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Buzz Words



www.floridamosquito.org

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**Deadlines for submissions to be
included in the newsletter:**

Jan/Feb	Jan 15
Mar/Apr	Mar 15
May/June	May 15
Jul/Aug	Jul 15
Sep/Oct	Sep 15
Nov/Dec	Nov 15

Send newsletter submissions to:

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The mission of the FMCA is to promote effective and environmentally sound control of disease-transmitting and pestiferous mosquitoes and other arthropods of public health importance, develop and enhance public interest, awareness, and support for the control of mosquitoes, and provide for the scientific advancement of members through our meetings, training and education.

Upcoming Events

FMCA 85th Annual Fall Meeting
Westin Cape Coral Resort at Marina
Village
November 17 – 20, 2013

Mosquito Identification Training Workshop
Panama City at Florida State University
December 11, 2013

FMCA Fly-In
Lee County Mosquito Control District
January 7 – 9, 2014

FMCA Dodd Short Courses
January 20 – 24, 2014
Ocala, FL

AMCA Annual Meeting
Feb 2 – 6, 2014
Seattle, WA

North American Black Fly Association Annual
Meeting, Feb 22 – 23, 2014
Athens, GA

FMCA Advanced Mosquito Identification and
Certification Course
March 3 – 14, 2014
Vero Beach, FL

Southeast Regional Mosquito Control Workshop
March 10 - 11, 2014
Florida State University Panama City

The 2012 West Nile epidemic in Dallas County, Texas: *Déjà vu, all over again*

In 2012, Dallas County, Texas experienced one of the largest West Nile outbreaks yet seen in the U. S. The epidemic is reviewed in Chung et al.¹ Six hundred and fifteen cases met laboratory case criteria. There were 398 cases confirmed by clinical review with 19 deaths for a case incidence of 7.3/100,000 residents.

The timeline of the outbreak showed that Dallas County had excellent West Nile virus (WNV) surveillance information throughout that summer that included information about vector abundance and mosquito infection rates.¹ The culprit was *Culex quinquefasciatus*.

Florida mosquito control and public health professionals have been discussing West Nile surveillance and appropriate mosquito-borne disease control since 1999 when WNV first entered the U. S.²⁻¹¹ WNV surveillance programs are conducted in many Florida counties using sentinel chickens and/or vector surveillance. The Florida arbovirus action plan, revised in 2003, includes a mosquito control action plan for WNV using surveillance data.¹² Thankfully, Florida has not experienced a West Nile epidemic on the scale of the 2012 Dallas County epidemic. However, there are examples where aggressive mosquito and mosquito-borne disease control actions have been conducted in Florida against WNV when surveillance information provided evidence of a high risk for WNV transmission. For example, Pinellas County Mosquito Control³ and Indian River Mosquito Control¹³ conducted aggressive spraying and/or issued medical alerts in response to sentinel chicken surveillance information showing high WNV transmission. Several other Florida mosquito control programs have taken similar actions based on surveillance data over the past few years.

There have been many articles, workshops and meetings, where the importance of WNV surveillance data has been demonstrated. Unfortunately, there are still situations when these data are not available, overlooked or even ignored. Yogi Berra, the legendary catcher for the New York Yankees, once quipped, "*it's like déjà vu, all over again.*"

Surveillance information was available for WNV in Dallas County in 2012. It is apparent that by mid-June, the surveillance data showed a high risk for WNV transmission. The first WNV positive mosquito pool was detected in late May with weekly mosquito infection rates peaking at 53/100 in July. Trapping showed *Cx. quinquefasciatus* was widespread in the county. Ground spraying was initiated using trucks on June 21 targeting areas known to have abundant *Cx. quinquefasciatus*, but subsequent surveillance did not show substantial impact. Chung et al.¹ show that aerial adulticiding began on August 16 through August 23 and also that cases declined during this period. We have seen a similar decline coincident with aerial adulticiding, although whether or not there is a cause and effect is not for certain. Recall similar examples reported in *BuzzWords*. The onset of West Nile symptoms or reporting of a case occurs several days after the actual transmission to that person. Therefore, the actual infection events, which are what we should be focused on, occurred several days previous to the adulticiding applications - well before the beginning of the aerial spray campaign. Aerial spraying occurred when transmission had already been declining, just as we witnessed in the 2003 WNV outbreak in Ft. Collins, Colorado, when aerial adulticiding occurred as the epidemic was already subsiding.⁵

Chung et al. ¹ conclude:

“Our findings support incorporating mosquito infection indices into response plans and closely monitoring the vector index in real time. The goal is to recognize significant increases above historically predictive thresholds of epidemic transmission when augmented mosquito control measures can prevent the most human illness. This requires continuing investments in robust mosquito surveillance programs...and establishment of local baseline patterns. Significant numbers of human cases may be reported too late to be a sensitive trigger for expanded intervention during the course of an epidemic.”

