

# Mosquito & Tick Surveillance Report

April to October 2024

Submitted for Publication:  
October 2024

Special thanks to 2024 OCDPH interns:  
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# Definitions and Acronyms

## Definitions

**Pool:** A group of mosquitoes that are the same species caught from the same trap type. A pool contains a maximum of 50 mosquitoes and is often tested for mosquito borne diseases.

**Gravid Traps:** This trap type attracts female mosquitos by means of a bait liquid that is contained in a plastic tub below the trap. The trap operates by creating an upward current of air from within the confines of the pan using a fan, the mosquitoes are blown into a collection bag after being attracted to the bait liquid, which is comprised of a mixture of water and alfalfa-based rabbit food.

**BG Sentinel 2:** The BG-Sentinel mosquito trap is a collapsible fabric container with a plastic lid featuring holes covering its opening. In the middle of the cover, air is sucked into the trap through a black catch pipe by an electrical fan that draws approaching mosquitoes into a catch bag. The air then exits the trap through the white cover, generating air currents. These traps also use the BG-Lure, which emits a scent that attracts mosquitos.

**Tick Drag:** Tick dragging is a method for collecting ticks by dragging a light-colored cloth across the ground or vegetation where ticks are likely to be present. The cloth is attached to a heavy dowel and pulled at a steady pace behind the person conducting the drag. Ticks that are looking for a host, called "questing" ticks, will attach themselves to the cloth when it drags past them.

**Nymph:** An adolescent tick.

## Acronyms

**MDHHS:** Michigan Department of Health and Human Services

**NACCHO:** National Association of City and County Health Officials

**OCDPH:** Ottawa County Department of Public Health

# Ottawa County Vector Surveillance Grant Support

## Grant:

- **Grantor:** NACCHO
- **Name:** Vector Control Collaborative: A Vector Control and Surveillance Mentorship Program
- **Award Date:** April 15, 2024
- **End Date:** July 31, 2024
- **Amount:** \$14,999.34

# Mosquito Surveillance

# Mosquito Surveillance Methods Ottawa County, 2024

## Mosquito Surveillance Methods:

- Traps were set weekly, April through September, in Ottawa-area parks to capture live mosquitoes.
- Both Gravid and BG Sentinel 2 traps were used.
  - Gravid Traps include standing water to attract breeding mosquitoes. These traps target West Nile Virus carrying mosquitoes.
  - BG Sentinel 2 Traps include a bait that attracts mosquitoes by smell. These traps target invasive *Aedes* mosquitoes.
- Collection bags were removed from the traps each week. Mosquitoes were humanely euthanized then sorted and counted by species.
- Sorted mosquitoes were sent to the MDHHS laboratory where they were tested for mosquito-borne diseases such as West Nile Virus.

**“Gravid”  
Mosquito Trap**



**“BG Sentinel 2”  
Mosquito Trap**



# Mosquito Species Identified and Mosquito Testing Results

## 2024 Season Mosquito Collection Results

Species	Number Collected	% of Total Specimens
Culex	527	86%
Non-Native Aedes*	49	8%
Native Aedes**	23	4%
Anopheles	7	1%
Coquillettidia	2	.03%
<b>Total</b>	<b>608</b>	<b>99.03%</b>

## 2024 Season Mosquito Disease Testing Results

Disease	Result
Eastern Equine Encephalitis	<b>Not Detected</b>
Jamestown Canyon Virus	<b>Not Detected</b>
La Crosse Virus	<b>Not Detected</b>
St. Louis Encephalitis	<b>Not Detected</b>
West Nile Virus	<b>Detected</b>

\***Non-Native Aedes species:** Aedes albopictus, Aedes aegypti, Aedes japonicus, Aedes vexans

\*\***Native Aedes species:** Aedes canadensis, Aedes triseriatus

## Tick Surveillance



# Tick Surveillance in Ottawa County, 2024

## Tick Surveillance Methods:

- Tick drags were conducted each week in various green spaces and trails across Ottawa County.
- A tick drag cloth was employed to collect ticks actively seeking a host on the ground. The cloth was inspected every 10 meters, with any captured ticks being removed for sorting and analysis. Each full tick drag covered a minimum distance of 1,000 meters.
- Captured ticks were humanely euthanized then sorted and counted based on life stage, sex, and species. As needed, sorted ticks were confirmed by microscope.
- Tick life stages, sex, and species were reported to MDHHS for surveillance purposes.








