

Urban Street Trees: Inventories, Organizations, and Long-Term Effects in Greenfield, Massachusetts

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Project Statement

Trees generate important social, environmental, and economic benefits in a municipality, but harsh urban growing conditions may necessitate the management and care of this important community resource. Organizations like the Greenfield Tree Committee use inventories to track different characteristics of city trees, including tree health, planting site attributes, and maintenance needs. As part of this internship, I researched the benefits derived from Greenfield's urban trees and assisted the Greenfield Tree Committee (GTC) with urban tree inventory efforts. I also assisted PhD candidate Alicia Coleman with a formal literature review and research related to urban greening and the management of street trees.



Pin Oak providing shade

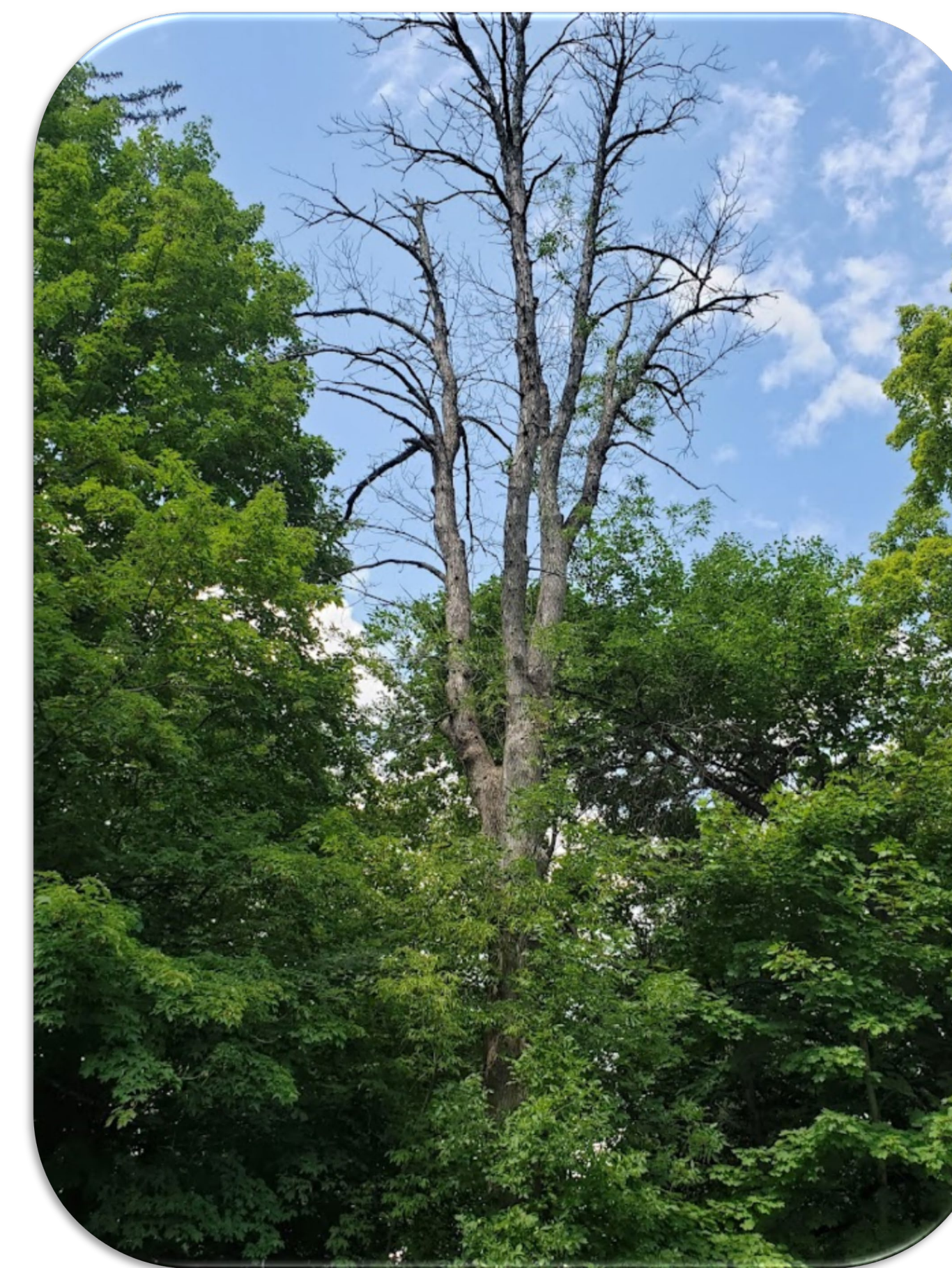
Benefits of Street Trees

- Buffer roadway traffic
- Cool surroundings
- Reduce stress
- Build connections
- Encourage physical activity
- Support human health
- Clean air

