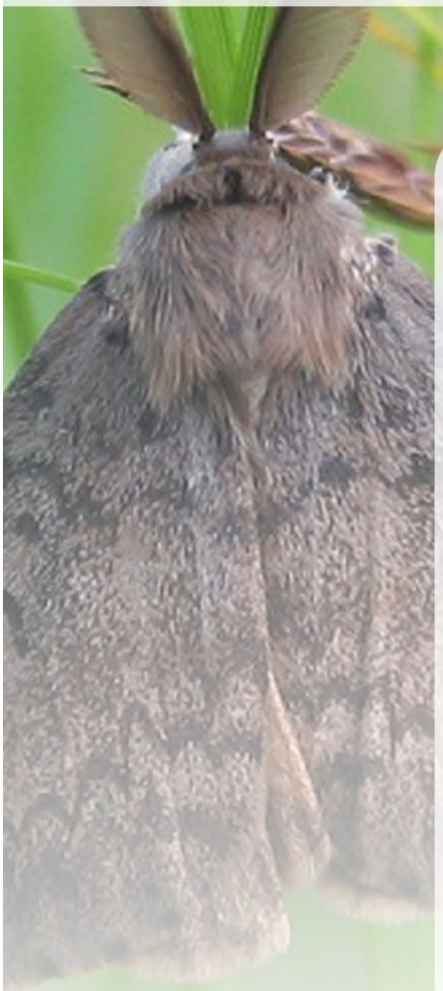
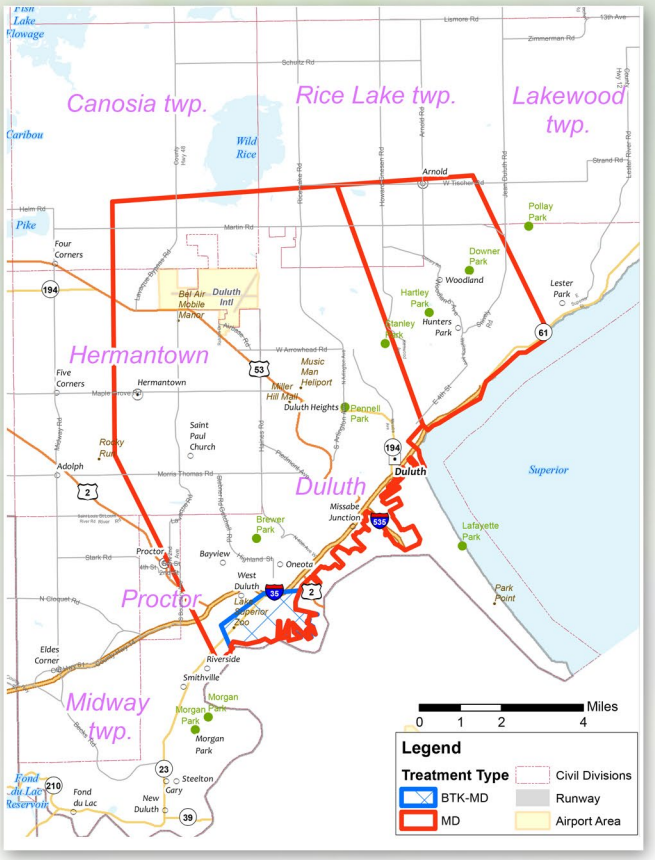
Proposal for Gypsy Moth Management

St. Louis County, Minnesota, 2014



The Minnesota Department of Agriculture (MDA), in collaboration with federal, state, and local partners, is proposing to slow the spread of gypsy moth populations in St. Louis County around Duluth and Ely. Surveys in 2013 revealed extensive areas where monitoring traps caught extremely high numbers of moths. These results, combined with the trap records of previous years, prompted MDA, the USDA's Forest Service, the Superior National Forest, and local officials to develop a proposed treatment project for 2014.



A complete description of the treatments as proposed will be available on MDA's website, **www.mda.state.mn.us/gypsymoth**. Paper copies will also be available from MDA, Superior National Forest Headquarters in Duluth, Tofte and Gunflint Ranger Stations, or mailed upon request.

Minnesota Department of Agriculture

Photo by University of Minnesota Department of Entomology

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 southward and is now established as close as northeastern Minnesota. It is a serious defoliator of forest, shade, fruit and ornamental trees across much of the Northeast. Gypsy moth caterpillars are voracious eaters and can strip trees of their leaves, stressing the trees sometimes to the point of death. 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.

Are gypsy moths similar to forest tent caterpillars?

