

# Vector Control

CASS COUNTY GOVERNMENT

Special points of interest:

- *A vector is an organism capable of carrying disease from one host to another*
- *Vector Control employees applied 33,146 pounds of product to standing water this season*
- *There are over 4,000 areas mapped in Cass County that hold water long enough to be mosquito habitat*
- *Mosquitoes go from egg to adult in about 10 days*
- *The life span of a mosquito can be up to 6 months*
- *Mosquitoes kill more people than any other organism on Earth*
- *1-3 million people die each year from Malaria*

Important Dates:

*February 23, 2009  
Applications for summer employment available at:  
[www.casscountynd.gov](http://www.casscountynd.gov)*

*March 13, 2009  
Application deadline*

*May 18, 2009  
Seasonal employees begin work  
(late start is available)*

Links for more information:

[www.mosquito.org](http://www.mosquito.org)

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

## Mosquito Control in Cass County

Cass County Vector Control was established in 1988. The program was combined with Weed Control under the same Director until 2004, soon after West Nile Virus (WNV) became a threat in North Dakota. The WNV epidemic led to Cass County increasing control efforts in order to protect citizens from mosquito borne illnesses.

Cass County employees three individuals full time: the Vector Control Director, Vector Supervisor, and an Equipment Technician. The Director is responsible for maintaining the budget, providing training and guidance to employees, media relations, public information and education. The Vector Supervisor is responsible for mapping of mosquito breeding areas, supervision of seasonal field crews, and maintaining a historical record of mosquito activity in Cass County. The Equipment Technician completes all maintenance on 21 trucks, 3 ATV's, 2 utility vehicles, 20 backpack sprayers, two backpack foggers, and 20 foggers used in city wide spraying.

Cass County has 35 seasonal mosquito control positions. Seasonal employees spend the majority of their time outdoors working individually or paired

performing a variety of different tasks.

Mosquitoes in North Dakota are responsible for the spread of dog heartworm, West Nile Virus, Western Equine Encephalitis, and St. Louis Encephalitis. There are 45 known species of mosquitoes in North Dakota. In Cass County we focus on three species as disease vectors. 33 traps throughout the county are collected from May to September.

The mosquitoes are sorted and identified, letting us know where to focus control efforts. 90% of the work performed by Vector Control employees involves the treatment of standing water.

Employees apply environmentally friendly pesticides to water to target immature mosquito larvae. 10% of the effort is spent spraying adult mosquitoes with backpacks or truck mounted sprayers.



## Vector Control as a Career

Mosquito control programs exist in every state in the US, and many countries throughout the world.

The majority of positions available in the United States are seasonal summer positions, which are attractive to students and teachers that are looking for active, summer employment.

Research positions are available to test efficacy of current products as well as creating new control methods. Research is also conducted to study disease vectors, their habitat, and distribution.

Full time administrative positions can include program planning, public education, and GIS mapping.

States with warmer climates such as California, Texas, and Florida offer year round field positions.

Travel opportunities to Latin America and Africa are available through the World Health Organization and Center for Disease Control and Prevention.

Environmental Health Practitioners work for public health units and track local disease activity.

Epidemiologists for the ND Department of Health investigate disease activity on a state-wide level, and help to prepare for future epidemics.

Sales of both biological and synthetic insecticides and herbicides. These positions offer frequent travel around the country.

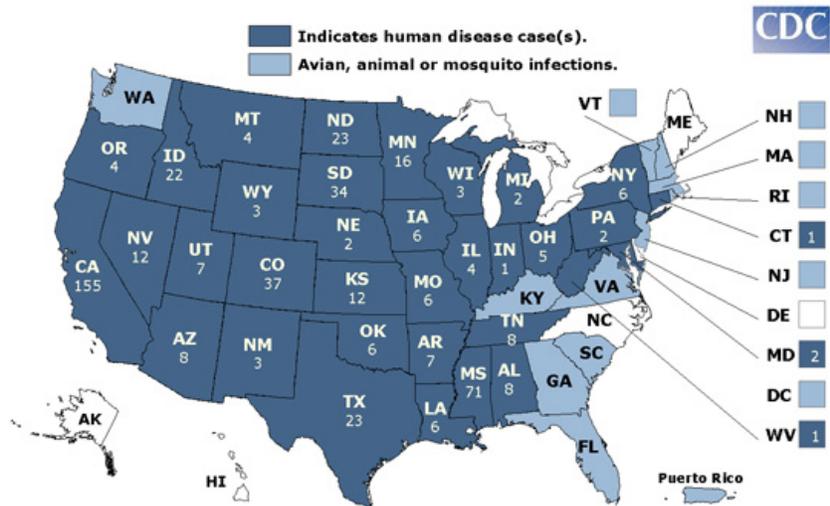
The ND State Surveillance Program employs a small group to identify and test mosquito samples in Bismarck.

## West Nile Virus

West Nile Virus (WNV) was first discovered in the United States in 1999. Since that time, it has spread across the country affecting humans, birds, horses, and many other woodland animals.

The disease is spread so quickly because it is carried by birds and transferred from birds to humans by mosquitoes.

North Dakota had its first reported human cases of WNV in 2002. The prevalence of disease carrying mosquitoes can change each year depending on precipitation and temperature.



## History of WNV in North Dakota

- 2002: 17 humans, 569 horses, 65 birds, 1 mosquito pool
- 2003: 617 humans, 41 horses, 168 birds, 11 mosquito pools
- 2004: 20 humans, 0 horses, 67 birds, 2 mosquito pools, 36 live wild birds serums
- 2005: 86 humans, 4 horses, 16 dead birds, 4 mosquito pools, 24 sentinel chickens
- 2006: 137 humans, 4 horses, 10 dead birds, 4 mosquito pools, 36 sentinel chickens
- 2007: 369 humans, 4 horses, 10 dead birds, 7 mosquito pools, 5 sentinel chickens
- 2008: 36 humans, 4 dogs (as of 09/16/08)

## Fun Mosquito Facts

- An adult mosquito can live as long as 5 months. It may take several months for a larva to develop to the adult stage in cold water. Eggs of floodwater mosquitoes may remain dormant for several years, and hatch when they are covered with water.
- An adult female mosquito weighs only about 1/15,000 ounce (about 2.0 milligrams).
- An adult female mosquito consumes about 5-millionths of a liter in a single blood meal.
- A mosquito wing beats from 300 to 600 times per second.
- Male mosquitoes find female mosquitoes by listening to the sound of their wings beating.
- The males can actually identify the correct species by the pitch of the female's wings.
- Mosquitoes can fly about 1 to 1.5 miles per hour.
- Most mosquitoes do not fly very far from their larval habitat, but the salt marsh mosquito migrates 75 to 100 miles over the course of its life.

A mosquito can smell the carbon dioxide you exhale from about 60 to 75 feet away. Some people are more attractive to mosquitoes than others. It is not clear why, but probably has something to do with the 300 odd chemicals produced by the skin.