



# Vector Borne Disease 2018 Surveillance Report

Summit County Public Health



Report Weeks 13 and 14 (August 19 to September 1, 2018)  
CDC/MMWR Weeks 34 and 35

**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: 5/27 to 6/9	5	0	5	0	0.0%
Weeks 3 & 4: 6/10 to 6/23	2	0	7	0	0.0%
Weeks 5 & 6: 6/24 to 7/7	4	0	11	0	0.0%
Weeks 7 & 8: 7/9 to 7/21	6	0	17	0	0.0%
Weeks 9 & 10: 7/22 to 8/4	8	0	25	0	0.0%
Weeks 11 & 12: 8/5 to 8/18	5	0	30	0	0.0%
Weeks 13 & 14: 8/19 to 9/1	11	0	41	0	0.0%
Weeks 15 & 16: 9/2 to 9/15					
Weeks 17 & 18: 9/16 to 9/29					
Weeks 19 & 20: 9/30 to 10/13					
Weeks 21 & 22: 10/14 to 10/27					

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

**West Nile virus testing (Table 1):** During surveillance Weeks 13 and 14, there were 11 tests for West Nile virus (or arbovirus panels) ordered by Summit County hospitals, and all tests had negative results (Table 1).

**Lyme Disease testing (Table 2):** There were 36 diagnostic test series performed for Lyme disease during Weeks 13 and 14, one 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. If the Western blot test result is deemed indeterminate, the Lyme disease diagnosis may be based on the doctor's interpretation of the results and clinical symptoms.

Week(s)	# of Lyme tests ordered this period	# of positive or indeterminate Lyme tests this period	Cumulative # of tests ordered this season	Cumulative # of positive or indeterminate tests this season	% of positive or indeterminate tests
Weeks 1 & 2: 5/27 to 6/9	63	9	63	9	14.3%
Weeks 3 & 4: 6/10 to 6/23	50	3	113	12	10.7%
Weeks 5 & 6: 6/24 to 7/7	60	5	173	17	9.8%
Weeks 7 & 8: 7/9 to 7/21	43	4	216	21	9.7%
Weeks 9 & 10: 7/22 to 8/4	51	2	267	23	8.6%
Weeks 11 & 12: 8/5 to 8/18	34	2	301	25	8.3%
Weeks 13 & 14: 8/19 to 9/1	36	1	337	26	7.7%
Weeks 15 & 16: 9/2 to 9/15					
Weeks 17 & 18: 9/16 to 9/29					
Weeks 19 & 20: 9/30 to 10/13					
Weeks 21 & 22: 10/14 to 10/27					

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 September 1, there were 21 reported cases of Lyme disease, 4 reported cases of Rocky Mountain spotted fever, 1 case of dengue and 3 cases of malaria (dengue and malaria cases were the result of international travel). In Summit County, there were no cases of West Nile virus infection reported, or any other locally transmitted mosquito borne illness.

	Confirmed	Probable/Suspected	Notes
<b>Tick-borne diseases:</b>			
Babesiosis	0	0	
Ehrlichiosis / anaplasmosis	0	0	
Lyme disease	6	15	
Rocky Mountain spotted fever	0	4	
<b>Mosquito-borne diseases:</b>			
Chikungunya	0	0	
Dengue	1	0	Case was imported
Eastern equine encephalitis	0	0	
LaCrosse virus disease	0	0	
Malaria	3	0	All cases were Imported
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. Case counts may updated as case status changes.

**Table 4: Reported aseptic 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 5/26/2018)	6	-
Week 1-2: 5-27 to 6-9	2	2
Week 3-4: 6-10 to 6-23	0	2
Week 5-6: 6-24 to 7-7	2	4
Week 7-8: 7-8 to 7-21	5	9
Week 9-10: 7-22 to 8-4	2	11
Week 11-12: 8-5 to 8-18	2	13
Week 13-14: 8-19 to 9-1	2	15
Week 15-16: 9-2 to 9-15		
Week 17-18: 9-16 to 9-29		
Week 19-20: 9-30 to 10-13		
Week 21-22: 10-14 to 10-27		

Source: Ohio Disease Reporting System (ODRS)

**Reported aseptic meningitis cases (Table 4):** There were two new cases reported during Weeks 13 and 14, bringing the season total case count to 15 and the 2018 total to 21. Aseptic (viral) meningitis is the most common type of meningitis and occurs predominately in the summer and fall. While most aseptic meningitis cases are due to gastrointestinal or respiratory viruses, similar symptoms may be present with arthropod-borne diseases.

