

# VECTOR BORNE AND ZOO NOTIC DISEASES

## NORTH DAKOTA

*Michelle Feist*

*North Dakota Department of Health*

*Division of Disease Control*

*[mafeist@nd.gov](mailto:mafeist@nd.gov)*



NORTH DAKOTA  
DEPARTMENT of HEALTH

# HANTAVIRUS

- Retrospective
  - 1978 one case
  - 1982 two cases
- 1993 two cases
- 2000 two cases
- 2006 two cases

# LYME DISEASE

- 1996-2006
  - ✦ 16 cases
- Most recent in 2006
- Associated with out of state travel

# ROCKY MT. SPOTTED FEVER

- Past 10 years (1996-2006)
  - ✦ Four cases
- Most recent
  - ✦ 2005

# TULAREMIA

- Past 10 years (1996-2006)
  - ✦ Seven cases
- Most recent
  - ✦ 2006

# RABIES

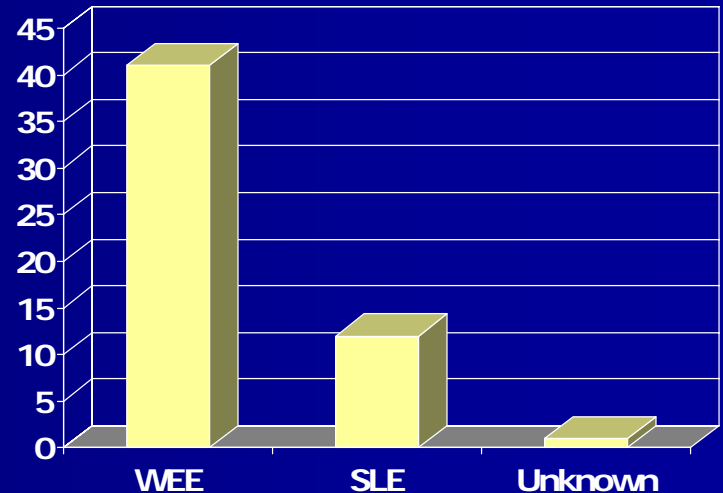
- 33 cases in 2006
  - ◆ Average 50-75 cases\year

SPECIES	# CASES
Bat	1
Cat	5
Cow	5
Dog	4
Skunks	18

# ENCEPHALITIS

# WEE and SLE

- 1975 outbreak
  - + 54 cases
- 41 WEE
- 12 SLE
- 1 Unknown Etiology





# WEE and SLE

	WEE	SLE
1976	0	4
1977	3	0
1986	0	1
1987	2	1
1991	1	0

# WEST NILE VIRUS

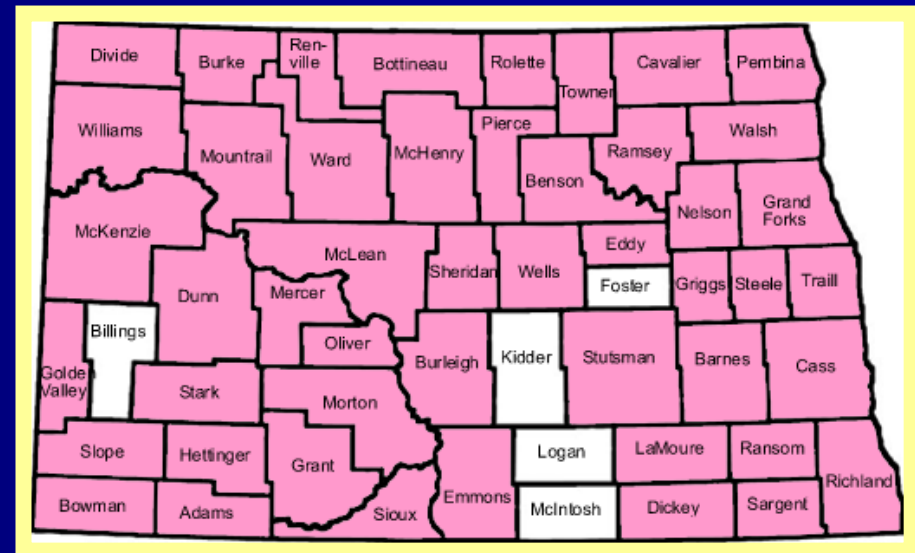


# HUMAN CASES

■ 2007

✦ 2,220 samples tested

✦ 369 positive



# WNV

- Of 369 reported cases
  - ◆ 49 (13%) encephalitis
  - ◆ 320 (87%) WNF
- 22 asymptomatic blood donors identified
  - ◆ 2 symptomatic blood donors
- Three deaths reported

