

# GYPSY MOTH

## in New Jersey



The insect pest Gypsy Moth (*Lymantria dispar*) feeds on hundreds of varieties of trees and shrubs. The moth prefers the oak as a host tree - such as New Jersey's state tree, Northern red oak.

### SUSCEPTIBLE PLANTS\*

apple	hawthorne	oak
aspen	hazelnut	rose
basswood	hophornbeam	serviceberry
gray, paper, & river birch	larch	sweetgum
	mountain ash	willow
		witch-hazel

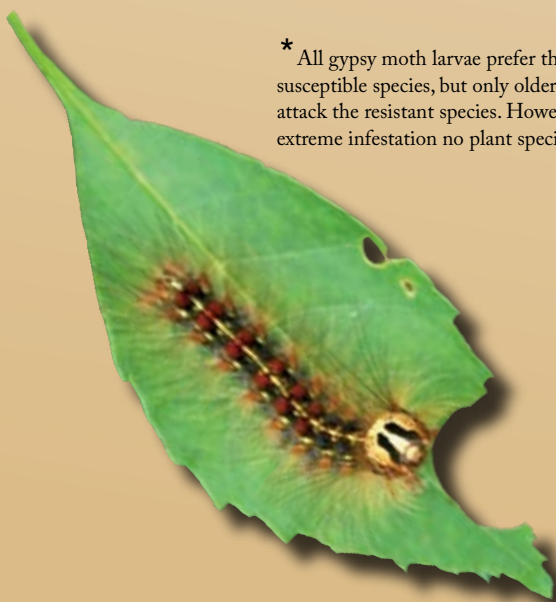
### RESISTANT PLANTS\*

beechnut	choke cherry	persimmon
black birch	elm	pine
blackgum	hemlock	redbud
blueberry	hickory	sassafras
cherry	maple	sourwood
chestnut	pear	spruce
		walnut

### IMMUNE PLANTS

arborvitae	elderberry	mountain laurel
ash	fir	mulberry
atlantic-white cedar	grape	pitch pine
azalea	greenbriar	rhododendron
yellow birch	American holly	sycamore
dogwood	horsechestnut	tuliptree
eastern redcedar	Kentucky coffee tree	viburnum
	locust	

\* All gypsy moth larvae prefer the susceptible species, but only older larvae attack the resistant species. However, in extreme infestation no plant species is safe.



### THE PROBLEM

The Gypsy Moth, originally from Europe, was introduced to Massachusetts in 1869 by a French botanist trying to develop the silkworm industry. Once the insects escaped from his laboratory, they colonized and spread. Currently gypsy moths populate 19 states. Without intervention this pest spreads at about 13 miles per year.

### CONTROLLING THE SPREAD

To control gypsy moths a property owner should monitor populations, maintain tree health, remove and destroy egg masses, and trap larvae by banding trees with burlap. Heavy infestation may require treatment with insecticide such as Bt (*Bacillus thuringiensis*) - a naturally occurring bacteria. Bt is often recommended because it only affects the caterpillar stage of moths and butterflies. Spray the tree's leaves with Bt from late April to early May when caterpillars first hatch and are less than 5/8" long. Bt does not work on older caterpillars or other moth life stages. Some Bt brand names are: Dipel, Thuricide, and Caterpillar Attack. Read all instructions before applying pesticides. Homeowners should consider hiring a NJ Certified Tree Expert or NJ Approved Forester to develop a control plan to protect their tree resource.



### TREE DAMAGE

If a healthy tree is defoliated, the tree may re-leaf during the summer, but with smaller leaves. This stress to the tree makes it more susceptible to borers, fungus, and drought. A healthy tree may be able to survive one or two defoliations. A stressed tree may partially or totally die from defoliation and the impact may not be seen for many years.

### GROWING POPULATIONS

In 1981, New Jersey suffered the worst gypsy moth defoliation of 800,000 acres. From aerial surveys, New Jersey foresters have determined that populations are on the rise again. From 42,000 acres defoliated in 2005, the infestation has risen to over 127,000 acres in 2006, and 324,000 in 2007. Without proper management, the defoliation could grow to 600,000 acres in 2008.

# GYPSY MOTH lifecycle

## Adult

Adult male moths are brown, while females are whitish, slightly larger, and flightless. Females emit a pheromone to attract a mate. After mating, the female deposits eggs. Adults die soon after, leaving a new generation to hatch in the spring.



## Egg mass

The female moth deposits egg masses on trees, rocks, buildings, and woodpiles. She then covers the egg masses with scales and hairs from her body to provide winter protection. Egg masses, containing 200-1000 eggs, are buff-colored, but may bleach from weathering.



## Pupa

In late June and early July the larva will crawl to a protected bark crevice and form a pupa. After about 2 weeks, moths emerge.



## Defoliating larva

When the larvae make contact with a leaf, feeding begins. Second and third instars feed during daylight on leaf edges. The fourth instars feed at night. Larvae feed the most in the fifth and sixth instars. When larvae heavily infest an area, they feed continuously.



## Tiny larva

Larvae emerge from late April to early May. The larvae grow rapidly, molting weekly into progressively larger instars. During the first instar, the tiny larvae may be blown by the wind several miles to spread the infestation. Apply Bt insecticide at this time.



## NATURAL ENEMIES

The Gypsy Moth's natural predators include wasps, flies, beetles, ants, and spiders. These and other animal predators help suppress gypsy moth populations from outbreak. However, during an outbreak, the most effective natural enemy to gypsy moths is a fungus known as Wilt Disease.

### OTHER ANIMALS THAT EAT GYPSY MOTHS

BIRDS	MAMMALS
Chickadee	Mouse
Blue Jay	Shrew
Nuthatch	Chipmunk
Towhee	Squirrel
Robin	Raccoon

## TENT CATERpillARS

Often the tent caterpillar is mistaken for the gypsy moth. This caterpillar is also foliage feeding but unlike gypsy moth, it is native to our area, makes silky tents in trees, has a stripe on its back, and favor cherry trees.

