

MOSQUITO CONTROL

DOG HEARTWORM



Mosquitoes are one of our biggest summer pests in the Red River Valley. These pests have the ability to infect both the human population and our pets with fatal diseases. Every year in North Dakota and Minnesota, dogs become ill or die from heartworm disease. Heartworm disease, caused by a filarial nematode (a thread-like round worm) is transmitted by mosquitoes. Once transmitted into the bloodstream of a dog, the microscopic organisms grow into large worms which accumulate in the heart and lead to heart failure. Left untreated, this is fatal; however, heartworm infection is preventable. Several products are available to prevent dogs and cats from contracting this disease. These medications are available from local veterinarian.

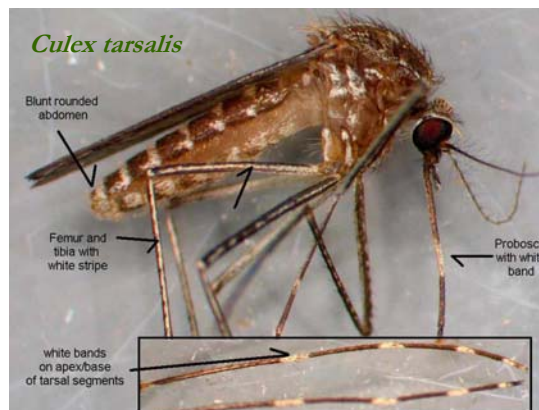
Symptoms of West Nile Virus

Serious Symptoms in a Few People. About one in 150 people infected with West Nile Virus will develop severe illness. The severe symptoms can include high fever, headache, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, vision loss, numbness, and paralysis. These symptoms may last several weeks, and neurological effects may be permanent.

Milder Symptoms in Some People. Up to 20 percent of the people who become infected will display symptoms which can include fever, headache, body aches, nausea, vomiting, and sometimes swollen lymph glands or a skin rash on the chest, stomach, and back. Symptoms can last for as short as a few days, though even healthy people have been sick for several weeks.

Mild Or No Symptoms in Most People. Approximately 80 percent of people (about 4 out of 5) who are infected with WNV will have mild or no symptoms at all.

CULEX TARSALIS—MOST COMMON MOSQUITO TO TRANSMIT WEST NILE VIRUS



There are more than 2,500 different species of mosquitoes throughout the world. North Dakota has about 43 different species. The mosquito with the greatest medical importance in North Dakota is the *Culex tarsalis*. This mosquito is the most common species for transmitting West Nile virus in North Dakota.

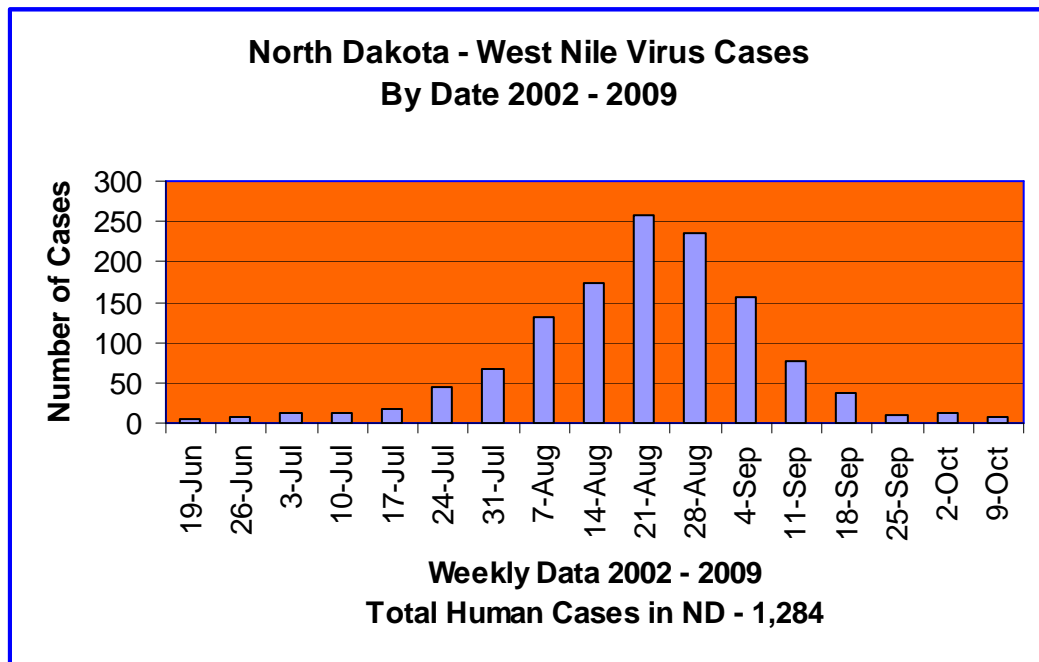
West Nile virus is a disease transmitted by mosquitoes that can be deadly. It was first identified in North Dakota in 2002. Since then, almost 1,300 people in North Dakota have tested positive for this disease and 13 have died. This disease is preventable. You can

