

AMCA[®]

NEWSLETTER

FALL 2023 | Vol 52 | Issue 4





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Upcoming Events



AMCA 90th Annual Meeting

March 4-8, 2024
Sheraton Dallas Hotel
Dallas, TX

View our event [calendar](#).

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On The Cover

Photo by Egor Kamelev - pexels.com.

Our mission is to enhance health and quality of life through the suppression of vector-transmitted diseases and the reduction of mosquitoes and other public health pests by providing leadership, information, collaboration, tools, and education.

President’s Message 4

Industry Update 5

Technical Advisor Report. 6

**Introducing the AMCA Info Hub: Getting
the Most Out of Your Membership & Community 8**

North Pacific Director Report 9

North Central Director Report 12

Mid-Atlantic Director Report. 15

South Atlantic Director Report 17

Thank you to our 2023-2024 Sustaining Members. 19

AMCA RESEARCH FUND

Mosquito control is science-based. Mosquito control professionals use observation of mosquito populations, evaluation of novel control technology and predictive modeling to determine the best way to manage mosquito populations and prevent pathogen transmission. Mosquito control has benefited from a long history of research within mosquito abatement agencies, at public and private universities, and at other qualified research institutions examining how to improve mosquito control to provide a better quality of life for the public.

2023 RESEARCH FUND AWARDEES

Julianne Miranda-Bermúdez, PhD., *“Infrastructure to evaluate community engagement efforts for an Integrated Vector Management Program.”* Puerto Rico Vector Control Unit.

Emily Mader, *“Analysis of perceived risks and benefits of mosquito abatement and person protection strategies.”* Northeast Regional Center for Excellence in Vector-Borne Diseases, Cornell University

CONTRIBUTIONS TO THE AMCARF ARE NOW BEING ACCEPTED!

The AMCA Research Fund is currently accepting contributions for future research on mosquito control and related topics. Contributions can be made online through the [Research Fund webpage](#) or by check payable to:

**AMCA Research Fund
ATTN: Megan MacNee
1 Capitol Mall, Suite 800
Sacramento, CA 95814**

AMCA WOULD LIKE TO THANK THE FOLLOWING CONTRIBUTORS

- ADAPCO
- Anonymous Contribution
- Canyon County Mosquito Abatement District
- Contra Costa Mosquito and Vector Control District
- Michigan Mosquito Control Association
- Sacramento-Yolo Mosquito and Vector Control District
- Schools First Federal Credit Union
- Valent BioSciences



President's Message

Kristen Healy, PhD

It is now halfway through my term as president, and I wanted to use this newsletter article as an opportunity to highlight some of the wonderful discussions I've had with AMCA members over the last few months. During the month of August, I had dozens of one-on-one discussions with committee chairs, AMCA volunteers, advisors, coordinators, representatives, and general members. My goal was to step back and look at the overall needs of the groups, members, and committees that hold AMCA together. For any future AMCA presidents out there, I encourage you to have these conversations early, as it can open the door for many new ideas and opportunities.

Much of the value within the AMCA membership is a direct result of the hard work and effort of the numerous committees and volunteer positions within AMCA. With over 14 unique committees, AMCA is able to tackle a wide range of issues confronting our industry. While there is tremendous benefit to the organization, I have learned we still have a great deal of challenges these committees face. And while I am able to implement some small changes as president, such as establishing a new "Quarterly meeting of committee chairs," the truth is, it is you, the reader, that this organization needs to breathe new life into AMCA. Whether you are a young professional, a seasoned professional, or even retired professional, you offer tremendous value to this organization. So, as you read the rest of this article, I challenge you to think about ways you can become more engaged in AMCA.

One of the greatest challenges within the AMCA committees is the lack of volunteers. From personal experience, I don't believe this is due to lack of interest, as I constantly have people asking about committees and ways to get involved. There seems to be some sort of disconnect in the point of interest and understanding how to actually

get involved. I assure you; we have some amazing committees and your presence in one, would be valued and appreciated. I will highlight some of these committees in a moment. If one in particular is of interest you, please feel free to contact me directly, and I'll help you through the process.

I'm going to highlight some committees (in no particular order), as all of these would happily engage new members into these committees. The "Member Education committee" is the group responsible for organizing those amazing webinars through AMCA. Members of this committee help pitch ideas and reach out to potential speakers. While this committee has so much potential to meet other educational needs of AMCA, the committee structure is small, and could use additional volunteers to help bring some of their new creative ideas to life. In addition to sitting on a committee, I also challenge members to view the webinar content, as this is a huge benefit to AMCA.

Two bigger committees within AMCA are the "Science and Technology" and the "Legislative and Regulatory" committees. The S&T committee provides a ton of value to AMCA through poster competitions, the AMCAREF research fund, and individual subcommittees that address specific science and tech-based needs. The L&R committee uses a subcommittee structure to address specific challenges, such as endangered species, pesticide education, chemical control, biological opinions, pesticide regulation, and numerous other topics. These committees can not only benefit from additional volunteers, but I also challenge readers to be more involved in these committees by (1) donating to the AMCAREF fund, (2) applying for AMCAREF funds, (3) attending the annual Washington Day conference, (4) submitting



Photo by Vlada Karpovich - Pexels.com

posters at AMCA, and (5) sitting in on L&R symposia at AMCA.

In addition to the big committees discussed, I also want to highlight many of the behind-the-scenes committees in AMCA, each of which would also happily take in some new volunteers. Our "Bylaws" committee addresses policy and bylaws changes as needed. Thanks to the bylaws committee, we were able to establish a new Code of Conduct last year within AMCA. And by being a voting member, you helped approve a bylaws change to allow the "Young Professionals" to be its own standing committee within AMCA. Our "Archives" committee helps maintain any archived AMCA materials, and with additional volunteers, could potentially have more time and resources to make these materials available electronically. Lastly, our "Finance" committee helps propose budgets and assists the treasurer in keeping the budget balanced within AMCA. New volunteers in this committee are already actively engaged in finding new and unique ways to generate revenue for the association.

Lastly, I want to highlight the committees that provide value back to the membership through the publications being produced. The "Publications" committee has several subcommittees responsible for the newsletter, Wing Beats, and JAMCA. The committee also generates special issues for JAMCA, which are driven by member interest and needs. These committees could benefit from additional volunteers, but also from members providing new and unique ideas for special topics issues for the journal. The "JAMCA Editorial board" is also a standing committee within AMCA. The editorial board helps organize the peer review process for the journal, and has

recently established a panel of subject matter experts. While these committees can always use new volunteers, I also challenge you to get involved by submitting articles for publication in JAMCA, and by helping to review articles as requested.

While I didn't highlight all AMCA committees, I want to reiterate that your help is always needed. Whether you want to sit on a committee, or contribute in other ways, you are a valuable member of this organization. Additional committees in AMCA include Public Relations, Young Professionals, and the Diversity and Inclusivity Subcommittee (DISC). As one of the original members that established the DISC subcommittee, I also encourage you to attend the annual networking breakfast at the annual meeting (organized by DISC). I was delighted to see so many of you attend our first event last year, and I'm planning on crafting some even more interesting puzzle boxes this year. Lastly, for those interested in leadership roles (president, vice president, regional director), your interest in the executive committee, board, membership, and annual meeting are always appreciated.

As I tell everyone, my door is always open. I'm always happy to speak with you, listen to your ideas, and help you find a place in this organization. As it is you, and all that you contribute (even just reading my article) that provide the true value to this organization. I hope to see all of you in Dallas. All are welcome to visit my presidential suite, and I'll probably even have a part of it set up as an escape room. Thank you again for all that you do for this industry. ■



Industry Update

Broox Boze, PhD • Industry Director

As we transition into the fall season of 2023, mosquito control efforts continue to be a top priority for communities dealing with unprecedented moisture, natural disasters, extreme heat, and diseases like West Nile, EEE, SLE and even Malaria or Denué. As the global community faces the ongoing challenges of emerging diseases, climate change, and urbanization, continued investment in mosquito control is essential for protecting both people and the environment.

