

 UI Extension Forestry Information Series

Gypsy Moth Monitoring in Idaho

Yvonne Carree Barkley and Ladd Livingston

In 1870, a well-known entomologist announced that “Only a year ago the larvae of a certain moth, *Lymantria dispar*, were accidentally introduced into New England, where it is spreading with great rapidity.” It happened like this: A Mr. Trouvelot, then living in Massachusetts, was in search of a silk worm that would survive in the United States. By accident, he brought some gypsy moth larvae home when he returned from his travels. Mr. Trouvelot, being an entomologist and aware of the havoc this particular insect caused throughout Europe, informed the authorities that he thought some adult moths had escaped. Nothing was done and an epidemic of wide-scale proportions had begun.

Placed in an environment lacking natural enemies, the gypsy moth (like many other introduced insects and diseases) rapidly multiplied and spread. Today, approximately 347,000 square miles of northeastern forest land is infested with the gypsy moth. Despite strict quarantines and aggressive attempts at control, it continues to spread, hitch-hiking its way to new areas on cars, campers, and patio furniture.

Adult gypsy moths deposit egg masses on tree trunks, branches, buildings, fences, on cars and campers, patio furniture, and even in bird and bat houses. Masses usually contain 100-600 eggs and are covered with a brown felt-like covering. The gypsy moth caterpillar hatches from early April to late May, often remaining on the egg mass a few days before climbing the tree to feed. It sometimes spins a silken thread and suspends itself from a leaf. If the wind becomes strong enough, the dangling caterpillar becomes airborne and can travel from several hundred yards in wooded areas to many miles across open terrain. As the caterpillar matures, it begins to feed at night and

descends from the tree during the day to take cover in a shady area. Heavily infested trees will have caterpillars feeding around the clock. Oaks suffer from gypsy moth attacks more than other species of trees, *but many species of hardwoods and conifers host this voracious insect*. Most deciduous trees can survive one or two consecutive years of defoliation before severe decline or death occurs. *Conifers will die after one complete defoliation*.

Surveys to detect the gypsy moth have been conducted in Idaho each year since 1974. The first gypsy moth was discovered in Idaho in 1986 at Sandpoint. The following year, numerous moths were caught at Sandpoint and Coeur d’Alene. This stimulated ground treatments in 1988 and aggressive aerial spray eradication programs in 1989 and 1990 using a natural occurring bacterium, *Bacillus thuringiensis (B.t.k.)*, as the pesticide. No gypsy moths have been caught in the treated areas since 1989.

Each year, pheromone-baited traps are placed on a grid basis of four traps per square mile. Cities and communities with twenty or more move-ins occurring are trapped irrespective of their place in the grid or schedule. A move-in is defined as an individual or family moving to Idaho from a state that is generally infested with gypsy moth. This information is gathered from vehicle registrations from the Idaho Department of Transportation. Most infestations are started when an egg mass, or other stage of the gypsy moth, arrives on an outdoor household article brought by someone moving into the state. Campgrounds, tourist attractions, and other high-risk locations are also trapped yearly.

CONTINUED ON PAGE 2

Gypsy moth control can be achieved with a number of biological controls. *Bacillus thuringiensis*, a bacterial pathogen, kills the caterpillars. Some parasites and predators of the gypsy moth from Europe and Asia have been reared and released in the United States with some success. A fungus from the Orient has good potential for use as a microbial insecticide, while another fungal insect pathogen has been a factor in gypsy moth populations kills about 10% of the population per year, and is being looked into as another method of control.

Trapping and monitoring are important tools in the identification and control of insect populations. Even

the strictest quarantine controls will eventually allow some individuals of an unwanted insect population to gain entrance to the U.S. The key to controlling these unwanted populations is to detect them early and begin aggressive treatments before they increase their numbers to unmanageable levels.

This information first appeared in Woodland NOTES, Vol. 11, No. 1.

About the Authors: *Yvonne Carree Barkley* is an Extension Associate - Forestry at the University of Idaho. *Ladd Livingston* is the Idaho Department of Land's State Forest Entomologist.

