COUNTY OF WELLINGTON

COMMITTEE REPORT

To: Chair and Members of the Planning Committee
From: Meagan Ferris, Manager of Planning and Environment
Date: Thursday, October 07, 2021
Subject: Gypsy Moth (Lymantria dispar dispar)

---

1. 0 Introduction:

The intent of this report is to provide Council with information regarding the LDD Moth including items to consider with respects to aerial spraying in response to Council direction that was received in June of this year. This report also reviews the roles of the varying levels of government; what the County's applicable conservation authorities and other municipalities are providing in terms of services to the public; and known methods to maintain and control an LDD Moth infestation.

2.0 General Overview of the LDD Moth:

The European Gypsy Moth, which is commonly referred to as the LDD Moth due to its scientific name (Lymantria dispar dispar), was unintentionally introduced in Canada in 1969. The Moth is considered an invasive pest that is found in Ontario, Quebec and the Maritimes that poses a threat to Canada's forests and overall biodiversity.

The Moth's life can be broken down into four (4) different life cycles, beginning with egg masses which are laid on tree bark and outdoor objects between July of the previous summer and April. The 2nd phase is larvae/caterpillars which hatch between the months of April and June with the 3rd phase being the pupae stage with full maturity being the 4th stage. Full maturity is reached between the months of July and August.

The most damaging life stage of the Moth is during the larvae/caterpillar stage as it is at this time that defoliation occurs due to the caterpillars feasting on leaves as they grow and prior to entering into the pupae stage. The impacts of defoliation from the LDD Moth can vary from minor to severe defoliation and it is generally understood that a healthy tree can withstand some defoliation. The primary concern for long term tree health is repeated defoliation as this will make a tree more susceptible to other pest infestation; drought; and can cause growth loss. The Ministry of Northern Development, Mines, Natural Resources and Forestry (NDMNRF) has identified that Moth infestations are cyclical and can occur every 7-10 years, lasting between two (2) to four (4) years; however, other sources suggest this cycle can occur every 5-10 years.

The tree types most commonly impacted by the LDD Moth include oak, birch, poplar, willow, and maple trees. The Moth will also defoliate softwood trees such as white pine and blue spruce trees.

3.0 Management Methods:

The most crucial time to manage a LDD Moth infestation would be at the egg mass stage before the eggs hatch into caterpillars. This is due to extensive leaf consumption that takes place by the caterpillars in preparation of their next life cycle. There are several common practices and methods that can manage this pest throughout its stages of life, with some options outlined below:

- *Egg Masses & Pupae:*
    - Scrape the egg masses or pupae off of its host throughout the season and dispose of the eggs and pupae in a mixture of soap and water.
    - The removal of egg masses should be completed as soon as they are spotted, which is generally during August of the current year to mid-April or May of the following year.

- *Caterpillars:*
    - Trap the hatched larvae by using a burlap and bands method and remove the caterpillars daily and disposing of them in a soap and water mixture.
    - This should be completed during the months of May to June.

- *Use of a Pesticide:*
    - Multiple sources identify Btk (Bacillus thuringiensis kurstaki) as a pesticide that can be used to address small and large scale infestation. This particular product impacts the digestive system of the LDD Moth, but timing of application is important in order for this method to be affective.
    - Applications should occur during the early stages of the caterpillar's life (between mid-April to mid-May) and multiple applications may be required.

The Province of Ontario has also identified that there are several natural occurring predators or factors that can also control the LDD Moth population, including: a virus known as the Nuclear Polyhedrosis Virus (NPV); a fungus known as Entomophaga maimaiga; predators such as birds and mammals, including a species of wasp; and cold winters with extended days of cold weather below -20 degrees Celsius.

4.0 Aerial Spraying

In Canada, pesticides are regulated by Health Canada's Pest Management Regulatory Agency (PMRA). Health Canada has identified that "Btk poses little threat to human health either through handling products directly or through indirect exposure such as during a spray program." This product can be applied through ground application and aerial spraying.

Although aerial spraying is understood to be an effective method, this method is more commonly used to cover a large area. It is estimated that the cost is approximately $1 000 per hectare, depending on the consultant. There is also a potential that aerial spraying contractors may have a minimum acreage requirement that needs to be met in order for aerial application to be undertaken. The application of Btk may require more than one application, so to be effective it is assumed that multiple applications will be required. If so, the estimated cost per hectare within a year would be approximately $ 2000 per hectare.

In determining the pros and cons of aerial spraying, the County should give considerations to: where aerial spraying would be applied (public and/or private properties); what level of public engagement is required prior to deciding to spray; if there is buy in from all local municipalities; notification requirements prior to spraying; cost and cost sharing potential etc.

Council may wish to consider inviting a licensed contractor to attend a future meeting to outline the pros and cons of using this method and the parameters considered for identifying areas that are an ideal candidate for the aerial application method.

5.0 Roles of the Federal, Provincial and Local Government:

Planning staff have included an overview of the federal and provincial governments involvement with the monitoring or management of the LDD moth. An overview of what other communities in south-western Ontario are doing to address this issue along with the current County and local municipal approach is also included within this section.

