



Vector Borne Disease 2020 Surveillance Report

Summit County Public Health



Report Weeks 9 and 10 (July 19 to August 1, 2020)
MMWR Weeks 30 and 31

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: 5/24 to 6/6	3	0	3	0	0.0%
Weeks 3 & 4: 6/7 to 6/20	9	1	12	1	8.3%
Weeks 5 & 6: 6/21 to 7/4	6	0	18	1	5.6%
Weeks 7 & 8: 7/5 to 7/18	7	0	25	1	4.0%
Weeks 9 & 10: 7/19 to 8/1	8	1	33	2	6.1%
Weeks 11 & 12: 8/2 to 8/15					
Weeks 13 & 14: 8/16 to 8/29					
Weeks 15 & 16: 8/30 to 9/12					
Weeks 17 & 18: 9/13 to 9/26					
Weeks 19 & 20: 9/27 to 10/10					
Weeks 21 & 22: 10/11 to 10/24					

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 9 and 10, there were 8 tests for West Nile virus ordered by Summit County hospitals. So far this season, there have been 2 positive results for IgG antibody only for the West Nile virus, which is an indication of immunity due to a past exposure and were not active infections.

Lyme disease testing (Table 2): There were 57 diagnostic test series performed for Lyme disease during Weeks 9 and 10, with 14 positive or indeterminate test results. 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 and the case is confirmed only if the EIA/IFA and the immunoblot are both positive.

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	Percentage of positive or indeterminate tests
Weeks 1 & 2: 5/24 to 6/6	41	5	41	5	12.2%
Weeks 3 & 4: 6/7 to 6/20	48	11	89	16	18.0%
Weeks 5 & 6: 6/21 to 7/4	76	13	165	29	17.6%
Weeks 7 & 8: 7/5 to 7/18	81	21	246	50	20.3%
Weeks 9 & 10: 7/19 to 8/1	57	14	303	64	21.1%
Weeks 11 & 12: 8/2 to 8/15					
Weeks 13 & 14: 8/16 to 8/29					
Weeks 15 & 16: 8/30 to 9/12					
Weeks 17 & 18: 9/13 to 9/26					
Weeks 19 & 20: 9/27 to 10/10					
Weeks 21 & 22: 10/11 to 10/24					

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

Reported Vector-borne diseases in 2020 for Summit County residents (Table 3): As of August 1, there were 22 reported cases of Lyme disease; all were suspected. Also reported were one confirmed case of LaCrosse virus disease, one suspected case of Ehrlichiosis and one suspected case of babesiosis.

	Confirmed	Suspected	Notes
Tick-borne diseases:			
Babesiosis	0	1	
Ehrlichiosis / anaplasmosis	0	1	
Lyme disease	0	22	
Powassan virus disease	0	0	
Rocky Mountain spotted fever	0	0	
Mosquito-borne diseases:			
Chikungunya	0	0	
Dengue	0	0	
Eastern equine encephalitis	0	0	
LaCrosse virus disease	1	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.

Species name	Diseases associated	# identified
Mosquito species		
<i>Aedes albopictus</i>	Chikungunya, dengue fever, yellow fever	0
<i>Aedes triseriatus</i>	La Crosse encephalitis	4
Tick species		
<i>Amblyomma americanum</i>	Ehrlichiosis, tularemia, red meat allergy	1
<i>Dermacentor variabilis</i>	Rocky Mountain spotted fever, tularemia	30
<i>Ixodes scapularis</i>	Lyme disease, babesiosis, anaplasmosis	12

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 5/23/2020)	5	-
Weeks 1 & 2: 5/24 to 6/6	1	1
Weeks 3 & 4: 6/7 to 6/20	0	1
Weeks 5 & 6: 6/21 to 7/4	1	2
Weeks 7 & 8: 7/5 to 7/18	0	2
Weeks 9 & 10: 7/19 to 8/1	2	4
Weeks 11 & 12: 8/2 to 8/15		
Weeks 13 & 14: 8/16 to 8/29		
Weeks 15 & 16: 8/30 to 9/12		
Weeks 17 & 18: 9/13 to 9/26		
Weeks 19 & 20: 9/27 to 10/10		
Weeks 21 & 22: 10/11 to 10/24		
Source: Ohio Disease Reporting System (ODRS)		

Reported aseptic/viral meningitis cases (Table 5): Prior to the reporting season, there were 5 reported cases of aseptic meningitis, and 2 cases were reported during Weeks 9 and 10, increasing the season total to 4. 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 August 4, 3,264 mosquitoes were collected throughout Summit County, and 1,487 *Culex* spp. were combined as pooled samples. Thirty of the pooled samples were tested for West Nile virus, and none were positive for West Nile Virus. Twenty-nine additional pools are pending.

