AGENDA

HUMAN SERVICES COMMITTEE

111 S. Michigan Ave., Room 200, Saginaw, MI 48602

Monday, January 11, 2021 – 4:00 p.m.

VIA TELECONFERENCE PER
PA 228 & PA 254 of 2020

Members: James Theisen – Chair, Michael Webster – Vice-Chair, Kathy Dwan, Gerald Little, Carl Ruth
Others: Controller, Civil Counsel, Finance Director, Personnel Director, Board Staff, *Media*

The Human Services Committee meeting will be held via Zoom online meeting platform.
As the County Building is closed to the public, the meeting is open remotely
to the public to follow along and participate during the public portion of the meeting, as follows:

County of Saginaw is inviting you to a scheduled Zoom meeting.
Topic: See Agenda below
Date/Time: January 11, 2021 04:00 PM EST

Join Zoom Meeting: https://zoom.us/j/8024441727 Meeting ID: 802 444 1727

INSTRUCTIONS using ZOOM audio conferencing:
Dial: 1 (877) 853-5257 or 1 (888) 475-4499 and enter Meeting ID: 802 444 1727

I. Call to order
II. Welcome
III. Public comment *(Speakers limited to 3 minutes)*
IV. Agenda

1. **Approval of 2021 Committee and Board Session Calendar** (*Attached*)

2. **William W. Stanuszek, Director, Mosquito Abatement Commission, re:**
   - **1-19-1** Presenting its 2020 Annual Report for review and discussion *(Distributed to all Commissioners)*

3. **Mark J. Rankin, Dist. 9 Coordinator, MSU Ext.; Meaghan Gass, Ben Phillips, & Tom Wenzel, re:**
   - **1-19-2** Presenting information on its Agriculture and Agribusiness Institute (AABI) as well as its Community, Environment, and Food Institute (CEFI) Programs available in Saginaw County

4. **Christina Harrington, Health Officer, Saginaw Health Department, re:**
   - County COVID Update
   - County Vaccination Update

V. Miscellaneous
VI. Adjournment

1-8-21/sea/sek

2021 CALENDAR
Saginaw County Board of Commissioners
www.saginawcounty.com

PRIMARY STANDING COMMITTEES

Human Services Committee		Courts & Public Safety Committee		County Services Committee	
Monday 4:00 pm		**Tuesday 4:00 pm**		**Wednesday 4:00 pm**	
January	11	January	12	January	13
February	1	February	2	February	3
March	1	March	2	March	3
April	5	April	6	April	7
May	3	May	4	May	5
June	7	June	8	June	9
July	---	July	---	July	---
August	2	August	3	August	4
September	7 ***(Tue)(4:00)**	September	7 ***(4:30)**	September	8
October	4	October	5	October	6
November	1	November	2	November	3
December	6	December	7	December	8

REGULAR STANDING COMMITTEES — BOARD SESSION

Budget/Audit Committee		Labor Relations Committee		Executive Committee			
Thursday 4:00 pm		**Monday 4:00 pm**		**Tuesday 4:00 pm**		**Tuesday 5:00 pm**	
January	14 ***(4:00)**	January	14 *(Thu.)(4:30)	January	---	January	4, 6, 19
February	4	February	8	February	9	February	16
March	4	March	8	March	9	March	16
April	8	April	12	April	13	April	20
May	6	May	10	May	11	May	18
June	10	June	14	June	15	June	22
July	---	July	---	July	---	July	---
August	5	August	9	August	10	August	17
September	9	September	13	September	14	September	21
October	7	October	11	October	12	October	19
November	4	November	8	November	9	November	16
December	9 ***(4:00)**	December	9 *(Thu.)(4:30)	December	---	December	14

Budget Sessions are subject to the call of the Chair. There is no Board Session in July.

Legislative Committee & Intergovernmental Cooperation Committee meet as called and posted.

Schedule may be amended in the event of insufficient or additional agenda items. Please call (989) 790-5267 for confirmation of meeting dates or visit www.saginawcounty.com. All Committees meet at the Saginaw County Governmental Center, 111 S. Michigan Ave., Saginaw, MI, 2nd Floor, Room 200 - Board Chambers unless otherwise noted.

SAGINAW COUNTY MOSQUITO ABATEMENT COMMISSION

HUMAN SERVICES

William W. Stanuszek, Director

MEMO

1-19-1

RECEIVED
SAGINAW COUNTY
BOARD OF COMMISSIONERS
2021 JAN -7 AM 10: 21

To: All Saginaw County Commissioners

From: William W. Stanuszek, Director

Date: December 16, 2020

Re: **Distribution of SCMAC's 2020 Annual Report**

The Saginaw County Mosquito Abatement Commission (SCMAC) proudly presents our 2020 Annual Report. This report provides an account of the mosquito season's control efforts, services, public education, and surveillance, as well as the challenges posed by COVID-19. This accounting represents the hard work and efforts of our staff to protect the public from mosquitoes and the diseases they transmit. This report is available for public viewing on our website saginawmosquito.com.

In addition to meeting the challenges posed by mosquitoes, the pandemic required unique solutions to ensure the safety of staff and the public. We truly appreciate our staff's dedication to safe practices and the public's understanding of necessary changes to services. While the pandemic affected many of our individual services, our community operations were very successful. Our surveillance noted higher than average mosquito-borne disease activity in 2020, with West Nile virus found in multiple mosquito samples. Control operations responded to mosquito threats throughout the season with a concerted effort made to keep the public informed as well as remain accountable utilizing news releases, agency website, and social media.

SCMAC remains committed to providing a responsible public health service to all communities throughout our county. Providing relief from nuisance mosquitoes and lessening the threat of mosquito-borne disease is our priority.

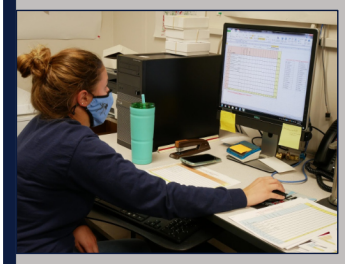
Please do not hesitate to contact me if you have any questions regarding the report or our program. Further information is also available on our website.

On behalf of our Board of Trustees and the entire staff at Mosquito Control, we wish you and your family a safe and joyous holiday season.

211 Congress Avenue, Saginaw, MI 48602
(989) 755-5751 I Fax (989) 758-2309 I www.saginawmosquito.com

2020 Annual Report

Responsible Public Health through Integrated Mosquito Management



SAGINAW COUNTY MOSQUITO ABATEMENT COMMISSION

saginawmosquito.com

Contact Information
211 Congress Avenue
Saginaw, MI 48602
(989) 755-5751
info@scmac.org

Note *from* William W. Stanuszek Director

I am proud to present Saginaw County Mosquito Abatement Commission's (SCMAC) 2020 Annual Report to the Saginaw County community. This report reflects the hard work of our employees and departments, along with a synopsis of the past mosquito season. With 44 control seasons experienced, we continue to make strides in our abilities to control mosquitoes and mosquito-borne disease throughout our county in the most cost-effective manner. We strive to use the most effective strategies based on science and regulation with the least impact to the environment and pollinators.

