	2
<i>Oc. atlanticus</i>	2130	<i>Ps. howardii</i>	7
<i>Oc. canadensis</i>	104	<i>Ur. sapphirina</i>	19



A total of 38 species from 9 genera have been collected to date.

Mosquitoes – Tested (to date)

- We continue to work with limited funding.
- Mosquitoes have been tested from 16 counties; 3 counties have reported WNV+ mosquitoes.

County	vector species	# WNV+ pools
Chatham	<i>Culex spp.</i>	14
	<i>Cx. nigripalpus</i>	2
	<i>Cx. quinquefasciatus</i>	197
DeKalb	<i>Cx. quinquefasciatus</i>	30
	<i>Cx. restuans</i>	1
Glynn	<i>Cx. quinquefasciatus</i>	3

Minimum Infection Rates

County	# mosquitoes submitted	# pools tested	# WNV+ pools	WNV MIR	# EEE+ pools	EEE MIR
Ben Hill	31	1				
Berrien	23	2				
Brooks	64	2				
Bryan	15	2				
Camden	7817	1026				
Chatham	79039	2518	213	3.21		
Cook	15	2				
DeKalb	11225	571	31	3.13		
Echols	100	2				
Fulton	2232	82				
Glynn	13682	1229	3	0.26		
Irwin	50	1			1	20.00
Lanier	100	2				
Lowndes	9029	516			2	0.34
Tift	97	2				
Turner	6	1				

The Minimum Infection Rate or MIR = (# WNV+ Pools/Total # Mosquitoes Tested) X 1000.

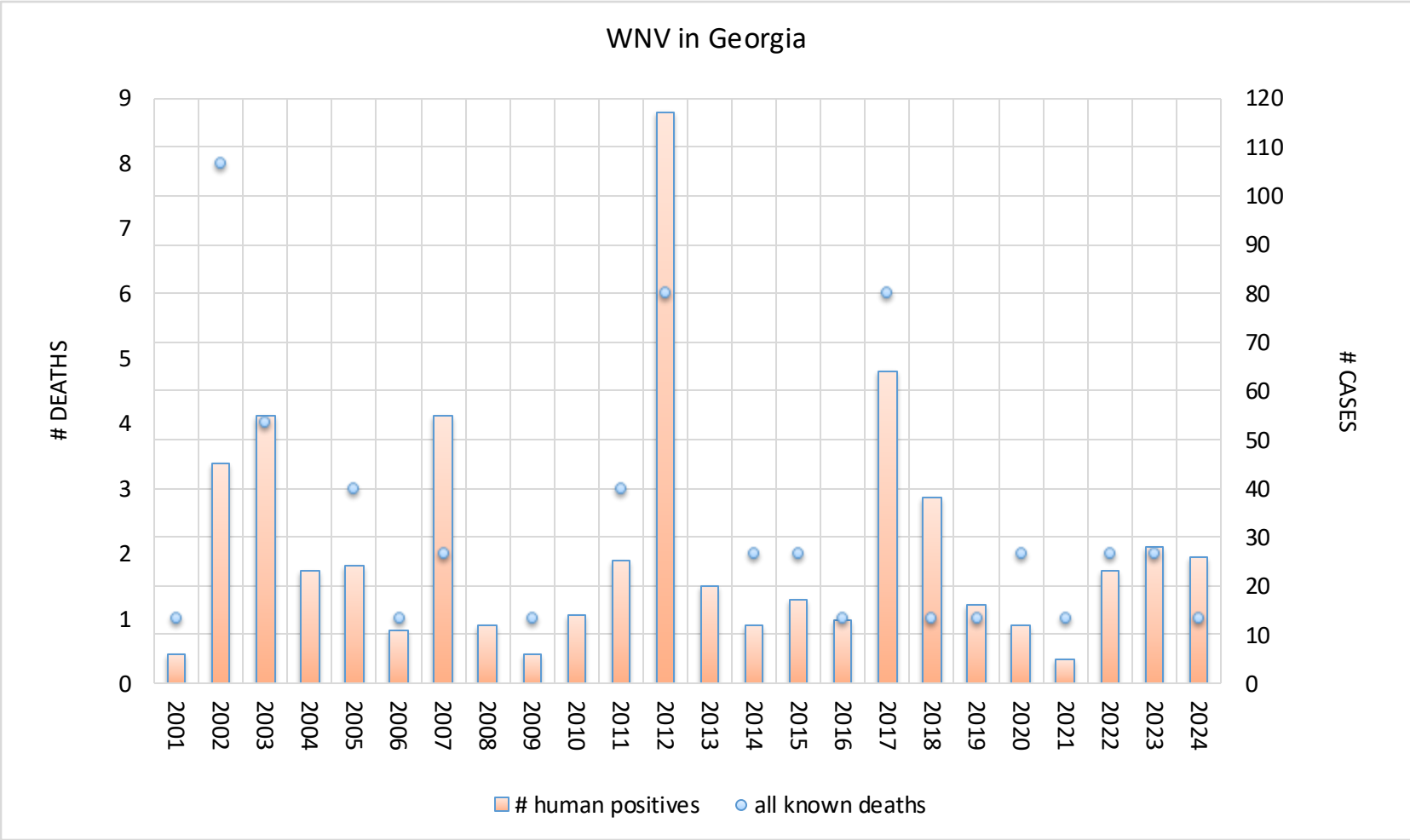
- MIR of 0 - no viral activity detected in the area
- MIR of 0.1 to 3.9 - some viral activity is present, increased vigilance and testing are needed
- MIR of 4.0 or above - high level of viral activity is present, human infections are imminent (if not already present), and prompt action is required

