



# Vector Borne Disease 2023 Surveillance Report

Summit County Public Health

Report Weeks 9 and 10 (July 16 to July 29, 2023)  
MMWR Weeks 29 and 30



**Public Health**  
Prevent. Promote. Protect.

This report will be issued from June through October of each year (or later if West Nile Virus disease is still a concern). Surveillance will include human and veterinary cases and testing of mosquito pools in Summit County. It will also include updates from Ohio and around the nation. It will include vector-borne diseases besides West Nile Virus.

## SUMMIT COUNTY SURVEILLANCE

**West Nile virus testing (Table 1):** During surveillance period weeks 9 and 10, there were 7 tests for West Nile Virus ordered by Summit County hospitals, none were positive.

Table 1: West Nile virus (WNV) tests ordered in Summit County hospitals 2023					
Week(s)	# of WNV tests ordered this period	# of positive WNV tests this period	Cumulative # of tests ordered this season	Cumulative # of positive tests this season	Percentage of positive tests
Weeks 1 & 2: 5/21 to 6/3	3	1	3	1	33.3%
Weeks 3 & 4: 6/4 to 6/17	5	0	8	1	12.5%
Weeks 5 & 6: 6/18 to 7/1	4	0	12	1	8.3%
Weeks 7 & 8: 7/2 to 7/15	14	1	26	2	7.7%
Weeks 9 & 10: 7/16 to 7/29	7	0	33	2	6.1%
Weeks 11 & 12: 7/30 to 8/12	-	-	-	-	-
Weeks 13 & 14: 8/13 to 8/26	-	-	-	-	-
Weeks 15 & 16: 8/27 to 9/9	-	-	-	-	-
Weeks 17 & 18: 9/10 to 9/23	-	-	-	-	-
Weeks 19 & 20: 9/24 to 10/7	-	-	-	-	-
Weeks 21 & 22: 10/18 to 10/21	-	-	-	-	-

Note: Reporting may not be completed each week. Numbers will be updated when reports are received

**Lyme disease testing (Table 2):** There were 110 diagnostic test series performed for Lyme disease during Weeks 9 and 10. 14 tests were positive and no additional tests are pending. For information about Diagnosis and Testing, visit this link: <https://www.cdc.gov/lyme/diagnostictesting/index.html>.

Week(s)	# of Lyme tests ordered this period	# of positive Lyme tests this period	Cumulative # of tests ordered this season	Cumulative # of positive tests this season	Percentage of positive tests
Weeks 1 & 2: 5/21 to 6/3	39	13	39	13	33.3%
Weeks 3 & 4: 6/4 to 6/17	81	11	120	24	20.0%
Weeks 5 & 6: 6/18 to 7/1	103	10	223	34	15.2%
Weeks 7 & 8: 7/2 to 7/15	108	13	331	47	14.2%
Weeks 9 & 10: 7/16 to 7/29	110	14	441	61	13.8%
Weeks 11 & 12: 7/30 to 8/12	-	-	-	-	-
Weeks 13 & 14: 8/13 to 8/26	-	-	-	-	-
Weeks 15 & 16: 8/27 to 9/9	-	-	-	-	-
Weeks 17 & 18: 9/10 to 9/23	-	-	-	-	-
Weeks 19 & 20: 9/24 to 10/7	-	-	-	-	-
Weeks 21 & 22: 10/18 to 10/21	-	-	-	-	-

Note: Reporting may not be completed each week. Numbers will be updated when reports are received

**Reported Vector-borne diseases in 2023 (Table 3):** As of July 29, there were 117 reported cases of Lyme disease; 16 were confirmed and 99 were suspected status. There were also 2 reported cases of Ehrlichiosis / anaplasmosis, 1 suspected case of Dengue and 5 confirmed cases of Malaria among Summit County residents.