Example of a healthy tree → Honey Locust



Example of a dying tree → Green Ash



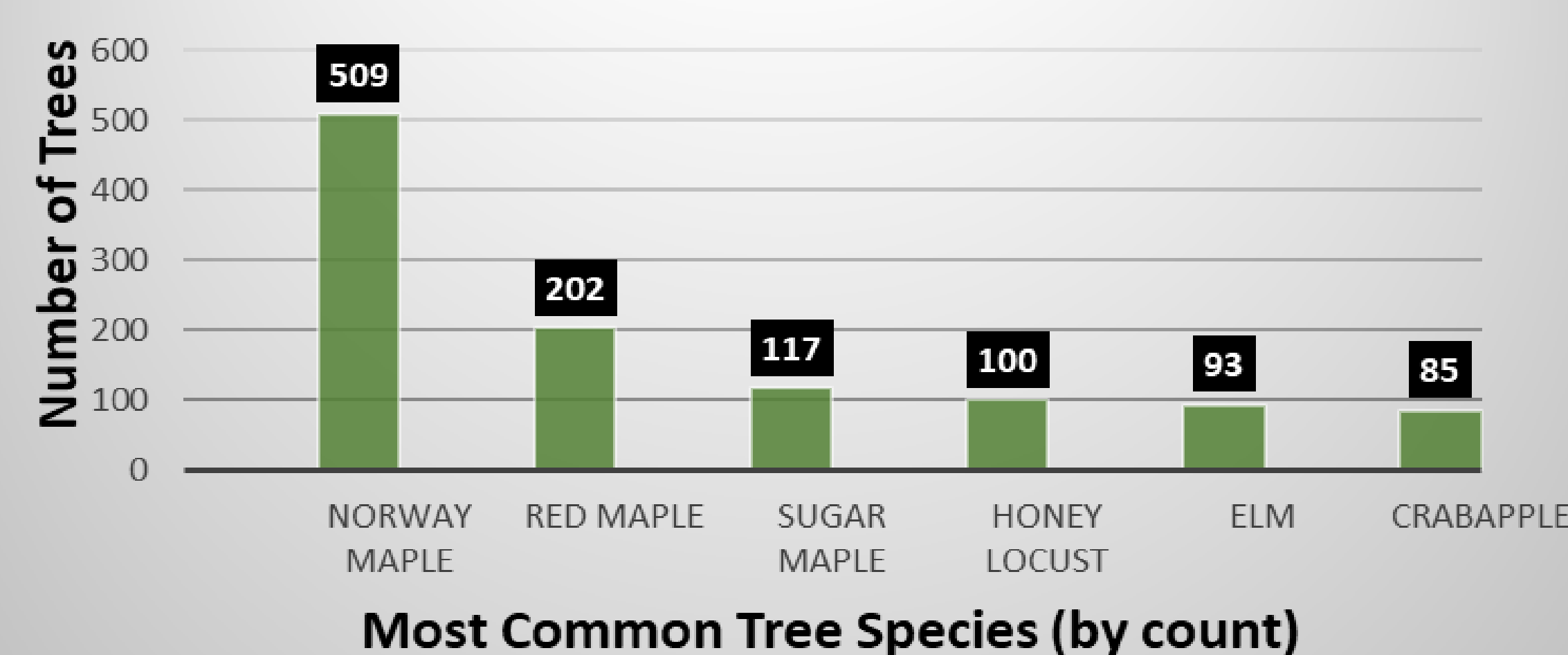
Future Applications

- How does residential or personal tree stewardship relate to residential satisfaction?
- What physical and psychological health benefits do urban street trees generate across a range of environments and human demographics?
- How do the benefits of trees inform urban design?
- In what ways is undergraduate engagement in tree stewardship effective in increasing awareness about the importance of urban trees?