# Ticks Identified in Ottawa County, 2024

## 2024 Season Tick Collection Results

Genus	Adult Females	Adult Males	Nymphs (Juveniles)	Total Number Collected	Total Percent Collected
Dog Tick	25	29	0	54	68%
Deer Tick	10	7	8	25	32%
Lone Star Tick	0	0	0	0	0%
<b>Total</b>	<b>35</b>	<b>36</b>	<b>8</b>	<b>79</b>	<b>100%</b>

26 total tick drags were completed between April and August 2024.

# Tick Identification Guide and the Diseases they can Carry

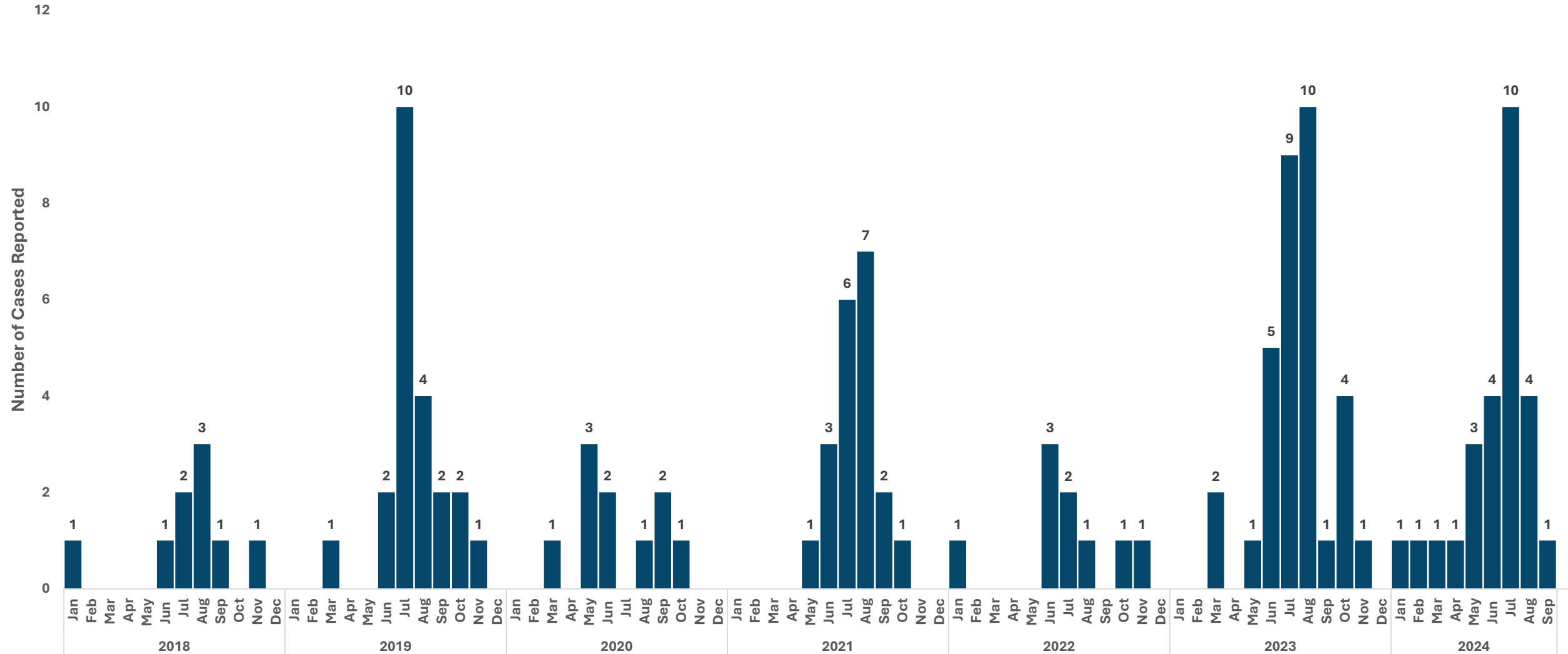
Species	Picture	Information	RISKS*
<p><b>American Dog Tick</b> <i>(Dermacentor variabilis)</i></p>	 <p>Female      Male      Nymph</p>	<p>Most common tick in Michigan</p> <ul style="list-style-type: none"> <li>Large: ~5mm</li> </ul> <p>Rocky Mountain Spotted Fever is rare in Michigan - &lt;0-1 case per year</p>	<p><b>ROCKY MOUNTAIN SPOTTED FEVER</b></p>
<p><b>Black Legged Tick / Deer Tick</b> <i>(Ixodes scapularis)</i></p>	 <p>Female      Male      Nymph</p>	<p>Common in Michigan</p> <ul style="list-style-type: none"> <li>Adults can be between 2-3mm</li> <li>Nymphs can be the size of a poppy seed</li> </ul> <p>Adult female infection rate is 36-40%, and nymphal infection rate is 9-15%</p>	<p><b>LYME DISEASE, ANAPLASMOSIS, BABESIOSIS</b></p>
<p><b>Lone Star Tick</b> <i>(Amblyomma americanum)</i></p>	 <p>Female      Male      Nymph</p>	<p>Rare in Michigan</p> <ul style="list-style-type: none"> <li>Round body</li> <li>Size: 4-6mm</li> </ul> <p>Alpha-gal syndrome may be triggered by the bite of a Lone Star tick - but more research is needed to understand why</p>	<p><b>ALPHA-GAL SYNDROME</b></p>

