Coming Events

9/21/2020 to 10/26/2020 The Global Challenge of Vector Borne Diseases and How to Control Them
10/14/2020 AMCA/CDC Webinar: Mosquito Control Emergency Preparedness and Response to Natural Disasters
View our event calendar.

Committee Chairs

- **Annual Meeting**
  - Mark Breidenbaugh
- **Archive**
  - Scott Crans
- **Bylaws**
  - Janet McAllister
- **Finance**
  - Gary Hatch
- **Legislative & Regulatory**
  - Angela Beehler
- **Member Education**
  - Isik Unlu
- **Membership**
  - Dave Butler
- **Nominating, Awards**
  - Jason Kinley
- **Public Relations**
  - Dave Brown
- **Publications**
  - Dr. Steve Pressley
- **Science & Technology**
  - Dr. Seth Britch
- **Young Professionals**
  - Kristy Burkhalter

Editor Information

- **AMCA Newsletter Editor**
  - Clark Wood
- **Send Articles to**: amca@mosquito.org
- **Next Issue Deadline**: December 16, 2020
- **AMCA Move**
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On The Cover

Photo Courtesy of: Katja Schulz from Washington, D.C., USA

Our mission is to provide leadership, information and education leading to the enhancement of health and quality of life through the suppression of mosquito and other vector transmitted diseases and the reduction of annoyance levels caused by mosquitoes and other vectors and pests of public health importance.

Stay Connected on Social Media

@AMCATweets
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.

2020 RESEARCH FUND Awardees

Dr. Brelsfoard, “Non-target effects of autodissemination strategies for mosquito control”, Texas A&M

Dr. Reeves, “Effect of size and circadian activity patterns of non-target pollinators on their chronic and acute susceptibility to adulticides”, University of Florida

AMCA RESEARCH FUND

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 (SINCE FEBRUARY 23, 2019)

• 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
“You may be an Ento working under a scope, you may be a Pilot, flying on a joke.
You may be a Vendor, just twitching to spray, you may be a Fed, with no money to give away.
But you’re gonna have to serve somebody…”

Yup! Don’t matter who you are, we all serve somebody. It might be your mamma, it might be your husband, it might be your kids, your pastor, your boss, constituents, politicians, god, nature, but we all serve somebody.

Who do I serve? Well, this year I serve YOU. Our membership. And believe me, despite all the setbacks this year, despite all the global issues, the national issues, and even the local issues, I am treading water to better serve you. And yes, even Utah has experienced unprecedented events this year that will probably not occur again for quite some time. And I am not even talking about COVID or the social protests, but a windstorm that caused major damages within our state and even an earthquake that sloshed around our larvae like the SS Minnow. This is all on top of our regular job duties, extracurricular activities, volunteer work, and personal lives. I would like to say I can’t wait to end 2020, but I’m a glutton for punishment and I know this year will make all of us stronger. This year will definitely be remembered for the rest of our lives.

And what have we done this year? Well, not as much as I had hoped, but that is certainly not due to lack of effort. It is just much more difficult this year to get things accomplished when there is so much uncertainty surrounding us. And unfortunately, your Board of Directors and I must exhibit fiscal responsibility to ensure the solvency of our beloved association. Having said that, I would like to highlight the below topics to ensure that our membership is kept informed of some of our major accomplishments and topics of interest.

Executive Director Change
I am sorry and yet delighted to report that our management company has provided AMCA a new Executive Director. Megan MacNee will be serving in this capacity for AMCA moving forward. I have already provided you an official announcement on this topic via an email blast, but I want to take this opportunity to once again welcome Megan. Her new role will ensure the membership that both your Board of Directors and AMG have the best interest of the association at heart and that this change should further improve the services that we provide you. The members of the Board have worked with Megan for many months now and we have little reservation that she will excel in this position. Welcome aboard Megan!

Centers for Disease Control and Prevention Grant
I am happy to report that the AMCA has been awarded a competitive grant proposal on “Training and Certification for Culex (West Nile Virus) Surveillance and Control.” This grant will allow us to develop best new management practices material for mosquito and vector control professionals and will culminate in training opportunities that will further enhance our existing public health infrastructure. I am simply ecstatic about this opportunity and have no doubts that this will be a positive endeavor for our association, our members, our partners, and public health as a whole. This opportunity would not have been afforded to us if it was not for the hard work and diligence of key members of our organization. These include Gary Goodman, Dr. Rajeev Vaidyanathan, Dave Brown, David Butler (AMG), Angela Beehler, Dr. Brian Byrd, Dr. Mark Clifton, and many others that have selflessly donated their valuable time and expertise. I would also like to thank Dr. Roxanne Connelly for all of her inspiration, encouragement, and fervor. This grant further enhances our partnership with the CDC and will hopefully pave the way for many other opportunities down the line. Kudos to all of you!

Membership Survey
By now, you are well aware that we were forced to table our Strategic Planning until this pandemic subsides. However, many of you are aware and have responded to a qualitative Membership Survey that was circulated amongst you. Those results have been tabulated and are now being incorporated into a much more detailed survey that will be sent out to you. We had an excellent response rate to the last survey, and I hope that you further prove the dedication of this group to our survey conductors and provide your feedback as quickly as possible. Remember that this is really for you and it is a great opportunity to let your leadership know what we are doing right, what we are not doing, and where we need improvement. Please take a few moments to make things better.

Journal of the American Mosquito Control Association
Yes, we realize that some changes need to be made and that the journal needs a bit of work to get back to its prestigious position of days before. Our Editor, Dr. Lal Mian, has been tirelessly working towards this endeavor and he has been doing a fantastic job, but the work demand continues to grow and we have realized that it is time for the journal to acquire Subject Editors to assist Dr. Mian. I am happy to report that the Editorial Board and Publications
Committee have been working hard to select Subject Editors for the journal and that a formal recommendation will be made during the Interim Board Meetings in November of this year. This will certainly be a welcome change for Dr. Mian and should be able to help him to revitalize the journal.

**Technical Advisor, Public Relations, and Social Media**

Boy oh boy, did we make a great selection in Dave Brown as our Technical Advisor. He had some large shoes to fill, and some stiff competition from the other candidates, but the Board and I could not be more ecstatic about our selection and the many activities that Dave has already accomplished. Aside from the many fires that he puts out, the many calls and requests that he answers from our members, the numerous letters to politicians, regulators, and federal partners, Dave also has many new ideas that have invigorated our association and the TA position. He will provide his updates on the legislative front to you in his own writeup, but I want you to be aware that he has also been working hard with nominations, bylaws, public relations, and social media. My sincere appreciation and heartfelt thank you goes out to him and members of the above committees that have assisted him. I hope we benefit from his wisdom and enthusiasm for many years to come. Oh, and did I mention that he accomplished most of these tasks with only one eye? Arrrgh, but I will leave that for you to ask him about next time you see him.

**Bylaws and Diversity/Inclusivity Subcommittee**

I also want to take a moment and thank a few folks that have also put in numerous hours of volunteer time for your association in order to make things better. These include my brother from a different mother, Herff Jones, and my sister from a different mister, Dr. Kristen Healy. Herff has been serving as the Board Liaison to the Bylaws Committee, and with the help of Dr. Janet McAllister and the rest of the Bylaws Committee, they have been working on addressing a variety of matters that have been brought to our attention. Many of these matters will more than likely culminate in Bylaws changes, which the membership will have an opportunity to review and vote on at a later date. Additionally, Dr. Healy and the rest of the subcommittee continue to make strides in ensuring our association best interests of ALL of our members.

