For the latest up-to-date treatment information contact:

Minnesota Department of Agriculture: www.mda.state.mn.us/gypsymoth
gypsy.moth@state.mn.us
"Arrest the Pest" Hotline: 651-201-MOTH (6684) or 1-888-545-MOTH (6684)
Minnesota Department of Health: www.health.state.mn.us/divs/eh/pesticide/bt.html
Superior National Forest: www.fs.fed.us/r9/superior

Future notification will be done through public media outlets so be sure to watch your local newspapers, TV and radio stations for updates on the gypsy moth treatment.

Minnesota Department of Agriculture
Plant Protection Division
625 Robert St. N.
St. Paul, MN 55155-2538

MINNESOTA DEPARTMENT OF AGRICULTURE
PLANT PROTECTION

Proposal for Gypsy Moth Management
Cook & Lake Counties, Minnesota
March 2009

What is a gypsy moth?

The European gypsy moth (*Lymantria dispar L.*) is not native to the United States. After being introduced in Massachusetts in the late 1800s, gypsy moth has continuously moved westward and is now established as close as central Wisconsin. Gypsy moth caterpillars strip trees of their leaves, and this defoliation can contribute to tree mortality. The preferred host species include oaks, aspen, paper birch, basswood and willow, which are all very common trees in Minnesota.

High numbers of gypsy moth caterpillars can cause a substantial public nuisance, a reduction in tree growth, branch dieback and tree death. This damage to forests diminishes environmental quality and may affect human health and local economies. Widespread gypsy moth outbreaks can alter water quality, wildlife habitat, microclimate, and soil fertility.

THE Minnesota Department of Agriculture (MDA), in collaboration with tribal, federal, state, and local partners, is proposing to treat gypsy moth populations in Lake and Cook Counties along the North Shore of Lake Superior. Surveys in 2008 revealed pockets where monitoring traps caught extremely high numbers of moths. In order to reduce current populations of gypsy moths and retard the growth of future generations of this forest pest, MDA proposes to treat a total of about 717 acres of land with a biological insecticide called Btk and about 71,000 acres with mating disruption. Seven treatment blocks have been identified and named for their geographic locations: Castle Danger, Split Rock Point, Carlton Creek, Onion River, Alfred Creek, Spruce Creek, and Hovland. Forests in the proposed treatment areas include many of the trees species considered susceptible to gypsy moth defoliation.

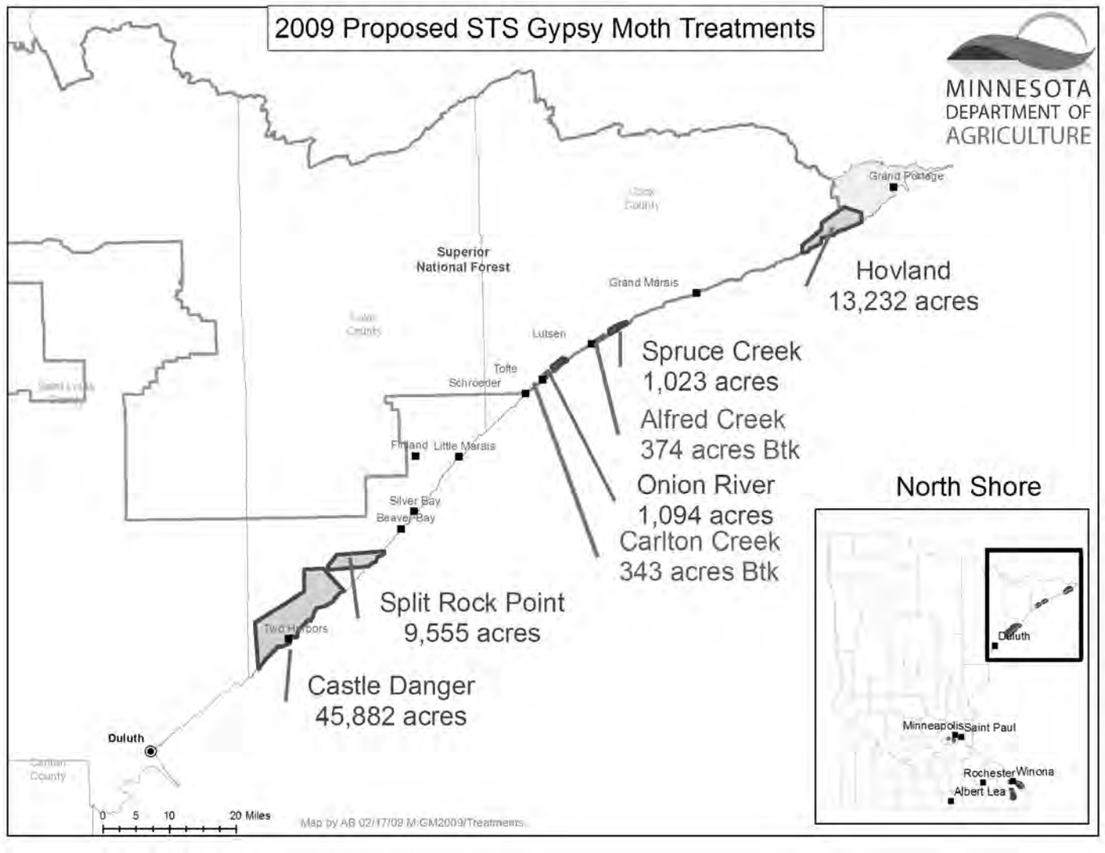
Throughout Minnesota, the 2008 gypsy moth survey resulted in the capture of 12,255 moths, the highest ever recorded in the state. These results, combined with the trap records of previous years, prompted MDA, the USDA Forest Service's Slow the Spread (STS) program, and local officials to develop the proposed treatment project for 2009. Visit the MDA website for details on other gypsy moth management projects throughout the state.

