

# AGENDA

## HUMAN SERVICES COMMITTEE

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

**Monday, January 8, 2024 – 4:00 p.m.**

Members: Gerald Little – Chair, Tracey Slodowski – Vice-Chair, Michael Webster, Lisa Coney, Christopher Boyd

Others: Finance Director, Civil Counsel, Board Staff, *Media*

- I. Call to Order
- II. Welcome
- III. Correction/Approval of Minutes (***December 4, 2023 – Attached***)
- IV. Public Comment
  - *Speakers limited to 3 minutes*
- V. Agenda
  1. **Harmony Fierke-Gmazel, AICP, MSU Extension Educator, re:**
    - **1-16-1** Providing information about programs, benefits, and opportunities within MSU Extension
  2. **William Stanuszek, Director, Mosquito Abatement Commission, re:**
    - **1-16-2** Presenting its 2023 Annual Report for review and discussion
- VI. Miscellaneous
- VII. Adjournment

**MINUTES**  
**HUMAN SERVICES COMMITTEE**

**DRAFT**

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

**Monday, December 4, 2023 – 4:00 p.m.**

Present: Gerald Little – Chair, Michael Webster, Lisa Coney, Christopher Boyd  
Absent: Tracey Slodowski  
Others: Koren Thurston, Dave Gilbert, Richard Spitzer, Mark Rankin, William Stanuszek, Jaime Ceja, Patricia Johnson, Kelly Suppes, Jennifer Broadfoot, Isaac Blackmon, Randy Knepper, Rene DeSander, Courtney Eggebrecht, Chip Hendrick, Marissa Sawdon and Catherine Hicks

- I. Call to Order ---**Little at 4:00 p.m.**
- II. Welcome
- III. Correction/Approval of Minutes (**November 6, 2023**)  
---**Moved by Boyd, seconded by Coney, to approve. Motion carried.**
- IV. Public Comment ---**None**
  - *Speakers limited to 3 minutes*
- V. Agenda
  1. **Mark Rankin, MSU Extension, District 9 Director, re:**
    - **12-19-1** Providing quarterly data reports for July – September 2023 as well as 2022 programming information  
---**Moved by Webster, seconded by Coney, to accept this report as satisfaction of the contractual requirements to facilitate payment of \$111,449 for FY 2023. Motion carried. (Board Report)**
  2. **William Stanuszek, Director, Mosquito Abatement Commission, re:**
    - **12-19-2** Submitting information and requesting consideration and support of 705 N. Towerline Road, Buena Vista, as the future Mosquito Control facility site  
---**Moved by Webster, seconded by Boyd, to allow Civil Counsel to proceed with negotiations on 705 N. Towerline Road for a portion of the property. Motion carried.**  
---**Moved by Boyd, seconded by Webster, to allow Civil Counsel to negotiate a design build with Saginaw Public Schools for purchase of a renovated building and bring a negotiated agreement back to the full board. Motion carried. (Board Report)**
- VI. Miscellaneous ---**None**
- VII. Adjournment ---**Moved by Boyd, seconded by Coney, to adjourn. Motion carried; time being 5:05 p.m.**

Respectfully Submitted,  
Gerald Little, Committee Chair  
Marissa Sawdon, Committee Clerk

January 3, 2024

# HUMAN SERVICES

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

1-16-1

**RE: Request for MSU Extension to appear before the Human Services Committee**

Dear Chairman Boyd and Commissioners:

This is a formal letter requesting the opportunity for Harmony Fierke-Gmazel, AICP, MSU Extension Educator for Land Use, Planning, Zoning, Resiliency & Engagement to share about programs, benefits, and opportunities at the Human Services Meeting on Monday, January 8th @ 4 p.m.

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.** As you know, MSU Extension relies on local funding to leverage State and Federal dollars for Saginaw County to provide research based programs and educational resources to the residents.

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,

Mark J. Rankin  
District 9 Director  
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](mailto:rankinm1@msu.edu)

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RECEIVED  
SAGINAW COUNTY  
BOARD OF COMMISSIONERS  
MS  
2024 JAN - 3 A 10: 19



# HUMAN SERVICES

William W. Stanuszek, Director



## MEMO

1-16-2

To: All Saginaw County Commissioners  
From: William W. Stanuszek, Director   
Date: December 19, 2023  
Re: **Distribution of SCMAC's 2023 Annual Report**

RECEIVED  
SAGINAW COUNTY  
BOARD OF COMMISSIONERS  
MS  
2023 DEC 19 A 10:25

The Saginaw County Mosquito Abatement Commission proudly presents our **2023 Annual Report**. This report provides an account of the mosquito season's control efforts, services, public education, and mosquito surveillance. 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](http://saginawmosquito.com) and can be accessed by clicking on the above "2023 Annual Report" link.

Our 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. Our surveillance again noted the presence of mosquito-borne disease within the county's mosquitoes and birds.

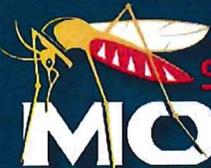
SCMAC remains committed to providing a responsible public health service to all communities throughout our county. Providing relief from nuisance mosquitoes and lessening the threat of mosquito-borne disease is our priority.

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, we wish you and your family a Safe and Joyous Holiday Season.

# 20 ANNUAL 23 REPORT



 SAGINAW COUNTY  
**MOSQUITO**  
ABATEMENT COMMISSION



# CONTENTS



## CONTROL OPERATIONS

Integrated Mosquito Management through community larviciding and adulticiding



## SERVICES AND OUTREACH

Service Requests, Reporting, Bti Distribution, and more

## 01 DIRECTOR'S NOTE

A letter from the Director

## 02 SCMAC STAFF

Meet the permanent staff and Board of Trustees at Saginaw County Mosquito Abatement Commission

## 03 INTEGRATED MOSQUITO MANAGEMENT

Responsible mosquito control through a multifaceted program

## 04 COMMUNITY EDUCATION

Community outreach, classroom education, and professional development

## 11 SOURCE REDUCTION

Elimination of mosquito breeding habitat through community programs and more

## 12 POLLINATOR PROTECTION POLICY

Following key principles and practices for pollinator protection

## 19 PROFESSIONAL DEVELOPMENT

Continued education through meetings, conferences, and trainings

## 20 TECHNICAL ADVISORY GROUP

Top experts in their field helping guide SCMAC's mosquito control programs

Accountability and transparency documents are available under the Performance Dashboard at [www.saginawcounty.com](http://www.saginawcounty.com)

# LETTER FROM THE DIRECTOR

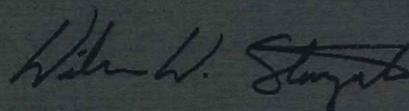
I am proud to present Saginaw County Mosquito Abatement Commission's (SCMAC) 2023 Annual Report to the Saginaw County community. This report reflects the hard work of our employees and provides a synopsis of the past mosquito season. With 47 control seasons experienced, we continue to make strides in our abilities to control mosquitoes and mosquito-borne disease throughout our county in a 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 last couple of seasons punctuated by abnormal weather patterns it has been difficult to find normal or what is expected. The 2022 season lacked normal rainfall with very dry conditions persisting throughout the season, and then this year we went from very dry to very wet weather patterns. It is periods of wet weather that produce mosquito nuisance while dry conditions often favor disease transmission. The recent weather patterns have resulted in redefining our control season as this year was our first sustained treatment into October. Late season rainfall and warm temperatures supported adult mosquito nuisance through September and into October, extending our season.

