

**CHARTER TOWNSHIP OF OXFORD**

300 Dunlap Road • Oxford, Michigan 48371

Phone: (248) 628-9787 • Fax: (248) 628-8139

www.oxfordtownship.org

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Dear Oxford Township resident:

You have contacted the Oxford Township Office to report an increase in the presence of gypsy moth infestation on and around your property. We are in the process of compiling information regarding the addresses of residents reporting gypsy moths.

The most effective way to suppress the spread of gypsy moth caterpillars is by aerial spraying. To be effective spraying has to occur in the month of May when the gypsy moth egg masses begin to hatch. As you are aware, it is too late for aerial spraying in 2021, but there is an opportunity to create a Special Assessment District ("SAD") for your property and surrounding properties interested in creating a SAD in 2022. An SAD is a process to pay for the suppression of gypsy moth infestation. As a note, the aerial spraying cost will vary depending on the amount of acreage that will be included in the SAD.

If you are interested in creating a SAD through the Charter Township of Oxford, enclosed are the Basic Steps involved in creating a Special Assessment District and a sample petition. You can create your own petition as long as it complies with the Michigan Compiled Laws to create a SAD.

Also, enclosed are several pieces of literature that contain email links with additional information to assist you with your questions to determine whether you wish to proceed with a SAD for Gypsy Moth suppression or you can treat your property at your own expense.

If you have any further questions, you can call (248)628-9787 ext. 102 for more information.

Thank you.



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## Basic Steps to Create Special Assessment Districts

1. Applicant obtains Special Assessment District petition from the Oxford Township Office.
2. Applicant circulates petitions and returns signed petitions to Supervisor's office.
3. After verification of the petitions, an Application Fee that will cover any township costs shall be established. This fee, which shall be \$1,500.00, will be deposited into the Oxford Township Trust and Agency Account to pay for all township direct and indirect costs associated with establishing the Special Assessment District. Any costs over the established fee shall also be the responsibility of the applicant as well. If any funds remain after the Special Assessment District has been established, they shall be returned to the applicant.
4. The Oxford Township Board will then, after the payment of the required fee(s) authorize the improvement plan, determination of the Special Assessment District and cost estimate by the Township Engineer.
5. After receipt of the improvement plan and determination of the Special Assessment District and cost estimate from the Township Engineer, the Township Board may, by Resolution declare their intent to make the improvements, designate district boundaries and set a public hearing to hear objections to the petition, improvement and / or district. The original Application Fee and other Special Assessment District project costs shall be added to the cost estimate as well.
6. Township Board holds a public hearing. After the public hearing, the Township Board may, by resolution, approve the improvement, approve the plans and the cost estimate, approve the petition, approve the district boundaries, determine the term or length of time for the Special Assessment District, and authorize preparation of the special assessment Roll.
7. After the Township Board receives the proposed special assessment Roll, it shall set a public hearing for the sole purpose of hearing objections to the special assessment amounts.
8. After the public hearing is held, the Township Board may reject or confirm the special assessment Roll.

From start to finish, a Special Assessment District can take up to six (6) months or more to process.



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**PETITION FOR SPECIAL ASSESSMENT DISTRICT  
FOR THE IMPROVEMENT OF**

Oxford Township, Oakland County, Michigan

I / We, the undersigned, representing the record owners of more than (50%) fifty percent of the total land area or frontage within the proposed special assessment district, hereby petition the Charter Township of Oxford board to create a special assessment district to

\_\_\_\_\_ under authority of MCL 41.721 et. al., as amended.

We, the petitioners understand that the improvement shall be conducted in accordance with plans for the same to be prepared, reviewed, and approved by the Oxford Township board, and that the costs thereof, including expenses connected with engineering, planning, and legal costs will be assessed against each parcel of land within said proposed district.

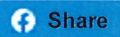
The cost of the special assessment district shall be paid by the property owners based on a \_\_\_\_\_ basis for all properties within the special assessment district area.

	<u>Signature</u>	<u>Address</u>	<u>Town, State, Zip Code</u>	<u>Date of Signing</u>
1.	_____			
	_____ Printed Name			

	<u>Signature</u>	<u>Address</u>	<u>Town, State, Zip Code</u>	<u>Date of Signing</u>
2.	_____			
	_____ Printed Name			

# What can you do to manage gypsy moths in your landscape?

Bindu Bhakta and Lori Imboden, Michigan State University Extension - June 10, 2021



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Having problems with gypsy moths this summer? You aren't alone!