\*Only adult females and nymphs are able to spread disease to their hosts

# Human Disease Surveillance

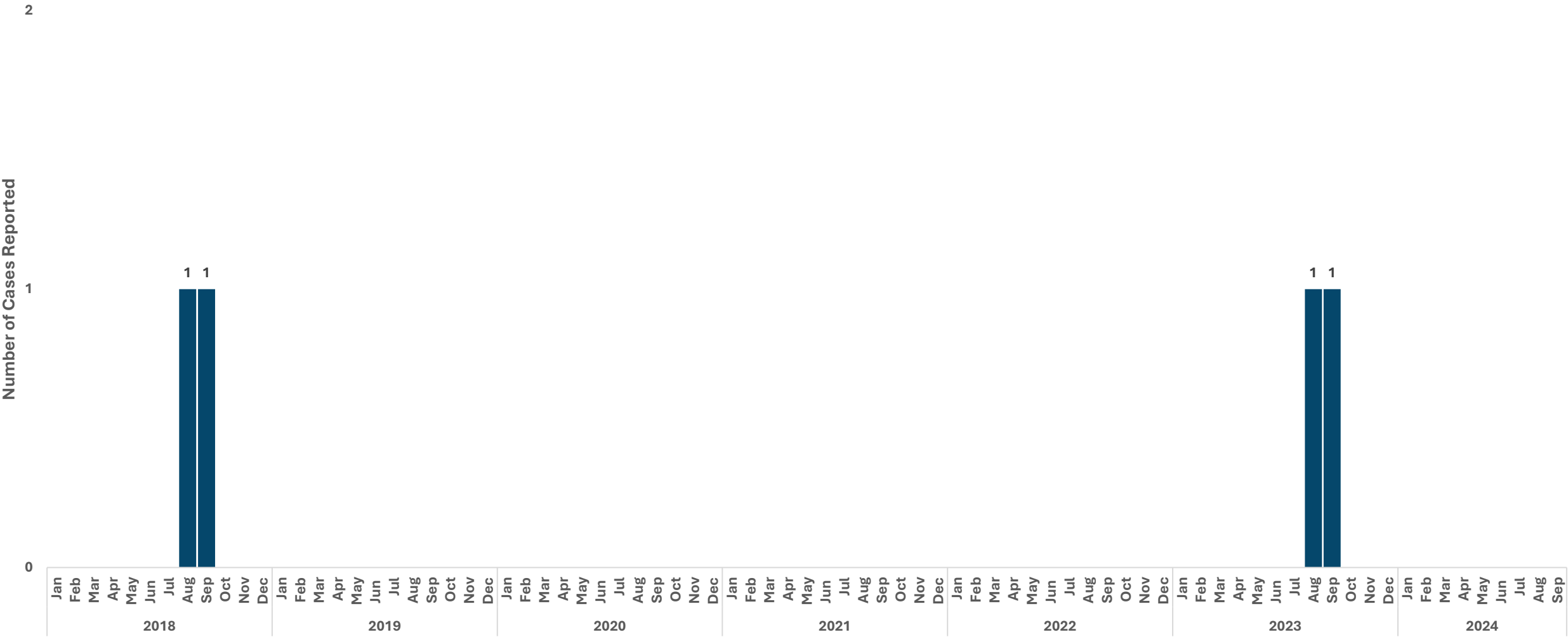
Lyme Disease  
and  
West Nile Virus

# Human Lyme Disease Cases\* by Month, Ottawa County, 2018 – September 2024



\*Includes Confirmed and Probable Cases by Month and Year of Referral to Public Health

# Human West Nile Virus Cases\* by Year, Ottawa County, 2018 – September 2024



\*Includes Confirmed and Probable Cases by Month and Year of Referral to Public Health

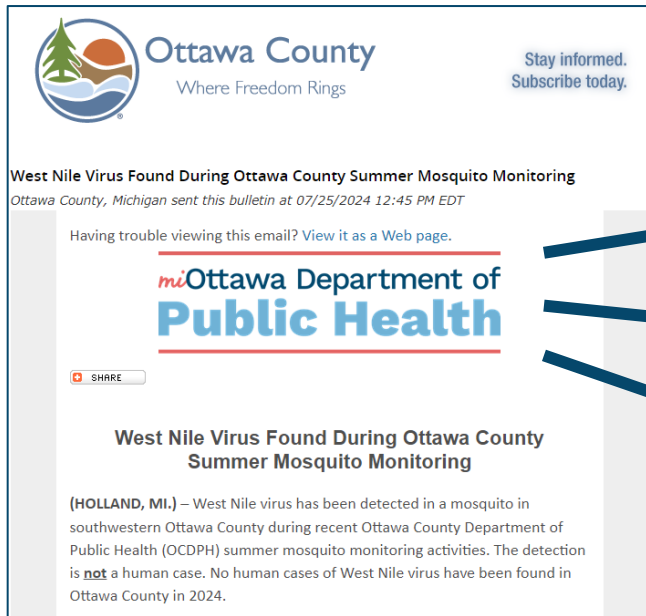
## Communication and Media



# OCDPH Communication and Media

## OCDPH Issued a News Release

## Which resulted in widespread media attention



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Where Freedom Rings  
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**West Nile Virus Found During Ottawa County Summer Mosquito Monitoring**  
Ottawa County, Michigan sent this bulletin at 07/25/2024 12:45 PM EDT

Having trouble viewing this email? [View it as a Web page.](#)

**miOttawa Department of Public Health**

SHARE

**West Nile Virus Found During Ottawa County Summer Mosquito Monitoring**

(HOLLAND, MI.) – West Nile virus has been detected in a mosquito in southwestern Ottawa County during recent Ottawa County Department of Public Health (OCDPH) summer mosquito monitoring activities. The detection is **not** a human case. No human cases of West Nile virus have been found in Ottawa County in 2024.