Federal

The role of the Canadian Food Inspection Agency (CFIA) is to prevent the introduction and/or spread of plant pest, including the LDD Moth. Currently, there are Federal regulations in place to control additional introduction and ultimately the spread of the LDD Moth from the importing and exporting of certain commodities (i.e. Christmas trees, nursery stock, wood products and equipment that may harbor the moth at any stage in its life). The areas subject to this regulation are Ontario, Quebec and the Maritimes. No direct assistance to local municipalities or the general public is provided by this agency.

Provincial

The Ministry of Northern Development, Mines, Natural Resources and Forestry (NDMNRF) plays a role is monitoring forest health on a yearly basis through ground and aerial surveys. The Province also prepares an annual forest health conditions reports. The Ministry may also complete a forecasting survey to help predict future defoliation.

In reviewing the Ministry's 2020 annual forest health report, it was identified that in the southern portion of the Province, defoliation (light, moderate and severe) from the LDD Moth has substantially increased and that moderate to severe defoliation has occurred within the overall Guelph District. Wellington County forms part of the Guelph District, which stretches from Huron County to Niagara Region. More specifically, it was identified that Wellington County's moderate to severe defoliation were smaller and more scattered, with most of the defoliation identified south of Fergus and Brisbane, in and around Guelph Lake Conservation Area, and along the Hwy 401 northeast of Puslinch Lake. Small areas of defoliation were also identified in the northern parts of the County. The 2021 annual report and 2022 predications have not yet been released.

The Ministry provides assistance to the public through their information websites, with some direct assistance being provided through a contact for individuals to obtain information and protocols for the completion of an egg mass survey on an individual's property. It is also noted that there is an *Invading Species Awareness Program* that is a partnership between the Ministry of Northern Development, Mines, Natural Resources and Forestry (NDMNRF) and the Ontario Federation of Anglers and Hunters (OFAH). This programme provides information and also includes ways to report invasive species.

Local Government

Several municipalities were canvassed in order to understand what role and services are being provided in southwestern Ontario. Based on this review, the level of services appears to vary. It was evident that some communities provide information resources (i.e. websites and in some cases information pamphlets); while others have taken a more active role in monitoring and managing infestations. Some of the communities that are undertaking some noteworthy efforts, include:

- **County of Brant** - established an Aerial Treatment Programme and conducts aerial spray on County-owned lands and in some cases private properties. This programme has been completed for this year. Brant County also has a programme that works with landowners to evaluate outbreaks on their private property and the County provides education on how to manage infestations.

- **Town of Oakville** - the Town has been monitoring the moth population since early 2000's and also implemented aerial spraying (using Btk pesticide) on Town woodlands in 2021. The Town also provides residents in areas heavily impacted with LDD Moths with tree banding kits. Recently, additional funding was set aside for egg removal of municipal trees.

- **City of Mississauga** – the City has established a management and implementation plan and utilizes an interactive mapping and reporting tool for the public. The City also monitors municipal trees and identifies priority areas requiring treatment. Amongst the standard management methods, as mentioned within Section 3.0 of this report, the City has also used hanging traps in the trees and an injectable insecticide (called TreeAzin).

6.0 Roles of the Conservation Authorities:

There are six (6) conservation authorities within the County and these authorities include: Credit Valley Conservation Authority; Halton Conservation Authority; Grand River Conservation Authority; Hamilton Conservation Authority; Saugeen Valley Conservation Authority and Maitland Valley Conservation Authority. Planning staff completed an initial review of what the various conservation authorities are doing to address the LDD Moth concerns.

All of the conservation authorities in the County (except for Maitland Valley) have information tools in the form of a website for the public to review. Other than monitoring and managing of their own lands, none of the County's applicable Conservation Authorities are providing any direct services (i.e. spraying) for the public. However, it is noted that some of the authorities do have staff available to answer public inquiries and provide education information and advice for some potential removal methods.

7.0 County of Wellington Context:

Over the last five (5) months, the Planning and Development Division has received a number of inquiries from the public about the LDD Moth and if there is a programme me the County has in place to assist residents. Currently, the County of Wellington does not have an invasive species programme me or dedicated staff to address any invasive pests. Due to the influx in public inquiries in the summer months, planning staff did reach out to the Grand River Conservation Authority (GRCA) and have been provided

with an informal list of known private contractors that could assist with controlling the Moths on private property. This information has since been distributed to concerned residents in an informal manner.

It is important to note that within the County, there are several local municipalities (i.e. the Town of Erin, Guelph-Eramosa and Centre Wellington) that have all implemented education websites to assist residents with controlling infestations on private property. Centre Wellington is also actively monitoring infestation and have a more formalized monitoring programme for moth sightings.

In preparing this report, staff also considered the potential impacts that the LDD Moth may have on County owned lands; right-of-ways and the County's Forest Tracts. Although there is no formalized monitoring programme, at this time there has not been any infestations specifically identified on County properties or right-of ways. With respects to the Forest Tracts, staff are reviewing the current Forest Management Plans to identify the Tracts that may be most susceptible to determine if there is any infestation and/or defoliation. This review will inform continued, informal monitoring of the County Tracts to assess the impacts (current and future).

8.0 Recommendation:

That the report "Gypsy Moth (Lymantria dispar dispar)" be received for information; and

That County staff be directed to add information to the County website regarding the LDD Moth.

Respectfully submitted,

Meagan Ferris

Meagan Ferris, RPP MCIP
Manager of Planning and Environment