

Concept: How Might We Respond to the Gypsy Moth Infestation in the Town of Pelham

Background:

Whereas Council directed staff through the April 1, 2019 Public Works Report “Control of Gypsy Moth Outbreak in the Town of Pelham” to proceed with an urban infestation survey, this report serves to inform Council on the degree of gypsy moth infestation in the Town and propose a control strategy to reduce the damage to the urban forest and public lands in the areas surveyed, and to limit the spread of the infestation to other areas.

In 2017 staff began to receive concerns from residence regarding the emergence of Gypsy Moths in urban areas surrounding Fonthill, specifically Hillcrest Park which is located adjacent to Pancake Lane and Blackwood Crescent. In 2018 staff, by direction of Council, initiated the aerial spraying to reduce the infestation in Hillcrest Park (6.47 acres). Throughout the summer of 2018, Public Works Staff received photos of defoliation and reports of the presence of gypsy moths from approximately 116 citizens inside the urban boundary of Fonthill, Ridgville and Fenwick.



Image 1 – Hillcrest Park aerial application May 2018



Image 2 – Gypsy moth larva – Memorial Drive 2018.

In the past, effected municipalities have worked together to assist with the preparation and public awareness of the infestation. Their assistance included funding of the pre-spray co-ordination & the treatment of their own lands. In 2019, the Township of West Lincoln joined the Town of Pelham to work with Trees Unlimited and Zimmer Air Services to prepare for the 2019 spring infestation.

To optimize spray efficacy, reduce Gypsy Moth populations, minimize host tree defoliation and reduce the expansion of the outbreak to other areas in the Town, a program for the aerial spraying is proposed to be conducted over the infested areas within the urban boundary of the Town of Pelham, as delineated through the surveying process. The determination of the aerial treatment zones is dependent on a number of factors including the density, size and distribution of egg masses, tree species, ground cover, and the existing condition of the trees related to other stress factors. Both public and private trees will be sprayed in urbans areas under this program. It is not logistically possible to treat only street trees or omit individual properties when aerial applications are performed. The Egg Mass surveys and Urban/Rural Spray Blocks have been provided as an attachment to this report.

Adverse weather conditions such as wet, cool or windy conditions at the time of the proposed spraying may impact the program causing delays or not all areas being completely treated. Areas that do not meet the criteria established by Trees Unlimited for a spray program will not be included. Affected

property owners who do not meet the criteria will be advised as to how to implement integrated pest management strategies to reduce the population size on their properties.

Two aerial applications of *Bacillus thuringiensis kurstaki* (Btk) are required, typically beginning in mid-May and should be completed within a ten to fourteen day time frame. Btk is a naturally occurring, soil borne bacteria that only targets the larvae of insects within the order Lepidoptera (moths and butterflies). Because Aerial application of Btk is applied in early May before food plants for butterflies develop the impact on other butterfly populations is minimal. The active ingredient in Btk work only in the digestive system of the larvae and these conditions are not found in humans, mammals, birds, or other insects. Btk is one of the few chemicals that is registered for use for organic farming practices.

Although Gypsy Moth populations will be reduced within the proposed treatment areas, not all the gypsy moth caterpillars will be eradicated. Results will be variable between spray blocks and residents will observe some Gypsy Moths living in the treatment areas following the application; however, if the defoliation rates can be reduced, the overall tree mortality rates will also be lowered. As 2019 is the third year of the infestation within the Town of Pelham, it is unlikely that the population of gypsy moths would be high enough to warrant further treatment in 2020 as it is suspected that populations may begin to collapse.

The *Municipal Act, 2001*, Section 128, authorizes a local municipality to prohibit and regulate with respect to public nuisances, including matters that, in the opinion of Council, are or could become or cause a public nuisances. During past infestations in Ontario, Councils of several larger municipalities including the City of Mississauga, and Hamilton declared the infestation of Gypsy Moth to be deemed a public nuisance particularly given that if left unchecked would lead to devastation of the natural environment with in urban areas with the defoliation of many trees.

Alternatives for Consideration:

Alternative 1 a)

Council may decide to implement a Gypsy Moth Control program to include the aerial spraying of trees on municipally owned lands and upon private urban lands within the affected areas identified through the surveys to be at severe infestation levels. The maximum total area to be sprayed would be approximately 165 acres which would include of 85 acres private urban lands and 80 acres of municipally owned properties, 30 urban acres & 55 rural acres, including unopened road allowances. The cost of this program would be approximately \$79,000 (plus HST) but could fluctuate mildly due to permit costs, application restrictions by federal and provincial agencies (equipment & road closure

requirements). If this Alternative is chosen, the Town Clerk be authorized to introduce a nuisance by-law to declare gypsy moth a nuisance pest as attached to this report.