Sound familiar? Chung et al. ¹ confirm previously established principles. For example, see reviews based on experiences in California¹⁴ or in Florida.¹⁵ Although one must take into account the delay in collecting surveillance information, i.e., to test mosquitoes and to report West Nile cases, mosquito collections for abundance and reports of WNV-positive mosquitoes from Dallas County showed increasing potential for WNV-transmission during June-July 2012. Chung et al.¹ comment on the delays in surveillance reporting, and also the failure of the various Dallas County agencies to collate the available information they did have in hand.



“You can observe a lot by just watching.”
- Yogi Berra

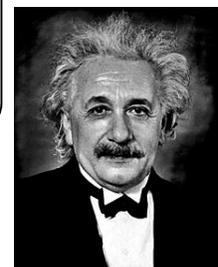
Dallas County has instituted earlier surveillance for WNV in 2013, started its ground spraying program May 1 and hopefully will take other appropriate mosquito control measures if the surveillance information warrants, without basing decisions largely on the appearance of human West Nile cases.

Many Florida counties have invested in surveillance for mosquito-borne diseases like West Nile and St. Louis encephalitis. Florida’s public health and mosquito control leaders must use this information and the Florida arbovirus mosquito response plan to take appropriate actions. Why expend resources and the effort to collect surveillance information, and then pay little attention to the findings?

What about dengue in Key West and elsewhere in Florida? Martin County is experiencing an outbreak of dengue virus transmission in the Rio-Jensen Beach region. Clearly there has been transmission of DENV-1 by *Aedes aegypti* in Martin County in 2013. Martin County Mosquito Control has conducted a heroic effort against *Ae. aegypti* in this region, conducting house to house sweeps against *Ae. aegypti* in roughly 600 houses in Rio and similarly in Jensen Beach. What were other actions by both mosquito control and public health professionals to protect the public? Have these efforts had an impact on transmission? Were other efforts considered to reduce transmission? Are mosquito and mosquito-borne disease efforts based on all the available information about transmission and will these plans effectively reduce transmission? This will be reviewed in the coming months when we have more information.

Florida can and must do better.

“Insanity is doing the same thing, over and over again, and expecting different results.” - Albert Einstein



References and Selected Readings

Relevant *BuzzWords* articles on using surveillance information for West Nile can be obtained at <http://fmei.ifas.ufl.edu/buzz/archive.shtml> or <http://mosquito.ifas.ufl.edu/BuzzWords.htm>

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11. Tabachnick, WJ. 2012. Predicting the risk for West Nile using sentinel chickens or monitoring mosquito infection rates. *BuzzWords*, Newsletter of the FMCA 12(5): 4-6.
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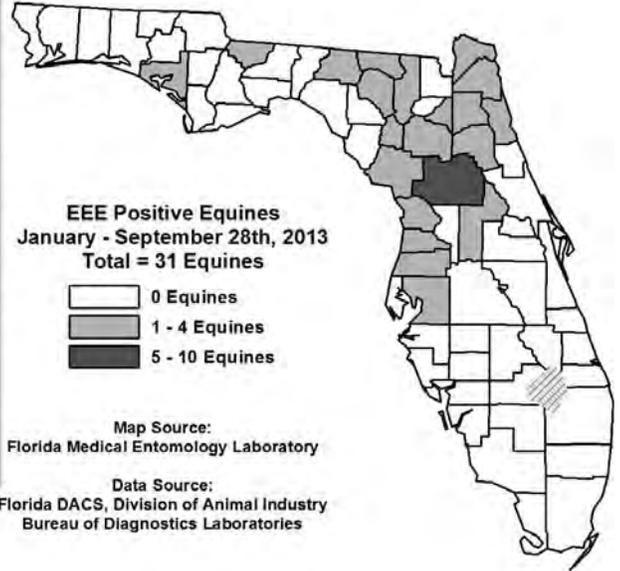
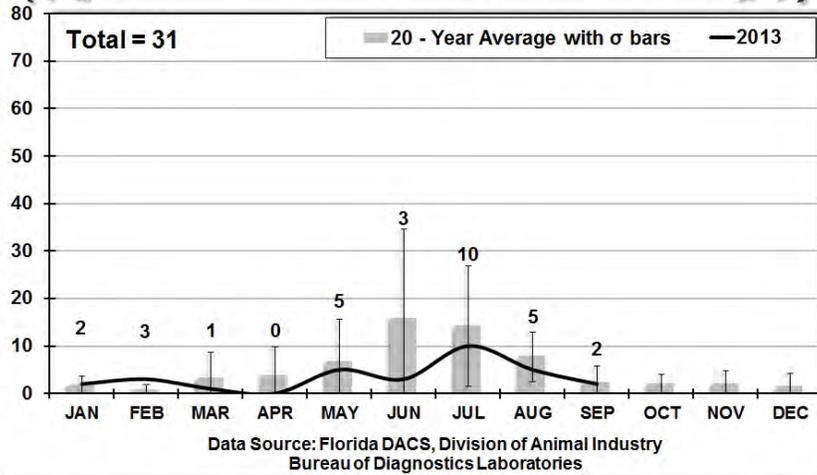
Walter J. Tabachnick
Director, Florida Medical Entomology Laboratory
Professor, Department of Entomology and Nematology
University of Florida
Vero Beach, FL

