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GMCA Newsletter

Volume 9, Issue 1

April 30, 2018

Washington Day, 2018

May 15

The 20th Annual AMCA Washington Conference will take place May 14-16, 2018 at The Hilton Alexandria Old Town in Washington, DC. AMCA members will meet to discuss issues that can only be resolved at the Federal level. The Washington Conference is geared towards those US AMCA members concerned with the impacts of the decisions the federal government makes that have an effect on mosquito control and public health pesticides.

There are 3 position papers this year:

-  [NPDES Permits](#)
-  [Endangered Species Act Reform](#)
-  [Federal Funding](#)

There are 4 bills associated with these position papers:

- [The SMASH Act \(H.R. 1310\)](#) and [The SMASH Act \(S.849\)](#)

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Annual Meeting

Athens, GA; Oct 17-19

The GMCA Board of Directors is currently working on the agenda for the annual meeting, being held on the UGA Campus at the Continuing Education Building on Oct 17-19.



So far, we have a great line-up of speakers, with topics ranging from the applied to the theoretical. However, there is still space on the agenda, so if you like to talk (even if you don't, we are a nice group and won't bite) and have something to say about mosquito control, we would love to have you come be a speaker.

President: Joey Bland

VP: Steve Pavlovich

Directors

1-year: Allen Hillman

2-year: Laura Peaty

3-year: Tiffany Nguyen

Sustaining: Zane McCallister

ST: Karen Farris

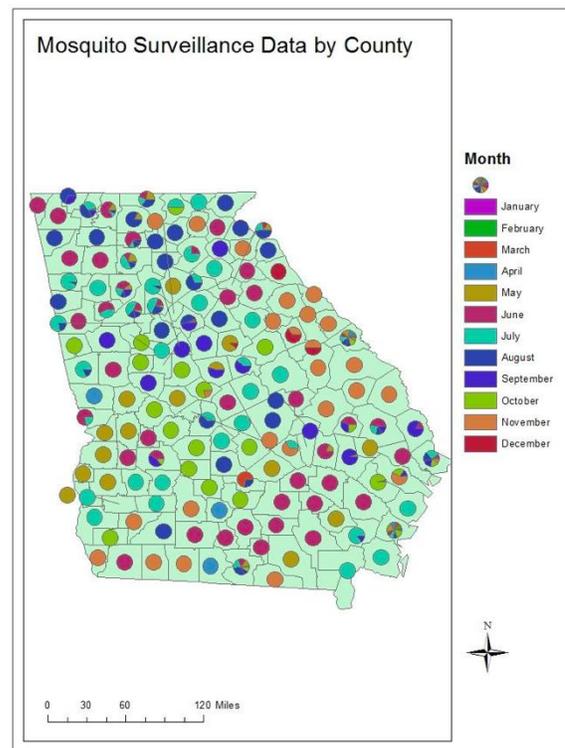
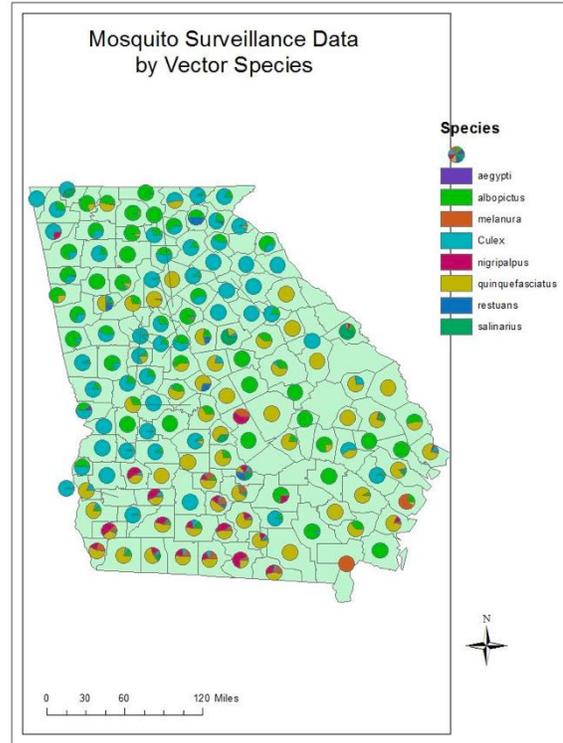
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Mosquito Surveillance in Georgia, 2017

