# Memorandum

Date: April 19, 2022

To: Members of Council

From: Jeremy Johnson, Manager, Operations, Parks and Forestry

Subject: Spongy Moth Update

**Note: In March 2022, the Entomological Society of America (ESA) announced "spongy moth" as the new common name for the moth Lymantria dispar dispar (LDD).*

In response to the 2021 outbreak population levels of the spongy moth (formally known as the LDD moth), the Town of Caledon completed spongy moth monitoring and population assessment efforts in early 2022 on Town owned land. Monitoring for spongy moth is completed by counting the dormant egg masses attached to street and woodlot trees throughout the municipality. The Town can predict what the 2022 population may look like in various areas/neighbourhoods by analyzing monitoring data (egg mass numbers) and comparing it to leaf loss data. Monitoring locations were selected based on locations that had multiple spongy moth-related service requests in 2021, as well as areas that contained a high count of trees that were severely defoliated in 2021. Through this prioritization, 130 street tree monitoring locations (650 trees), and 11 woodlots were selected for monitoring throughout the municipality.

Monitoring Results and 2022 Defoliation Predictions

2022 Monitoring results are suggesting a general decline in the spongy moth outbreak population in most of the monitored areas. These results are consistent to the results seen in the 2021/2022 monitoring efforts completed by the Toronto and Region Conservation Authority, Credit Valley Conservation Authority, as well as monitoring completed by the Government of Ontario. Schedule A provides a detailed summary of the Town's monitoring results for the various street tree monitoring locations, and woodlot monitoring locations respectfully.

Spongy Moth Treatment in 2022

Even with signs of a declining spongy moth outbreak population, some areas throughout the Town are expecting worse infestation predictions than others. Egg mass/hectare data within these areas will guide the Town's management thresholds and techniques used on Town-owned trees. Table 1 describes management methods to be implemented by the Town in 2022.

Table 1. Management techniques, corresponding thresholds, and estimated timelines for 2022 spongy moth management.

| Management Technique | Threshold/Criteria for Management | Timeline |
|---|---|---|
| **Egg mass scraping (In-house)** | • Trees identified as severely defoliated in 2021 and<br>• egg mass/hectare measure less than 600 egg masses/hectare. | March until egg masses begin to hatch.<br>To date, 405 Trees have been scraped by the Forestry team. |
| **Ground Spray Treatments with *Bacillus thuringiensis kurstaki* (Btk) biopesticide (Hired Contractor and In-house)** | • Trees identified as severely defoliated in 2021 and<br>• egg mass/hectare measure greater than 600 egg masses/hectare. | As early as mid-April until June, depending on when egg masses begin to hatch, and caterpillars start to feed on tree leaves. |
| **Injection Treatments (Hired Contractor)** | • Select tree species that were severely defoliated in 2021 and<br>• egg mass/hectare measure greater than 600 egg masses/hectare and<br>• too large for effective ground spray treatment. | As early as mid-April until June. Timeline for application is not as narrow since one treatment protects the tree for the full season. |
| **Bug Barrier Banding (In-house)** | • Select trees that were severely defoliated in 2021 and/or<br>• too large for effective spray treatment and/or<br>• not a candidate tree for injection or scraping. | As early as mid-April until June, depending on when egg masses begin to hatch, and caterpillars start to feed on tree leaves. |

<u>What Residents can do</u>

An LDD/spongy moth social media and communication campaign was launched in early 2022 to improve spongy moth management knowledge and engagement. Many resources have been mailed, posted on social media, and advertised to increase this communication. Residents are encouraged to visit the Town's website to stay up to date on what they can do to help manage spongy moth on their properties which includes:

- Keeping trees on their property healthy year-round by watering trees during dry seasons and protecting tree roots;
- scraping accessible egg masses (from 2021 population) and soaking them in a soapy mixture for 48 hours;
- burlap banding or tree banding trees on their property to capture caterpillars that travel down the trunk of the tree (to then soak in soapy mixture for 48 hours);
- contacting a professional tree care provider for the possibility of a chemical treatment;
- setting up pheromone traps when adult moths have emerged;
- scraping accessible egg masses in the fall (from 2022 population) and soaking them in a soapy mixture for 48 hours.

Like 2021, the Town will also be participating in a burlap banding kit hand-out program. Upon request, residents will be able to receive up to two burlap bands per household. Depending on tree size, one band strip will be able to cover 1-2 trees. Burlap bands will be available at the Service Caledon desk starting April 11th 2022.

To further increase awareness and monitoring efforts, the Town is also developing a reporting tool for residents to report spongy moth. This reporting tool is planned to go live in April 2022. Residents can report spongy moth in its various life stages on public or private property. This reporting tool will not replace service requests or site inspections, but data collected will support decisions in the monitoring and management of spongy moth in 2022 and future outbreak population years.

The Town's Communications group has created a spongy moth communication campaign that will create awareness of the spongy moth infestation issue and what the Town is doing to prevent it. The campaign will also educate Caledon residents on their role in preventing spongy moth infestations on their property. The awareness campaign will be ongoing until July with educational elements at each of the four stages of the LDD moth lifecycle. Council will receive updates and products to share at each stage. Schedule B provides a detailed summary of the Town's spongy moth campaign.

Schedule A – Monitoring Locations

Table 1. 2022 spongy moth egg mass monitoring results of 130 street tree locations. Five street trees are surveyed at one location and egg mass numbers summed and then extrapolated to a defoliation prediction.

| Defoliation Prediction | Location Count | Location Percentage |
|---|---|---|
| **Nil** | 12 | 9% |
| **Light** | 111 | 85% |
| **Moderate** | 6 | 5% |
| **Heavy** | 0 | 0% |
| **Severe** | 1 | 1% |

Table 2. 2022 spongy moth egg mass monitoring results of 11 woodlots selected for monitoring. Five street trees are surveyed at three separate locations within the woodlot and egg mass numbers are extrapolated to a defoliation prediction. Each prediction shown is obtained from an average of the 3 monitoring locations within a woodlot.

| Defoliation Prediction | Woodlot Count | Location Percentage |
|---|---|---|
| **Nil** | 3 | 27% |
| **Light** | 5 | 45% |
| **Moderate** | 2 | 18% |
| **Heavy** | 0 | 0% |
| **Severe** | 1 | 9% |

Schedule B - Spongy moth communication campaign

- Town website is updated and serves as a one-stop shop for all LDD moth information. www.caledon.ca/LDDmoths
- Media releases.
- Print ads in local newspapers.
- Front cover takeover in Caledon Enterprise to go to all homes.
- Digital website takeover of Caledon Enterprise.
- Direct mail poster delivered through Canada post to all homes in Caledon.
- Digital advertising using Metroland online community to all IP addresses in Caledon (92% reach).
- Roadside signage.
- Social media posts and paid ads reaching both followers and non-followers of Town accounts.
- Digital screen ads at Town facilities.
- E-newsletter articles in Town News, Age friendly e-news, library and recreation e-news.
- Burlap kit giveaway and tutorials by Operations staff promoted by communications.
- Webinars by local conservation authority partners promoted by communications and conservation partners.
- Radio ads.
- Instructional video.
- Resident notification letters in key ground treatment locations.
- Promotion of resident reporting of LDD on GIS mapping tool.
- Promote moth traps.
- Communicate key geographical areas of moth infestations and what the town is doing.