Much of Michigan's lower peninsula is experiencing an outbreak of gypsy moth (*Lymantria dispar* L.), an exotic pest. Gypsy moth caterpillars feed on the leaves of oaks, aspen and many other kinds of trees.

Local outbreaks of gypsy moths generally collapse after three or perhaps four years. Two pathogens, including a nucleopolyhedrosis virus (NPV), and a fungal disease called *Entomophaga maimaiga*, are especially important at causing gypsy moth outbreaks to collapse. These two insect diseases will not affect people, pets or beneficial insects like pollinators or insect predators. Over time, NPV will increase in a population and affect more and more gypsy moth caterpillars. Effects of the fungal disease on gypsy moth populations can also be important but vary depending on spring temperatures and rainfall.



*Gypsy moth caterpillars feed mostly in the evening. They often spend the day resting on the sides of buildings or on outdoor items. Photo credit: Lori Imboden, MSU Extension*

Living in the midst of a gypsy moth outbreak is not pleasant. There will be a few weeks when large caterpillars and their “frass” (excrement) are abundant. Fortunately, the caterpillars will finish feeding by early or mid-July, usually right around July 4. At that point, they will spin reddish-brown cocoons, pupate, and adult moths will emerge. Neither the male nor female moths do any feeding. After mating, the females lay an egg mass then die.



*Scraping and destroying new gypsy moth egg masses in fall and winter can help reduce gypsy moth populations in your landscape.  
Photo credit: Ferenc Lakatos*

Some trees, including many oaks, aspen, basswood, apple and willows, can be completely defoliated during gypsy moth outbreaks. However, most of these trees will recover. Deciduous trees (hardwoods) that lose more than 50-60% or more of their leaves will re-flush and produce a second set of leaves, usually by late July. Producing a second set of leaves can stress the tree but is unlikely to threaten the life of an otherwise healthy deciduous tree. Ensuring trees receive one inch of water per week, either from rain or from supplemental water, is important for helping trees recover from defoliation.

Note that occasionally gypsy moth caterpillars will feed on the needles of conifer trees (evergreens). Conifers such as spruce, pine, fir, and hemlock cannot re-flush during the summer and are more vulnerable than deciduous trees to defoliation. If caterpillars consume all or nearly all of their needles, the trees will die. If gypsy moth caterpillars are

feeding on conifers, control efforts are warranted.

## What can you do?

Michigan State University Extension receives frequent inquiries about gypsy moth identification, impacts and management options for landscape trees. Our first recommendation is to ensure the insect is correctly identified. There are many insects that feed on trees but there is only one gypsy moth!

While living with gypsy moth may be unpleasant, the caterpillars typically only feed for 4 to 6 weeks. People can choose to tolerate the caterpillars until they pupate, usually by early to mid-July.

Other options to help protect landscape trees can also be considered. For example, gypsy moth egg masses can be physically removed and soaked in soapy water for 24-48 hours to kill the eggs. It is best to wait until fall and winter to scrape egg masses. This allows tiny wasps to develop inside the gypsy moth eggs. Those little parasitoid wasps will help reduce gypsy moth populations next year.

Burlap barrier bands can be wrapped around a tree trunk. The caterpillars will hide under the flap of burlap during the day. Every day or so, knock the caterpillars into a bucket of soapy water to kill them. While this will not affect the overall gypsy moth population, it can help protect an individual tree. Sticky bands wrapped around the trunk are sometimes used to prevent caterpillars from crawling up to the canopy to feed on leaves. Avoid applying the sticky material directly to the bark - it can injure the tree. Three or four bands of inside-out duct tape around the trunk can also help capture the caterpillars.

Individuals or neighborhoods may consider hiring an arborist to spray or to inject individual trees with insecticides registered for use on gypsy moths. Proper equipment and experienced applicators will be important to effectively control the caterpillars and reduce effects on non-target insects and the environment. Various insecticide products are available for homeowners and non-commercial users to apply to trees on their own property. Follow all label instructions. Some insecticides use the microbial insecticide Btk. This is a naturally occurring bacteria called *Baccillus thuringiensis var. kurstaki* that only affects caterpillars that consume leaves that are sprayed with Btk. These products, however, are most likely to be effective if young caterpillars are targeted, usually around mid or late May.



