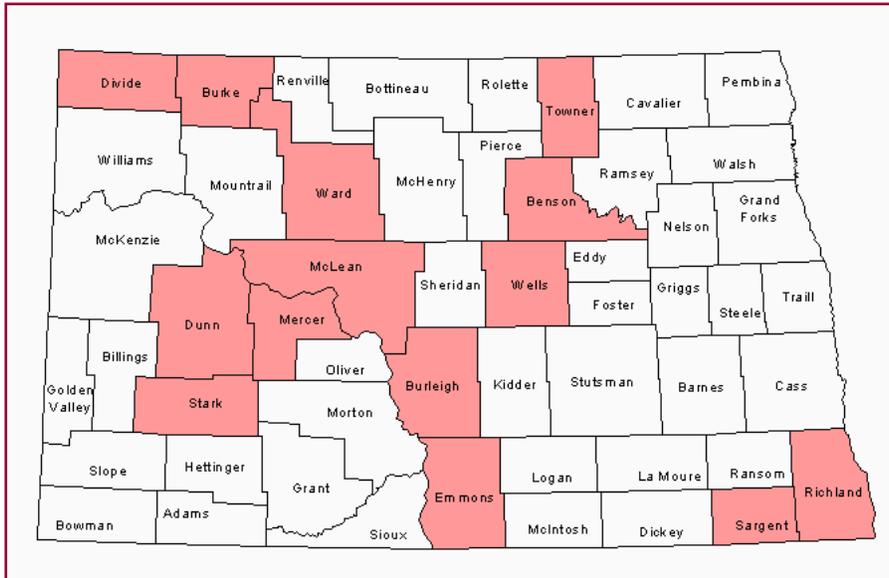


2004 West Nile Virus Summary

On June 1, 2004 the NDDoH West Nile virus (WNV) surveillance program initiated its third season of human arboviral encephalitis surveillance. In 2004, the Division of Microbiology conducted WNV testing on 1,224 human samples. Twenty positive human cases from 14 counties were identified (Figure 1).

Figure 1. WNV-Positive Human Cases by County* of Residence, North Dakota, 2004



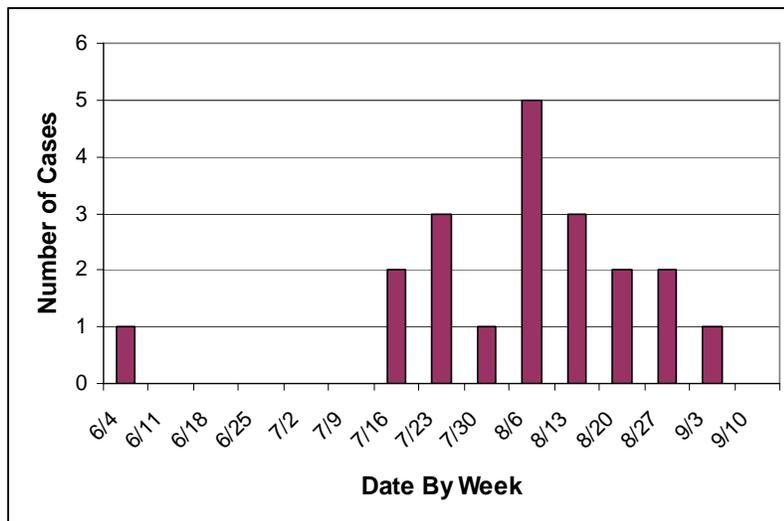
* Counties with WNV cases in red

In 2004, follow-up interviews were conducted only with hospitalized patients. Of the 20 reported cases, 2 (10%) met the case definition of West Nile encephalitis, with the remainder (18 cases or 90%) classified as West Nile fever. Two cases, one associated with West Nile encephalitis and the other with West Nile fever, were fatal.

The peak of illness onset occurred during the week

ending Aug. 6, 2004 (Figure 2). This peak was about three weeks earlier than in 2003 when the peak illness occurred during the week ending August 31st.

Figure 2. West Nile Cases by Date of Onset, North Dakota, 2004



In 2004, one asymptomatic blood donor was identified with WNV compared to 50 blood donors identified in 2003.

