



# Vector Borne Disease 2019 Surveillance Report

Summit County Public Health

Report Weeks 1 and 2 (May 26 to June 8, 2019)  
MMWR Weeks 22 and 23



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

Table 1: West Nile virus (WNV) tests ordered in Summit County hospitals

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: 5/26 to 6/8	2	1	2	1	50.0%
Weeks 3 & 4: 6/9 to 6/22					
Weeks 5 & 6: 6/23 to 7/6					
Weeks 7 & 8: 7/7 to 7/20					
Weeks 9 & 10: 7/21 to 8/3					
Weeks 11 & 12: 8/4 to 8/17					
Weeks 13 & 14: 8/18 to 8/30					
Weeks 15 & 16: 9/1 to 9/14					
Weeks 17 & 18: 9/15 to 9/28					
Weeks 19 & 20: 9/29 to 10/12					
Weeks 21 & 22: 10/13 to 10/26					

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

**West Nile virus testing (Table 1):** During surveillance period Weeks 1 and 2, there were 2 tests for West Nile virus ordered by Summit County hospitals. There was one positive result, which was determined to be due to a past exposure and was not a current infection (Table 1).

**Lyme Disease testing (Table 2):** There were 36 diagnostic test series performed for Lyme disease during Weeks 1 and 2, none of which were positive. The CDC currently recommends a two-step process when testing blood for evidence of antibodies against the Lyme disease bacteria (*Borrelia burgdorferi*). Both steps can be done using the same blood sample. The first step uses a testing procedure called "EIA" (enzyme immunoassay) or rarely, an "IFA" (indirect immunofluorescence assay). If this first step is negative, no further testing of the specimen is recommended. If the first step is positive or indeterminate (sometimes called "equivocal"), then the second step should be performed. The second step uses a test called an immunoblot test, commonly, a "Western blot" test. Results are considered positive only if the EIA/IFA and the immunoblot are both positive.

**Table 2. Lyme Disease Tests Ordered in Summit County Hospitals**

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: 5/26 to 6/8	36	0	36	0	0.0%
Weeks 3 & 4: 6/9 to 6/22					
Weeks 5 & 6: 6/23 to 7/6					
Weeks 7 & 8: 7/7 to 7/20					
Weeks 9 & 10: 7/21 to 8/3					
Weeks 11 & 12: 8/4 to 8/17					
Weeks 13 & 14: 8/18 to 8/30					
Weeks 15 & 16: 9/1 to 9/14					
Weeks 17 & 18: 9/15 to 9/28					
Weeks 19 & 20: 9/29 to 10/12					
Weeks 21 & 22: 10/13 to 10/26					

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

**Reported Vector-borne diseases in 2018 (Table 3):** As of June 14, there were 6 reported cases of Lyme disease; 2 were confirmed by laboratory testing and 4 were suspected. There was also one suspected case of Powassan virus disease, testing results are pending.

**Table 3: Vector-borne diseases reported in Summit County, 2019 cumulative totals**

	Confirmed	Suspected	Notes
<b>Tick-borne diseases:</b>			
Babesiosis	0	0	
Ehrlichiosis / anaplasmosis	0	0	
Lyme disease	2	4	
Powassan virus disease	0	1	
Rocky Mountain spotted fever	0	0	
<b>Mosquito-borne diseases:</b>			
Chikungunya	0	0	
Dengue	0	0	
Eastern equine encephalitis	0	0	
LaCrosse virus disease	0	0	
Malaria	0	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.

**Table 4. Notable mosquito and tick species identifications in Summit County**

Species name	Diseases associated	# identified
<b>Mosquito species</b>		
<i>Aedes albopictus</i>	Chikungunya, dengue fever, yellow fever	0
<i>Aedes triseriatus</i>	La Crosse encephalitis	4
<b>Tick species</b>		
<i>Ixodes scapularis</i>	Lyme disease, babesiosis, anaplasmosis	37