Just in case you haven't heard it enough, I want to remind you that THE LABEL IS THE LAW, and highlight some of the actions EPA has taken to protect endangered and threatened species. While industry partners make significant efforts to educate end-users about label changes, it is ultimately your responsibility to note changes on the label and remain compliant. So read/review the label for all products associated with your program often and take general note of the mitigation measures put forward by

EPA with regard to pesticide use limitation areas (PULAs) which can be found via "Bulletins Live! Two" (<https://www.epa.gov/endangered-species/bulletins-live-two-view-bulletins>) and were updated by EPA on August 23rd.

While insecticides remain an essential component of Integrated Mosquito Management (IMM), our agencies do so much more than apply pesticides, and it's important we highlight the field trials and technologies used to ensure ecological responsibility. If you haven't already registered for AMCA's Annual Meeting in Dallas, there are going to be some great talks on field trials with new active ingredients, discussions about the use of drone for adulticide, and sterile insect technique in vectors other than *Aedes aegypti* and *albopictus*. In addition to talks highlighting innovative strategies for control, Dr. Dan Markowski will be making sure you know everything there is to know about PULA's and regulatory affairs. ■



Technical Advisor Report

Daniel Markowski, PhD

As many readers here may recall, we spent a lot of time presenting at state and regional conferences last winter in an effort to explain the upcoming Endangered Species Act (ESA) mitigations that the EPA was going to introduce. Well, that time is upon us! As the summer application season began to wind down, the EPA approved the new Malathion labels right on schedule in late August. As you may recall part of these new labels will be protections listed for Endangered Species. These protections are detailed on the EPA's Bulletins Live! Two website (<https://www.epa.gov/endangered-species/bulletins-live-two-view-bulletins>).

I think it important to note that the registrant has until August 23, 2024, to distribute or sell product in their possession with previous (current) labeling. After that date, they can only sell or distribute product with the new labeling regarding ESA Mitigations and directing applicators to Bulletins Live! Two. Product with previous labeling that is in distribution, retail, or in end-user possession may continue to be sold, distributed, and used by those parties until those inventories held by the third

“ As the summer application season began to wind down, the EPA approved the new Malathion labels right on schedule in late August. ”

parties are exhausted. *End-users must use the product according to the label directions on the packaged product.* In other words, if you have existing product, that does not direct you to the Bulletins Live! Two website, you are not legally required to check that site for any pesticide use limitations.

I've been in contact with U.S. Fish and Wildlife Services (FWS) over the last several months regarding the rollout of these malathion-specific mitigations. They're currently developing in-house training materials to help their local offices. Similarly, we're developing materials to help our members talk to FWS and streamline your requests to these local FWS offices. This would allow you to conduct mosquito control operations within the pesticide use limitation areas. The current mitigations cover 21 species (*one less than was proposed last winter*) in 8 different states. Unfortunately for programs in Florida, 10 of the species

are in your state covering 20 different counties. Stay tuned this winter, as I'll be reaching out to affected programs with advice and hopefully, we can be as well prepared as possible when product with the new labels ship.

“ Myself and members of the L&R Committee also spent considerable time this summer responding to EPA's next project to address mitigations for “vulnerable” species. ”

Myself and members of the L&R Committee also spent considerable time this summer responding to EPA's next project to address mitigations for “vulnerable” species. EPA's Vulnerable Species Pilot Project (VSPP) (<https://www.epa.gov/endangered-species/implementing-epas-workplan-protect-endangered-and-threatened-species-pesticides#species>) is more far reaching than the Malathion mitigations and would impact a great many more programs throughout the United States. We commented quite extensively on the project with one overarching goal: AMCA feels that mosquito control applications should be considered as a separate use type when developing ESA interim mitigation measures and not included in the VSPP. To that end, we've secured a meeting this month (September) with EPA's leadership on the project to discuss our comments and propose a workable solution separate from the VSPP. This project would encompass all mosquito adulticides, so the results of our meeting will be of importance to all of us. There are a few things I think we have to all understand, in the future, there will be Bulletins Live! Two language on all our product labels and we will have to conduct some measure of broad ESA mitigations that are approved by EPA and the Services.

These facts became apparent in early September when EPA settled its longstanding litigation with the Center for Biological Diversity and Pesticide Action Network. The results of this “megasuit” have laid the foundation for most all pesticide regulations going forward, including for our industry. “This agreement and the prior partial settlement include obligations for EPA, many of which are also described in the ESA Workplan. Those actions include:

- Development of mitigation measures for listed species that are particularly vulnerable to exposures from pesticides and determine how to apply these mitigations to future pesticide actions, as well as whether this Vulnerable Species Pilot should be expanded to more species. EPA met its first deadline (June 30, 2023) for this action by conducting public outreach on the mitigation measures identified for the first set of species.
- Development and implementation of an Herbicide Strategy (draft released for public comment), a Rodenticide Strategy, Insecticide Strategy, and Fungicide strategy (the latter three are still under development) which will identify mitigation measures for entire classes of pesticides to address their potential impacts to hundreds of ESA-listed species
- Completion of the ESA work for eight organophosphates and four rodenticides;
- Hosting of a workshop for stakeholders to explore how to offset pesticide impacts on ESA-listed species in situations where eliminating or modifying pesticide use may not be feasible, and how EPA could incorporate those offsets into

its process for registering or reregistering pesticides. Offsets could include restoring wetland habitat or funding breeding programs for affected species.”

The goal over the next year for us will be to ensure that our Public Health applications are protected and considered separately from other pesticide uses such as Agricultural applications. There are many things that set our operations apart and we’ve made great progress educating the Agency and the Services of these differences, but there is clearly more work to be done.

I look forward to seeing each of you this winter. We’ll move forward in this brave new ESA world and develop plans and communicate each new change in a variety of platforms from webinars, website updates, this newsletter, direct communications, and many more. The best ways to stay informed will be to attend your state and regional conferences, make sure your AMCA membership is up to date so that you receive email alerts, and contact me if ever you have questions. Best wishes to all my friends and may the fall weather bring a change of pace and a chance to catch your breath! ■

SAVE THE DATE FOR THE AMCA RESEARCH FUND DAY OF CONTRIBUTING October 10, 2023

Make a contribution of any amount whether its \$10, \$100, or \$1,000 to be recognized!



SUPPORT MOSQUITO CONTROL RESEARCH



Introducing the AMCA Info Hub: Getting the Most out of Your Membership & Community

We are thrilled to announce the launch of a game-changing platform designed exclusively for our valued AMCA community: the **AMCA Info Hub**. This dynamic member portal is poised to revolutionize the way you engage with the AMCA and your fellow members. Packed with a host of features to streamline your experience and enhance your membership, the AMCA Info Hub is your gateway to membership excellence.

Accessing the **AMCA Info Hub** is a breeze, just click the “Member Login” on the top left at <https://www.mosquito.org/>. If you haven’t logged in to the new website, make sure to click “Create One” on the bottom of the login page or [click here to create your new account](#).

Now, what can you do on the new AMCA Info Hub?

Manage Your Membership with Ease

Our Info Hub simplifies the way you manage your AMCA membership. Now, you can pay invoices, update your personal information, and even post and view job openings, events, resources, and news - all within a few clicks. This centralized hub ensures that you are always in control of your membership experience.

Resource Library at Your Fingertips

Say goodbye to endless searches for crucial resources! The Info Hub boasts a dedicated Resource Library where you can effortlessly find and share videos, links, and other member-specific documents. This one-stop destination empowers you to stay informed and share valuable knowledge with fellow members.

Find & Share Events

Registering for AMCA events has never been more convenient. With the Info Hub, you can now register and pay for AMCA events directly through the platform. And you won’t just find AMCA events here, you’ll also be able to share your events with the AMCA community and find community events.

Enhanced Directory for Connections

Connect with your peers effortlessly through our enhanced member directory. You can search for other members and filter search results by keywords or categories. The Info Hub is your key to building meaningful professional relationships within the AMCA community.

Empower Your Career

Whether you’re on the lookout for your next career move or looking to hire top talent, our Career Center has got you covered. Post and find job opportunities within the AMCA community and take your career to the next level.