Table 6. Mosquito Testing in Summit County (<i>samples processed by noon on 8/4/2020</i>)	
Mosquitoes identified	3,264
Pooled samples tested	30
Positive WNV pooled samples	0
Note: All mosquitoes pools tested were <i>Culex</i> spp.	

Longhorned tick identified in Ohio (from CIDRAP)

The Ohio Department of Agriculture (ODA) late last week announced that the Asian longhorned tick, a rapidly spreading invasive species, has been found on a stray dog from Gallia County. In a statement, the ODA said the tick was identified on May 28 by The Ohio State University, with findings confirmed by the US Department of Agriculture National Veterinary Services Laboratory in Ames, Iowa. The tick was first identified in New Jersey in 2017. A ProMED Mail post on the Ohio detection said the number of states that have identified longhorned ticks has now reached 13. All but Arkansas are in the eastern United States.



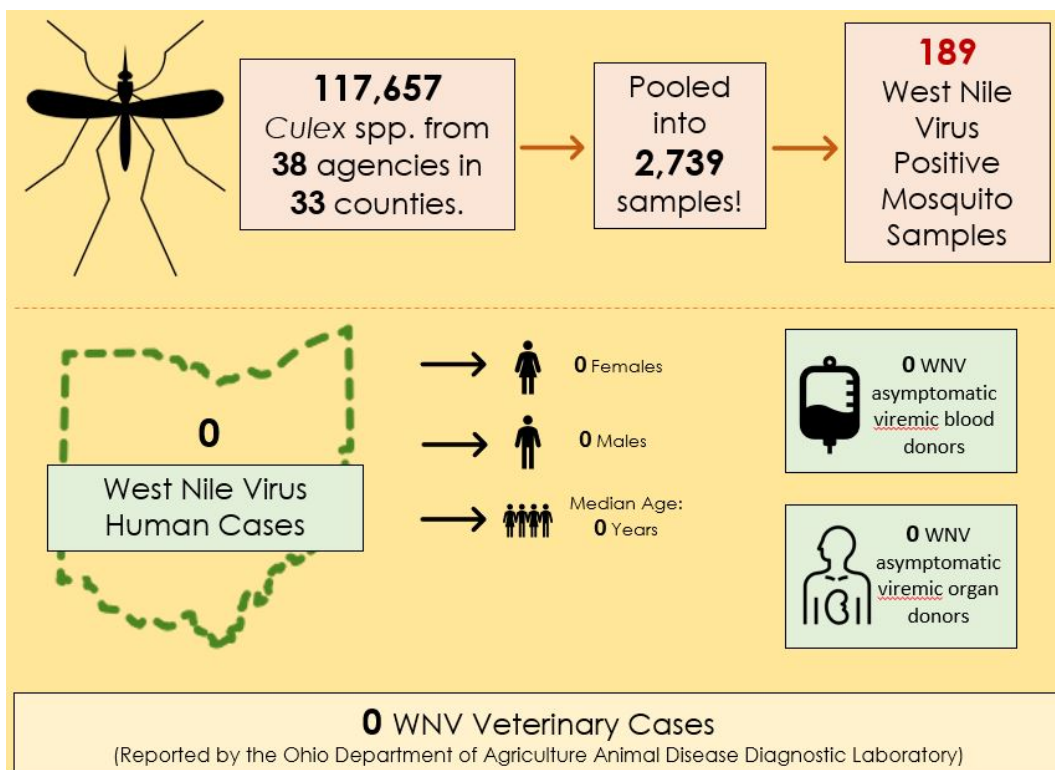
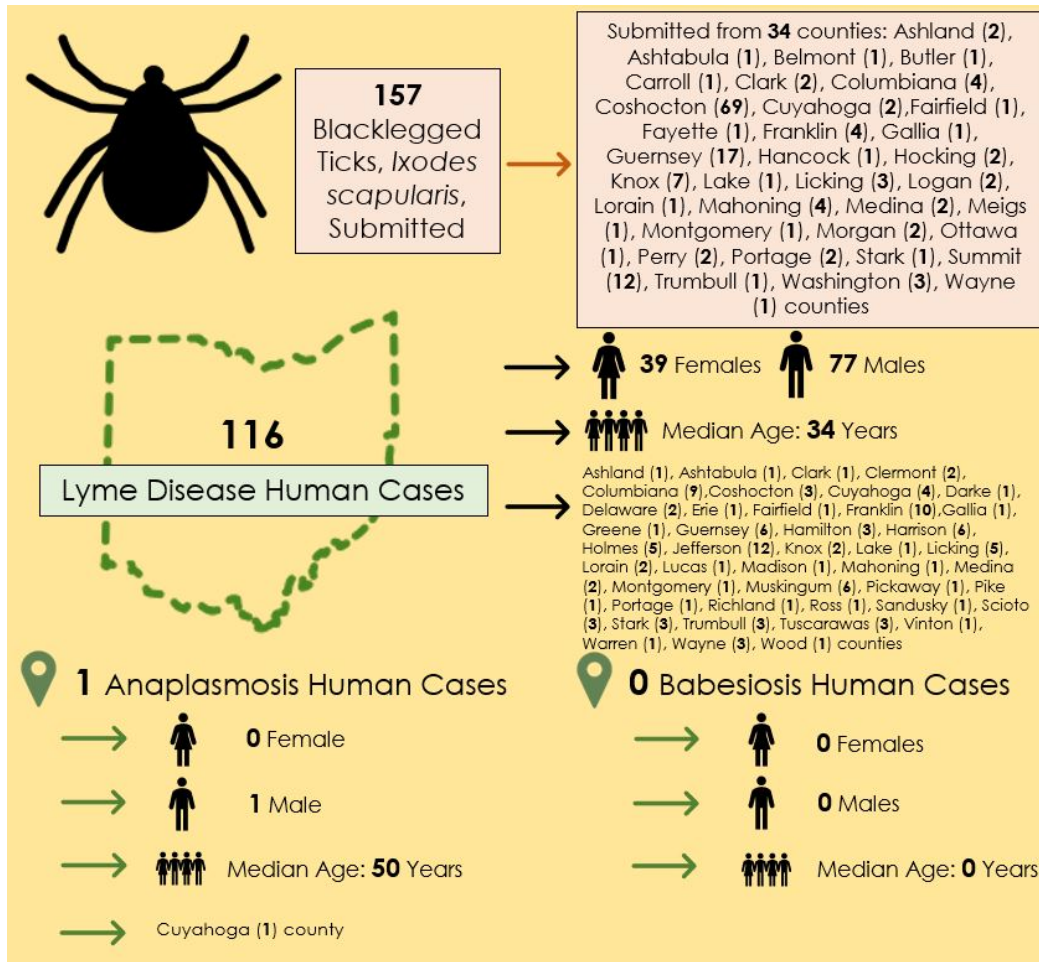
Longhorned ticks haven't been known to sicken people yet in the United States, but they are aggressive biters that are known to carry pathogens that sicken humans and livestock. Researchers last summer described the first known human to have been bitten by a longhorn tick, a man from New York who was likely exposed in his yard and did not become ill. Female *Haemaphysalis longicornis* ticks produce massive offspring without mating. In Australia and New Zealand, infestations from the species have been reported to decrease production in dairy cattle by 25%.