Limited mosquito surveillance programs are operated in only a few Georgia counties. Some counties conduct mosquito control activities without appropriate mosquito surveillance. Data obtained from mosquito surveillance activities are important to guide vector control operations by identifying vector species, providing an estimate of vector species abundance, and by indicating geographic areas where humans and animals are at greatest risk of exposure to WNV or other arboviruses.

The primary purpose of mosquito surveillance is to determine the species composition, abundance, and spatial distribution within the geographic area of interest through collection of eggs, larvae, and adult mosquitoes. Surveillance is valuable for determining changes in the geographic distribution and abundance of mosquito species, evaluating control efforts by comparing pre-surveillance and post-surveillance data, obtaining relative measurements of the vector populations over time, accumulating a historical database, and facilitating appropriate and timely decisions regarding interventions.

The likely consequence to Georgia of a continued lack of good vector surveillance and control programs is that we would not know which mosquitoes (thus which diseases) were present in specific areas of the state. We would be unable to provide accurate information regarding risk of disease; we would not know which new arboviruses were being introduced to Georgia and which were being competently vectored. We would be unable to detect arboviral pathogens early, before they infect humans. Georgia would experience cases of arboviral disease that could have been prevented, and, because some of these pathogens are singularly lethal, Georgia would experience unnecessary morbidity and mortality.



These maps were created in December 2017. They depict the month(s) in which surveillance was done in each county and the presence or absence of the important vector species *Aedes aegypti*, *Ae albopictus*, *Culiseta melanura*, *Culex* spp, *Cx nigripalpus*, *Cx quinquefasciatus*, *Cx restuans*, and *Cx salinarius*. This level of surveillance was only possible through the combined effort of State, District, and County Environmental Health, as well as assistance from several other agencies.

Our goals for 2017 were:

- Do some level of mosquito surveillance in every county in Georgia
- Provide mosquito surveillance equipment and train interested people in every Health District to do mosquito surveillance, ID, and control
 - With the support of Medical and EH Directors
 - With the understanding that other tasks take precedence
- Be better prepared for the next mosquito-borne virus to come along
- Have the equipment and training available to support local outreach for mosquito complaints

I believe we have accomplished these goals, with the help and support of a great many people.

See <http://www.gamosquito.org/resources/MSR.pdf> for additional information on the 2017 mosquito surveillance season.

https://www.cdc.gov/mmwr/volumes/67/wr/mm6717e1.htm?s_cid=mm6717e1_w for the CDC's Trends in Reported Vectorborne Disease Cases — United States and Territories, 2004–2016

Is it *Aedes*, or is it *Ochlerotatus*?

Ochlerotatus had been originally established as a genus in 1891. It became an aedine subgenus in the 1930s, but in 2000 John Reinert and his colleagues elevated the subgenus *Ochlerotatus* back to a genus based upon microscopic differences in the male genitalia between it and other subgenera of *Aedes*. However, in 2005 the *Journal of Medical Entomology* and the Entomological Society of America decided to put *Ochlerotatus* back to subgenera level (http://www.entsoc.org/Pubs/Periodicals/JME/mosquito_name_policy). After a contentious worldwide debate regarding the effect the taxonomic changes would have on names established over decades of work in scientific, government and lay communities, many scientists (including those at the CDC) and others affected by the change espoused the continued use of the previously established names. So, for the time being, everything is *Aedes* again.

HOWEVER, since the GDPH mosquito surveillance database was established after *Ochlerotatus* was elevated to genus status, we appreciate you continuing to use *Ochlerotatus* to make data access easier.



Georgia is vulnerable. Mosquito Control, in cooperation with State and local public health agencies, can help address the growing threat by:

- Building and sustaining public health programs.
- Training vector control staff.
- Educating the public about how to prevent bites and control vector-borne disease in their communities.

