

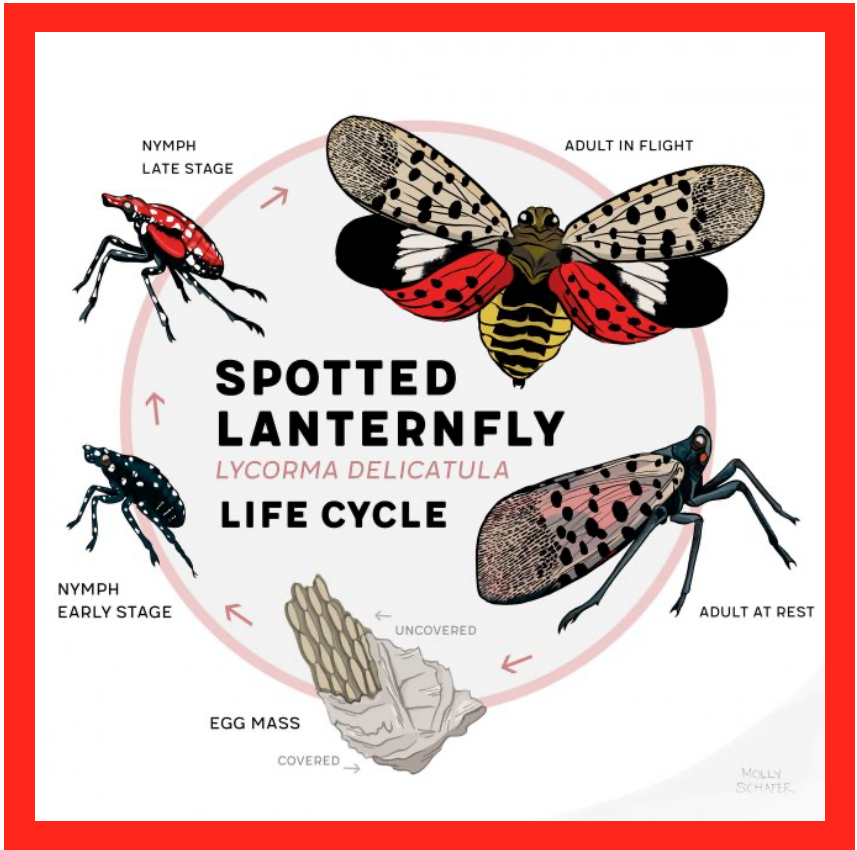
How do Manhattan’s host trees, particularly in Central Park, influence when and where spotted lanternflies appear?

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Abstract: Spotted Lanternflies are an invasive species from China that weakens and damages plants. Currently, they are rapidly reproducing here in New York City. This project aims to introduce the Spotted Lanternfly, explain its harmful effects, and outline methods for reducing its population. Data was collected from iNaturalist and NYC Open Data. The data was then sorted and used in Excel to create various charts and graphs. The key results were that a large majority of Spotted Lanternflies were found in Central Park, and its two most common host trees are the Red Maple and Norway Maple. Additionally, they were rarely spotted during the fall and winter. This observation indicates that this is the duration in which they lay their eggs. The key methods to reduce the population of the invasive species are to report sightings and destroy egg masses. These findings will help reduce the population of Spotted Lanternflies and help save the plants and wildlife of New York City.



Study Area:

1) Manhattan: Central borough of NYC and most densely populated in terms of animals and humans. It is known for the large skyscrapers, small areas of greenery, and busy streets



2) Central Park: Large green park in the middle of Manhattan, covering over 800 acres of land. It is a natural environment for organisms as it hosts over 18,000 trees of more than 170 species



What Are Spotted Lanternflies

Spotted lanternflies, also known as *Lycorma Delicatula*, are colorful flies that live and feed off of plants. These flies go through four stages of growth during which they develop wings, obtain a black and red color, and grow to 1.5 centimeters long. They originated in China, but they are now found in many Asian countries as well as North America

Why are Spotted Lanternflies Harmful:

Spotted Lanternflies feed off the sap of many plants and branches, weakening it by draining all its nutrients. After feeding on the sap, the spotted lanternflies release a honeydew that attracts sooty mold to grow. The lanternflies also lay 30–50 eggs at a time, rapidly expanding its presence across the world.

