

Gypsy Moth Advance Continues

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(Editor's Note: The following column is not intended to cause fear, panic, or a pit in the bottom of your stomach. The intent is to present the latest facts and to educate.)

Long thought to be strictly a problem of the northeastern United States, the gypsy moth (*Lymantria dispar*) is making serious inroads into the Midwest and "The Land of 10,000 Lakes". Let's explore the life cycle, distribution, impacts, and control measures posed by this annoying and potentially devastating insect.

Like so many other invasive species, gypsy moth was brought to the United States with good intentions. This European species was brought to the east coast in an attempt to breed a heartier silk worm. It escaped into the woodlands and forests of Massachusetts in 1869. In the early 1900's, the federal government realized that this pest would be a serious problem. The Plant Quarantine Act was introduced in 1909 and passed in 1912. This law quarantined all trees located in infested areas and required that a thorough inspection be performed on any trees leaving that area. The law was very effective and kept the moth in the northeastern United States for many decades. But as we shall see, as Americans became more mobile, so did the "Gypsy" Moth.

The life cycle of the Gypsy Moth is fairly simple. The larval stage emerges in the months of May and June. The larvae feed voraciously on deciduous trees and woody plants as they progress through five to six instars. The insect pupates during the month of July and the male and female moths emerge in August. The female moth is flightless and moves very little from the pupation site. After mating, the female deposits an egg mass on or in any protected location in the immediate area. The egg mass over-winters until the following spring.

The Gypsy Moth is a unique pest in several ways:

"It has no natural predators (which is often the case with invasive species) to control its population; they just keep increasing.

"It is not a finicky eater, reportedly feasting on 300-500 different species of



*Female depositing egg mass. Each egg mass contains 100-1200 eggs.
Photo by Kenneth H. Knauer, USDA Forest Service*

host trees. The spread of this pest will not be deterred by the absence of host species.

+ The egg mass is often deposited in log piles, trailer frames, camping gear, automobiles, etc. and unknowingly transported great distances by human activity.

+ In areas of heavy infestations, the female will lay her egg mass high up in a tree, impeding efforts to destroy populations.

+ Because it tends to feed high in large trees, aerial spray applications may be the only option when dealing with areas inaccessible to high pressure spray rigs.

+ The Gypsy Moth caterpillar is capable of "ballooning", a process of trailing a long line of silk that is picked up by high winds, moving the caterpillars from tree to tree. It is next to impossible to keep areas downwind clear from heavy infestations.

The Gypsy Moth is capable of defoliat-

ing huge tracts of forest and woodland. Successive years of defoliation weaken otherwise healthy trees, leaving them susceptible to disease, drought, and additional insect attacks. Worst case scenarios result in tree death. While the economic and environmental impacts from this pest are devastating, living among these insects is definitely no treat. When the larvae leave their host trees after ten weeks of feeding, they begin searching for a pupation site. In heavily infested areas they can literally cover houses, garages, automobiles, driveways, or anything else exposed to their numbers. Copious amounts of frass and leaf litter fall from the sky as thousands of larvae consume every leaf on a host tree. An allergy to the frass and molted skins of the caterpillar is an issue for some individuals.

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Gypsy Moths –

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As of this year, the range of the Gypsy Moth is from the Northeastern U.S. down the Atlantic coast to northern North Carolina and west across the Great Lake states. It is now common in eastern and central Wisconsin. Most of the western counties in Wisconsin are part of the USDA Forest Services' "Slow The Spread Program" (STS). This program focuses on using IPM strategies to deal with low-level moth populations in the transition zone between infested and uninfested areas. The program relies heavily on the monitoring and eradication of small, isolated populations before they become established. The program goals are to slow the spread of Gypsy Moth into uninfested areas by almost two-thirds, thereby saving monies that would otherwise be spent on damages and control. Currently, the Minnesota counties of Houston and Winona are in the STS program.

The Minnesota Department of Agriculture has been trapping Gypsy Moth since 1973. They place and monitor an average of 16,000 pheromone-scented traps annually. The trapping is not done for control purposes, rather, it is done to monitor for new infestations. Control methods include aerial applications of *Bacillus thuringiensis* var. *kurstaki*, a naturally occurring bacteria with insecticidal properties; and pheromone flakes, a mating disrupter that virtually makes the female moth invisible to the male moth and reproduction is eliminated. Over the past several years, the MDA has made numerous Bt applications to some highly populated urban areas including the Lake Harriet area, Edina, and the Golden Valley area. These treatments are very effective

Tree Preference of the European Gypsy Moth

<u>Preferred</u>	<u>Less Preferred</u>	<u>Avoided</u>
Oak	Yellow Birch	Ash
Aspen	Boxelder	Red Cedar
Basswood	Walnut	Balsam Fir
Paper Birch	Spruce	Silver Maple
Tamarack	Cottonwood	
	Pine	
	Red / Sugar Maple	

in localized areas.

The reality of the situation is this; the Gypsy Moth can be slowed down but it can NOT be stopped. Experts expect that Minnesota will be overrun in 8-12 years. At that time, the MDA will change its game plan from eradication to suppression. The financial costs for suppression will be enormous.

Listen closely...you might just hear *Lymantria dispar* knocking on Minnesota's door.



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