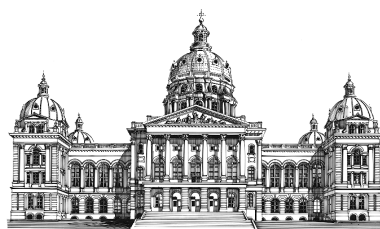


# Iowa Legislative Fiscal Bureau

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## Gypsy Moth Program

### ISSUE

This *Issue Review* examines federal and State programs to control the spread of gypsy moths in Iowa.

### AFFECTED AGENCIES

Department of Agriculture and Land Stewardship

### BACKGROUND

The gypsy moth, a forest pest, was introduced to North America from Europe in 1869 near Boston. The gypsy moth larva feeds on the foliage of hundreds of species of plants but its most common hosts are oaks and aspens. In areas of high egg mass densities, up to 1,000 egg masses per 100 acres, trees may become completely defoliated, leaving trees vulnerable to other stress factors. Several successive years of defoliation may lead to tree mortality.

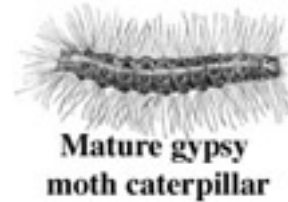
The female gypsy moth cannot fly so the spread of gypsy moth has occurred by the movement of moths and egg masses as hitchhikers on outdoor and recreational equipment. Egg masses are also transported into uninfested areas on nursery stock from infested areas. The gypsy moth larva can be wind blown to uninfested areas.

Figure 1



Gypsy moth female  
(life size)

Figure 2



**Figure 1** shows female gypsy moths with egg masses and the Gypsy moth female. **Figure 2** is a picture of a gypsy moth larva and a mature gypsy moth caterpillar.

Since its introduction to the United States, the gypsy moth has been spreading south and west. The gypsy moth appeared in Michigan and Wisconsin in the mid 1950s and was first trapped in Iowa in 1972. Currently, the gypsy moth is spreading at a rate of 21 kilometers per year and could infest much of the South and Midwest during the next 30 years.

### **Slow the Spread Project**

Beginning in 1999 the United States Department of Agriculture (USDA), Forest Service, began the National Gypsy Moth Slow the Spread Project. This Project is an attempt to reduce the rate of the spread of gypsy moths by 50.0%. This will be done by using a grid of pheromone traps to capture male moths and detect and eradicate new colonies of gypsy moths along the transition zone between areas infested and uninfested with gypsy moths. States included in the Project are Indiana, Illinois, North Carolina, Ohio, Virginia, West Virginia, and Wisconsin.

### **CURRENT SITUATION**

Pheromone trapping for male gypsy moths in Iowa began in 1970, with only a few moths captured up to 1980. Since 1981 the number of male moths trapped has been increasing, with 371 moths trapped in 1998. When moths are trapped, delimitation trapping is used to find the source of introduction. Delimitation trapping involves using a high density of traps in the area where the moths were first captured. Once the site of introduction and egg masses are found, the area is sprayed with *Bacillus thuringiensis*, a bacterium which produces a crystal toxin. Gypsy moth larva are destroyed by the consumption of this toxin. The bacterium is applied by hydraulic spray or is sprayed from helicopters or airplanes. The toxin produced by the bacterium is not harmful to humans or other animals and breaks down in the sunlight after a few weeks. There have been 29 sites in Iowa treated with *Bacillus thuringiensis* from 1989 to 1998, 26 of these sites were associated with nursery stock shipments from infested areas.

Traps for gypsy moths are placed in all Iowa cities, public and private campgrounds, locations of the previous years capture sites, saw mills in eastern Iowa, and Iowa nursery operations receiving nursery stock from the Federal Gypsy Moth Quarantine Area.

Northeast Iowa is currently the most threatened area for a gypsy moth invasion. Since 1995 capture of gypsy moths in Allamakee, Clayton, and Dubuque Counties have been on the rise. **Table 1** below illustrates the number of gypsy moths captured in these three counties from 1995 through 1998.

**Table 1**

### Number of Gypsy Moths Captured in Northeast Iowa

County	Year			
	1995	1996	1997	1998
Allamakee	0	6	14	98
Clayton	0	10	15	64
Dubuque	7	13	18	70

There has been a developing population of gypsy moths in a wooded area near McGregor in Clayton County. This area was treated with pheromone flakes in June 1999. Pheromone flakes fill the air with female pheromones preventing the male moths from finding females. *Bacillus thuringiensis* was not used, as egg masses are difficult to locate in wooded areas.

The Gypsy Moth Program, within the Department of Agriculture and Land Stewardship, has received a line item appropriation through the Laboratory Division since FY 1992. The line item appropriation was \$110,000 from FY 1994 through FY 1999 and was increased to \$150,000 for FY 2000. The Gypsy Moth Program has been receiving funding from the USDA, Animal Plant Health Inspection Service (APHIS), as part of a federal cooperative. The USDA/APHIS cooperative pays half the cost of delimitation trapping and treatment of introduction sites. **Table 2** below details the sources of revenues and expenditures of the Gypsy Moth Program in Iowa for FY 1995 through FY 1999.

**Table 2**  
**Gypsy Moth Program Resources and Expenditures**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
Expenditures					
Personnel	\$ 87,639	\$ 92,964	\$ 85,149	\$ 93,312	\$ 106,447
Travel	31,139	30,481	28,228	28,852	19,486
Supplies	464	7,133	8,467	8,788	17,396
Total Expenditures	\$ 119,242	\$ 130,578	\$ 121,844	\$ 130,952	\$ 143,329
Federal Cooperative Funds	\$ 2,696	\$ 6,770	\$ 6,242	\$ 16,354	\$ 22,126
Total State Expenditures	\$ 116,546	\$ 123,808	\$ 115,602	\$ 114,598	\$ 121,203
State Appropriation	\$ 110,000	\$ 110,000	\$ 110,000	\$ 110,000	\$ 110,000
Amount Spent in Excess of State Appropriation	\$ 6,546	\$ 13,808	\$ 5,602	\$ 4,598	\$ 11,203

The source of amount of money for the Gypsy Moth Program in excess of the line item appropriation for the Program comes from the General Fund appropriation for the Laboratory Division.

**BUDGET IMPACT**

The current line item appropriation for the Gypsy Moth Program aids in the control and eradication of gypsy moths in Iowa. As gypsy moths move west across Wisconsin and Illinois towards Iowa, there will be an increasing number of moths and developing populations in the State. In order to control the spread of gypsy moths more delimitation trapping and increased use of *Bacillus thuringiensis* and pheromone flakes will be needed. This may require an increase in future appropriations.

A decrease in the line item appropriation for the Gypsy Moth Program would result in less resources used to control this forest pest and could result in defoliation of forests and wooded areas of the State over a period of time. This may have negative impacts on the timber industry and recreational opportunities in Iowa.

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