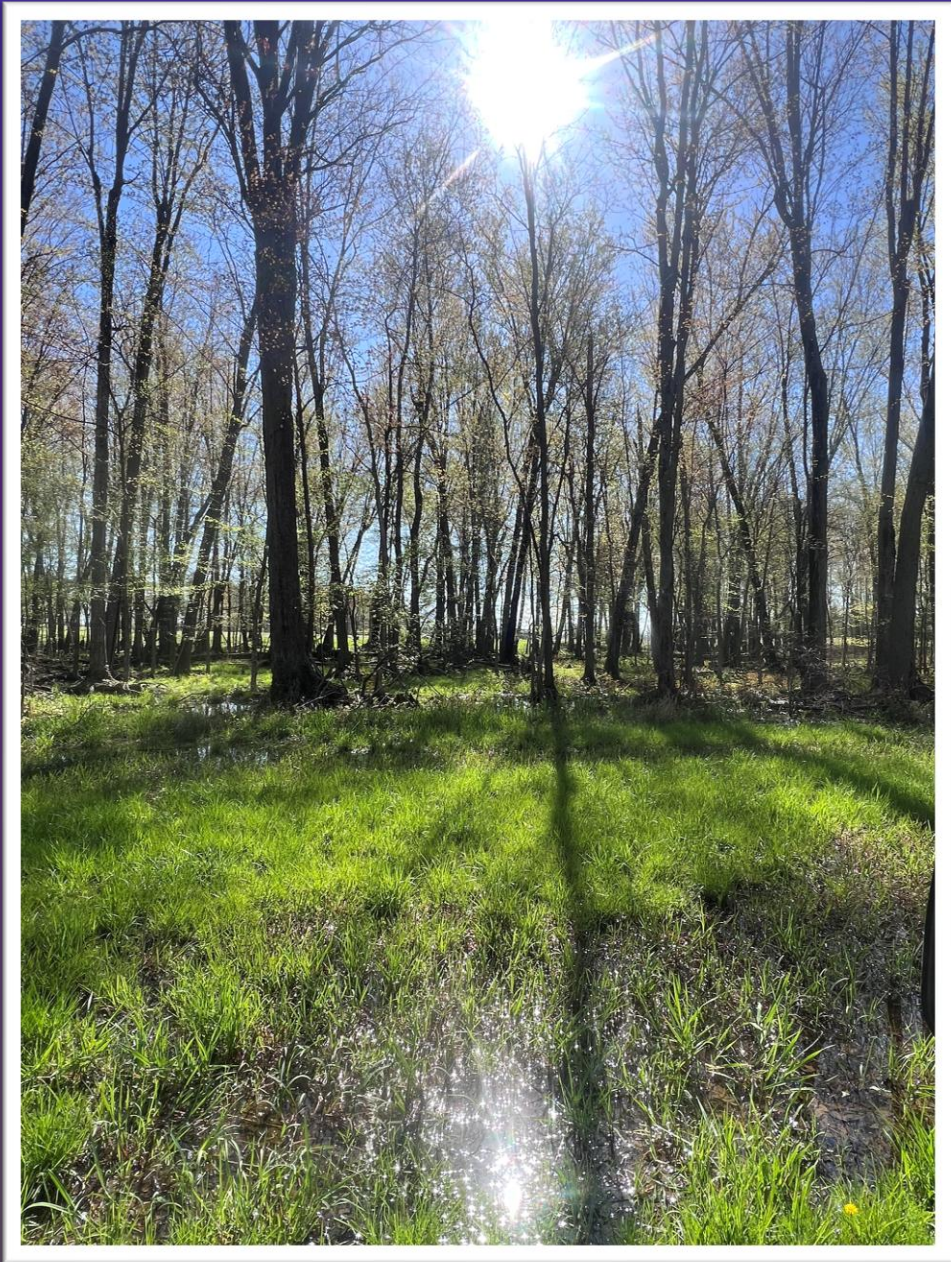
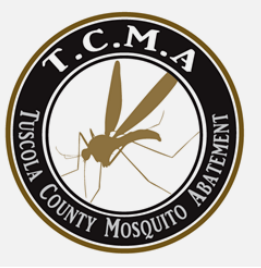


TUSCOLA COUNTY MOSQUITO ABATEMENT



2025 ANNUAL REPORT

2026 PROGRAM PLAN



TUSCOLA COUNTY MOSQUITO ABATEMENT

1500 Press Drive
Caro, Michigan 48723-9291
989-672-3748 Phone ~ 989-672-3724 Fax
Larry Zapfe, Director

Director's Report

As Director of Tuscola County Mosquito Abatement, I am proud to present our 2025 Annual report. This report contains information that reflects our program's dedication to protect residents from mosquito borne diseases as well as enhance the quality of living in Tuscola County. The success of this program extends far beyond the dedicated employees who work hard to keep the public safe. I would like to take a moment to say thank you for the continuing support from our residents, County Commissioners and many other extraordinary organizations who support mosquito control in the state of Michigan.

2025 Key Highlights:

Staffing

The department employed 4 full time positions and 21 seasonal positions for a total of 25 employees in 2025. There were 17 seasonal employees who returned from previous seasons and 4 new employees were certified and trained before the season began.

Certification and Training

Delta College provided pesticide certification testing, as required by the Michigan Department of Agriculture and Rural Development, for all new technicians. All technicians are provided with in-field training covering all application instructions and safety procedures.

Surveillance and Disease

*Trap counts for this season resulted in a total of 20,138 mosquitoes collected. The highest population counts included the species *Anopheles quadrimaculatus* linked to malaria and *Coquillettidia perturbans* linked to the Eastern Equine Encephalitis virus (EEE).*

West Nile Virus became the most prevalent mosquito related virus throughout the entire mid-west, including the state of Michigan according to MDHHS. Despite our best treatment efforts during the regular April to October mosquito season, MDHHS notified us in the month of November of two positive human cases of West Nile in Tuscola County.

Operations

This year GIS tablets were introduced to the truck fogging portion of our program. The new software from Frontier Precision gave us the capability to create and record spray routes in some of our trucks in a more efficient and safe manner.

2026 Program Plans

Complete all permit requirements from the Michigan Department of Environment Great Lakes and Energy (EGLE) and the Michigan Department of Agriculture and Rural Development (MDARD).

- Attend the Michigan Mosquito Control Association Conference.*
- Implement the second phase of a new GIS truck fogging software system from Frontier Precision.*
- Voted millage renewal in August for the next 6 years.*
- Purchase two new ULV truck fogging units.*
- Purchase two new work trucks.*
- Purchase one new UTV.*
- Continue broad species surveillance.*
- Continuing Public Outreach efforts.*
- Continue trapping, testing and surveillance throughout the county.*

Respectfully,

*Larry Zapfe, Director
Tuscola County Mosquito Abatement*

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County Board of Commissioners

Nancy Barrios, District 1
Thomas Bardwell, District 2
Kim Vaughan, District 3
Bill Lutz, District 4
Matthew J. Koch, District 5

County Administration

Erica Dibble, County Controller/Administrator

2025 Mid-Michigan Mosquito Control Technical Advisory Committee

Steven Carlson, Michigan Department of Agriculture and Rural Development
Fred Yanoski, Midland County Health Department
Roger Garner, Midland County
Emily Dinh, Michigan Department of Health and Human Services
Joe Sova, Midland County Drain Commission
Kent Singer, Tuscola County Health Department
Kim Vaughan, Tuscola County Commissioner
Joseph Rivet, Bay County Drain Commissioner
Jerry Somalski, Bay Landscaping
John Hebert, Bay County
Tom Putt, Bay County

Consultants

Richard Merritt, Ph.D Michigan State University
Edward Walker, Ph.D Michigan State University
Kevin Kern, Michigan Department of Agriculture and Rural Development
Darrin McCullough, Michigan Department of Environment, Great Lakes and Energy