Arboviral Surveillance 2001-2024

year	WNV+ pools	EEE+ pools	counties doing surveillance	# counties testing	# WNV+ counties	total mosquito pools tested	% WNV+	Human WNV+
2001	30		2	2	1	597	5.0%	6
2002	91		11	11	6	4032	2.3%	36
2003	106	1	26	26	6	6177	1.7%	55
2004	126	2	56	56	7	10161	1.2%	23
2005	67	8	55	55	5	15248	0.4%	24
2006	81		28	28	5	4785	1.7%	11
2007	75		28	28	7	6513	1.2%	55
2008	51	1	28	28	4	6383	0.8%	12
2009	24		26	26	4	4446	0.5%	6
2010	99	3	22	22	5	5990	1.7%	14
2011	438		19	19	8	7622	5.7%	25
2012	125	3	12	6	5	6042	2.1%	117
2013	166	1	13	6	6	7453	2.2%	20
2014	56	2	15	6	4	5038	1.1%	13
2015	40		13	6	3	3366	1.2%	15
2016	36		60	6	2	5620	0.6%	13
2017	276	2	159	5	4	6419	4.3%	63
2018	310	3	159	6	5	6598	4.7%	38
2019	243		159	12	5	5532	4.4%	16
2020	59		142	9	4	6025	1.0%	12
2021	31	1	103	16	5	7357	0.4%	5
2022	100	2	79	14	5	3611	2.8%	23
2023	118	1	101	7	4	7110	1.7%	28
2024*	247	3	64	16	3	6013	4.1%	25

* to date

WNV+ Humans 2001-2024



mean #positives = 28

mean #deaths = 2

Arboviral Surveillance – Human Positives, 2024

# cases (including asymptomatic), 2024				
District	CS (LAC)	EEE	WNV	TOTAL
1-1				0
1-2			1	1
2-0			2	2
3-(1,2,3,4,5)			13	13
4-0			2	2
5-1				0
5-2				0
6-0			1	1
7-0				0
8-1				0
8-2				0
9-1			3	3
9-2			3	3
10-0				0
TOTAL	0	0	25	25

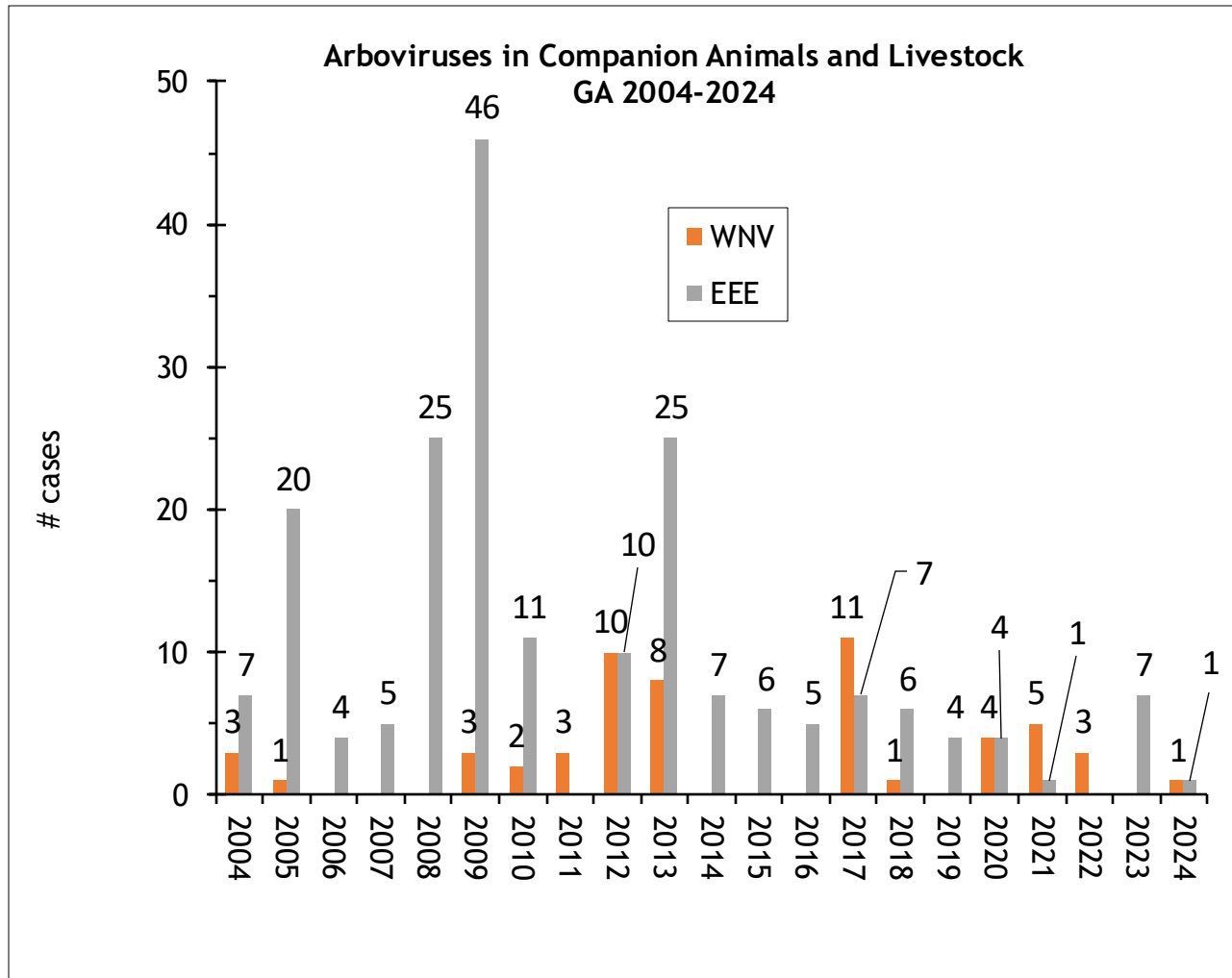
clinical	# cases	%
asymptomatic	8	32%
encephalitis/meningitis	4	16%
other neuroinvasive	8	32%
febrile illness	5	20%
unknown		0%
WNV		
Gender	# cases	%
male	16	64%
female	9	36%
unknown		0%

