



<b>Policy Name: Gypsy Moth Management</b>	<b>Policy No: S802-03</b>
Committee approval date:	February 18, 2020
Council approval date:	March 2, 2020
Revision date(s):	-
Department/Division:	Public Works

## 1. Purpose

The overall purpose of this policy is to provide a process that addresses the periodic infestation of European Gypsy Moth experienced in the Town of Pelham.

The specific goals of this Gypsy Moth Management policy are to develop an integrated set of objectives and procedures that will combine to form a set of overall working guidelines that will:

- Maintain tolerable gypsy moth populations at any point in time, and make sure that outbreaks are controlled properly.
- Educate residents about the European Gypsy Moth to foster a thorough understanding of forest pests and their environments, as well as, understand the rationale behind the Town's decision making process with respect to gypsy moth management.
- Provide a policy that Town officials and the general public are confident is an effective and fair tool in responding to gypsy moth infestations.
- Establish a feasible gypsy moth monitoring network and egg mass survey program.
- Establish an intervention threshold criterion for implementing gypsy moth treatment efforts.
- Strategically allocate resources toward forestry & tree health.
- Reduce the workload and duplication of effort for Town staff in responding to gypsy moth concerns.
- Allow for the collaboration across municipal and regional boundaries to help strengthen gypsy moth management.

## 2. Policy Statement

It will be the policy of the Town of Pelham to protect the tree canopy within the Municipal Boundary against Tree Mortality caused by defoliation by the gypsy moth and hence, preserve and enhance the quality of Pelham communities.



### 3. Policy Constraints

The policy will be applied to all properties within the Town of Pelham with the exception of properties, or sections of properties being used for agricultural production or commercial business, as well as properties owned or operated by; the Niagara Region, the Niagara Peninsula Conservation Authority or the Province of Ontario unless otherwise approved by the Director of Public Works.

The policy may be affected by the availability of Town staff, financial resources, regulatory restrictions and requirements from other departments and agencies.

### 4. Definitions

**Integrated Pest Management (IPM):** a multi-disciplinary, ecological approach to the management of pests based first on prevention and when needed, a control (biological, cultural, physical or mechanical intervention), saving registered pesticide application as a last resort.

**Pest:** an organism that causes damage, is a nuisance or interferes with the health, environmental, function or aesthetic objectives of citizens.

**Biological Controls:** other organisms that prey specifically on a pest.

**Pest Action Threshold:** the number or density of a pest when management action should be taken.

**Tree Mortality:** the level of defoliation (>60%) where a tree is likely to die.

**Treatment Buffer Zone:** the area adjacent to a treatment plot that will be included for treatment to reduce re-infestation or gypsy moth migration into nearby properties.

**Sequential Sampling:** a sampling technique wherein the researcher picks a single or a group of subjects in a defined area, conducts a survey, analyzes the results then picks another group of subjects if needed and so on.



**Commercial Property:** a property that is being used for a commercial purpose and/or generates an income.

## 5. General Provisions

The goal of the gypsy moth control program is not to eradicate the pest, but to protect tree health by suppressing the population to acceptable levels. Due to the relationship between weather and egg survivorship and the unpredictability of gypsy moth outbreaks, an Integrated Pest Management (IPM) approach will be taken to manage their population. The IPM decision-making process results from an evaluation of treatment options available and an analysis of potential impacts.

### 5.1 Treatment Threshold Criteria

In order to preserve the Town of Pelham's tree canopy and prevent tree mortality resulting from Gypsy Moth infestation, the Threshold Criteria used to identify plots that require treatment within Municipal Boundary will be a minimum of 2500 egg masses per hectare.

## 6. Annual Egg Mass Surveys

Decisions and control strategies for the management of the gypsy moth population will be made on the most appropriate IPM strategy based on analysis of egg mass survey results. Egg mass surveys will be undertaken annually in the fall, to determine the egg mass densities within the developed Gypsy Moth monitoring plots. (*Appendix A*) The information gathered during the surveys will be utilized in the development of a treatment program if the threshold criteria or special circumstances are met.

The number of surveying plots required to monitor gypsy moth populations fluctuates in times of high or low population densities. Sequential sampling plans increase the efficiency of the survey program by focusing in areas where intervention is most likely required. Areas with very low or high populations require the least amount of sampling, as a decision may be reached after sampling only a few plots. Plot sampling requirements may vary depending on land use for continually forested and urban/suburban habitats depending on gypsy moth populations.

## 7. Gypsy Moth Control Program



## **7.1 Spray Block Development**

If the threshold criteria for treatment are met, treatment blocks will be identified utilizing the information gathered through the annual egg mass surveys. Once the survey data is compiled and analysed, spray blocks will be identified based on the most appropriate IPM strategy.

Spray blocks will be developed to include areas where gypsy moth egg mass densities exceed the threshold criteria of 2,500 per hectare. Spray blocks are developed in such a way to accommodate aerial spraying in a safe and efficient manner. Due to the application method it is not logistically possible for individual properties inside the spray block to opt out of the treatment. Authority delegated through By-Law 4106(2019) allows the Director of Public Works to implement a gypsy moth control aerial spray program when the threshold criteria is met.