	Confirmed	Suspected	Notes
<b>Tick-borne diseases:</b>			
Babesiosis	0	1	
Ehrlichiosis / anaplasmosis	1	1	
Lyme disease	16	99	2 Probable
Powassan virus disease	0	0	
Rocky Mountain spotted fever	0	0	
<b>Mosquito-borne diseases:</b>			
Chikungunya	0	0	
Dengue	0	1	
Eastern equine encephalitis	0	0	
LaCrosse virus disease	0	0	
Malaria	5	0	
St. Louis encephalitis virus disease	0	0	
Zika virus infection	0	0	
West Nile virus infection	0	0	

Source: Ohio Disease Reporting System (ODRS); only confirmed, probable, and suspected cases are included.

Species name	Diseases associated	Summit County	Ohio
<b>Mosquito species</b>			
<i>Aedes albopictus</i>	Chikungunya, dengue fever, yellow fever	4	1,717
<i>Aedes triseriatus</i>	La Crosse encephalitis	97	712
<i>Coquillettidia perturbans</i>	Eastern equine encephalitis, West Nile virus	772	4,110
<b>Tick species</b>			
<i>Amblyomma americanum</i>	Ehrlichiosis, tularemia, red meat allergy	0	143
<i>Dermacentor variabilis</i>	Rocky Mountain spotted fever, tularemia	11	656
<i>Ixodes scapularis</i>	Lyme disease, Babesiosis, anaplasmosis	9	176

Source: Ohio Department of Health (Identification via mailed specimens, emailed photos and iNaturalist observations)

Reporting Week(s)	Cases reported this period	Cumulative cases for the season
Aseptic meningitis cases reported prior to season (1/1 to 5/20/2023)	1	-
Weeks 1 & 2: 5/21 to 6/3	1	2
Weeks 3 & 4: 6/4 to 6/17	0	2
Weeks 5 & 6: 6/18 to 7/1	0	2
Weeks 7 & 8: 7/2 to 7/15	0	2
Weeks 9 & 10: 7/16 to 7/29	1	3
Weeks 11 & 12: 7/30 to 8/12	-	-
Weeks 13 & 14: 8/13 to 8/26	-	-
Weeks 15 & 16: 8/27 to 9/9	-	-
Weeks 17 & 18: 9/10 to 9/23	-	-
Weeks 19 & 20: 9/24 to 10/7	-	-
Weeks 21 & 22: 10/18 to 10/21	-	-