Engage in Thoughtful Discussions

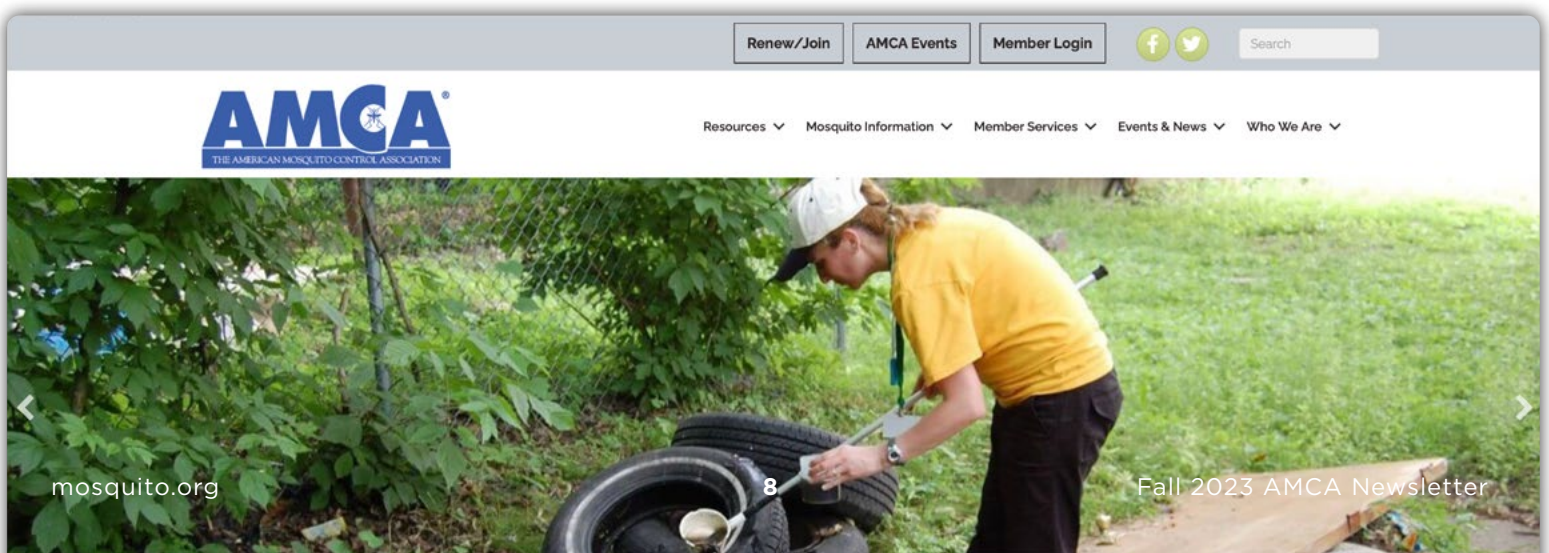
Have burning questions or insights to share? The AMCA Info Hub features a dynamic Discussion Forum where you can engage in meaningful conversations with your fellow members. Share ideas, seek advice, and participate in enriching discussions that drive our industry forward.

In the rapidly evolving field of mosquito control, staying connected, informed, and empowered is key. The AMCA Info Hub is your digital companion on this journey, ensuring that you have everything you need to thrive within our vibrant community.

To access the AMCA Info Hub, simply log in to your AMCA account by clicking “Member Login” on the top left at <https://www.mosquito.org/>. If you haven’t logged in to the new website, make sure to click “Create One” on the bottom of the login page or [click here to create your new account](#). Your membership experience is about to get a whole lot better!

We believe that this new platform will empower you to make the most of your AMCA membership, connecting you with resources, opportunities, and a community of like-minded professionals who are dedicated to advancing the air management industry.

Thank you for being a part of the AMCA community, and we look forward to seeing you on the Info Hub! ■





North Pacific Director Report

Greg Barron • North Pacific Director

This has been a very interesting mosquito season here in the Pacific Northwest. To start out we had several Districts dealing with Aedes mosquito issues along all major river systems due to high water caused from an abundant snowpack runoff and rain. This surface water invaded shoreline areas that had not seen water in 30 years thus causing quite a biting aedes mosquito conundrum. Mosquito control districts along the lower Columbia River experienced high numbers of these pesky biting scourge in highly populated urban areas. Similar problems arose in the popular Sunriver Oregon recreational area where snow pool Aedes wreak havoc with vacation goers. Ironically, the helicopter contractor was unable to larvicide because of ongoing FAA issues...heaven help us when a governmental agency is involved. Needless to say, lots of ground ULV activity ensued and the helicopter contractor was never able to treat those larval sources...good grief!

Of course, the West Nile virus decided to make its ugly push through the Pacific Northwest particularly in Western Idaho, Eastern Oregon, and Washington. I will let the representatives from those respective states tell their stories in this article.

REGIONAL UPDATE

NWMVCA Executive Director Message:

Hello all,

Well, we are nearing the end of another mosquito season, I hope everyone has had a positive year. For most of us the season started off fast with a hot start to the year, mosquito numbers rose fast and left most of us playing catch up for a while. Luckily this summer didn't seem as warm as usual and most people that I spoke with were able to catch up. Seasonal employment seemed to be a little better so adequate staffing helped for sure. Now being at the end of the season we can focus on finishing strong and looking towards goals in the off-season. The NWMVCA Fall meeting in Whitefish, Montana should be a good one, hopefully everyone will take something away from the meeting while having a good time.

The temperatures in late April and May were sometimes 15-20 degrees above normal. This led to a more rapid larval life cycle for the mosquitoes. Normally, in the spring, we have weeks for the newly hatched eggs to reach adult stage, but this year it was closer to a week. Pairing this with having a ton of water due to spring runoff it was the perfect storm to start off the year. The service requests towards the end of May and beginning of June were far above normal. With hard work and playing catch up most districts were able to rebound and at least for us, things got under control by the 4th of July.

Staffing seemed to be a little better this year, coupled with increased drone use have helped programs stay on top of those

pesky mosquitoes. Many programs have raised their seasonal wages and found more creative ways to find employees. The increased use of drones has not only allowed us to do the work with fewer people, it has also allowed us to get to more places and in the end, results in better service. Hopefully, we will see these trends continue and expand in the future.

The meeting in Whitefish is set. Dave has chosen a good location and Michael has put together a great agenda. These fall meetings are a great event where we can all come together and learn while also relaxing and enjoying each other's company and stories. I look forward to seeing everyone there.

Kelly Beehler
NWMVCA Executive Director

OREGON STATE

Many mosquito districts in Oregon experience an early onset of mosquito activity in May and this continued throughout the summer months. A few areas within the State are seeing a slight bump in activity as we enter the latter part of the season, however much of the State is beginning to slow down activities. In the coming weeks it is anticipated mosquito activity and control efforts will be considerably reduced to off-season levels.

As of this writing, West Nile activity in Oregon this year has followed normal activity patterns; with some of the eastern and southern counties of the State detecting local virus activity. These mosquito districts have detected West Nile virus in 58 mosquito pools and have detected three horses and one human death with the virus.

Beginning this fall Multnomah County Vector Control will be conducting a rodent trapping and testing project working with the State Health Authority. One of the main goals of the project will be to test for diseases that can be transmitted to humans, with a focus on the houseless community.

The Oregon Mosquito and Vector Control Association fall training and business meeting will take place November 14 – 15, 2023 in Newport Oregon.

Kenny Carver
Mosquito Control Coordinator
Washington County Health Dept.

WASHINGTON STATE

When you look at a West Nile Virus activity map for Washington state, a few counties tend to stand out, and this year was no exception. Historically, Benton, Yakima, and Grant Counties lead

the state in mosquito testing. This year, the west side ramped up their surveillance. Thanks to Mario Boisvert and his team over in Clark County, along with efforts by the WA State Department of Health (DOH) to fill in where no mosquito control districts exist, we now have a better idea of what is happening throughout the state.

Benton County Mosquito Control District (BCMC), which also covers a portion of Yakima County, experienced its highest level of West Nile virus detection since the (WA) peak of the epidemic in 1999. At the time of this writing, BCMC had 42 positive mosquito samples compared to only 5 detections in all of 2022. Those 42 detections make up nearly 60% of the cases in the state.