Forest tent caterpillars (FTC) have two parallel blue stripes down their backs with a pattern of pale “footprints” or “keyholes” running between them. They appear 2-4 weeks earlier in the spring than gypsy moth caterpillars. Defoliation by gypsy moth caterpillars starts and ends a little later in the season than FTC defoliation, possibly extending into mid-July.

Similar to FTC, gypsy moth caterpillars 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 effective and abundant natural enemies to keep populations in check between outbreaks. FTC outbreaks in the Lake States are cyclical and typically last for 3-5 years then subside for 8-12 years before the next outbreak.

In oak-dominated stands, the initial gypsy moth outbreak in an area may last for many years because the number of natural enemies is low. Subsequent outbreaks may last 2-5 years and are likely to be cyclic like FTC. In aspen-dominated stands, gypsy moth outbreaks may build and decline faster than in oak stands, according to observations in Michigan.

Forest Tent Caterpillar
Malacosoma disstria

Gypsy Moth Caterpillar
Lymantria dispar

Unlike FTC, gypsy moth caterpillars will feed on some conifers, especially if they are growing in a mixed hardwood stand with oak and aspen. Young conifers cannot withstand complete defoliation.

For more information on FTC in Minnesota see **www.dnr.state.mn.us/treecare/forest_health/ftc/index.html**

How do we manage gypsy moth?

Partnering with the STS program, Minnesota is able to treat areas where moth populations are building to delay the establishment and damage caused by this invasive species.

In order to reduce current populations of gypsy moths and slow the growth of future generations of this forest pest, MDA proposes to treat a total of about 1,100 acres of land with a biological insecticide called *Bacillus thuringiensis* var. kurstaki, or Btk, and about 52,000 acres with mating disruption. Three treatment blocks have been identified and named for their geographic locations: Duluth, West Duluth, and High Lake, all in St. Louis County (see map on page 1). Forests in the proposed treatment areas include many of the trees species considered susceptible to gypsy moth defoliation.

It is important to note that the West Duluth area will be treated with both Btk and mating disruption.

How does "Slow the Spread" work?

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 work together to delay the establishment of new gypsy moth populations. The federal 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 and south of us by implementing the proposed treatments. Using data collected each summer, MDA tracks the presence of gypsy moth in Minnesota. Based on this monitoring, we determine the extent of gypsy moth

Why continue to try to control gypsy moth?

Throughout Minnesota, the 2013 gypsy moth survey captured over 71,000 moths, and trends indicate an upward trajectory.

Gypsy moth defoliated this oak tree. www.entomology.wisc.edu

To our east, Wisconsin has been managing gypsy moth since the early 1990s and their efforts have delayed the pest's introduction and establishment in Minnesota. STS treatments in St. Louis County will not only decrease the local pressures of defoliation but will delay the impacts for forest resources in central Minnesota. Treatments made soon after the discovery of new populations can delay a costly, full-scale infestation and protect natural and urban forest health, local property values, and the quality of outdoor recreation activities.

Will I be charged for treatments?

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 STS Foundation. Total cost of treatment is about $35-$40 per acre for Btk and about $8-$16 per acre for mating disruption.

Can I provide input on this management proposal?

Public involvement and participation is encouraged. Citizens are invited to submit comments about the proposal in writing to MDA. All comments will be reviewed and responded to and authors will receive a copy of the final document. Comments received by April 6 will be most useful for identifying any issues and alternatives in the environmental assessment. Contact information for agencies is provided at the end of this bulletin.

What happens next?

Federal environmental law (the National Environmental Policy Act) requires that an environmental assessment be prepared for this project. An environmental assessment is being completed to assess the potential effects to the environment. One environmental assessment will be written to cover all treatment sites in Minnesota. It will include cumulative effects with references to all sites in analyses and conclusions and will respond to comments received during the scoping period.

MDA is preparing the environmental assessment in cooperation with the U.S. Forest Service--State & Private Forestry (S&PF), and the Superior National Forest. The agencies will prepare and issue an environmental assessment describing all of the alternative methods considered for controlling gypsy moth in the project area and analysis of associated environmental effects, as well as a decision identifying the selected management action.

A final environmental assessment is expected to be released in April. It will be posted on participating agency websites and will be mailed to those who comment on this proposal. Separate decisions from the S&PF and Superior National Forest will be signed before the treatment project begins. The decision made for treatments on the Superior National Forest is anticipated to be authorized under the Healthy Forests Restoration Act of 2003; therefore only those individuals that submit written comments in response to this proposal will have eligibility to submit an objection to the Superior National Forest treatments under 36 CFR 218 regulations.