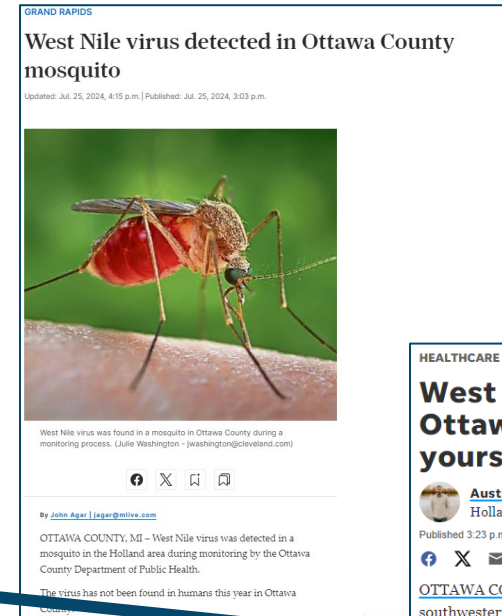
### Sources:

**West Nile Virus Found During Ottawa County Summer Mosquito Monitoring**  
<https://content.govdelivery.com/accounts/MIOTTAWA/bulletins/3aa98ac>

**West Nile virus detected in Ottawa County mosquito**  
<https://www.mlive.com/news/grand-rapids/2024/07/west-nile-virus-detected-in-ottawa-county-mosquito.html>

**West Nile virus found during Ottawa County**  
[https://www.grandhaventribune.com/news/health\\_care/west-nile-virus-found-during-ottawa-county/article\\_db440459-1979-5e56-bd57-5a70527eb240.html](https://www.grandhaventribune.com/news/health_care/west-nile-virus-found-during-ottawa-county/article_db440459-1979-5e56-bd57-5a70527eb240.html)

**West Nile detected in mosquito in Ottawa County: How to protect yourself**  
<https://www.hollandsentinel.com/story/news/healthcare/2024/07/25/west-nile-detected-in-mosquito-in-ottawa-county-symptoms-spread/74546998007/>



GRAND RAPIDS  
**West Nile virus detected in Ottawa County mosquito**  
Updated: Jul. 25, 2024, 4:15 p.m. | Published: Jul. 25, 2024, 3:03 p.m.



West Nile virus was found in a mosquito in Ottawa County during a monitoring process. (Julie Washington - jwashington@cleveland.com)

By John Agar | [jagar@mlive.com](mailto:jagar@mlive.com)

OTTAWA COUNTY, MI – West Nile virus was detected in a mosquito in the Holland area during monitoring by the Ottawa County Department of Public Health.

The virus has not been found in humans this year in Ottawa County.



West Michigan  
**West Nile virus found during Ottawa County**  
Jul 25, 2024 Updated Sep 1, 2024

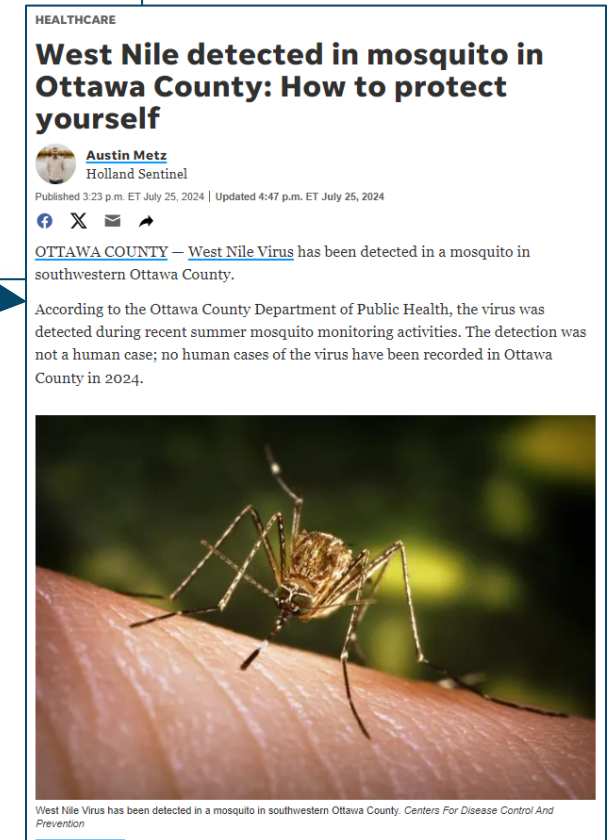
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00:00 00:17

West Nile virus has been detected in a mosquito in southwestern Ottawa County during recent Ottawa County Department of Public Health (OCDPH) summer mosquito monitoring activities.