For more information, see <https://www.cdc.gov/vector>.

- The Reducing Regulatory Burdens Act of 2017 (H.R. 953) (NPDES)
- The Sensible Environmental Protection Act of 2017 (S. 340) (NPDES)
- Agriculture Creates Real Employment (ACRE) Act (S. 2663) (NPDES)

This year there are 2 people, Tiffany Nguyen and Elmer Gray, going to Washington Day to represent the GMCA and mosquito control in Georgia.

Tiffany is the GDPH-EH Assistant Entomologist. This will be her first Washington Day. Elmer is a UGA Extension mosquito and black fly expert working in the UGA College of Agricultural and Environmental Sciences, Department of Entomology. Elmer has been to Washington Day before, and has been setting up the Congressional appointments (brilliantly) for years.

As someone who has been to Washington Day to “lobby” for many years, there are a few words of wisdom to impart:

1. Washington DC is an interesting place.
2. Change is not necessarily a good thing.
3. The memory of politicians is short and fickle.
4. ZIKV scared people but see point #3.
5. Some things never change; DC is still hilly and everywhere you need to be is uphill.



Representatives

Cooperative Extension – Elmer Gray
Public Health – Rosmarie Kelly

Past President – Fred Koehle

Active Membership (\$20) is for any and all persons who are professionally engaged in any branch of mosquito and related pest control work, and persons interested in the cause of mosquito and related pest control who desire affiliation with this association.

Companies that are professionally engaged in any branch of mosquito and related pest control work who desire affiliation with this association shall be eligible for commercial membership. If a pest control company wishes to become a Commercial Member (\$100), the company name will be listed on the Commercial Members page.

Any person or firm interested in the promotion of the purposes of GMCA may become a Sustaining Member (\$400). Sustaining Membership includes one individual membership and one exhibit space for the Annual Meeting.

Please check out our website – www.GAmosquito.org – for additional information.

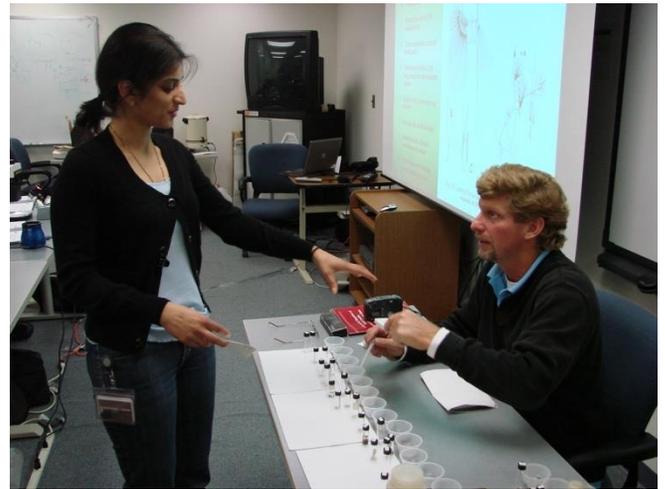
If you have a published paper you would like posted on the GMCA website (<http://www.gamosquito.org/publications.htm>), please send a copy to the webmaster at Webmaster@gamosquito.org.

Mosquito ID Class, 2018

The GPH offered a FREE 2-day adult mosquito ID course in Savannah, GA on April 30-May 1. Along with mosquito identification, information concerning surveillance and control is also discussed in this class, and Georgia-specific information about arbovirus surveillance is presented. These classes are open to Environmental Health Specialists, PCOs, Mosquito Control personnel, and any others with a desire to learn mosquito identification. CEUs for Georgia Pesticide License CAT 31 and 41 are available.

This is the 15th year we have offered this class in Georgia. Some years we have been able to offer both adult and larval ID classes, but, because the class is free, it all depends on funding.