**Legislative and Regulatory Updates**

Angela Beehler will provide a detailed update about L&R in her report, but I wanted to take a small amount of your time and reiterate the importance of the work that Angela and the many members of her committees and subcommittees provide to the association. Our members often forget that Angela not only juggles a full-time job, but as a mother of two young children, her time is even more in demand at home. Often, the only time available for her to send out updates is in the middle of the night at 1:00 or 2:00 am. How many of you work that late? If that’s not dedication, then I can’t tell a juvenile Anopheles from an Aedes. Thank you, Angela, and thank you to all of your members, particularly Dave Brown, Gary Goodman, and Dr. Mark Clifton. The updates that Angela provides you center around funding initiatives to enhance vector control capacity in the United States through the TICK Act, the SMASH Act, and a nationwide surveillance program (VectorSurv). But as mentioned, I will not take her thunder away and allow her to provide these updates to you directly herself.

**Annual Meeting**

Many of you are wondering what we are going to do with the Annual Meeting and if things have changed. As of now, they have NOT. We are still planning on having, in the minimum, a hybrid meeting, where those that cannot attend will still be able to deliver and attend the talks electronically. So, for those of you that have submitted abstracts or are participating in symposiums, please make plans to deliver your talks regardless of whether or not you attend in person. If we need to make an additional decision down the line, trust me when I say that I would be the last person that would want to cancel this meeting. But again, this will need to be an economic and public health decision, and only time will tell what is ahead of us.

In conclusion, thank you once again for allowing me to serve as your president. This presidency is certainly not what I had in mind, but we are making the best out of it. I appreciate your patience, your support, and your continuing dedication to your craft. I know that I should not go chasing waterfalls (there’s no mosquitoes there anyways), but I love adventures and will continue to shake things up. I want you to continue to keep the greater good in mind and have vision for the future, because this too shall pass. And remember, you gotta risk it to get the biscuit!

Dr. Ary Faraji
AMCA Board President
Dear AMCA members,

We wanted to share an exciting new change happening within AMCA. Over the past year and a half, our organization has been working to establish a Diversity and Inclusivity committee, which became an official subcommittee this spring. While this change has been slow, it has always been of great interest to AMCA to support diversity and inclusivity, and we are happy to be able to rolling out this subcommittee at a time when it is most relevant. AMCA is fully committed to supporting the diversity of its members, and are proud to be an inclusive group. The initial members of the Diversity and Inclusivity subcommittee have already begun meeting virtually, and have many exciting events and opportunities planned for the future. We welcome new members to this subcommittee, and look forward to your interest and support on this endeavor. If you are interested in joining the subcommittee, please contact the current D&I subcommittee chair, Kristen Healy, at khealy@lsu.edu.

Ary Faraji, AMCA President
Kristen Healy, D&I subcommittee chair

AMCA is proud to announce that we have received a $250,000 grant from the Centers for Disease Control and Prevention. This grant will help support our current West Nile virus surveillance programs and provide the necessary funding for public health professionals to properly identify, prevent and respond to West Nile virus and related outbreaks.
Notes from the Technical Advisor

Dave Brown

I want to give my thanks to all of you in the field operating as essential workers protecting public health from mosquito-borne illnesses. You did this through extraordinary conditions never seen in most of our lifetimes. As we come to the end of this mosquito season, please know that AMCA is doing what we can to support your work and will continue to do so to the best of our abilities.

Below are three items we continue to manage to maximize the work that you do.

Opposing Legislation that undermines FIFRA

As many of you know, AMCA signed on to a letter supporting the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) and opposing the Protect America’s Children from Toxic Pesticides Act of 2020 (H.R. 7940, S. 4406), which undermines 70 years of regulatory advancement based on best available science. The Responsible Industry for a Sound Environment (RISE) helped draft this letter to ensure that it covers the entire pesticide and pesticide use industry. THANK YOU to the state and regional mosquito and vector control associations that also signed on. If we left anyone off, please let me know and I will make sure you get included.

NALED Health and Human Risk Assessment

EPA released the Health and Human Risk Assessment in early September, with a comment period that will end November 9, 2020. AMCA has already started the review process for this very important tool in our public health mosquito control efforts. AMCA members can help by identifying and sharing with AMCA leadership the continued need for this product in their control programs. Let your AMCA Regional Directors know what the impacts to your programs would be if we lose this vital active ingredient.

EPA also released some recommendations for use of naled in mosquito control operations that were distributed to our AMCA membership. Please review these and let your Regional Directors know if you can comply with these recommendations. These are NOT requirements at this time but could become requirements after the 60-day comment period is over and an Interim Pesticide Decision is made.

Website and Webinars

AMCA is working to make our website more user friendly for both our public and our members. We have moved the FAQ of mosquito control to the front page, as well as information on topics of interest to our public (Sterile Insect Techniques, for example). In addition, we will be promoting webinars in an effort to provide opportunities for members to get CEU’s from their home state. Let us know what we can do to improve both efforts.

Young Professionals Update

Kristina Lopez

As the AMCA Young Professionals committee says goodbye to the members of the 2019-2020 committee, we say hello to all the new and returning members to our 2020-2021 committee! Despite these incredibly uncertain times, we are going forward with our YP activities with the same dedication and fervor like any other year. Below are three items we continue to manage to maximize the work that you do.

The events the 2019-2020 committee planned for the 2020 AMCA Annual Meeting were going to be fantastic. Between the pre-conference workshop, expert round table symposium, booth activities, and YP dinner, there was going to be so many educational and networking opportunities for young professionals.

As the committee beings the planning process for the 2021 AMCA Annual Meeting, we plan to retain much of what was planned for the previous meeting. We are always open to any suggestions or additions to activities or topics that should be included in the YP events, so please reach out! With so much of the groundwork already laid by the previous committee, the 2021 YP meeting events will certainly be a hit!
Take a moment to reflect upon what you did this summer to improve the quality of life in your community. In a year where everything seemed to be falling apart, I witnessed courage, compassion, and versatility from all of you. Give yourself credit for the positive impact you’ve made – maybe you saved a backyard family dinner from swarming mosquitoes, or prevented an immunocompromised resident from being exposed to a potentially deadly disease, or helped advance the future of mosquito control by participating in a product trial or innovative study. It is impossible to quantify the number of lives you enhanced, but it’s safe to say you are essential to public health.

AMCA is working with partner organizations to promote new vector control tools, training, and methods. There are several projects in their initial phases that I will report on later, but everything revolves around available funding. That is why AMCA continues to work with public health partners to support the Strengthening Mosquito Abatement for Safety and Health (SMASH) Act and Kay Hagan Ticks: Identify, Control, and Knockout (TICK) Act to secure federal dollars to enhance vector control capacity. In case you did not know, the TICK Act is named after former Senator Kay Hagan, who died in October 2019 due to Powassan virus, a tick-borne infection.

Thank you to the Sustaining Members of the association for supporting legislative and regulatory advocacy so AMCA can continue to be the primary resource for information, education, and advancement in mosquito control and vector-borne disease prevention. If you are not yet a Sustaining Member, please consider it for the future, because your Legislative and Regulatory (L&R) Committee members have been engaged on several issues that may be of interest to you. I chose to start this issue with the quote from Bertrand Piccard, because AMCA maintains a “pioneering spirit” even though regulatory processes seem to move at a snail’s pace.