TCMA STAFF 2025

DIRECTOR

Larry Zapfe

BIOLOGIST

Laura Hill

ADMINISTRATIVE ASSISTANT

Bonnie Fackler

SEASONAL OFFICE STAFF

Marianne Daily

EQUIPMENT TECHNICIAN

Pat Dennis

FOREMAN

Michael Sherman

Joseph Benjamin

SEASONAL TECHNICIANS

John Adamczyk

Kirk Bauer

Jessica Dopp

Kevin Gainforth

Lee Garnsey

Jason Hall

Cody Humphress

Richard Letts

LAB TECHNICIAN

Dennis Haley

UTILITY

Brittany Benjamin

ASSISTANT FOREMAN

Richard Domenick

Rich Myers

Rod Reid

Chance Snyder

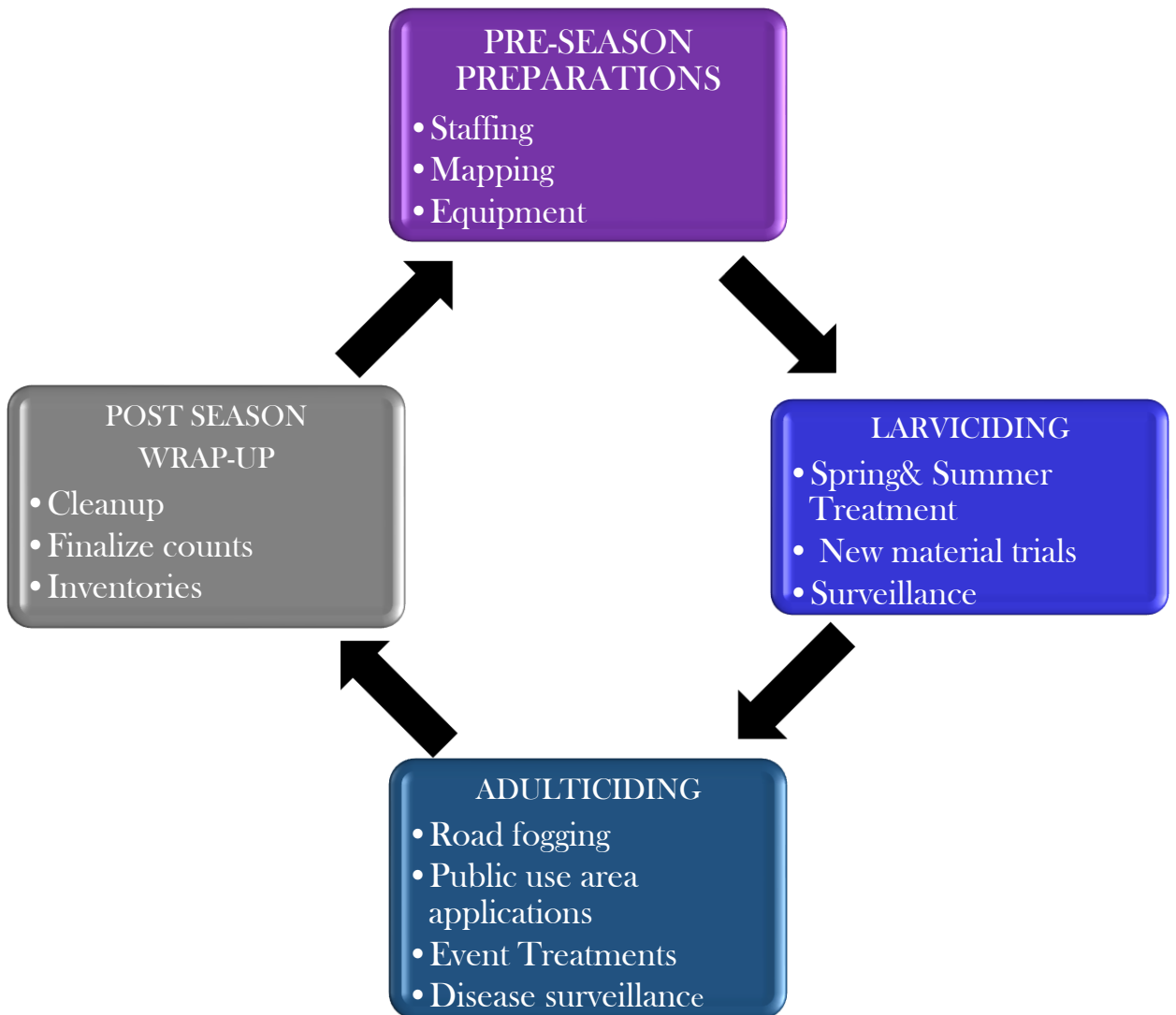
Daniel Sochocki

Rodney Speirs

Ron Turner

Brandy Wynn

TCMA TIMELINE



ORGANIZATION

The Tuscola County Mosquito Abatement (TCMA) district was originally formed in 1997, after a millage proposal was passed by the citizens of Tuscola County. In August 2020, a six-year renewal was passed with overwhelming support. Funding for the 2025 mosquito control season was collected during the winter of 2024 taxes, at a rate of 0.65 mils.

Tuscola County is currently one of four counties in Michigan with a formal comprehensive mosquito control program. TCMA is a county governmental agency, which serves to control nuisance and disease vectoring mosquitoes.

A Technical Advisory Committee (TAC), which is composed of some of Michigan's leading biologists, entomologists, conservationists, and scientists review TCMA's program every March.

Mosquito Abatement is based on Integrated Pest Management (IPM) practices. IPM is generally broken down into five categories or steps. These steps include:

- Identification of the pest
- Understanding the biology of the pest
- Monitoring the pest
- Developing sound goals to manage the pest
- Implementation of an IPM program

Biological surveillance, disease surveillance, product evaluations, field operations, and public education are included in this program.



STAFFING

Tuscola County Mosquito Abatement employed 21 seasonal positions and four full time staff in the 2025 season.

All TCMA technicians are required to have a MDA Certified Pesticide Applicators License (with a mosquito specific - 7F endorsement.)

Newly hired staff, and those in need of re-certifying, are given study materials to review prior to testing. At this time, the Michigan Department of Agriculture has made testing available at Delta College or virtual through Metro Institute.

Once newly hired staff have passed all testing requirements, several days of training are provided to help technicians become familiar with equipment and operations.

Beginning with our annual spring treatment of flooded woodlots, all technicians will be working the day shift, 8:00am to 4:00 pm. When night-time fogging begins, we split our crew and a night shift will be added from 5:00pm to 1:00am.



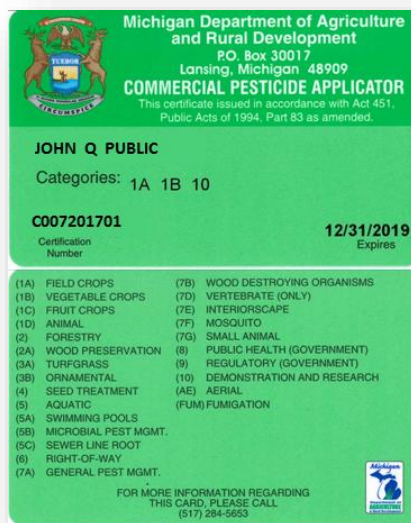
SAFETY & EDUCATION

Michigan regulations require commercial applicators to pass two exams. One exam confirms practical knowledge of Core pesticide use and safety. The other exam is category specific to Mosquito Control 7F.