With the arrival of the Coronavirus (COVID-19) in early 2020 and the resultant closures and precautions, it was apparent this mosquito control season was not going to be a normal. We prioritized the safety of our employees and the public, while continuing to provide our essential public health services. Due to these precautions, changes to certain services were necessary. In this report, changes to our services are noted along with other challenges posed by COVID-19.

I would like to thank our employees and the public for keeping one another as safe as possible during the pandemic. It is our hope that the pandemic is behind us in 2021, and if not, we will be better able to serve with a year of experience in hand.

Another major challenge this season was the flooding in May due to widespread heavy rainfall and the resultant failure of dams along the Tittabawassee River. This flood event not only resulted in property damage but also large populations of biting mosquitoes in and around those impacted communities. In response, SCMAC's control efforts increased in these areas until the mosquito threat subsided. Following the flooding, mosquito populations remained at normal levels throughout much of the season. We truly hope that all those impacted by the flood have recovered.

As for mosquito-borne disease activity, our surveillance again noted the presence of West Nile virus (WNV) in our mosquito populations. This year's WNV activity was above average and found in both rural and urban portions of the county; a map of this activity can be found on our website. While Eastern Equine Encephalitis (EEE) again threatened Michigan in 2020, EEE was not detected within Saginaw County. Substantial efforts were conducted in response to mosquito-borne disease and other mosquito-related threats; these control strategies are documented within this report.

SCMAC continues to incorporate technology to improve the efficacy, efficiency and accountability of our control program. We are able to track all control operations utilizing GIS software and compatible equipment. All adult spray operations are tracked and larval control operations are logged as they occur in the field. Public communication and education is a priority, and we have made substantial strides in its accessibility and relevance with updates to our website, www.saginawmosquito.com and increased use of social media.

The commission and its staff embrace our essential role in protecting public health, and I would like to thank them for their efforts in service to our community.

Table of Contents

Accountability and transparency documents are available under the Performance Dashboard at www.saginawcounty.com

COVID-19

COVID-19 Pandemic:

SCMAC continued essential community mosquito control throughout the COVID-19 pandemic. Social precautions were in place as we started our operations in March and remained throughout the season. These necessary precautions and protocols were reflected throughout 2020's operations, as safety to staff and public were priority.

Changes to individual or personal services were most affected, as we tried to limit contact between SCMAC staff and the public. While many large-scale community control operations were minimally impacted; control including spring aerial treatment, adult spraying, as well as larval control in roadside ditches and catch basins. The number of service requests and property treatments were lower then past years, as we conducted these services only upon property owner request. To offset the decrease in property visits, we emphasized treatment of other prolific mosquito habitats, most notably ditches and catch basins.

The following represents the most notable changes to services due to COVID-19:

- Delayed start for priority (yard) sprays.
- Household scrap-tire collection through drop-off at our facility by appointment only
- Public *Bti* distribution at our facility by appointment only
- Electronic submission or contact-free drop off of service related documents
- Suspension of public and school presentations, and increase use of social media
- Suspension of unsolicited property visits.
- Increased community level larval treatments, including catch basins and roadside ditches

Our workforce was impacted by the pandemic as their start was delayed due to delays in the hiring process and in attaining necessary certifications. Fortunately, the absence of normal early season staffing was minimized due to a successful aerial program and slow start to the mosquito season. Changes to training and procedures were necessary to promote safety during this difficult time.

Essential mosquito control operations continued during the pandemic, thanks to the hard work and attention to safety of our staff and the understanding and participation of the public.

SCMAC Staff

Proud to Serve You...

Permanent Staff

Director: William W. Stanuszek
Account Specialist: Courtney L. Eggebrecht
Administrative Services Manager: Gloria K. Katch
Biologist: Charles R. Pearce
Chief Mechanics: Jeremy D. Fabera and Paul B. Kinde
Education Coordinator: Mathys G. Kotze
Foremen: Paul P. Gutka and Ryan A. DuRussel
Operations Manager: Isaac Blackmon

Board of Trustees *

Chairman: Christopher N. Klawuhn, Saginaw County Environmental Health Services
Vice-Chairman: Carl E. Ruth, Saginaw County Commissioner Representative
Secretary: Randall G. Knepper, Saginaw; Member-at-Large
Trustee: Sidney R. Childs, Saginaw; Member-at-Large
Trustee: Rene C. DeSander, Saginaw; Member-at-Large

* Meet monthly on the 4th Thursday at 2:00 p.m.; dates are subject to change, please call 989-755-5751.

Consultants

Entomologist: Edward D. Walker Ph.D., Michigan State University
Source Reduction: Brian J. Wendling, Public Works Commissioner

Seasonal Staff

Administration

Katelyn Housey
Mia Maher
Molly Mantei
Olivia Mantei
Maddie Rood

Biology

James Barber
Jozalynn Boucher
Claire Brownlee
Isabelle Kettler
Jacqueline Laurin
Mary Kate Little

Field

Chance Atkins
Mark Bailey
De-Quadre Baker
Devon Barron
Trace Burgess
Alivia Butko
Lorissa Butko
Travis Coughran
Noble Cradit
Noah Cribbs
Jakob Dijak
Julian Dolzynski
Grace Douglas
Alexander Dwan
Mason Gates
Morgan Gates
John Hoff
Andrew Hubbard
Steve Johnson
Noah Kaul
Tony Key
Trevor Klein
Sheri Kochan
Paige Krupnek
Aubrey Kruske
Montana Kruske
Mariah LaLonde
George Lown
Michael Lumsden
Jacob Nerio
Amanda Neumann
Alexis Pearce
Zoila Perez
Adrienne Prentice
Doug Putnam
Ryan Quinnell
Nicholas Rethman
Andrew Schlicker
Alex Snider
Abagail Stevens
Michelle VanHautte
Weston Wendling
Morgan Wolfgram
Herb Ziehl

Education

Walker Wenzel

Source Reduction

Nicholas Housey
Kayle Sharkey

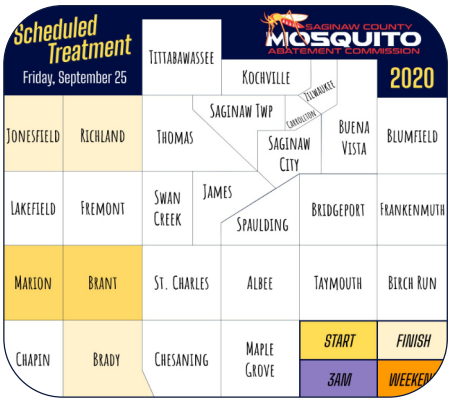
Community Education

Integrated Mosquito Management:

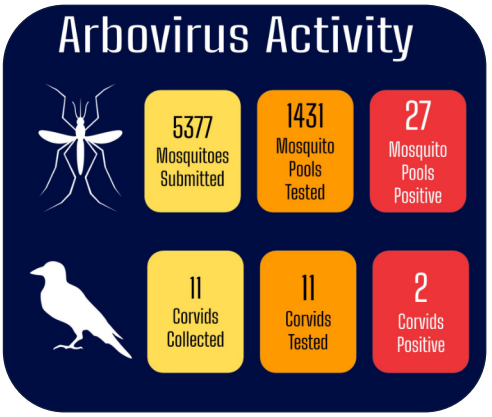
Saginaw County Mosquito Abatement Commission (SCMAC) has embraced the concept of Integrated Mosquito Management (IMM). Our program controls mosquitoes and promotes public health through community education and outreach, mosquito and mosquito-borne disease surveillance, the removal of standing water where mosquitoes lay eggs (source reduction); controlling larval and adult mosquitoes, and evaluation of control products and strategies. The end result of this IMM approach is an efficient program based on sound scientific principles resulting in the citizens of Saginaw County experiencing significantly less mosquito biting activity and a reduced risk to mosquito-borne diseases.

Public Information and Community Outreach:

Public education is an integral part of SCMAC's Integrated Mosquito Management (IMM) Program, especially in abnormal times where communication with the community is very important. During most years we would have attended county events and schools as part of our program but this year our online efforts took precedence.



We have steadily been expanding our online outreach via our website and Facebook and this year we have added Twitter and Instagram. As we go forward, we hope these will prove very effective to educate as well as provide relevant and important information to the Saginaw community.



We refined the overall design with a further focus on simplicity and efficacy, while still considering the vast amount of information we provide. The aim is for people to quickly find the information they are looking for in a succinct, yet visually pleasing design on any device. Therefore, our website home page features up-to-date treatment and surveillance maps and a banner at the top to display important updates across all pages. Both maps highlight the townships where treatment is scheduled or disease has been detected. All information is now accessible via a menu and for convenience we also added shortcuts on the home page for quick access.

We are in the process of adapting our school and community presentations to be accessible online for educators and parents to use at their convenience. We hope this will still enhance and aid the school curriculum as before, cultivating a cultural awareness of mosquitoes and the disease threats it carries but more importantly, the role and responsibility of the residents and our Commission to combat disease.

Unfortunately, our popular creative arts contest had to be canceled for 2020. The next few months will determine how much the contest will need to be amended and what criteria will need to be followed. Going forward, we may use technology as a means for students to express their understanding of disease, mosquitoes, and the role of mosquito control.

Ultimately, we strive to provide up-to-date and relevant information in a professional and easy to understand manner to the broadest audience possible.

Disease Surveillance

Mosquito-borne Disease Surveillance:

Understanding and tracking mosquito-borne disease is crucial to promoting public health within the county. Monitoring mosquito-borne virus activity dictates our control strategies as well as public notification and education. Our surveillance samples for five viruses known to

cause human disease in the Midwest region: La Crosse encephalitis (LAC), Jamestown Canyon virus (JCV), St. Louis encephalitis (SLE), West Nile virus (WNV), and Eastern Equine encephalitis (EEE). The first two viruses belong to the California group of viruses, which often result in milder symptoms than the other viruses. All five of these viruses may result in death. While no current human vaccines are available, horses can be vaccinated against WNV and EEE. Our surveillance program has and will change with the arrival and resurgence of mosquito-borne viruses.

Our routine 2020 surveillance (table) found 27 mosquito

collections positive for WNV. Citizen reported bird surveillance resulted in the detection of two WNV positive corvids (crows and blue jays). The WNV activity was slightly above average in mosquitoes compared to recent years. There was no other arbovirus activity found in Saginaw County. To date no human infection has been reported in the county for 2020.

There was no EEE activity in Saginaw County again this year. However, the State of Michigan is reporting two human EEE cases, with no fatalities and 39 EEE animal cases across 17 counties. The State of Michigan is also reporting WNV in 7 birds from 4 counties including Saginaw and positive mosquito pools from 6 counties including Saginaw. Three human cases of Jamestown Canyon virus have been reported from Kalamazoo, Oakland, and Ottawa counties, with no fatalities.

Arbovirus Activity 2020
Saginaw County
11/18/2020 - Final

Sample	Collected	Zip	Virus
Mosquitoes			
Cx spp	7/3/2020	48757	WNV
Cx. restuans	7/9/2020	48602	WNV
Cx. restuans	7/13/2020	48457	WNV
Cx. restuans	7/13/2020	48604	WNV
Cx. restuans	7/22/2020	48601	WNV
Cx. pipiens	7/22/2020	48603	WNV
Cx spp	7/24/2020	48757	WNV
Cx. restuans	7/27/2020	48655	WNV
Cx. pipiens	7/29/2020	48623	WNV
Cx. pipiens	7/29/2020	48602	WNV
Cx spp	7/29/2020	48601	WNV
Cx spp	7/30/2020	48609	WNV
Cx. pipiens	8/10/2020	48604	WNV
Cx spp	8/19/2020	48757	WNV
Cx spp	8/21/2020	48604	WNV
Cx. pipiens	8/25/2020	48415	WNV
Cx. erraticus	8/27/2020	48601	WNV
Cx. pipiens	8/28/2020	48734	WNV
Cx spp	8/28/2020	48757	WNV
Ae. japonicus	8/31/2020	48601	WNV
Cx. erraticus	8/31/2020	48609	WNV
Ae. japonicus	9/1/2020	48724	WNV
Cx. erraticus	9/1/2020	48604	WNV
Cx. pipiens	9/2/2020	48603	WNV
Ae. japonicus	9/2/2020	48637	WNV
Cx. pipiens	9/3/2020	48609	WNV
Cx. restuans	9/7/2020	48655	WNV
Corvids			
Crow	9/9/2020	48626	WNV
Crow	9/25/2020	48734	WNV
Stats	**Samples**		**WNV+**
Mosquitoes	**1431**		**27**
Corvids	**11**		**2**

