

# What Can A Homeowner Do?

In areas where there is no organized gypsy moth control program, people with serious infestations often feel helpless as their trees are devoured and caterpillars migrate over everything. Even with a coordinated control program, the magnitude and complexity of the task makes 100 per cent success impossible. No single control method can eliminate the insect completely, nor can several methods used together. In that light, just what can the homeowner do?

## Scraping and Destroying Egg Masses

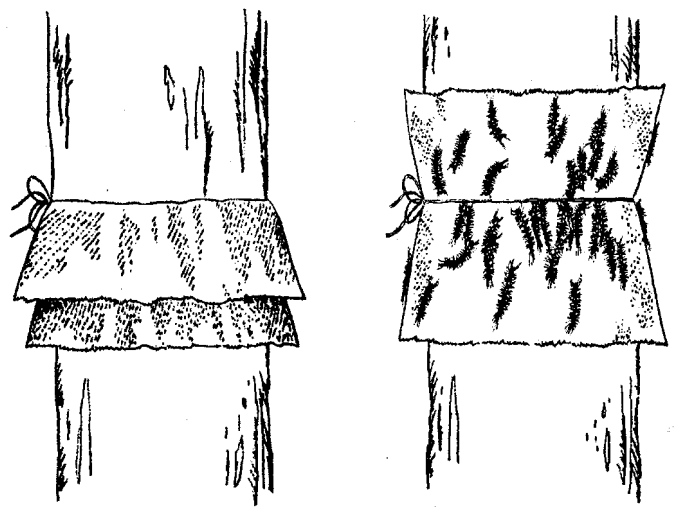
People can have an impact on gypsy moth survival long before the caterpillars hatch by searching for the buff-coloured egg masses and destroying them. Egg masses are easiest to see when leaves are off trees, so this technique is most effective from fall to early spring. Each egg mass contains from 100 to 1,000 eggs. Egg masses can be found on tree trunks, under branches, on rocks, wood piles, fences, and nearly any other surface, including buildings. The best bet is to scrape the masses into a container of soapy water (a teaspoon of detergent per litre) and soak them for one week. Alternatively, they can be burned in a fireplace. **Scraping eggs onto the ground will not prevent them from hatching.** There are many home brews used for spraying on egg masses, but their effectiveness has not been proven and they may harm trees. *Keep in mind that a pesticide must be specifically labelled for spraying on gypsy moth eggs before it can legally be used for that purpose.*

If you have a large forested property, egg scraping will be a daunting task. Many egg masses are found far above the ground, however, the egg masses that cannot be reached are the most susceptible to overwinter killing by cold temperatures (lower than -25°C). At least destroying those within reach may make the difference between complete defoliation and just an ugly nuisance. Cold winter temperatures in more northerly areas may kill many of the eggs above the snow, therefore, it is more important to concentrate search efforts close to the ground where eggs will be insulated by the snow cover.

## Tree Banding

Once the eggs have hatched in early spring, it is too late to scrape egg masses. The next line of defense is tree banding. This is a popular method, but is often misunderstood. A short lesson in gypsy moth caterpillar behavior will clarify the issue.

As caterpillars grow and develop, their ability to travel increases. They tend to do most of their leaf-munching at night when the air is cool and humid. As daytime temperatures rise, many will seek shelter from sunlight and exposure to predators. Some, but not all, will move right down the trunk to hide in dead leaves or underbrush. If they happen upon a sheltered site on their way down, they will often take advantage of it. Caterpillars find a loose flap of burlap especially inviting. But here's the catch. The burlap will not kill them nor will it prevent them from going back up the tree. You must destroy them--preferably every day in the late afternoon. Crush them if you like, or sweep them into a container of soapy water.



*Gypsy moth larvae seek shelter under a burlap band. When collecting larvae, wear gloves to avoid human skin irritation from larval hairs.*

It is best to install a loose, double-layer skirt of burlap by folding a 40 to 60 cm (16 to 24 inch) wide strip over a piece of twine and tying it all the way around the tree. If the flap is too tight against the tree, the caterpillars will have a tough time crawling under it, and it will be difficult to lift it to remove them. Cut four slits in the burlap band to create quarter panel flaps which makes the burlap easier to lift for removing caterpillars.

## Sticky Tape

The use of various sticky materials is questionable, but if you must use one, do not apply it directly to the bark. This can leave a permanent scar or even kill the tree. Wrap the tree with a protective material (duct tape on rough-barked trees; foil or paper on smooth barked trees) and apply the sticky material on top of this. Pressing tape into all cracks and crannies on rough-barked trees prevents caterpillars from crawling underneath. The barrier stops caterpillars from crawling up the tree from the ground; burlap bands intercept those crawling down the tree.