You can find a comprehensive list of resources on gypsy moths linked throughout this article at the MSU Integrated Pest Management website: [https://www.canr.msu.edu/ipm/Invasive\\_species/Gypsy-Moth/](https://www.canr.msu.edu/ipm/Invasive_species/Gypsy-Moth/). Or simply google “MSU gypsy moth” and click on the topics of interest.

MSU Extension staff and volunteers can assist individuals with questions about gypsy moth and their landscapes. Clients are asked to upload their question and up to three photos at Ask Extension (<https://www.canr.msu.edu/outreach/ask-an-expert>). These inquiries can be submitted any time. The MSU Extension Lawn and Garden hotline is available from 9 a.m. to noon on Mondays, Wednesdays and Fridays (1-888-678-3464). Engaging directly with an arborist (<https://www.treesaregood.org/>) is recommended for those who wish to have assistance on site.

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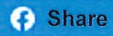
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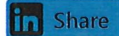
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# Btk: One management option for gypsy moth

Deborah McCullough and Leah Bauer, Michigan State University, Department of Entomology - May 22, 2019



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Answers to frequently asked questions about using Bt products to control gypsy moth during outbreaks.



*Gypsy moth caterpillar feeding on oak leaf. Photo by Clifford Sadof, Purdue University.*

Gypsy moth (*Lymantria dispar* L.), an invasive pest native to Europe, was introduced into Massachusetts in 1869 by a well-meaning, but clearly misguided, amateur naturalist. Despite many efforts to contain this pest, gypsy moth populations have continued to expand. People can accidentally move gypsy moth egg masses or other life stages into new areas, which greatly increases the rate of spread. Populations of gypsy moth are now found across much of the eastern United States and Canada.

Gypsy moth was first discovered in central Lower Michigan in the 1950s, and the first outbreaks occurred in this area in the mid-1980s. By the late 1990s, much of Lower Michigan and areas in the Upper Peninsula had experienced a major gypsy moth outbreak. Today, gypsy moth is present in all Michigan counties. During most years, gypsy moth populations are low and few people even notice them. Occasionally, however, the density of a local gypsy moth population builds to outbreak levels.

Gypsy moth outbreaks typically last two to four years, then collapse, usually because the caterpillars die from viral and fungal diseases. Parasitoids, predators, starvation and unfavorable weather may also help reduce gypsy moth numbers. Once an outbreak collapses, the population will remain low for some time, often several years.

A gypsy moth outbreak can be unpleasant for people who live, work or enjoy outdoor recreation in affected areas. Large hairy caterpillars can be abundant in forests, campgrounds and parks, and in residential areas. The caterpillars often wander in search of cool, shady areas, often resting on the sides of houses and trees during the day. Frass (insect feces) produced by the caterpillars feeding on leaves in the tree canopies can rain down on driveways, sidewalks and picnic tables. Oaks and other favorite host trees can be heavily defoliated, usually between late June and mid-July.

Gypsy moth completes one generation each year. Tiny gypsy moth caterpillars hatch from eggs sometime between late April and mid to late May. Newly hatched caterpillars disperse by hanging from a silk strand and waiting to be carried in the wind. The caterpillars feed for six to eight weeks on the leaves of trees in forested, rural, suburban and urban areas. By the time caterpillars finish feeding, they may be 2 to 3 inches long.

Oak trees are usually their favorite hosts, but gypsy moth caterpillars can feed on many other hardwood trees including aspen, basswood (linden), willow, birch and crabapple. When populations are high, caterpillars sometimes feed on spruce, pines or other conifer trees. In fact, gypsy moth caterpillars can feed on at least 300 different species of trees and woody shrubs.

Hardwood trees (those that lose their leaves in fall) can tolerate two or three years of severe or even complete defoliation if they are reasonably healthy. Often, severely defoliated hardwood trees produce a second set of leaves in midsummer, which allows the trees to build up energy for the next year. Producing the second set of leaves, however, can stress the trees, slowing growth and sometimes making the trees more vulnerable to other pests.

Unfortunately, conifers (evergreens) such as spruce, fir and pine trees cannot produce a second set of buds during the summer. If caterpillars consume all or nearly all the needles on conifer trees, the trees will die.