Parker Whitt will be teaching this course again. He received his bachelor's and master's degrees from Appalachian State University and worked for the Forsyth County Health Department after graduating. When a state position came open, he jumped at the chance to learn under Bruce Harrison, who has been studying mosquitoes for about four decades. When his state position was eliminated, Parker joined the NC Dept of Agriculture mattress patrol, dealing with bed bugs and the like. However, he still spends days hiking through the woods, trapping mosquitoes, raking for ticks and catching snakes.





The Georgia Mosquito Control Association

GMCA
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Richmond County Health Department
950 Laney Walker Blvd.
Augusta, GA 30901

www.GAmosquito.org



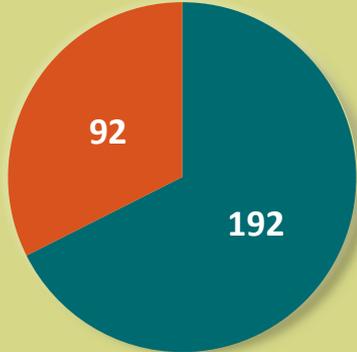


Highlight: 2016

Top mosquito-borne disease:
Zika virus

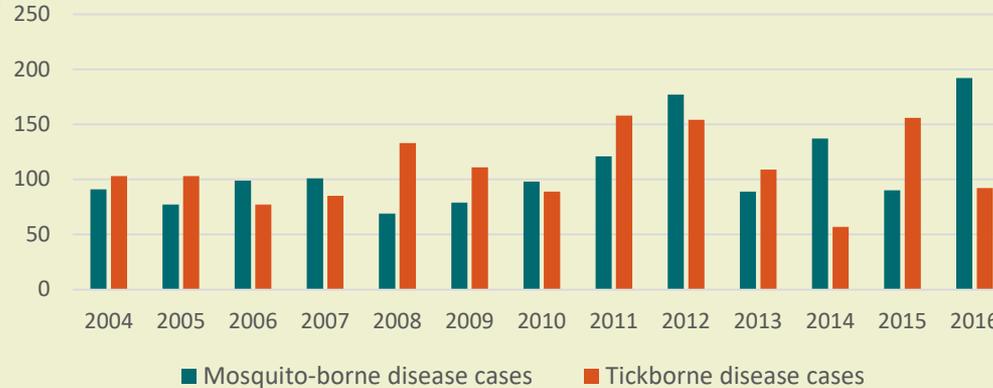
Top tickborne disease:
Spotted fever rickettsiosis

Total vector-borne disease cases



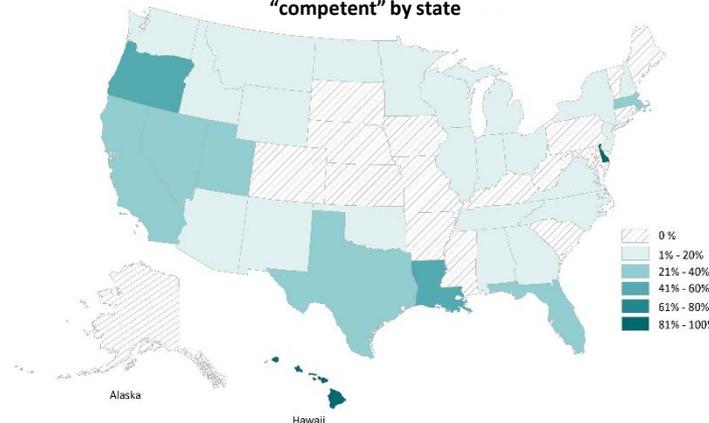
■ Mosquito-borne disease cases
■ Tickborne disease cases

Mosquito-borne and tickborne disease cases, 2004-2016



About the data: Centers for Disease Control and Prevention. National Notifiable Diseases Surveillance System, Annual Tables of Infectious Disease Data. Atlanta, GA. CDC Division of Health Informatics and Surveillance, 2005-2017.

Percentage of vector control programs ranked as “fully capable” or “competent” by state



Georgia is vulnerable. State and local public health agencies can help address the growing threat:

- Build and sustain public health programs.
- Train vector control staff.
- Educate the public about how to prevent bites and control vector-borne disease in their communities.

