Gypsy Moth Management
in the United States:
a cooperative approach

Record of Decision

January 1996

United States
Department
of Agriculture

Forest Service

Animal and Plant
Health Inspection
Service

Handy reference to strategies and alternatives

Strategies

suppression—reducing high populations of the gypsy moth caterpillar in areas where the insect is already established, to prevent or minimize heavy defoliation

eradication—eliminating isolated infestations of the gypsy moth, to prevent establishment in new areas

slow the spread—keeping low level populations of the gypsy moth from rapidly increasing, to slow the spread of the insect from areas where it is already established

Alternatives

Alternative 1—No suppression, no eradication, no slow the spread
Alternative 2—Suppression
Alternative 3—Eradication
Alternative 4—Suppression and eradication
Alternative 5—Eradication and slow the spread
Alternative 6—Suppression, eradication, and slow the spread

The complete final environmental impact statement, Gypsy Moth Management in the United States: a cooperative approach, consists of five volumes:

Volume I.	Summary
Volume II.	Chapters 1-9 and Appendixes A-E
Volume III.	Appendix F, Human Health Risk Assessment
Volume IV.	Appendix G, Ecological Risk Assessment
Volume V.	Appendix H, Comments on the Draft Environmental Impact Statement, and Responses

The record of decision is a separate document published and available 30 days or longer after the notice of availability for the final environmental impact statement is published in the Federal Register (40 CFR Part 1506.10).

Record of Decision

Gypsy Moth Management in the United States: a cooperative approach

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Record of Decision

Purpose

This document records the selection and rationale for selection of an alternative from the six alternatives analyzed in the final environmental impact statement, "Gypsy Moth Management in the United States: a cooperative approach."

The gypsy moth (*Lymantria dispar* [L.]) is a nonnative insect that alters ecosystems, destroys the beauty of woodlands, and disrupts people's lives and livelihoods by feeding on the foliage of trees, shrubs, and other plants. The European strain of the gypsy moth, brought to the United States from Europe and accidentally released in eastern Massachusetts in the late 1860's, is now established in all or portions of 16 northeastern and midwestern States and the District of Columbia. It continues to spread into uninfested areas. The Asian strain of the gypsy moth was introduced into Oregon and Washington by ships from eastern Russian ports in 1991 and into North Carolina by shipping containers from Germany in 1993. These introductions have been eradicated. The possibility of future introductions is a concern, however, especially given the recent increase in international trade and travel.

The U.S. Department of Agriculture (USDA) has carried out its gypsy moth management responsibilities through the Forest Service and the Animal and Plant Health Inspection Service (APHIS) under the programmatic direction of decisions based on an environmental impact statement prepared in 1985. Changes in gypsy moth status and management techniques that have occurred since 1985 indicate that a new programmatic policy built upon an updated environmental impact statement on the gypsy moth was needed.

Statutory Authorities

The Forest Service and APHIS conduct pest management activities under broad discretionary authority given by Federal laws including the Federal Plant Pest Act of 1957, as amended (7 U.S.C. sections 150aa-150jj); the Department of Agriculture Organic Act of 1944, as amended (7 U.S.C. section 147a); and the Cooperative Forest Assistance Act of 1978 (16 U.S.C. section 2101 [note]), as amended by the Forest Stewardship Act of 1990 (16 U.S.C. section 2101 [note]). Activities conducted under these statutory authorities are listed on pages 1-8 and 1-9 of the final environmental impact statement. USDA gypsy moth policy is presented on page 1-3 of the final environmental impact statement.

The Decision

We have selected alternative 6, which includes all three of the gypsy moth management strategies analyzed—suppression, eradication, and slow the spread. Implementation of this alternative will require that site-specific environmental analyses be conducted to address local issues before Federal or cooperative suppression, eradication, or slow-the-spread treatments are conducted. These site-specific environmental analyses will be tiered to this programmatic environmental impact statement. Alternative 6 will guide the national gypsy moth management program.

