



Mosquitoes

According to the Thompson River Indians of North America, Thunder asked Mosquito why he was so fat, and Mosquito replied that he sucked on trees. He didn't want to admit that he really fed on people, because he didn't want Thunder to eat up all the people and deny him of his prey. Mosquito's plan worked very well, and his story explains why Thunder now shoots trees instead of people.

About Mosquitoes

Although the Great Lakes region is home to only around 50 of the 2,500-plus species of mosquitoes found in the world, they are easily one of the most abundant “biters” you may encounter outdoors. Taken alone, a single mosquito doesn't seem all that intimidating. But what the mosquito lacks in stature, it makes up for in numbers and fearless tenacity. Swarms of droning mosquitoes have chased countless picnickers and campers from the woods, and even driven wanted criminals out of hiding. Fortunately, there's no need to let them ruin your outdoor adventures.

Life and Times . . .

Mosquitoes (*Culex species*) are members of the order Diptera. Considered “true flies,” they are related to house flies and midges. Mosquitoes have two scaled wings, six long legs and, of course, a long, piercing proboscis (or beak).

Female mosquitoes lay 200–400 eggs in quiet marshes, swamps, ponds and other places which hold stagnant water like ditches, old tires and hoof prints. The eggs hatch within days of being laid. The tiny larvae hangs upside down like a letter “J” at the surface of the water. It feeds almost continuously on microscopic plant fragments.

About a dozen days later the larvae changes (pupates) into the adult mosquito. The pupa begins to fill its pupal covering with air until the skin splits open and out emerges the wobbly adult mosquito. It stands, resting, on the surface of its watery home for about a half an hour before it flies up to nearby grasses or brush.

Fascinating Facts

- Only female mosquitoes bite.
- Male mosquitoes feed on nectars from flowers or rotting fruit.
- The female's wings beat 250–500 times per second; the male's elaborate, feathery antennae helps him pick up their species-specific frequency and pitch.
- Mosquitoes are capable of mating within two days of hatching.



- A female mosquito mates only once in her life. She will receive all the sperm needed to produce up to 400 eggs.

Thanks to Mosquitoes

- Mosquitoes are a major plant pollinator in the Great Lakes region.
- Their larvae voraciously process tons of rotting plants (detritus) in a wetland.
- Mosquitoes are a main food source for other insects and wildlife such as ducklings and young fish. A single little brown bat may eat 5,000 mosquitoes in one night!



Myth Busters

MYTH: All mosquitoes are alike and can be controlled the same way.

There are more than 160 mosquito species in North America alone, and different species exhibit different behaviors. Some feed just before nightfall, others around the clock or whenever a host is near. Spraying of the winged, adult mosquitoes should be timed to reach these insects when they are flying and when the wind, humidity and general climate conditions favor targeting them.

MYTH: ZZZZZZZAP!

Researchers found that while ultraviolet or black light “bug zappers” do attract and kill thousands of insects within a 24-hour period, mosquitoes comprise only 6.4% of a five-day insect catch. Of that, only half of the mosquitoes killed were the blood-feeding females. This is clearly not a good choice for controlling mosquitoes.

MYTH: The mosquito dies after she takes a blood meal.

Mosquitoes are capable of biting more than once. After the female mosquito takes a blood meal she completes the development of her eggs and may deposit up to 200 of them at a time. She may seek another blood meal and lay again.

Why They Bite

Proteins in the blood of warm-blooded animals are required to produce eggs, assuring there will be future generations of mosquitoes. As the most numerous

mammal on the planet, humans are a big part of the mosquito's dinner buffet.

How They Bite

The female uses her sight and her ability to detect the host's heat and carbon dioxide (from exhaling) in order to locate a warm-blooded host. She pierces the host's skin and releases an anticoagulant, a blood thinner of sorts, into the host. Proteins found in the insect's saliva create the itch and welt after the mosquito bites.

How Afraid Should I Be?

Mosquito-borne diseases such as malaria are a serious health threat in much of the world. Thankfully, in the Great Lakes region, mosquito bites are mostly just a painful irritation. Still, several diseases remain a concern.