There have been no positive birds reported in 2024.
There have been no sentinel chicken reported in 2024.

Clinical Syndromes, 2024

Virus	Month	Clinical Syndrome	County of Origin	Fatality	# cases
West Nile	July	Asymptomatic			2
		Meningitis			3
		Other Neuroinvasive Presentation			1
		Guillain-Barre Syndrome			1
	August	Acute Flaccid Paralysis			2
		Asymptomatic			6
		Febrile illness			1
		Febrile illness			2
		Febrile illness			2
		Other Neuroinvasive Presentation			3
		Other Neuroinvasive Presentation		Yes	1
Encephalitis - Including Meningoencephalitis			1		

Veterinary Arboviral Positives, 2024



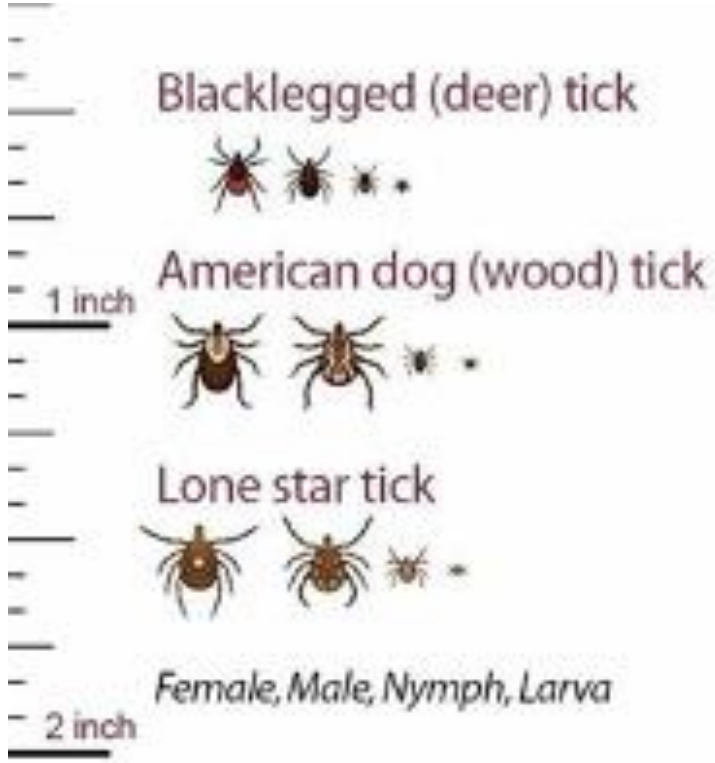
year	WNV	EEE
2001	64	
2002	175	1
2003	60	80
2004	3	7
2005	1	20
2006		4
2007		5
2008		25
2009	3	46
2010	2	11
2011	3	
2012	10	10
2013	8	25
2014		7
2015		6
2016		5
2017	11	7
2018	1	6
2019		4
2020	4	4
2021	5	1
2022	3	
2023		7
2024	1	1

Pesticide Resistance Testing

Pesticide resistance has been found to be a component of ineffective mosquito control.