Alternative 1 b)

If a Gypsy Moth Control program is approved, Council may consider the imposition of a mandatory cost recovery program for affected homeowners to help offset some of the cost requiring the enactment of a fee by-law. The estimated cost to the 250 benefitting property owners would be approximately \$216 (plus HST) per property. This estimation is based on the following formula:

$$\frac{(Total\ Cost) - (Town's\ Portion)}{Number\ of\ Benefitting\ Properties}$$
$$\frac{\$79,000.00 - \$25,000.00}{250}$$
$$= \$216$$

Alternative 1 c)

If a Gypsy Moth Control program is approved, Council may consider providing full program funding for Urban Area spraying from the Levy with no attempt to recover costs from benefitting private property owners.

Alternative 2

Council may decide to implement a Gypsy Moth Control program to aerial spray only municipally owned lands and unopened road allowances identified through the survey to be at severe infestation levels. The maximum total area to be sprayed would be dependent on the existing operation budget allocation of \$25,000.00 for the program co-ordination and aerial spraying.

Alternative 3

Council may direct staff to “do nothing” and allow nature to run its course. This alternative is not recommended based on the following impacts:

Environmental

- Reduced Tree vigor
- Tree crown dieback and mortality

- Further reduction of the Urban Canopy
- Reduced shade, dry soils
- Effects on air quality, sound reduction, heat sink effects, etc.
- Increased pesticide contamination due to uncontrolled private application

Human Health

- Allergic reactions to hairs, wing scales including rashes and skin irritations, respiratory tract irritations, eye irritations
- Psychological reactions
- Hazard trees, dead branches and tree falls
- Increased exposure to chemical pesticides

Economic Impacts – Costs to Property Owners

- Pesticide treatments privately undertaken
- Cleanup of insect body parts
- Pruning dead branches; dead tree removal and replacement
- Rural property owners have organized their own cooperative spray program

Economic Impacts – Costs to the Municipality

- Increased tree inspections
- Increased staff response to citizen concerns
- Tree pruning and maintenance
- Tree removal and replacement
- Reduced use of infested parklands and recreational trails

The potential impact on other Forestry programs could be significant if staff is directed to take a “do nothing” approach. This would result in an increased backlog of work orders for City owned trees if this pest is not controlled and allowed to spread. There is the potential for hundreds of dead and/or hazardous trees requiring attention, creating other budget pressures.

The Challenge:

2019 Town of Pelham Gypsy Moth Infestation
Tuesday, April 23, 2019

HWM implement an Aerial Tree Spray program to protect the urban forest as well as municipal properties in the Town of Pelham from the Gypsy Moth Infestation.

HMW introduce a nuisance by-law to declare gypsy moth a nuisance pest.

Our Recommended Solution:

BE IT RESOLVED THAT Council receive the report, 2019 Town of Pelham Gypsy Moth Outbreak; and

- 1. That staff be directed to implement a Gypsy Moth Control program an Aerial Tree Spray program involving the aerial spray of the biological control agent Btk to include both Town and privately owned trees within the identified affected areas to control the larval stage of the European gypsy moth which causes defoliation of trees;**
- 2. That an Implementation and Communication Plan be developed, providing defined treatment areas, measures to mitigate public concern, communication and cost recovery plans;**
- 3. That staff coordinate a process whereby a portion of the cost for aerial spray may be received from affected property owners to help offset the cost of the control measures;**
- 4. That the appropriate nuisance by-law to declare gypsy moth a nuisance pest be passed and enacted.**

Rationale:

Through the infestation surveys completed by Trees Unlimited it was found that infestations within the Town of Pelham have reached severe outbreak levels which will lead to defoliation and tree loss. Town staff have received over one hundred reports of gypsy moth infestation and requests for spraying from citizens concerned about the health of their trees and the enjoyment of their properties.

Measure of Success:

Success would be achieved if a Gypsy Moth Control program be successfully implemented with no risk to public health that effectively reduces the gypsy moth population and reduces defoliation of the tree canopy.

Milestones:

N/A