Typically, the virus is confined to specific wetlands managed by the City of Grandview (sewage lagoons) and the WA Department of Fish and Wildlife for waterfowl habitat. These areas are problematic due to limited access by ground and high organic content in the water, which reduces larvicide efficacy, and 98% of the collections from these areas are vectors for WNV. However, in 2023 the virus activity was widespread throughout the district. It is presumed that transitioning from RAMP testing to in-house PCR testing, considering the increased sensitivity and accuracy of this new testing method, is responsible for the increase in detections. Regardless of the number of detections in a season, the priority is to detect disease activity quickly and apply appropriate measures of control as soon as possible to ultimately prevent human infection of WNV as best we can.

In August, Washington held its first One Health Conference, bringing together individuals interested in human, animal, and environmental health. In the past, the state convened a zoonotic disease conference, but the focus has since expanded. A One Health workshop was held in the spring to identify data gaps throughout the state, and the August conference served as a chance to report back on the work currently being done to fill those gaps. Both meetings were well attended in person and allowed attendees from many disciplines an opportunity to brainstorm how to bridge the data “silos” that currently exist.

Lastly, the Washington Department of Ecology is currently drafting its National Pollutant Discharge Elimination System (NPDES) permit for 2024-2029. Mosquito control programs making pesticide applications to, over, or near waters of the state must pay close attention to the permit requirements. Any mosquito control programs with coverage under the current permit must apply for continuing coverage by December 4, 2023. If there is language in the existing permit that concerns you, or you would like to suggest language for the new permit, please contact Shawn Ultican, Aquatic Pesticide Permit Specialist, shawn.ultican@ecy.wa.gov. For more information, see [Aquatic mosquito control - Washington State Department of Ecology](#).

Angela Beehler
District Manager
Benton County Mosquito Control District

MONTANA STATE

Greetings from the Big Sky State! The 2023 season was seen the most West Nile activity since 2018; as of September 8th, there have been 26 human cases and 13 equine cases. The first positive pool was July 10th in Blaine county. Carroll College and Professor Grant Hokit’s program has received trapped mosquitos and set traps throughout the state and to date 22 counties involving 367 trap nights and has resulted in 621 pools of *Cx tarsalis*/*pipiens* (pools of 50 individuals or less). Here’s hoping cooler temperatures are in the future! We look forward to seeing you all next month in Kalispell.

Flathead County

This year Flathead County experienced an early runoff, and a hot dry Summer causing the mosquito season to be less than average. Our season started in early March and ended early August. Many areas that flooded last year or held onto water had little to no water this year. So far, we have had 1 confirmed human case of West Nile. Our district now has over 1,400 larvicide mapped areas and continues to expand with the growth of the Flathead Valley.

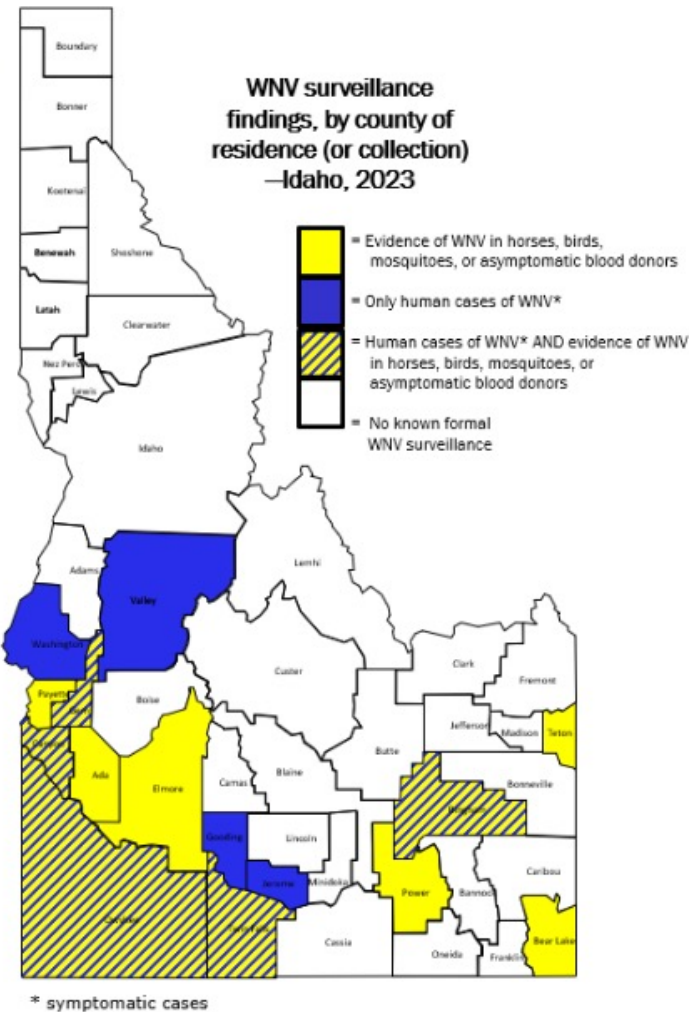
Broadwater County

We’ve received almost record precipitation and the early season mosquitoes reflected this. Broadwater had no positive pools of mosquitos despite being surrounded by positive pools. We’ve also added the Three Forks Mosquito district to our responsibility. Looking forward to winter!

Jessica Bushnell
Broadwater County
Noxious Weed Coordinator | Townsend & Three Forks Mosquito District Manager

IDAHO STATE

Overall, the mosquito season in Idaho across the state has been per the normal, atypical in one way or another. We had a long cool and wet spring in all parts of the state, however adult mosquito abundance has been relatively low overall. West Nile virus has been consistent and “hot” all season for the western districts and detected in mosquito pools resulting in a few districts completing aerial adulticide applications once again. Some of the western districts have noted a shift of detecting WNV in *Culex tarsalis* mosquito samples more this year than in the last 3 years. This shift is more similar in the area when WNV was first found in Idaho (2003-2008) and *Cx. tarsalis* was the primary vector historically compared to *Culex pipiens* in more recent years. The eastern side of the state has found no or relatively low WNV positive pools. The state health department has had WNV neuroinvasive cases in humans and 1 death at the time of this report in counties without mosquito districts. Districts have been also hearing from residents and the public that there are WNV human and horse cases, but they seem to not be reported to the state level since they (doctors and veterinarians) are not doing serological



IMM and accurate information and education to the public will be more important now than ever and in the future for mosquito control districts in Idaho and across the nation. I, like many of my colleagues, am looking forward the end of the mosquito field season and are fortunate we get to have one!

Desireé Keeney
Idaho State Rep, NWMVCA

BRITISH COLUMBIA

Things got off to a very quick start with a rapid snowmelt and increasing river levels during the first couple of weeks of May.

River levels above thresholds accounted for widespread larval development that were about 2-3 weeks earlier than usual. The moderate snowpack extended the duration of flooding was much less than the past few years. Total treatment scope (area) was about average (long-term, 10 year) and less than the past few years.

Extended drought conditions (minimal rain) meant overall larval development into June, July and August was reduced as compared with the past few years.

Adult mosquito nuisance was minimal to non-existent and the great majority of program areas.

Overall.....a good (minimal annoyance) mosquito year.

Curtis Fediuk, Owner
Duka Environmental Ltd

UPCOMING EVENTS

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confirmation testing. This is causing concern amongst our district managers and trying to figure out how to get the word out for more education and potential public health risks to the public. This issue, along with many social concerns today seems to lead into further issues with trying to continue to do public outreach locally. Challenges include people moving into our districts from out-of-state or from one county to the other thinking “WNV is not that big of a deal” or “I moved here to get away from all that chemical spray” public comments. Finding ways to improve



North Central Director Report

Mark Clifton, PhD • North Central Director

It's that time again! Time for the North Central Fall update for AMCA. Over the last 6 years or so, I have served as the regional director for the AMCA North Central region. Unfortunately, this will be my last year harassing you all by email for updates. As many of you may know, I have been deeply involved in the Endangered Species act subcommittee and this last year I have been serving as the Co-Chair for the Legislative and Regulatory Subcommittee. In anticipation of taking on the L & R committee completely, it is clear that it is time for me to step away from the regional director position. The experience of being a regional director has been truly terrific. You have invited me to your meetings, put up with my AMCA updates, and treated me so warmly that I feel honored to have been in this role these last years. So thank you for everything AMCA North Central region! It's been awesome getting to know you all and you know where to find me if you need me.