**Mosquito testing (Table 5):** Based on the ODH mosquito testing summary released on September 4, 123,751 mosquitoes were collected as 3,325 pooled samples throughout Summit County. 602 of the pooled samples tested positive for West Nile virus so far this season.

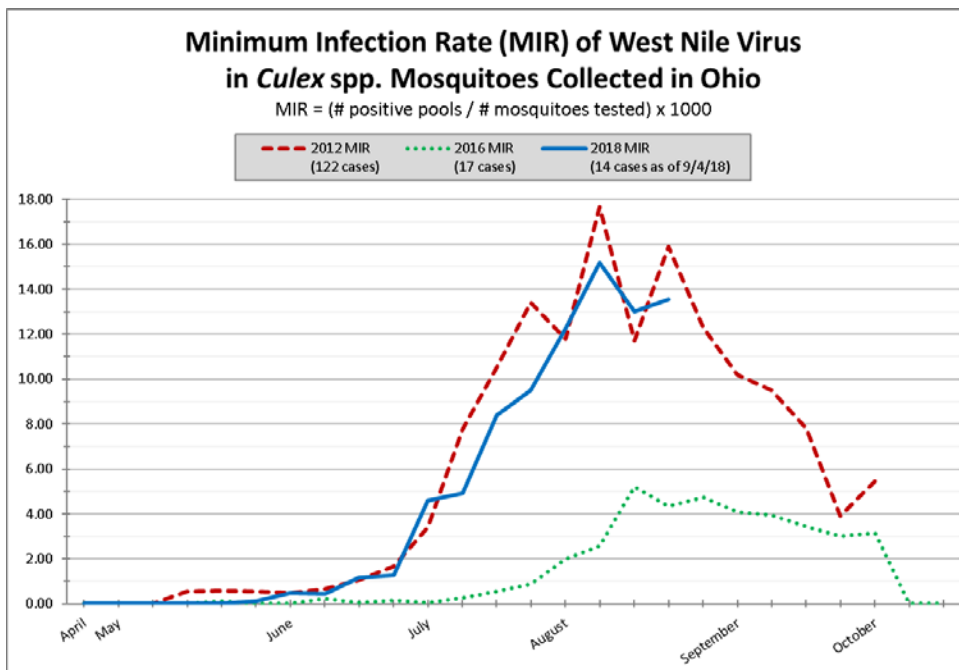
**Table 5. Mosquito testing in Summit County (samples processed by noon on 9/4/2018)**

Mosquitoes submitted and identified	123,751
Pooled samples tested	3,325
Positive WNV pooled samples	602

Note: All mosquitoes tested for WNV were *Culex sp.*

## OHIO ARBOVIRUS SURVEILLANCE

**Figure 1. Ohio West Nile virus activity in 2012, 2016 and 2018 (as of 9/4/2018)**



The minimum infection rate (MIR) functions as an indicator of seasonal West Nile virus (WNV) activity. A high MIR in mosquitoes is commonly associated with higher WNV case counts in humans. In 2012 (an active WNV year), the mosquito MIR in Ohio reached a maximum value of nearly 18.0, with a total of 122 human WNV cases. In 2016, the maximum MIR was approximately 5.0 with a 17 human WNV cases. Last year, the maximum MIR was about 14.0 and there were 34 WNV cases. As of 9/4/2018, the MIR in 2018 continues to remain elevated at levels seen in the higher activity year 2012.