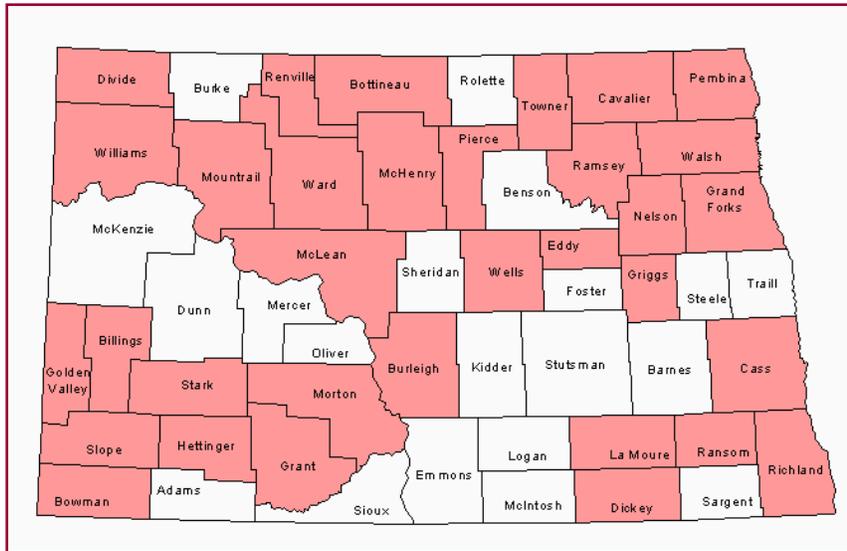
The North Dakota State University Veterinary Diagnostic Laboratory (ND-VDL) tested 75 horses for WNV infection. Of the 75 samples submitted, no horses tested positive for WNV.

Five hundred and thirty-two birds were collected and sent to the ND-VDL for WNV testing. Of those, 67 specimens tested positive. An additional 617 live bird serums were sent to the ND-VDL

for WNV testing. Of those, 36 birds were identified as positive for WNV. Birds also were collected during the hunting season and tested for WNV. Fifty-five hunter-harvested birds were sent to the ND-VDL for

testing with two identified as WNV-positive. A total of 105 birds, representing 16 species (Table 1) and collected in 33 counties tested positive for WNV (Figure 3).

Figure 3. WNV-Positive* Avian Cases by County[‡] of Submission, North Dakota, 2004



*Positive birds include dead birds, live serum sampling and hunter harvested.

[‡]Counties with WNV cases in red.

Statewide mosquito monitoring was enhanced during the 2004 summer with the New Jersey Trap Network expanding to 100 trapping sites. Live trapping of mosquitoes was established at 30 separate sites throughout the state and was conducted weekly from July 1, 2004, until Sept. 30, 2004. During this time, 139 mosquito pools were tested for WNV, with

no pools yielding positive results. Additional mosquito testing was conducted by the Minot Air Force Base where two positive *Culex tarsalis* pools were identified (See Table 2 for county specific data).

Table 1. WNV-Positive Bird Species, 2004

North Dakota Bird Species	# WNV-Positive	North Dakota Bird Species	# WNV-Positive
American Robin	6	Finch	4
Barn Owl	1	Grackle	3
Barn Swallow	1	House Sparrow	16
Blackbirds	3	House Swallow	3
Blue & Gold	1	Mourning Dove	17
Blue Jay	4	Northern Flicker	1
Cliff Swallow	15	Pigeon	4
Common Canary	1	Sparrow	10
Cormorant	1	Starling	1
Cornidea	1	Turkey	2
Crow	9	Woodpecker	1

Table 2. Number of WNV Cases Per County, North Dakota, 2004

County	Human	Horse	Bird	Mosquito Pools
Adams				
Barnes				
Benson	1			
Billings			2	
Bottineau			1	
Bowman			1	
Burke	1			
Burleigh	3		8	
Cass			18	
Cavalier			1	
Dickey			1	
Divide	1		1	
Dunn	1			
Eddy			1	
Emmons	1			
Foster				
Golden Valley			8	
Grand Forks			3	
Grant			4	
Griggs			2	
Hettinger			3	
Kidder				
LaMoure			2	
Logan				
McHenry			7	
McIntosh				

County	Human	Horse	Bird	Mosquito Pools
McKenzie				
McLean	1		1	
Mercer	3			
Morton			3	
Mountrail			1	
Nelson			1	
Oliver				
Pembina			5	
Pierce			2	
Ramsey			1	
Ransom			1	
Renville			1	
Richland	1		3	
Rolette				
Sargent	1			
Sheridan				
Sioux				
Slope			3	
Stark	2		3	
Steele				
Stutsman				
Towner	1		1	
Trail				
Walsh			2	
Ward	2		8	2
Wells	1		3	
Williams			1	