MICHIGAN

From Carl Doud at MCMC:

Midland County Mosquito Control (MCMC) in Mid-Michigan began the season in April with a full crew for the first time since before COVID. This was most welcome as a significant push each spring involves treatment of flooded woodlot areas to control spring Aedes species in April and May. Having a full crew means more habitat treated during this crucial time. The County has a sizeable spring aerial larviciding program as well that covers 61,000 acres of wooded habitat.

MCMC has added drone treatment this season into operations. The district purchased a Leading Edge drone capable of carrying 25 lbs. of granule material for larviciding. Though it has been a slow start as the crew learns the technology, this season 61 acres of larval habitat have been treated with products such as Altosid XR-G® Ultra and VectoPrime®. Once the crew gains proficiency it will make for an integral control tool for the district.

Weather trends this season involved drought conditions through May and June, followed by a number of rain events in July and August. This rainfall pattern is the opposite of the normal trends and has led to unseasonably high populations of floodwater mosquitoes in the latter part of the summer. This will keep the staff fully engaged until the temperatures cool.

Fortunately, the indications of arbovirus activity seem by all measures to be minimal this season. The most recent disease data for Michigan shows just two West Nile virus human cases and two Jamestown Canyon virus cases. The district has been testing mosquitoes for virus and does not have any positive mosquito pools to date in Midland County

From Bill Stanuszek at SCMC:

In Saginaw County, Spring began as fairly normal with rainfall that allowed for an above average hatch of early-season woodlot Aedes. Saginaw County Mosquito Control's response to this hatch was the treatment of well over 50,000 acres of flooded woodlot habitat. This provides substantial relief for associated communities from hordes of nuisance mosquitoes as well as impacting early season arbovirus activity associated with those species, like Jamestown Canyon virus. From May through June, Saginaw experienced substantially dry conditions resulting in a focus on permanent water habitats that favor vector species

“ Midland County Mosquito Control (MCMC) in Mid-Michigan began the season in April with a full crew for the first time since before COVID. ”

like *Culex*. Related treatments resulted in nearly three rounds of treatment in catch basins within our urban and sub-urban communities to interrupt in addition to multiple tire site, neglected swimming pool, and retention pond treatment. The situation drastically changed in our area with routine bouts of heavy rainfall since early July. July through August rainfall totals ranged from 9 to nearly 15 inches as compared to 2 to 4 inches for May and June. As of writing this in early September, we are facing very large populations of floodwater Aedes, most notably *Aedes vexans* and *Aedes sticticus* as well as pocketed areas of *Psorophora ferox* in wooded habitats. For those that have experienced these species, *Ae. vexans* bites at sunset and often fly in from surrounding habitats, whereas *Ae. sticticus* and *Ps. ferox* will bite any time of day as they love the shade and often anchor themselves to associated habitats (i.e. don't fly very far to feed).

Our arbovirus activity has provided a surprise of noting Eastern Equine Encephalitis in an *Aedes japonicus*, surprisingly. Saginaw County does not support associated EEE habitat, and therefore the likely source of the virus was migrating birds. Our West Nile virus activity is reflecting normal seasonal patterns to date, with our first occurrence in mosquitoes noted in early August with the following weeks offering a few more positive mosquito pools. While our infection rate still remains

very low in mosquitoes, we are noting an increase in citizen reported dead crow and blue jay activity.

With our season drawing to a close in October we are spending our last month addressing adult mosquito nuisance and arbovirus activity. This year started as normal, then dry and predictable, while ending with urgency. Never become complacent during the season, predictability can change with one rainfall event or the latest arbovirus results.

OHIO

From Paul Bauman at TASD:

The Toledo Area Sanitary District’s biggest challenge this year, so far, has been staffing. We had trouble filling our seasonal roles and lost several full-time staff for various reasons as the season progressed. We are running very short-staffed right now. The good news is that mosquito populations were very low through the 4th of July and we really didn’t have to do any adulticiding until mid-July. This is very abnormal for us, as we are normally adulticiding in late May or early June. I am certain that our larviciding operations contributed, but the low populations were primarily the result of a very dry spring.

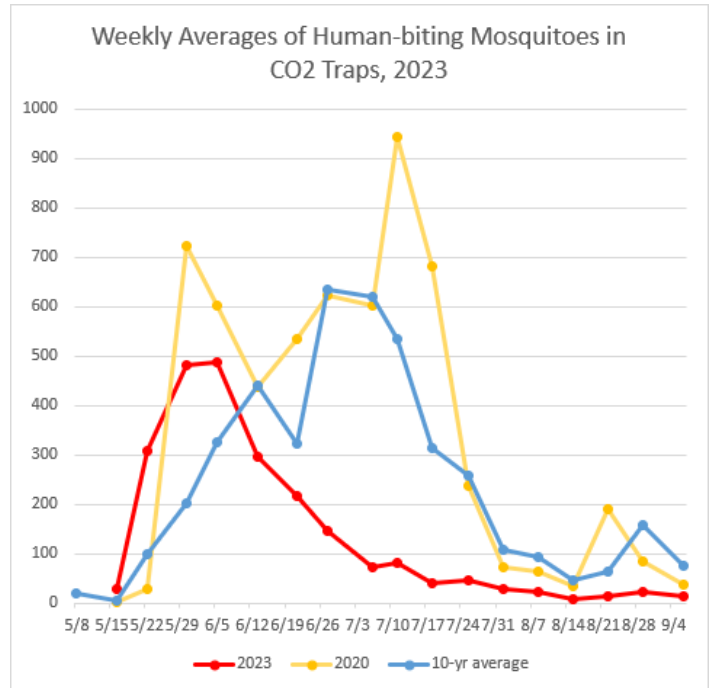
Since early to mid-July, things have changed and we have seen a lot of rain and several areas of our District have had significant increases in nuisance mosquitoes. Our in-house PCR WNV testing is routinely identifying positive mosquito pools on a daily basis. To date, we have tested almost 23,000 mosquitoes in over 1,500 pools. We have identified 109 positive pools with a seasonal MIR of 4.78 and weekly MIR in the range of 11.95 to 15.78 over the past month. WNV in our mosquito population is definitely increasing, but we, thankfully, have not had any human cases to date.

Probably the most interesting development so far involves our local *Aedes albopictus* populations. We first identified *Ae. albopictus* in our county in 2017. Since then, we have seen it slowly spreading in low numbers. This season we have been screening these mosquitoes for WNV. The results have been interesting...we have tested 137 *Ae. albopictus* mosquitoes in 35 pools. Of those 35 pools, 7 have been WNV positive. This is a very limited sample size, but interesting to consider what role *Ae albopictus* may play in WNV risk as the species continues to expand and establish itself in our District.

MINNESOTA

From Alex Carson at MMCD:

2023 in Minnesota was defined by heavy snowfall in the winter and very little precipitation in the summer. Snowmelt and early spring rain led to a surge in human-biting mosquitoes in May and early June that exceeded the 10-year average. For the third consecutive year, much of the counties covered by MMCD entered drought conditions in the peak summer months and mosquitoes were below average throughout late June, July, and August.



Graph compiled by Dr. Scott Larson, assistant entomologist at MMCD.

Data on West Nile virus transmission is still being collected, but according to MMCD Vector Ecologist Kirk Johnson, we are on track for local records for the number of West Nile virus positive samples collected and the minimum WNV infection rate for a season. As of September 1st, there were 117 WNV positive samples of 699 tested. MMCD recorded its highest number of WNV positive mosquito samples in 2018 with 132 samples of 842 testing positive. The MIR for WNV currently sits at 8.24/1000 mosquitoes tested, the record high for a season in the District was 7.20/1000 in 2012.

MMCD continues our search for a new Executive Director to replace Dr. Stephen Manweiler who retired at the end of 2022. A hiring committee, made up of County Commissioners, will select a candidate and present their choice to the full Commission. We hope to have a new Executive Director in place by the end of the year.

ILLINOIS

From Brian Duffy at DVMAD:

I’m guessing your NSMAD weather has been somewhat similar to ours at the Des Plaines Valley MAD. It has been a season of feast or famine with rain. July proved to be challenging due to the amount of rain we were receiving. We were always playing catch-up, and worked every Saturday during the month in order to stay on schedule.

