



## Gypsy Moth

*Lymantria dispar* Linnaeus (Lepidoptera: Lymantriidae)

### Introduction:

The Gypsy Moth (GM) is an exotic, invasive insect from Europe accidentally introduced near Boston, MA, in 1869. Finding abundant host plants to feed on, the pest successfully established and is now considered one of the most devastating pests of hardwood trees in the U.S. Nearly a million acres of trees are defoliated annually, at a cost of about \$30 million/year for the past 20 years. More control efforts are aimed at GM than against any other forest insect in U.S. history.

GM is regulated by quarantines in the U.S. and Canada to restrict its spread beyond infested areas. Federal regulations prohibit moving infested articles from quarantined areas to uninfested parts of the nation. Articles requiring inspection include: nursery stock and Christmas trees; logs, pulpwood, and bark products; certain vehicles and equipment; and outdoor household items.

### U.S. Distribution/Spread:

GM are established in 19 eastern U.S. states and Washington, DC, and in four Canadian provinces. Full or partial quarantines are in effect in all of these areas. Sporadic infestations of GM have been detected and eradicated in a number of western U.S. states almost annually since 1974. Currently, GM infests less than 30% of its susceptible hosts in the U.S. Adult male GM spread naturally by flight, but females cannot fly. Larvae disperse naturally by hanging down on silken threads to catch a breeze and “balloon” short distances. Long range artificial spread occurs when people accidentally transport GM egg masses, larvae or adults from infested areas on vehicles, firewood, camping equipment, etc., into uninfested areas.

### Host Plants:

GM larvae feed on several hundred different species of trees and shrubs but prefer the foliage of hardwoods, especially oaks and aspen. At dense populations, larvae of all stages will feed on almost any vegetation, including conifers. Intense feeding may completely defoliate a tree. Deciduous trees often refoliate and survive, but several consecutive years of complete defoliation may kill them. Evergreen trees can not refoliate and extensive defoliation can kill them in one season.

### Biology and Damage:

GM produce one generation annually. They overwinter as eggs in

protective egg masses, and hatch from early-spring to mid-May. Newly emerged larvae (caterpillars) feed on leaves in the crown of host trees, or “balloon” to new hosts to feed. Larvae are the destructive stage, feeding for 8-12 weeks while growing larger through a series of 5 or 6 developmental molts.

Older caterpillars typically feed in tree crowns at night and crawl down the trunk at dawn to rest during the day. In dense populations, larvae will feed continuously day and night until the tree is stripped of all leaves. By June, a mature caterpillar can eat up to 1 sq. ft. of foliage a day. When feeding ends in mid-June to early-July, caterpillars search for places to pupate, congregating in huge numbers on lawns, sidewalks, vehicles, sides of buildings, etc.

Adult moths emerge late-June to late-July and are active through mid-August. The moths do not feed; their only function is to mate. Unlike most moths, which are nocturnal, GM males fly during the day. Females cannot fly and crawl only short distances. Each female lays a single, buff colored egg mass containing 100-1,000 eggs on the bark of trees, or almost anywhere outdoors.

### Identification:

- Female moths are creamy white with wavy black markings on the wings, and have thin antennae.
- Females are large, with wingspans up to 2½” (6.4 cm), and stout bodies 1” long (2.5 cm) or longer.
- The female’s enlarged abdomen is covered with yellow hairs.
- Despite well-developed wings, females cannot fly.



Male (left) and female gypsy moth adults. USDA APHIS PPQ, Bugwood.org

- Male moths are mottled brown (tan to dark brown) with wavy black wing markings, and oblong, feathery antennae.
- Males are smaller, with slimmer bodies, and wingspans of about 1" (2.5 cm).
- Males are strong fliers active primarily during the day.
- Egg masses resemble domed, oval shaped, buff colored pieces of chamois leather about 1-2" long (2.5-5 cm).
- Younger larvae are small, about 1/8-3/5" long (3-16 mm); black with black heads; and hairy.
- Older larvae are 3/5-2 1/2" long (15-64 mm); with dark gray, hairy bodies; yellow, black-marked heads; and a row of 5 pairs of blue bumps followed by 6 pairs of red bumps down the back.



Gypsy moth larva. Minnesota Department of Natural Resources, Bugwood.org

- Pupae are encased in dark red-brown, smooth, teardrop-shaped skins about 1/2-1" long (13-25 mm) with sparse tufts of buff colored hairs.
- Pupae are motionless, webbed or suspended in place with a few strands of silk.



Gypsy moth pupa. USDA APHIS PPQ, Bugwood.org

### What to Look For:

- Egg masses on tree trunks, undersides of branches, under loose bark, in tree cavities; or on outdoor items such as garden tools, furniture, vehicles, camping equipment, wood piles, etc.
- Feeding damage ranging from small shotgun holes in leaves, to larger holes occurring along leaf margins, to entire leaves eaten leaving only midveins intact.
- Defoliated trees; twig and branch die-back in upper crown.
- During severe outbreaks, large numbers of GM caterpillars crawling on walls, across roads, over outdoor furniture, in pools, on and even inside homes.
- Caterpillar silk strands, frass (droppings), leaf litter and dead moths may be abundant.
- Plain brown male moths flying during the day.



Female laying egg mass. Steven Katovich, USDA Forest Service, Bugwood.org

Egg mass. Louis-Michel Nageleisen, Département de la Santé des Forêts, Bugwood.org



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Egg masses on tree trunk. Milan Zubrik, Forest Research Institute - Slovakia, Bugwood.org

### How to Report a Possible Sighting/Infestation

#### **In Maryland:**

**University of Maryland Cooperative Extension Exotic Pest Threats Website:**  
<http://hgic.umd.edu/faq/sendAQuestion.cfm>

**Maryland Department of Agriculture:** call 410-841-5920 to report suspect pests; visit [http://www.mda.state.md.us/plants-pests/invasive\\_species.php](http://www.mda.state.md.us/plants-pests/invasive_species.php) for information.

**Nationally: USDA-Animal and Plant Health Inspection Service (APHIS)**  
[http://www.aphis.usda.gov/services/report\\_pest\\_disease/report\\_pest\\_disease.shtml](http://www.aphis.usda.gov/services/report_pest_disease/report_pest_disease.shtml)



### **Where to Get More Information:**

UMD Cooperative Extension Exotic Pest Threats Website: <http://www.PestThreats.umd.edu/index.cfm>

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