Arbovirus surveillance, Florida 2013

EEE



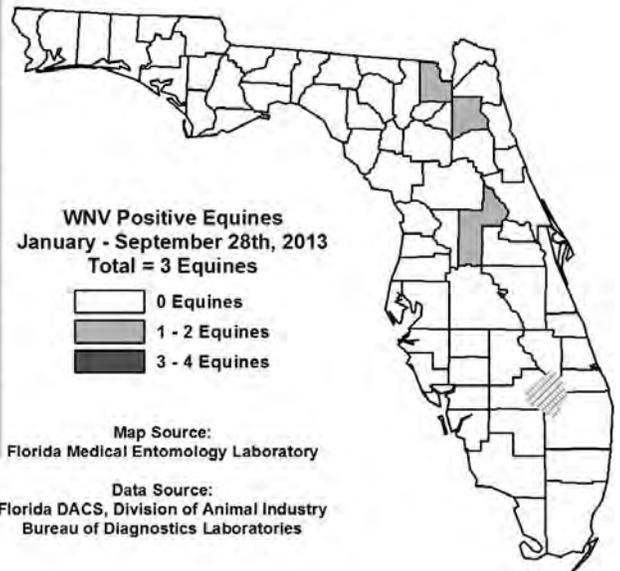
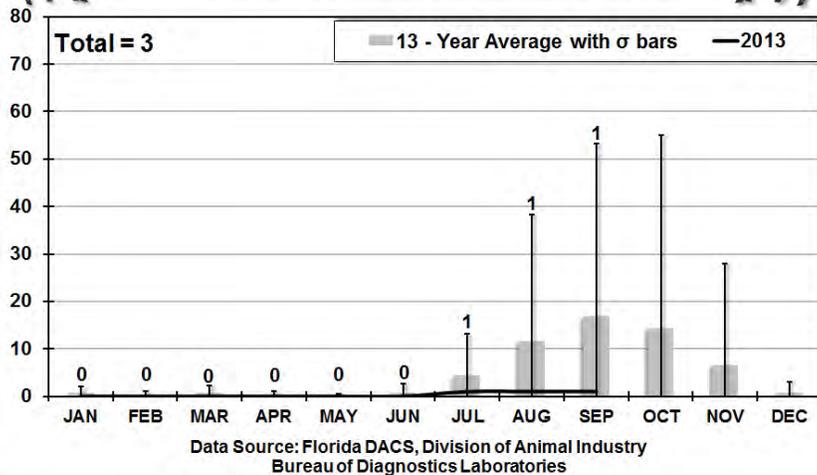
EEE Positive Equines in Florida
January 1 through September 28, 2013



West Nile



West Nile Positive Equines in Florida
January 1 through September 28, 2013



FMCA – Reports from your Regional Representatives

Northeast Region Report by Jim McNelly, Volusia County Mosquito Control

Anastasia Mosquito Control District (AMCD) - St. Johns County - The Board of District Commissioners of AMCD County recently decided to continue collaboration with USDA/CMAVE to organize and host the 11th Arbovirus Surveillance and Mosquito Control Workshop March 25-27, 2014 (www.amcdsjc.org). Also, AMCD has published Arbovirus Surveillance Workshop proceedings in conjunction with FMCA as a Technical Bulletin of the Florida Mosquito Control Association (www.floridamosquito.org).

AMCD will have a symposium entitled “Vegetation Management and Biting Fly Control” at the upcoming American Mosquito Control Association’s 80th Annual Meeting, in Seattle, WA, Feb. 2-6, 2014 (www.mosquito.org). The symposium has been organized and will be moderated by Dr. Rui-De Xue, Director of AMCD, and Dr. Gunter Müller of Hebrew University.

Dr. Xue was invited to give a presentation regarding “Best Management Practices for Integrated Mosquito Management in Anastasia Mosquito Control District” during the Integrated Vector Management symposium of the 6th International Congress of Vector Ecology, La Quinta, CA, Sept. 23-27, 2013 (www.ove.org).