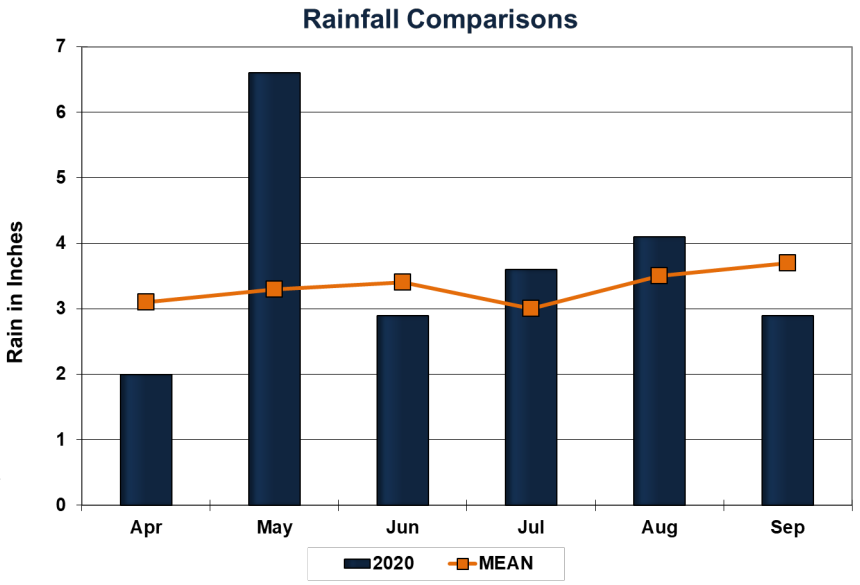
Mosquito Surveillance

Mosquito Surveillance:

The Biology Department utilizes multiple adult traps to track mosquito populations throughout the season. In addition, mosquito breeding habitat is sampled continually throughout the season noting the presence and abundance of larval mosquitoes. This sampling not only allows for operations to respond to mosquito populations, but offers better understanding of mosquitoes and the factors that effect them. Weather conditions greatly influence mosquito populations; most notably temperature (development) and rainfall (abundance). SCMAC monitors rainfall throughout the county to better forecast impacts on mosquito populations. Routine surveillance determines when and if control is needed, and offers insight into efficacy and efficiency of our control efforts.

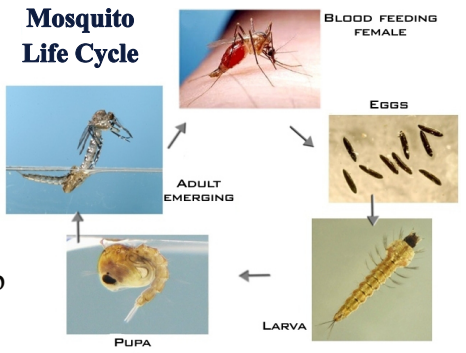
Weather:

Precipitation and temperature influence the amount of mosquito nuisance and arbovirus activity experienced within the mosquito season, which is normally April through September. The season began with March and April rainfall being slightly below average, yielding normal levels of water within the woodlots, which allowed for a successful aerial treatment of spring mosquitoes. In May, we received 6.6 inches of rain with much of it falling over a short period of time throughout the region. May's rainfall caused the failure of dams along the Tittabawassee River resulting in regional flooding and a large nuisance mosquito population. Following a wet May, drier weather with average temperatures persisted through August muting nuisance populations while promoting some disease carrying mosquito populations. Temperatures in late September limited adult control as cool evenings were common. When temperatures drop below 55°F mosquito flight is minimal therefore limiting adult control operations. The control season concluded on Wednesday, September 30th.



Mosquito Surveillance Highlights:

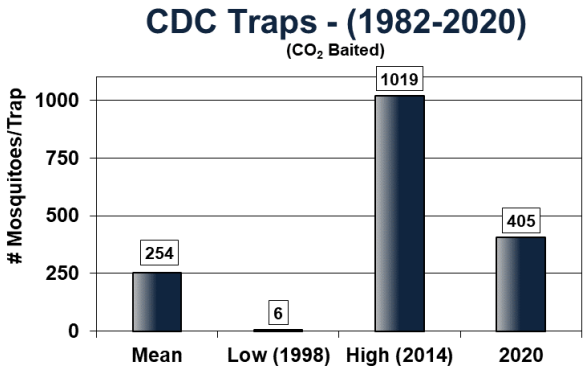
March 9: First mosquito larvae found
April 27: First mosquito pupae found
May 27: First major adult emergence
June 4: Peak Floodwater *Aedes* activity: 6,341 mosquitoes per CDC Trap
June 16: Peak Spring *Aedes* activity: 1,246 mosquitoes per CDC Trap
June 18 Peak *Culex* activity: 25 mosquitoes per Gravid Trap
June 24: Summer *Culex* migrate up into tree canopy



Trap Surveillance

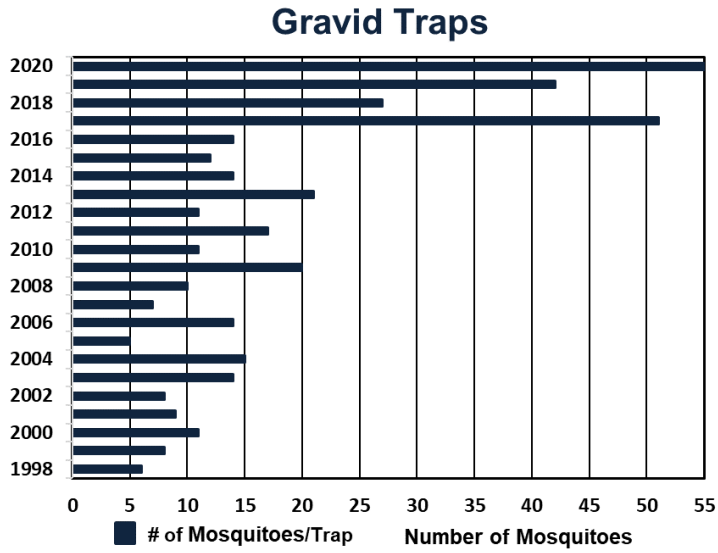
CDC and Gravid Traps:

CDC Traps are baited with dry ice (carbon dioxide) and are very efficient in collecting mosquitoes that are not attracted to light such as nuisance spring *Aedes* mosquitoes. These traps are placed at different locations in the county every Monday - Thursday evening, with mosquito collections retrieved by staff the following morning.



Elevated CDC Traps are used to monitor mosquito-borne disease, efficiently sampling summer *Culex* mosquitoes the primary vectors of West Nile virus (WNV). These traps are baited with CO_2 and placed 15-20 feet off the ground into the tree canopy where *Culex* mosquitoes feed on birds, their primary host. This "elevated" placement often notes the beginning of summer *Culex* biting activity usually mid-July and the end in early September. This method of *Culex* surveillance allows us to monitor and better curtail WNV activity, by finding the virus early and reacting quickly. Historically more than a third of our WNV positive mosquito samples are collected in elevated CDC traps.

