



# CITY OF EAST GRAND RAPIDS

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[www.eastgr.org](http://www.eastgr.org)

April 1, 2021

Dear Resident:

This notice/informational document is being provided to residents within the area where the City has previously treated and has been routinely monitoring Gypsy moth activity. The purpose of this communication is to provide updated information with respect to recent surveys as well as mitigation options that the City Commission will be considering.

Over the past several years, the City of East Grand Rapids has been monitoring the emerging gypsy moth population. During the summers of 2017 and 2018 the City saw populations in several areas reach elevated levels leading to significant defoliation of some oak trees. In 2019 the City of East Grand Rapids provided tree bands for residents and had an aerial application of *Bacillus thuringiensis* (Bt) applied to the impacted area. Due to the treatment in 2019 and spread of natural disease pressure the population was determined by experts to be in decline in 2020. Due to the population decline, experts did not recommend aerial application of Bt in 2020. The City did not conduct an aerial treatment in 2020 but did offer tree bands to residents within the impacted area.

The City Arborist/Forestry consultant from Davey Resource Group completed an egg mass survey this past winter/spring to provide an update regarding the gypsy moth population as well as recommended action for 2021. The report is enclosed.

## **Background information:**

Gypsy moth (*Lymantria dispar*) is an invasive pest, native to Europe and Asia, which was accidentally introduced into Massachusetts in the late 1800s. Since its introduction, it has made its way west and is now well-established in Michigan. Gypsy moth produce one generation per year, with a female moth laying eggs in early summer. The eggs overwinter on tree trunks and buildings and hatch into caterpillars the following spring. These caterpillars then move into tree canopies to start feeding. The caterpillar stage feed on trees while adult moths do not. Gypsy moth caterpillars can feed on over 300 tree species however, their preferred species are oak. Gypsy moth caterpillars are primarily a nuisance pest. When populations are low their impact is not generally noticeable, however, when populations are high caterpillars can completely defoliate trees. Most trees will survive a single or isolated defoliation, but multiple years of heavy defoliation along with other stresses (e.g. drought) can cause tree mortality.

## **Gypsy moth mitigation strategies:**

- **Relying on the natural predators to control the population.** This approach is recommended by both Michigan State University and the Michigan Department of Natural Resources. Heavy gypsy moth infestations are cyclical, occurring approximately every 15-20 years. Normally their populations are kept in check by natural predators, specifically the fungus (*Entomophaga maimagia*) and virus (Nuclear Polyhedrosis Virus (NPV) that are naturally found in the environment. The fungus and virus infect the caterpillars leading to death.

The most recent spike in the gypsy moth population has been due, in large part, to the dry springs of 2016 and 2017 that impacted the ability of the *Entomophaga* fungus to spread and infect caterpillars. The *Entomophaga* fungus is the primary natural predator that keeps the population under control. The wet springs over the past several years has helped spread the fungus to the gypsy moth population, however, dry weather over the summer may have limited its effectiveness and further stressed some trees. While the *Entomophaga* fungus is weather dependent, the virus, NPV, is not. NPV builds up if there is a high density of gypsy moth and typically leads to the gypsy moth population crashing within three years. Caterpillars that are infected by NPV hang from a tree trunk in an upside down “V.”

As populations increase and gypsy moth come in greater contact with one another, the virus and fungus can rapidly spread, causing populations to collapse. The City Arborist/Forestry consultant has determined that the both natural fungus and virus are present and impacting the gypsy moth population.

- **Providing treatments or control strategies to individual residents for use on private property.** For isolated populations of gypsy moth, individualized treatment strategies such as insecticide implants, tree bands, and other products can be effective, if applied appropriately. This past year the City provided two rolls of “slippery tape” tree bands to each resident/property owner in the impacted area at no cost.
- **Application of *Bacillus thuringiensis* (Bt).** Bt is a bacteria that when ingested by any Lepidoptera insect (moths and butterflies) leads to death. This is a naturally occurring bacterial disease in insect populations and is the active ingredient in the insecticide spraying treatment method. Bt is often applied by aerial (e.g. helicopter) or ground-based spray programs, and is extremely weather and time dependent. For it to be effective, the bacteria must be applied when the gypsy moth caterpillar is in a specific growth stage and when it is not windy and rain is not in the forecast. If it rains soon after a Bt application, the bacteria can wash off the leaves and the gypsy moth caterpillars won’t ingest the bacteria while feeding. In 2019, several nearby communities who completed Bt applications noted limited effectiveness. Bt can be effective when applied appropriately and afforded the right weather window, however, it is non-selective and affects the caterpillars of all butterflies and moths, not just gypsy moth caterpillars. Bt is considered safe to people and non-target species.

The City of East Grand Rapids recognizes that the gypsy moth population in recent years is a serious concern for residents. The City Commission will be considering additional mitigation beyond the natural pressures including “slippery tape” tree bands for residents as well as aerial application of Bt for the 2021 season at the April 19 City Commission meeting at 6:00pm. The meeting can be attended in person (current COVID restrictions do not allow more than 25 for in-person attendance) or virtually (please see the City Commission Agenda Center via [www.eastgr.org](http://www.eastgr.org) for links and instructions to participate).

In advance of the April 19 City Commission meeting, please send comments directed to the City Commission to City Clerk, Karen Brower, via e-mail at: [kbrower@eastgr.org](mailto:kbrower@eastgr.org).

For additional questions please contact Deputy City Manager, Doug La Fave, via email at [dlafave@eastgr.org](mailto:dlafave@eastgr.org) or by phone: 616-940-4817.

Thank you,

East Grand Rapids Department of Public Works