

# GYPSY MOTH

## WHAT IS THE GYPSY MOTH?

The gypsy moth is an invasive forest pest from Europe that is one of the most damaging tree defoliators currently in the U.S. Aspen and oak top the list of over 500 preferred host species. Gypsy moth caterpillars feed on leaves of deciduous trees and are present in early-mid summer.



## EGGS

Gypsy moth egg masses are typically laid on branches and trunks of trees. The egg is the overwintering stage. After an acclimation stage, eggs can withstand freezing temperatures. The longer they are chilled in winter, the less heating is required for their hatch in spring. Egg masses are buff colored when first laid but may bleach out over the winter months.

## LARVAE

The hatching of gypsy moth eggs coincides with budding of most hardwood trees. Larvae develop into adults by going through a series of progressive moults through which they increase in size.

## PUPAE

The larvae reach maturity between June and July when they enter the pupal stage. This is the stage during which larvae change into moths. Pupation lasts from 7 to 14 days. When the population is spread out and running low, pupation can take place under flaps of bark, in crevices, under branches, on the ground, and in other places where larvae rested. During periods when population numbers are dense, pupation is not restricted to locations where larvae rested. Pupation will take place in sheltered and non-sheltered locations, even exposed on the trunks of trees or on foliage of nonhost trees.

## MOTHS

The brown male gypsy moth emerges first. When the females emerge, they emit a chemical substance that attracts the males. After mating, the female lays her eggs in July and August close to the spot where she pupated. Then, both adult gypsy moths die.



## ECOLOGICAL THREAT

Gypsy moths are voracious eaters and can completely defoliate entire trees. Outdoor recreation might be reduced as a result of bare trees, caterpillar presence on trees and roads, and feces falling from trees. Repeated defoliation can lead to the death of many trees, changing the mix of tree species and affecting dependent wildlife. Tree losses can impact forest and related industries. Because gypsy moths are non-native, there are few natural enemies to keep them in check.

## CONTROL METHODS

**Natural Control:** Gypsy moth larvae have a few predators which can help decrease their population. Lack of predation is one reason they can go from a normal part of the ecosystem to an actual threat to trees. Deer mice, tachinidae flies, and Braconidae wasps are the three most commonly use natural controls.

**Chemical Control:** During periods when numbers of gypsy moth larvae are dense, pesticides may be the most effective method of reducing the number of larvae and protecting the foliage of host trees. Large areas, such as wooded residential areas and forests, should be treated by aircraft. Available pesticides fall into two broad groups: microbial and biological pesticides. Microbial and biological pesticides contain living organisms that must be consumed by the pest. Microbials include bacteria, viruses, and other naturally occurring organisms; biologicals include manmade synthetics of naturally occurring organisms. These pesticides should be applied before the larvae reach the third stage of development. As they mature, larvae become more resistant to microbial pesticides and are more difficult to kill.