Identifying & managing gypsy moth caterpillars

R. Chris Williamson and Andrea Diss

Andrea Diss, WI DNR

Gypsy moth caterpillars have a bristly body with five pairs of blue warts followed by six pairs of red warts running down their back.

The gypsy moth is a foreign pest that was introduced to North America in 1869. It has since become one of the most important insect pests of forest and shade trees in the eastern United States. Gypsy moth is now established in eastern Wisconsin and continues to move westward.

Approximately every 10 years the gypsy moth population explodes to very high numbers. During these outbreaks, the caterpillars strip trees of their leaves, defoliating neighborhoods or even entire forests in late June. While most healthy trees can survive a single defoliation, trees that are already stressed or which suffer drought or other damage that same summer may die. At their peak, the sheer numbers of caterpillars crawling all over becomes an annoyance, and can lead some people to try remedies that can be more damaging to the environment and themselves than the outbreak itself!

Identification

Terry McGovern

Gypsy moth caterpillars can be hard to identify in May and early June when they are very small, but by mid-June they are large enough to see their distinctive features. The caterpillars have bundles of bristles over their body and two lines of colored warts running the length of their body. The five pairs of warts towards the head are blue, the six pairs towards the rear are red. In addition, the head is dirty yellow with two vertical black bars that look like eyes. Gypsy moth caterpillars are present from May through mid-July.

USDA Forestry Service

Gypsy moth caterpillars can also be distinguished by their behavior. From the time they hatch in early May until they are half grown in mid-June, the little caterpillars feed during the day. Once they are about 1 inch long, however, their behavior changes. They start feeding at night and each morning they come down from the treetops to rest during the day. They often congregate on tree trunks but they'll also swarm all over the sides of houses, outdoor furniture, play sets, cars, and anything else located near the trees on which they are feeding.

Because they feed at night and the amount they eat increases daily as they grow, it sometimes appears that trees are defoliated overnight in late June. In a way it's true, as caterpillars consume 90% of their total diet during their last week or two of growth.

Tim Tigner, Virginia Department of Forestry

Gypsy moth caterpillars usually complete their development in early July. The mature caterpillars then search for a safe place to pupate. This is how gypsy moth pupae and eventually egg masses end up in such odd spots as the undersides of vehicles, behind signs on trees, on buildings, in wood piles, and stone outcroppings as well as in crevices on trees. Once they've found a secure spot, the caterpillar sheds its skin and becomes a pupa. The gypsy moth does not form a cocoon. The pupation stage lasts for approximately 2 weeks before the adult moth emerges.

Management

Gypsy moth outbreaks may last from 1 to 3 years, with about 10 years between outbreaks. It's unclear what triggers a population explosion, but they always eventually collapse as a result of natural causes. However, until populations crash, homeowners can use a variety of strategies to limit damage and nuisance problems.

It's important to remember that not all tree defoliation is the work of gypsy moths. Gypsy moth caterpillars never build tents or nests. So if you see a webbed tent or nest near a defoliated area, another pest is involved. Before selecting a management strategy, be sure to correctly identify the pest.

Cultural

Maintaining healthy trees and shrubs will help defoliated plants recover more quickly.

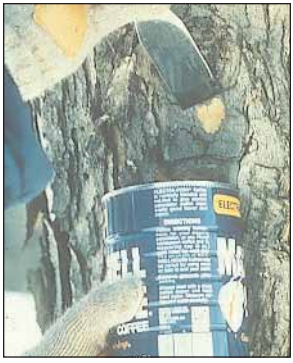
Trees that are defoliated will recover more quickly if they receive adequate water. Irrigate affected trees for about an hour each week unless there's been a good soaking rain. Continue watering through the end of August.

Avoid fertilizing trees for the remainder of the growing season. Nitrogen stresses the tree by encouraging growth of leaves at the expense of food reserves stored in the roots. Lawn fertilizers are another source of nitrogen and should not be used until late October.

Physical

WINTER (mid-October until mid-April): Destroy egg masses to help reduce the number of caterpillars next spring. Spray with Golden Pest Spray Oil or scrape off and kill the egg masses by microwaving for 2 minutes or by submerging in soapy water for 2 days. Killed eggs may be thrown out in the trash.

Bill McNee, WI DNR



Cliff Sadof, Purdue University

Bob Queen, WI DNR

Late April: Place barrier bands on tree trunks. Barrier bands will prevent caterpillars from climbing back into trees after they have tried to disperse or when they have fallen. Barrier bands can be purchased or made using duct tape or other nonporous material that can be wrapped around a tree trunk (silver side out) and coated with a commercially available sticky material such as TangleFoot®. **Never** put sticky material directly on the tree trunk. On thin-barked trees such as birch, tie butcher paper or paper bags tightly around the trunk before using the duct tape. The sticky material may need to be re-applied periodically due to rain and other environmental conditions as well as when the bands are covered with caterpillars.

Bob Queen, WI DNR

Early June: Replace barrier bands with cloth collection bands. Collection bands can be made from medium-weight dark cloth or burlap approximately 12–18 inches wide and long enough to completely wrap around a tree in a wide belt. Tie a piece of cord or twine around the middle of the cloth band at chest height on the tree. Fold the top half of the cloth down to cover the bottom half

to make a two-layer skirt. Older caterpillars are attracted to these "skirts" when looking for a place to hide during the day. Remove and destroy the caterpillars each day by scraping them into a bucket of soapy water.

Bob Queen, WI DNR

Sanitation. Remove items such as dead branches and stumps that protect gypsy moth caterpillars and pupae from predators.

Soapy water. Spraying young gypsy moth caterpillars with soapy water can kill those soaked.

Chemical

Biological pesticides. The most common treatment used against gypsy moth is a spray of *Bacillus thuringiensis*, commonly called Bt. This bacterial insecticide kills caterpillars that eat it within a week of its application. Bt is found naturally in soil and degrades within a week when exposed to sunlight. The variety of Bt used against the gypsy moth only affects caterpillars of moths and butterflies. Bt has no affect on animals, birds, people, or even other insects. It is sold under various labels (Bactur, Dipel, Foray, and Thuricide, to name a few). Bt must be applied to trees in May when caterpillars are less than ½ inch long. Timing is critical as Bt is significantly less effective on older caterpillars.

Chemical insecticides. Numerous insecticides are registered against gypsy moth in Wisconsin. Many products are available at your local garden center or nursery. Check the label to make sure gypsy moths are listed. If you elect to use a chemical insecticide, consider the potential impact on beneficial insects and natural enemies such as predators, parasites, and honeybees. To help you decide which pesticide is right

for your situation, see publication FR-171d *Selecting a Pesticide for Gypsy Moth Control*. **Always** read and precisely follow the label directions. Many trees will be too tall for a homeowner to treat effectively, in these cases, hire a certified arborist.

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