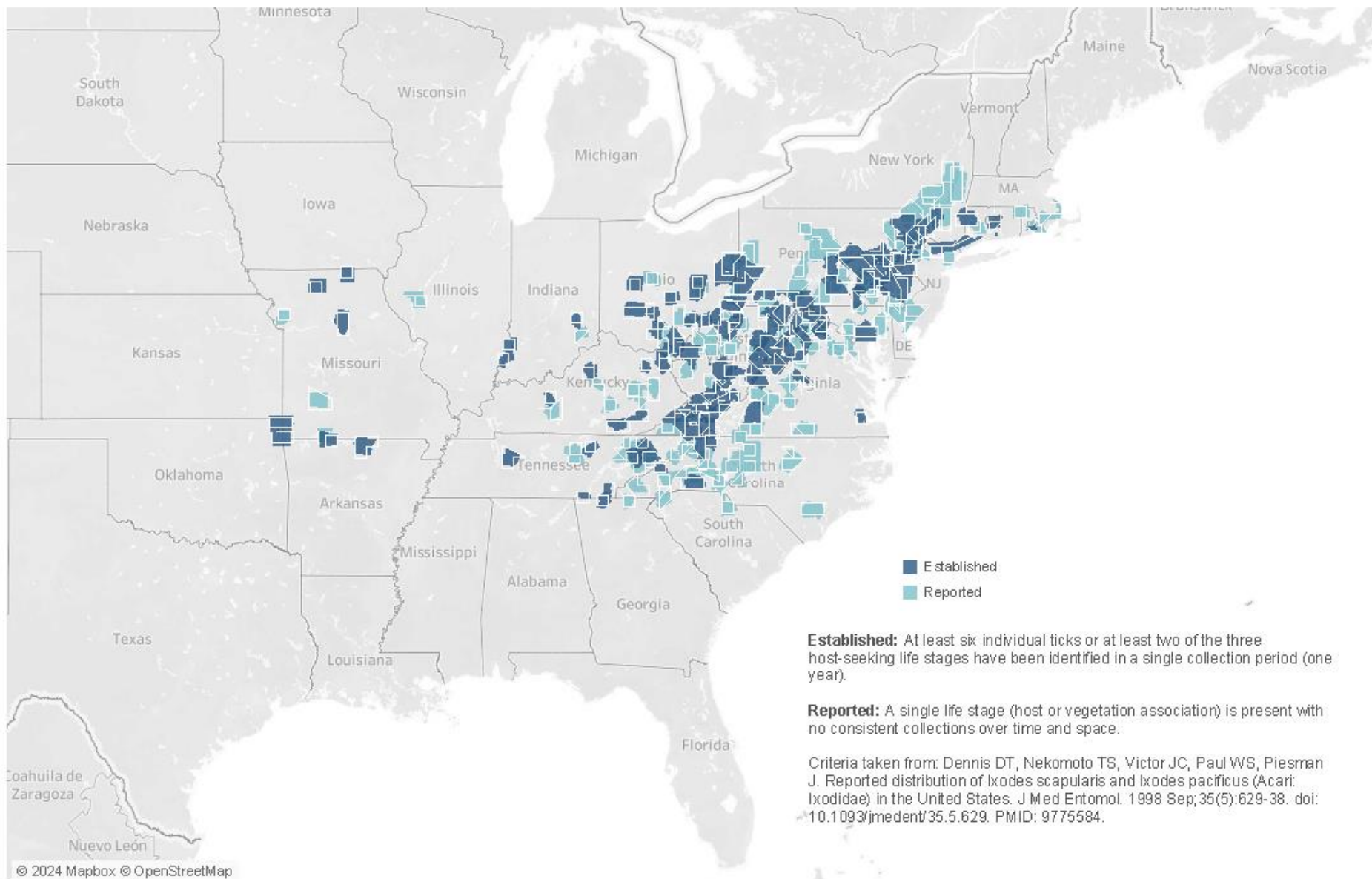
- The state entomologists were tasked by the CDC, through the Hurricane Crisis CoAG grant, to conduct pesticide resistance testing in all high-risk urban regions of Georgia for the period of the grant.
 - Collaborators include:
 - Environmental Health Specialists around the state who conduct mosquito egg collections.
 - Mosquito control technicians from Chatham and Glynn counties who conduct their own resistance testing.
- The statewide pesticide resistance testing program is a major component in reducing the exposure of mosquito-borne disease risk to the public.
- Even though the funding period has ended, DPH continues to do pesticide resistance testing, although at a more restricted level.

Common Ticks Found in Georgia



A. Lone star tick, female
B. American Dog tick, female
C. Blacklegged tick, female
D. Blacklegged tick, nymph

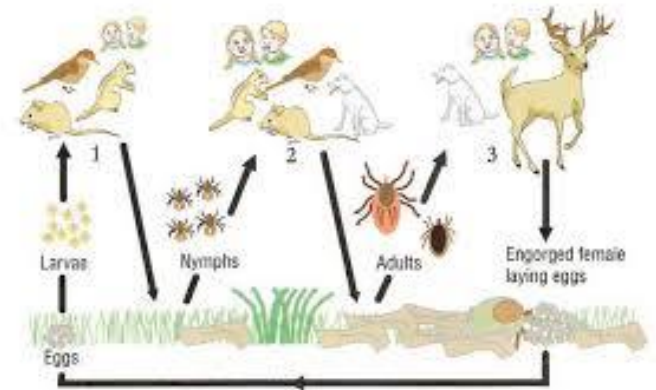
Counties with established Asian longhorned tick populations



Tick Surveillance at Wildlife Management Areas

We also have a collaborative effort with the Georgia Department of Natural Resources (GA DNR) to collect ticks during quota hunts at the Wildlife Management Areas (WMAs).

- In 2020, we attended 9 quota hunts at 2 different WMAs to check deer brought in for tagging for ticks.
- In 2021, we attended 11 quota hunts at 5 different WMAs to check deer and bear brought in for tagging for ticks.
- In 2022 & 2023, we attended 22 quota hunts at 15 different WMAs to check deer and bear brought in for tagging for ticks.
- We expect to collect ticks at ~18 WMA in 2024, with the help of our interns.