Special circumstances such as proximity to selected treatment areas, or areas where high gypsy moth populations threaten nearby property where protection is greatly desired, may extend consideration of treatment to additional areas or Treatment Buffer Zones. Also, consolidation or expansion of proposed treatment areas may be attempted in the interests of program efficacy and efficiency.

Circumstances may warrant the consideration of areas with egg mass counts below 2500 egg masses per Hectare, on a lower priority basis, when Habitat Susceptibility and Land use factors are high and there is a clear indication that the gypsy moth populations, though low, are in increasing and are healthy. Generally, areas that in the past have experienced high and rapidly rising outbreak levels of gypsy moth would be candidate for such consideration to achieve effective and more efficient long term pest management.

## **7.2 Treatment Program Communication**

Prior to the implementation of any treatment program, staff will prepare a report outlining the results of the egg mass surveys, management recommendations, treatment costs, proposed spray blocks as well as the amended by-law to be presented to Council for approval.

Town of Pelham Staff will host a Public Information Centre (PIC) to present the purpose, objectives and implementation process of the treatment program. Program information will also be made available on the Town of Pelham's Website and social media feeds as well as public notices in local print media.

The Town of Pelham will notify landowners, whose properties are included within or adjacent to the spray blocks prior to May 1st by Canada post letter mail.



The Town of Pelham will provide information concerning the gypsy moth, including control measures on private properties to the residents of Pelham. Information provided will be made available at; all Municipal Facilities, Libraries, gypsy moth treatment program PIC, the Town of Pelham website, social media feeds and media releases. (*Appendix B*)

Further to the communication plans described in the previous paragraphs, the Town of Pelham shall adhere to section 79 of Ontario Regulation 63/09 under the Pesticides Act for alternative means of public notice of pesticide use.

### **7.3 Aerial Application for Gypsy Moth**

The treatment of gypsy moths shall be completed in an ecologically responsible manner. To protect other sensitive species, a number of factors are considered in determining the timing for aerial application of control agents including; foliage emergence, gypsy moth in-star development, weather conditions and manufactures' specifications.

Spray application will not be initiated until foliage has developed to no less than 30% of mature size, and caterpillars have reached 90% emergence and display evidence of feeding. Application must be made only during meteorological conditions that are suited to maximize spray deposit in the treatment areas and to minimize off target movement of the spray. Foliage must not be too wet prior to application and applied well in advance of any rain events. This may vary depending on manufacturers' technical information and product-specific recommendations.

### **7.4 Post Application Assessments and Communication**

Initial post-spray assessments are to be completed after each spray application to ensure that the treatment area was completely and correctly flown over. Efficacy assessments will be performed within 24 hours of the spray application utilizing an Accurate Deposit Assessment Methodology (ADAM) kit from Valent Biosciences or approved alternative.

Once the majority of gypsy moth caterpillars have finished feeding and begun pupation and before trees have had time to grow new leaves, defoliation surveys will be completed in a representative number of spray blocks as well as other locations where gypsy moth egg mass data was collected. This information will be utilized to design future egg mass surveys and estimate population migration.



Town of Pelham Staff will prepare and present a report to summarize the effectiveness of the treatment program including; graphical spray event data, post-spray assessments and defoliation survey.

### **7.5 Alternative Gypsy Moth Control Measures**

The Integrated Pest Management decision-making process includes an evaluation of treatment options and an analysis of potential impacts. Through the IMP approach, a number of alternative management options may be utilized based on; survey results, tree species, tree maturity and density, land use, location, ecological factors and the health of the gypsy moth population.

In locations where aerial spray application is not well suited, a number of other treatment options may be utilized. These may include but are not limited to: ground spraying, tree injection, burlap banding, or a “do nothing” approach if the impact of the infestation will be limited to a remote area.

## **8. Community Volunteer Program**

The Town of Pelham may develop and implement a volunteer based forest health monitoring program overseen by a qualified forestry consultant. Effective volunteer programs can have many positive results and increase awareness among the general public about tree health and invasive species. Raising interest in tree health issues in the community is imperative for the future conservation of the Town of Pelham’s tree canopy. By enlisting and training members of the community to identify invasive species, and collect tree health data from their own lands and public property, volunteers can generate pertinent information that can be useful for municipal operations and help cultivate an awareness of tree health issues among Town of Pelham residents.

## **9. Gypsy Moth Management Funding**

The Town of Pelham will endeavour to strategically allocate resources toward the protection of tree health. The Gypsy Moth Management Policy identifies how the periodic gypsy moth infestations are treated by the Town of Pelham as part of an overall Integrated Pest Management Policy.

A Forestry Health Reserve Fund will be established which will be used to fund programs related to the health of the forests and tree canopy within the Town of Pelham.



The Gypsy Moth Management Program will be funded through the Forestry Health Reserve with Council approval.

To help ease the costs associated with treatment programs the Town of Pelham may attempt to coordinate spray programs with neighbouring municipalities, conservation groups, agricultural and commercial operations and other governmental organizations.

## **10. Attachments**

Appendix A Gypsy Moth Egg Mass Survey Plots

Appendix B Gypsy Moth FAQs



**APPENDIX A – Gypsy Moth Egg Mass Survey Plots**