Source: Ohio Department of Health, Zoonotic Disease Program

Ohio Mosquito-borne Disease 2018 Numbers At-A-Glance  
As of September 4, 2018 12:00 pm

West Nile virus (WNV)	Notes
<b>449,572</b> Mosquitoes tested	Collected by 81 agencies in 68 counties, pooled into 14,714 samples
<b>2,592</b> WNV positive mosquito samples	Adams (6), Ashland (4), Ashtabula (5), Athens (19), Belmont (1), Brown (5), Butler (6), Clark (9), Clermont (12), Coshocton (1), Cuyahoga (34), Delaware (5), Fairfield (4), Franklin (958), Geauga (1), Greene (2), Guernsey (2), Hamilton (8), Hancock (11), Henry (12), Hocking (6), Huron (8), Jefferson (2), Lake (77), Licking (68), Lorain (26), Lucas (256), Mahoning (10), Medina (1), Meigs (1), Miami (6), Montgomery (56), Morgan (2), Morrow (7), Noble (1), Ottawa (20), Pickaway (1), Portage (86), Richland (20), Ross (8), Scioto (21), Seneca (16), Stark (64), Summit (602), Trumbull (3), Tuscarawas (29), Union (5), Vinton (1), Warren (42), Washington (13), Williams (5), Wood (22) and Wyandot (2) counties
<b>8</b> WNV veterinary cases	8 equines in Holmes (3), Lorain (2), Medina (1), Stark (1) and Wayne (1) counties, onset of symptoms 08/06/2018-08/25/2018
<b>3</b> WNV asymptomatic viremic blood donors	3 males ranging in age 30-58 years (median 53 years) in Cuyahoga (1) and Franklin (1) counties
<b>14</b> WNV human cases	4 females, 10 males ranging in age 24-85 years (median 60.5 years) in Cuyahoga (1), Erie (1), Franklin (1), Fulton (1), Hamilton (1), Hardin (1), Lake (1), Montgomery (1), Paulding (1), Preble (1), Ross (2), Stark (1) and Wayne (1) counties, onset of symptoms 06/23/2018-08/18/2018
<b>60</b> Ohio counties with WNV activity reported	Includes counties with WNV positive mosquitoes, equine WNV cases, human WNV cases and human WNV asymptomatic viremic blood donors

Other locally-acquired mosquito-borne cases	Notes
<b>11</b> La Crosse human cases	8 females, 3 males ranging in age 3-17 years (median 8 years) in Fairfield (1), Hocking (2), Licking (2), Miami (1), Morgan (1), Morrow (1), Muskingum (1) and Stark (2) counties, onset of symptoms 06/20/2018-08/09/2018
<b>2</b> Unspecified California virus human cases	2 males ranging in age 11-16 years in Franklin (1) and Morrow (1) counties, onset of symptoms 07/06/2018-07/21/2018

Travel-associated mosquito-borne disease cases	Notes
<b>0</b> Chikungunya virus human cases*	
<b>4</b> Dengue human cases*	3 females, 1 male ranging in age 6-45 years (median 28.5 years) with travel to Haiti (2), Mexico (1) and Venezuela (1), onset of symptoms 04/07/2018-08/01/2018
<b>0</b> Zika virus human cases*	
<b>34</b> Malaria human cases	12 females, 22 males ranging in age 9 months-72 years (median 36.5 years) with travel to several African countries and Peru

Source: <https://www.odh.ohio.gov/arboupdate>

**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 6. Reported Vector Borne disease in Ohio, 2018**

Disease	2018 (as of 9/1) cumulative
Babesiosis	0
Chikungunya	0
Dengue (includes dengue-like illness)	4
Eastern equine encephalitis	0
Ehrlichiosis / anaplasmosis	15
LaCrosse virus disease	12
Lyme Disease	304
Malaria	35
Spotted fever rickettsiosis	45
St. Louis encephalitis virus disease	0
West Nile virus infection	11
Zika virus infection, non-congenital	0