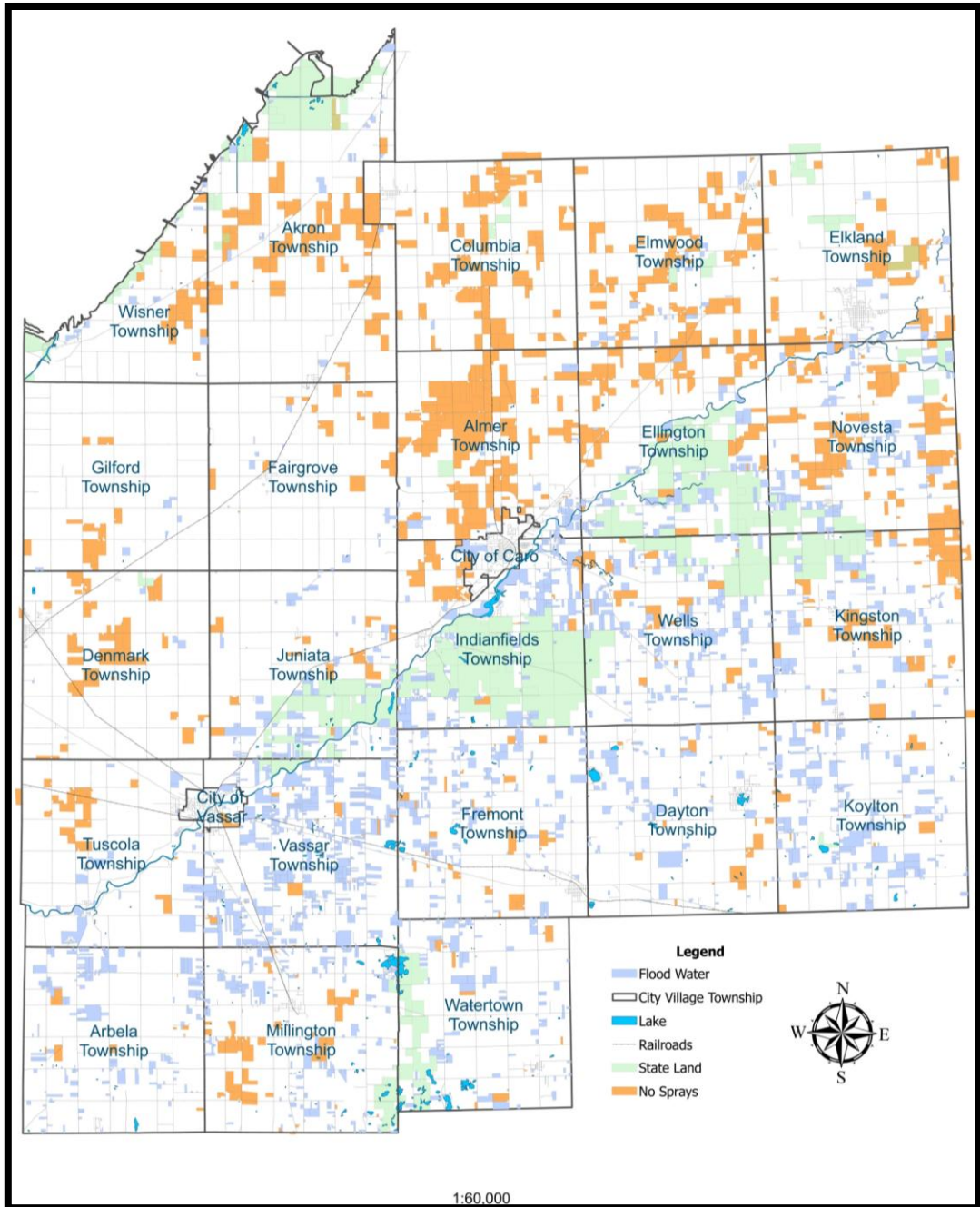
These exams require comprehension of pesticide label and labeling, safety and hazards, first aid, personal protective equipment use, and emergency response. Study manuals provide information about pesticides in the environment, pest identification and management, pesticide formulations, pesticide application equipment, application techniques, and laws and regulations.

All technicians employed at TCMA have successfully taken and passed both of these exams. This ensures all technicians are trained appropriately in knowledge and safety before going out into the field.

Technicians also earn credits annually by attending 7F conferences to stay educated and updated on new regulations and procedures.



TUSCOLA COUNTY MAP



LONG DRIVEWAY PROGRAM

We realize that many homes in Tuscola County are set back from the county road and therefore, are subsequently shielded from the effect of the road-side aduaticiding operations. If requested by the owner, their property will be reviewed to see if it meets the criteria. If the property does meet the established requirements, it will be placed on our Long Drive Program. The drive, at that time, will be marked with our long drive stake that has a reflective band at the top. These stakes are placed by our technicians. (We do ask the homeowners to remove them during the winter months to avoid possible damage from snowplows etc.). By placing these stakes at the end of the drives, our technicians are able to see the reflective band and treat the drive as required.

The criteria for a home to be placed on the Long Drive Program are:

- There must be a primary residence on the property, and the front of the home must be 300 ft. or greater from the roadway.
- There must be an adequate turnaround for our trucks that does not require driving across any lawn areas.
- The drive must be passable with two-wheel drive vehicles.
- The drive must have significant vegetation that provides areas for mosquito harborage.



In 2025, we held our open enrollment for the long driveway program from March through April.

Tuscola County enrolled 47 more residents to this program this season bringing the total to 670 long drive participants!

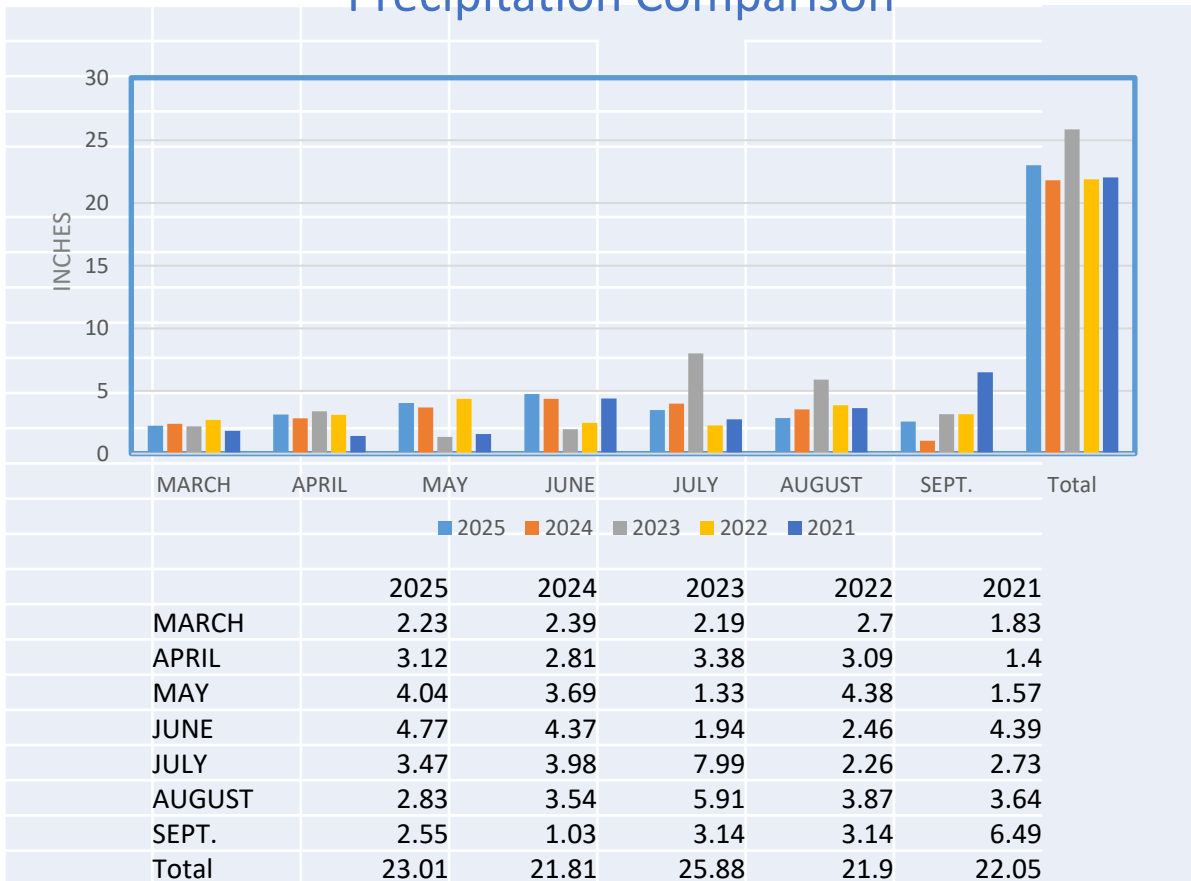
WEATHER DATA

Weather plays a very important role in determining our mosquito population.

Rain events that cause flooding or standing water create breeding areas that will result in a hatch of mosquitoes.

On Monday March 31st, TCMA began treatments of flooded woodlots. Overall, the county received 23.01 inches of rainfall this season, making it a wetter season than 2024 and with the month of June being extremely wet with 4.77 inches of rainfall. Monitoring the weather is a daily event due to the fact that all treatment techniques are weather dependent.

Precipitation Comparison



OPERATIONS

Mosquito Abatement strives to keep residents safe from mosquito-borne disease by reducing the mosquito population in our county. This is done through various forms of treatment, typically beginning in late March, when we begin surveillance and treatment of the flooded woodlots with ground crews.