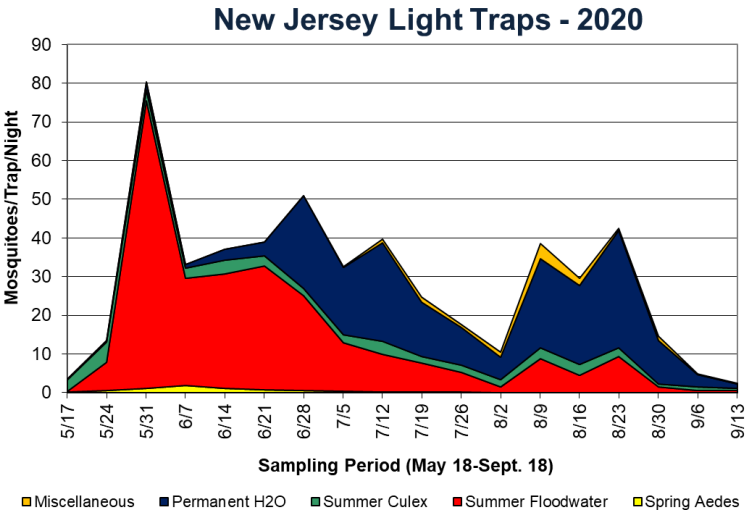
Gravid Traps monitor mosquito-disease by baiting summer *Culex* mosquitoes with a fermented mixture of water, guinea pig pellets (hay), whey, and brewer's yeast. This "bait" is very attractive to female mosquitoes looking to lay their eggs. *Culex* will often lay eggs following a blood meal, commonly from a bird, which may contain a virus like WNV. Five traps are placed at different sites Monday - Thursday evenings.

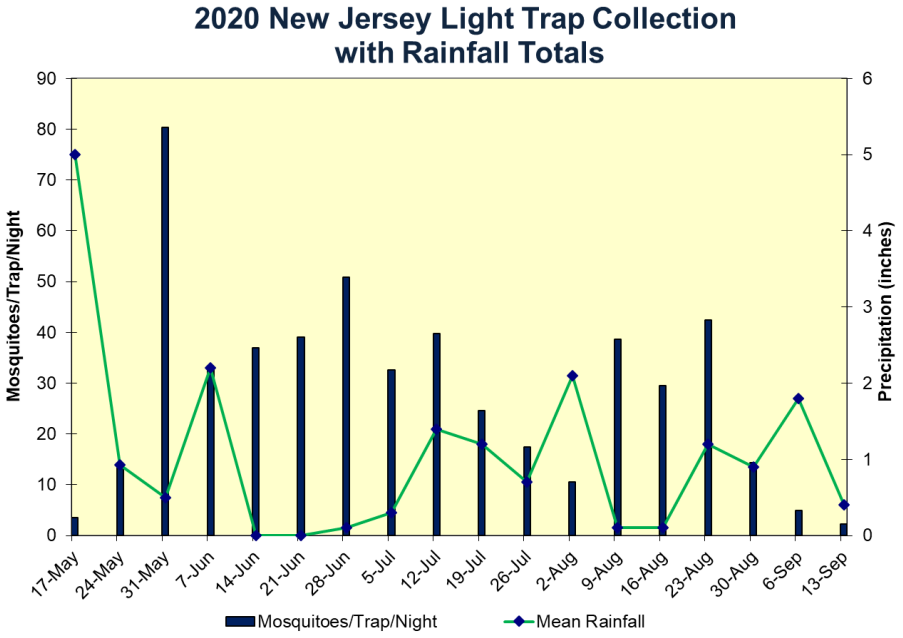


Trap Surveillance

New Jersey Light Traps:

New Jersey Light Traps (NJLT) utilize a 25 watt light source to sample adult mosquito populations. *Aedes* and *Anopheles* mosquitoes are most often captured in these traps. Twenty-five of these traps are geographically located throughout Saginaw County. NJLT's are typically placed at county residents' homes who agree to operate the traps every Monday, Wednesday, and Friday night for 18 weeks during the mosquito season. Biology staff collects the mosquitoes the following scheduled workday. These collections are counted and identified providing mosquito species and densities indicating where control is needed. This trap network monitors immediate and long term changes in mosquito populations.





Research:

SCMAC conducted multiple laboratory and field tests on current and possible adulticiding products to verify effectiveness. Truck mounted ULV caged mosquito tests were completed to ensure adulticides performed in the field. Laboratory bottle bioassay tests examined possible adulticide resistance in Saginaw's mosquito population. This year's accomplishments included: continued field evaluation of a water-based ULV formulations, extended release products, and methoprene formulations. We also continue to examine the presence of Jamestown Canyon virus in our local spring mosquito populations.

Source Reduction

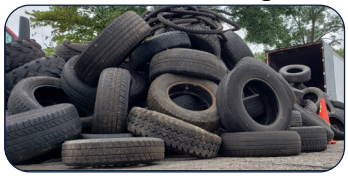
Search and Inform Program:

Artificial containers can be a significant source of mosquito breeding. Typical containers that breed mosquitoes are tires, neglected swimming pools, flower pots, children's toys, plugged rain gutters, tarps, bird baths, boats, and anything that may hold water. Our Search and Inform Program targets urban and suburban areas where both these habitats and disease-carrying mosquitoes are prevalent, posing a threat to public health. Staff canvas neighborhoods looking for sources of mosquito breeding. With the property owner's permission surveys are performed and results are shared with the homeowner as to educate on how eliminating artificial habitats can control mosquitoes. Containers are either dumped or treated with *Bti*. This was performed during resident requested site visits only due to the COVID-19 pandemic.

Community-Wide Scrap Tire Collection:

Scrap tires are a significant source for breeding nuisance and disease carrying mosquitoes. Our scrap tire collection was limited to 10 household tires (without rims), passenger size only (car and pickup truck) per address per year. Residents with larger tires such as semi, tractor, and/or heavy equipment tires were referred to nearby tire recycling companies. Tire collection excluded businesses and other revenue generating enterprises. Residents could drop off tires meeting this criteria at our facility during regular business hours from May 1st through August 31st. Tires were transported to First Class Tire Shredders in Clio, MI where they were shredded and used in various capacities.

Our 2020 tire collection efforts were limited to drop-offs at our facility, and assisting with community clean-ups. Due to the pandemic, community tire drives were canceled and all drop-offs were by appointment only. All tire collections adhered to the necessary social precautions. Our collection efforts removed 2,563 tires from the environment. SCMAC received a Scrap Tire Grant from the Michigan Department of Environment, Great Lakes, and Energy (EGLE) for the amount of $10,000 to assist with 2020 collection efforts. Due to the pandemic, SCMAC did not utilize these funds and will be allowed to use these funds for tire collection in 2021.



Neglected Swimming Pools: In an effort to reduce mosquito breeding and the risk of West Nile virus (WNV), Saginaw County's Health Department assists SCMAC efforts to eliminate the dangers of neglected swimming pools. Neglected pools are capable of breeding large populations of *Culex* mosquitoes, the primary vector of WNV. A single neglected pool can produce millions of mosquitoes over the course of a summer. The intent of this program is to encourage homeowners to do one of the following: restore the pool to use; drain completely to ensure that the pool cannot hold water; or remove the pool. In respecting social precautions only pool sites where permission was granted were treated with Altosid XR briquets. Twelve sites were treated, representing 20% of the normal annual pool visits.

