

Slowing the Spread of Gypsy Moth in the United States

Overview:

This brief provides information about the gypsy moth slow the spread pilot project and the benefits of implementing an operational slow the spread strategy.

Introduction:

Over the last 30 years the spread of the gypsy moth has accelerated from about 3 miles per year to an average of 13 miles per year. Natural means of spread, that is, hatching larvae ballooning short distances on wind currents does not account for this increase in the rate of spread. Two other factors more likely are responsible: (1) an increase in the mobility of people and household moves, which increase the chances of the artificial movement of all life stages of this pest, and (2) abandonment of the early USDA and state programs which aggressively worked to slow the spread of and reduce populations of the gypsy moth.

Traditional gypsy moth management strategies seek to reduce damage caused by the insect in two ways: by suppressing outbreaks in the generally infested area where gypsy moth is considered to be a permanent resident, and by eliminating isolated infestations to prevent the insect from becoming established in uninfested areas of the United States. Largely ignored, however, are survey and treatment of newly established, but low level and disjunct gypsy moth populations that occur in the transition area, a band about 50 to 100 miles wide separating the generally infested area from the uninfested area (see map). The risk in leaving these populations untreated is that they continue to grow, coalesce and contribute to further spread of the insect. The idea behind slow the spread is to keep these populations from growing rapidly and thereby delay the impacts associated with gypsy moth outbreaks and the cost of suppression activities.

Initiation of Slow the Spread Pilot Project:

In 1992 the USDA Forest Service and Animal and Plant Health Inspection Service, along with eight state and university partners, initiated the Slow the Spread (STS) Pilot Project on 7 million acres in the transition area of four states: North Carolina, Virginia, West Virginia and Michigan (see map). STS uses intensive monitoring to locate low-level populations of the gypsy moth when they first arrive in the transition area. Once detected, these populations are targeted for treatment. All available treatments are considered, but priority is given to the use and field evaluation of treatments that have the fewest environmental impacts.



Goal of Slow the Spread Pilot Project:

The increased rate of spread of gypsy moth is of great concern because the initial outbreaks in previously uninfested areas are usually very damaging and often result in costly suppression projects. The goal of the STS pilot project is to determine the feasibility of using integrated pest management strategies over wide geographic areas to reduce the rate at which gypsy moth is spreading. The pilot project is expected to continue until at least 1998 and then a decision will be made whether to implement a national slow the spread strategy.

Benefits of a Slow the Spread Strategy

A slow the spread strategy has a solid economic justification. Economic impacts that are likely as gypsy moth spreads into new areas include (in order from least to most) growth loss in timber, fewer visitors and loss of revenues in recreation areas, cost of increased government activities against gypsy moth, and costs to landowners.

Impact Category ¹	Assumptions	Value
Timber (5%)	Outbreak on 10% of the susceptible host	10 years loss in growth and yield
Recreation (5%)	Loss of visitor days	\$13.50/visitor day
Government activities (30%)	Increase in gypsy moth management costs	\$0.18/acre
Residential (60%)	Willingness to pay to avoid impacts	\$41/household

¹Percent of total impacts

The point where the value of the delayed impacts would equal STS program costs is estimated to be in the range of \$6.4 million to \$243 million per year, depending on how much the rate of spread can be reduced and how often the impacts occur. The most conservative approach assumes that impacts occur in the first year of the infestation only. The least conservative approach assumes that impacts occur yearly after the first year of infestation.

If rate of spread is reduced from...	Range of yearly benefits is...
miles per year	millions of dollars
15.0 to 2.5	\$32.0 to 243
12.5 to 5.0	19.2 to 148
10.0 to 7.5	6.4 to 49

Implementing a National Slow the Spread Strategy:

Assessment of the viability of a national STS strategy is well underway. Based on preliminary results achieved in the pilot project, it is estimated that the rate of spread can be reduced by 35-40% (from 12.5 to 7.5 miles per year) through implementation of STS throughout the transition area. Under this scenario an national STS strategy would cost approximately \$8.3 million per year and would generate benefits ranging from \$13.5 million (most conservative) to \$100.4 million (least conservative). Projections of costs and benefits will continue to be updated as part of the feasibility study of implementing a national slow the spread strategy.

For more information contact:

Donna Leonard
STS Project Manager
USDA Forest Service,
PO Box 2680
Asheville, NC 28802

(704) 257-4329

Charles Coffman, Director
Plant Industries Division
WV Department of Agriculture
1900 Kanawha Blvd., E.
Charleston, WV 25305

(304) 558-2212

Phil Eggborn, Program Manager
Office of Plant and Pest Services
VA Department of Agriculture
and Consumer Services
PO Box 1163
Richmond, VA 23218

(804) 786-3515

Bill Dickerson
Plant Pest Administrator
NC Department of Agriculture
PO Box 27647
Raleigh, NC

(919) 733-6930

Ron Priest
Gypsy Moth Program Manager
MI Department of Agriculture
PO Box 30017
Lansing, MI 48909

(517) 373-9745