Once adult mosquitoes are present, usually in mid-May, we transition some of technicians to second shift. They will begin to conduct routine roadside fogging and yard treatments for homeowners, when requested.

Early summer larviciding will include routine surveillance and treatment of ditches, catch basins, and sewage lagoons. Later in the season we will conduct surveillance and treat cross country ditches.



We maintain public use areas such as parks, campgrounds, trails, conservation clubs, golf courses, and schools on a weekly schedule during the season. This is to keep our citizens safe from disease carrying mosquitoes.

Residents may request yard treatments for special events such as weddings, parties, etc. when giving two week or more notice-depending on scheduling availability. We also provide treatment for the many festivals that occur throughout the county.

TREATMENT SITES

MATERIAL	TREATMENT SITE
BVA (Mosquito Larvicide Oil) (highly refined petroleum distillate)	Swamps, Flooded Woodlots, Flooded Fields
Kontrol 4-4 (permethrin)	Roadside fogging, Public Use Areas, Private Property
Four Star Briquets 90 Day (Bacillus sphaericus 6% Bacillus thuringiensis 1%)	Retention Pools
Mavrik (Tau-fluvalinate)	Select Private Property
Mosquito Dunks (Bacillus thuringiensis)	Small water hole, artificial containers
Vectolex FG (Bacillus thuringiensis)	Catch Basins
Suspend Polyzone (Deltamethrin)	Select Private Property
VectoBac G (Bacillus thuringiensis)	Flooded Woodlots, Artificial Containers, Tires, Ponds
VectoBac 12AS (Bacillus thuringiensis)	Roadside Ditches, Retention Ponds, Lagoons

SPRING / SUMMER LARVICIDING

We began in the early spring with the treatment of flooded woodlots. Biology staff and larviciding crews conducted routine surveillance and quality control on 2,418 flooded woodlot sites during the 2025 season, compared to 2,458 last season.



Tuscola County is home to nine sewage lagoons and many catch basins which have been known to be breeding sites. Each of these sites are checked routinely and treated throughout the season. Lagoons are treated using liquid BTI (VectoBac® 12 AS) and BTI (VectoBac® G). Catch Basins are typically treated 2-3 times throughout the season using VectoLex FG.

Larviciding treatments are done by our technicians using handheld spreaders to deliver granular BTI or a backpack sprayer to deliver mosquito larvicide oil to the flooded areas. We utilize a citizen tracking database, which allows us to keep a historical record of homeowners and locations throughout the county, with woodlots that may require treatment in the spring. In addition, larviciding is also performed in the cross-country ditches, flooded fields and artificial containers as needed using BTI (VectoBac® G).

ADULTICIDING



Tuscola County is made up of 23 townships. Each township is assigned a technician that will perform roadside fogging throughout the season.

Tuscola County currently has 981 “NO Spray” areas. These areas are organic farms or beekeepers, as well as residents who wish not to be treated. We utilize the FieldWatch site to help us stay current with new fields or beehives.

Assigning a technician to a specific township allows them to become familiar with these special conditions. No Spray signage is checked at the beginning of every season to replace or post signs where needed.

Treatment route maps are updated routinely during the season, utilizing updates received from FieldWatch and our county citizens.

Kontrol 4-4 (Permethrin) is applied at 4.5 to 6.0 oz per minute, with truck mounted ULV units. Treatment is also conducted on a routine basis in all public use areas (parks, golf courses, schools, campgrounds, rail trails, gun clubs and archery clubs) using our Kawasaki Mule, equipped with a ULV unit. For treatment to be effective, temperatures must be above 50 degrees and winds below 10 miles per hour.

Citizens requesting treatment of their property are treated using a handheld thermal fogger or ULV backpack sprayer.

ROADSIDE DITCH TREATMENT

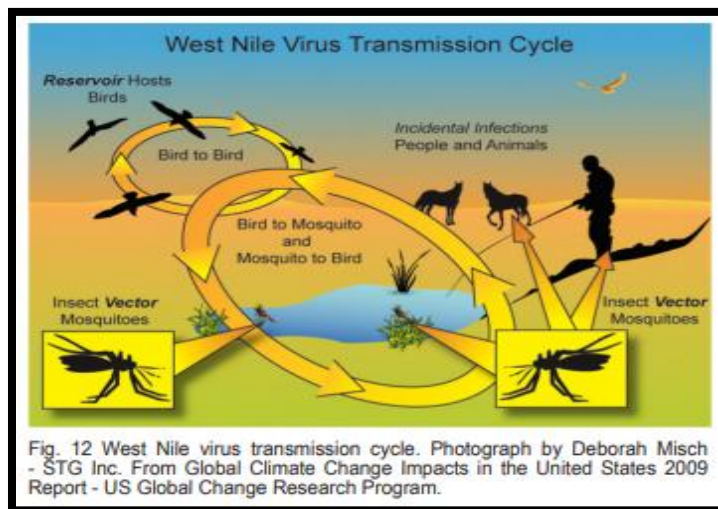
2025		
TOWNSHIP	MILES DRIVEN	GALLONS USED VECTOBAC
AKRON	288	225
ALMER	116	75
ARBELA	143.6	199
COLUMBIA	156	90
DAYTON	159	128
DENMARK	157	110
ELKLAND	150	117
ELLINGTON	142	105
ELMWOOD	191	130
FAIRGROVE	163.6	140
FREMONT	148	135
GILFORD	169	130
INDIANFIELDS	105	105
JUNIATA	168	130
KINGSTON	173	163
KOYLTON	141.2	190
MILLINGTON	135	122
NOVESTA	152	145
TUSCOLA	160	135
VASSAR	184	180
WATERTOWN	134	125
WELLS	190	175
WISNER	82	100
TOTALS	3607.4	3154

ROADSIDE TRUCK FOGGING

2025		
TOWNSHIP	MILES DRIVEN	GALLONS USED K-4
AKRON	1511.4	235.5
ALMER	560.39	101.61
ARBELA	1665.70	374.38
COLUMBIA	77	8.61
DAYTON	2659.06	465.24
DENMARK	945.6	298.3
ELKLAND	411.8	72.13
ELLINGTON	1170.8	217.79
ELMWOOD	359.8	39.82
FAIRGROVE	1002.8	126.87
FREMONT	1606.4	249.22
GILFORD	868.3	106.95
INDIANFIELDS	1844.23	391.65
JUNIATA	996.4	209.82
KINGSTON	1718.1	247.12
KOYLTON	2001.4	332.6
MILLINGTON	1425.9	400.7
NOVESTA	1211.28	192.68
TUSCOLA	957.6	217.97
VASSAR	1904.73	395.38
WATERTOWN	1241.3	229.36
WELLS	2105.43	387.14
WISNER	728	118.56
TOTALS	28,522.12	5,363.46

SURVEILLANCE & DISEASE

TCMA uses four types of traps to collect mosquitoes for surveillance. Mosquitoes caught in these traps are sorted and identified. The species that are more likely to be involved in disease transmission are selected from the sorted groups for testing. These tests are used to check for the presence of the four most common mosquito-borne diseases in our area; West Nile Virus (WNV), St. Louis Encephalitis (SLE), Jamestown Canyon Virus (JCV) and Eastern Equine Encephalitis (EEE).



West Nile Virus (WNV) is a virus known to be the leading cause of mosquito-borne disease in the United States. This virus is commonly spread to humans by the bite of an infected mosquito, however once the virus infects a human it can not be spread to either other humans or back to mosquitoes. This is because humans are considered “dead end hosts”, meaning that the concentration of the virus in their bloodstream is usually insufficient to infect mosquitoes. Therefore, the cycle is broken and a dead-end has been created. Above you can see the WNV cycle and how mosquitoes become infected.

Following the completion of this season, 2 humans were detected with West Nile virus infection in the end of October - beginning November months.



IN-HOUSE TESTING RESULTS



The TCMA Lab tests mosquito pools in-house using the VecTOR Test Kit. This kit tests for WNV, EEE and SLE viruses. All other pools are sent to Lansing to be tested by MDHHS.

This season, TCMA tested a total of 112 mosquito pools “IN-HOUSE” for disease and 104 mosquito pools were sent to Lansing to be tested by MDHHS. Within the in-house mosquito pools, two tested positive for WNV and within the MDHHS pools-13 tested positive for WNV.