Not entirely mosquito related, a lightning strike near our building came in through the phone line and fried some computer components along with our vehicle tracking system. This is the second consecutive year that this has occurred. Who says lightning can’t strike twice in the same spot. Now we have lightning and

surge suppressors on all the computers in hopes we can prevent any damage if this happens again. Finally, one of our villages asked if we would conduct tick surveillance in their community. Mark Tomek and the lab are currently testing things out and working on protocols for the process. It appears that we will be doing this going forward. For the most part it's been a fairly normal mosquito season...so far.

From Central Life Sciences:

Central Life Sciences expanded its technical services department with the addition of Tony Hughes, Ph.D., as a technical services entomologist. Hughes brings his extensive experience to the organization's Vector/Mosquito Control and Professional Pest Control divisions where he will support the sales and marketing teams with product trials and offer technical consultation to customers and end users. Hughes joins the Schaumburg, Ill.-based Central Life Sciences following a 22-year career as an entomologist with the US Navy. His most recent assignment was with the Centers for Disease Control and Prevention in Atlanta, where he worked under the US President's Malaria Initiative program, serving as the technical lead for entomology in Liberia, Rwanda, and Sierra Leone. Hughes received his M.S. degree from the University of Wisconsin – Madison and Ph.D. in entomology from the University of Florida.

From NSMAD:

At the North Shore MAD, we have been very busy on a project in collaboration with the Centers for Disease Control and Prevention. This project is intended to evaluate the benefit (if any) of conducting very early season catch basin larval control. To do this, we deployed over 96 gravid traps and 48 light traps over nearly 8 square miles. CDC staff visited the District every week from April through October. The density, duration, and intensity of trapping is beyond anything the NSMAD has tried before. At the time of this writing, this project has already begun to deliver some interesting results. For example, who knew we would find *Aedes aegypti* in the Chicago area at multiple locations? This project also highlighted that 2023 was the year that *Aedes albopictus* has become widespread and near common throughout the District. Where this species was once a rarity, nearly every single one of our 14 communities has this species regularly turning up in traps. Is this going to be our new normal? While the colonization of the Chicago area by *Ae. albopictus* was generally seen as a certainty at some point in the future (like in 2050 when it would be somebody else's problem!), I am not sure we expected the rapid spread we witnessed this year. Time will tell whether a couple of polar vortex winters will push this species back or whether they have infested enough locations that enough can ride out a Chicago winter.

And that's the news from the North Central region! ■



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Mid-Atlantic Director Report

Michael Doyle • Mid-Atlantic Director

VIRGINIA - TIM DUBOIS

In Virginia, there was more than average rainfall early in the season, followed by an abnormally dry later season. Overall, localities reported lower than average mosquito populations, with *Ae. albopictus* and *Cx. salinarius* populations making up the majority of the collections. Thus, ULV spraying operations were also lower than usual, with the exception of a few localized cases. Salt marsh numbers have also been exceptionally low this year so far, giving a sigh of relief to localities that are greatly affected by the habitat.

In counties and cities reporting thus far, there have been 2,041 pools tested for West Nile virus, Eastern Equine or a combination of the two, with a total of 37 positive pools (12 WNV, 25 EEE positive; 1.8% overall positivity rate). A total of 5 sentinel chickens have tested positive for Eastern Equine encephalitis.

Reports seem to show that localities have taken the light season in stride with increased outreach and education and increased focus on larviciding efforts.

The Virginia Mosquito Control Association is looking to hold its annual conference next year at the Hilton Virginia Beach Oceanfront on February 20-22, 2024. Information and registration for the conference can be found at www.mosquito-va.org.

MARYLAND - BRIAN PRENDERGAST

The season started very dry (almost drought conditions). Complaints were way down. That ended June 27. In July and early August, we had enough rain to produce many mosquito complaints. Because of the lack of rain in June, the Bay acted more like an ocean. We sprayed aerially for saltmarsh mosquitoes in June. That was the first time we sprayed aerially in June in over 10 years. When there is a lot of rain in the bay watershed, the bay stays flooded and saltmarsh mosquitoes are greatly reduced. We will see what September will bring.

There was a locally acquired case of malaria in Maryland. This case was *Plasmodium falciparum* malaria (the cases in Florida and Texas were *P. vivax*). We were informed of this case on August 16th, at approximately 9:00. I informed my boss a little after 10:00 on the 16th.

We trapped three times to determine risk of continued transmission. All Anopheline mosquitoes were sent to the state lab, which sent them to the CDC. We have not gotten any results from the CDC, so I assume they were all negative. The first time we trapped was the night of Aug 17th. We collected 13 *Anopheles* females - 6 *An. quadrimaculatus*, 4 *An. crucians* and 3 *An. punctipennis*. We trapped again on the 21/22. We caught 5

Anophelines. We trapped on the 28th (I was on leave then).

We larvicided a radius of 3/4 miles 3 times, on the 17, the 22 and the 28th from the assumed site of infection.

We adulticided (sprayed) the area three times. The first spray was a radius of 3/4 miles (1,000 acres) on the 17th. The second spray was a radius of 3 miles (8,000 acres) on August 22nd. The third time was 3/4 mile on August 28th. This area was sprayed numerous other times because it is in our nuisance spray program, including on Aug 8th. Apparently, the patient reported malaria symptoms on the 6th.

There were several discussions with the Maryland Department of the Environment and the Maryland Department of Natural Resources regarding where they would allow us to spray. So far, we are not curtailed too much. Discussions are ongoing. The permitting requirements went way up.

WEST VIRGINIA - ERIC DOTSETH

For mosquito-borne diseases, there have been three travel-associated human malaria cases, three La Crosse human patients, and one human case with West Nile virus infection in 2023 (as of September 7). In 2022, four travel-associated malaria infections in humans and two La Crosse encephalitis human cases were detected in West Virginia.

For tickborne diseases, there have been 952 human cases of Lyme disease, 15 human ehrlichiosis cases, 10 human anaplasmosis cases, and 7 human patients with spotted fever group rickettsiosis in 2023 (as of September 7). In comparison to the rest of the state, the density of the blacklegged tick (*Ixodes scapularis*) nymphs was lower in the low Lyme disease incidence counties in southwestern West Virginia. Most human ehrlichiosis and human spotted fever group rickettsiosis cases were localized to southwestern West Virginia, a region with populations of the Gulf Coast tick (*Amblyomma maculatum*) and high densities of the lone star tick (*Amblyomma americanum*). In 2022, there were 2449 human cases of Lyme disease, 12 human ehrlichiosis cases, 12 spotted fever group rickettsiosis human patients, 6 accounts of human anaplasmosis, and one ehrlichiosis/anaplasmosis human case.

The West Virginia Tick Surveillance Program focused most tick monitoring activities to central West Virginia in 2022. Central West Virginia is an emerging front for Lyme disease. Active tick surveillance activities focused on collecting the blacklegged tick (*Ixodes scapularis*), tick vector for Lyme disease (*Borrelia burgdorferi*), using the tick drag method. Although tick

sampling was conducted throughout the year, most monitoring occurred during *Ixodes scapularis* nymph and adult emergence. *Ixodes scapularis* nymphs were submitted to the Centers for Disease Control and Prevention for human pathogen testing for Lyme disease (*Borrelia burgdorferi*, *Borrelia mayonii*), hard tick relapsing fever (*Borrelia miyamotoi*), human anaplasmosis (*Anaplasma phagocytophilum*), and human babesiosis (*Babesia microti*). Many counties in northwestern West Virginia had *Ixodes scapularis* nymph populations with >20% *Borrelia burgdorferi* infection rate. Counties in northern West Virginia had >10% *Borrelia burgdorferi* infection rate in their *Ixodes scapularis* nymph populations.

In 2023, the West Virginia Tick Surveillance Program was able to monitor a large area for ticks with the assistance of three local health departments across the state (Cabell-Huntington Health Department, Kanawha-Charleston Health Department, Monongalia County Health Department). Thirty-seven localities in 20 counties in West Virginia were actively surveyed for ticks including the blacklegged tick (*Ixodes scapularis*), the lone star tick (*Amblyomma americanum*), and the Asian long-horned tick (*Haemaphysalis longicornis*). In the higher elevations in northeastern West Virginia (>1000 m), *Ixodes scapularis* nymphs were still very active through the middle of August. Although the lone star tick has been found throughout the state, high densities of *Amblyomma americanum* are still limited to southwestern West Virginia.