The Florida Keys Mosquito Control District’s (FKMCD) board has approved a proposal to utilize non-biting male, genetically modified mosquitoes as part of a trial to determine their effectiveness in controlling the wild population of Aedes aegypti. According to an August 2020 press release, the FKMCD’s approval comes after the U.S. Environmental Protection Agency (EPA), U.S. Centers for Disease Control and Prevention (CDC), and seven government agencies in Florida approved an Experimental Use Permit, following an exhaustive regulatory assessment that included more than 70 scientific and technical documents, 4,500 pages of material, and 25 commissioned scientific studies. All found that Oxitec’s technology poses no risk to humans, animals, or the environment, including endangered species. Congratulations to all those involved. The work leading up to this trial was an extraordinary effort, and we look forward to viewing your results.

The AMCA provided comments on the United States Fish and Wildlife Service’s (USFWS) proposed rule to designate critical habitat for the Florida bonneted bat. The comments focused on ensuring the proposed designation of critical habitat for the Florida bonneted bat does not result in unwarranted public health and economic impacts due to restrictions on mosquito control efforts. Specifically, the committee expressed concerns about the arbitrary inclusion of well-developed residential and business areas as proposed critical habitat. For a copy of the letter AMCA submitted to the USFWS, please contact Mark Clifton, Chair of the Endangered Species Act (ESA) Subcommittee, or David Brown, Technical Advisor of the AMCA.

Thank you to Michael (Mike) Riles for his work as the Endangered Species Act Subcommittee Chairman. Mike will stay involved with L&R but has handed the reins over to Mark Clifton to focus on his various other roles (student, disc jockey, etc.). Most notably, Mike continues to draft best management practices for mosquito control professionals relating to pollinators, a much-anticipated document that will demonstrate AMCA’s dedication to pollinator protections.

EPA released draft human health and ecological risk assessments for naled for a public comment period ending November 9, 2020. The draft risk assessment is the first step in a multi-step process that is designed to both identify risk and then identify actions that can mitigate those risks. Final decisions are expected in 2022, but in the meantime, those who use naled for aerial mosquito control should be aware of EPA’s current recommendations. EPA recommends mosquito control programs notify residents 24-hours prior to spraying and inform them to:

- Stay indoors with the windows closed during spraying.
- Do not allow children to play outdoors for four hours following spraying.
- If you are outdoors when spraying takes place and encounter
the chemical, rinse your skin and eyes with water.

- Wash fruits and vegetables from your garden before storing, cooking, or eating. This is a good habit, regardless of whether mosquito spraying has occurred.

- Cover outside items like furniture and grills before the spraying takes place. Bring pets and items like pet food dishes and children’s toys indoors. Rinse any uncovered items left outside during spraying.

- If you think you have had a reaction to the spraying of naled, talk to your doctor or call the regional Poison Control Center at 1-800-222-1222.

EPA’s risk assessment indicates new application parameters could significantly reduce human exposure levels and reduce any ill health effects by lowering application rates (0.05 lb/acre vs. 0.1 lb/acre, or only about 50% current max label rate), higher release altitudes (300 feet vs. 200 feet), spraying only during conditions of higher ground wind speeds (10 mph vs. 5 mph), and using smaller spray droplet sizes (more toward DV50s of 40 um vs. 60 um); but how might this then detrimentally affect naled’s very good control efficacies, either for getting the product into the target zone or its knockdown once in the target zone? To answer these questions and help EPA make informed regulatory decisions, AMCA’s diverse membership must comment on the docket.

If any of these recommendations are cause for concern, contact the AMCA Technical Advisor, David Brown, your AMCA Regional Director, or comment directly to the docket by November 9th. The draft risk assessments are available in naled’s registration review docket EPA-HQ-OPP-2009-0053 at www.regulations.gov.

These topics and more (unmanned aircraft, cannabis, federal lands) will be covered at the AMCA Annual Meeting and the Washington Conference, so I hope to see you there.
It’s late September and while cold-fronts, north winds, and dry air moves across most of the continental United States, Florida, South Carolina, Georgia and Alabama continue to deal with daily rains, hurricanes, high humidity and 90-degree temperatures ….. and of course, lots of mosquitoes. Most Districts will continue to treat larval and adult populations on a daily basis through middle October when weather patterns finally change in the South Atlantic.

Covid and Annual Meetings: All regional meetings in the South Atlantic have been cancelled for the remainder of 2020 and early 2021. The regularly scheduled in-person meeting for the FMCA, GMCA, SCMCA and Mid-Atlantic MCA have all been cancelled with all four currently planning on offering a virtual meeting. The FMCA will also offer the Dodd courses in a virtual platform with most traditional courses (and some new courses too) being available. The FMCA Fly-In will not be offered in January 2021 due to the hands-on nature of that meeting.

EPA and Dibrom: All members of the AMCA and especially the South Atlantic region who aerially apply adulticides are asked to submit public comments to the US EPA recently released risk assessment on naled. The EPA has now modeled risk potential for naled and determined a risk to children up to 4-hours post spray. The EPA is now asking for "less deposition and less exposure" although no prescription for how this might be achievable without accepting some operational nightmares in use patterns (such as reducing application rates from 1.0oz/acre to 0.5, increase release heights to 300ft or higher, spray when ground wind speeds exceed 10 mph, further reducing droplet sizes beyond what was prescribed in PRN 2005-1). Accepting these changes in use patterns will most certainly reduce efficacy. Even more problematic might be a public relations nightmare where the EPA now suggests 24-hour advanced public notice and warnings to stay indoors, close windows, keep children inside for 4 hours, wash skin and rinse eyes after expose, etc. All of these precautions have been deemed “unnecessary” by the EPA in previous naled re-registration processes but there might be a change in attitude/position in Washington DC on some of these matters. And what might be the catalyst for these new recommendations ….. all of this will need to be evaluated.

A bit of an interesting operational note: Over the past two years, both Manatee County and Lee County MCDs were issued special permits to aerially adulticide State-lands that were designated as “no-spray zones” in 1987. Over the past 30+ years the Districts could only aerial adulticide AROUND the State-managed lands which then functionally served as a 2,000 acre “mosquito sanctuary”. The Districts could effectively reduce mosquito populations outside the state property but within a few days migrating mosquitoes would quickly reoccupy the areas previously sprayed. All of this resulted in a large amount of chemicals being applied around the State lands for 2+ weeks on multiple spray missions until the mosquito refuge was finally depleted. Ironically, all of this additional chemical was being applied to the same watershed that the State Department of Environmental Protection was trying to protect.

Fast-forward to 2019 and 2020: This year was much different ...... one large aerial adulticide mission over the entire geographic areas in both Lee (2019) and Manatee (2020) applied early in the season including the state lands not only immediately reduced the mosquito population (>95% control) but also required no additional follow-up spray missions to address migrating mosquitoes in the following weeks. Interesting operational note ......the adult Aedes taeniorhynchus populations remained very low all summer despite multiple flooding tides on the nearby saltmarshes in both Manatee and Lee. No additional aerial adulticide work was needed for the remainder of the season. It is speculated that the early and well-timed adulticide mission eliminated the first large brood of saltmarsh mosquitoes and subsequent broods (eggs) were never able to re-establish over the duration of the summer. Finally, it wouldn't be proper if I didn't share a nod of the cap to Mr. Allen Woolridge who suggested this possibility over a decade ago.
Mosquito and vector control programs within the Mid-Atlantic region have worked diligently to protect public health during 2020 in spite of COVID-19 logistical challenges that have ranged from personnel reassignments to PPE shortages. Professional associations within the region have likewise pivoted and some are offering virtual or hybrid educational meetings while others have had to cancel or postpone meetings. The North Carolina Mosquito and Vector Control Association (www.ncmvca.org) will offer its 54th Annual Meeting virtually on November 6, 2020. The Virginia Mosquito Control Association (http://mosquito-va.org) has planned a virtual Annual Meeting, January 26-27, and the Mid-Atlantic Mosquito Control Association (www.mamca.org) has also opted for a virtual spring conference in 2021 (details forthcoming).