MDA and its partners are holding open houses to provide information about the gypsy moth, trapping data, and the proposed treatments. Public comments on this proposal are solicited through these open houses or in writing until April 15. The public is encouraged to attend and comment on the treatment proposal, or contact us with questions or comments using our contact information on the back of this bulletin.

OPEN HOUSE SCHEDULE	
Wednesday, March 18th **Two Harbors** Lake County Law Enforcement Center 613 3rd Ave. 2-4pm and 6-8pm	**Thursday, March 19th** **Silver Bay** Tettegouche State Park 5702 Hwy 61 1-3pm
There will be no formal presentation at these locations. We invite you to take advantage of one-on-one time with several experts from participating agencies that will be available to explain the treatment proposal and answer your questions.	**Thursday March 19th** **Grand Marais** Cook County Courthouse 411 W. 2nd Street 6-8pm

This bulletin serves as a scoping document for the Superior National Forest

Proposed Gypsy Moth Treatments



Why continue to treat for gypsy moth?

Minnesota is a member of a federal program called Gypsy Moth Slow-the-Spread (STS). As the name suggests, member states share federal resources to monitor and treat gypsy moth populations. The STS program has been successful in keeping gypsy moth out of our state for years by treating comparable populations to the east. We have benefited greatly by these actions and can help protect our own state as well as those to the west of us by implementing these proposed treatments.

Using information collected each summer, MDA tracks the presence of gypsy moth in Minnesota. Based on this monitoring, we determine the extent of gypsy moth populations, and whether and what types of treatments are needed. Each gypsy moth female is capable of laying an egg mass with 500-1,000 eggs. If left untreated, gypsy moth infestations can build and spread quickly. The goal of slow the spread treatments is to reduce the building moth populations in your area, protecting valuable natural resources.

Similar treatments have been used extensively in the U.S. to slow the spread of gypsy moth. Treatments made soon after the discovery of new populations can delay a costly, full-scale infestation and protect the forest's health, local property values, and the quality of outdoor recreation activities.

Are gypsy moths similar to forest tent caterpillars (FTC)?

Similar to FTC, gypsy moth often defoliate extensive areas, feeding on many of the same species, including quaking aspen, birch, oak, and basswood. However, FTC is a native insect and has several natural enemies to keep populations in check. FTC outbreaks in the Lake States are cyclical and typically last for 3-5 years then subside for 3-5 years.

In oak-dominated stands, the gypsy moth outbreaks last 2-5 years or more. Defoliation by gypsy moth larvae starts and ends a little later in the season than FTC defoliation, possibly extending into early July. In aspen-dominated stands, gypsy moth outbreaks may build and decline faster than in oak stands, according to recent observations in Michigan. Gypsy moths, unlike FTC, will feed on and defoliate some conifers, especially if they are growing alongside a favored host such as oaks and aspen. Young conifers do not survive complete defoliation events.

Other concerns addressed...

What happens next?