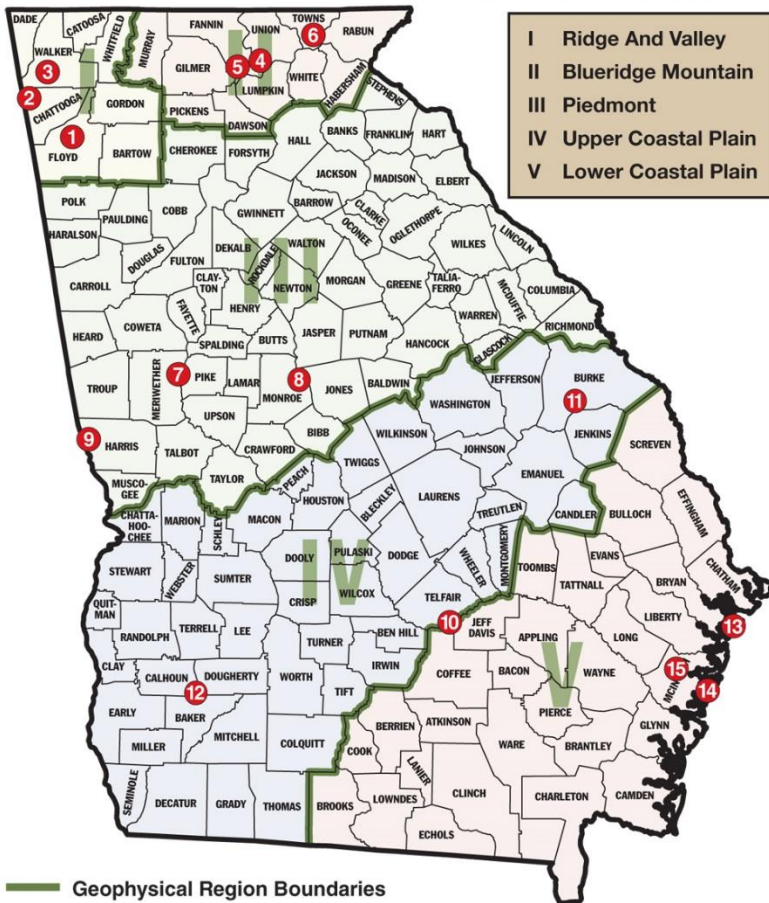
Tick Collections at WMA quota hunts

- 2020 - Cedar Creek and Clybel
- 2021 - BF Grant, Rum Creek, Oaky Woods, Clybel and Cedar Creek
- 2022 & 2023 - Chattahoochee/Chestatee, Dawson Forest, Cooper's Creek, Blue Ridge, Lake Russell, Fort Yargo, Tugaloo State Park (SP), War Woman, Richard B Russell SP, Swallow Creek, BF Grant, Rum Creek, Oaky Woods, Clybel, and Cedar Creek
- 2024 - Chattahoochee/Chestatee, Lake Russell, Dawson Forest, Cooper's Creek, Blue Ridge, Fort Yargo, Tugaloo State Park (SP), War Woman, Richard B Russell SP, Swallow Creek, BF Grant, Rum Creek, Oaky Woods, Clybel, Cedar Creek, Ohoopee Dunes North, Hard Labor, Chattahoochee Fall Line-Hillard Tract

Wildlife Management Areas (WMAs)