DELWARE UPDATE

Dr. Bill Meredith, Department of Natural Resources and Environmental Control

Abnormally dry weather from March through June kept mosquito populations relatively low, but this all changed following passage of Tropical Storm Fay in early July and Tropical Storm Isaias in early August. Each coastal storm dropped several inches of rain throughout the state, along with other severe local thunderstorms and high heat and humidity persisting into early September (the time of this report), all setting off large coastal and inland broods of *Aedes vexans*, *Ae. sollicitans*, *Ae. taeniorhynchus*, *Ae. atlanticus*, and *Ae. albopictus*, plus *Psorophora ferox* and *Ps. ciliata*.

Given the amount of water that’s inundated Delaware’s landscape combined with favorable environmental conditions for certain species, it became impracticable to try to control these eruptions relying just upon larviciding, so we then had to go with some expansive aerial adulticiding to bring things under control. But despite our summer having now turned wetter than normal, things are unusually quiet on the arbovirus front, in that through early September we’ve found WNV at only one of our 20 sentinel chicken monitoring stations around the state and no EEE in our chickens, and there have also been no WNV or EEE human or equine cases. But how long our good fortune might last remains to be seen with late October still rather cool and mosquito populations were not abundant, particularly in comparison to previous years (you all remember 2018). Following that was a dry first half of June, so given the circumstances of the pandemic causing a delay in service, the outcome was quite well.

PPE has been difficult to obtain, as other states have mentioned. Surplus inventory from last year has been a big help. Maryland has seen plenty of rainfall after storm Isaias passed through, providing us with plenty of *Ps. ciliata* and *Ae. vexans* to control. Likewise, the storm occurred during a full moon and marshes became prime habitat for *Ae. sollicitans*. We initially conducted aerial spraying for two weeks to control both freshwater and saltwater populations in approximately 70,000 acres; however, multiple broods continue to emerge, and the state has now completed 105,000 acres of aerial control.

MARYLAND UPDATE

Kyle Brinson and Brian Prendergast, Maryland Dept. of Agriculture

Maryland, like all, is working around the current pandemic in the best ability possible and we are all working under the safety protocols recommended by the CDC. The pandemic caused a brief delay in ground based ULV mosquito control services this year. We typically start ULV spraying the third week of May; however, this year’s program started around mid-July.

Thankfully, the delay was not detrimental. With the year-round staff we have, MDA provided aerial larvicide services and controlled 5,732 acres via airplane to control the emergence of spring mosquito species in late April. May temperatures were still rather cool and mosquito populations were not abundant, particularly in comparison to previous years (you all remember 2018). Following that was a dry first half of June, so given the circumstances of the pandemic causing a delay in service, the outcome was quite well.

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NORTH CAROLINA UPDATE

Michael Doyle, Communicable Disease Branch, NC Dept. of Health and Human Services

The NC Mosquito Management Task Force, under the auspices of Emergency Management (EM), has been formed in the last year, to coordinate large-scale disease and post-hurricane responses. The multiagency task force includes representation from EM, Public Health Preparedness, Communicable Disease Branch, and the North Carolina Mosquito and Vector Control Association.

The state of NC is partnering with East Carolina (ECU), Western Carolina (WCU), and NC State (NCSU) to create insecticide resistance profiles for *Aedes albopictus*, *Culex quinquefasciatus/pipiens*, and *Aedes triseriatus*. Currently these species are being tested against 8 active ingredients and several formulated products. The goal is to assist local programs for their responses to local mosquito-borne outbreaks.
Approximately eight local mosquito programs and two universities are submitting mosquito pools for arboviral diseases (i.e., eastern equine encephalitis, West Nile virus, and La Crosse encephalitis). Approximately 300 mosquito collections have been tested at CDC thus far in 2020. All 2020 testing is being performed by CDC-Fort Collins because state lab resources have been dedicated to human COVID-19 testing.

NC’s local mosquito programs, as well as ECU, WCU, and NCSU are contributing mosquito surveillance data to CDC’s MosquitoNet for the 4th year. Currently, approximately 15 counties are participating, with approximately 14,000 records contributed to date, with approximately 3,700 thus far in 2020.

State Communicable Disease Branch staff is coordinating the “NC Biogents Mosquito Counter Dashboard” which reports the number of mosquitoes being collected by the traps in near real time and is visible to all participating mosquito programs. Currently five NC counties are reporting continuously from 11 traps in the eastern half of the state.

**VIRGINIA UPDATE**

**ANDY LIMA, VIRGINIA MOSQUITO CONTROL ASSOCIATION PRESIDENT**

The 2020 mosquito season has been filled with challenges, but also innovation, due to the COVID-19 pandemic. Virginia jurisdictions have all been affected to varying degrees—causing changes to operations and staff schedules. Still, the work that we do as vector control professionals is as important as ever, as many of the risk factors for COVID-19 are closely aligned with risk factors for vector-borne diseases like West Nile virus, which disproportionately affects older adults and those with underlying medical conditions. As such, much vector control work has continued, with a focus on activities that directly impact public health, such as West Nile virus surveillance in mosquitoes and prioritization of sites where vectors like *Culex pipiens/quinquefasciatus* are known to proliferate.

A majority of jurisdictions in Virginia have seen lower-than-average numbers of *Culex* mosquitoes and correspondingly low WNV infection rates during the 2020 season. Although this is welcome in such a difficult year, there are concerns that low WNV positivity this season could lead to above-average rates during the 2021 season. This is based on a troubling 3-year trend that has seen “outbreak” years during 2015 and 2018, and the working knowledge that low-activity years, where large numbers of birds are not exposed to WNV, can precede boom years when naïve populations of birds from the previous year see spikes in WNV infection. Southeastern Virginia saw higher-than-average rates of EEE-positive mosquitoes earlier in the year. Some jurisdictions have continued pesticide resistance studies, and continue to share their results with CDC.

With gratitude to those continuing our important work,

**WEST VIRGINIA UPDATE**

**ERIC DOTSETH, WEST VIRGINIA DEPARTMENT OF HEALTH & HUMAN SERVICES**

There have been two human cases of La Crosse encephalitis in West Virginia. There has been no indication of West Nile virus human infection and no human cases of non-endemic mosquito-borne diseases (dengue, malaria) in the state. As of August 28, there have been 171 human cases of Lyme disease and three spotted fever rickettsioses human cases in the state.