This year's warm, dry periods favored Mosquito-borne disease activity, with average West Nile virus (WNV) activity found within our mosquito populations. Our Biology Department detected WNV in 19 mosquito collections, whose location, type of mosquitoes, number, and seasonality reflected what is known or expected with this virus. Other mosquito-borne viruses were noted this season, with Jamestown Canyon (JCV) being found again in our spring mosquito populations. The unexpected detection was the collection of Eastern Equine Encephalitis (EEE) in a single adult mosquito. Without the presence of the ideal EEE habitat, marsh and bogs, this positive is thought of more as a curiosity than a sustained threat. As with all mosquito viruses we spend a substantial effort controlling larval and adult mosquito populations known to transmit them.

SCMAC continues to invest in technology to improve the efficacy, efficiency and accountability within our programs and services. In addition to expanding GIS technologies within our workflows and services, we offered digital access to allow residents to report biting mosquito activity, receive treatment notification, and request larval treatment using our downloadable application (for mobile devices) as well as our website, [www.saginawmosquito.com](http://www.saginawmosquito.com).

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. Also, on behalf of the Commission, I would like to pass along sincere appreciation to Saginaw County residents for their participation in controlling mosquitoes in their yards and communities.



**William W. Stanuszek**





2023 MOSQUITO CONTROL



# STAFF | BOARD



"IF EVERYONE IS MOVING FORWARD TOGETHER, THEN SUCCESS TAKES CARE OF ITSELF."

- HENRY FORD



## PERMANENT STAFF

Director | William Stanuszek  
Account Specialist | Gabriel Brown  
Biologist | Charles Pearce  
Chief Mechanic | Jeremy Fabera  
Education Coordinator | Mathys Kotze  
Foreman | Ryan DuRussel  
Foreman | Paul Gutka  
Office Manager | Courtney Eggebrecht  
Operations Manager | Isaac Blackmon

## BOARD MEMBERS



Chairman | Randall Knepper; Member-at-Large  
Vice-Chairman | Christopher Klawuhn; Saginaw County Environmental Health Services Director  
Secretary | David Gutierrez; Member-at-Large  
Trustee | Christopher Boyd; Saginaw County Commissioner Representative  
Trustee | Rene DeSander; Member-at-Large

"IF YOU WANT TO GO QUICKLY, GO ALONE. IF YOU WANT TO GO FAR, GO TOGETHER."

- AFRICAN PROVERB

# MOSQUITO



- Informing residents, through our Public Education Program, of best practices to control mosquitoes and avoid their bites around the home or within their community.
- Elimination or removal of mosquito breeding habitat (standing water) in and around the home and community through our Source Reduction Programs, including household scrap tire collection.

- Our Biology Department monitors mosquito populations and mosquito-borne disease. This surveillance directs our control program. In addition, all control is monitored to ensure responsible and effective use of control products.
- Larval mosquito control is performed through treating standing water where larval mosquitoes are found. The majority of larval control is done with a bacterial (Bti) product which targets mosquito larvae and bio-degrades rapidly.

- Controlling the pupal stage is done with a fine, highly refined mineral oil. This oil biodegrades in within 24 hours.
- Adult mosquito control reduces populations of biting adult mosquitoes. When surveillance notes certain populations of adult mosquitoes and/or presence or increase in mosquito - borne disease, an ultra-low volume (ULV) application is performed to decrease the mosquito threat.

# Community Education

Professional Development | Media | Community Events | Contest



Providing the public with easily accessible information is a priority. SCMAC prides itself on transparency related to our services, products, and mosquito threats in the community. We offer access to information through a variety of platforms, from a comprehensive website, social media, our public notification app, to in person engagement.

Our commission is very active with professional groups related to mosquito control. This season the Education Department and agency were very involved with the Michigan Mosquito Control Association's (MMCA) Annual Conference (February) and 7F Certification Seminar (November) as well as our own Seasonal Employee Trainings. Building relationships and networking with colleagues and stakeholders within the profession continues to be beneficial in combatting mosquitoes and disease here in Saginaw County.

Our website, public notification app, social media, and online business profiles provide usable and interactive access to information and services. Our technical expertise in virtual webinars and presentations proves valuable for a seamless experience both internally and publicly.

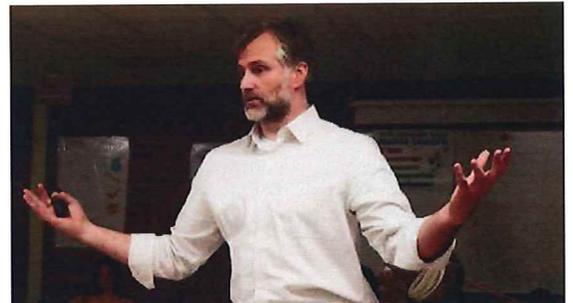
This year we participated in various civic events:

- Friday Night Live
- Commission of Aging Senior Picnic
- Saginaw County Fair
- School Presentations
- Saginaw County Parks Events

We appreciate the various organizations that invite us to educate residents on mosquitoes, the diseases they transmit, and their control. In-person school presentations continued to be valued and we appreciate the schools and teachers inviting us to participate in their programs.

Our classroom presentations and annual creative arts contest are a great way to engage student participation.

## education in action



# DISEASE SURVEILLANCE

2396  
MOSQUITO  
SAMPLES TESTED

21  
POSITIVE  
SAMPLES

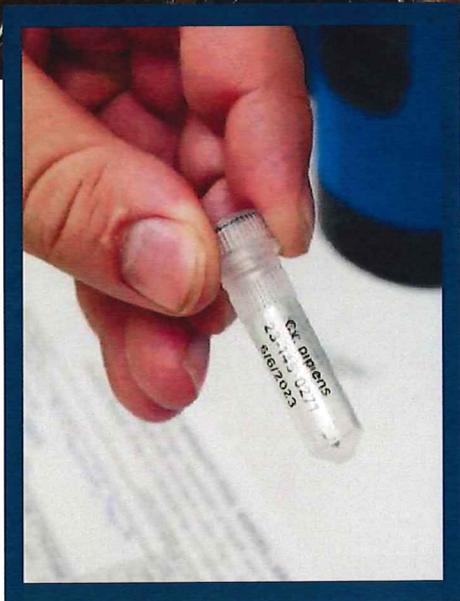
1  
JCV  
1  
EEE  
19  
WNV

10  
DEAD BIRDS  
TESTED

5  
WNV



Understanding and tracking mosquito-borne disease is crucial to promoting public health within the county. The presence, amount, and recent history of 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: Eastern Equine encephalitis (EEE), Jamestown Canyon virus (JCV), La Crosse encephalitis (LAC), St. Louis encephalitis (SLE), and West Nile virus (WNV). Mosquito samples are submitted to the Michigan Department of Health and Human Services' Bureau of Laboratories while birds are sent to the Michigan State University Veterinary Diagnostic Laboratory for testing. Our surveillance efforts adapt according to the arrival and resurgence of mosquito-borne viruses.