## Pheromone Traps

Some garden centres and hardware stores sell pheromone "sex lure" traps that catch adult male moths. These have their uses in organized programs where gypsy moth populations are low, but are of little value when used individually.

## Ground Application of Insecticides

Insecticide application from the ground is an alternative if a significant problem exists where there will be no aerial spraying. Many firms will spray small areas from the ground or homeowners can do limited amounts of spraying on small trees. Keep these points in mind to save money and avoid frustration: 1) See the caterpillars for yourself before paying to spray--do not spray if it isn't necessary; 2) Do not apply insecticides after caterpillars are gone. This sounds obvious, but there have been instances where spraying was done many weeks too late; 3) Refrain from treating not susceptible tree species like cedar and ash; 4) Plan early; and 5) To minimize environmental impacts, consider using biological controls.

# Natural Controls of Gypsy Moth

The enemies of the gypsy moth are represented by the three 'P's : **Predators Parasites Pathogens**  
 Native forest insects such as the forest tent caterpillar are kept under control by a community of natural enemies. When the gypsy moth came to North America it left its natural enemies behind. However, two things have happened over the past 100 years--some of the gypsy moth's natural enemies are now at work here and some native enemies have adapted to it.

## Once an Enemy, Always an Enemy

In the first half of this century many of the gypsy moth's natural enemies from around the world were released in the United States and Canada. Most were insects and many became established in North America. Some of these imported enemies have followed the gypsy moth into Ontario. Some native mammals, birds and insects have adapted to take advantage of the gypsy moth.

## Ganging Up on the Gypsy Moth

The enemies of gypsy moth fall into three distinct categories:

**PREDATORS** are animals which actually eat the gypsy moth. Some examples include white-footed mice, shrews, spiders, skunks, carpenter ants, beetles and about 40 species of birds. Predators do not have a preference for any particular life stage of the gypsy moth. They feed on a variety of prey species and

do not seek out the gypsy moth exclusively but will eat it when it is available and locally abundant. Predators of the gypsy moth play a role in the collapse of outbreaks.

**PARASITES** are usually insect species which consume and kill the gypsy moth by living inside it. There are over 100 known insect parasites of the egg, larval and pupal stages. Certain flies and small non-stinging wasps are examples of gypsy moth parasites. Unlike predators, parasites are usually very specific feeders. They commonly attack only gypsy moth at a certain stage in its development. Parasite populations build up in response to large gypsy moth populations, however, parasite control is most effective when gypsy moth populations are low.

**PATHOGENS** are diseases which can be found naturally in the environment. A well known pathogen, Bacillus thuringiensis (B.t.) is a bacteria which is specific to caterpillars that become moths and butterflies. B.t. occurs naturally in the soil. Commercially produced B.t. can be purchased in small quantities from a hardware store or lawn and garden centre, and sprayed on trees much like a more conventional insecticide.

Another pathogen is a naturally occurring nucleopolyhedrosis virus or NPV which is specific only to the gypsy moth. This virus causes infected larvae to appear "wilted". Unlike B.t., the NPV can be transmitted from one caterpillar to another and from generation to generation. In Canada, a product called Disparvirus is made from NPV-infected caterpillars by staff of Forestry Canada's Forest Pest Management Institute in Sault

Controlling Gypsy Moth - Naturally						
Type	Description	Examples			Effectiveness	Recommendations/Status of Homeowner Use
<b>Predators</b>	animals which eat the gypsy moth.	<b>Birds</b>	<b>Mammals</b>	<b>Insects</b>	help to keep low population levels in check.  help collapse outbreaks.	create suitable habitat conditions for predators.  maintain vegetation under trees.
		- chickadees - tanagers - blue jays - robins  + about 36 others	- mice - shrews - raccoons - skunks	- beetles - spiders - carpenter ants		
<b>Parasites</b>	insects which live inside the gypsy moth and eventually kill it.  usually specific to a particular life stage of gypsy moth.	<b>Flies</b>	<b>Wasps</b>		help to keep low population levels in check.  little impact on high gypsy moth populations.	try to maintain natural forest conditions around trees.  research currently looking at ways to release insect parasites. Not a method for homeowner use.
		can affect larval or pupal stage.	several insects were imported, have become established and affect egg, larval or pupal stage.			
<b>Pathogens</b>	diseases which occur naturally in the environment.	<b>Disparvirus</b> (nucleopolyhedrosis virus)	<b>Bacillus thuringiensis</b> ( <b>B.t.</b> ) (bacterium)		<u>B.t.</u> occurs naturally in soil.  Virus can cause heavy mortality in gypsy moth populations.	<u>B.t.</u> can be purchased and applied on small trees around homes.  research involving Disparvirus spraying is ongoing.  Disparvirus may be available for homeowner use in a few years.
		specific to gypsy moth	specific to caterpillars that become moths and butterflies.			