During the period April 5 to August 28, the West Virginia Department of Health & Human Resources conducted active tick surveillance in the following 20 counties: Barbour, Brooke, Cabell, Greenbrier, Hancock, Harrison, Kanawha, Marion, Marshall, Mason, Mercer, Monongalia, Monroe, Ohio, Preston, Raleigh, Summers, Taylor, Upshur, and Wood counties. Blacklegged tick (*Ixodes scapularis*) nymphs were active throughout all counties surveyed. *Ixodes scapularis* nymph density was higher in high Lyme disease risk counties than low Lyme disease risk counties. There are large enough samples to determine the Lyme disease infection rates from multiple sites in central (Kanawha County), southeastern (Greenbrier, Summers counties), and northeastern (Barbour County) West Virginia. Based upon active tick surveillance, veterinary tick submissions, public consultations, and human/animal patient disease records, the lone star tick (*Amblyomma americanum*) was more active in the Kanawha-Cabell counties region than in previous years. The Gulf Coast tick, *Amblyomma maculatum*, has recently become established in Cabell County in southwestern West Virginia. The Asian longhorned tick (*Haemaphysalis longicornis*) was discovered in three new counties in southeastern West Virginia (Greenbrier, Kanawha, Raleigh counties) and one new county in northeastern (Mineral County) West Virginia. *Haemaphysalis longicornis* larvae recently started to emerge in the middle of August. To address the growing concern for *H. longicornis* and *Theileria orientalis*, West Virginia University Extension, in collaboration with Virginia Polytechnic Institute and State University, United States Department of Agriculture Animal and Plant Health Inspection Service, West Virginia Department of Agriculture, and West Virginia Department of Health and Human Resources, developed a webinar for West Virginia livestock producers.
Updates galore from the AMCA North Central region! Between COVID-19 staffing and licensing issues, lack of lab capacity for mosquito testing, record flooding in Michigan and high lake levels throughout the Great Lakes region, almost everyone has news to share. Despite all the updates from around the region, I think it is safe to say that Midland County mosquito control wins the “2020 is the worst year ever” award. If you think your season was unique or challenging, at least you did not have two dams break!

I received such a robust response from our AMCA membership this month that I thought it would be best to let our members speak for themselves. Below you will see updates pretty much as I received them from vector control agencies and associations in Illinois, Ohio, and Michigan.

Update from Paul Bauman of the Toledo Area Sanitary District, Ohio

It has been a very hot and dry season leading to low nuisance mosquito populations. However, as we know, this type of weather pattern is often associated with increased West Nile Virus activity. Due to COVID, our mosquito testing has been very limited. This has had a huge impact on our program, as we are lacking the data necessary to inform our operational strategies in place for early intervention to protect the public’s health. It has been a scientific setback for our program. In addition, from a financial perspective, we had to pay for testing that was not budgeted for and we are currently looking at the added expense of creating our own testing facility so that, in the future, we will not be dependent on outside agencies for the data necessary to operate in the most informed manner possible. The season has been a struggle to say the least!

Update from Jason Probus of the Macon Mosquito Abatement District, Illinois

This spring we hired an entomologist, Elizabeth Clodfelter, in April after Sam Force retired. This is significant in many ways, but importantly I think it highlights the ability for undergraduates who have an interest in entomology to find employment after college and put their skill set to work in a real meaningful way.

Additionally, maybe the most exciting information coming out of our district is our surveillance efforts specifically geared toward Ae. albopictus collections. To date we have caught over 4,000 albopictus since we began in week 21. This is twice as many as last year and will likely end up as more than the last two years combined. The season has been a struggle to say the least!

TO WHAT END? My hope going in was to lay the breadcrumbs that would help determine if there was real need for wide area liquid larvicide applications either with backpacks as targeted treatments or a truck mounted unit [ed. note: Jason, you are not getting your Buffalo Turbine back. The NSMAD bought it fair and square]. Obviously with albos being day-time active we need other application methods that we currently don’t have or at least may not be incredibly effective, especially if there is any chance these are vectors.

We are working with the University of Illinois, specifically INHS, to examine other vector borne diseases that may be in the area by
submitting all “bycatch” from our traps for further analysis—this includes all of our *Ae. albopictus* as well. To date, we have collected 13 species—of interest [including a] handful of *Anopheles barberi*.

**Update from Mary Mcarry of the Michigan Mosquito Control Association, Michigan**

The Michigan mosquito control districts implemented many adaptations in response to COVID-19 and have continued administering programs amid these myriad challenges. Pesticide certification testing delays, staffing challenges, the implementation of wearing masks and social distancing, eliminating the process of technicians going door-to-door in search of mosquito habitats, and suspending long-held procedures in order to comply with COVID-19 safety considerations are some of the challenges we have been faced with.

Michigan’s arbovirus testing was impacted early on due to national COVID-19 testing utilizing the same supplies as Michigan State University’s arbovirus testing program; however, MSU has been up and running since late-July. They’ve tested 5,033 mosquitoes in 482 pools with 14 positive as of August 31, but turnaround time on test results has been impacted due to staffing restrictions and lack of testing materials at the laboratory. In addition, the Michigan Department of Health and Human Services has reported 10 horses testing positive for Eastern Equine Encephalitis (5 in the last week of August alone), two human cases of Jamestown Canyon virus, and two WNV positive birds. With EEE a major concern in Michigan in 2019 and again in 2020, districts continue to battle the prolific bridge vector, *Coquillettidia perturbans*.

The hot, dry weather that has prevailed for much of the summer means conditions are suitable for a rise in WNV. Most of the activity seen with WNV is near metro areas (city and surrounding communities), although it can also be found in rural areas. Saginaw saw near average virus activity during July with regards to WNV in Culex mosquitoes, yet crows have been surprisingly absent with WNV in the entire region. Saginaw County also had a La Crosse positive mosquito collection (*Ae. triseriatus*) on the Shiawassee National Wildlife Refuge in late July. Bay, Midland, and Tuscola counties have had no West Nile Virus activity reported to date. In response to WNV activity, aggressive catch basin and urban fogging campaigns were executed this 2020 season by all mosquito districts in Michigan.

**Update from Carl Doud of Midland County Mosquito Control, Michigan**

An eventful season is an understatement for 2020! - A pandemic and a 500-year flooding event ensured that it was a season we will never forget, despite the desire to do just that.

COVID-19 has provided a number of challenges to Midland County Mosquito Control (MCMC) regarding staffing levels and the ability to carry out field work due to social distancing precautions. The most significant impact this season from COVID was the inability to hire new employees due to lack of Michigan state testing opportunities for pesticide applicators. As such, MCMC had only half the normal field crew through the demanding spring treatment efforts. Spring is a crucial time when we experience a massive hatch of various spring woodlot Aedes systems leading to increased populations of *Anopheles* species and *Coquillettidia perturbans*. Information from the Corps of Engineers shows that 2019 was a record-breaking year for Great Lakes water levels and 2020 lake levels have surpassed those marks from April through August. In fact, on August 28, Lake Michigan was 5 inches higher than it was at that time in 2019 and an inch above its record high set in August 1986. The situation worsens when northeast winds push Lake Huron water inland to create additional breeding habitats in woodlots and ditches near the Saginaw Bay or along the Saginaw River, which runs through both counties.

In addition to the COVID-19 crisis, Michigan mosquito control districts had to deal with an abundance of rain in May and for one district in particular, Midland County Mosquito Control, the rain event was exacerbated by two dam failures and a subsequent flood (see Carl’s update below). Since that time, the Great Lakes Bay Region has experienced a hot, dry summer with fewer-than-average floodwater mosquito species to contend with. However, for several years Great Lakes high water levels, Lakes Huron and Michigan in particular, have affected Bay and Saginaw Counties by creating permanent water habitats along the shoreline or river systems leading to increased populations of *Anopheles* species and *Coquillettidia perturbans*. Information from the Corps of Engineers shows that 2019 was a record-breaking year for Great Lakes water levels and 2020 lake levels have surpassed those marks from April through August. In fact, on August 28, Lake Michigan was 5 inches higher than it was at that time in 2019 and an inch above its record high set in August 1986. The situation worsens when northeast winds push Lake Huron water inland to create additional breeding habitats in woodlots and ditches near the Saginaw Bay or along the Saginaw River, which runs through both counties.

