

Decision Notice  
& Finding of No Significant Impact  
**Gypsy Moth Eradication Project**

**USDA Forest Service  
Cherokee National Forest  
Watauga Ranger District  
Johnson County, Tennessee**

## **Decision and Reasons for the Decision**

### **BACKGROUND**

The Watauga Ranger District has prepared an Environmental Assessment (EA) that documents the analysis of a no action alternative and proposed action that will implement the Cherokee National Forest (CNF) 2004 Revised Land and Resource Management Plan (RLRMP). The proposed action alternative proposes to eradicate an isolated gypsy moth population located in Johnson County, Tennessee using a mating disruption pheromone.

Accidentally released in eastern Massachusetts around 1869, the Gypsy Moth (*Lymanthia dispar*) is one of the most destructive pests of trees and shrubs in the United States. The species has a host range of over 300 species of trees and shrubs; however, they have a preference for oaks and aspen. Gypsy moth outbreaks cause widespread defoliation, tree mortality, environmental and public health risks, and public outcry to control the outbreaks.

Gypsy moth infest new areas through natural means, for example, egg masses and pupae attached to and are transported on human-associated articles (such as nursery stock, vehicles, camping equipment, firewood, and outdoor house-hold articles). The national strategy for managing gypsy moth includes suppression in generally infested areas, “Slow The Spread” in transition areas, and eradication in areas that are not yet heavily infested. The block proposed for treatment is within a “not yet infested” area. Populations typically found in these areas are recently discovered and still at a low density. The optimum time to treat these infestations is before they increase and spread.

The EA documents the purpose and need: to eradicate the gypsy moth population in the Rutter Ridge Treatment Area in 2010 because 1) treating populations when they are at a low density is considered optimal with regards to time and expense of treatment effort, and 2) without timely intervention, the population would continue to grow and contribute to a faster rate of spread into non-infested areas.

This EA was prepared by an interdisciplinary team and is available for review at the Supervisor’s Office and Watauga Ranger District Office. This Decision Notice (DN) and Finding of No Significant Impact (FONSI) document the rationale for the selection of Alternative 2.

## **DECISION**

Based on the analysis and disclosure of effects contained in the EA, I have decided to select Alternative 2 for implementation. Following is a narrative description of Alternative 2.

### **Alternative 2 (Selected Alternative)**

In this alternative, the Forest Service in cooperation with the Tennessee Department of Agriculture (TDA) would treat low-density gypsy moth populations on intermixed Federal and private lands on the block described as the proposed treatment area. A private aerial contractor, using low flying aircraft under the direction of USDA Forest Service would treat approximately 360 acres with mating disruptants. These acres include 100 acres of private land and 260 acres of National Forest System lands. The mating disruption treatment is usually performed in mid-June. The timing of the treatment is after full “leaf-out” and before the emergence of the gypsy moth breeding adults. The dosage would be 15 grams of Disrupt II<sup>®</sup> or 23 grams of SPLAT-GM (Specialized Pheromone and Lure Application Technology – Gypsy Moth) per acre, depending on aerial contractor used.

#### Detailed Description of Treatment

The following information on mating disruption (MD) was provided by the USDA Forest Service, Forest Health Protection office, in Asheville, NC, last modified in 2008.

Pheromones are chemicals produced by insects to communicate with one another. In the case of the gypsy moth, the female releases a sex pheromone – disparlure (chemical name: cis-7, 8-epoxy-2-methyloctadecane) - when she is ready to mate. The male moths follow the pheromone scent to its source – the female. A synthetic form of disparlure, produced in the laboratory, is used in the co-operative USDA Forest Service projects to control low-density gypsy moth populations. The synthetic pheromone is formulated into controlled active ingredient release dispensers that are scattered over the forest canopy using aircraft. The dispensers slowly release pheromone into the environment over a two to three month period when gypsy moths would be mating. Because the air becomes saturated with pheromone, the males cannot distinguish between the real female moth and the synthetic pheromones released by the dispensers, and become disoriented when seeking the source. In turn, the number of gypsy moth caterpillars produced is reduced, thereby reducing the damage caused by caterpillars feeding. This process, called mating disruption, is effective at controlling low-density populations of the gypsy moth. The application would likely occur in early June 2010 prior to the emergence of gypsy moth breeding adults. The following provides more information on the potential dispensers:

- Disrupt II<sup>®</sup> (Hercon Environmental, Emigsville, PA) is a plastic laminate flake formulation that contains disparlure as the active ingredient. It is 17.9% active ingredient (pheromone) by weight, and is registered with the Environmental Protection Agency to control low density populations of gypsy moth (EPA Reg. No. 8730-55). Prior to application the flakes are mixed with an adhesive (Gelva Multipolymer Resin Emulsion 2333) to ensure they stick at all levels in the forest canopy or on foliage where gypsy moths are found.