Control Operations

Insecticide:

Insecticide bid opening took place on Wednesday, January 15, 2020.

The following tables account for SCMAC's 2020 insecticide usage, i.e. control products used this past season:

Larval Control:

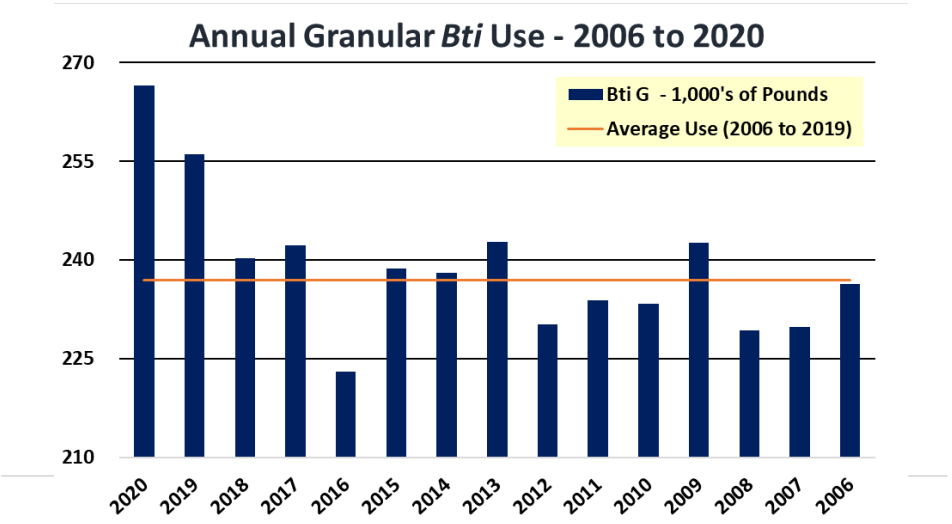
Pesticide Registration No.	Amount Applied	Active Ingredient(s)	Product	Application Method
73049-10	264,524 lbs.	*Bti*	VectoBac G	aerial/ ground equipment
4-455	527 lbs.	*Bti*	Mosquito Beater WSP	hand
8329-83	120 lbs.	spinosad	Natular G30	ground equipment
8329-602	106 lbs.	spinosad	Natular G	ground equipment
73049-475	2,284 lbs.	methoprene	MetaLarv S-PT	ground equipment
70589-1	136 gal.	mineral oil	BVA2 Larviciding Oil	compression sprayer
2724-421	4,915 briquets	methoprene	Altosid XR Briquets	hand
2724-448	48,792 packets	methoprene	Altosid pellets WSP	hand
89459-95	52 lbs.	methoprene	Altosid P35	hand
89459-93	1,120 lbs.	*Bti*/methoprene	Duplex-G	ground equipment
73049-57	22 lbs.	*Bs*	VectoLex WDG	moped pumps
73049-429	18,552 packets	*Bs/ Bti*	VectoMax WSP	hand
73049-56	19 lbs.	*Bti*	VectoBac WDG	moped pumps
85685-4	96 lbs.	*Bti*	Fourstar *Bti* CRG	hand
83362-3	672 briquets	*Bs/ Bti*	Fourstar 180 Briquets	hand

Bti = Bacillus thuringiensis israelensis, Bs = Bacillus sphaericus

Adult Control:

Pesticide Registration No.	Amount Applied	Active Ingredient(s)	Product	Application Method
73748-4	5,324 gal.	permethrin	Kontrol	truck ULV sprayers
89459-76	115 gal.	permethrin	Aqua Perm-X UL	truck ULV sprayers
2724-478	2,079 oz.	tau-fluvalinate	Mavrik	buffalo turbine
432-1534	68 gal.	deltamethrin	DeltaGard	truck ULV sprayers

VectoBac G (granular *Bti*) is used to control mosquitoes in a variety of floodwater habitats. The majority of this biological product is used during our Spring Aerial Larviciding Program. Below represents the last 15 years of use.



Control Operations

Larval Control:

Larviciding is the most effective technique for controlling mosquitoes where habitat cannot be drained or removed. Out of a 16-hour work day, 12 hours are engaged in this activity. Larval sites are either known historical habitat (checked routinely) or from residents reporting standing water. A total of 4,951 sites were checked for breeding and 2,779 sites required treatment.

Aerial Larviciding took place in seasonally flooded woodlots April 14 - 22, 2020, treating a total of 52,160 acres. Six fixed-wing aircraft were used to apply granular *Bti* at a rate of 2.5 to 3 pounds per acre. *Bti* is a naturally-occurring soil bacterium that biodegrades quickly, leaving no residue. Two methods are utilized to ensure the efficient and accurate dispersal of larvicide into the woodlands. First, the fixed-wing aircraft employ a Global Positioning System (GPS) for airplane guidance. This system ensures there is no overlap in treatment or any missed areas, allows real-time monitoring of all treatment, and gives SCMAC the ability to record and review all treatment. Second, the pilots use maps developed with ESRI ArcMap, a Geographic Information System (GIS) program, depicting targeted woodlands. A press release is sent to local media, as well as various governmental regulatory and public safety agencies regarding our spring treatment program. Routine program updates are provided through our social media accounts.

Spring Treat Evaluations: Yearly evaluation of our aerial larviciding program is conducted to monitor the accuracy of aerial applicators and insecticide efficacy. This year 49 seasonal woodland pools were checked before and after treatment to determine program efficacy. This year's sampling noted a 91% reduction in spring larval populations. That compares to our historic average of 88%, with a 27 year range of 72 - 95%. Immediately following the completion of aerial treatment, seasonal vector technicians normally begin ground larviciding of small, non-contiguous, seasonally flooded woodlands in and around populated areas. However due to the pandemic, only a portion of these sites were addressed by returning seasonal and permanent staff.

Open roadside ditches were larvicided on a township by township basis, depending on the level of infestation reported by the Biology and Field staff. Saginaw County consists of 27 townships and the Metro-Area. Ditches located within and around the Metro-Area were treated every 4 to 6 weeks with an extended release control product (MetaLarv or Duplex), to provide multiple weeks of control and allow for additional townships to be treated. Other roadside ditches were checked and treated in response to rainfall events and treated with granular *Bti* as needed.

Control Operations

Larval Control Continued:

Catch Basin Larviciding: All villages, cities, and townships with urban and suburban development have catch basins in or adjacent to roadways that are significant sources of *Culex* mosquito breeding. Due to the amount of catch basins and their potential to breed mosquitoes, the control products used provided weeks to months of control. The Biology Department routinely checks catch basins for infestation and control efficacy. When infestation reaches 25% the area is treated. Due to the delay in our disease testing (COVID-19 related) catch basin treatment was prioritized and started in early June to insure mosquito-borne disease activity was being addressed. Roadside catch basins were treated with bacterial (VectoBac WDG, VectoLex WDG, and VectoMax WSP) or methoprene (Altosid WSP) products totaling 79,819 treatments. Catch basins associated with busy roads or historic drainage projects were treated once with Altosid XR and Fourstar 180 briquets for a total of 5,360 treatments. For off-road catch basins associated with backyards, schools, apartment complexes, and parks Altosid pellets were used resulting in 5,360 treatments.