Alternatives

Combinations of the three gypsy moth management strategies, or their absence, comprised ten alternatives. The suppression strategy applies to

the generally infested area (the area of the United States where the European strain of the gypsy moth is established). Suppression prevents or minimizes heavy defoliation of trees by reducing outbreak populations of the gypsy moth.

The slow-the-spread strategy applies to the transition area (a band 50 to 100 miles wide where the gypsy moth is spreading naturally and by short-range artificial spread from the generally infested area). The objective of this strategy is to slow the spread of the European strain of the gypsy moth from the generally infested area and to delay the impacts and costs associated with gypsy moth outbreaks. The operational and economic feasibility of this strategy are being evaluated in a large-scale pilot test initiated in 1992.

The eradication strategy applies to areas where the gypsy moth is not established but where isolated infestations can occur. The objective of eradicating isolated infestations of the European strain of the gypsy moth is to prevent it from becoming established in uninfested areas. The objective of eradicating infestations of the gypsy moth that exhibit characteristics of the Asian strain is to prevent it from becoming established anywhere in the United States.

Treatments available for use in suppression are application of the insecticides *Bacillus thuringiensis* var. *kurstaki*, diflubenzuron, and the gypsy moth nucleopolyhedrosis virus (Gypchek). Treatments available for use in eradication and slow the spread include these three insecticides, as well as the use of the noninsecticidal treatments of mass trapping, mating disruption, and sterile insect release.

All of the alternatives except one—discontinuing all gypsy-moth-related activities in the USDA gypsy moth management program—included Forest Service and APHIS support for integrated pest management and delivery of technical assistance to cooperators.

Four of the alternatives were considered but not carried forward for analysis in the environmental impact statement: slow the spread only; suppression and slow the spread; discontinuing the gypsy moth program; and eradicating the gypsy moth from the United States. These alternatives were impractical or failed to meet the USDA goal of reducing the adverse effects of the gypsy moth nationwide. A detailed discussion of the alternatives considered but not carried forward is presented on pages 2-13 and 2-14 of the final environmental impact statement.

Six of the alternatives were considered in detail.

Alternative 1. No suppression, no eradication, no slow the spread. The Forest Service and APHIS could not conduct suppression, eradication, or slow the spread of the gypsy moth.

Alternative 2. Suppression. The Forest Service could conduct suppression and cooperate with other Federal agencies and States to conduct suppression.

Alternative 3. Eradication. The Forest Service and APHIS could conduct eradication and could cooperate with other Federal agencies and States to conduct eradication of isolated infestations of the gypsy moth.

Alternative 4. Suppression and eradication. The Forest Service could conduct suppression and could cooperate with other Federal agencies and States to conduct suppression. The Forest Service and APHIS could conduct eradication and could cooperate with other Federal agencies and States to conduct eradication of isolated infestations of the gypsy moth.

Alternative 5. Eradication and slow the spread. The Forest Service and APHIS could conduct eradication and slow the spread of the gypsy moth, and could cooperate with other Federal agencies and States to conduct eradication and slow the spread.

Alternative 6. Suppression, eradication, and slow the spread. The Forest Service could conduct suppression and could cooperate with other Federal agencies and States to conduct suppression. The Forest Service and APHIS could conduct eradication and slow the spread of the gypsy moth, and could cooperate with other Federal agencies and States to conduct eradication and slow the spread.

Environmentally Preferable Alternative

Alternative 1 poses the least potential for adverse effects due to treatments because no treatments would be conducted; however, there would be adverse effects caused by the gypsy moth. Alternative 6 poses the least potential for adverse effects due to the gypsy moth because treatments could be conducted throughout the United States; however, there would be adverse effects due to treatments. Discussion of adverse effects due to the gypsy moth and due to gypsy moth treatments is presented on pages 4-71 through 4-95 of the final environmental impact statement.

