



# Skeeter Scanner

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[www.mimosq.org](http://www.mimosq.org)

## President's Message

I probably don't need to discuss this season's mosquito news, but I'm sure most of you have been busy just trying to keep up with calls and concerns from clientele. Lower Michigan has been dealing with a large crop of floodwater mosquitoes from the May rains on top of our usual spring species. Recent dry conditions (at least in my area) have slowed things down a bit, but *Coquillettidia* and *Anopheles* are fast making up for any drops in spring and summer floodwater populations. Consequently, it seems I've been talking to reporters as much as I've been doing any "real" mosquito research.



Interacting with the press and public is an important component of effective mosquito control that can often be underestimated. It can also be very challenging. Cases in point are several articles included in this issue. One article deals with the elimination of mosquito control programs based on budget concerns and a perception that we don't need such programs anymore, another discusses misinformation about DDT, and a third gives an example of a useless (or worse) product sold to the uninformed as an effective mosquito repellent. In the original article on budgets for mosquito control in Illinois, the caption for the accompanying photo erroneously indicates that someone setting up a gravid trap is pouring "insecticide into a tray". Sadly, such errors are not uncommon.

Clearly, we continue to deal with many people in our districts, the media, and even the legislature, who do not understand mosquito or disease dynamics, and what constitutes a sound control approach. Usually, I find it rewarding to educate these folks and to take the time to try and explain what can be complex answers to mosquito nuisance or mosquito-borne disease questions. As you know, however, it can also be frustrating to see your best effort at such misinterpreted or ignored when it appears as a news story or in public policy. My message in response to this is "Keep at it". Informing people about why the job you're doing is important and how pains are taken to minimize health and environmental risks are paramount to continued effective control. We all need to do our part to present the full picture of what we do (including risks) in clear terms. Some people may never be swayed by facts, but as I've said before, I'm optimistic that reason will eventually prevail.

I wish you all a safe and productive summer. May all your dealings with the press and public be pleasurable. (I'm guessing "few and tolerable" should be substituted for "pleasurable" for most of you).

Cheers,

## Help us pass the "NPDES Fix" Legislation!

HR 872, which exempts pesticide applications - including mosquito control - in, over, or near waters of the United States from burdensome Clean Water Act (National Pollutant Discharge Elimination System (NPDES) permitting requirements, is stalled in the Senate. We need 60 senators' support to get the bill to the Senate floor for a final vote before the October 31st deadline when the NPDES takes effect!

### This is critical!

#### What you can do:

·Contact your Senators in one or more of their district offices. Ask them to promise support for HR 872, called "Reducing Regulatory Burdens Act of 2011". Background information on this crucial legislation can be found at [mosquito.org](http://mosquito.org).

·Make an appointment to visit with or ask to speak with the point person on environmental issues to discuss the NPDES permit and support for the NPDES Fix legislation.

#### What you should say:

·Share with the senate staffer personal/professional impacts the NPDES PGP permit will have on mosquito control operations and on the health and welfare of humans and wildlife if it takes effect. HR 872 will prevent these.

·Emphasize that the bill will prevent unnecessary additional regulatory costs to the city/county/state.

·Emphasize that the bill's provisions will NOT adversely affect water quality.

·Ensure that the staffer understands that HR 872 has crucial far-reaching consequences and deserves to be voted on by the full Senate.

#### Talking Points in Support of HR 872

Many Senators have been given inaccurate information that needs to be corrected:

◆ Passage of HR 872 will not gut the Clean Water Act. It will not degrade the effectiveness of the

EPA or their enforcement of existing Clean Water Act (CWA) regulations.

◆ Passage of HR 872 will restore the authority of Congress. The U.S. Congress should determine the environment policy of the United States, not the judicial system.

◆ Passage of HR 872 will not adversely impact any state regulatory programs that were in place prior to the Sixth Circuit ruling. Existing state permitting programs for pesticide applications will remain in effect.

#### [HR872](#)

#### [Benefits Of The Pesticide General Permit \(PGP\) Cited By EPA](#)

#### Thirteenth Annual AMCA Washington Conference



L-R: Tom Wilmot, Senator Stabenow, Randy Knepper

MMCA members Tom Wilmot and Randy Knepper attended the 13<sup>th</sup> Annual American Mosquito Control Association Washington Conference this past May 9-11, 2011. Numerous presentations were made by Federal Regulatory agencies but as always, the highlight was the day spent on the hill visiting the offices of our federal elected officials.