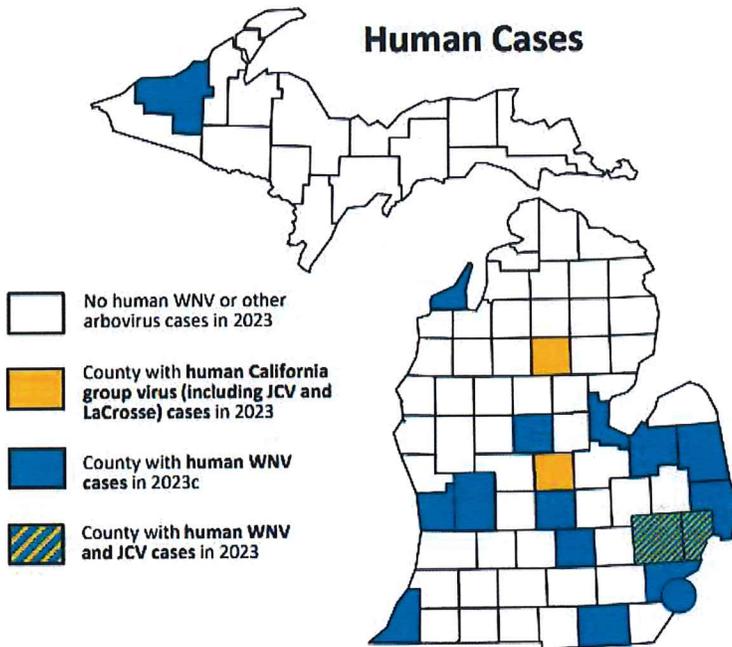
## Mosquito-Borne Virus Surveillance Results

- **2396 mosquito samples submitted**
  - *Aedes canadensis*: 1 - JCV Positive
  - *Aedes japonicus*: 1 - EEE Positive
  - *Anopheles quadrimaculatus*: 1 - WNV Positive
  - *Coquillettidia perturbans*: 1 - WNV Positive
  - *Culex species*: 17 - WNV Positives
- **10 bird samples submitted**
  - Crows: 3 - WNV Positives
  - Blue Jays: 1 - WNV Positive
  - Redtail Hawk: 1 - WNV Positive

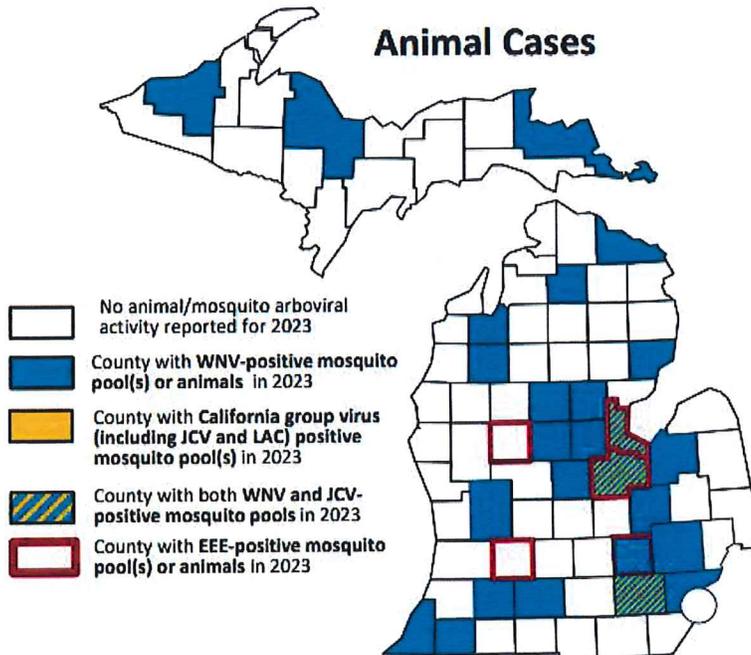
# STATE OF MICHIGAN

## Arbovirus Surveillance

### Human Cases



### Animal Cases



“

*Arboviruses are viruses transmitted by mosquitoes or other insects*”

The State of Michigan reported **21 human cases of WNV** with most occurring in the middle and eastern portions of the lower peninsula. No fatalities have been reported. WNV was also detected in **124 mosquito pools, 21 birds, 1 camelid and 4 horses**.

**EEE cases** decreased in 2023 infecting a total of **1 horse** occurring in Mecosta County, **1 deer** in Livingston County, and **4 mosquito pools** in Bay, Barry, and Saginaw Counties. No human detection has been reported.

**Jamestown Canyon virus (JCV)** was detected in **6 mosquito pools** reported in Saginaw, Bay, and Washtenaw counties with **4 human cases** in Gratiot, Macomb, Oakland, and Roscommon Counties.



# Mosquito Surveillance



SCMAC utilizes multiple adult traps to track mosquito populations. In addition, mosquito breeding habitat (standing water) 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 affect 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.

## Seasonal Highlights

**MARCH 14:** First mosquito larvae found

**APRIL 24:** First mosquito pupae found

**MAY 22:** First major adult emergence

**MAY 30:** Peak Spring *Aedes* activity:  
4,000 mosquitoes trapped

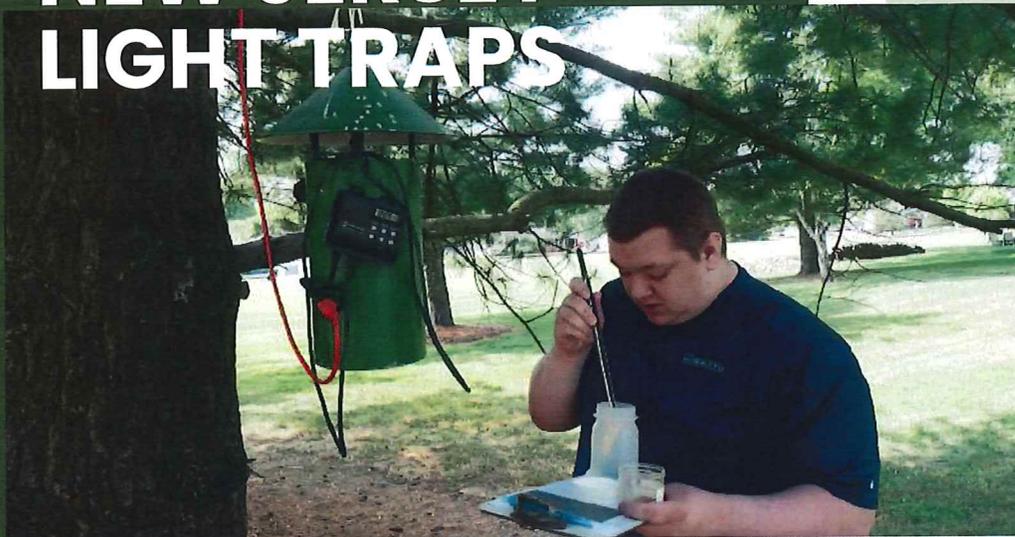
**AUGUST 16:** Peak *Culex* activity:  
411 mosquitoes trapped

