

Gypsy Moth Defense Strategies

Gypsy moths conjure up dreaded images of defoliated forests and yards blanketed with hairy crawling caterpillars. While it's true that these insects can do a great deal of damage, the fears about them are often exaggerated. If left to their natural cycle, gypsy moth populations will build for 5 to 10 years to peak numbers. When they are numerous, gypsy moths may defoliate trees for 1-2 years, before the insect population crashes. Although the exact cause is not known, natural controls such as viruses account for some of the decrease. Most large trees can withstand this damage and still recover. Gypsy moths, like Japanese beetles, cannot be eradicated so we have to accept that they are here to stay and learn techniques to live with them.

In order to recognize the stages of the gypsy moth which can be combated, it's crucial to know its life cycle. Like other moths and butterflies, gypsy moths start as eggs which hatch into crawling larvae, also known as caterpillars. The larvae feed voraciously on foliage until they form a cocoon. After two weeks in the cocoon, or pupal stage, the adults emerge and breed quickly to produce egg masses. After 7-10 days the adults die.

Look for the tan-colored, hairy egg masses, in late July through the following spring. They are usually found attached to loose bark, firewood, under recreational vehicles, and in any other protected place. The tiny larvae emerge in late March to early May and are only 1/8" long, hairy, and black. As they grow to 1 1/2" or more they show a pattern of 2 rows of spots down the back. The first 5 pairs of spots are blue, while the rest are red. This characteristic spotted color pattern distinguishes them from Eastern and Forest Tent caterpillars. Adult females are creamy white and do not fly, while the males are smaller and brown and black in color. Both have a "chevron," or V-shaped marking, on their forewings.

FOLLOW THESE STEPS TO HELP PROTECT YOUR LANDSCAPE FROM GYPSY MOTH DAMAGE:

◆ SKIRT YOUR TREE

The theory behind this strategy is that as gypsy moth caterpillars mature, they seek protected spots to avoid sunlight and predators as they travel up and down the trunk. Use burlap sections that are 12"-18" wide and long enough to wrap around the tree. The "skirt" should be placed at chest-height and tied on with string. Check the skirt daily during midday and sweep caterpillars into soapy water to drown them. Wear gloves or use a brush to avoid allergic reactions. Start this technique in early June and stop when they pupate in early July. This is a very effective control measure for single trees.

◆ GET THEM BEFORE THEY HATCH

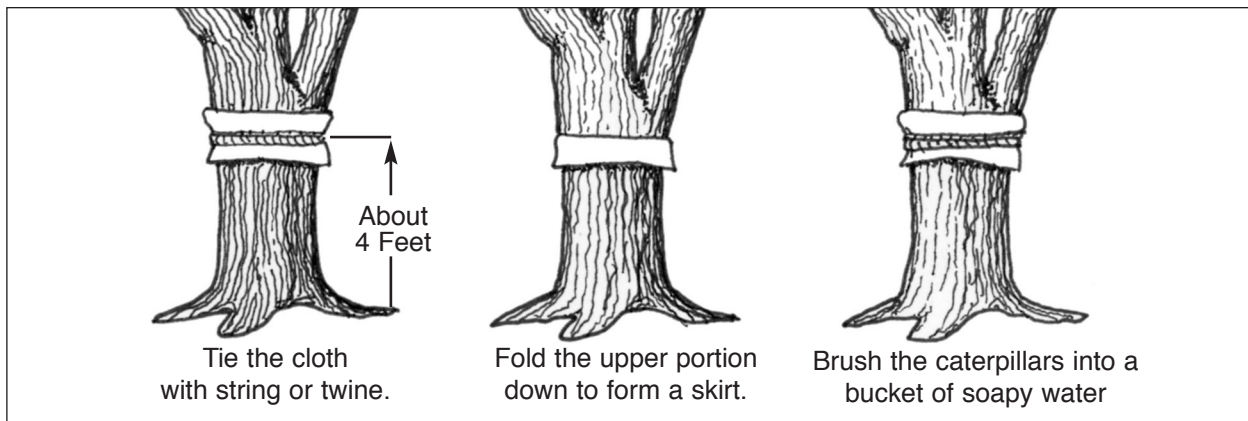
Beginning in August, be on the lookout for egg masses. They can be burned, buried deeply, or dropped in gasoline (just scraping them off onto the ground is insufficient.) Check any firewood you bring in, and look under your vehicles in the fall.

◆ FAVOR THEIR FAVORITES

Trees such as oak and others that gypsy moth larvae find most tasty should get extra care with fertilizer, adequate water, pruning, and reduced competition with grass and other plants. The healthier these trees are, the better they will withstand leaf damage.

◆ PLAN FOR THE FUTURE

With any new landscape additions, consider species that the gypsy moth larvae don't favor. Refer to the website listed at the end of the bulletin for a list of suitable plants. It's also important to plant a variety of trees and shrubs. Monoculture – the cultivation of one species in the landscape – invites pest problems in general.



◆ **TAKE LAST-RESORT MEASURES**

If necessary, spray with *Bacillus thuringiensis* (Bt). Bt is a naturally occurring bacteria that kills all caterpillars at a very young stage, because of this, all moths and butterflies at the same stage of life will die if sprayed. Insecticidal soap, like stronger insecticides, can kill all affected insects, not just butterflies and moths. Be aware though that spraying with pesticides slows or stops the predators and pathogens from keeping up with the gypsy moth population.

◆ **KEEP INFORMED**

It's difficult to predict the extent of damage the gypsy moth larvae will do each year. Typically, gypsy moths will be a bigger problem in oak-dominated forests, which are less common in northeast Ohio. The Holden Arboretum, along with area conservation agencies, acknowledges that to a certain extent, we must accept the integration of these creatures into the local ecology. Why has Holden's gypsy moth population stayed low? We believe the fungus, *Entomophaga*

maimaiga has controlled our population since 1996. Area parks were involved in an early release program for the fungus and the fungus has also been found occurring naturally in some areas. Other native and non-native predators have also followed the gypsy moths. Several parasitoid wasps have been released since the early 1900's and they travel with the gypsy moths. Several native insects, as well as mice and birds, also feed on them. All of this is part of how they are fitting into the local ecology and this may keep the population from exploding to damaging levels in the future.

TREES PREFERRED BY GYPSY MOTHS

All oak; aspen; poplar; gray, white and river birch; willow; apple; hawthorn; white pine; blue spruce; american beech; basswood; larch; mountain ash; sumac

THROUGH THE YEAR WITH GYPSY MOTHS

ACTIVITY	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV/MAR
Larvae present								
Larvae traps up								
Defoliation occurs								
Available spray period								
Pupae present								
Adults present								
Egg masses present								
Search for and destroy egg masses								

For more information, refer to "Face to Face with the Gluttonous Gypsy," in the spring 1996 edition of the Arboretum Leaves. Also refer to "The Case of the Gluttonous Gypsy," Leaves, spring 1991. For a list of plants least susceptible to gypsy moth damage, refer to the website: <http://lucas.osu.edu/gm/gmhome.htm>