Within the framework of a cooperative approach to managing the gypsy moth in the United States, alternative 6 is environmentally preferable. Actions taken against the gypsy moth by other agencies, organizations, or individuals without cooperation of the Forest Service or APHIS are not within the scope of the environmental impact statement or this Record of Decision.

Rationale for the Decision

Alternatives were compared on the basis of these criteria: (1) how they respond to the goal of the USDA gypsy moth management program as determined by expected future conditions for each alternative in the year 2010, (2) how they respond to issues raised during scoping, and (3) the amount of flexibility they provide for managing ecosystems.

We selected alternative 6 (suppression, eradication, and slow the spread) because analysis showed that it fully meets the USDA goal of reducing the adverse effects of the gypsy moth on the nation's forests and trees, it addresses the major issues associated with the gypsy moth and their treatment, and it provides the greatest amount of flexibility (the greatest number of options) in managing ecosystems affected by the gypsy moth. A description of how the alternatives address the selection criteria follows.

USDA Goal

Alternative 6 best meets the USDA goal to reduce the adverse effects of the gypsy moth on the nation's forests and trees by allowing Federal action and cooperation in gypsy moth treatments anywhere in the United States where the gypsy moth may occur. Alternatives 2, 3, 4, and 5 only partially meet the USDA goal in that they do not cover the entire United States. The gypsy moth would be best managed under alternative 6. Defoliation would affect fewer acres than under the other alternatives. Environmental effects due to the gypsy moth therefore would be less under alternative 6 than under the other alternatives.

Alternatives 5 and 6 both minimize expansion of the generally infested area and would result in the smallest transition area, limit the spread of the gypsy moth from the generally infested area, and prevent or delay adverse effects due to the gypsy moth.

Alternatives 3, 4, 5, and 6 all would prevent the establishment of isolated infestations of the European gypsy moth that ultimately would increase the size of the generally infested area. These alternatives also would prevent the Asian gypsy moth from becoming established in the United States.

Under alternative 1 the Forest Service and APHIS would be limited to providing technical assistance and would not conduct or cooperate in gypsy moth treatments.

A description of how the alternatives prevent or minimize damage to resources, eliminate isolated infestations, and reduce the rate of spread is presented on pages 2-19 through 2-22 of the final environmental impact statement.

Issues

The major issues raised during scoping that influenced our decision are summarized in the question: How do the gypsy moth and gypsy moth treatments affect human health, nontarget organisms, and forest condition?

Human Health

Human health concerns fall within two categories: (1) concerns about the effects caused by the presence of large numbers of caterpillars (including skin rashes, hazardous walkways, and emotional discomfort from the presence of vast numbers of insects), and (2) concerns about the effects of possible exposure to gypsy moth treatments. A detailed examination of the human health risks is presented in appendix F, Human Health Risk Assessment, of the final environmental impact statement.

Officials responsible for gypsy moth treatments would be provided the most latitude to address site-specific health concerns under alternative 6. They would have a choice of whether to treat, and a choice of treatments.

Nontarget Organisms

The gypsy moth is the target of treatments. All other plant or animal species are considered nontarget organisms and are potentially affected directly or indirectly by some gypsy moth treatments. Nontarget organisms may also be affected by defoliation caused by the gypsy moth.

Alternative 1 results in no effects from gypsy moth treatments and the most effects from gypsy moth outbreaks. Alternatives 2 through 6 cause effects associated with gypsy moth treatments and reduce effects caused by gypsy moths. Alternative 6 provides the greatest potential for nontarget organisms or their habitats to be affected by treatments, and the least potential for nontarget organisms to be affected by the gypsy moth. Managers at the local level must weigh the benefits against the potential adverse effects to determine whether suppression or slow the spread should be conducted, which treatment or treatments would be most appropriate for any of the management strategies, and how to mitigate adverse effects of treatments.