Though gypsy moth is here to stay, there are several options to help control this pest during outbreaks. One option involves spraying Bt to protect tree foliage and reduce the annoyance caused by gypsy moth caterpillars. Bt refers to a microorganism called *Bacillus thuringiensis*. Bt is widely used to control gypsy moth and certain other caterpillar pests because of its effectiveness, ease of use and its low toxicity to other animals, including other insects. This article is designed to answer some frequently asked questions (FAQs) about Bt.

## What is Bt?

Bt is the abbreviation for *Bacillus thuringiensis*, a native bacterium commonly found in soil and on plants. Thousands of Bt varieties exist in nature, each with its own unique characteristics. Most Bt varieties are insect pathogens that cause disease in specific groups of insects, and several are registered with the U.S. Environmental Protection Agency (EPA) as microbial insecticides. Though Bt products can be highly effective in controlling specific insects, they have little impact on other animals. Therefore, sprays made with Bt pose much less risk of affecting non-target organisms than conventional chemical insecticide sprays.

The Bt products used to control gypsy moth during outbreaks are made from a strain known as *Bacillus thuringiensis* var. *kurstaki* HD-1, or more simply, as Btk. Btk has been used for gypsy moth control in the northeastern U.S. since 1961 and in Michigan since 1985.

The Btk formulation used for gypsy moth spray programs in Michigan is certified by the [Organic Materials Review Institute \(OMRI\)](#), a national nonprofit organization that approves products for organic growers, as regulated by the [USDA National Organic](#)

Program. Btk is commonly used by organic gardeners and farmers, as well as some conventional farmers, to control caterpillar pests of fruits and vegetables.

## How does Btk control the gypsy moth?

When Btk grows, it produces spores and non-living protein crystals. When gypsy moth caterpillars eat leaves that have been sprayed with Btk, the protein crystals dissolve in their digestive system and become toxic. This can occur only in caterpillars because of the many unique conditions present in their digestive system. For example, caterpillars have an alkaline digestive system, while humans and many other animals have acidic digestive systems.



*Newly hatched gypsy moth caterpillars on egg mass. Photo: Steven Katovich, USDA Forest Service, Bugwood.org.*

Soon after caterpillars feed on leaves sprayed with Btk, they stop feeding. If the caterpillars consume enough Btk, they die after a few days from a combination of starvation, damage to their digestive system and bacterial growth within their bodies.

There are a few unusual but important things to remember about the way Btk works:

- Btk must be eaten by caterpillars to be effective. Therefore, the leaves of trees or shrubs must be well coated with Btk.
- Young gypsy moth caterpillars are usually more sensitive to Btk than older, larger caterpillars. This is one reason why Btk should be applied soon after gypsy moth caterpillar eggs hatch. Timing of Btk applications depends on spring weather conditions and varies by location (see MSU's [Enviroweather's gypsy moth treatment](#)

guidelines). Older, larger caterpillars may become ill, but can often survive a Btk application.

## **What are the ingredients in a Btk product?**

Commercially available Btk products are composed of two major components: the active ingredients and the inert ingredients. The active ingredients in products used to control gypsy moth are Bt *kurstaki* HD-1 spores and protein crystals. Bt *kurstaki* HD-1 is a naturally occurring bacterium in the environment.

Inert (non-active) formulation ingredients are added to the Btk spores and crystals. These ingredients make it easier to mix, spray and store the product. These ingredients are food-grade additives that appear on the U.S. Food and Drug Administration's "Generally Recognized As Safe" list.

## **How does Btk differ from conventional chemical insecticides?**

In contrast to Btk, conventional chemical insecticides are man-made or synthetic chemicals that usually affect the nervous systems of insects and other animals. These products can kill insects on contact or when eaten. This means conventional insecticides are capable of killing most non-target insects, including beneficial parasitoids and predators, and pose greater health hazards to humans and other animals.

## **How long does Btk last?**

Most of the Btk sprayed on tree foliage is destroyed by sunlight and microbial activity within a few days. To help reduce gypsy moth populations and defoliation during an outbreak, tree foliage must be sprayed each year, ideally soon after gypsy moth eggs hatch.