GEORGIA'S TOP WMAs

1 Best Bet WMAs For Whitetails*



*WMAs keyed to chart on opposite page

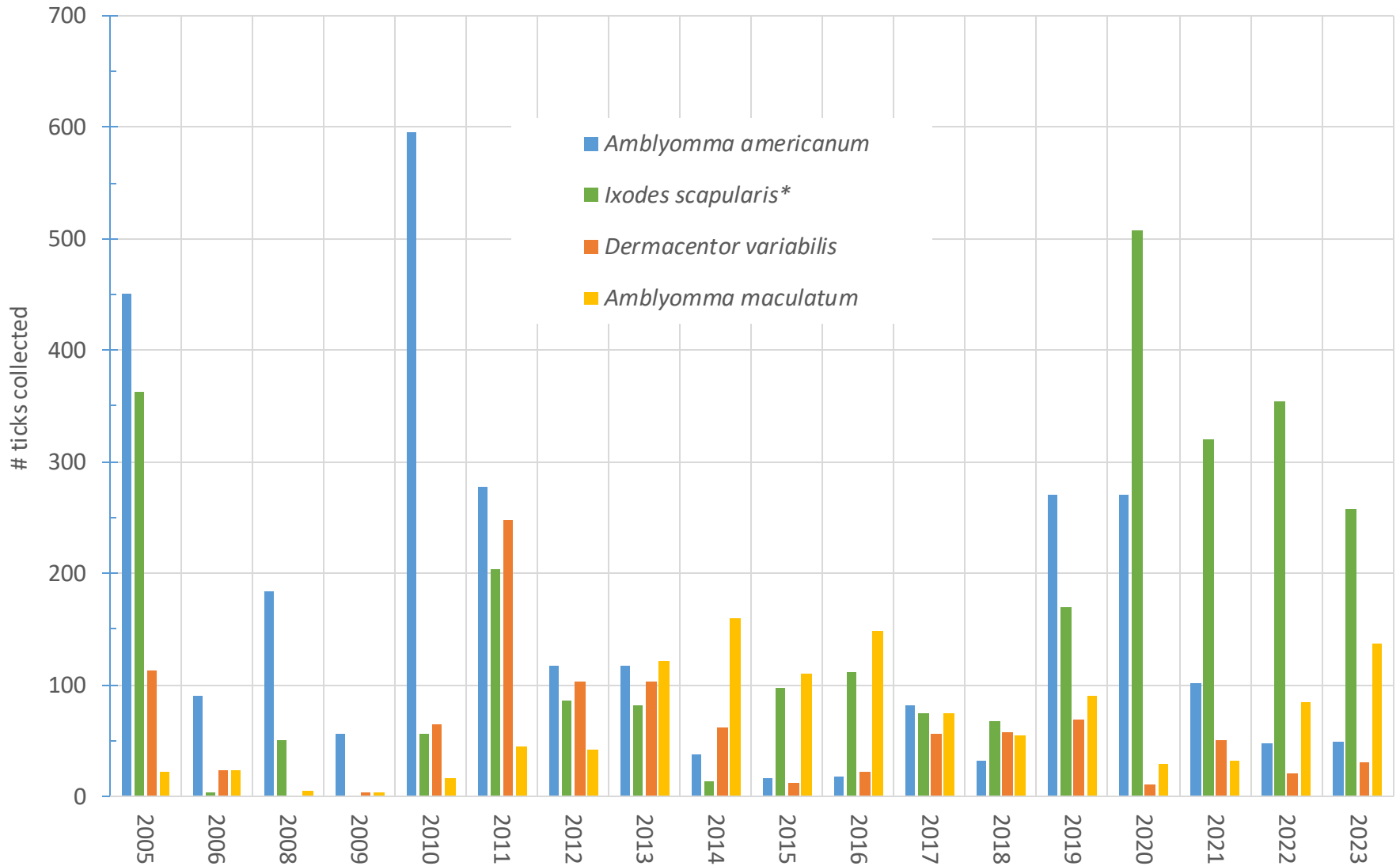
WMAs are special places, acquired and managed to: provide quality wildlife habitat; foster wildlife reproduction and survival; promote wildlife-dependent recreation and enjoyment-including hunting, trapping, wildlife observation and photography; and protect soil and water quality. Wildlife Management Areas provide and protect natural habitats that are particularly significant in their capacity to host unusual concentrations of one or more wildlife species; provide important resting and feeding areas for migratory birds or other wildlife; harbor rare, threatened, or endangered species; or provide significant value for wildlife or human enjoyment of wildlife.

<https://georgiawildlife.com/allwmas>

New Tick Projects

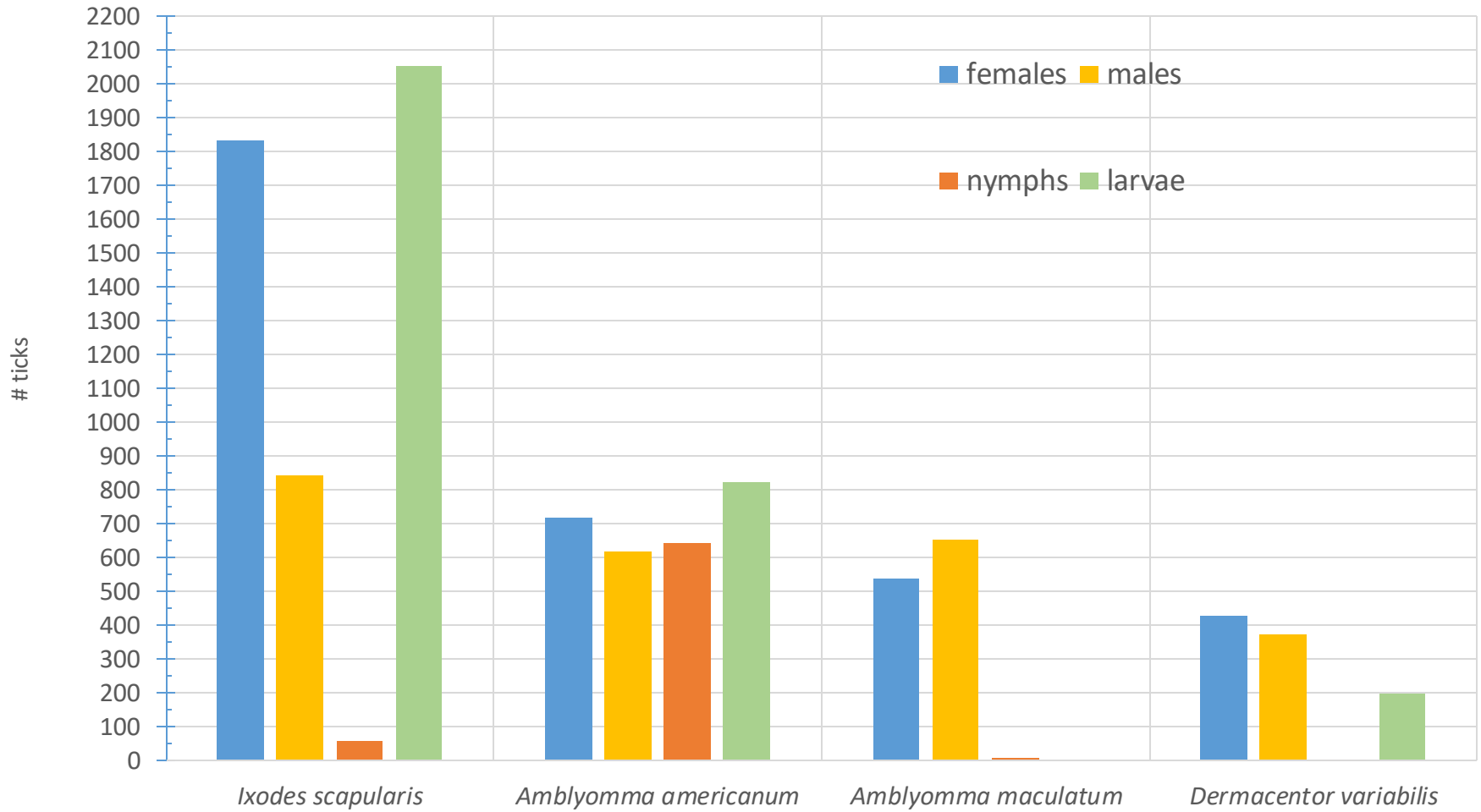
- Practicum student will be looking at what hunters know about ticks to determine what education is needed to protect hunters from TBDs.
- Tiffany will be working with the USDA rabies vaccine drop to collect ticks off raccoons.
- We will be collaborating with an OSU researcher who is evaluating the population genetics of the Gulf Coast tick across its range.
- We will be collaborating with the SECVBD on a tick odor attractant study.