The lab also conducts in-house testing on dead birds that have been turned in by our county residents using the same VecTOR Test Kit. This season, Tuscola County had 3 birds turned in to be tested. One crow tested positive for West Nile virus in Denmark township. All other mosquito-borne diseases remained undetected throughout the season.



DISEASE UPDATE

POSITIVE DISEASE TEST RESULTS 2025

Order	Date	Location	TWP	Species	Amount	In- House?
1	07/15/2025	Reese Lag	DEN	Cx.pipiens	43	X
2	07/23/2025	Richville Lag	DEN	Cx.pipiens	33	
3	08/05/2025	Indianfields Lag	IND	Cx.pipiens	46	
4	08/05/2025	Akron-Fai Lag	FAI	Cx.pipiens	13	
5	08/06/2025	Richville Lag	DEN	Cx.pipiens	42	
6	08/12/2025	Akron-Fai Lag	FAI	Cx.pipiens	43	
7	08/12/2025	Gagetown Lag	ELM	Cx.pipiens	11	
8	08/14/2025	Mayville Lag	FRE	Cx.pipiens	16	
9	08/20/2025	Saginaw Rd	DEN	CROW	1	X
10	08/21/2025	Mayville Lag	FRE	Cx.pipiens	24	
11	08/26/2025	Akron-Fai Lag	FAI	Cx.pipiens	16	
12	09/05/2025	Vassar WWTP	VAS	Cx.pipiens	27	
13	09/10/2025	Richville Lag	DEN	Cx.pipiens	13	
14	09/15/2025	Gagetown Lag	ELM	Cx.pipiens	35	
15	09/19/2025	Woodvalley Lag	VAS	Cx.pipiens	18	
16	09/23/2025	Richville Lag	DEN	Cx.pipiens	8	X

This season through TCMA surveillance a significant increase in West Nile virus was charted at multiple sites in our county. 16 positive test results were noted including one bird and 15 mosquito pools. Post-season in the end of the month of October and beginning November- 2 human cases of WNV appeared. The chart above lists the areas in order where these pools were collected. The Amount column lists the total number of mosquitoes in the pool-not the total number of positive mosquitoes. Of these positive pools, 3 in-house pools had positive tests and 13 were confirmed through MDHHS. The list below shows a short rundown of results from previous seasons for comparison.

- 2018: WNV 1 bird, 1 human, 12 mosquito pools
- 2019: WNV- 1 mosquito pool, 1 bird & EEE-1 horse
- 2020: EEE- 1 horse
- 2021: No positives found
- 2022: No positives found
- 2023 WNV-5 mosquito pools
- 2024: WNV- 1 bird
- 2025: WNV- 1 bird, 2 humans, 15 mosquito pools

Arbovirus* Activity, Including West Nile Virus and Eastern Equine Encephalitis: Weekly Summary, Michigan 2025

*Arboviruses are viruses transmitted by mosquitoes or other insects

Updated: December 5, 2025

207 

Mosquito pools testing positive for arbovirus infection

96 

Animals testing positive for West Nile virus infection

60 

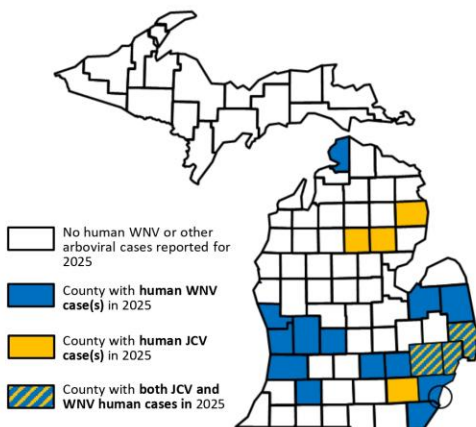
Human cases of West Nile virus or other arboviruses reported

2025 Michigan Arbovirus Surveillance	
Total Number of Mosquito Pools Tested	5,346
Total Number of Mosquitoes Tested	82,013
WNV-Positive Mosquito Pools	194
JCV-Positive mosquito pools	13
Animal Arbovirus cases	97
EEE-positive horses	1
WNV-positive horses	4
WNV-positive birds	92
Human Arbovirus cases	60
Human WNV cases	50
Human JCV cases	10

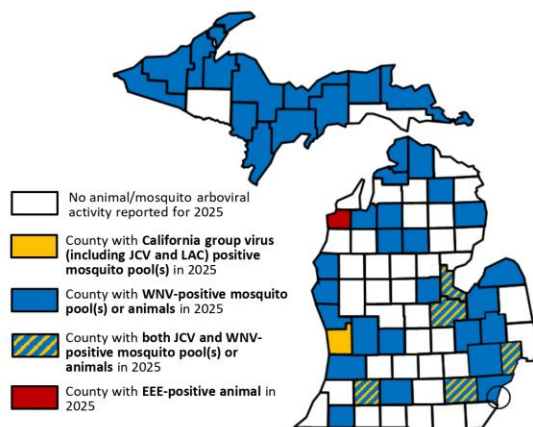
Highlights

- So far in 2025, 50 people from Allegan, Emmet (2), Ingham, Ionia (2), Kalamazoo (3), Kent (12), Livingston, Macomb (5), Monroe, Muskegon, Oakland (7), Ottawa (2), St. Clair, Sanilac (2), Tuscola (2), and Wayne (7) counties have been sickened by West Nile virus (WNV).
- Ten people from Alcona, Macomb (2), Oakland (2), Ogemaw, Roscommon, St. Clair (2), and Washtenaw counties have tested positive for Jamestown Canyon virus (JCV).
- One horse from Benzie County has tested positive for Eastern Equine encephalitis (EEE) and four horses from Mecosta, Missaukee, Oceana and Sanilac counties have tested positive for WNV.
- Ninety-two birds from Alcona, Allegan, Alger, Baraga (3), Bay (7), Calhoun, Cass, Charlevoix, Cheboygan (3), Chippewa, Delta, Dickinson (3), Emmet (2), Genesee (3), Gogebic (3), Grand Traverse, Houghton, Ionia (2), Kalkaska, Kent (2), Keweenaw (2), Lapeer, Luce, Marquette (2), Mason, Menominee, Montmorency, Muskegon, Oakland (4), Ontonagon (2), Roscommon (4), Saginaw (28), Schoolcraft (2), Tuscola, and Wayne (2) counties have tested positive for WNV.
- Mosquito pools from Bay (32), Huron (3), Kalamazoo (2), Kent (44), Macomb (2), Midland (33), Oakland (1), Saginaw (45), Tuscola (13), Washtenaw (5) and Wayne (14) counties have tested positive for WNV.
- Thirteen total mosquito pools from Bay (2), Kalamazoo (2), Macomb, Ottawa (2), Saginaw (5), and Washtenaw counties have tested positive for Jamestown Canyon virus (JCV).