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

**Table 5. Reported Aseptic/viral Meningitis Cases in Summit County (confirmed & probable)**

Week(s)	Cases reported this period	Cumulative cases for the season
Aseptic meningitis cases reported prior to season (1/1 to 5/25/2019)	3	-
Weeks 1 & 2: 5/26 to 6/8	1	1
Weeks 3 & 4: 6/9 to 6/22		
Weeks 5 & 6: 6/23 to 7/6		
Weeks 7 & 8: 7/7 to 7/20		
Weeks 9 & 10: 7/21 to 8/3		
Weeks 11 & 12: 8/4 to 8/17		
Weeks 13 & 14: 8/18 to 8/30		
Weeks 15 & 16: 9/1 to 9/14		
Weeks 17 & 18: 9/15 to 9/28		
Weeks 19 & 20: 9/29 to 10/12		
Weeks 21 & 22: 10/13 to 10/26		

Source: Ohio Disease Reporting System (ODRS)

**Reported aseptic/viral meningitis cases (Table 5):** Prior to the reporting season, there were 3 reported cases of aseptic meningitis, and 1 case was reported during Weeks 1 and 2. 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 (Table 6):** Based on the ODH mosquito testing summary released on June 14, over 14,470 mosquitoes were collected as 202 pooled samples throughout Summit County. None of the samples tested positive for West Nile virus or St. Louis encephalitis virus.

**Table 6. Mosquito Testing in Summit County (samples processed by noon on 6/13/2019)**

Mosquitoes identified	14,470
Pooled samples tested	292
Positive WNV pooled samples	0

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

## Find These Things That Cause Mosquito Breeding Around The Home



1 Pool cover that collects water, neglected swimming pool or child's wading pool



2 Birdbath and garden pond



3 Any toy, garden equipment, or container that can hold water



4 Flat roof with standing water



5 Clogged rain gutter



6 Trash and old tires



7 Tree hollow stump, or rain puddle



8 Missing, damaged or improperly installed screens



9 Uncovered boat or boat cover that collects water



10 Leaky faucet and pet bowl

Source (includes informative poster for download): <https://odh.ohio.gov/wps/portal/gov/odh/know-our-programs/zoonotic-disease-program/resources/mosquito-poster>

**Special note for travelers:**

Ohioans traveling to areas where local transmission is occurring should be aware of the ongoing situation and make every effort to avoid mosquito bites. Additional information can be found from the [Centers for Disease Control and Prevention \(CDC\)'s Travelers' Health](#) and [Pan-American Health Organization](#) websites.

**Table 7. Reported Vector Borne disease in Ohio and the United States, 2019**

Disease	OHIO	UNITED STATES	
	2019 (as of 6/8) cumulative	Weeks 1 and 2 (5/26 to 6/8)	2019 (as of 6/8) Cumulative
Babesiosis	2	7	50
Chikungunya	1	0	28
Dengue (includes dengue-like illness)	4	1	132
Eastern equine encephalitis	0	0	0
Erlichiosis / anaplasmosis	23	182	784
Jamestown Canyon virus disease	0	0	0
LaCrosse virus disease	27	0	0
Lyme Disease	298	Not reported weekly by CDC	
Malaria	46	20	418
Powassan virus disease	0	0	0
Spotted fever rickettsiosis	55	67	769
St. Louis encephalitis virus disease	0	0	0
West Nile virus infection	48	0	7
Zika virus infection, non congenital	0	0	2

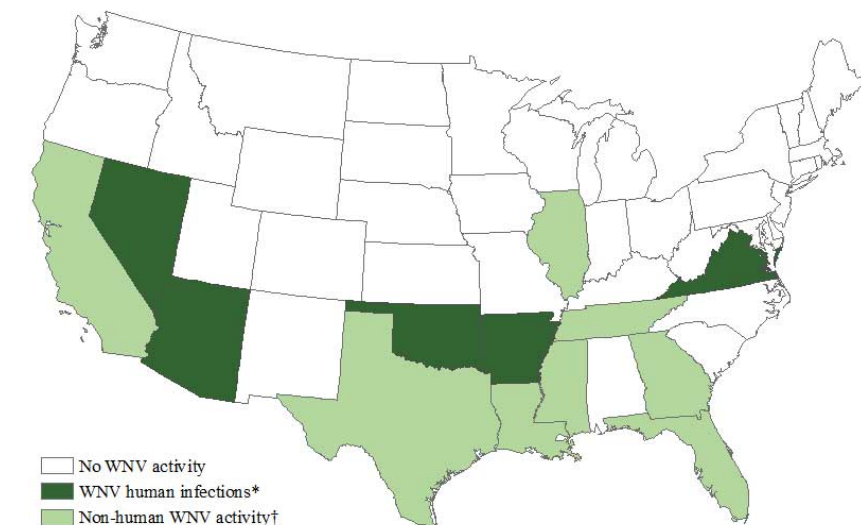
Note: Data is provisional and subject to change