# 2007 WNV SUMMARY

**Total Cases: 369**

**Age Information:**

**Gender:**

**Female 154**

**Male 215**

**Hospitalized: 86**

**Active Counties: 48**

**Range**

**Cases**

**<10**

**7**

**10-19**

**36**

**20-29**

**32**

**30-39**

**59**

**40-49**

**74**

**50-59**

**94**

**60 +**

**67**

# SURVEILLANCE

- Dead bird testing
  - ◆ 10 positive (18 tested)
- Sentinel Chickens
  - ◆ 5 positive serums (314 tested)
- Horses
  - ◆ 4 positive (18 tested)
- Mosquito
  - ◆ 7 positive pools (73 tested)

# PREVENTION

- Mosquito control
  - ✦ Coordinated by LPHU
- Community intervention
  - ✦ Insect repellent distribution
    - e.g. McQuaid, Int'l Pow-Wow
- Public education
  - ✦ Brochures\Posters

Mosquitoes become carriers of West Nile virus when they feed on birds that are already sick. Mosquitoes then can give West Nile to other birds, humans and horses.



### SHOULD I REPORT DEAD BIRDS?

Help watch for West Nile virus by reporting dead birds online at [www.ndwnv.com](http://www.ndwnv.com).

Certain birds can be tested for West Nile. Check with your local health unit, Indian Health Service sanitarian, local veterinarian, county extension agent or vector control office for bird testing criteria.

Vaccinate your horses.  
Foals too!! Contact your  
local veterinarian.



### FOR MORE INFORMATION ABOUT WEST NILE VIRUS:

Contact your state or local health  
department.

Additional information can be found at  
[www.ndwnv.com](http://www.ndwnv.com)  
or by calling the North Dakota  
Department of Health at 800.472.2180.



**NORTH DAKOTA**  
DEPARTMENT of HEALTH

Revised 7/2005



**JOIN THE  
SWAT TEAM  
AND**

**SURVIVE  
WEST NILE VIRUS**







**JOIN THE**  
**SWAT TEAM**  
**AND** **SURVIVE**  
**WEST NILE VIRUS**

- ✦ Wear light-colored, long pants and long-sleeved shirts.
- ✦ Stay indoors during the evening and early morning hours when mosquitoes are most active.
- ✦ Keep the grass and shrubbery cut short.
- ✦ Use an insect repellent containing DEET, picaridin, oil of lemon eucalyptus or permethrin. Always follow the directions on the label.
- ✦ Empty water from buckets, tarps, wading pools, troughs and potted-plant trays every four to five days.

**FOR MORE INFORMATION  
ABOUT WEST NILE VIRUS:**

Contact your state or local health department.

Additional information can be found at:

[www.ndwanr.com](http://www.ndwanr.com)  
or by calling the North Dakota  
Department of Health at  
800.472.2190.





Standing Rock  
Reservation

# West Nile Virus



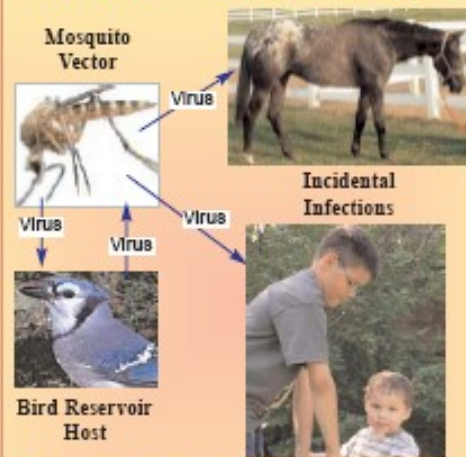
Spirit Lake  
Reservation

# West Nile Virus

NORTH DAKOTA  
DEPARTMENT of HEALTH

Mosquitoes transmit West Nile virus. Mosquitoes become infected when they feed on infected birds. The mosquito can then transmit the virus to other birds, humans or horses.