**JULY 19:** Summer  
*Culex* migrate up  
into tree canopy

**SEPTEMBER 6:**  
Peak Floodwater  
*Aedes* activity:  
5,240 mosquitoes  
trapped



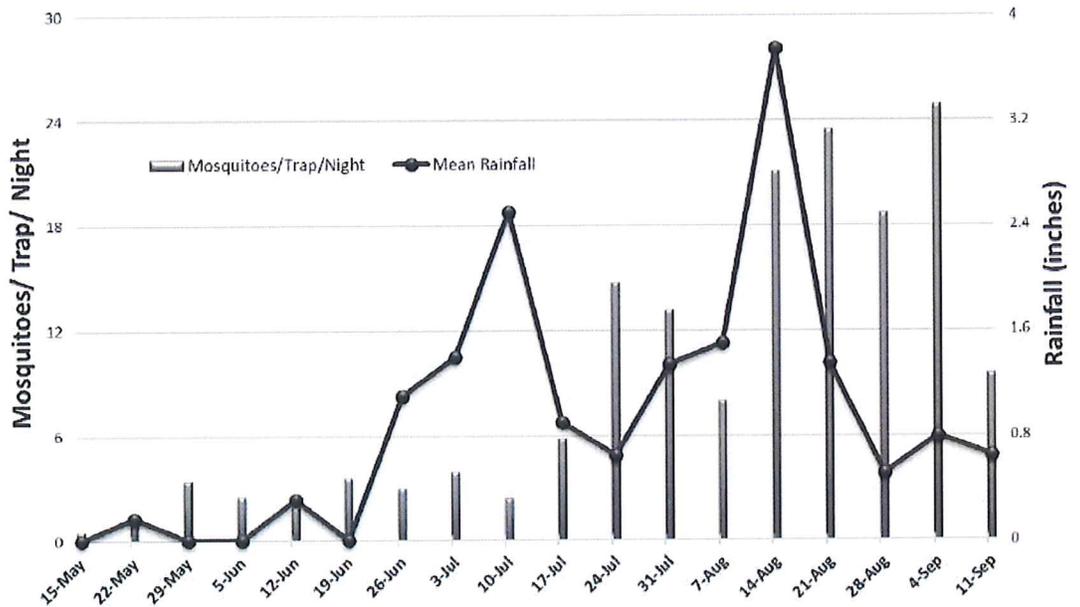
# NEW JERSEY LIGHT TRAPS



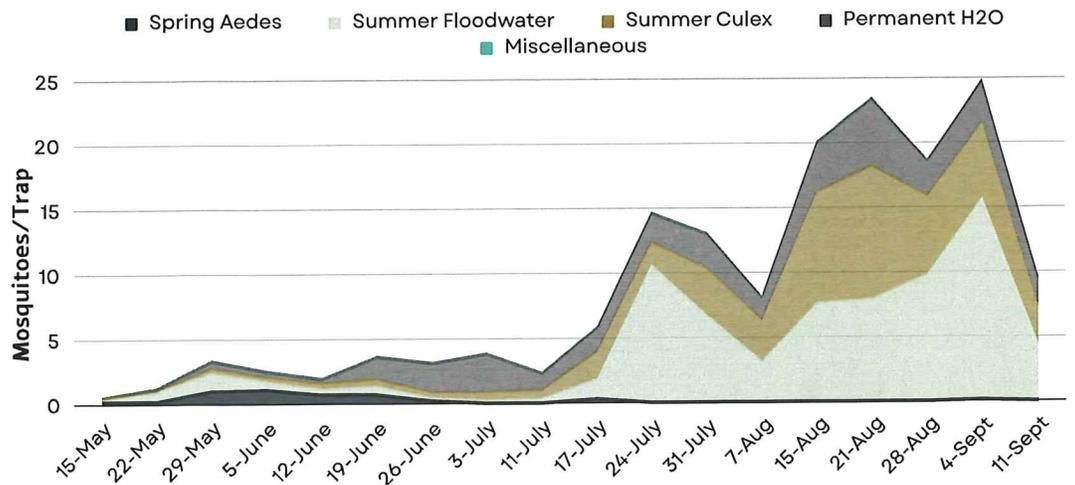
New Jersey Light Traps (NJLT) utilize a light source to sample adult mosquito populations. *Aedes* and *Anopheles* mosquitoes are most often captured in these traps. Twenty-five of these traps are geographically located throughout Saginaw County. These traps are placed primarily at participating county residences, and operated Monday, Wednesday, and Friday nights 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 within mosquito populations.

2023 New Jersey Light Trap Collection with Rainfall Totals



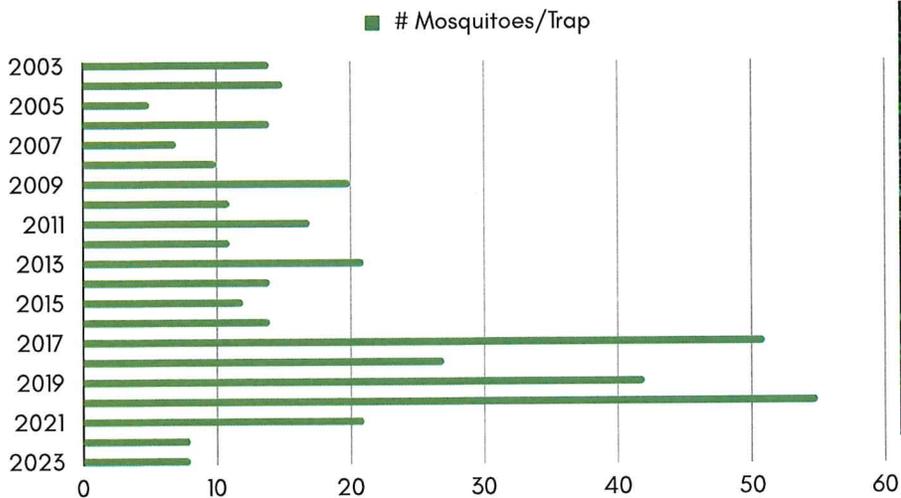
Mosquito Groups Collected



# CDC/GRAVID TRAP SURVEILLANCE

## GRAVID TRAPS

These specialized traps monitor mosquito-borne disease by baiting *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 West Nile virus. Five traps are placed at different sites Monday - Thursday.



