Towards culturally-informed urban conservation practices: An Evanston pilot study

REU Site: *Plant Biology & Conservation Research Experiences for Undergraduates - From Genes to Ecosystems* (Supported by NSF award DBI-2149888).

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CHICAGO BOTANIC GARDEN
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INTRODUCTION

- Lawns constitute a large part of both public and private urban greenspaces, therefore making their management an essential component of urban biodiversity (Chollet et al 2018).
- Homeowners outwardly express their aesthetic and cultural values with the plant and management strategies they utilize on their lawns (Galluzi et al 2010).
- Understanding homeowner's landscaping choices and their unique cultural drivers is essential to inform the design of effective urban conservation programs (Uren et al 2015).

OBJECTIVES

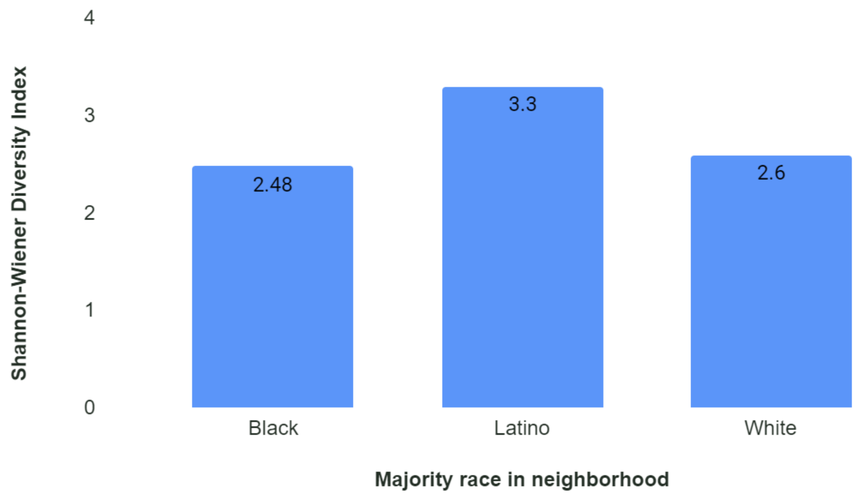
- Determine plant genera that are popular within and between racial groups in Evanston
- Determine if racial differences across neighborhoods influence front lawn plant biodiversity in Evanston

METHODS

- I used U.S. census data and bestneighborhood.org to identify census tract 8103.01 in Evanston, IL as the area of focus for this study due to the presence of majority Black, Latino, and White neighborhoods of similar lawn size
- I identified and counted every plant genus on the front lawn of 3 single-family detached homes in each neighborhood. I used the Shannon-Wiener Diversity Index to calculate plant biodiversity of each neighborhood on the genus level.

Urban lawn biodiversity & preferred plants differed between Black, Latino, and White-majority neighborhoods in Evanston, IL

Figure 1 - Front lawn plant biodiversity in Evanston across racial groups



Average neighborhood species richness: Black – n = 32.33; Latino – n = 76.33; White – n = 64

RESULTS

- The Latino-majority neighborhood showed a statistically significant difference in front lawn biodiversity compared to Black (p = 0) and White (p = 0.001) majority neighborhoods (Fig. 1, t-test).
- Each neighborhood had unique non-"weed" plants found in all houses surveyed (Table 1).

Table 1 - Popular plant genera in Evanston across racial groups

Majority race in neighborhood	Popular genus	# Houses Present
Black	Buxus**, Poa,** Rosa, Viola*	3
Black	Taraxacum,* Medicago,* Pilosella*	2
Latino	Poa,** Hibiscus	3
Latino	Rubus, Picea, Buxus**, Medicago*	2
White	Poa,** Hibiscus	3
White	Buxus**, Hydrangea, Euonymus, Leucanthemum, Echinacea	2

* = May be considered "weeds" by homeowners
** = seen in all houses regardless of racial group

FUTURE WORK

- Identifying native & beneficial alternatives to popular plant genera can help increase biodiversity while retaining homeowner's aesthetic preferences (Uren et al 2015).
- More homes in Evanston must be surveyed within all racial groups to increase the accuracy of these findings.
- Homeowner interviews are required to identify the cultural drivers behind plant choices.

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