Clay County Mosquito Control - Sonya Floyd, Manager of CCMC, writes that “I have a lab tech and two full time inspector/sprayers, and those three have really had to step it up over the past year and half due to Tropical storms Debby and Beryl, and from the production that’s resulted from all the rain we’ve had this season. They have worked tirelessly to ensure that we have stayed on top of the mosquito problems here in Clay County. I’d like to recognize these three individuals: Keith Damren (Lab Technician), and both Mark Nicholls and Walter Thacker (Inspector/Sprayers).”

Putnam County – Bob Hatton reports that mosquito populations have generally been moderate with trap counts running 10-100 per trap/per night. Spraying in conjunction with July 4th fireworks was not conducted this year, due to the event being rained out and postponed until August 31st. Above average rainfall has aquifers at the highest levels in five years. Uncapped artesian wells are flowing and flooding woods and pastures. Spray operations have been impacted by evening and night-time thunderstorms.

Many citizen complaints have been generated by this year’s *Psorophora ciliata* production and the press about this mosquito. Our homeowners refer to *Ps. ciliata* as “Gallynippers”, “helicopters”, and “turkeys”. The County and mosquito control operations are concerned with diminished tax revenues. And finally, the new Putnam County Solid Waste Director is Larry Gast, a University of Florida graduate (Entomology) and licensed Mosquito Control Director.

Volusia County Mosquito Control (VCMC) - Salt marsh mosquito production remains minimal, as is *Culex* spp. production across much of the county as monitored by sentinel chicken traps. VCMC is collaborating with another Public Works division (Solid Waste) with efforts to enhance remediation of illegal tire dumping. Solid Waste Compliance Officers have been trained as inspectors and provided with collection kits, which are then picked up and identified by VCMC (Dodd Certified Ray Lucas). The expectation is that having additional information about potential disease vectors will help the Officers’ efforts.

In their spare time, both Bruce Morgan and Ed Northey have been working with others in Volusia County to hone emergency management skills and responsibilities at the county’s new Emergency Operation Center. Two of three student interns have returned to school (2 from UF, 1 Bethune-Cookman) and we wish them both well.

Northwest Region Report by Mark Cothran, Gulf County Mosquito Control

“Rain, Rain...Go Away!” I think it is very safe to proclaim, while standing clad in slicker suits and rubber boots, we have had our share of rain this season. With daily temps soaring into the mid-90’s and standing water everywhere, northwest Florida has been busy this year. With budgets still low from years of cutbacks, this makes our task even more interesting. Using proven methods of attack and having to think outside the box on others, I’m proud to say that we’re getting the job done. With rain events happening on such a regular basis, ditch maintenance and grass cutting have been forced to take a back seat to damaged roads and culvert repair from flooding. Many panhandle counties have experienced this same protocol. BUT...through all the gloom and doom, complaints and requests that we as mosquito control professionals experience during a tough year, there is always light at the end of the tunnel. I believe we are all ready for that day to come when we get to experience...the morning we wake up and see the first frost. Keep the faith, my friends; winter is one day closer today than it was yesterday.

-Mark Cothran

Beach Mosquito Control District (Bay County) – We’ve had a very wet July and most of August, but surprisingly, the mosquito counts and service requests have not been that bad. We have been spraying by truck in the morning hours, typically covering the district routes in a week. We have sprayed by helicopter twice for adulticiding and twice for larviciding. Dog fly populations are growing and the district is monitoring its beaches seven days a week until we get a decent cold front. The flies build along the beach shoreline and we spray when we get five plus per minute landing rate. A horse was euthanized for EEE in August and we had two chickens test positive for WNV in August as well.

Our long time entomologist, Dale Martin, retired at the end of June with 16 years of service. We are looking forward to the start of a new employee, Mike Riles, who begins at Beach MCD in January. Beach MCD personnel will attend several trainings and conferences, including the FMCA annual meeting, the FMCA Fly-In and the Mosquito Identification Training Workshop in December. We completed our budget process, Truth in Millage, with no public attending our two public budget hearings. It is still warm out and we have lots of standing water so we are still busy. A Channel 7 TV reporter flew with us and featured a story on the 6:00 news. It was very positive and provided good media exposure.

-James F. Clauson

Escambia County Mosquito Control Division - Between July and August 2013, our county received approximately 26 inches of rain. When rainfall amounts were most prevalent, *Aedes* species increased by 30% over the previous month’s record. As the water levels receded, *Aedes* species decreased and then *Culex* species increased by 28%. As rainfall continues to decrease, our county’s populations of *Culex* species are expected to increase. Light trap surveillance data from previous years indicate that early summer rains impact our county’s mosquito populations with these predictable shifts in the mosquito community.