Forest Condition

Changes in tree species diversity, age class distribution, and overall health and vigor of forests and trees are affected by defoliation. Alternatives 1 and 3 do not prevent the gypsy moth from changing forest condition. Alternatives 2, 4, 5, and 6 reduce or delay the effects on forest condition caused by the gypsy moth, to varying degrees. Alternative 6 provides the greatest protection to forests because it allows action anywhere the gypsy moth may occur and the use of various treatments. Forest condition is not directly affected by gypsy moth treatments.

How the alternatives respond to issues is described on pages 2-22 through 2-29 of the final environmental impact statement.

Cumulative effects that result from implementing the alternatives can be caused by:

- Repeated gypsy moth outbreaks and defoliation of the same area;
- Repeated treatment of the same area in the same season;
- More than one treatment in the same area; and
- Retreatment of the same area the following season, or a season soon after.

Cumulative effects are discussed on pages 4-85, and 4-89 through 4-91 of the final environmental impact statement, and have been considered in our decision.

Management Flexibility

The alternatives differ in providing a range of options that the Forest Service and APHIS could exercise in managing ecosystems or in helping others in managing ecosystems. Alternative 1 does not provide managers with the option to treat to prevent or reduce the adverse effects to ecosystems caused by the gypsy moth. Alternatives 2 through 5 provide more options than alternative 1. Under all alternatives the gypsy moth could cause changes that may not be desirable in some ecosystems.

Alternative 6 provides the greatest flexibility and the most options in managing or assisting others in managing ecosystems affected by the gypsy moth.

The Forest Service and APHIS would decide where to treat and how to treat gypsy moths, and how to mitigate treatment effects. These decisions will require site-specific environmental analyses.

Mitigating Measures and Standard Operating Procedures

Means to avoid or minimize environmental harm from implementation of alternative 6 have been considered and adopted. Mitigating measures designed to reduce adverse environmental effects that could result from conducting gypsy moth treatments are discussed under Standard Operating Procedures and Mitigating Measures in chapter 2 of the environmental impact statement. That section discusses measures to minimize adverse effects on nontarget organisms, water quality, human health and safety, people's perceptions and behaviors, economic factors, and recreation. For example, use of no-spray buffer zones to minimize or eliminate insecticide drift into sensitive areas may be applicable to protect nontarget organisms, bodies of water, or organic farming operations. Site-specific analyses will determine the need for further mitigating measures. Treatments that use insecticides approved by the U.S. Environmental Protection Agency will be conducted in compliance with instructions on the labels.

The Fish and Wildlife Service was consulted during preparation of the environmental impact statement. In compliance with the Endangered Species Act of 1973 (16 U.S.C. sections 1531-1536, 1538-1540) the Forest Service and APHIS will consult with the Fish and Wildlife Service or—where appropriate—the National Marine Fisheries Service, on gypsy moth treatments that would be conducted by the Forest Service, APHIS, or in cooperation with other Federal agencies or States.

The Fish and Wildlife Service concurs that project-specific consultation on a case-by-case basis will ensure that maximum attention is given to threatened and endangered species for each treatment proposal (Nickerson, Paul R. Letter to John Hazel. 1995 August 1. 1 leaf. Located at: U.S. Department of Agriculture, Forest Service, Radnor, PA). Appropriate field offices of the Fish and Wildlife Service Ecological Services will be contacted as part of the environmental analysis process for site-specific projects.

Monitoring

Surveys are conducted to monitor gypsy moth populations and to determine the extent of infestations. Selected treatment projects are monitored to see that they are carried out as prescribed and to determine whether effects on the environment are those expected. Gypsy moth infestations are monitored in treatment areas to determine whether projects were effective.

Public Involvement

A public involvement effort informed the public about the environmental impact statement and elicited their suggestions, ideas, and concerns related to gypsy moth management. Public outreach was conducted throughout the duration of the environmental impact statement process and was highlighted by formal public comment periods in which written comments were sought.