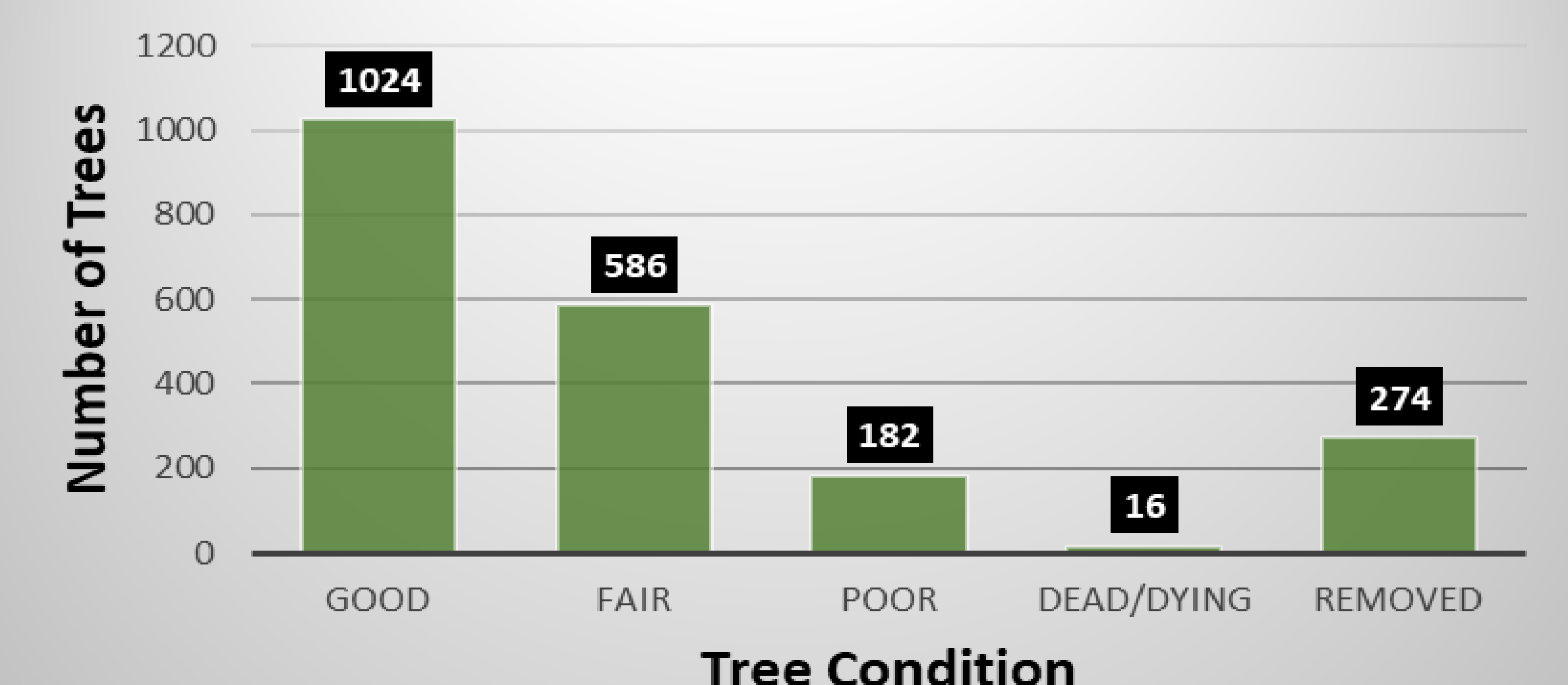
Outcomes

- **Literature review:** found and coded 18 new research articles which involved summarizing and condensing the key findings of the articles into a standardized form.
- **Trees in planning documents** (e.g., Master Plan, Open Space and Recreation Plan): most frequently cited as a benefit.
- **Street tree inventory:** recorded the location and attributes of 585 street trees with the help of five GTC members, thus completing their inventory for next several years.
- **Public school outreach:** created an ArcGIS Story Map that describes fun facts about trees on school campuses (grades Pre-K through 12th).

Most Prevalent Tree Species in Greenfield, MA ⁽¹⁾



Distribution of Tree Condition ⁽¹⁾



References

⁽¹⁾ Greenfield Tree Committee 2020 Greenfield Tree Inventory Report and Action Plan: https://6dff8875-db8b-4c79-96a1-d3e91a8f1b76.filesusr.com/ugd/6710bd_e365be327a9f40f0a99506d37a6d573b.pdf

⁽²⁾ Health Benefits of Trees: <https://www.washingtonnature.org/fieldnotes/2021/6/8/health-benefits-of-trees>

Photos courtesy of Eli Grigorian

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