Commonly Found Ticks by Species and Year - Georgia

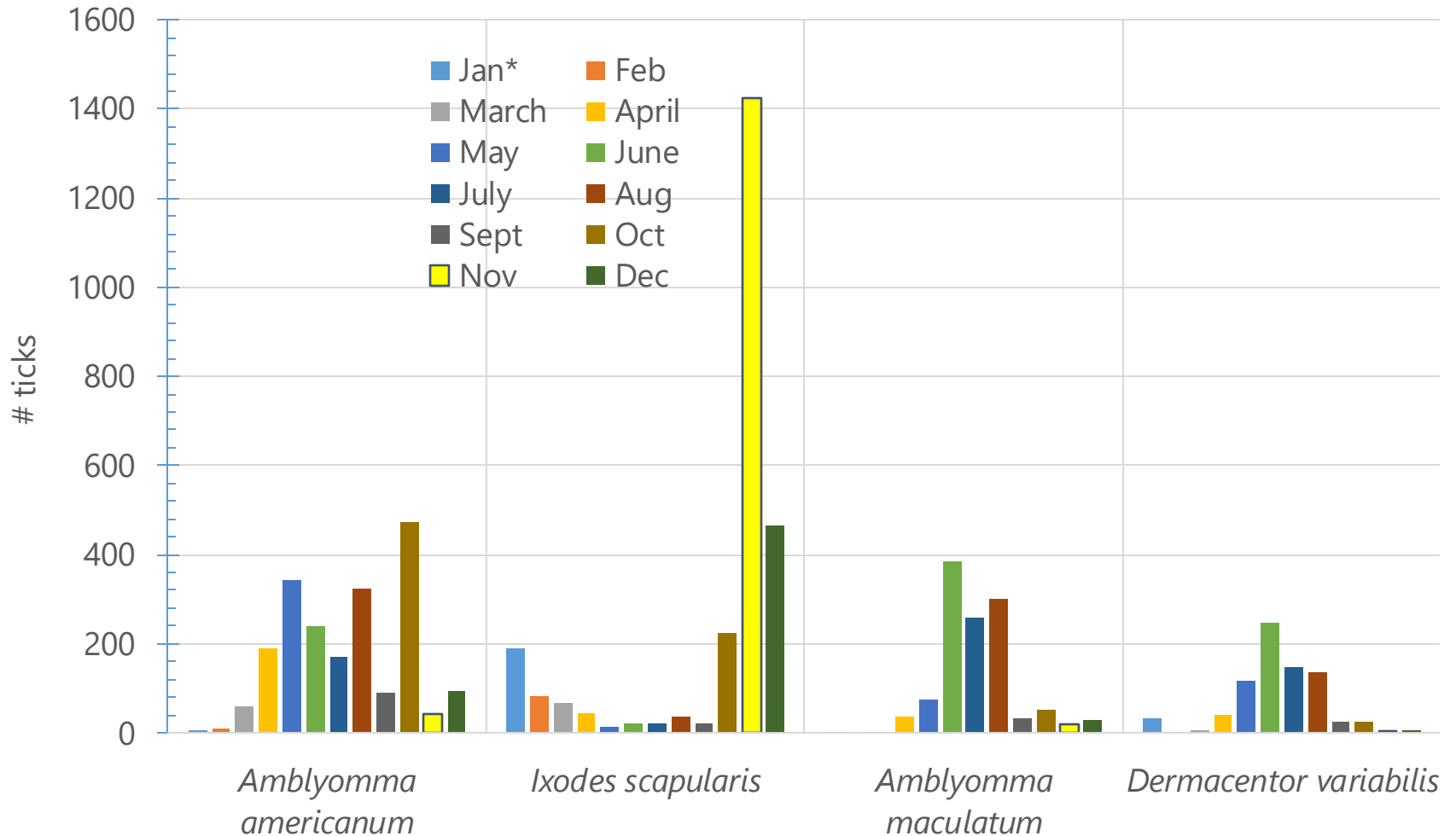


Does not include 2000 larval *Ixodes scapularis* found on one animal in 2012

Ticks by Life Stage, 2005-2023

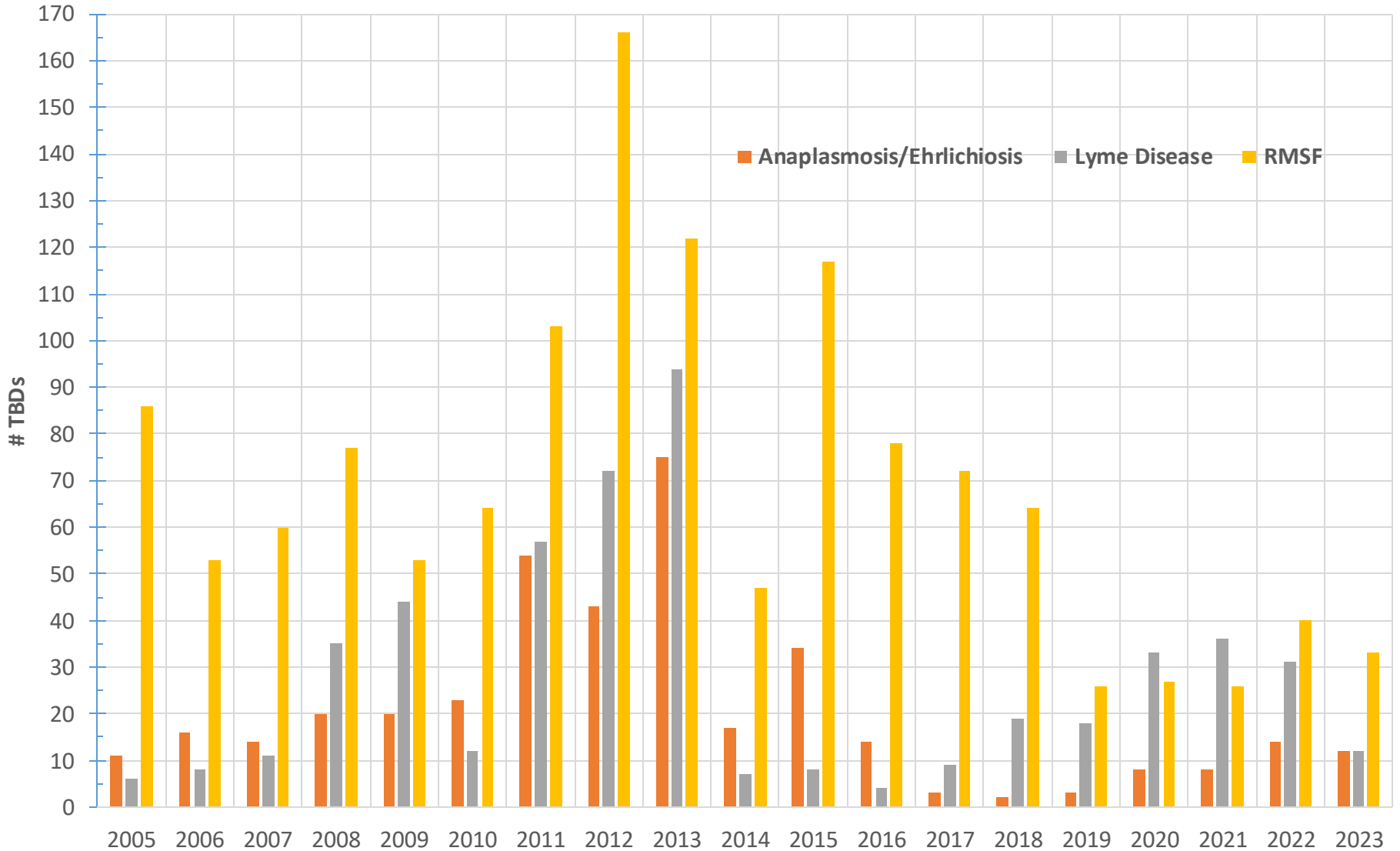


Ticks by Month, 2005-2023*



Does not include 2000 larval Ixodes scapularis found on one animal in Jan 2012

Tick-Borne Diseases



RMSF – Spotted Fever Rickettsiosis

Some of Our Other Duties

Education/Outreach/Inservice Training

- bed bug education
- lice education
- scabies education
- education on any other arthropod (and other things) the public deems a pest

Web Sites

- Insects and Diseases: <https://dph.georgia.gov/environmental-health/insects-and-diseases>
- Georgia Mosquito Control Association: <http://www.gamosquito.org>

Upload data to the CDC ArboNET database

Mosquito and Tick ID training – discontinued due to funding loss

Board members for the GMCA and MAMCA

Resources

Arbovirus summaries are available monthly during mosquito season – if you want a copy sent to you, please send me an email at Rosmarie.Kelly@dph.ga.gov

A final arboviral summary has been put together for every year since 2002 and are available upon request

A mosquito surveillance summary has been put together every year since 2017; they are available at <http://www.gamosquito.org/mosquito.htm> or upon request

Tick surveillance summaries are put together every year and are available upon request

- There are 5 tick surveillance summaries currently available:
 - 2005-2019
 - 2020
 - 2021
 - 2022
 - 2023



ANY QUESTIONS???

<http://health.state.ga.us/epi/vbd/mosquito.asp>

<http://www.GAmosquito.org>