West Virginia hosted the National Scout Jamboree from July 19-28 at the Summit Bechtel Reserve in Mount Hope, West Virginia. The event increased the number of visitors to Fayette, Raleigh, and surrounding counties. Unfortunately, this area is also a high La Crosse encephalitis incidence region. Larvicide was applied to mosquito breeding sites at the Summit Bechtel Reserve before the National Scout Jamboree event. Active tick surveillance was conducted before the event. Participants of the National Scout Jamboree submitted ticks encountered at Summit Bechtel to the state public health entomologist.

DELAWARE - WILLIAM MERDITH

Mosquito control needs in Delaware were steady again this year because of dry to normal weather conditions. Pesticide costs were nearly half of 2018 but have been average since then. These lower needs have been fortunate due to the ongoing difficulties in finding and retaining both seasonal and full-time staff. Of 9 seasonal positions authorized, none were able to be filled due to wage competition with local businesses (e.g., the state is offering \$11.35/hr. while local restaurants are offering \$16 or \$17/hr. Therefore, it has been increasingly difficult to perform consistent surveillance and respond to resident's concerns. One silver lining is that the state is increasing the hourly wage in time for the 2024 season.

Delaware's new rotary excavator was put to use in 2022-23, but

work is currently limited to winter due to difficulty in getting seasonal heavy equipment operators. The state is also researching purchase of a new bulldozer that meets the 3 psi specification requirements for work on saturated soils.

Human disease and mosquito testing rates have been vacillating the last few years. Two years ago (2021) was the peak for % arboviral seroconversion for chicken sentinels, then the rate dropped to below normal in 2022, and has returned to average in 2023.

Endangered species issues have been minimal the past year, as most active mosquito control areas are not adjacent to areas containing, or potential habitat for, endangered or threatened species.

NORTH CAROLINA - MICHAEL DOYLE

North Carolina experienced slightly wetter conditions in the spring, followed by drier than normal conditions over the summer, resulting in low overall mosquito populations and lower than normal groundwater levels. However, the isolated wet areas created significant *Culex* populations in focal areas. This changed with the arrival of Hurricane Idalia, which dumped 2-8" of rain in a band across the eastern third of the state. Fortunately, dry soils absorbed most of the rain, resulting in isolated high mosquito numbers, but no wide-area issues requiring aerial adulticiding.

In the event that aerial work was became necessary, the NC State Emergency Management (NCEM) department still has a contingency contract in place with Clarky/Dynamic Aviation for all large disease and/or post-storm needs. The contract is managed by NCEM, with assistance from a multi-departmental, multi-agency group called the Mosquito Management Task Force.

Insecticide resistance remains a concern, especially for *Culex* species against pyrethroids. IR levels are now being entered into NCSurv (part of the VectorSurv system) along with mosquito trapping results and (shortly) mosquito pool testing performed by the State Lab of Public Health.

On that note, mosquito pool testing to date is showing concerning % positives for WNV, with ~2% of pools positive to date. The infected species thus far are *Culex nigripalpus* and *Culex pipiens* complex.

West Nile virus levels were high for humans by NC standards in 2022 (12 neuroinvasive cases). This was the highest number since the arrival of WNV, which produced 18 reported neuro. cases. 2023 is looking on the higher side also, with 5 neuroinvasive cases through August. La Crosse encephalitis cases were oddly low in 2022 (2 neuroinvasive cases; 18 is the average). 2023 is also very low, with 1 neuroinvasive case thus far. No EEE has been reported in humans or horses in 2023, undoubtedly because *Cs. melanura* numbers have been remarkably low this year. ■



South Atlantic Director Report

Robert Cartner • South Atlantic Director

Miami-Dade County Mosquito Control and Habitat Management has a new acting director: Dr. Isik Unlu, the current operations manager, has taken over on an interim basis for the retired Dr. William Petrie. The county has been under a mosquito-borne illness alert because of locally transmitted dengue cases, which number 12 as of press time. The division is getting a new facility, to be constructed near the site of the current one, which will house 60 employees and will integrate administrative, research, and operations functions. The fleet was recently re-wrapped with a fresh, new design, and 10 trucks were outfitted with new adulticiding equipment. On the education and public relations side of the house, the division has partnered with the Miami-Dade Public Library System to conduct mosquito control workshops this fall, and remains extremely busy visiting local schools, which are now back in session for a new academic year. Finally, Public Information Officer, Michael Mut, was recently named chair of the Florida Mosquito Control Association's Public Information committee.

- Michael Mut, Public Information Officer

The Florida Keys have had an interesting year, to say the least. We have seen numerous *Aedes taeniorhynchus* hatchings throughout the season, with significant rainfall occurring very early this year. Due to that, we completed our first aerial adulticide mission at the beginning of April, which is almost two months earlier than normal. Since then, it has been a bit of a rollercoaster year with peaks in June and numbers climbing again at the end of August. While we all anticipate "normal" mosquito seasons, these last few years we all have learned to expect the unexpected. Control of *Aedes aegypti* continues to be of utmost importance to our District. While we have not seen locally-transmitted diseases since 2020, South Florida continues to be a hotbed for both travel and locally-acquired cases of dengue each year. In response, the District has increased WALS treatments by ground and air, continued trials with *Ae. aegypti*-specific traps, and are continuing our trials with the release of genetically-modified male *Ae. aegypti* with Oxitec. Meanwhile, we are in the middle of our ongoing aerial fleet replacement plan. Initially, the District had two Bell Jet Rangers, two Bell Long Rangers, and two Britton Norman Islanders. Our plan is replace the entire fleet by 2025 with four Airbus H125's. As of October of 2023, we will have three H125's and have surplused both Jet Rangers and one Islander. So, for those interested in an Islander or Long Ranger, surpluses are forthcoming in the next couple of years!

- Andrea Leal, Executive Director

The **Manatee County Mosquito Control District** was placed under a mosquito-borne illness alert by the Florida Department of Public Health in late May due to 7 human cases of locally acquired malaria in Sarasota County (to our immediate south) with the first

two of these cases occurring in homeless residents who spent some of their transient lives in Manatee County. Due to aggressive aerial adulticiding on a 10-day interval, ground-based larviciding, active surveillance and enhanced mosquito trapping, no human cases of malaria were detected in Manatee County nor were any of the 400 mosquito pools determined to be *Plasmodium* infected. The success of this 3-month mission was undeniably a result of the professional and unwavering commitment of the entire 30-person staff of the District to the overall mission of the program. The mosquito-borne illness alert was lifted from Manatee County in early September. By late October 2023, the District will have completed construction of a new \$14M campus spanning one year of planning and an additional year of construction. The campus will address future 30-year needs of the County and includes administrative offices, 150-person conference room, laboratories for both the Biology (research) and Entomology departments, 2 – 5,000 sq. ft. helicopter hangers and numerous storage buildings including an air conditioned 2,500 sq. ft chemical storage building and 10,000 sq. ft. truck storage building.

- Chris Lesser, Director

It has been an unusually dry summer in **Collier County**, resulting in fewer freshwater mosquitoes than usual. However, the rain and high tides during Hurricane Idalia led to the hatching of salt marsh mosquitoes in August and September, months later than expected. The District recently acquired a new pontoon boat to provide service to barrier island residents. This new boat allows us access to these remote islands and the cargo capacity to bring our surveillance and control materials along. We have also incorporated Valent BioScience's new ReMoa Tri, Triple Action Insecticide Space Spray, to our operations. We have conducted two truck missions with this new treatment material to target our resistant *Aedes aegypti* mosquitoes, and we are currently evaluating its field efficacy. The District continues to work toward expanding its boundaries through a local bill in Tallahassee. Unfortunately, our local bill did not pass in the 2023 Legislative Session as it was not heard in the Local Administration, Federal Affairs and Special Districts Committee. However, we received unanimous support from the Collier County Legislative Delegation when we presented the bill on September 11, 2023. The District's leadership team is determined to reintroduce the bill in the 2024 Legislative Session. Our Deputy Executive Director, Keira Lucas, and Field Technician Supervisor, Richie Ryan, will be traveling to Puerto Rico to provide larvicide management training at the Vector Control Annual Convention on October 26, 2023. Since April, we have welcomed several new hires to our organization. Jonathon Little, MBA, has joined us as our new Director of Communications, and Jessica Burnham, MBA-HRM, SHRM-SCP is now serving as the Director of Human Resources.