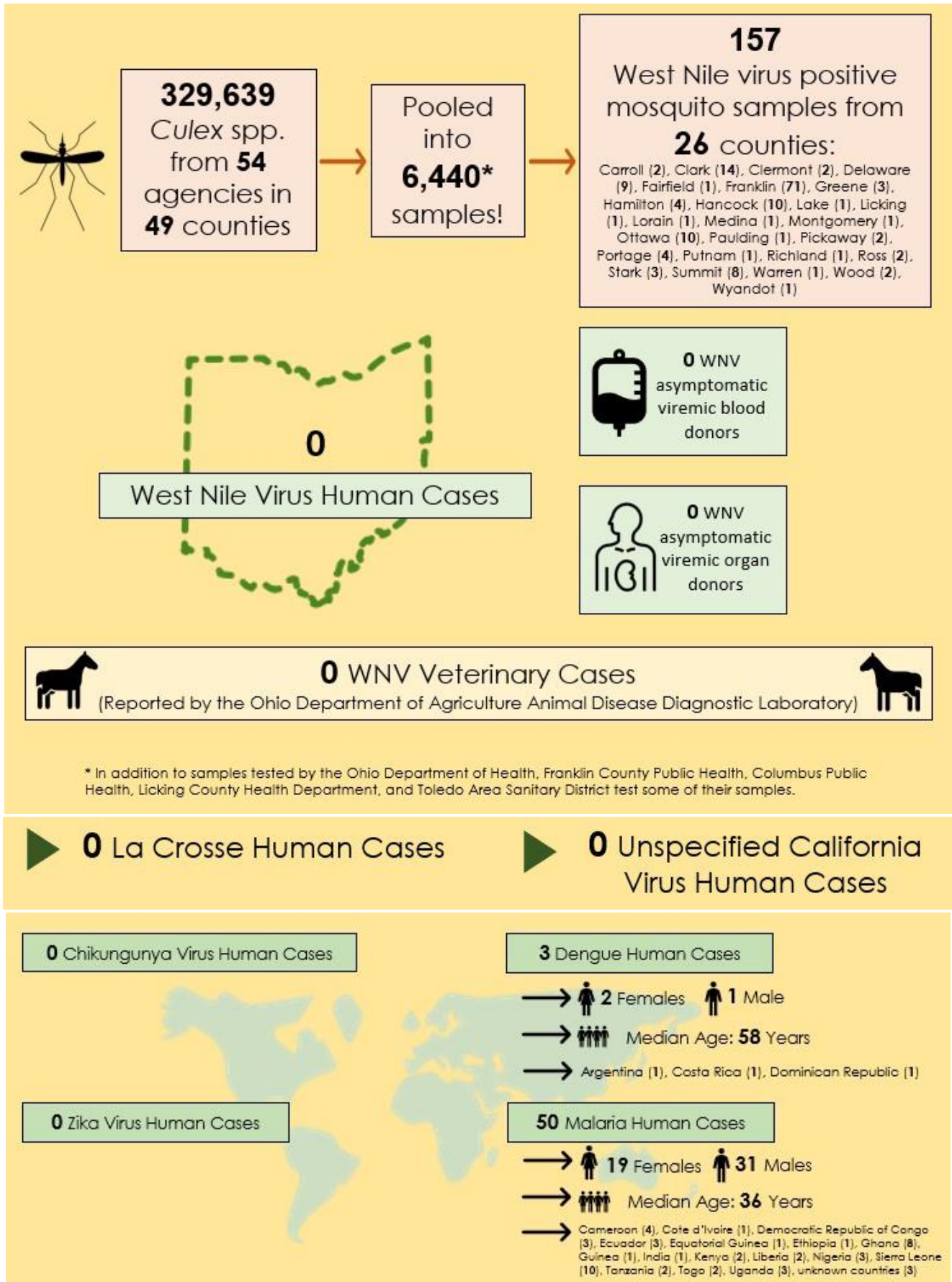
Source: Ohio Disease Reporting System (ODRS)

**Reported aseptic/viral meningitis cases (Table 5):** Prior to the reporting season, there was 1 reported cases of aseptic meningitis, and 1 confirmed or probable cases was reported during weeks 9 and 10. Aseptic/viral meningitis is the most common type of meningitis and occurs predominately in the summer and fall. While most aseptic/viral meningitis cases are due to gastrointestinal or respiratory viruses, similar symptoms may be present with arthropod-borne diseases.

**Mosquito testing by the Ohio Department of Health:** Based on the ODH mosquito testing summary released on August 3, 2023, 34,833 mosquitoes were collected as 844 pooled samples throughout Summit County. Of the pooled samples, 8 were positive for West Nile Virus.

Mosquitoes identified	34,833
Pooled samples tested	844
Positive WNV pooled samples	8

Note: All mosquitoes pools tested were *Culex spp.*







**176**  
Blacklegged  
Ticks, *Ixodes*  
*scapularis*,  
Identified

Identified from **42** counties: Ashland (1), Ashtabula (5), Athens (8), Belmont (1), Brown (6), Butler (1), Carroll (3), Clark (2), Clinton (3), Columbiana (9), Coshocton (1), Cuyahoga (5), Erie (3), Fairfield (2), Franklin (15), Gallia (2), Geauga (7), Greene (3), Guernsey (1), Hamilton (4), Harrison (3), Hocking (1), Jefferson (2), Knox (13), Licking (7), Lorain (4), Lucas (1), Mahoning (3), Medina (4), Mercer (1), Monroe (1), Morrow (2), Perry (1), Portage (6), Preble (1), Richland (6), Stark (6), Summit (9), Tuscarawas (2), Warren (13), Wood (3), Wyandot (4), unknown (1)