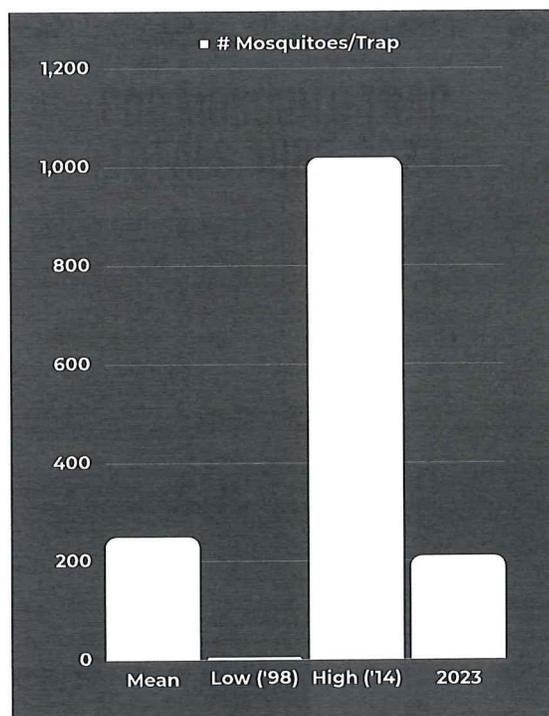
**CDC MOSQUITO TRAP TOTALS: 1985-2023**

### ELEVATED CDC TRAPS

Are placed 15 to 20 feet into the tree canopy to sample mosquito-borne disease by sampling summer *Culex* mosquitoes. *Culex* mosquitoes primarily feed on birds, this trap placement samples bird feeding activity which occurs in roosting or nesting birds. Birds play an important role in many mosquito-borne disease cycles and amplification. Historically, this trapping method notes early season virus activity.

### CDC TRAPS

These traps are effective in defining local mosquito nuisance as well as sampling certain disease-carrying mosquitoes. They are baited with dry ice (carbon dioxide) which is very effective in attracting host-seeking mosquitoes, especially *Aedes* mosquitoes. Daily trapping occurs Monday - Thursday in varying locations.



# WEATHER REPORT

## TEMPERATURES AND PRECIPITATION

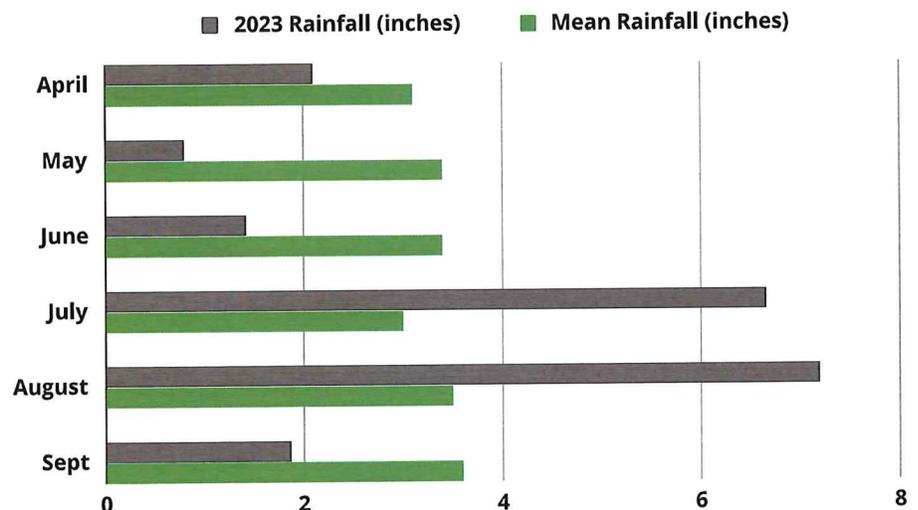
Precipitation and temperature influence the amount of mosquito nuisance and arbovirus activity experienced within the mosquito season.

Our 2023 mosquito season began with below average snowmelt and spring rainfall. These conditions, along with a successful spring aerial program resulted in muted numbers of spring and nuisance mosquitoes.

When heavy rains arrived in July and August, this saturated our ground leading to an abundance of standing water and replenishment of our permanent water habitat. Due to this we had a large, sustained emergence of summer floodwater mosquitoes.

These wet conditions replenished marshes and swamps supporting our permanent water mosquito populations, which include *Anopheles*, *Culex*, and cattail mosquitoes. These mosquitoes are responsible for disease amplification and are associated with habitats that hold water year-round.

The warm temperatures along with early season dry conditions supported mosquito-borne disease activity. West Nile activity was noted in late July and increased through August and September. Warmer than average temperatures were experienced in September and early October, extending our control season.



# SOURCE REDUCTION

## Search & Inform:

Targeting residential mosquito breeding habitats, crews search includes:

- Tires
- Children's toys
- Bird baths
- Buckets

These man-made habitats are capable of producing both biting and disease-carrying mosquitoes, making elimination of these habitats crucial. With the homeowner's permission, crews survey and educate. When these sources cannot be dumped or removed, they are treated.

## Scrap Tire Collection:

Tires are accepted at our facility May 1st - August 31st and transported to Environmental Rubber Recycling Center in Flint, Michigan. A portion of these efforts were funded through a Scrap Tire Grant from the Michigan Department of Environment, Great Lakes, and Energy (EGLE).

## Collection Criteria:

- Saginaw County residents only
- 10 tires per household
- No rims
- Passenger sized only
- No businesses

## Neglected Swimming Pools:

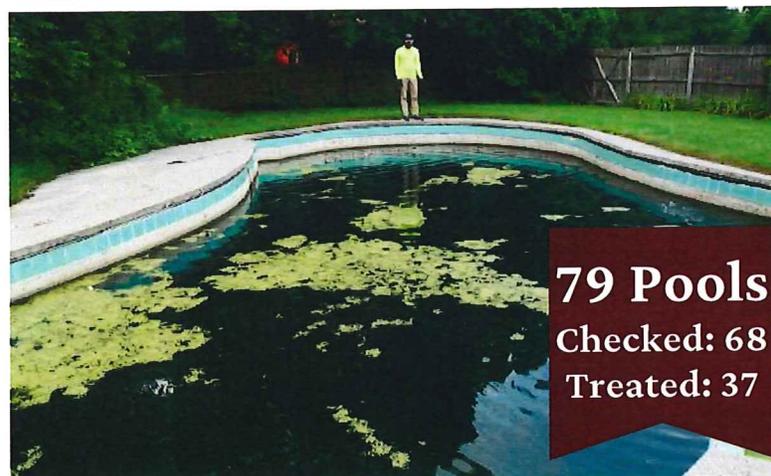
Neglected pools are a major source of *Culex* mosquitoes which often carry West Nile virus (WNV). SCMAC works with the Saginaw County Health Department to help eliminate the public health threat. The intent of the program is to encourage homeowners to:

- Restore the pool to use
- Drain completely
- Remove pool



SCMAC hosted 2 tire drives

June - St. Charles Township Office - 1,507 tires  
July - Taymouth Township Office - 1,015 tires



# POLLINATOR PROTECTION POLICY

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SCMAC is continuously aware of the presence and importance of pollinators in Saginaw County. In order to adequately protect honeybee colonies and other pollinators from possible pesticide exposure, there must be effective communication and cooperation from those involved.