Methodology

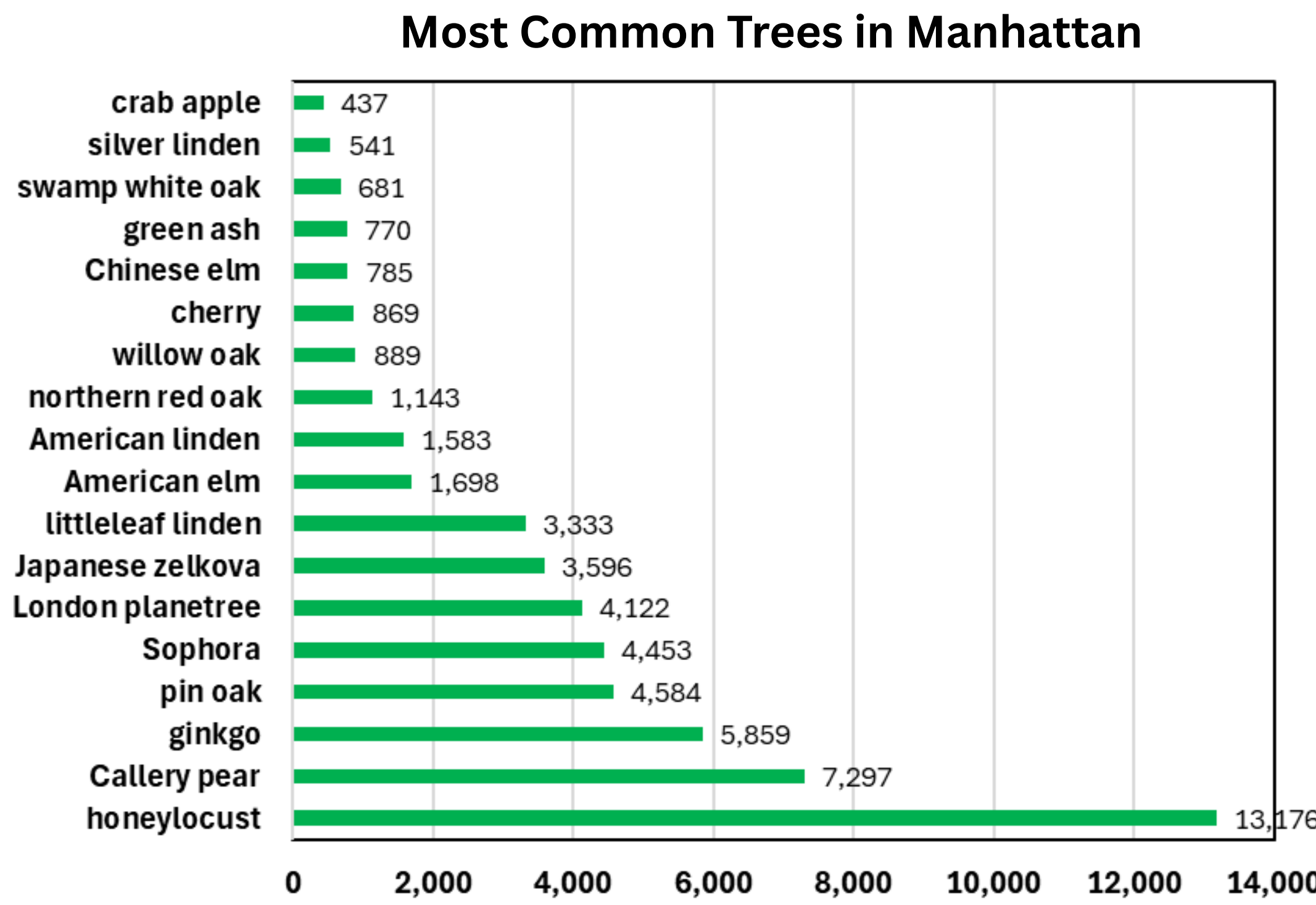
- 1) iNaturalist –Exported observations to compare sightings and seasonal trends
- 2) Pivot Tables – Excel function used to sort and compare data by making charts
- 3) NYC Open Data – Analyzed the 2015 Street Tree Census Data to identify species

Acknowledgements

We would like to thank Dr. Ayo for his guidance throughout this project. He provided us with a lot of resources on how to collect tree specific data. Lastly, he took the time to review our work closely and provided suggestions on how to improve.