**362**  
Lyme Disease Human Cases

→ **153** Females  
→ **209** Males  
→ Median Age: **34** Years

→ Allen (1), Ashland (1), Ashtabula (1), Athens (2), Auglaize (1), Belmont (7), Carroll (6), Clark (4), Clermont (5), Columbiana (36), Coshocton (13), Cuyahoga (6), Delaware (3), Erie (2), Fairfield (11), Franklin (10), Geauga (3), Guernsey (13), Hamilton (9), Harrison (7), Hocking (8), Holmes (8), Huron (1), Jackson (8), Jefferson (2), Knox (29), Lake (7), Licking (23), Lorain (1), Madison (3), Mahoning (5), Marion (1), Medina (10), Miami (1), Monroe (1), Morgan (2), Morrow (2), Muskingum (22), Noble (1), Pickaway (3), Portage (2), Richland (8), Ross (1), Scioto (1), Stark (22), Summit (13), Trumbull (11), Tuscarawas (13), Union (1), Washington (4), Wayne (6), Wood (1) counties

▶ **2** Anaplasmosis Human Cases

→ **1** Female  
→ **1** Male  
→ Median Age: **73** Years  
→ Hamilton (1), Summit (1) counties

▶ **0** Babesiosis Human Cases

**656**  
American Dog Ticks,  
*Dermacentor variabilis*,  
Identified



▶ **6** Rocky Mountain Spotted Fever  
Human Cases

→ **1** Female  
→ **5** Males  
→ Median Age: **67** Years  
→ Gallia (1), Jackson (5) counties

**143**  
Lone Star Ticks,  
*Amblyomma americanum*,  
Identified



▶ **4** Ehrlichiosis Human Cases

→ **3** Females  
→ **1** Male  
→ Median Age: **41** Years  
→ Adams (1), Franklin (1), Warren (1), Wayne (1) counties