Pursuant to the National Environmental Policy Act, an Environmental Assessment (EA) is being prepared for this project. An EA is being completed to assess the potential effects to the environment. One EA will be written to cover all STS sites in Minnesota. It will include cumulative effects with references to all sites in analyses and conclusions. MDA is preparing the EA in cooperation with the U.S. Forest Service--State & Private Forestry (S&PF) and the Superior National Forest (SNF).

Further description of the treatments as proposed will be available on MDA's website, www.mda.state.mn.us/gypsymoth, in March. Paper copies will also be available from MDA, the SNF Headquarters in Duluth, Tofte and Gunflint Ranger Stations, and Grand Portage Tribal offices or mailed upon request. The public is invited to submit comments in writing to MDA before April 15. Contact information for MDA is provided on the last page of this bulletin.

A final Environmental Assessment is expected to be released in April. It will be posted on the participating agency websites and will be mailed to those who comment on this proposal. Separate decisions from the S&PF and the SNF will be signed before the treatment project begins on the respective lands.

The portion of the proposed action on the SNF is authorized under Title IV, Insect Infestations and Related Diseases, of the Healthy Forest Restoration Act (HFRA) because the proposed action is consistent with the SNF Forest Plan, is not in a wilderness area, is being identified through a collaborative process, and is on Federal land on which windthrow or blowdown, ice storm damage, the existence of an epidemic of disease or insects, or the presence of such an epidemic on immediately adjacent land and the imminent risk it will spread, poses a significant threat to an ecosystem component, or forest or rangeland resource, on the Federal land or adjacent non-Federal land. As per HFRA, a no action alternative and an action alternative will be analyzed in the EA. HFRA projects are subject to a pre-decisional objection process (36 CFR 218).

How is it applied?

Btk, flakes and waxy droplets are applied with aircraft operated by licensed applicator pilots. Aerial treatments are at low altitude (~50 feet above the treetops). Application is discontinued when winds are too strong, when rain is expected, or when leaves are dripping wet. The aircraft are calibrated to be sure the product is applied at the proper rate and are equipped with the latest available technology, including Global Positioning Systems to help to ensure application accuracy. Open bodies of water, such as lakes, are excluded from the treatments

When will the proposed treatments take place?

The proposed Btk treatments would take place in June 2009, while the mating disruption treatment would be made later in July. Exact dates depend greatly on weather conditions and insect development. Notification will be made 7-14 days in advance of any treatments through various media outlets including local newspapers, TV and radio. Minnesota Department of Agriculture (MDA) staff will be on-site to oversee the treatment. MDA's Arrest the Pest Hotline will be updated with treatment information frequently.

For best results, the treatment generally starts early in the morning. It is possible that you may be awakened by the noise of a low-flying aircraft. We apologize in advance for any inconvenience this may cause, but the aircraft should be over your area for only a brief time. Pets may be spooked by low-flying aircraft noise, so we recommend keeping them indoors during the time when your area is treated.

Will I be charged for treatment?

No. The Minnesota Department of Agriculture will work with federal, state and local officials and residents to carry out these treatments at no cost to homeowners. Funding will be provided by the state of Minnesota and the U.S. Department of Agriculture. Cost of application is about $25-30 per acre for Btk and about $7-15 per acre for mating disruption.

MINNESOTA DEPARTMENT OF AGRICULTURE
PLANT PROTECTION

Information for Alfred Creek and Carlton Creek blocks

How will MDA treat gypsy moth?

We are proposing the use of a biological insecticide called Bacillus thuringiensis var. kurstaki (Btk). Btk treatments are proposed on state and private lands, and are not proposed on SNF lands. The active ingredient is a crystalline protein toxin formed by naturally-occurring bacteria that becomes toxic when eaten by certain caterpillars. When ingested, Btk is broken down and paralyzes the caterpillar. The caterpillar stops feeding and dies within a couple days. Btk is broken down naturally by sunlight so two applications about a week apart are needed to make sure all caterpillars are exposed to the bacteria.

Is it safe?

Btk is not active in humans or other mammals; however, it does affect some butterflies and moths, such as the gypsy moth and tent caterpillars. To have any ill-effects, an insect species must be actively feeding within approximately two weeks of treatment, they must eat the Btk, and they must be susceptible to the bacteria. We work with the Minnesota Department of Natural Resources and the U.S. Fish and Wildlife Service to identify and minimize impacts to any threatened or endangered species that might be affected by these treatments.