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species. Nevertheless, the dedicated team of returning technicians (those who had current pesticide applicator registration/certification) were able to treat $\frac{2}{3}$ of the flooded woodlot acreage of a fully-staffed year.

When the state finally provided a means to test new hires we were most appreciative. By that time we were able to bring onboard four of the eight who were originally processed to hire. After having to wait six weeks, a number of them had moved on to other opportunities. So at the height of 2020 staffing, MCMC was still only about 75%.

In May came 4+ inches of rain to Midland County and up to eight inches to areas along the Tittabawassee river system north of Midland. The Tittabawassee and a neighboring river made up a four lake system with 100 year old dams that all fed into Midland County. The influx of rain on already water soaked soil proved too much for the aging dams, and resulted in the failure of the two dams in Midland County. The Tittabawassee River crested to over 35 feet, the highest level ever recorded. Areas along the lakes and rivers downstream suffered catastrophic property damage estimated at $210$ million. Fortunately, no casualties!

Knowing that MCMC staffing was only half capacity, it was apparent we would not be able to effectively deal with the mosquitoes that would soon emerge from the flooded habitat. Therefore, efforts began for a Midland County first – an aerial operation to treat adult mosquitoes. A proposal for the operation was quickly formulated and within days was approved at the highest level at the state. MCMC then received calls from various state agencies to inquire how they could assist us to carry out the operation. We were most grateful for the support from these bureaus, which made it possible to arrange such a large undertaking in quick order. Clarke was selected as the contractor (with the aerial capability provided by Dynamic Aviation), and two treatments were carried out to 120,000 acres of Midland County in June. We were most grateful to Clarke/Dynamic for the provision of such a critical service at a time of considerable need. Given the staffing difficulties and scale of mosquito populations from the flood, this was the only option to provide substantial relief to the County.

Interestingly, Aedes canadensis was the most abundant species following the floods. This species was also the most abundant mosquito last season. Aedes vexans, usually the most troubling nuisance species, was present but not as abundantly as following the June 2017 flood, which was the most recent flood event prior to this year’s tragedy. Perhaps the seasonal timing of the May flood in 2020 favored Ae. canadensis over vexans.

Here’s to hoping that the remainder of the season will be much less eventful. Thankfully, so far all employees as well as their family members have stayed healthy through this challenging time. MCMC has accomplished a lot with just a few and has much to be proud of. And the County residents must have agreed, we enjoyed 91% approval during the millage renewal vote in August!

In one last update from Michigan, Tuscola Mosquito Abatement Commission has a new director, Larry Zapfe. Congratulations to Larry on this new position!
Greetings from Oregon! First off, I hope everyone is doing well and having a good season during these difficult times. As I am sure is true for many, Covid has created some obstacles for districts throughout the state, but overall everyone is having a successful field season. Most of Oregon saw above average precipitation for the month of May and first part of June, as well as pretty strong snowpacks overall throughout the state. A couple districts have reported some flooding events this spring, but overall most have experienced a fairly slow start to the season. Many districts have reported cooler temperatures and wind keeping trap numbers down and making it difficult to perform adult mosquito control operations in June and July. Summer finally showed up here in the month of August with temperatures reaching the century mark especially in Eastern Oregon, which has increased mosquito and virus activity around the state. So far, three counties have reported West Nile virus activity: Lane County one positive bird, Jackson County one positive mosquito pool and Malheur two positive mosquito pools. Everyone stay safe and I look forward to the day we can all get together again.

Statewide there have been no WNV positive pools, veterinary, or human cases, so far. Let us hope that continues.

As far as Flathead County goes, we had a very cool, wet spring and early summer with plenty of flooding that kept us very busy. The cool spring seemed to delay Culex development a bit, but with plenty of standing water left and much warmer temperatures, they are doing their best to make up for it. We are still seeing much more larval activity than is normal for us at this point in the season. Nights are starting to cool off, so, hopefully things will wind down soon.

Cascade County has had a very wet and cool start to summer. This created healthy floodwater mosquito broods in the area. As summer continues to heat up and dry out, the district is not seeing as many Culex spp. mosquitoes as other years and have not detected any WNVs as of yet; hopefully we can squeak by this year without any positive pools. As of August 14, all of our seasonal sprayer employees have returned to school, and our full-time field supervisor is out and about trying to keep Culex populations from getting out of hand.

The Fort Belknap Indian Reservation is experiencing the same weather patterns as Cascade County. We do have an epidemic and plague of grasshoppers.

Blaine and Phillips Counties have no positive pools which have been showing up these past few years for the month of August, but quiet so far.

Manager Dennis Longknife is concerned about what September may bring including WNV, add to that, when our birds head south for the year (whenever a cold front comes), as humans will become the new number one host for our WNV carrying mosquitoes.

The hot, dry and windy days have dried out much of our water sources (standing water bodies and most of our reservoirs), which is helping to keep mosquito numbers down.

At Hill County Weed and Mosquito District they have included a drone program this year. Josh Miller became licensed to fly in early June and, although he wanted to start surveying then, we ran into some equipment backorder and delivery delays for the initial surveillance drone. Next season they will be acquiring an applicator drone that will have the capabilities to treat areas for both weeds and mosquitoes. COVID-19 has presented some significant challenges for the district this year. The staff adulticides sections of the district, whenever weather allows. They have drivers scheduled almost nightly with the vast size of our district and small staff. This year the district anticipated shipping issues with the pandemic and ordered well in advance. Regardless, they experienced significant delivery delays. The first two weeks of August temperatures consistently ranged in the 90's, which drastically increased the mosquito populations. During this same time, the district ran out of product and scrambled to find solutions to help ease the problem. The citizens of Havre have voiced their support for adulticiding, and it has become very popular in the community, with very few people against it. During this time, calls to the office were exponential, however their hands were tied until they could get new product in. The district has a strong larvicidal program, which helped some, but the heat created a perfect storm for mosquito production.

Last year, the district also developed a Facebook page to educate, inform, and work with the public on mosquito control. During the time they were out of product, Facebook was a huge help in relaying their message to the public, plus it allowed them to share ways for folks to protect themselves and reduce mosquitoes in their own yards. The district found that the use of social media has been an incredibly valuable tool for communication with the public and has reduced calls to the office by providing the
information well in advance. The district routinely posts fogging schedules, educational materials, and trap count/results on this forum which has really become popular. The same page is also used by the weed district activities and the community has responded positively almost 100% of the time to posts and information shared on this page. Social media has certainly become a useful tool for them and has allowed the district to form an even stronger bond with the citizens they serve. Their goal is to keep up with the times and find new ways to conduct business that are effective.

In Glasgow, the season started off cool and wet. The staff was able to keep up on the larvicide treatments this spring. Unfortunately, the weekend of July 4th when the adult mosquitoes showed up. Folks started to notice mosquitoes moving into town. The district had a game plan to fog for mosquitoes three times during the week of July 4 and twice a week thereafter. They noticed a large number of pupa and larva in the irrigation canals and decided to try some 150 day briquettes within the canal in hopes of potentially reducing their numbers. With a little luck, the number of larva in the canal was greatly reduced. The district has been able to maintain a very low number of adult mosquitoes in town. August temperatures will increase, however, and it will stay hot and dry translating to more mosquitoes. Thankfully, cooler weather is coming over Labor Day weekend. Hopefully, a frost will come in early September to reduce the mosquito populations immensely. Fingers crossed! Wish all those with a longer season or continuous mosquito season the best!