Routine monitoring of 12 sewage lagoon sites occur throughout the season. These habitats can produce very large populations of *Culex* mosquitoes and can be "hotspots" for WNV activity due to the high organic content of the habitat. Those lagoon sites found breeding *Culex* were treated as needed **depending on weather and the level of infestation. The control product used was Vectolex WDG at a rate of 1 pound per acre. Treatment acres were based on a 20 foot swath around the perimeter of the sewage lagoons.**

Retention and detention ponds are designed to collect water from paved surfaces such as parking lots and subdivisions. Water in these ponds is removed by evaporation, infiltration of soil, or outlets into a municipality's storm water drainage system. There are 36 retention/detention ponds that are routinely checked and treated when necessary. Treatment acres for these ponds are rainfall dependent and treated with Natular G or with Natular G30 at a rate of 5 to 9 pounds per acre. In the presence of pupae, a larviciding oil is applied at a rate of three gallons per acre.

Approximately 1,200 summer floodwater sites that frequently produce mosquitoes have been inventoried within our GIS. These habitats include areas prone to flooding such as lawns, fields, floodplains, and woodland areas. Following significant rain events, staff inspect these historic breeding sites and make control applications when larvae and/or pupae are found. Due to COVID visits to these sites were less than normal as to avoid unsolicited personal interactions with homeowners. Upon property owner request, SCMAC would visit and treat any mosquito breeding found.

Adult Control:

Ultra Low Volume (ULV) adulticiding is the introduction of control products into the air to kill adult mosquitoes while they are in flight using truck mounted ULV sprayers. Each ULV unit is calibrated monthly to dispense approximately 1.0 ounce of spray product per acre. These machines break down insecticides into the proper droplet sizes, which range from 12 - 25 microns. Weather permitting, ULV treatment normally takes place

Control Operations

Adult Control Continued:

Monday through Friday from sunset to 12:30 a.m., as to coincide with peak mosquito activity. If mosquito densities are high, an additional spray shift was conducted prior to sunrise during the second peak of mosquito activity. The pandemic had minimal impact to our community spraying.

The County of Saginaw is divided into 9 service zones. Adult spraying is performed after careful analysis of biological data from traps, disease surveillance, and citizen calls. Our ULV spraying primarily utilized a 4% permethrin formulation. ULV applications are less effective at temperatures below 55ºF, winds in excess of 10 miles per hour, or during periods of heavy rain. Due to these factors, ULV operations cannot be performed every evening. Treatment route information was updated by 2:00 p.m. Monday - Friday (May - September). Residents could access this information through the following methods: calling the office at 989-755-5751, calling recorded message at 989-755-0449, visiting our web page at www.saginawmosquito.com or through our Facebook page.

Types of Citizen Requests:

Each address is allotted two priority requests per year where a resident can request a specific day for their property to be treated. This service was delayed until July due to the pandemic. Each property owner was required to sign a Liability Release Form if they wanted the truck to treat off their drive. Necessary forms were submitted electronically, physical drop-box, or through the mail, and social distances were maintained while this service was performed. A limited number of priority requests were accepted per evening. When surveillance and resident complaint calls reflect high mosquito activity, priority requests were placed on a temporary hold. A total of 537 requests for priority service were performed. A service request is for roadside treatment only and is performed during our regular ULV zone sweeps. These requests are a useful aid when monitoring mosquito densities. A total of 292 requests for adult mosquito control were received.

Buffalo Turbine Residual Spray Program (Mist Blower):

There were 70 predetermined sites scheduled for foliar adulticiding treatment on a weekly basis (weather permitting). These sites consisted of parks, sportsman clubs, golf courses, campgrounds, etc. Visits to all sites totaled 1,081. The insecticide utilized was Mavrik Perimeter an emulsifiable concentrate, 8 ounces of product mixed to 100 gallons of water. The final mix applied to foliage is a 0.01% active ingredient solution.

Pollinator Protection:

SCMAC is continuously aware of the presence and importance of pollinators in Saginaw County. In order to adequately protect honey bee colonies and other pollinators from possible pesticide exposure, there must be effective communication and cooperation from those involved. At times it may be necessary to control adult mosquitoes in areas known to have bee colonies. Bees and many pollinators are most active between 8:00 a.m. and 8:00 p.m. ULV treatment begins in these areas after sunset, well after the time most bees have returned to their hives. A major portion of our insecticide budget is for larvicide (*Bti*) that is applied directly to the water and does not affect pollinators. SCMAC works with the Saginaw Valley Bee Keepers Association to follow the Best Management Practices for bee colony/pollinator health in Saginaw County.

Services

Bti Self-Help Program:

Bti distribution is part of a self-help larviciding program and is normally accomplished through cooperation with participating townships and villages. Due to the COVID-19 Pandemic, a decision was made to distribute *Bti* products by appointment only at our facility. Past-participating township and village offices were instructed to refrain from distributing existing inventories. Our goal was to prioritize public safety by observing social distancing guidelines. Residents that scheduled an appointment were instructed to remain in their vehicle and product was placed in the trunk. For the safety of our staff and the public no contact was made during this process. It was important to continue access to this program because the mosquito larva is the least mobile and most concentrated and accessible mosquito life stage. By targeting larvae in ditches, flooded fields, pools, and artificial containers countless mosquitoes are destroyed before they reach the adult biting stage. In 2020, SCMAC office distributed 267, thirty ounce containers and 40, forty pound bags of *Bti* granules. Each citizen was given an instruction packet and product label regarding the proper procedure for application. Citizens that own greater than 10 acres of property, were eligible to pick up a 40 pound bag of *Bti* granules while supplies lasted. These products present minimal environmental risk and are not a chemical, but rather a biological control. *Bti* is a naturally occurring soil bacterium that biodegrades quickly, leaving no residue. The *Bti* specifically targets mosquito and blackfly larvae.

Medical Certification Program:

A special program has been developed for residents who are severely allergic to mosquito bites. To receive benefits from this program, residents must annually fill out a Medical Certification Form and obtain a doctor's confirmation stating a family member(s) is severely allergic to mosquito bites or has special medical needs. Residents meeting SCMAC's eligibility requirements receive yard treatment when a ULV zone sweep is conducted in their township (no more than once every 10 days). This year 434 service treatments were provided for 61 residents.

