How Distance from a Public Greenspace Impacts Private Lawn Biodiversity

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Introduction

- Lawns take up more space than irrigated corn in the United States[1], and their maintenance can have detrimental environmental impacts[2]
- Since lawns have sociological value along with environmental value[3], neighbor behavior and the homeowner's surroundings affect their likelihood to implement lawn best management practices (BMPs)[4]
- Investigating the factors influencing use of BMPs provides valuable information for conservation in urban/suburbanized areas[4] - this study looks at public greenspace as a potential effector of BMP adoption

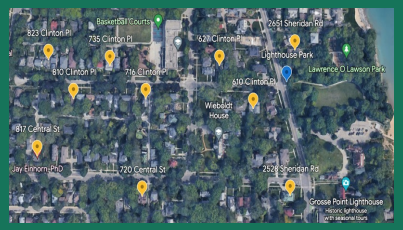
Objective & Hypothesis

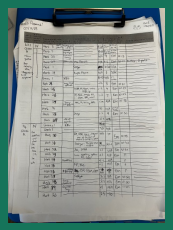
The goal of my study was to determine the influence of public greenspace on private lawn care BMPs - specifically biodiversity.

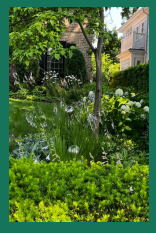
Hypothesis: if a private lawn is far away from a high-biodiversity public park, it will have less species richness/diversity and greater grass cover than one closer to the park.

Methodology

- Randomly chose 10 houses near Lawrence O Wilson Park in Evanston and mapped their distances (m) from the park in Google Earth
- Determined 1. The number of plant species on each lawn, 2. The number of individuals within each species, and 3. The % grass cover for each lawn
- Modeled the relationship between distance and species richness (# spp.), diversity (SWI), or % grass cover using linear regression in R







Results

The relationship between distance from a public park and species richness, diversity, and % grass cover

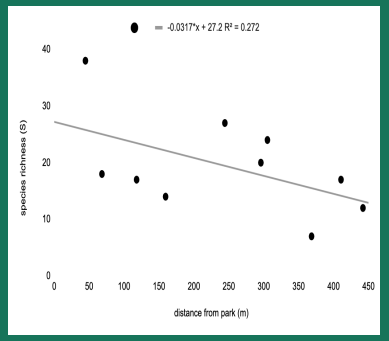


Figure 1a. Distance from park vs. species richness. Distance had an insignificant effect on species richness ($p > 0.05$)

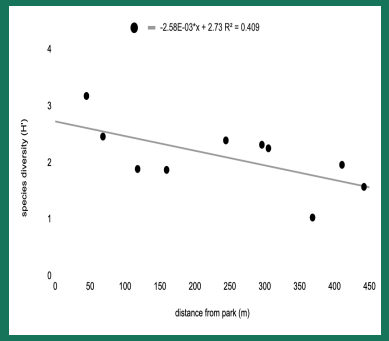


Figure 1b. Distance from park vs. species diversity. Distance had a significant effect on species richness ($p < 0.05$)

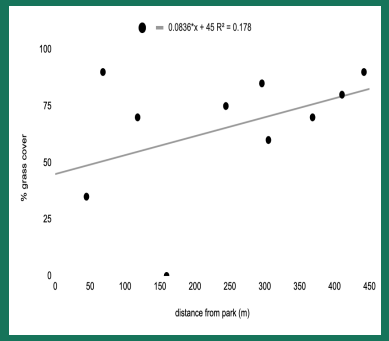


Figure 1c. Distance from park vs. % grass cover. Distance had an insignificant effect on grass cover ($p > 0.05$)

Discussion

- **Takeaways:** Results indicate that living closer to a park could have a positive impact on a homeowner's decision to diversify their lawns
- **Limitations:** Future research should 1. survey more homes, and 2. include a more in-depth assessment of the flora in Lawrence O Wilson Park to gauge how directly the park affected homeowner plant choice
- **Future Work:** Interviews with homeowners may provide a better sense of why they plant what they plant, how often they visit parks, etc.; researchers might explore into how to encourage increased plant species diversity in areas with less access to public greenspace

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References

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