

The North Dakota Department of Health (NDDoH) monitors WNV activity in the state through surveillance activities that include reporting and testing sick horses and other animals, trapping and testing mosquitoes, reporting and testing dead birds and monitoring illness in humans.

Dead bird surveillance is an indicator of transmission of WNV and can play a role in predicting human risk of infection. The North Dakota dead bird surveillance for WNV involves collecting reports of dead bird sightings and testing dead birds for WNV.

In North Dakota, approximately 100 mosquito traps are set up each summer, with at least one trap in each county. The traps are emptied each week and mosquitoes are sent to the North Dakota Department of Health's Division of Laboratory Services for counting and identification.

Visit www.ndhealth.gov/wnv to find additional information about WNV in North Dakota.

West Nile virus (WNV) is a mosquito-borne infection that can cause mild flu-like symptoms or severe encephalitis. WNV was first recognized in the U.S. in 1999 in the state of New York. In 2002, North Dakota had its first confirmed human cases of WNV, as well as detectable virus through laboratory testing in birds, horses and mosquitoes. Since 2002, there have been human cases of WNV in North Dakota every year.

On June 1, 2013, the North Dakota Department of Health (NDDoH) West Nile virus (WNV) surveillance program initiated its eleventh season of human arboviral surveillance. In 2013, the Division of Laboratory Services conducted WNV testing on 854 human samples. One hundred twenty-seven positive human cases were identified (Figure 1).

Of the 127 reported cases, 61 (48%) met the case definition of West Nile encephalitis/meningitis, with the remaining 66 (52%) cases classified as West Nile fever. Forty-five of the 127 cases were hospitalized. Two cases were fatal. In addition to the 127 cases, 15 asymptomatic North Dakota blood donors with WNV were reported to the NDDoH in 2013.

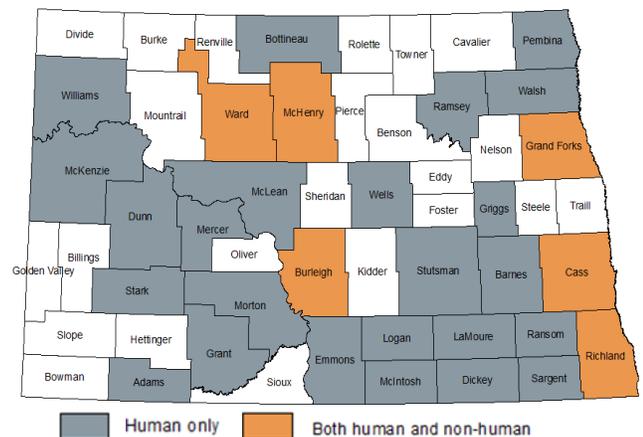
Table 1. Human WNV Cases by Age Group, North Dakota, 2013

Age Group	Cases
Age <10	0
Ages 10-19	7
Ages 20-29	11
Ages 30-39	20
Ages 40-49	18
Ages 50-59	31
Ages 60 and older	40

In 2013, 48 of the reported human WNV cases were female and 79 were male. Of the 127 reported cases, 71 (56%) were age 50 or older (Table 1). Although WNV can affect all age groups, those older than 50 have an increased risk of developing more severe disease.

The North Dakota Veterinary Diagnostic Laboratory (NDVDL) tested 18 horses for WNV infection. Of the 18 samples submitted, 1 (3%) tested positive for WNV from Richland County. In addition, two cows, one from Burleigh County and one from McHenry County, and one dog from Grand Forks County tested positive for WNV. (Figure 1).

Figure 1. WNV Human and Non-human Activity by County, North Dakota, 2013.



In 2013, dead bird collection focused on birds from the corvid and raptor families. The corvid family includes crows, blue jays, magpies and ravens. The raptor family includes birds of prey such as hawks, eagles, falcons and owls. Twenty-one dead birds were collected and tested for WNV. Of those, 11 tested positive from the following counties: Burleigh County (1), Cass County (2), Grand Forks County (6) and Ward County (2).

Statewide mosquito monitoring was conducted weekly from June through August using 75 New Jersey light traps stationed around the state. Female *Culex tarsalis* counts peaked the second week in July (**Figure 2**).

Culex tarsalis is the mosquito that transmits WNV and typically reaches its peak numbers at the end of July or beginning of August. Increases in the number of *Culex tarsalis* pose a higher risk for human WNV infection.

Figure 2. Total Number of Mosquitoes and Female *Culex tarsalis* Mosquitoes from surveillance traps, North Dakota, 2013.

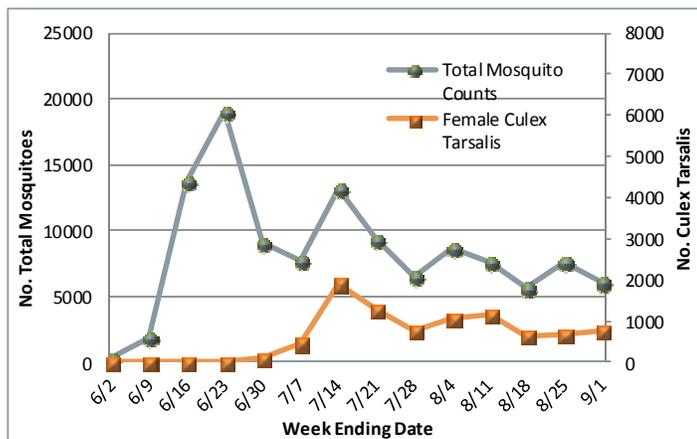


Table 2. Number of WNV Cases Per County, North Dakota, 2013.

County	Human	Horse	Bird	Other Vet
Adams	1			
Barnes	3			
Benson				
Billings				
Bottineau	2			
Bowman				
Burke				
Burleigh	23		1	1
Cass	17		2	
Cavalier				
Dickey	3			
Divide				
Dunn	2			
Eddy				
Emmons	2			
Foster				
Golden Valley				
Grand Forks	3		6	1
Grant	3			
Griggs	1			
Hettinger				
Kidder				
LaMoure	3			
Logan	1			
McHenry	2			1
McIntosh	1			
McKenzie	2			
McLean	8			
Mercer	5			
Morton	3			
Mountrail				
Nelson				
Oliver				
Pembina	1			
Pierce				
Ramsey	2			
Ransom	3			
Renville				
Richland	10	1		
Rolette				
Sargent	3			
Sheridan				
Sioux				
Slope				
Stark	6			
Steele				
Stutsman	7			
Towner				
Traill				
Walsh	2			
Ward	5		2	
Wells	2			
Williams	1			

West Nile Virus in the United States

In 2013, 2,374 human cases of WNV were reported in 46 states, and the District of Columbia (**Figure 3**). Of the 2,374 reported cases, 1,205 (51%) met the case definition of West Nile encephalitis/meningitis, with the remaining 1,169 (49%) cases classified as West Nile fever. Additionally, there were 114 WNV deaths reported from 30 states.

Figure 3. WNV Activity Reported by County, United States, 2013.