Appointments were made with the offices of Senator Stabenow, Senator Levin, Congressman Camp, and Congressman Kildee. In addition, an appointment was made with an aid from the Senate Agriculture Committee in which Senator Stabenow is the Chair to specifically discuss the current NPDES situation and HR 872. Since this was such a high profile issue, American Mosquito Control Association President Bill Meredith was also

invited to attend this meeting. As noted in this newsletter HR872 has passed through the Senate Agriculture Committee and hopefully our meeting had some small part in its passage. Of course during all the visits NPDES was always the main topic but other issues that were addressed included: Mosquito Control on National Wildlife Refuges; Endangered Species Act Considerations and Mosquito Control; Funding for National Disease Surveillance Network through Epidemiology and Laboratory Capacity Grants from the Centers for Disease Control; and Failure to Appropriate FQPA – Authorized Funding Threatens Availability of Public Health Pesticides.

## **DDT a Potent Weapon against Malaria**

### **Engineering News**

I have had an interest in malaria for many years and, a few years ago, I was invited to write a chapter in a book published in London on Third World Health. My chapter was on malaria and the wonder chemical DDT. I was amazed at what I found out when I really looked into the topic. DDT is not at all as harmful, as so many activists have claimed.

South Africa is currently a world leader in malaria control and has achieved great success, particularly since reintroducing the use of DDT a number of years ago

Malaria is both preventable and curable, and I am sure, had the world invested as much effort into wiping out malaria as has been put into HIV/Aids, we would probably have no more malaria today.

Malaria used to be prevalent in Europe, England and the US, but not anymore. In those places, it has been wiped out. Interestingly, in Shakespeare's works, he mentions malaria eight times.

What is worrying is that, for the last decade, the number of recorded malaria cases in Limpopo province has averaged 413 over the Christmas period but, during this past Christmas, they rose to 488, which is a statistically significant rise. Some of this rise can possibly be attributed to the weather, and some proportion of it to what is known as 'taxi' malaria and 'suitcase' malaria. I have also found out about 'pot plant' malaria. Improved travel between

countries plays a role. Luckily for South Africa, our only malarial area is in the far north-east of the country, but people cross over from neighboring countries and bring malaria-carrying mosquitoes in their baggage and in taxis.

I know people have gone down with malaria in Pretoria, and they could prove that they never left the city environs for months. I also found out about pot plant malaria. Pot plants are brought in to local nurseries from malarial areas with the mosquitoes in the pot plants. People then buy them and take them directly into their houses.

South Africa has had great success in recent years in controlling malaria and has also entered into agreements with neighboring states. The most successful cross-border malaria control program has been the Lubombo spatial development initiative. This is a trilateral arrangement between South Africa, Mozambique and Swaziland. Since its inception in 1998, the initiative has reduced the malaria incidence on the Swaziland border from more than 25% to less than 2%. In 1999, in Maputo, the malaria incidence was 60%, but is now below 5%.

In the US, a number of years ago, a woman, the late Rachel Carson, wrote a book called Silent Spring, which condemned DDT as being harmful to humans and to animals, particularly birds. This book was largely responsible for the large-scale banning of DDT all over the world. The book was wrong. In later life, Carson admitted that she had written it more as a novel than as a true scientific work, but the damage had been done. Millions of people had died as a result.

There is now no evidence that would stand scientific scrutiny that shows that DDT is harmful to humans. During talks that I have given in public on the topic, I have twice met ladies in their 80s and 90s who told me that their mothers had given them a teaspoonful of DDT each week for years to ward off polio. As it happens, it does not do anything to ward off polio but, 50-plus years ago, when mothers were really worried about polio and, desperate for some affective medicine which did not exist at the time, they tried DDT because it had been so successful in the fight against malaria.

When malaria was wiped out in Europe and the US in the mid 1970s, DDT was banned because of the claims of Carson et al. They made African countries ban it too and the death rate in Africa soared. Meanwhile, the International Agency for Research on Cancer classifies DDT as a 'possible carcinogen', which places it in the same category as beer, coffee and peanut butter. I am not aware of a single case in the world of any person getting cancer from DDT, and am certainly not aware of any deaths.