Source: [https://wonder.cdc.gov/nndss/nndss\\_weekly\\_tables\\_menu.asp](https://wonder.cdc.gov/nndss/nndss_weekly_tables_menu.asp)

**Figure 1. West Nile virus activity by state – United States, 2019 (as of June 11, 2019)**

Ohio has not yet reported reported West Nile virus activity in humans or non-humans. Human cases of West Nile virus infection have been reported in Virginia, Arkansas, Oklahoma, Arizona, and Nevada.

Source:



\*WNV human disease cases or presumptive viremic blood donors. Presumptive viremic blood donors have a positive screening test which has not necessarily been confirmed.

†WNV veterinary disease cases, or infections in mosquitoes, birds, or sentinel animals.

<https://www.cdc.gov/westnile/statsmaps/preliminarymapsdata2019/activitybystate2019.html>

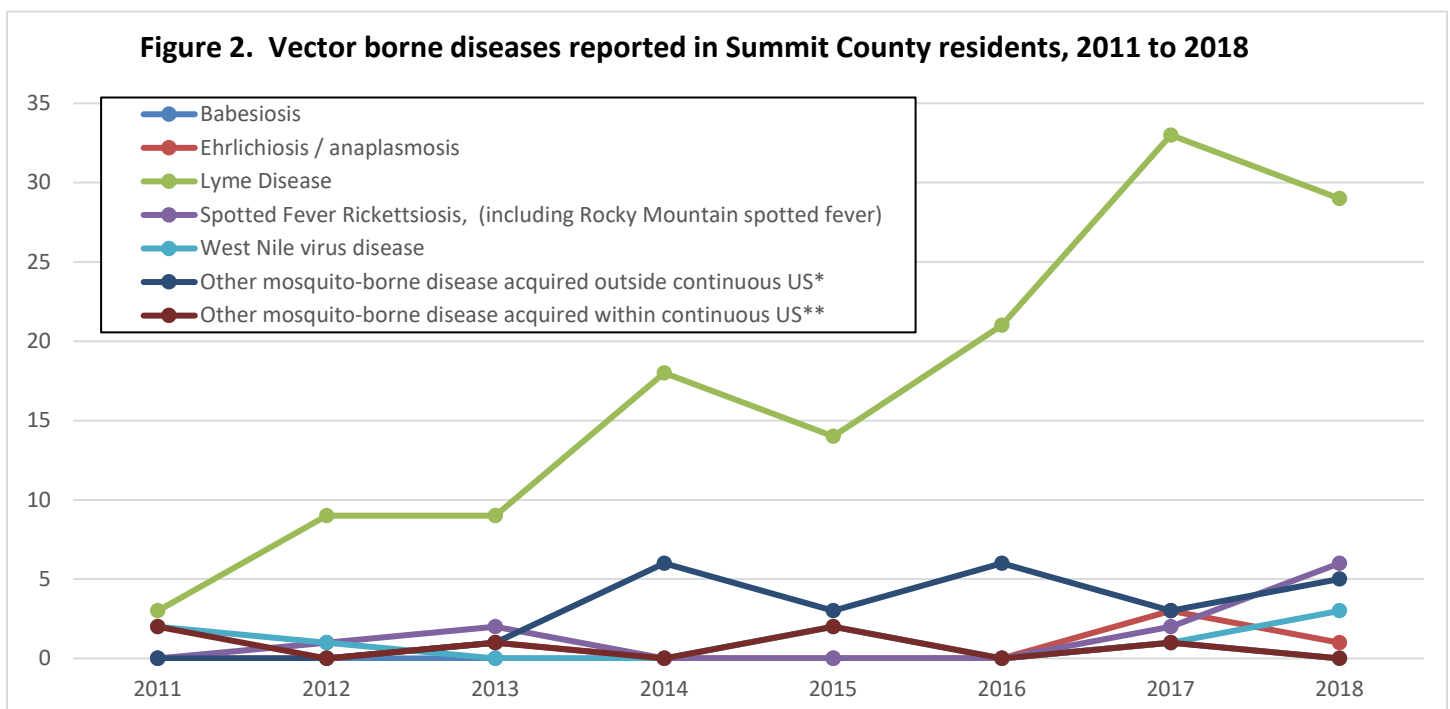
## TRENDS IN VECTOR BORNE DISEASE IN SUMMIT COUNTY, 2011 - 2018