-Kim Sargent

Jefferson County Mosquito Control – Jefferson County had a lot of mosquitoes the first part of the season in April, but May was mostly dry, while July rained constantly. Since then, it has been about average. Mark Positano deployed to Martin County with the Department of Health to assist with dengue serosurveillance.

-Mark Positano

Leon County Mosquito Control – In February, Leon County experienced a large rainfall event which dropped almost twelve inches of rain countywide over a two-day period. This resulted in a slightly earlier start to our mosquito season. Eventually, the normal rainfall patterns returned and we ended up having an average mosquito season. Our staff responded to more than 8,000 service requests and removed more than 1,500 waste tires through our neighborhood collection program. The arbovirus surveillance program has indicated only background levels of EEE and WNV. This year Leon County developed an online service request system along with associated smartphone applications. Citizens can now generate service requests anytime of the day or night. Approximately 16% of our calls were received through this system.

-Glen Pourciau

North Walton Mosquito Control, Walton County – We had an abundance of rain during July and August but did not see a great increase in our light trap collections. As of 9/30/13 we have replaced 59 sentinel chickens due to virus exposure (44 WNV positive, 13 EEE positive, and 2 HJ positive). Beginning in November we will collaborate with Dr. Tom Unnasch (USF) and Dr. Nathan Burkett-Cadena (UF) to study the winter transmission of EEE in Florida.

- Brenda Hunt

Southwest Region Report by Jim Burgess, Lee County Mosquito Control District

Collier Mosquito Control District - Jim Stark, who has worked for the Metropolitan Mosquito Control District in Minneapolis, Minnesota for 30 years, as Executive Director since 2006, has signed a letter of intent to become the Executive Director of the Collier Mosquito Control District in Naples. At 60, Stark said he is ready for a new challenge and it's a good time to relocate his family because his daughter will be in college next year. Jim has lived in Minnesota for 30 years and "this has been my life for those 30 years," Stark said. "I love this organization." Stark began working for the district during the summers when he was in college and in 1978 was hired as a seasonal inspector. He also served as a field supervisor and public affairs coordinator for the agency before becoming Executive Director. Because mosquitoes thrive where there is water, there will be plenty of mosquitoes to work on in Florida, Stark said. The Collier district targets mature, flying mosquitoes by spraying them from planes and helicopters. By contrast, Minnesota's metro district, which serves the seven-county area, targets mosquito larvae by dropping pellets into larval habitats. Providing as much mosquito control as possible within budget constraints will continue to be a challenge for the agency, as will climate change, which is causing new species of mosquitoes to move in, he said.

-Laurie Blake

Southeast Region Report by Judy Avril, Indian River Mosquito Control District

Indian River and Martin Counties - I am certain that most of the readers are aware that over the past few months, Martin County has been experiencing cases of locally transmitted dengue (18 confirmed as of Sept. 13). Given that such transmission can undoubtedly occur anywhere in our state, several members of our Indian River Mosquito Control District staff (Dr. Don Shroyer, Bruce Peery, John Beidler, Doug Carlson), along with Drs. Tabachnick, Rey and Alto (FMEL), visited Martin County Mosquito Control Program Director Gene Lemire on September 10 in an attempt to learn from their efforts to curb the spread of dengue in their Rio and Jensen Beach areas. After the 2009-2010 cases in Key West, our District developed a Dengue Response Plan, which fortunately, we have not yet had to implement. Our recent meeting with Gene is helping our office to better fine-tune our plan for possible implementation in the future. From our brief visit, it was apparent that the tremendous effort that Gene and his small staff have been putting forth is making a difference in helping to control the spread of dengue in their county. The citizens of Martin County are very fortunate to have Gene and his staff's expertise and dedication under trying circumstances. We look forward to learning more from Martin County's experiences so that we can all be better prepared for future outbreaks elsewhere in Florida.

-Doug Carlson

Lake County - The Lake County Mosquito and Aquatic Plant Management Programs have been operating this year at the same level of staffing we had in 1995, despite budget cutbacks. However, the one saving grace for our area is the drought period we have been experiencing for over five years. Lakes, marshes, and hardwood swamps reached record low water levels and were maintained at those low water levels for several years in a row. Toward the end of an extreme drought period *Culex* sp. were hard to find in Lake County and have not reached historical abundance levels to date. Therefore, our mosquito abatement activities this season are still below previous levels. We did have two human dengue fever cases imported this year to the northern reaches of our county in Astor, FL. The patients were treated a week after returning home and both patients responded positively to treatment by recovering completely. However, we did have some concerns about possible transmission during the period when the patients were home, and out and about, prior to treatment. Although adult mosquito surveillance activities conducted in the area indicated a low abundance of *Aedes aegypti* and *Ae. albopictus*. Abatement activities were conducted in the area two evenings in a row as precautionary measures. Post treatment adult mosquito surveillance activities detected no species of concern.