## **Does Btk harm other insects?**

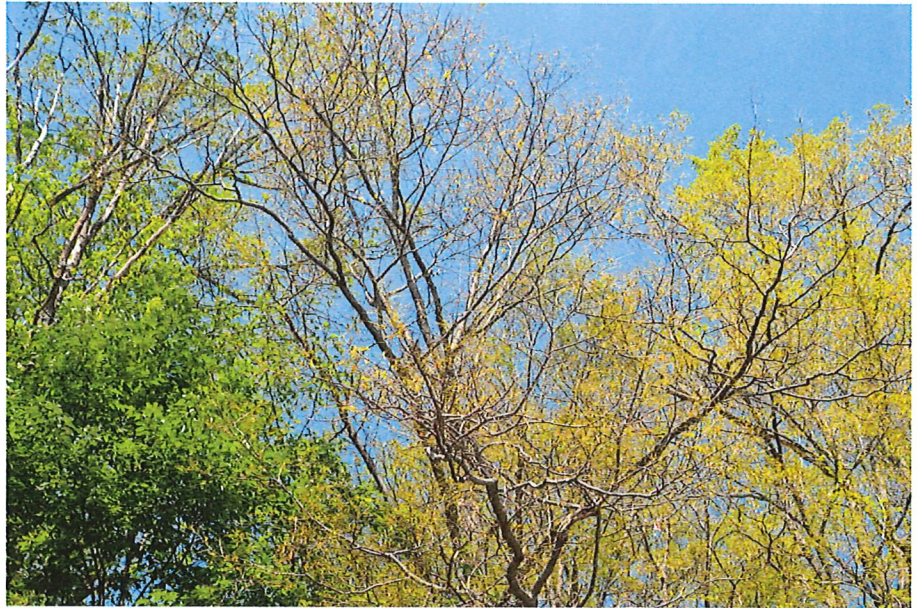
Btk is much more selective than conventional chemical insecticides, but it can affect other kinds of foliage-feeding caterpillars if they are also feeding on treated leaves. This is a good reason to use Btk only when gypsy moth populations are high. Some caterpillar species are more sensitive to Btk than gypsy moth, while others are less sensitive. Scientists have studied non-target species of caterpillars following Btk sprays for gypsy moth suppression. They found that populations of native caterpillar species tend to

recover by re-colonizing areas relatively quickly.

Btk has little or no effect on the large majority of insects, including bees, lacewings, ladybird beetles and other beneficial species. This is a significant benefit of using Btk rather than conventional chemical insecticide products, which are toxic to many kinds of insects.

## How safe is Btk for humans?

After 50 years of testing and widespread use, Btk has demonstrated minimal hazards to people and other mammals, birds, fish, beneficial insects and other non-target organisms. To ensure the continued safety of Btk for the public, the EPA administers an extensive system of regulatory safeguards. These include requirements for mammalian and environmental toxicology testing of the Btk active ingredients and formulated products. Quality control procedures are also in place to ensure the safety of each batch of Btk products.



*Defoliated oaks trees during a gypsy moth outbreak. Photo by Clifford Sadof, Purdue University.*

As part of its regulatory function, a reassessment of Btk safety conducted by the EPA confirmed earlier findings, including: “...*the lack of any reports of significant human health hazards of the various Bacillus thuringiensis strains...*” ([EPA document #EPA 738-R-98-004](#)).

Major studies were conducted in New Zealand when populated areas were repeatedly sprayed with Btk to eradicate another introduced pest, the white-spotted tussock moth (1998 Report to the Ministry of Forestry prepared by Jenner Consultants Ltd., Parnell Auckland, New Zealand, to address issues raised in 1995 by Diane Wharton, Society Targeting Overuse of Pesticides, North Vancouver). A key citation in a report on the New Zealand study stated: “...*The data support the belief that they [Bt kurstaki products] can be safely used in environments in which human exposure is likely to occur.*” However, if you are concerned about your exposure to Btk, remaining indoors during the spray

application is a good, common-sense strategy.

## **Will Btk get rid of ALL my gypsy moth caterpillars?**

It's important to realize that a Btk spray will not kill every gypsy moth caterpillar on your property. When Btk is applied properly, however, it can help protect your trees from serious defoliation and reduce the annoyance caused by high numbers of gypsy moth caterpillars during an outbreak.

## **Is it possible to buy Btk to spray caterpillars in my own garden?**

Yes, several commercially available Btk products can be used to control caterpillars on shade trees, fruit trees or plants in the garden. Both liquid formulations and wettable powders are available from local garden stores. Be sure to follow the directions on the label.