For more information, see <https://www.cdc.gov/vector>.



U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

National Association of County and City Health Officials. NACCHO Report: Vector Control Assessment in Zika Virus Priority Jurisdictions. 2017 [cited 2018 March 19, 2018]; Available from: <https://www.naccho.org/uploads/downloadable-resources/Mosquito-control-in-the-U.S.-Report.pdf>. (CDC, National Center for Emerging and Zoonotic Infectious Diseases, GRASP)

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Culex nigripalpus in Chatham County, Georgia

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The mosquito, *Culex nigripalpus*, (Figure 1) is a moderate-sized, dark mosquito distributed throughout the southeastern United States (Darsie and Ward, 2005; Burkett-Cadena, 2013). In Georgia, it is found across the Piedmont and Coastal Plain regions of the state. In the Chatham County area it is a commonly caught mosquito, particularly in the more rural and heavily wooded areas (Figure 2).



Figure 1. *Culex nigripalpus* adult.



Figure 2. *Culex nigripalpus* records from Chatham County.

Larvae are often found in flooded woodland pools, ditches, and other wetlands generally void of fish. Adult females may travel 1.5-2.5 miles within a 48 hour span (Dow, 1971; Morris et al., 1991). In Chatham County, this species is collected primarily in CDC light traps, but can also be caught in CDC gravid traps, and occasionally in exit traps set in association with our sentinel chicken program (Figure 3).

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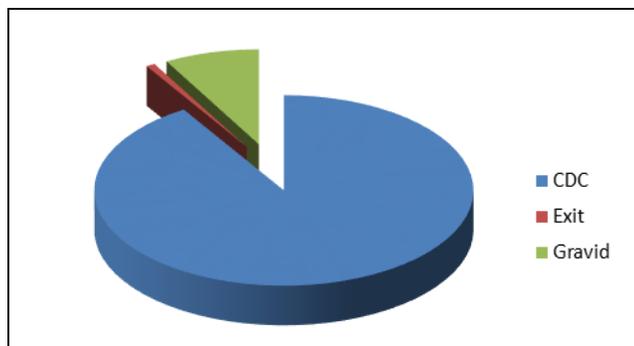


Figure 3. Trap choice by *Culex nigripalpus* in Chatham County, Georgia.

Often specimens found in exit traps are engorged with blood, presumably from feeding on the sentinel chicken, although *Cx. nigripalpus* is known to feed on a wide range of vertebrates, including amphibians, reptiles, birds, and mammals (Edman, 1974). Rodents and dogs were the most common sources of blood meals in specimens from Brazil, where just over 10% of identifiable blood meals were human (Laporta et al., 2008). Of interest from an arbovirus prospective, *Cx. nigripalpus* from central Florida displayed a shift from primarily bird hosts in winter/spring to mammals in summer/fall (Edman and Taylor, 1968).

Cx. nigripalpus is considered one of the principle members of the *Culex* group encountered during late summer in southwestern Georgia (Love and Goodwin, 1961), where specimens are rarely seen outside the period between August and November. Seasonal activity appears similar along the east coast of Georgia, as adults are generally seen from August through December in Chatham County, and few are collected from January through June (Figure 4). Despite its summer/fall abundance, *Cx. nigripalpus* does not

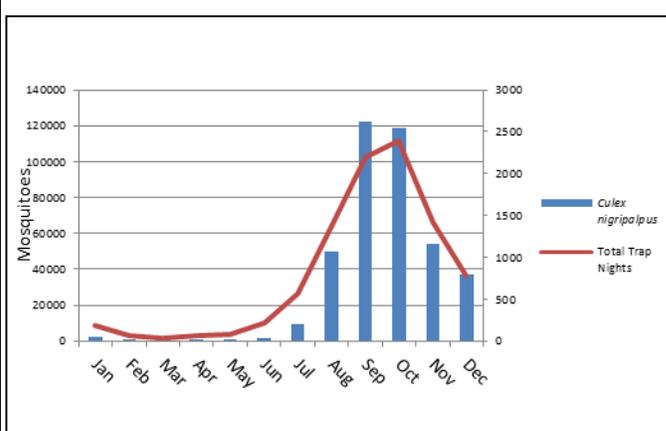


Figure 4. *Culex nigripalpus* activity in Chatham County, 2000-2017.

generate numerous complaint calls in our area, and does not appear to greatly contribute to local nuisance mosquito problems.