-Eric Cotsenmoyer

Commentary: U.S. Fish and Wildlife Service Claims Mosquito Control Activities Negatively Affecting Butterfly Populations

Recently the U.S. Fish and Wildlife Service (USFWS) proposed to list two butterflies (Florida Leafwing and Bartram's Scrub Hairstreak) as endangered species. Both species are found in south Florida and if listed, could negatively affect mosquito control activities in the State.

Scientific data clearly indicates the primary factors causing a decline in the Florida Leafwing and Bartram's Scrub Hairstreak butterfly populations (and many other butterfly species as well) are related to changing land-use patterns (human development, habitat fragmentation), changes in plant community structure initiated by the loss of fire management, hurricane activity, human poaching and a series of unusually cold winters in 2009 and 2010. Additionally, spiders, wasps and non-native ants have been documented to prey upon the proposed species and believed to have a significant effect upon their populations. Additionally, it must be recognized that many tropical and subtropical species of butterflies residing in south Florida are precarious survivalists in the northern-most reaches of their natural ranges and any type of environmental insult (such as human development) has a very significant effect on local populations.

The USFWS recognizes the major stressors upon the proposed species but also implicated the use of mosquito control adulticides as a contributing factor to population declines. In this assertion, the agency did not provide supporting evidence that accurately portrays real-world conditions of butterfly ecology and/or normal spray operations practiced by professional mosquito control districts in Florida. Despite numerous scientific investigations by State, Federal and non-governmental organizations attempting to find cause/effect, there is no evidence that mosquito control spraying is having any effect on butterfly populations when 1) modern spray technology, 2) modern EPA-registered chemistries, 3) appropriately "timed sprays" (when butterflies are largely inactive, resting and harboring under protected areas), 4) very small droplets of an adulticide that are very diffuse and rapidly broken down into non-toxic components after a few hours exposure to environmental conditions and 5) GPS-guided spray software/hardware that ensures accurate and even chemical applications are employed.

The USFWS cites Zhong (2010) claiming a 73.9% survival rate of Miami Blue Butterfly larvae exposed to aerial ULV naled applications but fails to report an observed negative correlation between naled deposition and observed larval mortality. Additionally, aerial ULV mosquito applications were made after sunrise which would be unusual for many mosquito control districts with most agencies preferring late evening or post-sunset application. Lastly, previous research by the same researcher of the same topic, using the same study design concluded that aerial naled applications had no effects on Miami Blue Butterfly larvae (Zhong, 2007). Bargar (2012) was also cited by the USFWS and predicted unacceptable butterfly mortality subsequent to aerial spray missions but failed to accurately create "real-world" conditions of butterfly biology. In this study, filter paper and fuzzy yarn were used to collect naled droplets and then predict the potential mortality on butterflies based upon collection volumes. Sampling devices were placed in "open" areas, with a bias towards collection efficiency, as opposed to sheltered areas that butterflies and butterfly larvae are more likely to inhabit, locations that would normally protect them from direct chemical exposure resulting in a much lower predicted mortality.

The USFWS wants to establish "critical habitat" where no butterflies currently exist. In April 2012, the Miami Blue Butterfly was officially listed as an Endangered Species by the USFWS. In a policy memo dated April 5, 2012 (Ken Warren and Elsie Davis representing the agency) and addressing multiple affected parties including the professional mosquito control community, it is stated (summarized) "*mosquito control spraying will be restricted only from those areas where the species is known to exist*". The current proposal for the Florida Leafwing and Bartram's Scrub Hairstreak establishes "critical habitat" in areas where the species are known to NOT exist but potentially could exist at some future date. Why would there be such a difference in the listing between the Miami Blue and what might be approved for the Leafwing and Hairstreak? *Critical habitat should only be designated for "known" populations and specific geographic areas.* Additionally, many of the "critical habitats" identified for the Leafwing and Hairstreak are directly proximal to areas of high human

density and residential communities. If critical habitat designation is approved as proposed by the USFWS, then many residents of Monroe and Miami-Dade counties will no longer be protected from mosquitoes emerging from the newly created “refuge area”. This will result in people having increased exposure to mosquitoes and mosquito bites, increased risk of mosquito-borne diseases, decreased quality-of-life and reduced economic value of real estate. Why would the USFWS want to create a quality-of-life hardship for human residents in an area where no imperiled butterflies are known to exist? Is this a public relations battle that the USFWS would want to face? How would a USFWS staffer answer the complaints from the public when these citizens suddenly realize that a “mosquito refuge” has been established next to their home in order to protect a butterfly that doesn’t reside there anyway?