Btk is produced from a bacteria found in soils, plants and insects worldwide. It is cultured by fermenting grains and potatoes with fish or cornmeal, a process similar to brewing beer. The final product contains water, the active ingredient (Btk), leftover growth medium, carbohydrates, and other ingredients approved as food additives. The product breaks down quickly in sunlight, but is extremely potent to gypsy moths and can kill nearly 100% in treated areas under proper conditions.

Numerous studies have documented the low risk of Btk for humans, pets, and other species. Btk is a common product that is readily available and inexpensive. It presents a very low risk to the environment and is approved for use in organic farming. Attempts are made to avoid applying Btk to sites where sensitive, threatened or endangered species of moths and butterflies exist.

The Minnesota Department of Health (MDH) has prepared the following information to answer frequently asked questions about health risks from Btk:

- Btk has been used safely for more than 40 years to control insects in the United States, Canada, and other parts of the world, on agricultural crops and forestry projects, including gypsy moth eradication projects in metropolitan areas such as Chicago and Vancouver.
- Btk operates through a well-known protein mechanism that causes toxicity in caterpillars (i.e. larvae). This mechanism is not present in humans or other mammals, regardless of age.
- Btk is a biological control method that is an alternative to chemical pesticides. Btk does not disrupt the ecological balance or harm most non-target organisms.
- Research shows that the level of Btk in air decreases to very low levels within 30 to 90 minutes after an aerial application. Two hours after an application, Btk concentrations in the air are typically below measurable levels.

If you have individual health concerns about exposures to Btk, contact your physician or other health care professional. For general questions about health risks or steps to prevent or reduce exposures to Btk, see the MDH website at: www.health.state.mn.us/divs/eh/pesticide/bt.html or call 651-201-4899.

How do I avoid exposure to Btk?

Even though Btk is considered low risk for humans, some people may choose to avoid exposures by staying indoors during treatments. MDA will offer advance notification of time that the treatment will occur.

The treatment product has no known health effects for humans, but there may be a slight misty residue on outdoor objects immediately after the application. This residue is easily washed off, but to avoid it altogether we advise that you stay indoors during the early-morning treatment and for 30 minutes afterward. You can avoid residue by closing windows and doors in your house and vehicles parked outside. The residue will not damage your car's finish, but you may wish to park your car indoors to avoid residue from landing on it. Any residue you find on your car, house or lawn articles can be washed off with soapy water.

To avoid exposure:

1. Stay indoors during treatments (and for at least 30 minutes after treatments) to allow droplets to settle.
2. Wait until the treatment has dried before touching grass or shrubs. If there is residue on playground equipment, sandboxes, benches, or lawn chairs, spray or hose them off with water afterward.
3. Wash exposed skin with soap and water if direct contact with the spray droplets occurs. If material gets into your eyes, flush with water for 15 minutes.

Information for Castle Danger, Split Rock Point, Onion River, Spruce Creek, and Hovland blocks:

How will MDA treat gypsy moth?

The proposed treatment in these blocks is to aerially apply a synthetic pheromone called disparlare. Disparlure can be contained in either plastic flakes or waxy droplets. The pheromone is emitted at a controlled rate over several months while the males are seeking females. The flakes are about this size: [] and the droplets vary but are around this size: O. These tiny flakes and droplets stick to leaves and branches.

How does mating disruption work?

Mating disruption is a way to prevent mating between a male and female gypsy moth, consequently preventing reproduction. It is achieved by flooding an area with a synthetic sex-attractant (pheromone) just prior to when the moths emerge as adults. The presence of the pheromone confuses the male moths so they cannot find the female moths. Pheromones are very specific, and in North America, gypsy moth is the only species attracted to this pheromone. Mating disruption has been used widely in gypsy moth management in recent years and has been very effective. It has no known adverse environmental impacts; pheromones affect only the intended species and are not toxic.

Is it safe?

The pheromone is specific to the gypsy moth so it will not affect other animals or organisms. Harmful effects of the plastic flakes and waxy droplets themselves have not been reported, and both degrade over time. All products proposed for application are registered with the U.S. Environmental Protection Agency and are classified as low-risk pesticides. Over the course of 25 years of this product being used at thousands of locations, no reports of adverse health effects on humans or pets have been documented. Disparlure minimally dissolves and is nontoxic to fish, birds or mammals.