




Hamilton

## INFORMATION UPDATE

<b>TO:</b>	Mayor and Members City Council
<b>DATE:</b>	September 19, 2019
<b>SUBJECT:</b>	Gypsy Moth Control Program (ES19023) (City Wide)
<b>WARD(S) AFFECTED:</b>	City Wide
<b>SUBMITTED BY:</b>	Craig Murdoch Director, Environmental Services Public Works Department
<b>SIGNATURE:</b>	

### Background

The Gypsy Moth is an aggressive, invasive, non-native pest. In the caterpillar stage it feeds on the leaves of hardwood trees and can cause severe defoliation. In some cases where multiple years of defoliation occur it can cause tree mortality. If left unmanaged the pest will significantly impact the City's trees and the overall tree canopy.

In 2017, areas were identified in the City that exceeded 2,500 egg masses as outlined in By-law No. 08-070 and as a result of this Report PW17088 recommended the implementation of a 2-year control program for Gypsy Moth. Council approved this program on November 22, 2017 and requested updates on the results of each year of the program. On March 14, 2019, Report ES19008 provided information on the details and results of the 2018 control program.

This Information Update is to provide the Mayor and members of Council with information on the 2019 control program and on plans to monitor Gypsy Moth for the future.

### Review of the 2019 Gypsy Moth Control Program

The strategy for the 2019 Gypsy Moth Control Program was primarily based on information gathered from 750 egg mass plots surveyed in the western portion of the city. These surveys identified specific areas that exceeded the egg mass threshold and therefore required control of the pest.

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The 2019 program represents the second year of aerial spraying on 580 hectares of land within Ancaster, Greensville, Waterdown and Carlisle. The aerial spray component of the program consisted of two applications to each area. Multiple spray applications are recommended by pest managers and the manufacturer of bio-pesticide Foray 48B *Bacillus thuringiensis var. kurstaki* known commonly as Btk. To ensure that all recommendations and regulations were adhered to, and to ensure the success of the applications, consultants from BioForest Technologies Inc. were contracted to assist with monitoring and data collection.

Through consultation with the aerial spray applicator, Zimmer Air Services, and the consultant, BioForest Technologies Inc., schedules were set for both applications. The dates were based on the pesticide's regulations of use, 90% Gypsy Moth eggs being hatched, specific weather conditions (relative humidity, temperature, wind speeds, precipitation), and host tree (Red, White and Bur Oak) leaf development reaching 30%.

The first aerial spray application was completed on May 31, 2019, and the second application was completed on June 8, 2019. Both applications were completed between 5:00 a.m. and 7:30 a.m., as per the pesticide's regulations of use.

To test the efficacy of each aerial spray application, leaf samples were taken from 5 trees within each neighbourhood sprayed and tested for Btk presence. Tests were completed using the ADAM (Accurate Deposit Assessment Method) field kits within 12 hours of the aerial spray. Following the first spray, 58.3% of samples had high deposit amounts of Btk, 27.8% had moderate deposit amounts of Btk, and the remaining samples had low deposit amounts. The second aerial spray had more favourable test results than the first, concluding that both sprays were completed within the pesticide's recommended parameters.

The 2019 program also included the installation of 23 burlap bands for prominent Red, White, Bur, and English Oak trees in the Westdale area. The trees were located on Oak Knoll Drive, Paradise Road North, and in Churchill Park. These trees were identified within the 2018 egg mass surveys to have high numbers of new egg masses, meaning that defoliation would be high and detrimental to their health. As there were only 23 trees, it was feasible to use banding rather than aerial spraying. The bands are used to trap the pest and deter the Gypsy Moth caterpillars from feeding on the host tree's leaves. The bands were installed in late May. Once each week, from May 20<sup>th</sup> to July 9<sup>th</sup>, the bands were inspected and all caterpillars were removed.

Defoliation surveys were completed to test the overall success of the aerial spray applications and the 23 burlap bands on July 9, 2019, one-month post spray. 50 Red, White and Bur Oak trees within Westdale, Ancaster, Greensville, Waterdown and Carlisle were assessed. The overall defoliation results measured at 82% having less than 5% defoliation, and the remaining trees had 6 - 25% defoliation.

Based on the 2018 egg mass survey areas within Westdale, Ancaster, Greensville, Waterdown, and Carlisle, pest population was forecasted to be high to severe in 2019. The reduction in population of Gypsy Moth reduced the actual overall defoliation to low levels. The 2019 Gypsy Moth Control Program was therefore successful and met its target goal to avoid tree mortality and public nuisance.

The 2019 Gypsy Moth Control Program included an extensive communications plan which allowed residents and staff to stay informed throughout the program. The communications plan included:

- a postcard notification for homeowners within the spray areas;
- targeted newspaper ads in the Flamborough Review, Ancaster News, Dundas Star, and Hamilton Spectator;
- posts on the City of Hamilton's Instagram and Twitter accounts;
- a media release was sent out prior to each of the two aerial spray applications;
- a webpage, [www.hamilton.ca/gypsymoth](http://www.hamilton.ca/gypsymoth), where residents could find information about the program and input their address to determine if they were within the aerial spray boundaries;
- residents were encouraged to contact the City via [Forestry@hamilton.ca](mailto:Forestry@hamilton.ca) , [askCITY@hamilton.ca](mailto:askCITY@hamilton.ca) , and by phone at 905-546-CITY, where calls were tracked to identify impacted areas;
- Council offices were provided information on the program details and aerial spray schedules;
- Media interviews were conducted as requested by both CHCH live and Hamilton News;
- External stakeholders (OPP, Health Canada, Transport Canada, Ministry of the Environment, Conservation and Parks, Hamilton Conservation Authority, Halton Conservation Authority, Royal Botanical Gardens, Hamilton International Airport, Hamilton Golf & Country Club, City of Burlington, Town of Oakville, and City of Mississauga) as well as internal stakeholders (Hamilton Emergency Services, Public Health, and HSR) were sent periodic communications to provide current information on the program and its schedule.

### Next Steps

To effectively monitor the Gypsy Moth population, the Forestry Section will continue to survey areas previously determined as being at risk.

In 2018 and 2019, forecast reports evaluated the Gypsy Moth population within some monitored areas as nil or low. Gypsy Moth populations fluctuate annually, but often peak every 7 to 10 years. It is expected that areas measured as nil or low could be left unmonitored for several years. A re-distribution of those surveys to monitor new areas not previously monitored would allow staff to determine if the population needs control. The number of egg mass plots surveyed within the Gypsy Moth Control Program in 2019 was 169. Of those, 47 were forecast as moderate to severe. Although these plots

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**SUBJECT: Gypsy Moth Control Program (ES19023) (City Wide) - Page 4 of 4**

are within areas that have had control measures implemented, a continuation of monitoring will take place to ensure the populations are decreasing.

**Conclusion**

The 2-year Gypsy Moth Control Program was effective in reducing Gypsy Moth populations in areas surveyed.

**APPENDICES AND SCHEDULES ATTACHED**

None