During the first opportunity for public comment the public's concerns and ideas about gypsy moth management were identified. An extensive effort used direct mail, news releases, presentations, publications, handouts, correspondence, and phone calls to reach the public that is interested in or affected by the gypsy moth. More than 3,500 written comments about gypsy moth management were received. The comments were used by the preparers of the environmental impact statement to determine the issues that were analyzed, to refine the alternatives, and to expand the range of alternatives.

During the second opportunity for public input the public's comments on the draft environmental impact statement were obtained. More than 13,000 copies of the summary or the four-volume draft

document were mailed to interested people and organizations. Outreach through newspapers and radio stations reached more than 22 million people. Publications, presentations, handouts, correspondence, magazines, newsletters, and phone calls were used, along with postings on the Internet. More than 650 written comments on the draft environmental impact statement were received. Use of the comments resulted in improvements to the final environmental impact statement and indicated no need for significant changes.

A third opportunity for public comment on the environmental impact statement was provided between the time the Notice of Availability of the final environmental impact statement was published in the *Federal Register* on December 1, 1995, and the date of this decision. No comments that resulted in a need to change the final environmental impact statement were received during this period.

To conduct public involvement on a national scale and to ensure that the environmental impact statement served all areas of the United States, the preparers of the environmental impact statement were assisted by public affairs and forest pest managers throughout the Forest Service and APHIS. A detailed accounting of the public affairs and public involvement activities appears in appendix C of the environmental impact statement.

Implementation

A minimum of thirty days has passed since the Environmental Protection Agency published a notice in the Federal Register on December 1, 1995, announcing the availability of the final environmental impact statement. Alternative 6 may be implemented immediately. Before gypsy moth treatments can be implemented, analysis of the site-specific environmental effects must be carried out, in accordance with the National Environmental Policy Act.

This decision is not subject to administrative appeal because it neither implements a National Forest land and resource management plan (36 CFR 215.1) nor approves, amends, or revises a National Forest land and resource management plan or regional guide (36 CFR 217.1).

Questions concerning this decision or other topics related to the environmental impact statement should be directed to:

John W. Hazel
USDA Forest Service
5 Radnor Corporate Center, Suite 200
Radnor, PA 19087-4585
(610) 975-4150

or

Charles Bare
USDA Animal and Plant Health Inspection Service
4700 River Road, Unit 134
Riverdale, MD 20737-1236
(301) 734-8247

Responsible Officials

Joan M. Comanor, *Deputy Chief* Date
State and Private Forestry
USDA Forest Service
14th and Independence, S.W.
P.O. Box 96090
Washington, DC 20090-6090

Donald F. Husnik, *Deputy Administrator* Date
Plant Protection and Quarantine
USDA Animal and Plant Health Inspection Service
Administration Building, Room 312-E
Washington, DC 20250-3401

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This document mentions the use of insecticides. All uses of insecticides must be registered by appropriate State or Federal agencies, or both.

Some States have restrictions on the use of certain insecticides. Check State and local regulations. Also, because registrations of insecticides are under constant review by the U.S. Environmental Protection Agency, consult your county agricultural agent or State extension specialist to be sure the intended use is still registered.

Caution: Insecticides may injure humans, domestic animals, livestock, crops, beneficial insects, fish, and other wildlife if they are not handled or applied properly. Use all insecticides selectively and carefully. Follow the directions and heed all precautions on the labels.

Do not apply insecticides when there is danger of drift or in ways that may contaminate water or leave illegal residues.

Avoid prolonged inhalation of insecticide sprays or dusts; wear protective clothing and equipment if specified on the container.

If hands become contaminated with an insecticide, do not eat or drink until you have washed. In case an insecticide is swallowed or gets in the eyes, follow the first-aid treatment given on the label and get prompt medical attention. If an insecticide is spilled on your skin or clothing, remove clothing immediately and wash skin thoroughly.

Store insecticides in original containers out of the reach of children and animals, and away from food and feed.

Dispose of surplus insecticides and empty containers promptly, using recommended practices.

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