- SPLAT-GM (ISCA Technologies, Riverside, CA) is a polymer matrix formulation that contains disparlure as the active ingredient. It is 13% active ingredient (pheromone) by weight and is registered with the Environmental Protection Agency for use on low-density gypsy moth populations (EPA Reg. No. 80286-4)

The product would be applied at a dose of 15 grams of Disrupt II or 23 grams of SPAT-GM per acre. The active ingredient dose is equivalent to about ½ cup of Disrupt II flakes or one cup of SPLAT-GM droplets per application per acre.

### **Design Criteria**

The following measures would apply to Alternative 2 (Proposed Action) to enhance the effectiveness of the treatment, and to reduce the risk of off-site impacts. Detailed descriptions, insecticide labels and Material Safety Data Sheets (MSDS) can be obtained at the Forest Supervisor's office in Cleveland, Tennessee, and at the Nolichucky/Unaka Ranger District office.

1. To minimize drift and insure a uniform distribution on vegetation, the application of the mating disruptants would be discontinued when winds would negatively impact deposition, the foliage is dripping wet or there is an imminent threat of rain. Since the mating disruptant products are not affected by temperature and relative humidity, these conditions would not directly effect the application of these products; however, these conditions are monitored to predict storm patterns and ensure the safety of the pilots. Ground personnel within the project area would monitor application conditions. Application heights would range between 100 and 200 feet above the treetops, depending on aircraft type and terrain.
2. The application pilot and observer aircraft pilot would conduct a pre-treatment flight of all proposed treatment blocks to become familiar with boundaries. Topographical maps would be provided to the application and observer pilots to assist in identifying the target area boundaries and any hazards associated with the aerial treatment of the areas. The application pilot would have radio communication with the airbase, observer aircraft, and personnel in the areas at all times. Ground crews assigned to the areas would monitor the application and provide weather updates. Observer pilot would provide flight following to the airbase for safety.
3. The application aircraft is equipped with a Differential Global Positioning System (DGPS) that assists the pilot in locating the treatment areas, identifying area boundaries, and insuring even coverage throughout the areas.
4. Disruptants would be applied according to label directions. All label warnings and restrictions would be strictly adhered to by the applicator. Disruptants would not be applied over open bodies of water.
5. The public would be notified of the proposed treatment dates and times through local newspapers and local radio stations.
6. Security measures would be implemented around all planes, chemicals, spray tanks, and other items associated with the aerial spraying.

## **Monitoring**

Effectiveness of the mating disruption treatment would be monitored for two years post-treatment using pheromone-baited traps\*. Traps deployed in the proposed year of treatment (2010) would not be expected to effectively trap male moths because the air would still be saturated with synthetic pheromone from the treatment. Traps deployed the year after the treatment (2011) would be used to evaluate treatment efficacy and to determine whether follow-up treatments would be required in 2012. The project would be considered successful if no male moths are caught in the second year post-treatment.

*\* Delta or milk carton traps, which vary in color from green, orange, or brown are distributed within areas known to have Gypsy moth and at the leading edge of an infestation to track its spread. The traps are baited with a lure, which is a natural pheromone that attracts the male Gypsy moth. The traps are hung 4-5 feet off the ground in a tree where air current can circulate the attractant freely.*

## **REASONS FOR THE DECISION**

I believe Alternative 2 best addresses the Purpose and Need stated on page 4 of the EA to move this area toward the desired condition. Alternative 2 is consistent with the 2004 RLRMP.

- Alternative 2 eradicates gypsy moth to prevent unacceptable damage to resources on adjacent land, prevention of unnatural loss to the resource, or to sensitive species (FW-64 Standard)
- Alternative 2 manages gypsy moth infestation using suppression, eradication, and slow the spread strategies (FW -70 Standard)
- Alternative 2 will have a certified pesticide applicator supervising the application dispensing (FW-77 Standard)
- Alternative 2 will notify people within one-fourth mile of the area to be treated aurally prior to treatment (FW-78 Standard)
- Alternative 2 manages forest insects, diseases, and non-native invasive plants using IPM (Integrated Pest Management ) practices (RX2B3-4 and RX8C-4 Prescription Standards)

As required by 36 CFR 219.35 (see Federal Register, December 18, 2009), I have considered the best available science in making this decision. The project record demonstrates a thorough review of relevant scientific information, consideration of responsible opposing views, and where appropriate, the acknowledgement of incomplete or unavailable information, scientific uncertainty, and risk.