This project will comply with all applicable state and federal laws governing planning and implementation of gypsy moth treatments.

2014 OPEN HOUSE SCHEDULE		
Thursday, March 13	**City Center West – West Duluth Library** 5830 Grand Ave, Duluth (218) 730-4280	11 am – 1 pm
Thursday, March 13	**Duluth Heights Community Recreation Center** 33 W. Mulberry St, Duluth (218) 723-3613	4 – 6 pm

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.

West Duluth treatment area

Information about Btk

What is Btk?

A biological insecticide called *Bacillus thuringiensis* var. kurstaki (Btk) is proposed for one block covering local, government-owned and private lands. The active ingredients are crystalline proteins formed by naturally-occurring bacteria. The proteins become toxic when eaten by certain susceptible caterpillars like the gypsy moth. 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.

When is Btk applied?

The proposed Btk treatments will take place in June 2014. For best results, the treatment generally starts very 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.

Exact dates and times 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. MDA staff will be on-site to oversee the treatment. MDA's Arrest the Pest Hotline (888-545-6684) will be updated with treatment information frequently. You can also find information on treatments by following the MDA on Twitter at **www.twitter.com/mnagriculture**.

How is Btk applied?

Btk formulations are applied with aircraft operated by licensed applicator pilots. Aerial treatments are at low altitude (approximately 50 feet above the treetops). The aircraft are calibrated to ensure 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. Non-forested areas such as large fields, stretches of pavement, and open bodies of water are excluded from the treatments.

How do I avoid exposure to Btk?

Even though Btk is considered very low risk for humans, some people may choose to avoid exposures by staying indoors or leaving the area entirely during treatments. MDA will offer advance notification of the 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. 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.

To minimize exposure:

1. Stay indoors during, and for at least 30 minutes after treatments, with windows and doors to your home and vehicles closed to allow droplets to settle out of the air.
2. Wait until the treatment has dried before touching vegetation.
3. Residue from the product may accumulate on your car, house, outdoor play equipment, or lawn articles. Btk is easiest to remove shortly after application so simply spray or hose off the items with water.
4. Wash exposed skin with soap and water if direct contact with the spray droplets occurs.

What are the environmental effects of Btk?

Btk is not activated 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, caterpillars must be actively feeding within approximately two weeks after treatment, they must eat the Btk, and they must be susceptible to the bacteria. The MDA works 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. Evaluations have been made and no known sites of sensitive, threatened or endangered species of moths and butterflies overlap with this year's proposed Btk treatments.

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

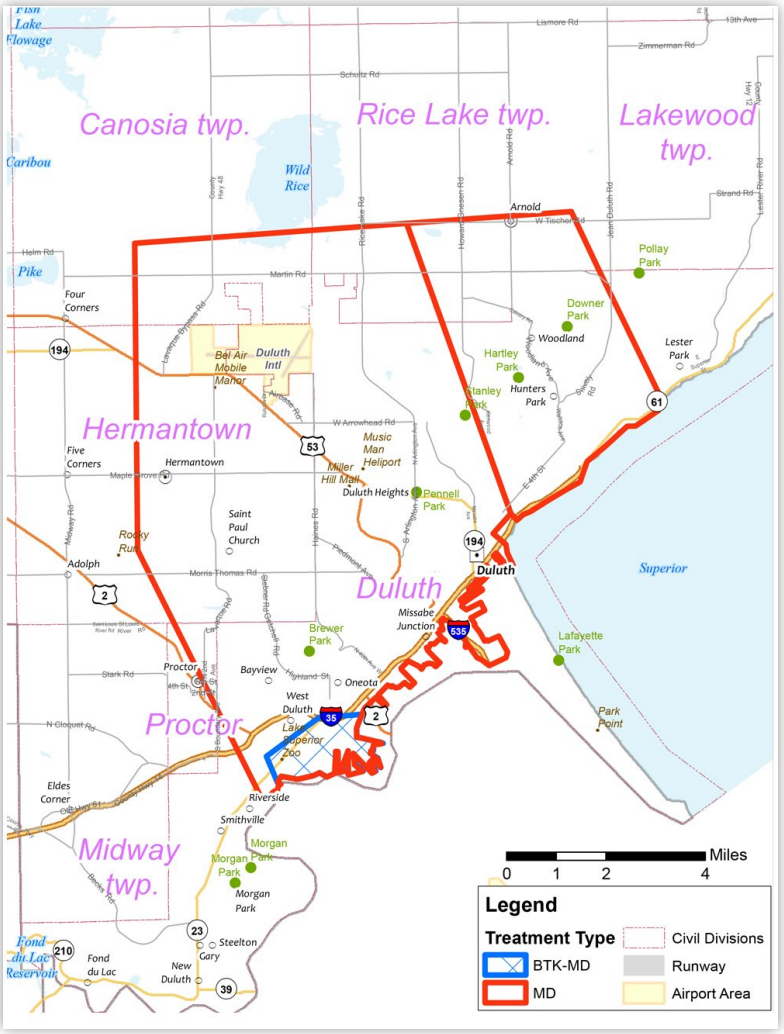
- Btk has been used safely for more than 40 years to control insects in the United States, Canada, and other parts of the world, on agricultural crops and forestry projects, including gypsy moth eradication projects in metropolitan areas such as Chicago and Vancouver.
- Btk is used because is causes a specific, toxic process in caterpillars. The process (a protein mechanism) that causes toxicity in caterpillars is not present in humans or other mammals, regardless of age, and exposure to Btk poses a low health risk for humans.
- Btk is a biological control method that is an alternative to chemical pesticides. Unlike a broad-spectrum pesticide, Btk has a very narrow target range so it will not disrupt the balance of nature.
- 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.