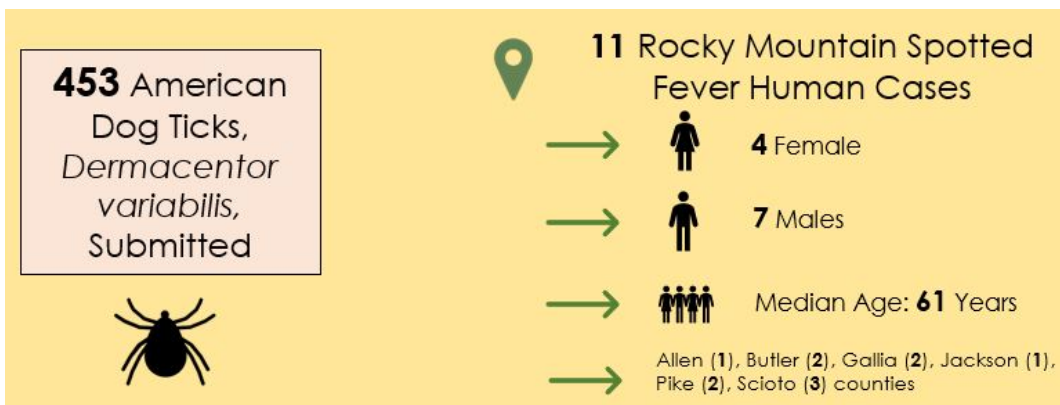
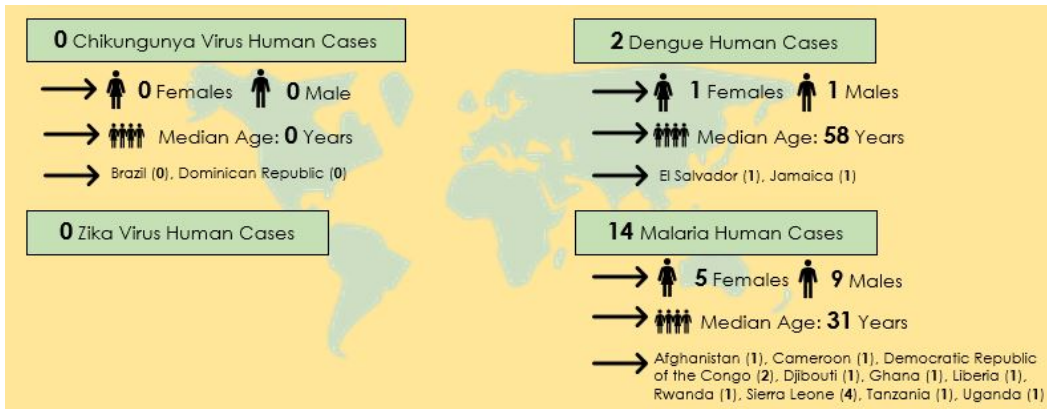
Jul 31 ODA [press release](#)