**IDAHO REPORT**

**DESIREÉ KEENEY NWMVCA IDAHO REPRESENTATIVE**

As I am sure you are feeling challenges with this spring and the current pandemic environment we are facing, as too is Idaho. Most Idaho mosquito control districts were considered essential, as we all should be with the nature of mosquito control and public health. Many of the districts in Idaho were able to maintain operations early on with limited staff or trained returning and hired staff before the state was put into a lockdown. Most districts had to change operationally to having individuals in single trucks vs. teams of two. Training practices were impacted and limited to one on one training for new staff and/or delayed new hire start times in some cases by a couple of weeks. Once in the field most districts were able to operate normally and practice all the recommended CDC guidelines.

Current concerns discussed from districts this year were training and recertification accreditation for staff especially with cancelled conferences and none scheduled in the near future.

On July 1, Idaho Department of Environment Quality took over the IPDES PGP from the U.S. EPA for Idaho mosquito districts. While this was being implemented over the last three years, the phase for mosquito control districts was just this year and so far it was a smooth transition where anyone with a current PGP and NOI received a letter of coverage and instructions for the next year for reporting until the release of the new permit scheduled in October 2021.

**General Updates for areas of the state**

Canyon County Mosquito Abatement District welcomed a new Director, our very own NW colleague, James “Jimmy” Lunders whom we welcome whole heartedly to Southwest Idaho. Jimmy has 26 years of mosquito control experience and B.S. in Biology to add to CCMAD’s program. Already the local districts have been collaborative in efforts of public outreach with a “Drain the Rain” campaign and information sharing; we look forward to the future mosquito control work in Idaho that Jimmy can add with his experience and background. Welcome to Idaho Jimmy!

Other news in the SW part of the state, overall mosquitoes have been low and slow to start, the rivers and reservoirs have been lower with slow release and limited to no flooding early this spring. The weather has been cooler with highs and lows which has helped with the slowing of mosquito development and while we received a record number of rain days in June, due to the flexing temperatures, and no consistent hot days yet (>100), mosquito abundance continues to be steadily low. As I write this report, so far no one has reported WNV yet while in previous years it has been typically found in some SW districts in middle of June. Ada County MAD has only trapped 6,318 of mosquitoes (majority Aedes vexans, only 9.4% of Culex spp.), which is significantly less than in previous years and tested 210 pools, all negative. Canyon County MAD implemented a gravid trapping program this year and have found more Culex pipiens in previously undetected areas due to this.

In the high country, mosquitoes have been fairly low except one site in Valley County that was a little troublesome with over 2500 mosquitoes in one night in a trap which is extremely high for them.

Valley County has also implemented two New Jersey Light traps in their weekly surveillance program this spring as well in addition to their CO2-baited light traps. Payette County MAD has some high and low areas; overall counts are low and there is less Culex spp. this season; they have flown one aerial ULV application to date.

Speaking with districts in Central Idaho, it has also been a fairly slow mosquito season to start. Twin Falls Pest District (TFPAD) purchased a new drone this spring which they like and have been able to help with other local districts like Elmore County MAD in a collaboration for treatment effort and demonstrations to local Commissioners. One concern TFPAD has seen this year is the increased release flows and flooding from their local reservoir in response to the current issue of the Salmon runs. While this could cause some potential issues, overall they have been able to handle most of the populations of black flies and mosquitoes so far this year. Luckily both Elmore Co. MAD and Twin Falls PAD had staff hired and trained early on before the COVID-19 impacts so they were able to continue work with normal operations and precautionary measures.

Similarly to Western Idaho, eastern Idaho has seen highs and lows
in temperature, but with more sun and snow day to day, despite this and higher elevation they are still seeing slower mosquito starts as well. Bannock County MAD reported increased trap locations in surveillance this year which has helped them get a better idea of abundance in the county for decision making also while noticing an increase in Cx. pipiens over Cx. tarsalis which is new for them. Contrarily, eastern Idaho in comparison to western Idaho has also seen more flooding this year than normal like Central Idaho. Bingham and Power County MAD’s have also been normal with surge of spring Ae. dorsalis and other species in May. Bingham Co MAD has been steadily declining since with an average 26.7 mosquitoes per trap and only 11 tested pools, all negative.

As of September 2020 Idaho reports the following West Nile Virus activity: 1 human, 1 presumptive viremic blood donor, 5 mosquito pools in 6 counties.

That about wraps up Idaho this spring and early summer, good luck to everyone working through this pandemic and the operational challenges it may bring and I hope your West Nile Virus season is a slow one!

**WASHINGTON REPORT**

**DAVID BEUS, NWMVCA WASHINGTON REPRESENTATIVE**

Mosquito Control operations are in full swing in Washington, although Covid-19 has changed how it looks a bit just like everywhere else. In Adams County, we are in the beginning steps of starting a drone program for the 2021 season. I appreciate the help and advice received from other districts in the region that are already using drones.

Franklin County Mosquito Control District has started larvicide treatments with their drone. To date, it is going extremely well, and they are talking about adding a second unit for next year. If any Districts are interested in seeing how it works, let them know, everyone is welcome.

Benton County Mosquito Control District trapped mosquitoes near the Grandview Sewage Lagoons on June 22 that tested positive for West Nile virus (WNV) using our in-house Rapid Analytical Measuring Platform (RAMP) unit. Grandview Sewage Lagoons, which is in Yakima County, but incorporated into Benton County MCD, is typically one of the first locations to show up positive for the virus each year, so it was not a historical event. What set this year apart was the apparent lack of interest from the public. The Washington State Department of Health and the Benton Franklin Health District were busy with COVID-19 response, so they opted not to put out a news release. Benton County MCD put out a news release and posted recommendations for personal protection measures on social media. However, it appeared the public is desensitized by virus reporting in the media, because there was little coverage about the disease-carrying mosquitoes in the news and lower-than-average concern expressed over the aerial mosquito spraying conducted by the district in response to the WNv threat.

As of September 2020 Washington reports the following West Nile Virus activity: 10 West Nile Virus positive mosquito pools all in Benton and Franklin Counties.

That’s our short and sweet report from Washington State. I hope the season continues well for all without any serious Covid-19 disruptions.

**BRITISH COLUMBIA, CANADA REPORT**

**CURTIS FEDIUK, NWMVCA PRESIDENT**

**BC and Yukon Summer 2020 – Mosquito Surveillance and Control**

Weather conditions for central BC and the north, through into Yukon and Alaska, were very wet and cool for most of this summer. Cool April temperatures, and a snowmelt which was slow to begin, resulted in most programs starting about a week to two later than usual.

Precipitation totals for the months of May were 3X normal, 1.5-2X normal in June and similar for July. Monthly mean temperatures were 2-3oC below normal. Other areas of the province were generally cooler and wetter as well, although not as extreme or persistent as in the northern half of the province.

River levels throughout the province were above normal and flooding in some areas was extensive or prolonged. The frequent precipitation and elevated river levels created ideal conditions for recurrent larval development. Most program areas completed multiple, or additional, aerial applications and increased their total treatment area.