After the Second World War, all the inmates of all the Nazi concentration camps were infected with body lice. They were all repeatedly sprayed with DDT when Allied troops liberated them. Both Tokyo and Naples also had 100% body lice infection of the population when Allied troops arrived. They too were sprayed. Over the years, no adverse health effects from DDT were ever detected in any of these populations, even though they were monitored for many years.

South Africa needs to keep up the anti-malaria drive and to work with neighboring States. A friend of mine died of malaria, which was totally unnecessary. Continued resolve is needed to get rid of the menace totally.

<http://www.engineeringnews.co.za/article/ddt-a-potent-weapon-against-malaria-2011-05-20>

## **'Natural' Insect Repellents are Plentiful but not Always Reliable**

Consumers now have an array of "natural" insect repellents from which to choose. These are made from benign-sounding plant extracts or oils such as citronella oil, soybean oil, peppermint oil, cedarwood oil, lemon grass oil and geranium oil. What consumers don't always have is proof that they work.

Many natural insect repellents, deemed "minimum-risk pesticides" by the Environmental Protection Agency, are exempt from safety testing because their active and inert ingredients have been deemed safe for their intended use. These ingredients have been used for long enough in consumer products that they're generally regarded as safe, says Scott Carroll, director of Carroll-Loye Biological

Research Consulting, an independent company that does extensive testing on insect repellents.

For instance, the synthetic form of vanilla is often used in pesticidal products because it helps catalyze the active ingredients. "[Vanillin] is in every sugar cookie anyone has ever eaten, so that's why it's not regulated," Carroll says.

Not only do these minimum-risk natural products not require safety testing, companies that market them are also not required to demonstrate how well they work.

"To me, [minimum risk pesticides] is code for: 'They don't work very well,'" says Dennis Tracz, founder of a company that makes a pine-oil based repellent. Many of the chemicals found in herbal repellents are highly volatile, so they evaporate quickly. "It's not that they're not effective, it's just that they don't last very long."

There are currently hundreds of products on the market that are exempt from testing because of their minimum-risk status. "It's just cheaper and easier to get that designation than to go through full [EPA] registration," Tracz says.

The EPA is the agency responsible for evaluating safety studies of insect repellents, and it also reviews data from third-party labs such as Carroll's that do independent testing of product efficacy. One of the reasons that the EPA was tasked with overseeing insect repellents, rather than the Food and Drug Administration, is that pesticides already fall under its purview.

But pesticides are generally not intended for personal human use. To get that mechanism turned around for products actually intended to be put on your body is not a very smooth process, says Carroll, also an evolutionary biologist at UC Davis.

What did one mosquito say to the other mosquito after they landed on a fisherman?



Should we eat him now or save him for later?

## **EPA Proposes Policy on Nanoscale Materials in Pesticide Products**

**WASHINGTON** - The U.S. Environmental Protection Agency announced it plans to obtain information on nanoscale materials in pesticide products. Under the requirements of the law, EPA will gather information on what nanoscale materials are present in pesticide products to determine whether the registration of a pesticide may cause unreasonable adverse effects on the environment and human health. The proposed policy will be open for public comment.

A number of organizations, as well as government, academic and private sector scientists, have considered whether the small size of nanoscale materials or the unique or enhanced properties of nanoscale materials may, under specific conditions, pose new or increased hazards to humans and the environment.

EPA also recognizes that nanoscale materials have a range of potentially beneficial public and commercial applications, including pest control products. The agency will continue to encourage responsible and innovative development of products containing nanoscale materials to realize these benefits while also addressing health or environmental concerns.

For more information or to read the proposed notice: <http://www.epa.gov/pesticides/regulating/nanotechnology.html>

## **UC Davis Researchers Discover ‘Generic Insect Repellent Detector’**

Researchers in the Walter Leal lab in the Department of Entomology, University of California, Davis, have discovered a “generic insect repellent detector” and its receptor in the fruit fly, research that may lead to more effective and lower-cost products than DEET, the gold standard of insect repellents.