Our Research team has welcomed Biologist Decyo McDuffie, Lab Technician Hunter Martin, and Biologist Gabriella Steele. We have also brought on John Delk and Seth Wisniewsky as pilots, Nathan Rhodes-Zambrana as our Logistics Coordinator, Jesse Patridge as a Field Technician, Ricardo Salinas as a Seasonal Technician, and David Forman as an Aircraft Mechanic. Additionally, we are fortunate to have two student interns from Florida Gulf Coast University this summer: Sara Kacinskas and Noah Wehner. These talented young people are contributing mightily to our Research and Technical Development programs, respectively.

- Andrea McKinney, Public Outreach Specialist

This year in **Lee County** we have not seen the consistent rainfall that is typical for southwest Florida. We've had large rain events that are sporadic and isolated, giving us just enough water on the ground to puddle up, hatch a brood of mosquitoes, keep the larviciding crew busy, and then dries up for the next rain event (Figure 1). So far this year we have seen an average of 21 inches of rain for the county, which is about 9 inches below the 10-year average. Rain bands from Hurricane Idalia provided another 3 inches of rain initiating September aerial adulticide missions for the first time in 3 months. The weather conditions for July and early August have continued to be hotter and drier than the 20-year Average. There have been no disease in our County, including the sentinel chicken flock. It has definitely been an unusual season. The District recently welcomed



Figure 1. LCMCD larvicide crew loading and fueling an H-125

Congressman Greg Steube and his family to Lee County Mosquito Control District (LCMCD). The Congressman, who serves Florida District 17 (which includes all of Sarasota, Charlotte, and part of Lee County), visited Buckingham to learn about best practices and current innovations in mosquito control. Executive Director Dr. David Hoel answered the Congressman's questions related to the recent local malaria reported in Sarasota County on the Manatee County border, explained the District's SIT program, and provided an aerial tour of Lee County. The Clinic for the Rehabilitation of Wildlife (CROW) on Sanibel was recently awarded a \$15,000 grant from Clarke's *Give to Tomorrow Foundation*. The 2023 LCMCD Aerial Workshop was held on April 17-20, 2023. This was the largest workshop yet with over 180 registered participants from Florida, Texas, Georgia and Louisiana. The event kicked off on Monday April 17th with Dunker

Training from US Survival Systems and the standard workshop schedule began on Tuesday April 18th. (Figure 5) The presentations and hand on activities included Helicopter calibrations, maintenance demonstrations, safety, auto rotations, disaster preparation/response, FDACS update, and multiple talks from other districts with updates and research projects from their area.

- Aaron Lloyd, Assistant Director

St. Johns county has been under a mosquito-borne illness advisory since June. So far there has been one human case of EEE, one travel-related dengue case, 2 horses tested positive with EEE, and 15 WNV and 4 EEE positive sentinel chickens in St. Johns County. In the middle of August, we had a mosquito population outbreak and more than 500 service requests within one week. Currently, there are still 5 part time and full-time college interns at. A total of 20 interns (2 graduates from UF, 3 undergraduates from FAMU, 8 undergraduate & graduate from UNF, and 7 high school students) have been trained at **Anastasia Mosquito Control District (AMCD)** this year. AMCD hosted Senator Rubio's Senior Regional Director Ms. A. Cook visiting on August 22, and Congressman Mr. J. Rutherford and his 2 staff's visiting the Disease Vector Education Center and SIT building on August 24. AMCD finished the DoD 3-year grant funded project at the end of July 2023. AMCD received the Rad Machine for the SIT mass rearing facility in August. Dr. W. Qualls, Scientific Manager has been promoted to Assistant

- Rui-De Xue, Executive Director

The majority of programs in **South Carolina** have had a slow season with some areas experiencing infrequent, large mosquito emergencies. The coastal areas received sporadic rainfall throughout the summer that provided brief relief from the above average temperatures. Charleston County Mosquito Control participated in the groundbreaking on May 16 for their new Public Works headquarters, which is expected to be completed in Spring 2026. South Carolina avoided any major impacts of Hurricane Idalia, but the arrival coincided with the king tides, so some coastal areas had increased flooding and those programs have been battling the emergence that followed. The South Carolina Mosquito Control Association (SCMCA) held their annual Summer Workshop on June 8, 2023 and their Annual Conference is scheduled for November 1-3, 2023, at Ocean Creek Resort, in Myrtle Beach, SC.

EVENTS

Association for the Management of Vectors of Puerto Rico (AMVPR) | October 26, 2023 | San Juan, PR

Florida Mosquito Control Association (FCMCA) | November 13-16, 2023 | Port Charlotte, FL

Georgia Mosquito Control Association (GMCA) | October 18-20, 2023 | Jekyll Island, GA

South Carolina Mosquito Control Association (SCMCA) | November 1-3, 2023 | Myrtle Beach, SC

Thank you to our 2023-2024 Sustaining Members

Renew your membership today for the 2023-2024 year!

DISTRICTS

- Adams County MCD
- Alameda County Mosquito Abatement District
- Anastasia Mosquito Control District
- Animas Mosquito Control District
- Atlantic County Office of Mosquito Control
- Beach Mosquito Control District
- Beaufort County Mosquito Control
- Benton County Mosquito Control District
- Butte County MVCD
- Canyon County Mosquito Abatement District
- Cape Cod Mosquito Control
- Citrus County Mosquito Control District
- Clackamas County Vector Control District
- Coachella Valley Mosquito & Vector Control District
- Collier Mosquito Control District
- Consolidated Mosquito Abatement District
- Contra Costa Mosquito & Vector Control District
- Davis County Mosquito Abatement District
- Delano Mosquito Abatement District
- East Flagler Mosquito Control District
- East Side Mosquito Abatement District
- EBRP Mosquito & Rodent Control
- Florida Keys Mosquito Control District
- Fresno Westside MAD
- Greater Los Angeles County Vector Control District
- Iberia Parish MAD
- Indian River Mosquito Control District
- Jackson County Vector Control District
- Klamath Vector Control District
- Lake County Vector Control District
- Lee County Mosquito Control District
- Macon Mosquito Abatement District
- Magna Mosquito Abatement
- Manatee County MCD
- Merced County Mosquito Abatement District
- Metropolitan Mosquito Control District
- MVMD of Santa Barbara County
- North Morrow Vector Control District
- North Shore Mosquito Abatement District
- Northwest MAD
- Northwest Mosquito & Vector Control District
- Orange County Mosquito and Vector Control District
- Osceola County Mosquito Control
- Otter Creek Watershed Insect Control District
- Pasco County Mosquito Control District
- Placer Mosquito & Vector Control District
- Placer Mosquito & Vector Control District
- Sacramento-Yolo Mosquito and Vector Control District
- Salt Lake City Mosquito Abatement District
- San Gabriel Valley Mosquito and Vector Control District
- San Joaquin County MVCD
- San Mateo County MVCD
- Santa Clara County Vector Control District
- Shasta Mosquito & Vector Control District
- South Salt Lake Valley MAD
- South Walton County Mosquito Control District
- St. Lucie County Mosquito Control District
- Sutter-Yuba MVCD
- Tangipahoa Mosquito Abatement District
- Teton County Weed & Pest District
- Toledo Area Sanitary District
- Warren County Mosquito Commission
- West Side MVCD

INDUSTRY

- AMGUARD Environmental Technologies
- Azelis A&ES
- Central Life Sciences
- Clarke
- Envu Environmental Science
- GroPro Corp.
- Leading Edge
- London Fog, Inc
- Target Specialty Products
- Valent BioSciences LLC
- Vector Disease Control International (VDCI)

REG/STATE ASSOC.

- Georgia MCA
- Idaho MVCA
- Louisiana MCA
- Michigan MCA
- Mid-Atlantic MCA
- New Jersey MCA
- North Carolina MVCA
- Northeastern MCA
- Pennsylvania VCA
- South Carolina MCA
- Utah MCA
- Virginia MCA

STATE AGENCIES

- Hawaii Dept. of Health, Environmental Services Division
- Pennsylvania Dept of Environmental Protection Vector Management