## **Where can I get more information on Bt?**

More detailed information on the use of Btk to control gypsy moth caterpillars during an outbreak is available from:

- The U.S. Forest Service's "[\*Bacillus thuringiensis\* for managing gypsy moth: A review.](#)"
- The Entomological Society of America's "[Is Bt safe for humans to eat?](#)"

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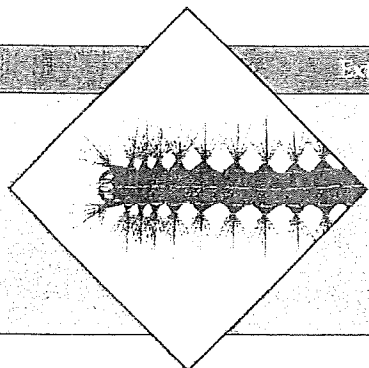


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# Gypsy Moth and Your Shade Trees

Michigan State University Extension

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The gypsy moth is an important pest of many forest and shade trees in the northeastern United States. This insect is not native to North America. Gypsy moth was accidentally introduced into Massachusetts in 1869 and has been slowly spreading through the northeastern United States.



The first gypsy moth outbreaks in Michigan occurred in the mid-1980s in the central part of lower Michigan, in Midland and Clare counties. Since then, much of northern lower Michigan has experienced at least one gypsy moth outbreak. High populations are expected to occur in many areas of southern lower Michigan during the next few years.

The gypsy moth can be an annoying pest in urban forests, especially during the caterpillar stage. Gypsy moth caterpillars feed on the leaves of more than 300 species of trees, but they especially like oak, basswood (linden), aspen, apple, crabapple and willow trees. When gypsy moth populations reach outbreak levels, shade trees may be heavily defoliated. The high numbers of large, hairy caterpillars that may be present and the resulting rain of frass (fecal pellets) from infested trees can be distressing for residents, especially for people who have not experienced a gypsy moth outbreak before.

This fact sheet was produced to provide answers to some questions about gypsy moth that are frequently asked by urban dwellers.

## How do I know if I have gypsy moth in my yard?

Many insects are found on urban trees, but there is only one gypsy moth! Gypsy moth caterpillars have pairs of red and blue spots along the back and long, dark hairs. They feed on the leaves of oaks, aspen, apple, crabapple, basswood and many other species of trees from late May until early July. The caterpillars spin reddish brown cocoons in July and pupate for one to two weeks.

Adult moths then emerge from these cocoons, usually between mid- to late July and early August. The moths live only a few days and do not feed. Adult males are brown with dark markings on the wings and are active fliers. Adult females have white wings with black chevron markings but do not fly. Each female lays one tan egg mass, which is covered with tiny hairs. Egg masses may be small, about the size of a quarter, or may be up to 3 inches long. Egg masses are laid in July or August, overwinter and hatch the following April or May. Color photos of the life stages of gypsy moth can be found in MSU Extension bulletin E-2302.

Many other insects feed on oak trees and are sometimes mistaken for gypsy moth. Color pictures of gypsy moth and other oak defoliators are in MSU Extension bulletins E-2633 and E-2299.

## Will gypsy moth kill my trees?

NO! An oak or other hardwood tree that is completely defoliated during the summer may look as if it's dead, but healthy trees will produce a second set of leaf buds, usually in late July or early August. This second set of leaves will produce enough energy for the tree to survive the winter. Severe defoliation does stress the tree, but healthy trees can tolerate even complete defoliation for a few years. However, if trees are affected by other stress factors such as drought, disease or poor growing conditions, there is a greater chance that they will die.

## How can I keep my trees healthy?

The best thing that you can do for your trees is to keep them well watered, particularly during dry periods in the summer. Also, avoid wounding your trees with lawn mowers or other equipment. Wounds will increase the risk that trees will be affected by disease. Avoid compacting the soil or damaging the root system of trees.

## Is there anything that I can do to help reduce gypsy moth populations in my yard?

You bet! Search for egg masses on trees, firewood and outdoor furniture. Scrape egg masses into a coffee can filled with soapy water, or burn or bury the egg masses. Bands placed around tree trunks can be used to trap caterpillars or

## Gypsy Moth and Your Shade Trees

prevent them from climbing into the canopy. See MSU Extension bulletins E-2300, E-2301, E-2302 and E-2591 for information on these strategies.