Information for Mating Disruption Blocks

What is mating disruption?

Female gypsy moths cannot fly so they produce a pheromone to attract a mate. If the female adult gypsy moth cannot lure in a male, they will die and fail to produce eggs for the following year. As the name suggests, mating disruption treatments interrupt mating behavior of the moths and reduce populations of gypsy moths the subsequent year. 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 for over a decade and has been very effective. It has no known adverse environmental impacts; pheromones affect only the intended species and are non-toxic.



How is mating disruption applied?

Mating disruption pheromones can be dispensed either sandwiched in plastic flakes or embedded in waxy droplets. The flakes are about this size: [] and the droplets vary but are around this size: o. Both flakes and droplets are aerially applied and stick to leaves and branches. After application, both products often go unnoticed by the casual observer. Using aircraft to dispense the mating disruptors ensures that the product is most effective and works efficiently.

When is it applied?

Mating disruption must be applied just before the gypsy moths are in their adult stage and searching for a mate. In northern Minnesota, adults are found mid to late July. Ideally, mating disruption applications start around sunrise and can continue throughout the day as long as weather conditions are favorable. 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.

How can I help?

MDA officials and their partners are asking for full cooperation from residents in and around the proposed treatment area. We will need to access private property to set, check, and remove monitoring traps starting in June through October.

Unless items are inspected, please do not remove trees, tree limbs, firewood, or any other item stored outdoors that may be contaminated with gypsy moth egg masses. A link to a self-inspection checklist of items to look at can be found on the regulations page at **www.mda.state.mn.us/gypsymoth**. If you see signs of gypsy moth infestation outside of the proposed treatment area, please contact MDA with details. Sending digital photos is the quickest way for staff to ID gypsy moth.

Where can I find out more?

MDA and its partners are providing information about the gypsy moth, trapping data, and the proposed treatments at local government and community organization meetings. Public comments on this proposal are solicited in writing via email or in paper format. Comments received by April 6 will be most useful for identifying any issues and alternatives in the Environmental Assessment. The public is encouraged to comment on the treatment proposal, or contact us with questions or comments using our contact information below.

Contact Us:

Minnesota Department of Agriculture
625 Robert St. N.
St. Paul, MN 55155
Website: **www.mda.state.mn.us/gypsymoth**
Email: **gypsy.moth@state.mn.us**
Arrest the Pest voicemail: 888-545-6684

Superior National Forest
8901 Grand Avenue Place
Duluth, MN 55808
Website: **www.fs.usda.gov/superior**
Email: **comments-eastern-superior@fs.fed.us**
Phone: 218-626-4300

Connect with Us:

To track the latest news on gypsy moth treatments, follow the Minnesota Department of Agriculture on:

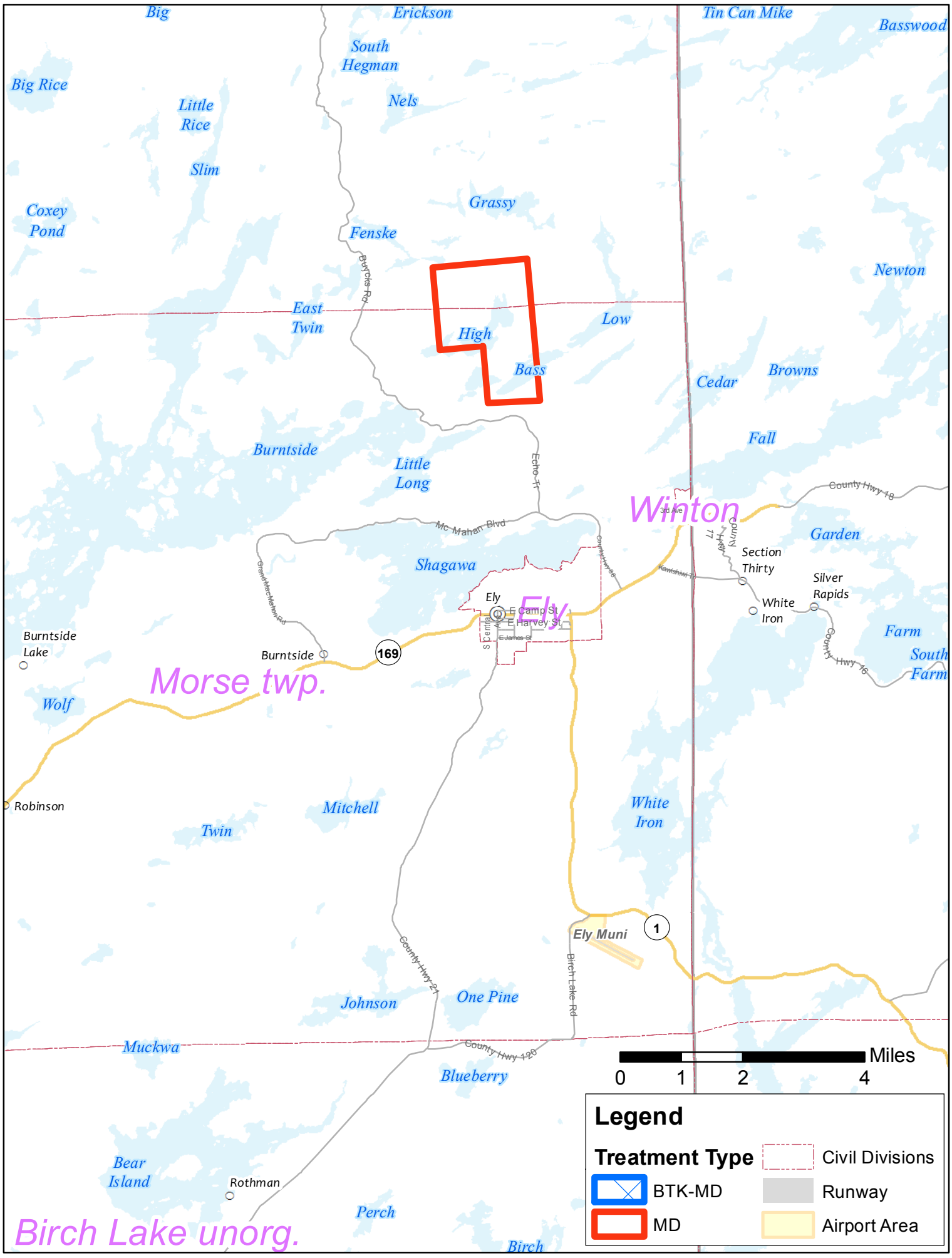
Facebook (**www.facebook.com/mnagriculture**)

Twitter **(www.twitter.com/mnagriculture)**.

In accordance with the Americans with Disabilities Act, this information is available in alternative forms of communication upon request by calling 651-201-6000. TTY users can call the Minnesota Relay Service at 711 or 1-800-627-3529. The MDA is an equal opportunity employer and provider.

Minnesota Department of Agriculture

Plant Protection Division
625 Robert St. N.
St. Paul, MN 55155-2538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Erickson
Tin Can Mike
Basswood
South Hegman
Big Rice
Nels
Little Rice
Slim
Grassy
Coxey Pond
Fenske
Burtcks Rd
Newton
East Twin
Low
High
Bass
Cedar
Browns
Fall
Burntside
Little Long
Echo Tr
Winton
County Hwy 18
Mc Mahan Blvd
Garden
Shagawa
Section Thirty
Silver Rapids
Ely
E Camp St
E Harvey St
E James St
White Iron
Farm
South Farm
Burntside Lake
Burntside
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Wolf
Robinson
Mitchell
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Birch Lake Rd
Johnson
One Pine
Muckwa
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