

DIDEEBYCHA

GMCA Newsletter

Volume 12, Issue 1

April 29, 2021

The Importance of Logos

...and the winners are...



Annual Meeting Update

Athens, GA; 2021

We are planning to have our 2021 meeting in October in Athens, GA, and we will need speakers. We need speakers who are willing to talk about mosquitoes, mosquito research, mosquito control, or just about any topic related to mosquitoes. We also usually have one or two non-mosquito talks. Our shortest talks are ~15 minutes, but we are happy to listen to you for an hour if you have something interesting to say. We especially like to have a good mix of operational vs research talks and talks from commercial vs municipal applicators, so please consider coming to give a talk if you are an applicator or a student doing research. We are an easy group to talk to, so no worries.

We do have some limited funding to help speakers with hotel and registration costs, and to pay for one person to attend the meeting who couldn't otherwise. Given all that, please consider giving a talk at the GMCA meeting in 2021. We all love to hear new stories from the lab and field.

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We are always looking for contributors to the GMCA Newsletter, so if you have an interesting story to tell about mosquitoes or mosquito control, please send it to rosmarie.kelly@dph.ga.gov.

Culex Capers

By Kristin Reichardt
Vector Surveillance Coordinator
Richmond County Mosquito Control

Richmond County Mosquito Control (RCMC) conducts routine adult mosquito surveillance using light and gravid mosquito traps. One of our light traps has consistently trapped more mosquitoes than the others in recent weeks. Concerningly, most of these mosquitoes at this site have been *Culex salinarius*, which vectors West Nile virus and Eastern Equine Encephalitis virus. So, in response to these trapping results, I visited the site on February 4, 2021, to see if I could pinpoint where these *Cx. salinarius* might be coming from.

The trapping site is in a large neighborhood in the southern part of Augusta, Georgia, where the county begins to transition from a commercial and urban/suburban landscape to more industrial and rural. There is a large stormwater ditch that runs through the neighborhood. Upon inspection, the water in the ditch was flowing, as we have had a wet winter/early spring, and I found no mosquito breeding. The day I inspected was cold, overcast, windy, and a little drizzly, so I decided to look for an area where adult mosquitoes might be sheltering. The two most plausible areas were the stormwater structures feeding water into and out of the ditch. I got my flashlight and made my way into one of the structures, and jackpot! Hundreds if not thousands of adult female mosquitoes were sheltering inside.

Given these findings, we decided to start setting a supplemental light and gravid trap closer to the structure (at the red star) to compare to our routine site (at the yellow star). I also returned to the structure on February 17, this time equipped with a partner, an aspirator, and plenty of collection vials. We collected hundreds of mosquitoes and brought them back to our office. After an unfortunately failed attempt to keep them alive and test them for insecticide resistance, I identified 200 individuals; 100% *Culex erraticus*! This species, like *Cx. salinarius*, is implicated in Eastern Equine Encephalitis virus transmission (For context, Richmond County had zero EEEV+ mosquito pools, equines, or humans reported in 2020, but neighboring Aiken County in South Carolina had at least 1 EEEV+ equine reported.)

Interestingly, even though so many adult *Cx. erraticus* were in the structure, we trapped no *Cx. erraticus* in any trap throughout our county from 11/17/2020 to 02/02/2021. The results from the supplemental traps we've set have

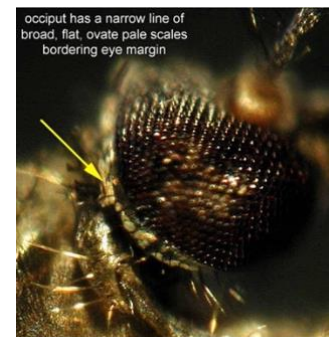
been unexpected, too. For the first week of supplemental trapping, counts closer to the structure were indeed higher, but because of *Cx. salinarius*, not *Cx. erraticus* (see bar chart).

These findings from my *Culex* capers raise some interesting questions. How do the behavioral diapause patterns of *Cx. erraticus* differ from other *Culex* species (e.g., *Cx. salinarius*), especially in Georgia where winters are mild, with several days conducive to adult mosquito activity? In other words, why did we see *Cx. salinarius* in our host-seeking light traps when there was such a large density of *Culex erraticus* so close by? How do these two species, *Cx. erraticus* and *Cx. salinarius*, contribute to EEEV maintenance in Georgia early in the year? Are there any inter-species interactions at play? Which adult mosquito control measures could be employed to kill the mosquitoes in this unique environment where pollution of the stormwater is a concern? And where was the larval habitat that produced these mosquitoes?

For now, RCMC will continue to monitor this site for larval and adult mosquitoes in the hopes of better understanding the seasonal patterns of these two species. For more information about our surveillance efforts or to contribute any feedback or theories about these intriguing results, please feel free to email the RCMC Vector Surveillance Coordinator Kristin Reichardt at Kristin.Reichardt@dph.ga.gov.



