

Gypsy Moth

History of European Gypsy Moth in North America

European gypsy moth (*Lymantria dispar*) is an invasive forest pest originating from Europe that feeds on tree and shrub leaves during the caterpillar (larval) stage. Gypsy moth is an unwanted pest worldwide and can have negative ecological and socio-economic impacts. It was unintentionally introduced to Massachusetts in 1869, and is now established in many parts of the U.S. and eastern Canada.

[List of North American Gypsy Moth Infested or Suspected Infested Areas of Canada and the United States](#)

Though small emerging gypsy moth populations are occasionally found in Manitoba, none have become permanently established. If gypsy moth was to become established in Manitoba, federal quarantines and trade restrictions could be put in place for products like Christmas trees or nursery plants.

Biology – Life Cycle

Gypsy moths complete their life cycle in one year. The adult female gypsy moth lays eggs in masses in early fall. She covers the eggs with buff or yellowish-coloured hairs (Figure 1). Egg-laying is usually done by early September.

The gypsy moth larvae, or caterpillars, hatch from the eggs in early to mid-spring. The caterpillars can feed on the leaves of more than 300 different types (species) of trees and shrubs. During an infestation, they can cause considerable damage to trees and plants. A single caterpillar can eat up to 1,000 square centimetres of foliage in their lifetime, about the equivalent of 15 oak leaves.



European gypsy moth egg mass

The preferred hosts in Manitoba are:

- Oak (*Quercus* spp.)
- Trembling Aspen (*Populus tremuloides*)
- Willow (*Salix* species)
- Cherry (*Prunus* species)
- White birch (*Betula* species)
- Maple (*Acer* species)
- Alder (*Alnus* species)
- Elm (*Ulmus* species)

Gypsy moth caterpillars grow and change over a couple months. They shed their skin several times, and by early July, they are fully grown. Mature caterpillars are about six to seven centimetres long, darkly coloured, and quite hairy. Each has a double row of tubercles (bumps) along back. They usually have five pairs of blue and six pairs of red tubercles, but sometimes all tubercles are either black or blue.



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Gypsy Moth Caterpillar

After reaching maturity in early July, the gypsy moth caterpillars find a sheltered location in which to pupate (transform from larval stage to moth stage in a cocoon). The pupae are dark reddish-brown, usually with a few yellowish hairs. Female pupae are much larger than the male pupae.



Moths are the adult stage of the gypsy moth life cycle. They start emerging from their cocoons in early August. Adult European gypsy moths do not eat. They only live about a week, long enough to mate and for the females to lay their eggs.

Empty Cocoons

Male gypsy moths are brown. They have a small body and are strong fliers. Female gypsy moths are white with black markings on the wings. They are much larger than males, but they do not fly. After mating, the female lays her eggs before she dies.



Male Gypsy Moth



Female Gypsy Moth

Gypsy moth in Manitoba

Prevention

The Canadian Food Inspection Agency (CFIA) is responsible for preventing the movement of gypsy moth into new areas. They have the authority to establish regulated areas to restrict the movement of infested materials to help prevent the movement of any goods that are infested with gypsy moth at any life stage. In Manitoba, *The Forest Health Protection Act* contains provisions that can be used to eradicate or contain gypsy moth detections.

Monitoring

The CFIA places and monitors gypsy moth traps across Manitoba. These are pheromone traps that attract male moths. Traps are set up in early summer, before the expected flight period in July and August. The location and number of traps is determined by the CFIA and partly depends on male moth captures from previous years.

Often, one or two male moths are captured in the traps deployed in Manitoba. These detections are not normally concerning, as it is not

unusual to capture a few stray moths that may have hitched a ride here from somewhere else. However, if a significant number of male moths are found a trap, ground surveys will be conducted jointly by the federal and provincial governments to look for other life stages of the moth, such as egg masses. These surveys are used to determine if there is a breeding population of gypsy moth in the area.



Management

Monitoring efforts in Manitoba have detected two breeding populations of gypsy moth in Manitoba in St. Germain and La Salle in 2009, and in Winnipeg in 2012. To prevent the establishment of this invasive pest in Manitoba, a successful eradication program was initiated in both cases. Treatment included three aerial applications of a biological insecticide containing *Bacillus thuringiensis* subsp *kurstaki*. Intensified monitoring was conducted in the affected areas for the two years following treatments to confirm that the population had been eradicated.

[*Bacillus thuringiensis subsp kurstaki \(Btk\)*](#) is a bacterium found in the soil. It is applied either aerially or by ground and deposited on tree leaves. When the treated leaves are ingested by larvae in the moth or butterfly family, it causes them to stop eating and die. The timing of the spraying targets gypsy moth larvae. The bacterium does not harm other insects or animals.

The food industry, including organic food producers, use Btk in the production of many fruits and vegetables. There is no evidence of Btk negatively impacting people with respiratory illness or other health concerns, but people may wish to minimize their exposure during any operations.



Aerial treatment in the 2012 (City of Winnipeg)

How You Can Help

Gypsy moth is often spread by human activity. Since this insect can lay its eggs on any surface, people can easily move gypsy moth and not know it.

Look for Egg Masses

Egg masses may be the most common life stage seen by the public. It is important to be thorough when looking for egg masses as they can be difficult to locate. Do not remove egg masses by yourself. Common hiding places include: the underside of branches, tree trunks, fences, firewood, outdoor furniture, swing sets, boats, trailers, under the eaves of buildings.

Egg masses can hitch a ride on objects that are moved from one area to another, such as firewood, vehicles, tents, trailers, lawn chairs and barbeques. Vacationers, especially campers, should be aware of this and should check their equipment before moving on. If you think you see something, make a note of the specimen's location, take a photo if possible, and contact the Manitoba Regional Canadian Food inspection Agency office at 204-259-1400.

Don't Move Firewood

The movement of firewood and wood products around Manitoba and across Canada is one way that invasive species are introduced into Manitoba. Stop the spread of invasive species by purchasing locally sourced wood products.