Their work, published March 16 in the open-access,

peer-reviewed science journal PLoS One (Public Library of Science), found the sensory organs involved when fruit flies (*Drosophila melanogaster*) detect and avoid three key insect repellents: DEET, IR3535 and picaridin. They identified the olfactory receptor neuron (ORN) and characterized its receptor, DmOr42a. (See <http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0017705>)

“Although DEET is widely used as the first line of defense against mosquito-borne pathogen transmission, there is a high demand for better insect repellents, but the cost of R&D is prohibitive,” Leal said. “With current technologies, it takes about 10 years and \$30 million to develop a new repellent. Only about one test compound in 20,000 reaches the market.” “This number of test compounds can be dramatically reduced by probing a library of putative repellents with the fruit fly and ruling out those that do not activate the repellent detector,” he said. “Then, a handful of ‘strong candidates’ can be synthesized in large scale for actual repellency and toxicity tests. In short, the fruit fly repellent detector has the potential to expedite and dramatically reduce the cost of development of much needed repellents that outperform DEET.”

The research team of Leal, primary author/chemical ecologist Zain Syed, chemical ecologist Julien Pelletier, and undergraduate students Eric Flounders and Rodrigo Chitolina, first found that the fruit fly avoids all three well-known repellents, DEET, IR3535 (a compound known as Avon Corporation’s “Skin-So-Soft Bug Guard”) and picaridin (derived from pepper) and then set out to find olfactory receptor neurons sensitive to those insect repellents. They scanned all olfactory sensilla in the antennae and the mouthpart structure, maxillary palps, using single unit electrophysiological recordings.

The receptor they found “fulfills the requirements for a simplified bioassay for early screening of test insect repellents,” they wrote in the scientific paper.

“This study,” Syed said, “adds a new dimension in research towards understanding the molecular, cellular and organismal response to repellents.”

# Electronic Mosquito Repellers Induce Increased Biting Rates in *Aedes aegypti* Mosquitoes

Carlos F. S. Andrade and Isaías Cabrini □

## ABSTRACT

Studies have demonstrated that electronic mosquito repellers are useless and that some of them could even increase the attraction of mosquitoes. While testing some electronic repellers, we noted that they also promoted an increase in biting rates. The present work has evaluated three commercial devices and a computer program working on five different sound frequencies. In a test chamber, the number of *Aedes aegypti* L. bite attempts was computed during four cycles of 3 min each by alternately turning the devices off and on. The mosquito biting rates for five sound frequencies (ranging from 9.6 kHz to 18.2 kHz) initially demonstrated a significant increase (ranging from around 20% to 50%), which decreased from 8.3% to 25.1% when the repellers were turned off. The biting rate significantly increased at 11.8 kHz (33.7%) when the device was turned on again. The danger of using electronic repellers and the role of sound frequencies stimulating mosquito biting are discussed. *Journal of Vector Ecology* 35 (1): 75-78. 2010.

## INTRODUCTION

Manufacturers of many electronic devices have claimed that their products produce sound frequencies capable of repelling insect pests. However, evaluations have demonstrated that these sound frequencies do not repel mosquitoes (Rasnitsyn et al. 1974, Coro and Suárez 1998, 2000), German cockroaches, Oriental rat fleas (Koehler et al. 1986) or ants (Huang et al. 2002). Other reports have even indicated that besides failing to repel, such devices could in fact attract insect pests. Ballard et al. (1984) demonstrated that under laboratory conditions *Blattella germanica* were trapped in larger quantities if pitfall traps were associated with the electronic repeller PestGuard™. Two electronic repellers, Skeeter Skat™ and Moziquit® (sound emission from 2 to 2.5 kHz), increased the number of bites and captured mosquitoes in Alaska and West Africa (Gorham 1974, Snow 1977), respectively. In previous evaluations, we demonstrated that some devices failed to repel *Aedes albopictus* and we suspected that a higher number of *Aedes aegypti* bite attempts occurred when some devices were turned on (Andrade and Bueno 2001, Cabrini and Andrade 2006). The object of this work was to experimentally evaluate if, once a group of *Ae. aegypti* females start attempting to bite, the sound emitted by such devices or systems (allegedly producing repellent frequencies) actually increases the bite rate.

Although our results cannot suggest an auditory function for the *Ae. aegypti* female antenna, we may emphasize the concern that electronic repellers are worse than useless.

