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| Author | Jenn LeMesurier, Land Stewardship Coordinator, Muskoka Conservancy |
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Background

Emerald Ash Borer (EAB) is an invasive forest pest that is native to Asia and is responsible for killing millions of trees in southwestern Ontario since its discovery in North America. EAB attacks both healthy and stressed Ash trees when its larvae tunnel through the tree's vascular tissue which delivers water and nutrients throughout the tree. The beetle's activity beneath the bark, cuts off the supply of water and nutrients, ultimately killing the tree.

Emerald Ash Borer was first discovered in North America in 2002 and it is thought to have arrived through untreated wooden packaging materials. With global trade and the movement of infested materials, EAB is a major economic and environmental threat. The Canadian Food Inspection Agency has prohibited the movement of firewood outside of designated areas. Even with this effort, EAB in Ontario is rapidly expanding.

Confirmation of the presence of EAB has occurred in areas of Ontario surrounding Muskoka. Infestations have appeared as far north as Sault Ste. Marie and also in Simcoe County, Peterborough, the District of Algoma, and Manitoulin Island. About three percent of Muskoka's forest cover consists of Ash trees, however the environmental impact resulting after the loss of these trees could be significant. The loss of Ash trees would be extremely harmful to urban and rural biodiversity in the region.

Project Description

To better understand the status of the health of the forests in the Bracebridge region, Muskoka Conservancy proposed to the Town of Bracebridge that we launch an Emerald Ash Borer Early Detection Pilot Project in partnership. This project involved setting 24 early detection prism traps throughout the Bracebridge region to gather information about the presence of Emerald Ash Borer. BioForest Technologies generously donated 24 traps to be used for the project. As part of this project, we offered a public workshop to discuss the threats of EAB and the control options that are available to landowners. This was an opportunity to have questions answered, and to get the community involved in the project.

24 Ash tree sites were selected based on their proximity to higher traffic locations where it was suspected that wood materials could be moving. Trees that were growing in more open areas, and had canopies that were accessible took priority. See Figure 1 for a map of trap locations. Volunteers and staff worked together with BioForest Technologies to hang the traps on June 20th and 21st, 2016. This week was selected based on the forecasted date for the emergence of adult EAB beetles in the region.

The green prism traps were baited with a pheromone and a green leaf volatile lure that draws the adult EAB beetles to the trap. The outside of the prism trap is very sticky, and when the beetles fly toward the scent, they get stuck to the outside of the trap.



Each site was marked and publically accessible sites included signage to explain the program and offer contact information if people had further questions. A public demonstration of a trap hanging was included in the information workshop hosted on June 20th, 2016.

Results

The traps were checked and removed on September 12th and 13th, 2016. As each trap was removed, they were carefully inspected by experts at BioForest Technologies, as well as Muskoka Conservancy staff for the presence of Emerald Ash Borer. During analysis of all 24 traps, no Emerald Ash Borer beetles were detected.

Project Successes

This project was successful at determining the presence of Emerald Ash Borer in the community of Bracebridge. With the distribution of traps, we concluded that there is not currently a presence of EAB, but more importantly, this project served as a public outreach and stewardship project to bring awareness to the issue. During both field days, and throughout the duration of the project, we communicated with community members about the threats of EAB and educated about the signs and symptoms of infestation. Individuals contacted us throughout the summer through social media, phone calls, and email communication, to ask about the early detection traps that they saw throughout the town. These inquiries demonstrate that our goal to engage the public was a success.

The partnership between Muskoka Conservancy and the Town of Bracebridge was valuable and we hope to have further opportunities to work together on stewardship projects that benefit the community and conservation in Muskoka.

Recommendations

If this project was to be undertaken in future years, it would be recommended that further attempts are made to locate Ash trees that are in corridors that are in higher risk areas. Funding from additional municipalities in the Muskoka region would allow us to expand the project, and gather more data across a larger geographic region. The project would benefit from having more volunteer engagement and could potentially be spearheaded by a volunteer.

Acknowledgements

We would like to thank the Town of Bracebridge for their support and partnership on this project. It would not have been possible without their support.

We would also like to thank BioForest Technologies and Allison Winmill for their donation of time and materials to make the project possible. Their knowledge, expertise and experience was invaluable to this project.



To all of the Muskoka Conservancy volunteers who spent time helping to hang traps and locate suitable locations for the traps to be hung - thank you. And to the individuals who volunteered their property to have a trap installed, their stewardship ethic is much appreciated.

Figures

Figure 1: Map of Emerald Ash Borer early detection prism trap sites, 2016.

