

FOREST HEALTH (LDD MOTH) ROLES & RESPONSIBILITIES

Provincial forest health monitoring

Forest health is monitored every year by the Ministry of Northern Development, Mines, Natural Resources and Forestry (NDMNRF). The ministry conducts ground and aerial surveys to map major forest health disturbances on the landscape. When pest populations reach outbreak levels, NDMNRF may complete pest specific forecast surveys to help predict defoliation for future years.

The forest health monitoring program provides scientific advice and supports training and interpretation of forest health disturbances.

LDD moth information

NDMNRF provides information on LDD moth (previously referred to as gypsy moth), defoliation maps and forecasts, and control options at www.ontario.ca/page/lymantria-dispar-dispar-ldd-moth.

LDD moth monitoring

NDMNRF's aerial forest health surveys include determining the severity and extent of the LDD moth defoliation. The ministry also conducts egg mass surveys to collect forecast data to guide activities, including monitoring of virus and fungus impacts on the population.

In 2022, NDMNRF expects a continued outbreak with substantial levels of defoliation in the same areas that experienced it last year – most of southern and parts of northeastern Ontario.

As part of the annual monitoring program, the ministry also works with the Canadian Food Inspection Agency to deploy pheromone traps outside the area where LDD moth infestations are known to occur. These traps are used as an early detection tool and to support federal quarantine legislation.

The forest health program will continue to conduct surveys to monitor this pest throughout the duration of its outbreak cycle.

NDMNRF works with Canadian Forest Service (CFS, Natural Resources Canada) to support the development of science and evaluate sampling methodologies.

Federal regulation and enforcement

LDD moth is a regulated pest by the [Canadian Food Inspection Agency \(CFIA\)](http://www.cfia.gc.ca). The CFIA is responsible for establishing and maintaining standards to prevent the introduction and spread of plant pests in Canada.

Pesticide regulation

The Health Canada Pest Management Regulatory Agency (PMRA) is responsible for pesticide regulation in Canada. Pesticides are stringently regulated in Canada to ensure they pose minimal risk to human health and the environment. Under authority of the Pest Control Products Act, Health Canada requires thorough scientific evaluation to determine that pesticides are acceptable for a specific use and that registered pesticides remain acceptable for use once on the market.

Ministry of the Environment, Conservation and Parks (MECP) regulates the sale, storage, use, transportation and disposal of pesticides in Ontario. Ontario regulates pesticides by placing appropriate education, licensing and/or permit requirements on their use under the Pesticides Act and Ontario Regulation 63/09 (O. Reg. 63/09).

Insect management on Crown land

In Ontario, to achieve sustainable forest management on Crown land, there is a forest management planning system under the Crown Forest Sustainability Act (CFSA).

For more information about this process visit [Sustainable forest management](#).

The CFSA and the Forest Management Planning Manual dictate acceptable forest management activities on Crown land in Ontario. Decisions to conduct an insect control program on Crown land are science-based and involve NDMNRF staff and local forest managers.

Some insect outbreaks can cause extensive tree mortality on high-value stands that may lead to significant economic and cultural impacts and increase the risk of fire to northern communities. During these outbreaks, usually in Northern Ontario, an insect pest management program is developed as required in the Forest Management Planning Manual to evaluate all options. If the pest management program involves aerial application of insecticides, the Forest Management Planning Manual outlines a specific process which includes creating project proposals, First Nation and Métis community involvement, and public consultation.

Currently, there is no alternative process for private landowners to request permission to spray on Crown land.

Insect management on private land

NDMNRF does not manage LDD moth on private land; insect management on private land is the responsibility of property owner. The ministry does provide information on forest pests that includes suggestions for landowners on how to control localized populations. The ministry also leverages partners such as [Ontario's Invasive Species Centre](#), and the [Ontario Federation of Anglers and Hunters' Invading Species Awareness Program](#) to provide information to landowners, and to assist with tracking citizen reports of LDD moth.

Municipalities and conservation authorities may choose to develop integrated pest management plans to manage trees, parks and other green spaces within their jurisdiction.

LDD moth (*Lymantria dispar dispar*) in Ontario

LDD (*Lymantria dispar dispar*) is an invasive species that is native to Europe. It was first detected in Ontario in 1969. This defoliator feeds on a variety of hardwood species, preferring oak, birch, and aspen. During severe outbreaks, softwoods such as eastern white pine, balsam fir, and Colorado blue spruce may be affected. LDD moth outbreaks have become cyclical, typically occurring every seven to 10 years, with outbreaks lasting three to five years.



What does LDD moth do to forests?

- Larvae (caterpillars) feed on new foliage.
- After defoliation, hardwood trees can produce a second crop of leaves during the growing season enabling them to continue to grow.
- Conifers can't produce a second crop of foliage but healthy trees can withstand repeated years of defoliation before branch and twig dieback start to occur.
- Defoliation stresses trees making them more susceptible to damage from secondary pests, drought, and poor growing conditions.

LDD moth life cycle

1. Overwinters in the egg stage — tan-coloured masses — often on the bark of trees.
2. In spring, eggs hatch and larvae ascend the trees to feed on the new foliage. Initially, larvae feed during the day but as they mature feeding occurs mainly at night.
3. Mature larvae, seen in early summer, are about 50 mm long, dark-coloured, hairy, with a double row of five pairs of blue spots down their backs followed by a double row of six pairs of red spots.
4. By July, the larvae are done feeding, pupate for 1 to 2 weeks, then hatch into moths.
5. Male moths are light brown and slender-bodied, while females are white, wingless, and heavy-bodied. They live only long enough to mate and lay eggs.





Control methods

The ministry does not manage LDD moth on private land. Landowners can find licensed insect control service providers with experience in controlling LDD moth populations by checking their local listings.

In spring, placing burlap bands around the tree stem gives the travelling larvae a place to congregate during warm days. The larvae can then be removed and killed.

After larvae have emerged, registered insecticides can also be applied to help protect trees from defoliation. Landowners considering spraying their property should engage a licensed insecticide application business as early as possible, as commercial capacity may be limited.

In fall and winter, removal of egg masses is also effective.

Tip: During a drought year, help your trees by watering them into the fall where appropriate to do so (ornamental or open grown trees). In a woodlot setting, manage trees to allow proper spacing and light to promote a healthy forest. Plant a diversity of species for a forest that is more resilient to insect and disease disturbances!

Ontario's forest health monitoring

The ministry monitors forest health across the province every year. Previous years' LDD moth defoliation information is included in our annual Forest Health Conditions in Ontario reports, available at ontario.ca/page/foresthealth-conditions.

Related information

ontario.ca/page/lymantria-dispar-dispar-ldd-moth

Invasive Species Centre

invasivespeciescentre.ca/invasive-species/meet-the-species/invasive-insects/gypsy-moth/

Invading Species Awareness Program

invadingspecies.com/invaders/forest/ldd-moth/