Table 2. *Aedes aegypti* 3 min bite rate (standard deviation) for each repeller in cycles turned off or turned on, and consequent percentage (%) increase “>” or decrease “<” following two cycles.

	First Cycle OFF	Second Cycle ON	%	Second Cycle ON	Third Cycle OFF	%	Third Cycle OFF	Fourth Cycle ON	%
MGUAR	2.26 (0.72)	2.52 (0.87)	>(11.5)	2.52 (0.87)	2.75 (0.82)	>(9.1)	2.75 (0.82)	2.60 (0.71)	<(5.5)
MCONT	2.70 (0.76)	3.87 (0.67)	>(43.3)*	3.87 (0.67)	3.55 (0.77)	<(8.3)	3.55 (0.77)	3.72 (0.85)	>(4.8)
Kawoa	2.39 (0.59)	3.58 (0.83)	>(49.8)*	3.58 (0.83)	2.73 (0.64)	<(23.7)*	2.73 (0.64)	3.65 (0.73)	>(33.7)*
SOFT 1	3.46 (0.69)	4.18 (1.06)	>(21.0)*	4.18 (1.06)	3.52 (0.89)	<(15.9)*	3.52 (0.89)	3.20 (0.91)	<(9.0)
SOFT 2	2.80 (0.94)	4.14 (0.80)	>(47.8)*	4.14 (0.80)	3.10 (0.75)	<(25.1)*	3.10 (0.75)	3.04 (0.76)	<(1.9)
SOFT 3	3.97 (1.14)	5.81 (1.07)	>(46.3)*	5.81 (1.07)	5.09 (1.00)	<(12.4)	5.09 (1.00)	5.29 (0.99)	>(3.9)
SOFT 4	3.10 (0.75)	3.34 (0.99)	>(7.7)	3.34 (0.99)	3.56 (0.99)	>(6.6)	3.56 (0.99)	3.38 (0.78)	<(5.1)
SOFT 5	3.60 (0.83)	3.90 (0.84)	>(8.3)	3.90 (0.84)	3.95 (0.75)	>(1.3)	3.95 (0.75)	3.86 (0.90)	<(2.3)

The asterisk (\*) indicates  $P < 0.05$  for the percentage variation following each on/off or off/on state for each repeller.

## Push to Eliminate Mosquito-Fighting Layer of Government Stirs Passions on Both Sides

When reformers talk of peeling away the luxuriant layers of government in Illinois, they often take a swat at an easy target: mosquito abatement districts: They're small. They're old. They kill bugs.

In a state strapped for cash and billions of dollars in debt, and with local government budgets as tight as ever, lawmakers have ratcheted up efforts to wipe out some of Illinois' nearly 8,500 taxing units, the most in the country. Mosquito districts often top the "not needed" checklist in Illinois, and their funding is being squeezed across the country.

"They have a little mosquito duchy here, courtesy of the bug. It's just ridiculous," said Comptroller Judy Baar Topinka, who called Illinois the nation's leader in bureaucracy. "There's no reason for these districts to exist. None."

A closer look at why the districts were created more than 80 years ago and the potential consequences of eliminating them illustrates the challenges state lawmakers and local officials face in trying to wipe them out.

Among the questions without clear answers: If the districts were discarded, who would be responsible for killing mosquitoes, a source of West Nile virus and other diseases? How would this be funded? And would axing them really save much money?

From Miami to Montana, the country's 734 mosquito abatement districts are facing severe reductions in funding as local and state governments struggle with budget crunches, said Joe Conlon, technical adviser for the American Mosquito Control Association.

"When mosquito control is done well, it's so seamless people fail to realize it actually is being done and think, 'Well, we can just get rid of it,'" Conlon said. "The truth is there are real, dangerous consequences."