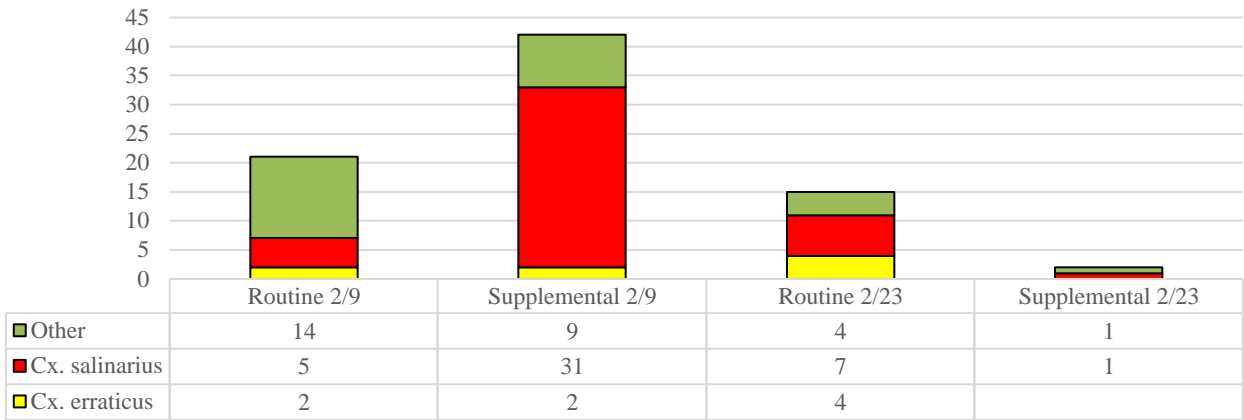
Cx salinarius



Cx erraticus

(continued on page 3)

Female Mosquitoes/Trap Night (gravid + light)



Top Left: The section of the creek leading up to the stormwater structure.

Bottom Left: The stormwater structure where I found *Culex erraticus*.

Right: An aerial GIS photo of the neighborhood. The stormwater ditch is highlighted in orange. The yellow star is our routine trapping site. The red star is the new supplemental site.

Georgia Surveillance Results, GPDH 2020

Even with a pandemic and the loss of funding that reduced our surveillance team at the State down to 2 from a total of 7, we managed to collect mosquito data from 142 of Georgia’s 159 counties. We also had mosquitoes from 9 counties tested for arboviral diseases. Of course, we couldn’t have done it with help of local and District environmental health and a number of mosquito control programs. Thanks to all who contributed.

Human arboviral cases were down in 2020, likely in part due to the understandable focus on Covid-19.

year	WNV Index	WNV+ Pools	human cases
2001	146.3	31	6
2002	106.6	57	37
2003	50.7	105	60
2004	40.7	126	24
2005	17.7	67	24
2006	31.5	81	10
2007	29.9	75	60
2008	25.3	50	12
2009	13.7	24	6
2010	47.7	99	14
2011	179.6	397	26
2012	64.3	125	117
2013	72.0	150	20
2014	43.6	56	13
2015	37.00	40	17
2016	22.80	36	13
2017	148.00	276	64
2018	202.30	310	38
2019	113.40	243	16
2020	24.60	59	12

We also managed a bit of tick surveillance in collaboration with the Georgia Department of Agriculture and the Georgia Department of Natural Resources. In October and November, we collected ticks of deer at 4 quota hunts at 2 different Wildlife Management Areas. We hope

to continue and expand our tick work in 2021, as well as continuing mosquito surveillance. If you are interested in the annual mosquito summaries, they are posted at <http://www.gamosquito.org/mosquito.htm>. I can send you tick and arboviral summaries if you are interested. Just send me an email at Rosmarie.Kelly@dph.ga.gov.

Cedar Creek WMA

Species	females	larvae	males	nymphs	Grand Total
Amblyomma americanum					
10/15/20		200	2	23	225
10/16/20	3			3	6
11/12/20				1	1
11/13/20	1	1	2	1	5
Amblyomma maculatum					
11/13/20	1		2		3
Ixodes scapularis					
10/16/20	10		4		14
11/12/20	112		69		181
11/13/20	49		34		83
Grand Total	176	201	113	28	518

Clybel WMA

Species	females	males	nymphs	Grand Total
Amblyomma americanum				
11/5/20		1		1
11/6/20	1	1	2	4
Ixodes scapularis				
11/5/20	41	36		77
11/6/20	24	17		41
11/19/20	3	3		6
11/20/20	3	1		4
Grand Total	72	59	2	133

The Georgia Mosquito Control Association



GMCA
c/o Kristin Reichardt
Richmond County Public Health
Richmond County Mosquito Control
1916 North Leg Rd
Augusta, GA 30909

www.GAmosquito.org