Table 6 provides data on the vector borne disease that were reported in Summit County from 2011 to 2018. As indicated in Table 6 and Figure 1, the number of vector borne disease cases has exhibited an increasing trend. The case total for 2018 was the same as 2017, 44 for both years, and the vast majority of these cases were transmitted by ticks. 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 counties near the Michigan border.

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 epidemic of 2016. The incidence of other vector-borne diseases, including West Nile virus disease and other tick-borne illness have remained consistently low.

	2011	2012	2013	2014	2015	2016	2017	2018
Babesiosis	0	0	0	0	0	0	1	0
Ehrlichiosis / anaplasmosis	0	0	1	0	0	0	3	1
Lyme Disease	3	9	9	18	14	21	33	29
Spotted Fever Rickettsiosis, (including Rocky Mountain spotted fever)	0	1	2	0	0	0	2	6
West Nile virus disease	2	1	0	0	2	0	1	3
Zika virus infection	0	0	0	0	0	4	1	0
Other mosquito-borne disease acquired outside continuous US*	0	0	1	6	3	2	3	5
Other mosquito-borne disease acquired within continuous US**	2	0	1	0	2	0	1	0
<b>Total vector borne disease cases</b>	<b>7</b>	<b>11</b>	<b>14</b>	<b>24</b>	<b>21</b>	<b>27</b>	<b>44</b>	<b>44</b>

Source: Ohio Disease Reporting System (ODRS), confirmed, probable and suspected cases  
 \* Includes imported cases of malaria, dengue and chikungunya  
 \*\* Includes LaCrosse virus disease and St. Louis encephalitis virus disease



Source: Ohio Disease Reporting System

### Find the Repellent that is Right for You

The United States Environmental Protection Agency offers a handy tool to search for the repellent that will be the best choice for your needs. You can specify by:

- mosquitoes, ticks or both;
- protection time;
- active ingredient; or
- other product-specific information.

The repellent search tool is located at this link:

#### Repellent Search Tool

The search tool also give the option to download the entire dataset to PDF format.

Sources: <https://www.epa.gov/insect-repellents/find-repellent-right-you#search%20tool>



### First US human bite from worrying longhorned tick noted



In a report last week, researchers described the first human in the United States known to be bitten by an Asian longhorned tick, a rapidly spreading invasive species that the US Centers for Disease Control and Prevention (CDC) warned about last year.

Though the 66-year-old man did not get sick, scientists know that *Haemaphysalis longicornis* can harbor bacteria that can cause human and animal diseases—possibly including Lyme disease—and an investigation into areas where the man lived found the tick in locations other ticks aren't typically found, which could lead to changes in public health risk messaging.

A team from the CDC, New York, and New Jersey reported the findings on May 31 in *Clinical Infectious Diseases*. The full story is available at the source link below:

Source: <http://www.cidrap.umn.edu/news-perspective/2019/06/first-us-human-bite-worrying-longhorned-tick-noted>

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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 Joan Hall (jhall@sched.org) or Tracy Rodriguez (trodriguez@sched.org), Summit County Public Health Communicable Disease Unit (330-375-2662). This report was issued on **June 14, 2019**.