Mosquito districts' chief mission now is the same as when the Illinois Legislature created them in 1927: to protect public health. In the 1920s, malaria outbreaks led to widespread draining of backwater areas and swamps, prime breeding grounds for

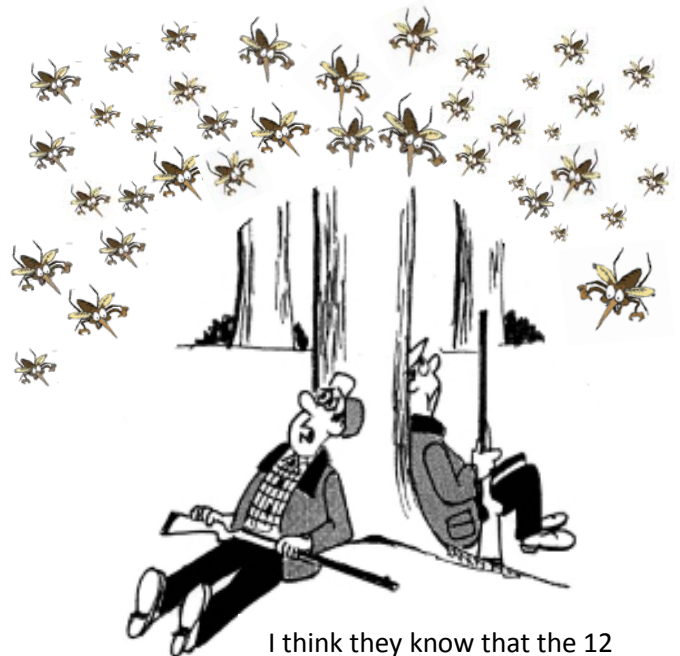
disease-carrying mosquitoes. When those efforts proved successful, the Legislature allowed for referendums creating local districts funded by property taxes.



With malaria and yellow fever threats long gone, the districts had focused on making outdoor life more comfortable — until 2002, when Illinois was the epicenter of the West Nile virus outbreak.

"West Nile reminded people mosquitoes can transmit disease," said Bob Holub, who manages the Des Plaines Valley district. "It's one of those things that's out of sight, out of mind, but it's here to stay."

After entering the country a few years earlier in New York, West Nile exploded in Illinois, infecting 884 people and killing 64, according to the U.S. Centers for Disease Control and Prevention. The Illinois cases accounted for 21 percent of West Nile cases nationwide in 2002.



I think they know that the 12 hour mosquito repellent is about to wear off!



# News From Around The Districts

SAGINAW

Our spring aerial larviciding program began on April 18<sup>th</sup> this year which is 10 days later than normal. Results for this program were excellent with a 94% reduction in mosquito larvae. April was cooler than normal with rainfall 90% above normal, with May continuing this trend of cool temperatures and rainfall 30% above normal. With all this additional rainfall it was inevitable that a large hatch of floodwater mosquitoes was on the way and they arrived the first two weeks of June. During this outbreak, we had multiple shifts working overtime in an effort to bring the mosquitoes under control. In reviewing past data, this two week period was the third worst mosquito outbreak since our program started in 1977.

Summer activities for our Education Department will include participation in the following events: Girl Scout Day Camp; Birds, Bugs (that's us) Butterflies and Blooms at the Children's Zoo; Saginaw Juvenile Detention Center; Consumers Energy Family Day; various summer day care programs; Truck and Bike Day, Reading in the Park, and Children's Fun Day sponsored by Saginaw County Parks and Recreation Department.

For almost a year we have been struggling with the Michigan DEQ as they try to implement new regulatory demands on our program. The results have been mixed as now we will be required to get Water Treatment Additive authorization for all 28 sewage lagoon and MS4 catch basin facilities throughout the County. The good news is that we were successful at stopping the DEQ's attempt to eliminate the use of temephos as a larvicide. The loss of this product would have forced our agency to use more expensive larvicides that are less effective in the larval habitats normally treated with temephos.

Our third and final tire drive of the season was held the week of July 25-29<sup>th</sup>. The hours for this drive will be 2:30pm – 7:00pm to provide the convenience of evening tire drop off. To date we have collected 9,783 tires for the year.

Our agency will also be hosting its annual blood drive on July 29<sup>th</sup> and walk-ins are encouraged.

MIDLAND

NPDES. I'd guess you're getting as tired of it as I am. As you will probably read elsewhere in this newsletter there has been some progress on achieving legislative relief from the federal mandate. HR 872 has passed the U.S. House and the Senate Agriculture Committee and is now, hopefully, headed to the full Senate. Now is the time for another push. We are fairly confident of Senator Stabenow's support but we do not know about Senator Levin. If you would like to see pesticide regulation left to FIFRA, **please** consider sending a letter, email and or telephone call to Senator Levin and his staff.