Human Cases



Animal Cases



For more information

Michigan.gov/westnile

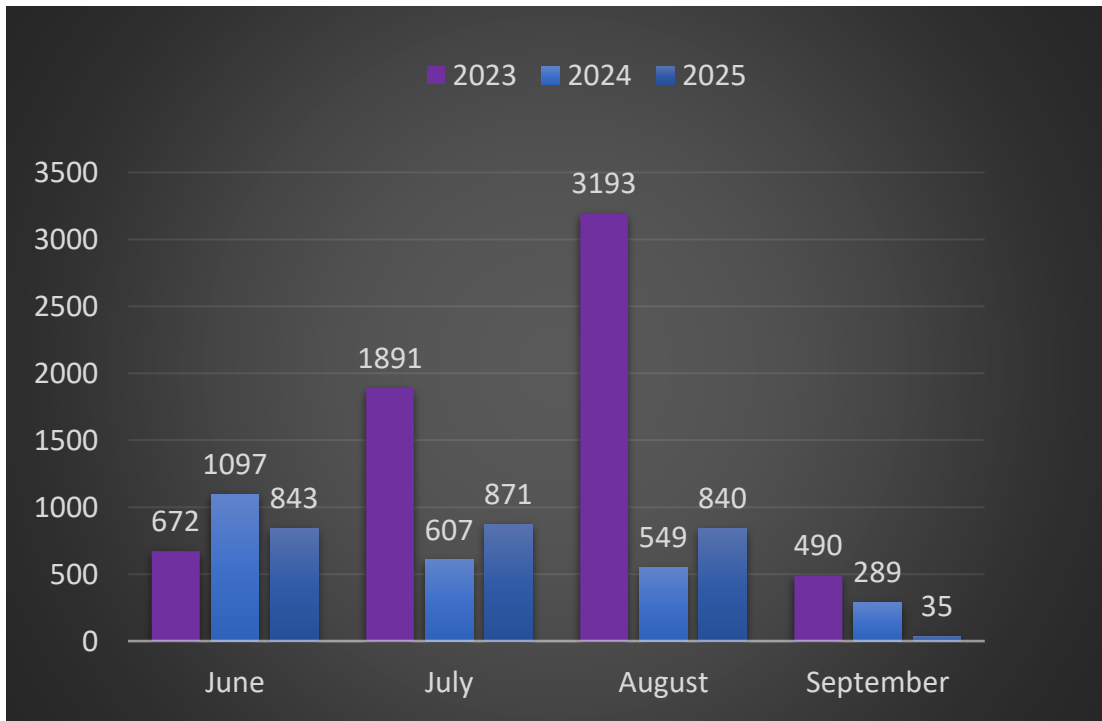


Michigan Department of Health & Human Services
Bureau of Infectious Disease Prevention
Emerging & Zoonotic Infectious Diseases (EZID) Section

GRAVID TRAPS

Gravid Traps use highly organic water to lure in mosquitoes. These mosquitoes are typically females that have had a blood meal and are looking for a potential place to lay eggs. The mosquitoes collected from these types of traps are generally *Culex pipiens* and *Culex restuans* which can transmit West Nile Virus. We use mosquitoes from these traps to test for disease.

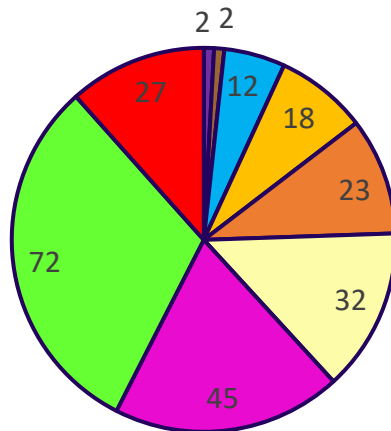
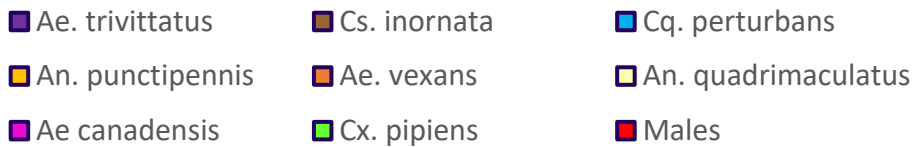
The graph below compares the number of female *Culex* mosquitoes trapped during the 2022, 2024 and 2025 season. This season our counts were fairly steady. A decrease doesn't start to be noticeable until September, falling a lot lower than the previous year. September counts show mosquito population in trapping areas dropping off at an average low which ended our season with a monthly total of less than 50 mosquitoes captured.



CDC TRAPS

Using a combination of light and CO₂, this trap draws in mosquitoes that are searching for a blood meal. A fan inside the trap pulls the mosquitoes down into a collection chamber.

We use CDC light traps to test for nuisance levels and to see just how effective our barrier treatments are. In order to make sure our treatment methods are still adequate, we typically place two CDCs within a resident's yard. One gets placed outside the barrier treatment and the other on the inside. Once we collect and count trapped mosquitoes, we discern if there is a significant difference between the two counts. If so, this means that our treatments were effective. Unfortunately, due to unforeseen circumstances we were unable to test our barrier treatments this season. We plan to do multiple test sites next season.

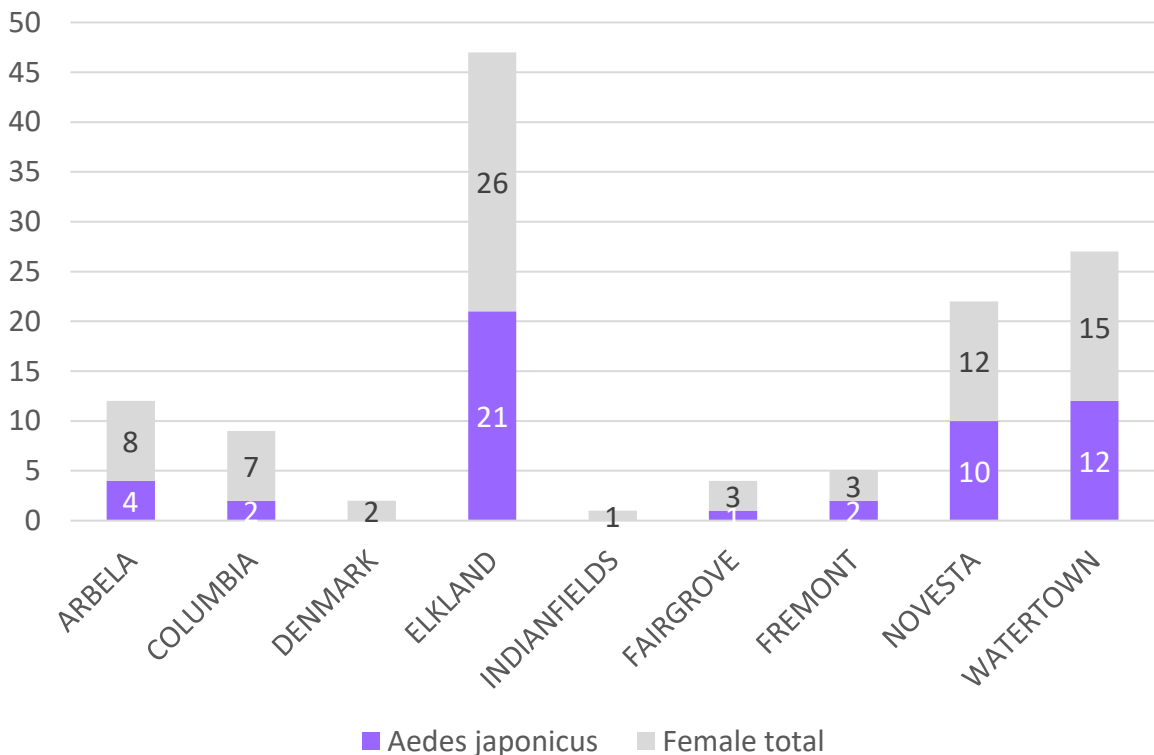


This season a CDC was placed at a private residence on Barney Drive in Wisner township throughout the season to observe *Cq. perturbans* activity on the border of Tuscola County and Bay County. As seen in the season totals graph below, we were unable to capture a significant total of mosquitoes from the months of May to September. The highest captured mosquitoes were *Culex pipiens* and *Aedes canadensis*. We were surprised to note that *Cq. perturbans* counts were not a nuisance levels even with significant habitat present. The total of mosquitoes captured for the season was 233.

BG-GAT TRAP

The BG-GAT trap is primarily used to trap for specific mosquitoes, such as the *Aedes albopictus* (Asian tiger) and *Aedes aegypti* (yellow fever) mosquitoes. Like the Gravid trap, this trap also draws in already fed female mosquitoes that are looking for a suitable place to lay eggs. A solution of water and highly organic matter is placed in the bottom of the bucket to lure these mosquitoes in. Once inside, the mosquitoes are trapped on a sticky surface. We then remove the sticky trap to examine the mosquitoes caught.