WEST NILE VIRUS

- Mosquitoes are the main means of contracting **West Nile virus** (WNV), which interferes with the central nervous system and causes inflammation of brain tissue. A mosquito may become infected with the virus by feeding on dead birds; if an infected mosquito bites a human or animal, the virus may be injected into the new host.
- Your risk of becoming seriously ill from **WNV** is very low. Even in areas where the virus is circulating, very few mosquitoes are infected. And fewer than one in 150 people who are bitten and become infected get severely ill. People over 50 years old or chronically ill are at the highest risk of developing severe symptoms.
- Most people infected with **WNV** will not show symptoms. Others might experience mild symptoms such as fever, headache, nausea or vomiting and sometimes swollen lymph glands or a skin rash on the torso. Mild symptoms can last from a few days to several weeks. Severe symptoms include high fever, headache, stupor, coma, vision loss, numbness and paralysis. These symptoms might last for several weeks and the effects could be permanent.

EASTERN EQUINE ENCEPHALITIS

- Of all the viral diseases carried by mosquitoes in the United States, **eastern equine encephalitis** (EEE) is the deadliest to humans. It proves fatal in

approximately one-third to one-half of all cases. Survivors often suffer mild to severe permanent neurological damage.

- On the positive side, you are statistically more likely to drown than get mosquito-borne **EEE**. In the past 40 years there have been less than six cases per year.
- **EEE** shows up roughly three days after being bitten by an infected mosquito. Many people infected with **EEE** have no signs of the illness. For those that develop the disease the symptoms are generally like a mild flu. Others develop an inflammation of the brain, lapse into a coma and die.

Preventing Mosquito Bites

PHYSICAL BARRIERS

The most effective means of dealing with mosquitoes is to put a barrier between yourself and the insect.

- Limit your time outdoors at dusk and dawn, when mosquitoes are most active.
- Wear loose-fitting, light-colored clothes that allow air movement but prevent the probing of mosquitoes. Dark clothing attracts mosquitoes.
- Head nets and bug jackets made of fine mesh keep insects from reaching your skin, yet allow air movement. Some are made to absorb repellents.
- Use screen tents to enclose picnic tables and lawn chairs.

NATURAL MOSQUITO REPELLENTS

- Oil of lemon eucalyptus repels mosquitoes. Citronella can work, too, but must be applied more often than synthetic chemicals. Some claim success using Avon Skin So Soft. Others believe eating one clove of raw garlic each day will give their skin an odor that keeps mosquitoes at bay.
- Outdoor products such as mosquito coils and citronella candles or torches can create an uncomfortable air space for mosquitoes.



CHEMICAL REPELLENTS

- The most common and effective repellent ingredient is DEET (di-ethyl-tolumide). However, it can cause eye and sinus irritation, headaches, insomnia and confusion. Repellants with high DEET concentrations can melt nylon, dissolve paint and leave unappealing odors.
- Permethrin is a synthetic, broad-spectrum insecticide. It is ineffective on your skin, yet very durable on clothing and gear.

THINK TWICE

Synthetic repellents and insecticides are dangerous chemicals potentially harmful to you and the environment. Apply them with care, and always read and follow the label instructions.

OTHER TRICKS IN OUTWITTING MOSQUITOES

- When setting up your camp or picnic, choose a location with good air flow, away from thick underbrush and low areas.
- Learn to put up with them! Your body is amazingly adaptable and you will build up a natural resistance over time.

Treatment of Bites

- Soak a washcloth with cool water and press it on the bite.
- Products such as Benadryl and other anti-itch and anti-inflammatory medicines help relieve itching and swelling.
- The juice from a piece of aloe vera plant can be rubbed on bites for relief.
- Apply a simple paste made of baking soda and water (use only enough water to form a sticky paste).
- Jewelweed or touch-me-not (*Impatiens biflora*) can help reduce itching. Pull up a plant from a site where it is abundant, squeeze its succulent stem and roots until it is juicy and rub the plant juices on the affected area.

BOTTOM LINE

Mosquitoes are one of the most abundant “biters” you may encounter outdoors. Fortunately, they are mostly just a painful irritation. Though several mosquito-borne diseases occur in the Great Lakes area, your chances of being infected are remote.