Note: Data is provisional and subject to change

Source: Ohio Disease Reporting System (ODRS), MMWR weekly reports

## UNITED STATES SURVEILLANCE

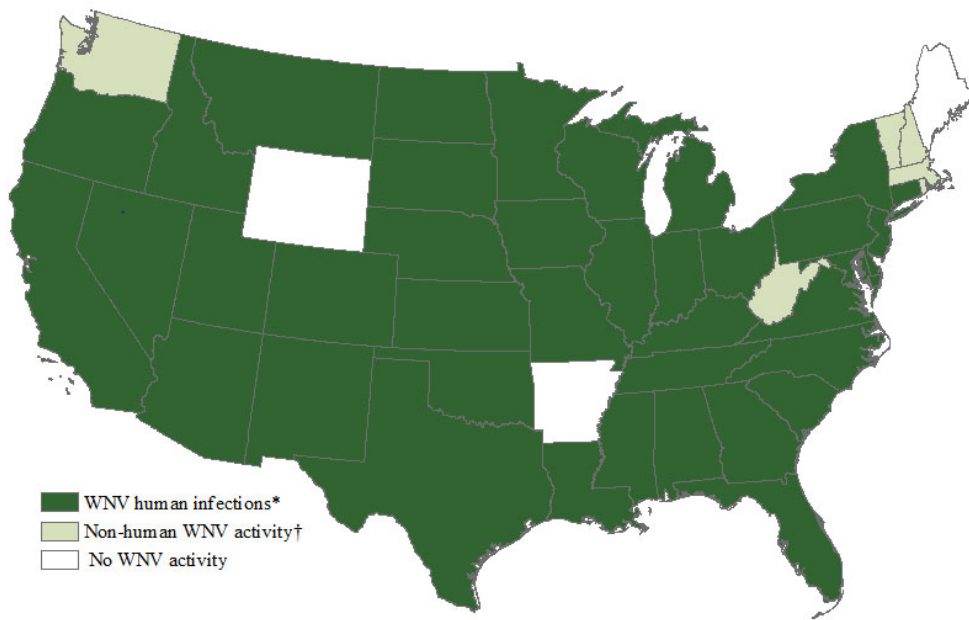
**Table 7. Reported vector borne disease in the United States, 2018**

Disease	Week s 13 & 14 (8/19 to 9/1)	2018 (as of 9/1) Cumulative
Babesiosis	27	1022
Chikungunya	0	45
Dengue (includes dengue-like illness)	0	125
Eastern equine encephalitis	0	3
Ehrlichiosis / anaplasmosis	88	3233
LaCrosse virus disease	0	28
St. Louis encephalitis virus disease	0	1
Malaria	34	823
Spotted fever rickettsiosis	62	3029
West Nile virus infection		
Neuroinvasive	20	319
Non neuroinvasive	4	296
Zika virus infection, non-congenital	0	45

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 2. West Nile virus activity by state – United States, 2018 (as of September 4, 2018)



In addition to Ohio, human WNV cases have been reported in 38 states and the District of Columbia. Five additional states reported non-human WNV activity. Only Wyoming, Maine and Arkansas have not yet reported WNV activity in 2018.

\*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.

Source: <https://www.cdc.gov/westnile/statsmaps/preliminarymapsdata2018/activitybystate2018.html>

**VECTOR BORNE DISEASE NEWS:**

Protect • Check • Remove • Watch
**Ohio.Gov/ Tick**

# BeTICK Smart!

- Wear repellent.
- Check for ticks daily.
- Shower soon after being outdoors.
- Call your doctor if you get a fever or rash following a tick bite.

- 1** Use fine-tipped tweezers to grasp the tick as close to the skin's surface as possible.
- 2** Pull upward with steady, even pressure to remove the tick. Avoid twisting or jerking.
- 3** Clean the bite area and your hands with rubbing alcohol, iodine scrub or soap and water.

The longhorn tick continues its spread in the eastern US, with sightings in Connecticut and Staten Island. With that in mind, *the Ohio Department of Agriculture encourages veterinarians and animal owners to be vigilant and to report the finding of unusual ticks, particularly in large numbers, to the Ohio State Veterinarian office at 614-728-6220 during regular work hours.*

**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@schd.org) or Tracy Rodriguez (trodriguez@schd.org), Summit County Public Health Communicable Disease Unit (330-375-2662). This report was issued on **September 7, 2018.**