Over the last several years we have seen an all-too-frequent occurrence of late spring and early summer rain producing waves of floodwater mosquitoes after our initial spring treat. Record rainfall in May and near-record rain in June has been followed by, guess what, more mosquitoes. Our larviciding crews were kept even busier making up for several of our technicians that resigned for better jobs, a new baby, etc. If the next rain holds off for a short while maybe we can get the adult mosquitoes knocked down a bit and spend more time on summer habitats, disease surveillance and other fun jobs.

In addition to our regular treatment this year we will be evaluating Four-Star larvicide in catch basins and containers and Zenivex adulticide. We will keep you informed.

Have a good summer!



The annual spring woodland pool treatment program marked the beginning of BCMC's mosquito control season. Control efforts included aerial spraying (over 40,000 acres) using one helicopter (Clarke) and two fixed-wing aircraft (Earl's Spraying Service, Inc.), with the focus on areas near cities, towns and large developments.

Summer has officially arrived along with a boat-load of rain that has created, as of late, mosquito numbers that are on the rise. Throw into that mix our annual influx of cattail marsh mosquitoes, *Coquillettidia perturbans*, and we are set up for a real bumper crop of the little pests! We're seeing few spring *Aedes* adults these days (except for northern Bay County woodlots), but have shifted to the bothersome *Aedes vexans* and *Cq. perturbans* adults collected in traps both of which can be troublesome to residents and disease vectors.

Throughout the warm weather months, BCMC will be busy treating larval or adult mosquitoes originating from woodlots, floodplains, freshwater wetlands, grassy fields, wet meadows, roadside ditches, ponds, catch basins, as well as containers. We've treated ditches in townships that have received enough rain to trigger a mosquito hatch and been back in woodlots and floodplains treating larvae. The number of complaint calls has increased as expected in areas near floodplains and cattail marshes.

Three training sessions were held for both new and returning seasonal staff members to prepare them to test with the MDA as certified technicians. Most started working by mid May and will be with us until the end of August.

BCMC's annual report was summarized and presented to the Bay County Board of Commissioners on Tuesday, April 12. Public education efforts continued with information distributed regarding artificial containers and basic homeowner control techniques. Presentations were given at Auburn Elementary School and Handy Middle School.

We continue to monitor for West Nile virus this season by testing American Crows, Blue Jays using the VecTest kit and by submitting mosquitoes to Michigan State University (MSU). Through June 30, we have tested no birds, but have submitted 87 mosquito pools containing 1,451 adult females to MSU; results are pending on the latter samples, but the first 40 pools tested negative.

A few other items of interest: the first of two tire drives was held May 21 with 2,258 tires collected; this first tire drive was held concurrently at the Bay County Fairgrounds and Pinconning County Park; Rob Cascioli of Clarke visited May 12 to use the AIMS machine to measure the MMD's of ULV machines; we've been working diligently with the MDEQ for compliance in treating catch basins and sewage lagoons and have nearly received all Water Treatment Additive Forms from businesses giving us permission to treat their catch basins.

We began Spring Treatment on April 13 (a week later than hoped). We went to two shifts on May 16, with the daytime crew continuing to larvicide, and the afternoon crew learning their routes and noting any signage issues. Since then, we have completed one round of catch basin treatment, and continue to apply larvicides to roadside ditches (there is water this season). Recently, we were given permission to add materials to the sewage lagoons; and these have received their initial "therapy". Meanwhile, the roadways are being adultcided...and priority requests are being satisfied. It has been a busy season, but manageable.

We have been collecting bids for the resurfacing of our parking lots. Our satellite tire collections (nine, to date) continue to produce large turnouts. We added two trucks to the fleet, bringing the total to seventeen equipped with ULVs. We have not seen evidence of arboviral activity, and hope that it stays that way. It's difficult to believe that July is already here.

# MMCA goes to Earth Day 2011

MMCA again attended the MDA/DEQ Earth Day celebration in Lansing. Danielle Donovan and Amanda Laurenz from Michigan State University and Margaret Breasbois from Saginaw County Mosquito Abatement Commission talked to the students and parents about the mosquito's life cycle and ways to help prevent mosquitoes.



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**Summer**