The precipitation and cool temperatures also prolonged adult mosquito survival. Adult mosquito populations and nuisance in many areas of the province were above normal, and in some areas reported as extreme.

Hot weather for the last two weeks of July and first two weeks of August, plus reduced COVID restrictions, increased both public use of the outdoors and adult mosquito activity. Following a bit of a surge in calls to report nuisance, adult mosquito populations quickly decreased with the hot temperatures and resident service calls during August decreased as well.

**NWMVCA News:** After much discussion of topics including travel restrictions, or not, economics, border status, group sizes which could meet etc., it was decided that the best plan forward was to postpone the 2020 fall meeting and those coming after it, for one year. The next NWMVCA Fall Meeting is tentatively (COVID 19) scheduled for October 6-8, 2021. Oregon will host the meeting in 2022.

Thank you everyone! Hopefully, everything will be back to normal in 2021. Stay safe out there!
A lot has happened since I took office as Industry Director in March. It has been a crazy year, but I am continuously impressed by the dedication of this group to education, scientific advancement, and the mission of protecting public health. While much of the nation was shut-down in response to Covid-19, both the CDC and EPA recognized our status as essential workers with their joint statement recommending the continuation of mosquito surveillance and control during public health emergencies and natural disasters (CDC Morbidity and Mortality Weekly Report, July 2019). Despite this statement, the vector control industry has faced unprecedented challenges with funding, staffing, and the availability of testing which highlight weaknesses in our nation’s public health infrastructure but also encourage us to find new ways of doing our jobs and interacting with the community. Below are three items we continue to manage to maximize the work that you do.

With the cancelation of our Annual Meeting in Portland, many of our industry partners dedicated significant funds to the association and spent extra time developing online education opportunities to keep our industry current. While I miss seeing everyone in person, we are living in a different world and the availability of webinars, short courses, and online conferences has increased tremendously. Topics like recognizing emerging infectious disease, planning for emergency response, implementing wide area larvicide programs, or even monitoring for resistance via bottle bioassays have all been made available to help membership meet their continuing education requirements. I want to extend a special thank you to Dr. Meredith Spence Beaulieu, past-president Jason Kinley and our technical advisor David Brown for partnering with the National Environmental Health Association to discuss the foundations of Integrated Mosquito Management and everybody else who has worked to plan these online events or participated in their success.

As environmental stewards we continuously strive to identify the most effective and environmentally friendly tools for controlling mosquitoes. While the EPA’s approval of sterile insect releases in Florida and Texas caught a lot of media attention, and shows great promise as part of an integrated mosquito management program, these control strategies along with others will continue to be scientifically vetted. Innovation, along with managing insecticide resistance is never easy, and we must continue to implement best management strategies including the rotational use of our limited chemical classes. While the organophosphates Naled and Chlorpyrifos are currently undergoing a registration review process by the EPA, we also saw the approval of a new active ingredient for the first time since 2009. Nootkatone was developed by the CDC, and is registered for use as both an insecticide and repellent although no commercial products are currently available.

As I finish writing this update, I think about all of our colleagues in South Louisiana who were impacted by Hurricane Laura/Sally and continue to deal with recovery efforts affected by mosquitoes. Many areas are seeing landing rates of greater than 100/minute and a recent press release documents Louisiana State University’s AgCenter explaining widespread cattle, deer, and livestock deaths as a result of exsanguination and exhaustion. Mosquito control professionals work closely with FEMA and State Health Departments to remain an essential part of emergency response recovery efforts and help individuals in impacted areas return to normal.

Dodd 2021 is going virtual!

The Dodd Committee is working diligently to ensure a full offering of core and public health CEU opportunities during the online, multi-day event. CEUs are valid for Florida but the Dodd is open to everyone. Yes, it’s going to look and feel a bit different, but the value remains the same. Program and details are coming soon!
Meet Your New Executive Director

Megan MacNee

Over the past year, it has been my pleasure to with the American Mosquito Control Association as your Deputy Executive Director and I am thrilled to begin serving as your Executive Director moving forward.

While association management might not be a career we think of pursuing when we are young, it is one that I now cannot imagine not having found. Much of my love for it builds on the opportunity to learn more about critical professions and fields, the impact they are making on the world, and having the opportunity to support them in these endeavors.

During my time with the organization so far, has given me the chance to learn about the complex ways our members are a vital to protecting the public health of our country and all the work it takes to ensure you are able to continue to do so.

Additionally, I love working with associations because of all the people you have the chance to meet. Both in a professional sense and on the personal level. During this past year, I have gotten to know many of AMCA's leaders and have both been impressed and enjoyed getting to know them.

They are hard working professionals who care so much about supporting their industry and everyone in it. On top of that, I have learned a lot from each of them on mosquito control and so much more.

While 2020 has not gone the way any of us would have expected at the start of the year, the opportunity to serve as your Executive Director is one, I am whole heartedly looking forward to. I am excited to dig in deeper to all the aspects of our association, continue to perfect what we do today, and support our leaders in its growth over the years to come.

Since I have not had the chance to meet many of you in person yet, I figured I would share a little about myself other than my resume. I have lived in Sacramento, California for the past ten years after moving up here to work in the Capitol after school. I fell in love with the area and the people and now have a 1920s bungalow I call home with my 90 lb. Shephard/Lab mix. I love traveling, often with my dog in tow, and cannot wait for the chance to explore new places again.

I am looking forward to getting to know many more of you and hope to see you at the AMCA 2021 Annual Meeting in Salt Lake City, Utah next year. In the meantime, if you have any questions or would just like to connect, feel free to reach me at MMacNee@mosquito.org.
Disease Carrying Insect Education and Outreach Materials

Educational media – ready for your region – without program development costs.

Provide community leadership, value, and service – without swatting a fly.

Be 1-2-3 ZIKA FREE!
A three step guide to avoiding the ZIKA virus

What’s Bugging You? Mosquitoes and Ticks

GROWING MOSQUITOES IN YOUR YARD

Personal Protection:
Wear light-colored clothing with long pants and long sleeves.

DEET is approved by the American Academy of Pediatrics for infants 2 months and older.

Use an EPA-approved repellent: DEET, picaridin, oil of lemon eucalyptus, IR 3535.

Adults should apply repellents to children's exposed skin.

South Lake Mosquito Abatement District
P.O. Box 1155
Highland Park, IL 60035
www.slmad.org

For mosquito concerns and to report water standing more than 3 days: notify southlake@clarke.com, or call the hot line: 800-942-2555

To report dead birds call the Lake County Health Department: 847-377-8300

SAMPLE

Now available on our new website: www.skeeterstore.com

or call: 703-321-7414

A partnership of the AMCA and Fairfax County Health Department
Because it was the right thing to do.

Our founders discovered the molecule (S)-methoprene, the original insect growth regulator (IGR) for mosquito control. It stops mosquitoes in the larval stage, with little-to-no adverse impact to non-target species.

Our commitment to providing environmentally responsible mosquito control is as strong today as it was then. It’s reflected in our product lineup of mosquito control solutions, including Altosid® larvicides, Zenivex® reduced-risk adulticides and FourStar® microbial larvicides.

In keeping with our desire to protect public health with a commitment to environmental compatibility, we are especially proud of our most recent innovations: Duplex™-G and Altosid® P35.

Because at Central Life Sciences, producing effective, environmentally conscious mosquito control has, and always will, come first.

To learn more or to find a sales representative or authorized distributor, visit CentralMosquitoControl.com.