Aug 2 ProMED Mail [post](#)

Jun 3, 2019, CIDRAP News story "[First US human bite from worrying longhorned tick noted](#)"

OHIO (GRAPHICS AS OF 8/4/2020) AND UNITED STATES SURVEILLANCE





Source: <https://odh.ohio.gov/wps/portal/gov/odh/know-our-programs/zoonotic-disease-program/news-and-events/vectorborne-disease-update>

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.

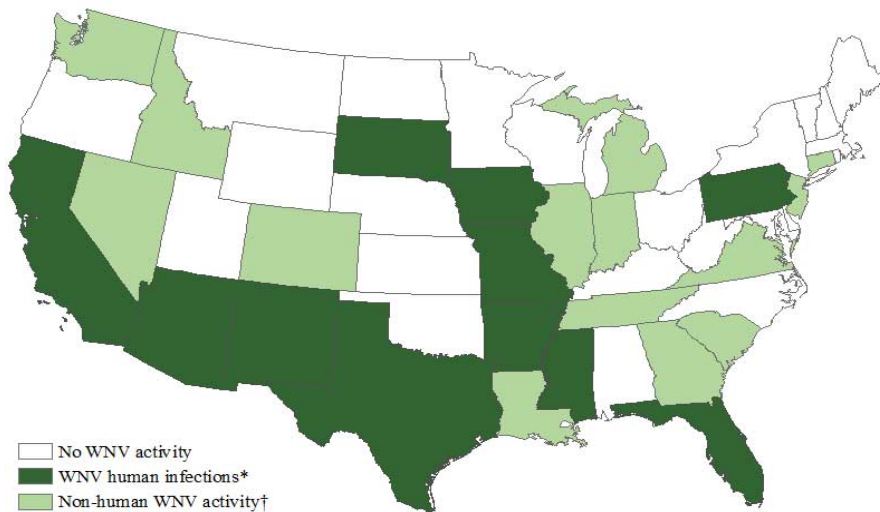
Table 7. Reported Vector Borne disease in Ohio and the United States, 2020

Disease	OHIO	UNITED STATES	
	2020 (as of 7/25) cumulative	Weeks 9 and 10 (7/19 to 8/1)	2020 (as of 8/1) Cumulative
Babesiosis	5	33	469
Chikungunya	1	0	13
Dengue (includes dengue-like illness)	2	8	163
Eastern equine encephalitis	0	0	1
Erlchiosis / anaplasmosis	28	135	2132
Jamestown Canyon virus disease	0	0	2
LaCrosse virus disease	0	0	5
Lyme Disease	650	Not reported weekly by CDC	
Malaria	17	3	250
Powassan virus disease	0	0	4
Spotted fever rickettsiosis	78	Not reported weekly by CDC	
St. Louis encephalitis virus disease	0	0	2
West Nile virus infection	0	2	21
Zika virus infection, non congenital	0	0	1

Note: Data is provisional and subject to change

Source: https://wonder.cdc.gov/nndss/nndss_weekly_tables_menu.asp and Ohio Disease Reporting System (ODRS)

Figure 1. West Nile virus activity by state – United States, 2020 (as of July 28, 2020)



Ohio has not yet reported West Nile virus activity in humans or non-humans. Human cases of West Nile virus infection have been reported in Arizona, Arkansas, California, Florida, Iowa, Mississippi, Missouri, Pennsylvania, South Dakota, New Mexico, and Texas.

*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/preliminarymapsdata2020/activitybystate2020.html>

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 the Summit County Public Health Communicable Disease Unit (330-375-2662). This report was issued on **August 7, 2020**.