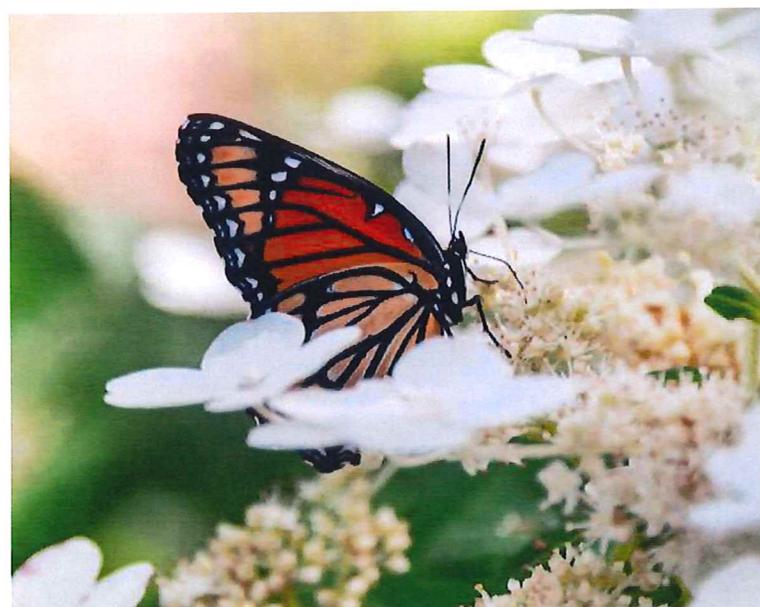
Bees and many pollinators are most active between 8:00 a.m. and 8:00 p.m. Our ULV adult mosquito treatment begins after sunset, well after the time most bees have returned to their hives. Adult mosquito treatment only occurs in areas when needed based on mosquito population and mosquito -borne virus activity. The majority of our control efforts and budget are for larval control that utilizes biological products like *Bti*, which is applied directly to the water and does not affect pollinators.

SCMAC works with the Saginaw Valley Beekeepers Association to follow the Best Management Practices for bee colony/pollinator health in Saginaw County, as well as following the principles and practices set forth by the State of Michigan's "Managed Pollinator Protection Policy" and Michigan Mosquito Control Association's "Mosquito Control and Pollinator Protection Best Management Practices".



## Pollinator Response Plan:

- Reduce the presence of mosquito breeding habitat by eliminating standing water and artificial breeding containers
- Minimize pesticide exposure by following IMM principles and following product labels
- Prioritize use of larval control products to target the beginning stages of a mosquito's life cycle in standing water. This practice offers little-to-no risk to pollinators
- ULV adult mosquito management that applies the lowest effective rate of material to target mosquitoes
- Utilize ULV practices after sunset when honeybees and other pollinators are not active and foraging
- Avoid direct application of spray to flowering plants
- Monitor wind direction and speed to avoid insecticide drift
- Maintain open and frequent communication with beekeepers
- Work with beekeepers who wish to be a "no spray" resident
- Watch Michigan Department of Agriculture and Rural Development's Drift Watch website for hive locations and note on all treatment maps





# LARVAL CONTROL MATERIALS

Product	Pesticide Registration No.	Active Ingredient	Amount Applied
VectoBac G	73049-10	Bti	263,565 lb.
Mosquito Beater WSP	4-455	Bti	1,083 lb.
MetaLarv S-PT	73049-475	Methoprene	4,196 lb.
BVA2 Larviciding Oil	70589-1	Mineral Oil	285 gal.
Altosid XR Briquets	2724-421	Methoprene	4,546 briquets
Altosid pellets WSP	2724-448	Methoprene	27,180 packets
Altosid P35	89459-95	Methoprene	2,165 lb.
Duplex-G	89459-93	Bti/Methoprene	1,290 lb.
VectoLex WDG	73049-57	Bs	0.7 lb.
VectoMax WSP	73049-429	Bs/Bti	16,184 packets
Fourstar WSP	85685-3	Bs/Bti	122 packets
Fourstar 180 Briquets	83362-3	Bs/Bti	463 briquets
MetaLarv XRP	73049-475	Methoprene	10,352 packets
Sumilarv 0.5G WSP	1021-2818	Pyriproxyfen	23 packets

Bti = *Bacillus thuringiensis israelensis*, Bs = *Bacillus sphaericus*

# ADULT CONTROL MATERIALS

Product	Pesticide Registration No.	Active Ingredient	Amount Applied
Kontrol 4-4	73748-4	Permethrin	5,644 gal.
DeltaGard	432-1534	Deltamethrin	165 gal.

# SPRING AERIAL

Aerial Treatment: April 19 - 22, 2023



**52,500**  
acres  
treated



**139**  
woodland  
pools  
checked



**87%**  
reduction in  
spring  
mosquitoes



In April of 2023, seven fixed-wing aircraft applied granular *Bti* at the very low rate of 2.5 - 3.0 pounds per acre to control spring woodland mosquito populations. *Bti* is a naturally occurring soil bacterium that biodegrades quickly without leaving a residual. Efficient and accurate aerial application is accomplished through Geographic Information Systems (GIS). Treatment areas are defined, and treatment can be tracked in real-time. Awareness and notification for this annual event is provided through a local news release and contacting governmental, regulatory, and public safety agencies.

Yearly evaluation of our aerial larviciding program is conducted to monitor the accuracy of aerial applicators and insecticide efficacy. Woodland pools are checked before and after treatment to determine program efficacy. Upon completion of aerial treatment, seasonal vector technicians begin ground larviciding of small, isolated flooded woodlands in and around populated areas. This year's sampling noted an 87% reduction in spring mosquitoes which compares to a historical average of 88% with a 31-year range of 72 - 96% reduction.

# Larval Control

**7,244**

breeding sites inspected

**1,341**

sites required treatment

Larviciding is the most effective technique for controlling mosquitoes where habitat cannot be drained or removed. Out of a 16-hour workday, 12 hours are engaged in this activity. Larval sites are either known historical habitats that are checked routinely or from residents reporting standing water.



## Flooded Fields

Summer floodwater sites are inventoried within our GIS software, and number in the thousands. These sites routinely breed nuisance mosquitoes following rainfall events that result in the creation of floodwater habitat. Upon property owner request, SCMAC conducts a visit and treats any mosquito breeding found on the property. This season, **1,699 site visits** were conducted of which **295 needed treatments**.



## Retention/Detention Ponds

Retention and detention ponds are designed to collect water from paved surfaces such as parking lots and subdivisions. There are **440 retention/detention** ponds that are routinely checked and treated when necessary. Treatment acres for these ponds are rainfall dependent and treated with *Bti* or Duplex-G at a rate of 5 to 9 pounds per acre. Pupae are treated with a larviciding oil applied at a rate of three gallons per acre. A total of **96 treatments** occurred this season.



## Sewage Lagoons

Saginaw County has **16 sewage lagoon** sites that are routinely monitored throughout the season. These habitats are a prolific source of disease carrying *Culex* mosquitoes due to the high organic matter. Monitoring and treating these sites are crucial to disease prevention. When breeding is found, treatment is done using Vectolex WDG at a rate of 1 pound per acre. Due to the unusual weather experienced this season, our sewage lagoons only required **1 treatment**.



## Neglected Pools/Tires

Unused swimming pools and scrap tires can be difficult to remove and are capable of breeding disease carrying mosquitoes all season long. These habitats are therefore inspected and treated with extended-release products when possible. A total of **68 pool sites** were monitored, **37 required treatments**. Pool sites are reported by residents, local governments, and the Health Department. A total of **336 tire site visits completed**, many businesses, were monitored requiring **150 treatments** with *Bti* and larviciding oil.