Manhattan

Most Common Tree Species in Manhattan



Honeylocust

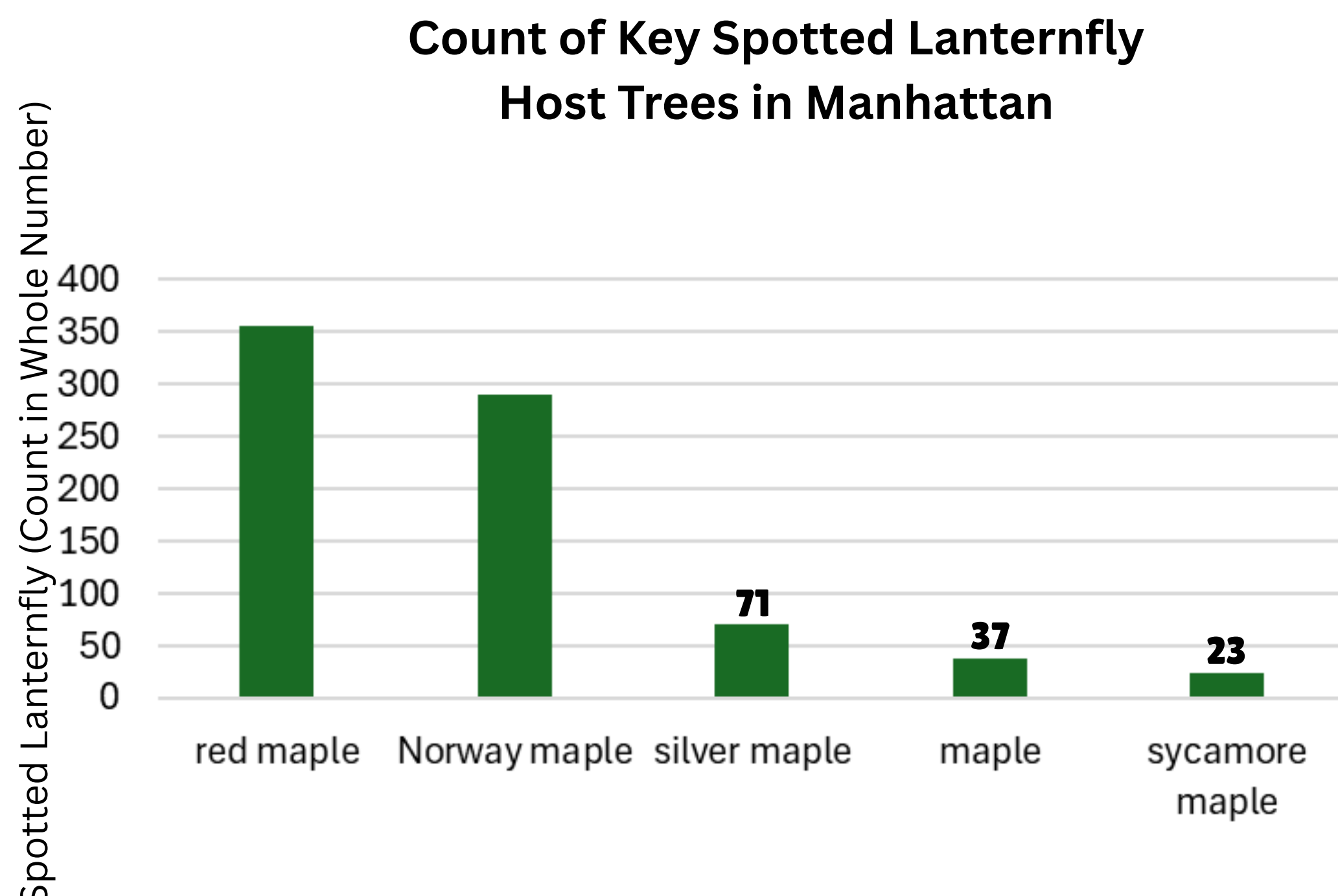


Callery Pear



Ginkgo

Spotted Lanternfly Host Trees in Manhattan



Red Maple



Norway Maple

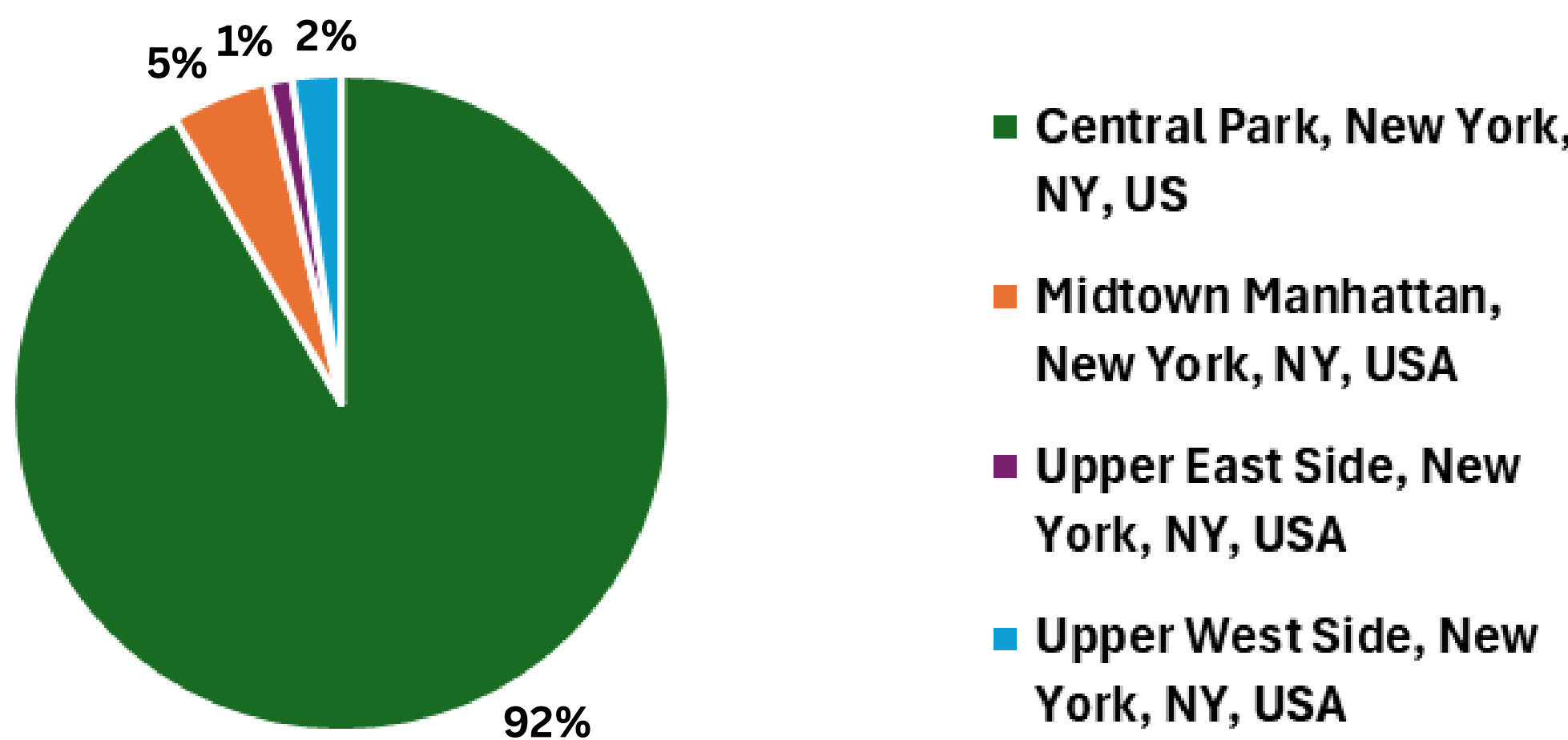
Analysis of Graphs:

- The three most common tree species found in Manhattan are the Honeylocust, Callery Pear, and Ginkgo.
- Central Park is a hotspot for Spotted Lanternfly sightings by a large margin
- The two main host trees for Spotted Lanternflies are Red Maple and Norway Maple trees
- Spotted Lanternflies are mostly seen from Spring to
- They do not appear during the fall and winter because that is the time they lay their eggs
- If we put a focus on our methods in Central Park, we would effectively reduce the majority of the population
- $R^2 = 0.4225$; this suggests that roughly 42% of the variation in the number of sightings can be due to the time of year.