Pheromone traps are used by scientists and pest managers to detect new gypsy moth populations in uninfested areas. These traps are rarely effective in controlling gypsy moth populations, however. See MSU Extension bulletin E-2585 for more information on pheromone traps.

Many natural enemies—such as birds, mice, predatory insects and insect parasitoids—feed on gypsy moth. You can encourage these natural enemies by avoiding the use of broad-spectrum insecticides and by providing habitat for birds and predators. Several biological control agents have been introduced into Michigan to help control gypsy moth. *Entomophaga maimaiga*, the gypsy moth fungus, is a recent introduction that affects large numbers of caterpillars in some years. A virus disease that affects caterpillars often causes gypsy moth outbreaks to collapse. See MSU Extension bulletins E-2302, E-2604 and E-2622 for information on gypsy moth natural enemies.

Some residents use Bt (*Bacillus thuringiensis* var. *kurstaki*) to reduce gypsy moth populations. Bt is a bacterial disease that affects only foliage-feeding caterpillars. It must be sprayed on leaves and the leaves must be eaten by young caterpillars for the Bt to be effective. Bt is not harmful to humans or other mammals, birds, fish or beneficial insects. More information on Bt is available in MSU Extension bulletins E-2421 and E-2591.

You can spray Bt on your trees yourself or hire professional tree care companies to spray trees. Also, some municipalities or neighborhoods are participating in the Michigan Voluntary Gypsy Moth Suppression Program administered by the Department of Agriculture. This program helps pay costs of Bt application in residential areas during gypsy moth outbreaks. Your neighborhood may be eligible to participate if you meet the program requirements. Contact your county suppression program coordinator, the regional Department of Agriculture office or your county MSU Extension office to learn more about this program.

### Will I have to deal with gypsy moth next year?

In most areas, gypsy moth populations will remain high for one to three years, then collapse and return to low levels. This population collapse usually is the result of a virus disease called NPV that affects gypsy moth caterpillars. When populations are high, the caterpillars must compete with one another for food and resting spots. Stressed caterpillars become more susceptible to the NPV disease. After a year or two of heavy defoliation, the NPV disease, in combination with other natural enemies, will generally control the outbreak. More information on NPV can be found in MSU Extension bulletin E-2604. Gypsy moth populations usually

remain at low levels for five to 10 years. Eventually, however, some factor triggers another outbreak and a new cycle begins.

### Can't we just get rid of ALL the gypsy moths?

Nope — gypsy moth is here to stay and is now a part of Michigan's forest and urban forest ecosystems. But you can help keep gypsy moth from spreading into new areas that are not yet infested. Gypsy moth females like to lay their egg masses in dark, protected locations such as the undersides of lawn chairs or picnic tables or on firewood. Egg masses may also be found on recreational vehicles or trailers or in the wheel wells of cars.



Female gypsy moth and egg mass

If you unknowingly transport egg masses to a new location, you may be helping to start a new gypsy moth population and many headaches for other people! Be sure that you know what a gypsy moth egg mass looks like. Inspect firewood, vehicles, lawn furniture and other outdoor items that might have egg masses. If you find egg masses, scrape them off into a can of soapy water, or burn or bury them.

### Where can I get more information?

Contact your county MSU Extension office. The staff there can provide you with the Extension bulletins listed here and give you up-to-date information on the gypsy moth situation in your neighborhood.

#### MSU Extension Bulletins on Gypsy Moth Management

Gypsy Moth in Michigan: Homeowner's Guide	E-2302
Gypsy Moth Management Calendar for Homeowners	E-2591
Comparison of the Gypsy Moth, Eastern Tent Caterpillar and Forest Tent Caterpillar	E-2299
Common Oak Defoliators in Michigan: It's Not Always Gypsy Moth!	E-2633
Cloth Banding Trees to Suppress the Gypsy Moth	E-2300
Barrier Bands to Suppress the Gypsy Moth	E-2301
Pheromone Traps and the Gypsy Moth	E-2585
Using Bt to Control Gypsy Moth	E-2421
<i>Entomophaga maimaiga</i> : A Natural Enemy of Gypsy Moth	E-2604
<i>Calasoma sycophanta</i> : A Natural Enemy of Gypsy Moth Larvae and Pupae	E-2622

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