# EXTENDED LARVAL CONTROL

## DITCHES

Roadside ditches are treated throughout our 27 townships, villages and cities. Larval treatment commences in metro areas and villages every 4-6 weeks with an extended-release control product. Ditches in other areas are monitored and treated with *Bti* following large rain events.

### PRODUCTS

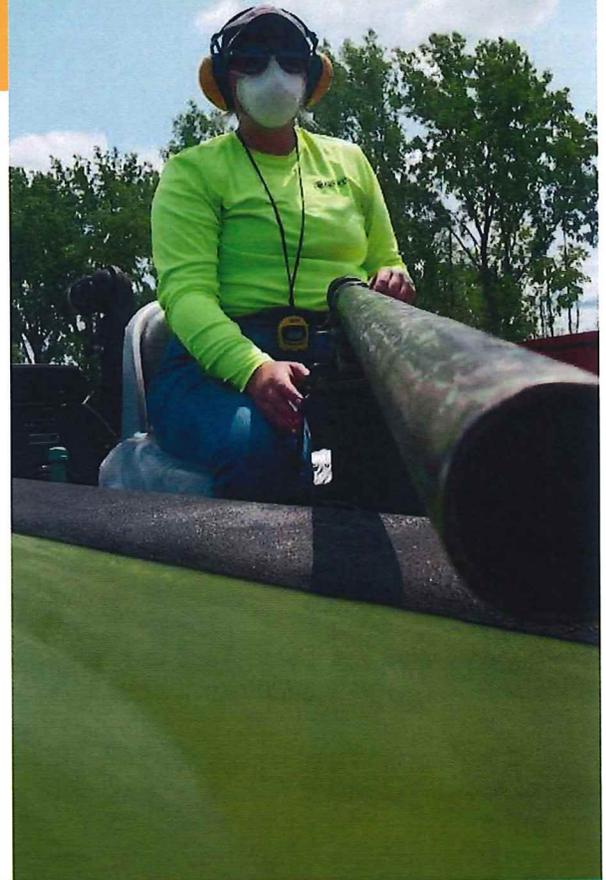
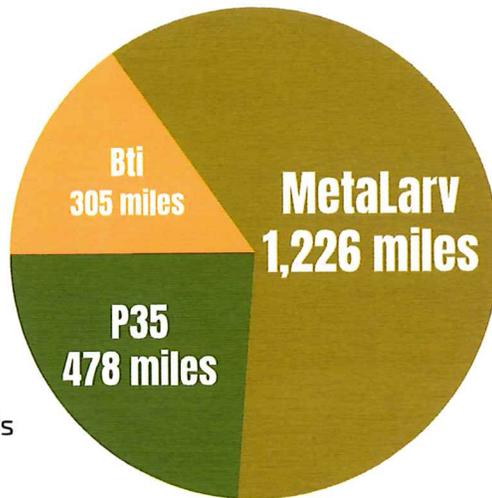
Products used in ditches:

**VectoBac G** - 1,065 pounds

**MetaLarv S-PT** - 4,196 pounds

**Altosid P35** - 2,165 pounds

**2,009**  
miles of ditches treated



## CATCH BASINS

Catch basins are a major breeding source for *Culex* mosquitoes which can transmit WNV and SLE. Extended-release products are used to control mosquitoes for weeks to months at a time. The Biology Department routinely checks for infestation and control efficacy.

### PRODUCTS

Product selection for use in catch basins depends on location of the basin, which we differentiate into Roadside, Off Road and Busy Road. Products include:

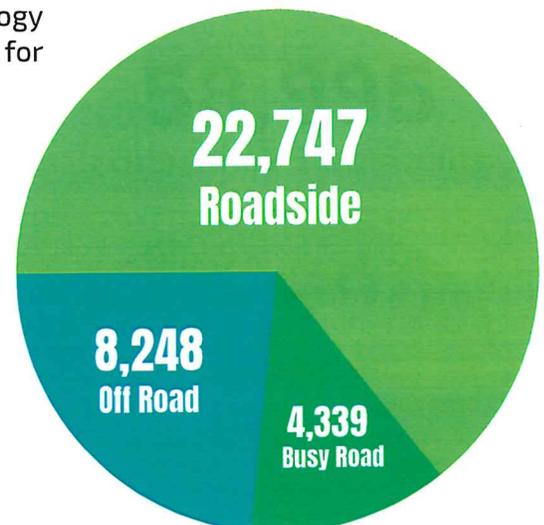
**VectoMax WSP** - bacterial

**Altosid WSP** - growth regulator

**Altosid XR briquets** - growth regulator

**MetaLarv XRP** - growth regulator

**58,995**  
catch basin treatments



# ADULT CONTROL

## ULV applications are not conducted if:

- Mosquito or virus thresholds not met
- Temperature below 55°F
- Winds above 10MPH
- Active precipitation

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 machine 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 and justified, ULV treatment normally takes place 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 is conducted prior to sunrise which correlates to a second peak of mosquito activity.

The County of Saginaw is divided into 9 service zones. Adult spraying is performed after analysis of biological data from traps, disease surveillance, and citizen calls. Our ULV spraying primarily utilized a 4% permethrin formulation.

# QUALITY CONTROL

In addition to monitoring larval control product effectiveness, SCMAC conducts multiple laboratory and field tests on current and possible adult control products. ULV caged-mosquito tests ensure adult control product efficacy in the field, while laboratory bottle bioassays monitor for possible adulticide resistance in Saginaw's mosquito population.

This year's accomplishments included: continued field evaluation of ULV formulations and extended-release larval control products including new pyriproxyfen formulations. We also continued to examine the seasonality of various mosquito-borne viruses including the resurgence of Jamestown Canyon virus.

**NIGHTLY TREATMENT INFORMATION WAS UPDATED BY 2:00 P.M. MONDAY - FRIDAY (MAY - SEPTEMBER)  
WEBSITE | HOTLINE | FACEBOOK | MOBILE APP**



# CITIZEN REQUESTS AND PROGRAMS

**832**  
Priorities

**66**  
Community  
Use  
Treatments

**20**  
MedCerts

**175**  
30oz Jugs  
**19**  
40lb Bags

**318**  
No Sprays

**1,342**  
Long  
Drives

## Priority Requests

Each year, residents are allotted 2 priority sprays for parties and events when availability allows. On the requested date, technicians are dispatched to the property and perform an adult treatment spray. A liability release form is signed for authorized off-drive treatment.

## Bti Distribution

Property owners that have persistent stagnant water may obtain a limited amount of *Bti* product. The amount of product given is based on acreage of land and amount of water present. Along with the product, residents are given a copy of the product label, proper treatment instructions, and answers to frequently asked questions.

## Long Drive Treatment

To promote effective adult control in their area, homeowners may request their driveway to be treated during a ULV zone sweep if they meet the criteria:

- Home is >300' from the road
- Adequate turnaround
- Vegetation/Harborage

Approved addresses are placed on our route maps and reflective markers are placed at the end of the driveways.

## Medical Certification

Residents who obtain medical confirmation of an extreme reaction or other medical difficulty related to biting mosquitoes may apply for our Medical Certification Program. Paperwork is renewed annually and those who qualify will receive yard treatment when a ULV zone sweep is conducted in their township (no more than once every 10 days).