Central Park

Spotted Lanternfly in Central Park Compared to Bordering Neighborhoods

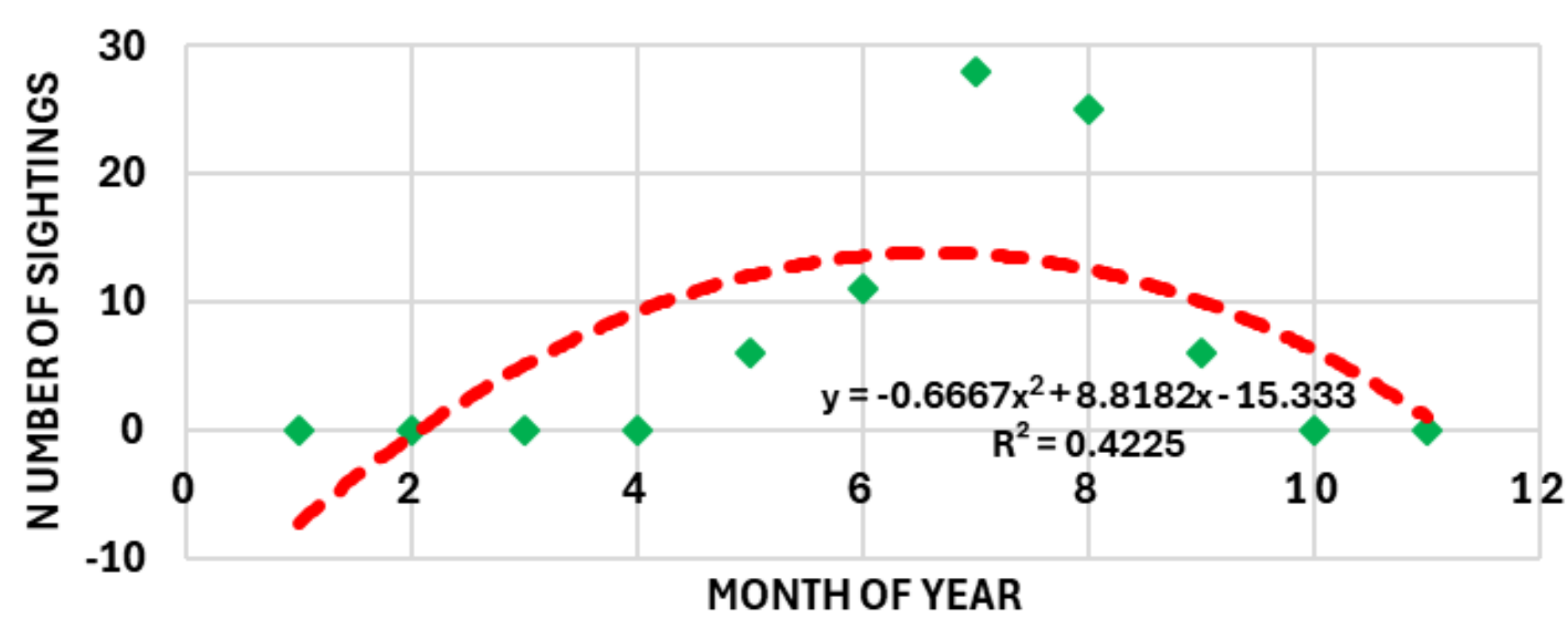
Central Park as a Spotted Lanternfly Sighting Hotspot (2025)



Central Park + Midtown Manhattan

Peak Season for Spotted Lanternfly

Monthly Spotted Lanternfly Sightings in Central Park (2025)



Peak Season: Summer

Takeaways:

- Host events to teach individuals how to report them
- Destroy egg masses
- Check belongings before travelling abroad
- Fence off plants



Works Cited