## **OTHER ALTERNATIVES CONSIDERED**

In addition to the selected alternative the EA considered five other alternatives, four of which were dropped from detailed study. The following is a summary of the other alternatives considered in the EA (pages 8-9).

### **Alternative 1 - (No Action)**

In this alternative, no actions would be taken to eradicate the gypsy moth population on the Cherokee National Forest, or on adjacent private lands in Johnson County, Tennessee. The population however would continue to be monitored each summer using pheromone traps, usually at 16 traps/ mile<sup>2</sup>. (The 360-acre proposed treatment area is approximately 0.56 miles<sup>2</sup>.) The area monitored would expand along with the gypsy moth population. Monitoring/trapping would cease when the population in the proposed treatment area met up with the generally infested area to the north.

### **Alternative 3 - (Aerial Application of Gypchek®)**

Gypchek® is the trade name for the Forest Service formulation of the nucleopolyhedrosis virus, a natural occurring gypsy moth-specific pathogen. Gypchek® is produced in limited quantities each year and only made available when there is a demonstrated need. The probability of successfully suppressing low-density populations like those found in the project area is not well documented. Gypchek® is most efficacious in high-density populations of gypsy moth where adequate numbers of caterpillars are present to transmit the virus among the population (Reardon and Podgwaite 1996). Due to the lack of efficacy data to support the use of Gypchek® in low-density populations, this alternative was eliminated from detailed study.

### **Alternative 4 - (Release of Predators and Parasites)**

Predators and parasites would be released to manage gypsy moth populations throughout the project area. Previous studies are not conclusive as to the efficacy of this control technique on low-density populations (USDA FEIS 1995, pp 2-7); thus, this alternative was not brought forward for additional analysis. It is important to recognize however that within any ecosystem, specific and non-specific predators and parasites of gypsy moth may contribute to the long-term biological control of the gypsy moth.

### **Alternative 5 - (Aerial Application of Btk on the treatment block)**

Two aerial applications of the biological insecticide, *Bacillus thuringiensis var. kurstaki* (Btk), a lepidoptera (butterfly family) specific insecticide, would be applied on the proposed treatment block. Btk is very effective when used for eradication of low-density populations of the gypsy moth. However, the Forest Service is committed to using the most environmentally sensitive tactic that would meet project objectives. Entomologists believe that the project objective could be met using a gypsy moth-specific tactic (mating disruption) on the treatment block. However since Btk would affect a wider range of moth and butterfly species, the use of Btk was not brought forward for additional analysis. (See Reardon et al. 1994).

### **Alternative 6 - (Mass Trapping)**

Mass trapping would be done to manage the gypsy moth population. Theoretically mass trapping works by capturing all the males in pheromone traps before they have a chance to mate. However, data to support the efficacy of this tactic is very limited and prior use in similar forest type was not successful. Because the efficacy has not been demonstrated the use of mass trapping was not brought forward for additional analysis.

## Public Involvement

The Forest Service requested comments to help determine issues regarding the Proposed Action. The Forest Service placed a legal notice in the *Knoxville News Sentinel* on March 2<sup>nd</sup>, 2010. Comments received are in the project file at the Nolichucky/Unaka District office. The proposal has been published in the Schedule of Proposed Actions since December, 2009.

Four comments were received. The comments all acknowledged the need for treating Gypsy Moth.

## Issues

There are no significant issues to the proposed action.

## Finding of No Significant Impact

After considering the environmental effects described in the EA, I have determined that these actions will not have a significant effect on the quality of the human environment considering the context and intensity of impacts (40 CFR 1508.27). Thus, an environmental impact statement will not be prepared. I base my findings on the following:

1. My finding of no significant environmental effects is not biased by the beneficial effects of the action. (EA, pp. 10-12 Comparison of Alternatives; EA, pp. 13-33 Environmental Consequences).
2. There will be no significant effects on public health and safety. (EA, pp. 6-8 Introduction – Detailed Description of Treatment; EA, pp. 7-8 Introduction – Design Criteria; EA, pp. 10-12 Comparison of Alternatives; EA, pp. 32-33 Environmental Consequences – Health and Safety).
3. There will be no significant effects on unique characteristics of the area. (EA p. 29 Environmental Consequences – Cultural Resources; EA pp. 16-27 Environmental Consequences -- Biological Resources; EA, Appendix C Response to Comments).
4. The effects on the quality of the human environment are not likely to be highly controversial. Treatment methods are based on past experiences, scientific literature and/or research, and have been implemented in the past with expected results. (EA, p. 3 Introduction – Relationship to Other Decisions; EA, pp. 6-8 Alternatives – Detailed Description of Treatment; EA pp. 7-8 Alternative – Design Criteria; EA pp. 32-33 Environmental Consequences – Human Health and Safety).
5. We have considerable experience with the types of activities to be implemented. The effects analysis shows the effects are not uncertain, and do not involve unique or unknown risk. (EA, p. 3 Introduction – Relationship to Other Decisions; EA, pp. 6-8 Alternatives – Detailed Description of Treatment; EA, pp. 7-8 Alternative – Design Criteria; EA pp. 32-33 Environmental Consequences – Human Health and Safety).

6. The action is not likely to establish a precedent for future actions with significant effects. (EA, p. 3 Introduction – Relationship to Other Decisions; EA, p. 6-8 Alternatives – Detailed Description of Treatment; EA pp. 7-8 Alternative – Design Criteria; EA pp. 10-12 Alternatives – Comparison of Alternatives; EA, pp. 13-33 Environmental Consequences).
7. The cumulative impacts are not significant. (EA pp. 10-12 Alternatives – Comparison of Alternatives; EA, pp. 13-33 Environmental Consequences).
8. This action will not adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places, because no earth disturbing activities are proposed. The action will also not cause loss or destruction of significant scientific, cultural, or historical resources. (EA, p. 29 Environmental Consequences – Cultural Resources).
9. The action will not adversely affect any endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species act of 1973. No threatened or endangered species are found within the treatment area. (EA, p. 17 Environmental Consequences – Threatened and Endangered Species; EA, Appendix B – Biological Evaluation).
10. The action will not violate Federal, State, and local laws or requirements for the protection of the environment. Applicable laws and regulations were considered in the EA. The action is consistent with the 2004 RLRMP. (EA, p. 3 Introduction – Treatment on National Forest Consistent with Revised Forest Plan and Relationship to Other Decisions).

## Findings Required by Other Laws and Regulations

- This decision is consistent with of the **National Forest Management Act (NFMA)** of 1976 regarding the effective management, use, and protection of the natural resources of the area affected by this project.
- All actions of the selected alternative will be consistent with the management requirements of the **RLRMP for the Cherokee National Forest**. This includes the forest wide goals, objectives and standards.
- This decision is in compliance with the **Endangered Species Act, Migratory Bird Treaty Act, and Sensitive Species direction** (Forest Service Manual 2670).
- This decision incorporates Best Management Practices, to ensure protections of soil and water resources, in compliance with the **Clean Water Act**.
- No direct, indirect, or cumulative effects are expected on wetlands or floodplains. (**Executive Orders 11990 and 11988**)

- In compliance with the **National Historic Preservation Act, Archaeological Resources Protection Act, and Native American Graves Protection and Repatriation Act** the project was shared with all cooperating Native American tribes at the time of scoping
- This decision is not expected to adversely impact minority or low-income populations and therefore complies with **Executive Order 12898**.

## **Administrative Review or Appeal Opportunities**

This decision is not subject to appeal pursuant to 36 CFR 215.12(e)(1).

## **Implementation Date**

Implementation may occur immediately, following legal notice publication, pursuant to 36 CFR 215.9(c)(1).

## **Contact**

Detailed records of the environmental assessment are available for public review at the Cherokee National Forest, Supervisors Office, 2800 Ocoee Street N., Cleveland TN 37312.

For further information on this decision, contact H. Thomas Speaks, Jr., Forest Supervisor at the Cherokee National Forest, Supervisors Office, 2800 Ocoee Street N., Cleveland TN 37312 or by phone at (423) 476-9700.

For additional information concerning appeals, contact Jim Bennett, Appeals Coordinator, USDA Forest Service, Suite 811N Appeals, 1720 Peachtree Road NW, Atlanta, GA 30309, or by telephone (404) 347-2788.

*/s/ Wesley A. Nettleton for*

*June 1, 2010*

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**LIA AGPAOA  
Regional Forester  
Southern Region**

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Date