Long Drive Program:

To promote effective adult control, homeowners may request their driveway to be treated during a ULV zone sweep if the following criteria is met: the front of the home must be 300 feet or more from the edge of the roadway; possess an adequate turnaround; and presence of significant vegetation providing mosquito harborage. All approved addresses are placed on our route maps and reflective markers are placed at the end of approved driveways to assist technicians in locating the addresses. SCMAC has 1,742 approved long drives.

No Spray Program:

Organic farm operations are not treated due to their organic designation. Residents desiring to be excluded from treatment must complete a No Spray Request Form each year to ensure accuracy. Once the form is received the resident is provided with yellow reflective signs. It is the property owner's responsibility to place the signs at property boundaries. These properties are inventoried and updated within our GIS and referenced during all control operations. Currently, SCMAC has 217 no spray addresses.

Professional Development

Permanent Staff Training:

As part of SCMAC's continuing professional education, 7 permanent staff attended the Annual Michigan Mosquito Control Association (MMCA) conference held February 5 - 6, 2020 at the Kellogg Center in East Lansing. Updates were given on mosquito-borne disease, mosquito biology, application equipment and methods, insecticides, and regulations that affect our operations.

Due to COVID-19 planned training opportunities were impacted, with many planned conferences canceled. However, training did not stop as we looked to virtual opportunities with staff receiving training pertaining to mosquito control, supervision, social media, finances, and customer service.

Seasonal Staff Training:

SCMAC's annual 12-hour certification training for seasonal employees had to be canceled due to the pandemic. Fortunately the Michigan Department of Agriculture and Rural Development (MDARD) developed a virtual certification solution that new seasonal employees completed in early June. All new employees also received ten days of intensive "hands-on" training, which consists of closely supervised field work beginning on the employee's first day of work. Upon successful completion, the MDARD issues a "registered technician" applicator card to the employee. Each employee was issued an Employee Training and Resource Manual that is designed to be used as a reference source covering aspects of employment.

Extensive training on COVID-19 protocol and precautions were provided to all employees upon the start of their employment and throughout the season as needed. Additional seasonal staff training addressed mosquito control products, application, equipment, technology use, customer service, safety, and county policies.

Shared Professional Relationships:

SCMAC values and promotes training of our staff in regards to safety, policies and regulations, operations, and professional development. The mosquito control field is always changing. Annually, permanent staff members attend State and National mosquito control meetings to stay abreast of new developments and technology. Mosquito Control's permanent staff are involved with numerous national and state associations. These include the American Mosquito Control Association, Michigan Mosquito Control Association, Midwest Center of Excellence in Vector-Borne Disease, and Entomological Society of America. SCMAC also works closely with the Saginaw County Health Department and Public Works.

Professional Development

Cooperative Outreach:

SCMAC participates in opportunities to share the value of mosquito control to public health. In past years this has involved attending the annual Earth Day celebration in Lansing, MI in collaboration with the MMCA. Again due to the pandemic this worthwhile event had to be canceled. We look forward to opportunities including Earth Day in 2021 and the future.

Technical Advisory Group (TAG): SCMAC's TAG was established in 1992 and meets twice a year. The first meeting this year was held virtually, via Zoom on Tuesday, March 24, 2020. Items discussed were SCMAC's 2020 Program Plan; program changes and season projects; State and Federal permitting; 2020 mosquito-borne disease surveillance; and TAG attendance/membership. The second meeting is scheduled to take place on Tuesday, December 8, 2020 where this Annual Report is presented, along with highlights from the 2020 season. We would like to take this opportunity to acknowledge our TAG Members: Chairman Edward Walker, Ph.D., George Balis, Eric Benbow, Ph.D., Dave Driver, Trisha Dubie, Kevin Kern, Chris Novak, Pam Repp, Kim Signs, Brian Wendling, and Bryant Wilke. SCMAC appreciates and values the Technical Advisory Groups' assistance and input.

Dump and Drain After Every Rain...

Protect Your Family:

During the summer, mosquitoes can develop in any source of standing water lasting 7 to 10 days. Consequently, protecting your family and community from biting mosquitoes and the diseases they carry begins around the home. The elimination of standing water can substantially improve your summer. The following proven strategies can be used and shared with your neighbors.

- Dispose of discarded tires, cans, buckets, tarps, and containers.
- Empty standing water weekly from useful containers, such as rain buckets, tire swings, flower pots, tarps, children's toys, etc.
- Fill in tree rot holes and hollow stumps that hold water.
- Change water in bird baths and wading pools on a weekly basis.
- Turn over plastic wading pools and wheelbarrows when not in use.
- Clean clogged roof gutters. Flooded gutters can produce hundreds of mosquitoes.
- Clean, chlorinate, and/or cover swimming pools that are not being used. Don't forget the water that collects on swimming pool covers.

Keeping grass and shrubbery trimmed will reduce resting areas for mosquitoes. Late summer mosquito complaints often involve containers found around the yard. Please check around your home and yard for mosquito breeding containers throughout the summer months and especially after it rains. Empty the water and, when possible, eliminate the source so accumulations will not occur in the future. Mosquito control begins with you.

Help us out...

Dump it out




SAGINAW COUNTY MOSQUITO ABATEMENT COMMISSION

saginawmosquito.com

Contact Information
211 Congress Avenue
Saginaw, MI 48602
(989) 755-5751
info@scmac.org

January 5, 2021

HUMAN SERVICES

1-19-2

Honorable Chairman Webster and Members of the Board of Commissioners
County of Saginaw
111 S. Michigan Avenue
Saginaw, MI 48602

RE: Request to appear before the Human Services

Dear Chairman Webster and Commissioners:

This is a formal letter requesting the opportunity for Michigan State University Extension (Meaghan Gass, Ben Phillips, and Tom Wenzel will be presenting) to appear before the Human Services Meeting on Monday, January 11 @ 4 p.m. via zoom.

The staff will share about our Agriculture and Agribusiness Institute (AABI) as well as our Community, Environment, and Food Institute (CEFI) programs in Saginaw County. This includes: Animal Ag, Business Management, Consumer Horticulture, Field Crops, Fruits, and Vegetables for AABI as well as Community Food Systems, Government and Community Vitality, Government and Public Policy, and Natural Resources Stewardship for CEFI.

Michigan State University Extension's mission is to: **help people improve their lives through an educational process that applies knowledge to critical issues, needs, and opportunities.**

I would like to thank you in advance for the opportunity for MSU Extension to be on the agenda and continue to advocate for MSU Extension and the value it brings to the residents of Saginaw County. If you have any questions, please do not hesitate to call or email me.

Sincerely,

RECEIVED
SAGINAW COUNTY
BOARD OF COMMISSIONERS
2021 JAN -5 PM 3:20

Mark J. Rankin

District 9 Coordinator
Michigan State University Extension
723 Emerson St.
Saginaw, MI 48607
Phone: (989) 758-2500
Fax: (989) 758-2509
Cell: (517) 937-7890
Email: rankinm1@msu.edu