### *West Nile Virus Transmission Cycle*



### **SHOULD I REPORT DEAD BIRDS?**

Help monitor for West Nile virus by reporting dead birds to your local IHS sanitarian.

Birds must be tested within 48 hours of death. The presence of fly larvae (maggots) is a sign that the bird has been dead too long to be tested.

Vaccinate your horse(s). Foals too!! Contact your local veterinarian.



### **FOR MORE INFORMATION ABOUT WEST NILE VIRUS**

You can contact Mary Fredricks at 701.627.4701 or your health-care provider.

Additional information can be found at:

[www.ndwnv.com](http://www.ndwnv.com)

or by calling the North Dakota Department of Health at 800.472.2180.

Adapted with permission from the Cheyenne River Sioux Tribe Environmental Health



**Fort Berthold  
Reservation**

# **West Nile Virus**



**NORTH DAKOTA**  
DEPARTMENT OF HEALTH



## WHAT IS WEST NILE VIRUS?

West Nile virus is transmitted by mosquitoes and primarily affects birds. In humans, it may range from a mild flu-like illness to encephalitis (inflammation of the brain).

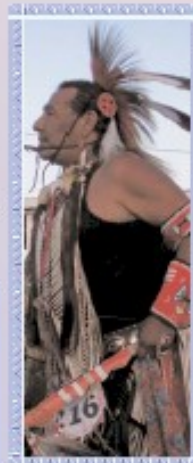


In North Dakota in 2003, a total of 617 people had West Nile virus and 5 died. Of those 617 people, 167 needed to be hospitalized. One hundred and six out of the 167 hospitalized were age 50 or older.

## PROTECT YOURSELF AND YOUR FAMILY FROM MOSQUITO BITES!

- ✦ Wear light-colored, long pants and long-sleeved shirts.
- ✦ Stay inside or in a screened-in area at sundown and sunset when mosquitoes are most active.
- ✦ Use insect repellent products with no more than 30 percent DEET for adults and children. Follow the directions on the label.
- ✦ Only adults should apply repellent on children.
- ✦ Use yellow "bug lights" for outdoor lighting.
- ✦ Install or repair screens on windows and doors.

**You can still enjoy pow-wows and other outdoor activities. Just take proper precautions.**



## CONTROL MOSQUITO BREEDING!

Mosquitoes can breed in a small amount of standing water in just a few days. Here are ways to help reduce mosquito breeding around your home.

- ✦ Turn over boats, wheelbarrows and other water-holding items or store them where they will not collect water.
- ✦ Empty water from buckets, tarps, wading pools, troughs and potted-plant trays every four to five days.
- ✦ Remove old tires from your yard. For more information call the Department of Solid Waste at 701.627.4382.
- ✦ Clean roof gutters and downspout screens.
- ✦ Keep grass cut short.
- ✦ Cover trash cans to keep out rainwater or drill holes in the bottom.



# Acknowledgements

- North Dakota Department of Health
  - NDDoH Division of Microbiology
  - NDSU Veterinary Diagnostic Laboratory
  - Local Public Health Units
  - North Dakota Board of Animal Health
  - North Dakota City and County Vector Control Agencies
  - Volunteer Mosquito Trap Operators
  - North Dakota Environmental Health Practitioners
  - North Dakota County Extension Agents
  - Indian Health Services
  - USDA Wildlife Services
  - Local Veterinarians
  - North Dakota Game and Fish
  - U.S. Fish and Wildlife Services
  - North Dakota Zoo Personnel
- North Dakota City and County Auditors
- North Dakota Parks and Recreation Department
- Tribal Health
- North Dakota Healthcare Professionals
- North Dakota Air Force Bases
- Department of Emergency Management
- Emergency Preparedness and Response Coordinators
- NDSU Extension Veterinarian and Staff
- North Dakota Bird Watchers Clubs
- Theodore Roosevelt National Park
- North Dakota Colleges and Universities
- Army Corps of Engineers
- Turtle Mountain Community College
- Highway Patrol, Local Police Units and Sheriff's Departments