Mosquito control spraying may be helpful to butterfly populations. Although laboratory studies and some highly controlled field trials have found a negative association between mosquito control chemicals and butterflies, field research and population assessments by Marc Minno (USFWS contract employee) have documented significantly higher butterfly populations in geographic areas that are heavily sprayed for mosquito control such as Miami and Key West. This contrasts with “control areas” such as the Everglades National Park and Biscayne National Park where no mosquito control spraying occurs yet very few butterflies of any species are found. A simple correlation indicates that aerial adulticiding for mosquitoes may benefit butterfly populations and at the very least, adulticiding does not appear to harm population levels which of course, is what the US EPA has been saying through their chemical registration process. If modern mosquitocides were proven to be mortally toxic to lepidopterans at application rates/techniques used in mosquito control, these beneficial-use insecticides would never have been EPA-approved for use in the environment in the first place. Adulticides used in mosquito control are designed to kill small-bodied insects such as mosquitoes but have no significant effect upon larger bodied organisms such as butterflies or butterfly larvae. However small-bodied organisms such as predatory ants, wasps and spiders can be impacted by the same spray missions. This cause/effect relationship should be better understood before active steps are taken against the professional mosquito control community. This trend/observation is also evident at Big Pine Key where in 1999 Bartram Hairstreak populations were found at a density of 7.7 individuals/acre but had dropped to just 0.3 individuals/acre in 2011, a decline of 96%. Ironically, the Keys Mosquito Control District significantly reduced aerial adulticiding over Big Pine Key in 2003 with the more aggressive use of a larviciding campaign resulting in a 69% decrease in aerial mosquito adulticiding (pers. comm. Andrea Leal) since 2002. Additionally, Florida Leafwing is no longer found on Big Pine Key.

Summary: The mosquito control community should encourage the USFWS to use the best available science in managing threatened and endangered species. The inclusion of mosquito control spray activities conducted by professional mosquito control districts in the management of the Florida Leafwing and/or the Bartram’s Hairstreak has no scientific basis and should not be included under Section 4 “*Factors Affecting the Species*” as now proposed by the USFWS.

Citations:

- Bargar TA. 2012. Risk assessment for adult butterflies exposed to the mosquito control pesticide naled. *Environ Toxicol Chem.* 31:1-7.
- Zhong H, Hribar LJ, Daniels JC, Feken MA, Brock C, Trager MD. 2010. Aerial ultra-low-volume application of naled: impact on nontarget imperiled butterfly larvae (*Cyclargus thomasi bethunebakeri*) and efficacy against adult mosquitoes (*Aedes taeniorhynchus*). *Environ Entomol* 39(6):1961-72.
- Zhong H. Impact of mosquito aerial ULV spray on Miami Blue Butterflies. Final Report to Florida Dept of Agriculture and Consumer Services. FDACS Contract No. 010978. Sept, 2007.

Christopher Lesser

Assistant Director, Manatee County MCD

Dear FMCA Members:

As President of FMCA, I am providing this as an official announcement to inform you of an important vote by our members on the following proposed bylaw changes. I hope to see all of you at our business meeting (Wednesday, Nov. 20th, 11:40 AM) and urge you to continue your support and participation in FMCA.

These are respectfully presented to the FMCA Members in good-standing for vote.

These rules are published in the FMCA Bylaws, as follow:

Article XIV – AMENDMENTS

These Bylaws may be amended by two-thirds (2/3) vote of the active members present at an annual meeting, provided the notice of the proposed amendment has been given in writing to the Executive Director and transmitted by the Executive Director to active members at least thirty (30) days before the meeting, and that notice of the time that said amendment is to be voted on has been announced at least twelve (12) hours in advance of the vote.

It should be noted that “active” members are defined as those who are present in the meeting room for this upcoming vote and who are in good-standing, a condition inherent in having their membership dues paid in full. As President, I will direct that the FMCA Executive Director will have full lists as to whom will be “in good-standing” as dues paid are concerned well in advance of that Annual Meeting’s vote to alleviate any potential misunderstandings as to one’s status and eligibility to participate.

You will be asked to vote on the following items:

1. The committees recommended for deletion from the FMCA Bylaws of the following committee and subcommittee:

“Education Coordination Committee” its subcommittees, “Agency Profiles,” both of which have become obsolete.

2. To change the name of the “Historical Subcommittee” to the “Archives Committee,” and promote it to Standing Committee status.

3. To change the name of the “Projection/Audio Visual Subcommittee” to the “Technology/Audio Visual Committee,” and promote it to Standing Committee status.