## TRENDS IN VECTOR BORNE DISEASE IN SUMMIT COUNTY, 2013 - 2022

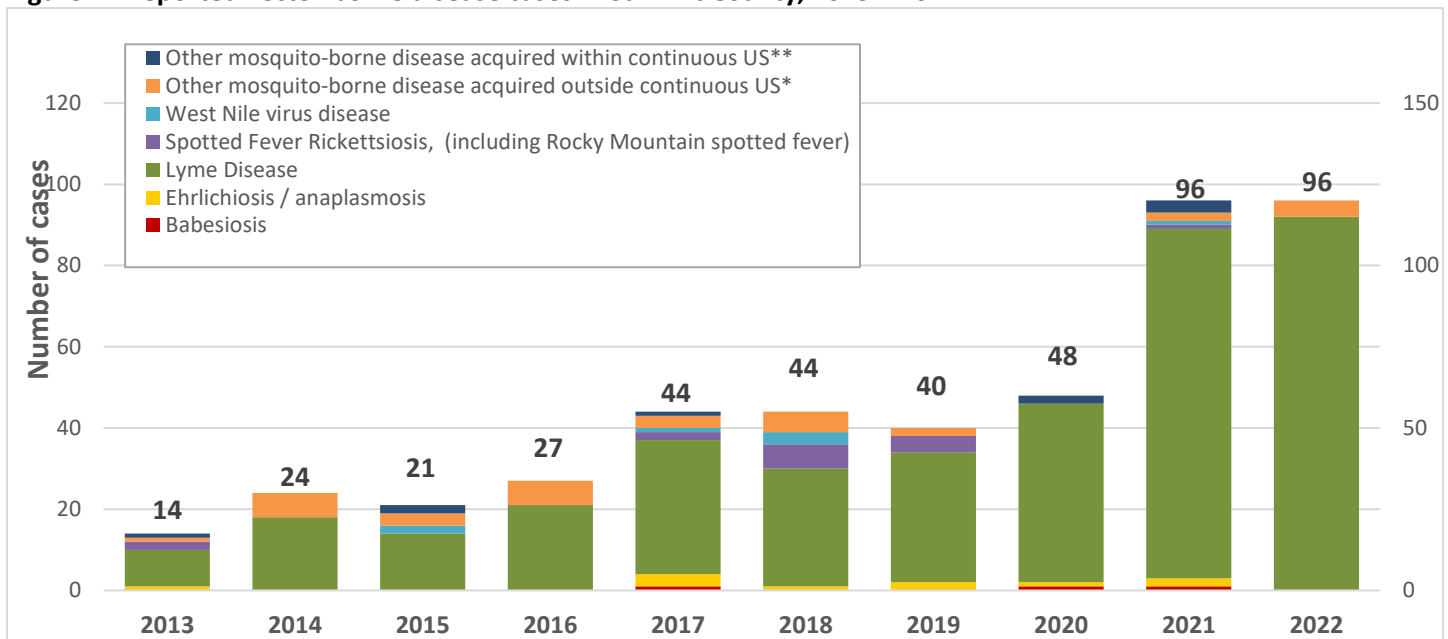
Table 8 provides data on the vector borne disease that were reported in Summit County from 2013 to 2022. The vector for Lyme disease, the blacklegged tick (*Ixodes scapularis*), was first identified in Ohio in 1989, but populations did not begin to increase dramatically until 2009. The blacklegged tick is now established throughout eastern and southern Ohio, and has been collected in all of Ohio’s 88 counties.

Other notable events in vector borne disease surveillance were the increase in Chikungunya cases in 2014 (reported as other arthropod-borne diseases) and the Zika virus disease epidemic of 2016. Increases in Ehrlichiosis and spotted fever rickettsiosis were observed from 2017 to 2019. The incidence of other vector-borne diseases, including West Nile virus disease and other tick-borne illness have remained consistently low.

**Table 8. Reported vector-borne disease cases in Summit County, 1/1/2013 - 12/31/2022**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Babesiosis	0	0	0	0	1	0	0	1	1	0
Ehrlichiosis / anaplasmosis	1	0	0	0	3	1	2	1	2	0
Lyme Disease	9	18	14	21	33	29	32	44	86	92
Spotted Fever Rickettsiosis, (including Rocky Mountain spotted fever)	2	0	0	0	2	6	4	0	1	0
West Nile virus disease	0	0	2	0	1	3	0	0	1	0
Other mosquito-borne disease acquired outside continuous US*	1	6	3	6	3	5	2	0	2	4
Other mosquito-borne disease acquired within continuous US**	1	0	2	0	1	0	0	2	3	0
	<b>14</b>	<b>24</b>	<b>21</b>	<b>27</b>	<b>44</b>	<b>44</b>	<b>40</b>	<b>48</b>	<b>96</b>	<b>96</b>

**Figure 2. Reported vector-borne disease cases in Summit County, 2013 – 2022**



**Notes:** \* Includes imported cases of malaria, chikungunya, dengue, and Zika virus infection  
 \*\* Includes LaCrosse virus disease and St. Louis encephalitis virus disease

**Data Source:** Ohio Disease Reporting System

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**About this report:** Reporting agencies include Summit County hospital laboratories and the Ohio Department of Health. Vector-borne disease case data for Summit County are obtained from the Ohio Disease Reporting System.

**Many thanks to all agencies who report vector-borne disease data weekly.**

Reporting from participants may not be complete each week. Numbers may change as updated reports are received. For questions, please contact Julie Zidones (JZidones@sched.org) or the Summit County Public Health Communicable Disease Unit (330-375-2662). This report was issued on **August 11, 2023**.