However, it has been detected with a number of arboviruses in the southeastern United States. Eastern equine encephalitis was found in *Cx. nigripalpus* collected near Waycross, Georgia (Chamberlain et al., 1969). It has often been associated with St. Louis encephalitis transmission in Florida (Chamberlain et al., 1964; Dow et al., 1964; Shroyer, 1991), and more recently with West Nile virus in Florida (Blackmore et al., 2003; Rutledge et al., 2003; Hribar et al., 2004; Godsey et al., 2005) and Louisiana (Ezenwa et al., 2006; Mackay et al., 2008; Unlu et al., 2010).

In Chatham County, *Cx. nigripalpus* has been detected with West Nile virus during three different West Nile active seasons (2012, 2013, and 2017). During these three years, *Cx. nigripalpus* represented over 5% of West Nile positive mosquitoes. However, the overall percentage of West Nile positive *Cx. nigripalpus* samples is just over 2% (Figure 5).

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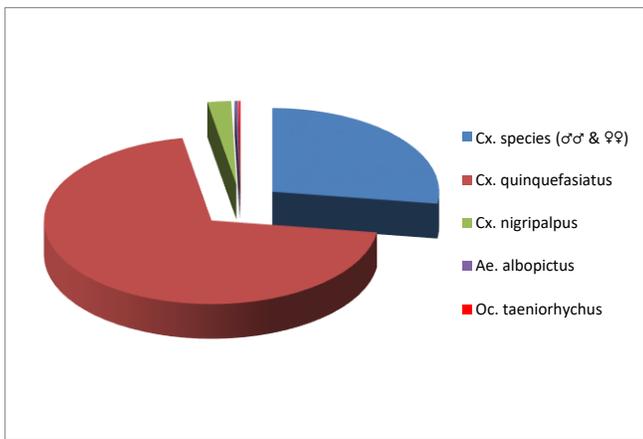


Figure 5. West Nile positive mosquito species/group from Chatham County, Georgia, 2002-2017.

In addition, this species is detected with West Nile later in the year, as the virus cycle is coming to a close. Although West Nile virus generally begins to show up in mosquitoes during mid to late June in our area, positive *Cx. nigripalpus* samples are not detected until September and October (Fig. 6). In addition, just over 32% of all positive mosquito pools recorded in October are *Cx. nigripalpus*. With this in mind, *Cx. nigripalpus* may be a key species in any late season West Nile virus transmission occurring in southern Georgia.

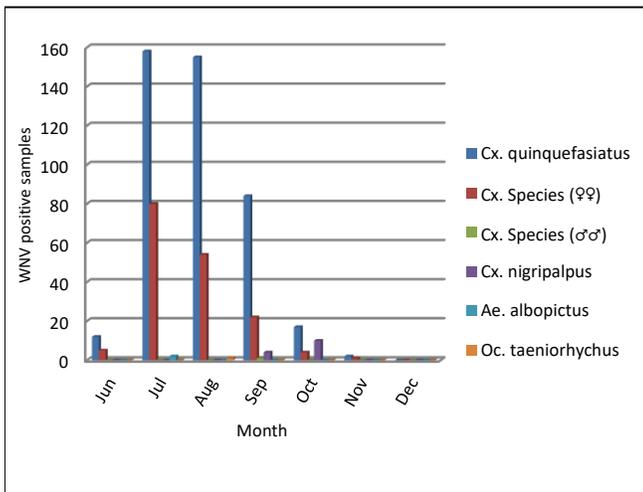


Figure 6. West Nile positive mosquitoes from Chatham County, Georgia, 2002-2017.

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