The detection is not a human case. No human cases of West Nile virus have been found in Ottawa County in 2024.



This is the northern house mosquito (Culex pipiens), one of the species that can carry West Nile virus.  
Photo provided by Indiana Department of Health




HEALTHCARE  
**West Nile detected in mosquito in Ottawa County: How to protect yourself**

 **Austin Metz**  
Holland Sentinel

Published 3:23 p.m. ET July 25, 2024 | Updated 4:47 p.m. ET July 25, 2024

**OTTAWA COUNTY** – [West Nile Virus](#) has been detected in a mosquito in southwestern Ottawa County.


According to the Ottawa County Department of Public Health, the virus was detected during recent summer mosquito monitoring activities. The detection was not a human case; no human cases of the virus have been recorded in Ottawa County in 2024.



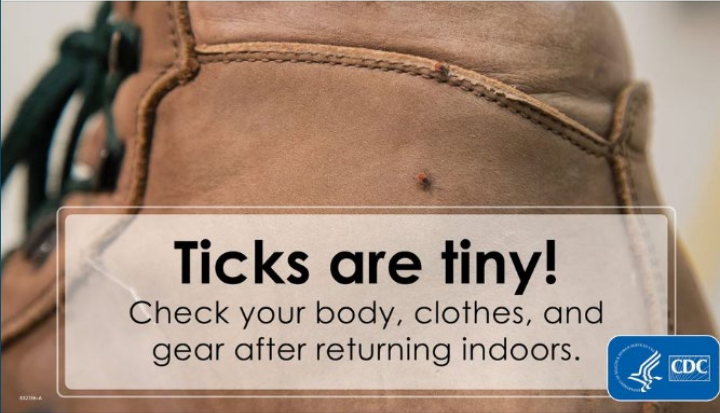
West Nile Virus has been detected in a mosquito in southwestern Ottawa County. Centers For Disease Control And Prevention

# Social Media Posts by OCDPH


## Tick Social Media

 OC Department of Public Health  
Published by Alison Clark  
· August 8 ·

Basking in the West Michigan sun can mean brushing shoulders with ticks! We monitor ticks and mosquitoes all summer and will keep you informed of any unusual increase in their activity or if we find any disease. In the meantime, you should know that tick bites can cause illness. You can reduce your risk by creating tick-free zones around your home and taking precautions when you are outdoors. Ticks are found in grassy, brushy, or wooded areas so it is important to check your clothing and body for ticks after being outside. Use insect repellent, conduct tick checks, and promptly remove embedded ticks. And, don't forget to check your pets! To learn more visit [cdc.gov/ticks](https://cdc.gov/ticks).



**Ticks are tiny!**  
Check your body, clothes, and gear after returning indoors.




See insights and ads [Boost post](#)

6

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## Mosquito Social Media

 OC Department of Public Health  
Published by Alison Clark  
· August 30 ·

Mosquito season in Michigan will last into September and with it comes the potential for illness because of bites. As you head into the holiday weekend, remember to take steps to prevent mosquito bites.

- Use insect repellent when you are outside.
- Wear light colored and long-sleeved shirts and pants.
- Treat clothing and outdoor gear with insect repellent.
- Take steps to control mosquitos in your yard by removing standing water around your home. This can include water in bird baths, children's wading pools, water bowls for your pets, or in any container that can collect water.



BRIDGEMI.COM  
Mosquito-borne viruses — and a mystery — emerge as Michigan summer ends | Bridge Michigan

See insights and ads [Boost post](#)

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