## No Spray

Property owners may "opt out" of any or all mosquito control services. 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. Residents are provided yellow reflective signs to post at their property lines to assist with awareness. In addition to visible signs, these properties are included in GIS for operational reference.

## Community Use Sites

Sites that are frequently utilized by the public such as parks, campgrounds, and clubs are routinely checked and treated for mosquitoes to promote community enjoyment and use. Each site is unique and receives site-specific IMM. While most sites receive routine larval treatment, adult control may occur as needed, event-based, or not at all. There are currently 24 sites within this program.



# PROFESSIONAL DEVELOPMENT

**Permanent Staff:** SCMAC values and promotes training of our staff regarding safety, policies and regulations, operations, and professional development. The mosquito control field is always changing. Permanent staff members are involved with numerous national and state associations, attend meetings, conferences, trainings, and seminars to stay abreast of new technologies, mosquito control practices, products, and science.

Various SCMAC staff attended professional meetings including:

- American Mosquito Control Association
- Michigan Mosquito Control Association
- Midwest Center of Excellence in Vector-Borne Disease
- Entomological Society of America

SCMAC also works closely with the Saginaw County Health Department, Parks and Recreation, and Public Works. The annual Michigan Mosquito Control Association Conference was held at the Kellogg Conference Center in East Lansing, and the American Mosquito Control Association annual meeting was held in Nevada. Staff also participated in virtual and in person seminars including regional mosquito control, novel equipment, GIS technologies, and regulatory updates.



**Seasonal Staff:** Prior to employment, seasonal staff had to pass the Michigan Department of Agriculture and Rural Development (MDARD) Core or Category 7F test to become registered technicians or commercial applicators. In addition to passing the MDARD test, employees receive intensive hands-on training, consisting of closely supervised fieldwork. Employees also receive training addressing safety, policies, control products, application techniques, technology, equipment, and professionalism.

# TECHNICAL ADVISORY GROUP

Saginaw County Mosquito Abatement Commission's Technical Advisory Group was established in 1992 and meets twice a year, typically in March and December. This group consists of experts in a variety of fields who assist and provide input to our agency's program and practices.

## March 2023 Meeting Topics

- SCMAC's 2023 Program Plan
- Program changes
- Season projects
- State and Federal permitting
- 2023 Mosquito-borne disease surveillance

## December 2023 Meeting Topics

- SCMAC's 2023 Annual Report
- 2023 Season highlights
- Mosquito surveillance results
- Disease detection results
- Post season plans



## Technical Advisory Group Members

Chairman: Edward Walker, Ph.D.

Michigan State University

George Balis

Clarke

Eric Benbow, Ph.D.

Michigan State University

Rachel Burkholder

Michigan Department of Health & Human Services

Emily Dihn, Ph.D.

Michigan Department of Health & Human Services

David Driver

Veseris

Kristen Finch

Michigan Department of Health & Human Services

Kevin Kern

Michigan Department of Agriculture & Rural Development

Tom Kessler

Clarke

Chris Klawuhn

Saginaw County Environmental Health Services

Chris Novak

Clarke

Jason Scott

Target Specialty

Scott Simmons

United States Fish & Wildlife Services

Jean Tsao, Ph.D.

Michigan State University

Brian Wendling

Saginaw County Public Works

Bryant Wilke

Sanilac County Health Department



# S C M A C

fight the bite

**Drain standing water**

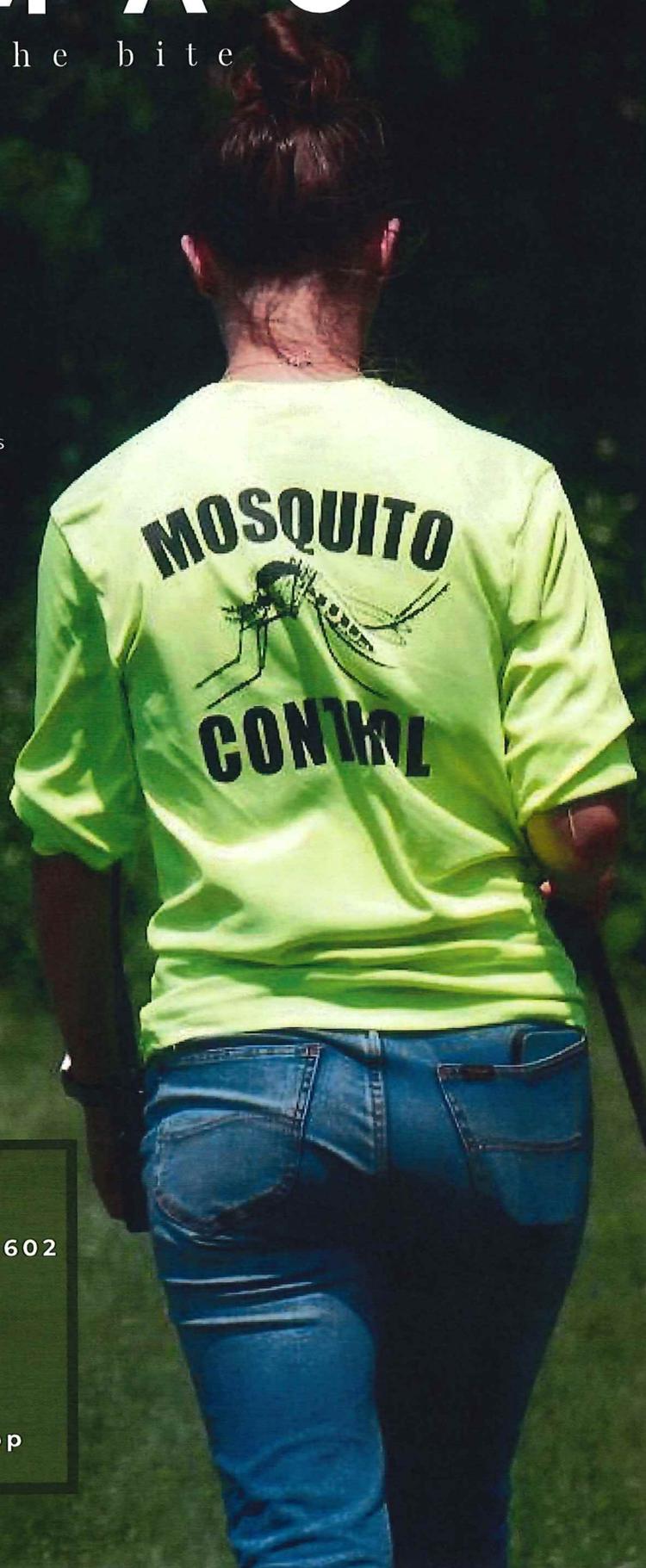
**Dusk & Dawn are when mosquitoes are most active**

- Limit outdoor activity or take precautions

**Deet is an effective repellent**

- Follow the instructions

**Dress in long sleeves and pants**



## CONTACT US

 211 Congress Ave., Saginaw, MI 48602

 (989) 755-5751

 [www.saginawmosquito.com](http://www.saginawmosquito.com)

 [Facebook.com/saginaw.mosquito](https://www.facebook.com/saginaw.mosquito)

 Saginaw Mosquito Notification App