reduce your risk of getting this disease by avoiding mosquito bites. Apply repellents containing DEET when outdoors.

The *Culex tarsalis* is a night biting mosquito. It usually feeds at dusk and after dark. This mosquito will breed in almost any type of freshwater. Even a container as small as a pop can may produce 1,000's of mosquitoes. They develop rapidly and produce multiple generations. They can go from egg to adult in 7 days and can lay six or seven batches of eggs with more than 200 per batch. You can help reduce your risk of getting West Nile virus by eliminating standing water from your property and apply insect repellents when you're around mosquitoes.

WEST NILE VIRUS RISK HIGHEST JULY–SEPTEMBER

Most of the human West Nile virus cases in North Dakota occur from late July - mid September. People infected with this disease typically develop symptoms between 3 and 14 days after they are bitten by the infected mosquito. Please protect yourself from mosquito bites and West Nile virus.



COMPREHENSIVE MOSQUITO CONTROL



Surveillance - Testing Chickens

There are five components to the mosquito control program in Grand Forks. Surveillance; Public Education; Source Reduction; Larviciding; and Adulticiding. Each component plays an important roll in reducing mosquito-borne diseases and reducing the number of nuisance mosquitoes. For more information about the Grand Forks Mosquito Control program visit our website at

www.gfmosquito.com



Larviciding



Public Education - Teaching Children



Source Reduction - Recycling Old Tires



Adulticiding

WHY THE CITY OF GRAND FORKS TRAPS MOSQUITOES



The more we know about the pests we're trying to control, the better we control them. The Grand Forks Health Department has an active mosquito control surveillance program. This program is responsible for collecting and analyzing data from the mosquitoes collected. This helps reduce the threat of mosquito-borne disease in our community.

Traps are distributed throughout the community. The Information gained from the traps includes:

Mosquito Population (daily trap count) –

helps us determine the need to spray the city and lets us know if the spray was effective.

The types (species) of mosquitoes – Some mosquitoes are just annoying pests, but our region has the *Culex tarsalis*, the most common mosquito for transmitting West Nile virus. We collect and test these mosquitoes to help us reduce the risk of this disease in our community.

Mosquito Activity – Knowing when the mosquitoes are most active is important for getting the best results from our spray. To be effective, the mosquito needs to come in contact with the chemical and this happens best when the mosquito is in-flight. Rotator traps are used to monitor the time mosquitoes are most active.

Gender Identification – Knowing the sex of the mosquito can be helpful in predicting a new hatch. Male mosquitoes hatch out before females. Therefore, if we see a spike in the number of male mosquitoes in the traps, we know there's a potential for an increase of females. That data is helpful in preparing us for a citywide spray. It's a short warning to get ready.



For information about mosquito control visit our website at www.gfmosquito.com or call 787-8110.



DO BATS CONTROL MOSQUITOES?

Bats are not effective at controlling mosquitoes. Although there is no doubt that bats eat mosquitoes, they are opportunistic feeders. Many scientific studies have been conducted and in all cases to date, less than 1% of the gut contents of wild caught bats consist of mosquitoes. M.D. Tuttle, a world authority on bats, cites an experiment in which bats are released in a laboratory room filled with mosquitoes. The bats caught up to 10 mosquitoes per minute. Tuttle extrapolates this value to 600 mosquitoes per hour. Thus, a colony of 500 bats could consume more than a quarter of a million mosquitoes per hour. However, this is unrealistic when based upon a study where bats were confined in a room with no other food source.