

# Detecting GM



GM traps in a tree<sup>9</sup> (left) and on a road sign<sup>10</sup> (right)

## Taking Action

The Colorado State Forest Service, Colorado Department of Agriculture and the USDA-Animal and Plant Health Inspection Service conduct an annual monitoring and detection trapping program for GM. This cooperative trapping program is designed to monitor Colorado for the presence of GM and allow for rapid response to GM when found.

## You Can Help

More than 1,700 GM traps are set annually in May and remain in place until October to detect GM. These traps also provide additional monitoring in areas when GM has been observed in an area. Please support state efforts by not disturbing traps in your area. GM traps are bright green and are deployed in every county in Colorado. These traps use pheromones to attract GM and do not present a hazard to people, pets, or other wildlife.

If you have questions about GM traps or think you have found GM in your area, please contact the Colorado State Forest Service at 1-970-491-6303.

# Controlling GM

## Quarantines

Eighteen states currently have GM quarantines and restrictions in place on the movement of materials that might harbor GM, including outdoor recreation equipment and woody material. Some areas require a physical inspection of all outdoor recreation equipment and other items prior to moving outside of a quarantine area. These restrictions help reduce the movement of GM into new areas.

## Treatment and Control

A number of products and forest management strategies aid in the control of GM. If a population of GM were to become established in Colorado a response plan would be executed by state and federal agencies to eradicate the population. Eradication of newly established GM populations has been successful in several locations throughout the western U.S., including Colorado.



Support for this brochure was provided by USDA-APHIS-CAPS

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<sup>1,2</sup> USDA-APHIS-PPG Archives; <sup>3,4</sup> Tim Tigner, VA Dept. of Forestry;  
<sup>5</sup> Penn. Dept. Conservation and Natural Resources; <sup>6</sup> Hannes Lemme; <sup>7</sup> Daniel Herms, The Ohio Univ.; <sup>8</sup> Milan Zubrik, Forestry Research Institute of Slovakia; <sup>9,10</sup> Sky Stephens, Colorado State Forest Service.  
Map credit: USDA-APHIS

# Gypsy Moth



## What You Need to Know about the Threat to Forests in Colorado



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# What is Gypsy Moth?



*Gypsy moth - adult male.*<sup>3</sup>

The gypsy moth (GM) is one of North America's most devastating forest pests, feeding on over 100 species of trees and plants. The European GM was introduced in the late 1860s to

Massachusetts. By the 1880s the European GM had established a local eruptive population and state and federal agencies began efforts to eradicate the European GM. All attempts to eradicate this pest failed and the European GM began to spread and efforts shifted from eradication to focusing on controlling the spread of the moths. By 1990 the European GM had become established throughout the northeastern U.S.

The European GM has been found in localized populations throughout the United States. Efforts to eradicate these isolated populations have been successful, but the European GM continues to be found outside of the quarantine area every year. Quarantines, outreach and education, and forest management efforts have impacted the rate of spread and number of introduced European GM to new areas, thus helping to reduce the spread of this pest.

The Asian GM is distinguishable from the European GM through DNA analysis. It feeds on both conifers and hardwoods and is a threat to western forests in the U.S., including Colorado's. Asian GM has been eradicated from several introduction points at U.S. ports of entry.

# Identifying GM

## Identifying GM

- Males – small brown moths with black markings, wingspan 1-1.5 inches
- Females – heavy-bodied white moths with a few dark spots or bands, wingspan 2 inches
- Female European GM have large, well developed wings, but are flightless
- Asian GM look identical to European GM, but the females are capable of flight
- Late instar larvae are hairy caterpillars about 1.5-2 inches long and have rows of blue and red spots



**Left:** Adult female<sup>4</sup> **Right:** Late instar larva<sup>5</sup>

## Life Cycle of GM

- April/May - Larva emerge from egg masses
- Larva feed for 6-8 weeks
- July - pupation
- July/August - Adults emerge
- August/September - Females lay egg masses



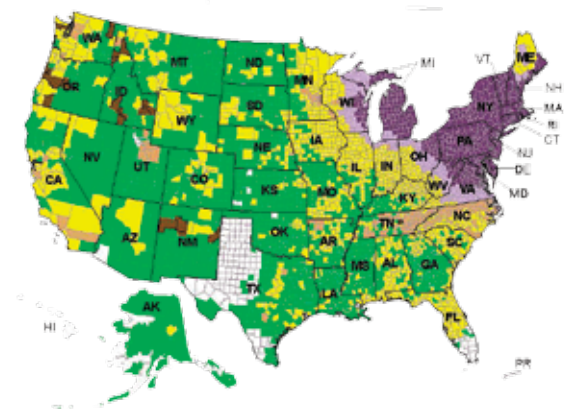
**Left:** Female with egg mass<sup>6</sup> **Center:** Larvae emerging from egg mass<sup>7</sup> **Right:** Pupae<sup>8</sup>

# GM In Colorado

## GM in Colorado

Gypsy moths have been collected in Colorado almost every year since the mid-1980s. Areas in which GM is detected are surveyed intensively to determine if a population of GM has become established. In 1984 a population of GM was detected and eradicated from Colorado; this was possible due to early detection. In most cases a likely source of introduction can be identified. Introductions are usually associated with the transportation of goods or people from areas having established GM populations.

GM is usually moved in the egg mass stage. Female moths will lay eggs on almost any surface, including firewood, outdoor recreation equipment, outdoor furniture, and automobiles. GM egg masses have been found under hubcaps, on birdbaths and under the hood of an old car. GM can also be moved in shipping and cargo containers.



Map showing locations of GM occurrence. Dark and light purple – populations established; yellow – moths detected by trapping; green – moths not detected by trapping; brown – eradication efforts; white – not trapped.