4. The “Technical Bulletin of the FMCA” subcommittee will be re-classified to Standing Committee status.

5. The former Standing Committee, entitled as the “Publications Committee,” shall be abolished since its function is redundant by making decisions as affect the Technical Bulletins of the FMCA subcommittee.

6. The FMCA’s Policy and Procedures (P&P) Manual, there are references made therein to the now defunct PHEREC (Public Health Entomology Research & Education Center) laboratory that was cancelled by actions of FAMU (Florida A&M University) of Tallahassee. The FMCA shall remove the reference to PHEREC from its bylaws.

7. The FMCA’s Policy and Procedures (P&P) Manual, there is a reference as to which qualified members shall serve on the Research Advisory Committee, reproduced here below for your benefit, as follows:

RESEARCH ADVISORY COMMITTEE

The Research Advisory Committee is made up of eleven members. The committee is set up to make recommendations to the Board of Directors regarding the needs of Florida mosquito control programs which can be addressed through research. The members should solicit input from programs throughout the state and prioritize needed research before presenting the list to the Board of Directors for their approval.

The committee advises the Board on options that deserve funding support from the research funds appropriated by the Legislature.

The committee shall have the following membership:

Administrator of Florida Medical Entomology Laboratory, Vero Beach, or a permanent designee;

Administrator of the John A. Mulrennan, Sr. Public Health Entomology Research & Education Center, Panama City, or a permanent designee;

Director of the USDA/ARS Center for Medical, Agricultural, and Veterinary Entomology, Gainesville, or a permanent designee;

Director of the DACS Bureau of Entomology and Pest Control. or a permanent designee;

Three (3) Directors of Florida mosquito control programs who will serve four-year staggered, renewable terms;

Four (4) at-large members from the Association's membership list who will serve, renewable terms.

The Research Advisory Committee will recommend a Chair each third year and replacement members annually to the Association's President. No agency or district will have more than one individual on the Research Advisory Committee.

Additionally, officials from the Florida Department of Agriculture and Consumer Services (FDACS) have expressed a desire to be removed from the Research Advisory Committee due to what they contend may be considered an "incompatible relationship" in the light of their Department's administering the mosquito control programs' state aid distributions.

In light of these requirements to replace qualified individuals from these institutions and for the FMCA to remain in compliance with its bylaws, the recommendation is that the two (2) identified positions shall be replaced by the addition of two more at-large members from the Association who will serve four-year, staggered and renewable terms. This addition will result in having six (6) at-large members on the Research Advisory Committee.

By making these changes, we will continue to grow stronger and better equipped to handle the future issues we face for our great association.

If you have any questions concerning the above items, please do not hesitate to contact me, or the Executive Director at ExecutiveDirector@FloridaMosquito.org. We look forward to seeing you at our Annual Meeting. Thank you for your support of the FMCA and thank you for your attention.

I remain,
Most respectfully yours,

Bob Betts
President, FMCA
rbetts@myescambia.com

POSITION ANNOUNCEMENT

Vector Biologist Research Technician

University of South Florida, College of Public Health

Department of Global Health

Biological Scientist

Job ID: 2742

Position Summary: The successful candidate will join the research team in the Global Health Interdisciplinary Research Laboratory headed by Dr. John Adams and assist in maintaining mosquito colonies and parasite cultures. This work supports research on the biology of liver stages of human malaria parasites to promote development of new anti-malarial therapies. This individual will also assist in some laboratory management, including monitor and order research supplies, maintain accurate records, freezer inventories, and prepare stocks of common lab reagents. The position is funded by research grants from the Bill & Melinda Gates Foundation, "Long-term continuous culture of *Plasmodium vivax* blood-stages" (BMGF OPP1023643) and "3D Microfluidic Human Liver Models for Malaria Drugs" (BMGF OPP1023601). _

Minimum qualifications:

- Bachelor's degree in a natural, physical or medical science
- Experience involving scientific laboratory or fieldwork may be substituted for the required college education on a year for year basis.

Preferred qualifications:

- Bachelor's Degree in the field of Biology, Biochemistry, and Molecular Biology
- Minimum of six months to one year related experience
- Requires biological laboratory experience, including some cell culture
- Must be able to handle animals for procedures (mosquito feeds)
- Prior experience for care and maintenance mosquitoes, especially *Anopheles*

Must apply online at

https://gems.fastmail.usf.edu:4440/psp/gemspro-tam/EMPLOYEE/HRMS/c/HRS_HRAM.HRS_CE.GBL?Page=HRS_CE_JOB_DTL&Action=A&JobOpeningId=2742&SiteId=1&PostingSeq=1

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