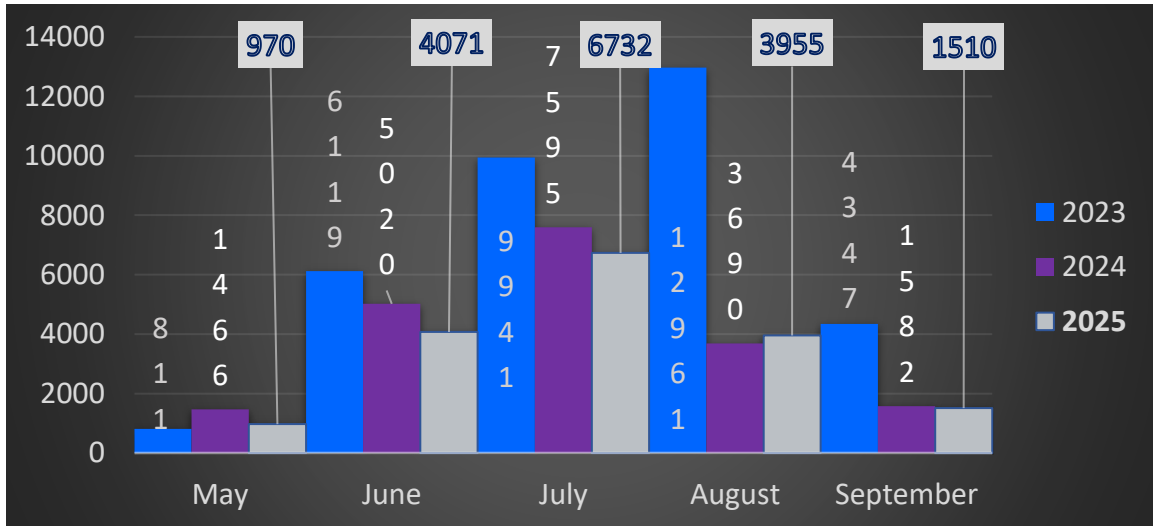
Due to very low volume of typical mosquito collections, we check and collect these traps one to two times a month. This season however, we chose to increase surveillance with more traps in the more densely populated areas of our county. Normally one GAT trap is placed and this season we increased to a total of 9 placements throughout our county.



The chart above shows collection counts from these traps. This season no *Aedes albopictus* or *Aedes aegypti* were found in our collections. Out of the 77 female mosquitoes captured, the largest count was 21 *Aedes japonicus*- a possible vector of multiple diseases.

NEW JERSEY LIGHT TRAPS

These traps are placed in fixed locations throughout the county every year, supplying historical data on mosquito populations. They require a supply of electricity, which provides a light source to attract mosquitoes. Once mosquitoes have been attracted, a fan pulls them downward into a collection container, in this case, we use a mason jar. A pesticide strip is placed in the jar to kill any bugs that have entered the trap. These traps are collected one to three times per week, depending on the amount of mosquito activity. Often-times, we will base our suppression strategy off the information provided by the NJLT.



The mixed graph above shows this season's total monthly counts compared to that of 2023 and 2024. Looking at the line graph, which depicts 2025's monthly count totals, you can see how our monthly counts started lower than the counts of last year. Then in June they were a little lower than those of the past two seasons. In July we again had lower counts than last season. In August our counts were just a bit higher compared to August last year and in September they were lower. This brought our 2025 NJLT season total to 17,238 compared to 19,623 in 2024.

NEW JERSEY LIGHT TRAP 2025 TOTALS

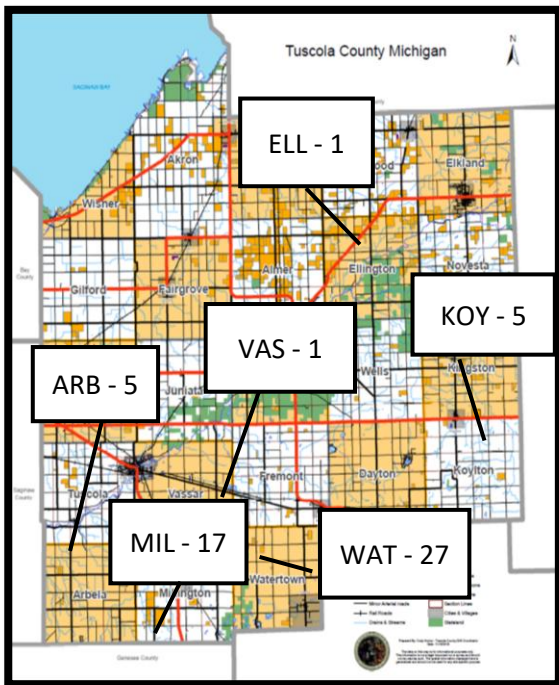
SPECIES	TOTAL
<i>Ae. canadensis</i>	567
<i>Ae. implicatus</i>	2
<i>Ae. japonicus</i>	87
<i>Ae. stictus</i>	2
<i>Ae. triseriatus</i>	35
<i>Ae. trivittatus</i>	801
<i>Ae. vexans</i>	1149
<i>Ae.vexans nipponii</i>	1
<i>An. punctipennis</i>	2023
<i>An. quadrimaculatus</i>	749
<i>An. walkeri</i>	10
<i>Cq. perturbans</i>	607
<i>Cs. inornata</i>	55
<i>Cx. pipiens</i>	844
<i>Cx. restuans</i>	15
<i>Cx. salinarus</i>	1
<i>Cx. tarsalis</i>	117
<i>Ps. ciliata</i>	502
<i>Ps. columbiae</i>	57
<i>Ps. ferox</i>	16
<i>Ur. sapphirina</i>	66
<i>Wy. smithii</i>	1
DAMAGED	648
MALE	8893
FEMALE	7697
TOTAL	17238

SPECIES UPDATE

In 2023 during routine surveillance we captured the *Psorophora columbiae* (dark rice field mosquito/ Florida glades mosquito). It is a floodwater mosquito with a salt-and-pepper appearance from a spattering of white scales over their body. They are commonly found in the contiguous lower 48, but have been located as close as Ohio, Indiana and Illinois. These vicious summer pests are a vector of the Venezuelan equine encephalitis virus (VEEV), Potosi virus (POTV), Rift Valley fever virus (RVFV) and can also carry West Nile virus (WNV).



We have been closely watching the emergence of this mosquito in our county the past few seasons. This season the trap counts showed more *Ps. Columbiae* than what was found in 2024. It seems the *Ps. columbiae* has started populating new areas where one was found in Ellington township and 5 were found in Arbela. In the lower townships Watertown township again had the highest recorded amount at 27 females captured. Koylton had the same capture at 5, Vassar had one, Millington went up to 17. We are noticing traps counts have increased and believe that this mosquito is establishing in this county. We plan to continue surveillance for confirmation.



AT HOME PREVENTION

To help prevent the spread of disease from mosquitoes, the following tips can help beyond pesticide treatments. These are some great ways to protect yourself and your family in the future:

- Eliminate standing water
- Wear long sleeves, pants, loose fitting clothing
- Use insect repellent
- Avoid peak mosquito times
- Repair screen holes on windows and doors

There are also some natural ways that might help reduce mosquito populations by having some of the following plants around your home.

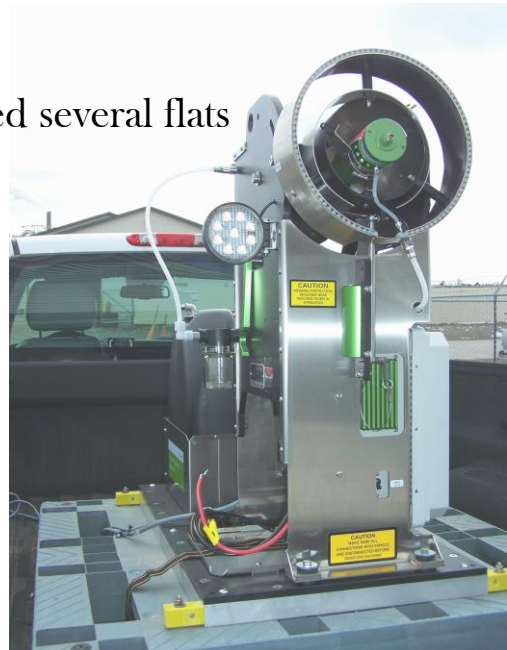


GARAGE NEWS

We have a master equipment technician , Pat Dennis , who had a very busy season. Here is a short rundown of his mechanics this season:

VEHICLE REPAIRS

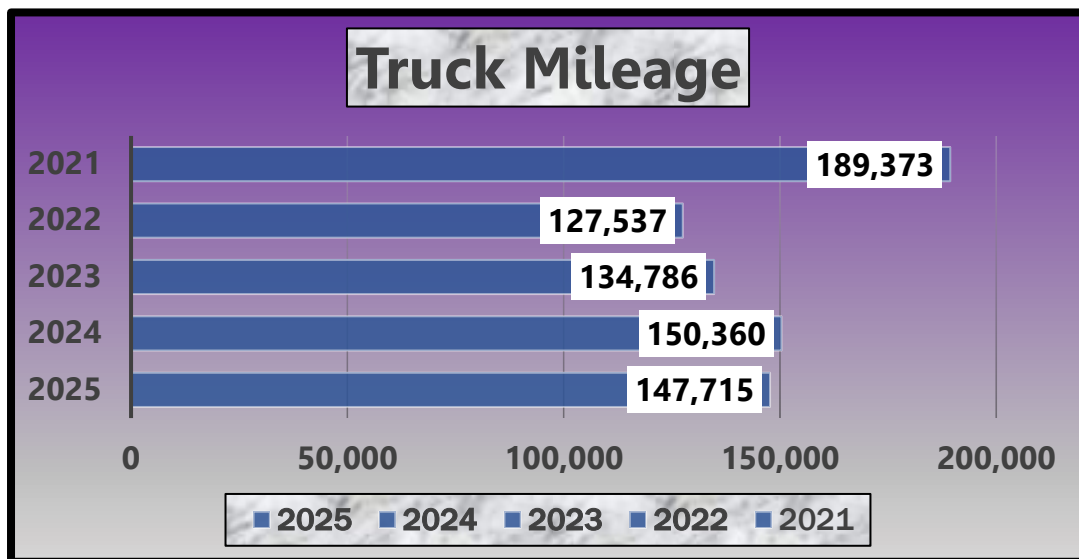
- Replaced 4 sets of tires and fixed several flats
- 2 carburetors rebuilds
- 2 steering alignments
- 4 strobe lights changes
- 78 oil changes
- Replaced 16 lower ball joints
- 2 upper control arms
- 2 struts
- 3 sets of brake rotors and pads
- 9 air filters changes
- 4 batteries replacements



EQUIPMENT REPAIRS

- Soldered new charge jacks into pioneer batteries
- Several pioneer sprayers repairs
- 2 ULV pump rebuilds
- Wire and switch repairs
- Installed tablet mounting systems in 6 trucks

Tuscola County Mosquito Abatement’s twenty-one truck fleet, added 147,715 miles this season.



All truck mounted ULV’s are now set to deliver 4.5 to 6.0 ounces of Kontrol 4-4 per minute, compared to just the 4.5 ounces that was used in the past. We began the season May 12th at 5 ounces per minute and then increased to 6 ounces per minute the first two weeks of July to combat the increase in trap counts, phone calls and West Nile detection in our Lagoons. Around August 18th we were able to decrease to 4.5 ounces per minute due to these significantly dropping until season end September 26th. The droplet sizes produced by each ULV are measured and calibrated multiple times each season utilizing the Army Insecticide Measuring System (AIMS), following the label recommendations. The droplets are set to be delivered in a range that helps ensure safety and efficiency.

MEMBERSHIPS

TCMA staff are required to obtain and maintain licensing through the Michigan Department of Agriculture (MDA) as certified pesticide applicators, in both the Core Category and 7F (Mosquito Control).

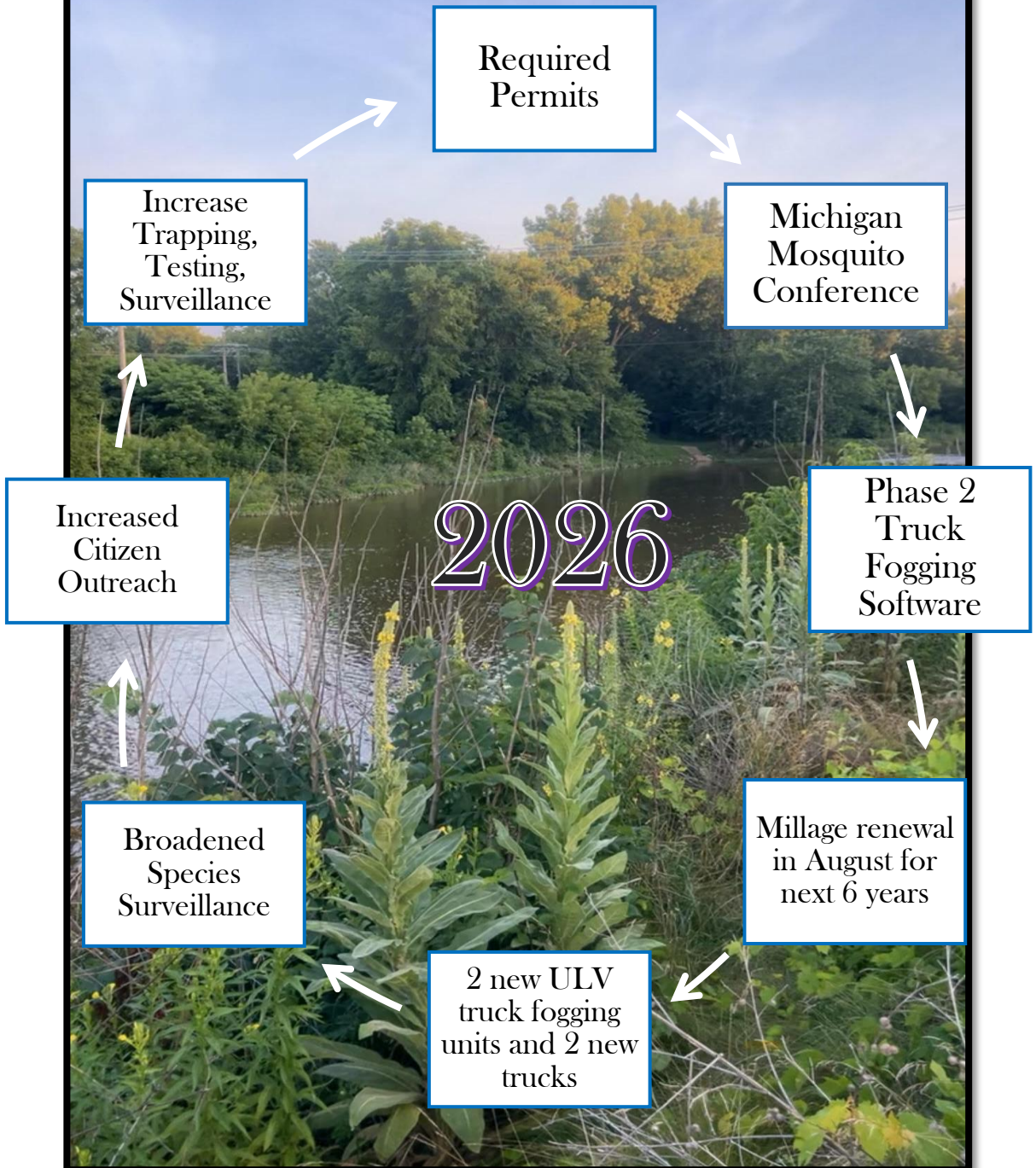
In order to stay informed of current developments, the permanent staff of TCMA are also encouraged to attend conferences, classes and seminars relating to mosquito biology and control. TCMA's Technical Advisory Committee (TAC) also provides new insight and important data in the areas of Biological Environmental Sciences.

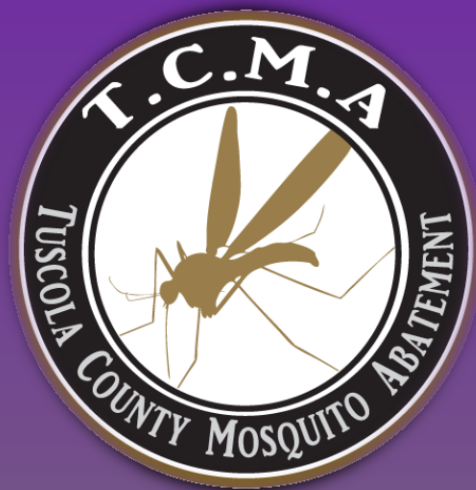
The permanent staff of TCMA also maintains memberships and are active in the Michigan Mosquito Control Association (MMCA) and The American Mosquito Control Association (AMCA).

Last year the annual MMCA Convention was held in-person at the Park Place Hotel in Traverse City. At this time, the Convention is being planned again as an in-person meeting in February this time at the Soaring Eagle Casino in Mount Pleasant .



2026 PROGRAM PLANS





1500 Press Drive
Caro, Michigan 48723
www.tuscolacounty.org