Tackling Tree Inequity

Jilliana Halder[1], Jean de Smet[2], Adriana Garcia[3]

[1]Windham High School; [2]Garden Club of Windham; [3]UConn NRCA

WINDHAM HIGH SCHOOL

GARDEN CLUB OF WINDHAM

Project Motivation & Goals

Many cities or post-industrial towns, like Willimantic, CT, are grappling with uneven wealth and access to natural resources, like trees (Fig. 1). Trees play an important part in the reduction of carbon dioxide in the atmosphere that would contribute to global warming by converting it into oxygen through photosynthesis. Thus, not only does the climate benefit from trees, but so do many species who use them for habitat and food. Additionally, studies show that communities with more green spaces have a decrease in crime rates than those with fewer green spaces.[3] Correspondingly, in New Haven, CT, a 10% increase in tree canopy was associated with a decrease in property and violent crimes, -14% and -15% respectively (Fig 2).[2] In general, areas with high-income, white majority, are likely to have higher tree density in comparison to low-income, BIPOC (Black, Indigenous, People of Color) communities, which are likely to be urban and have lower tree density.

> *"Neighborhoods with **90% or more of their residents living in poverty have 41% less tree canopy** than communities with 10% or less of the population in poverty."[1]*

My project encourages the planting of trees in the Willimantic community by working with local environmental organization, *Garden Club of Windham*, to:
- **Objective 1:** Learn more about native trees and plants in my environment
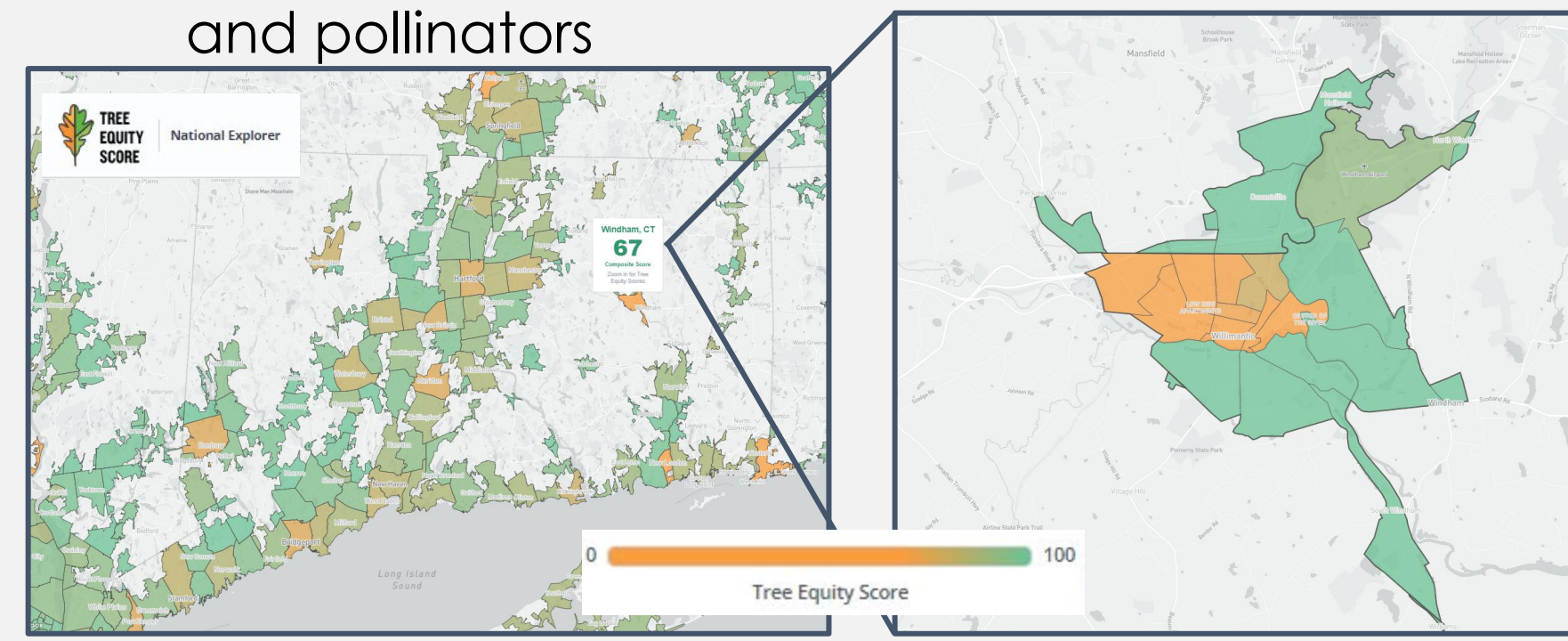- **Objective 2:** Plant native trees and plants to support a local trail's native animals and pollinators

Fig. 1: A map of Connecticut showing the tree equity score of towns statewide, with orange indicating high priority areas in need of trees. A zoomed in map of Windham demonstrates tree inequity with orange pockets comprising 21-40% tree cover and vulnerable populations. Maps from www.treeequityscore.org.[4]
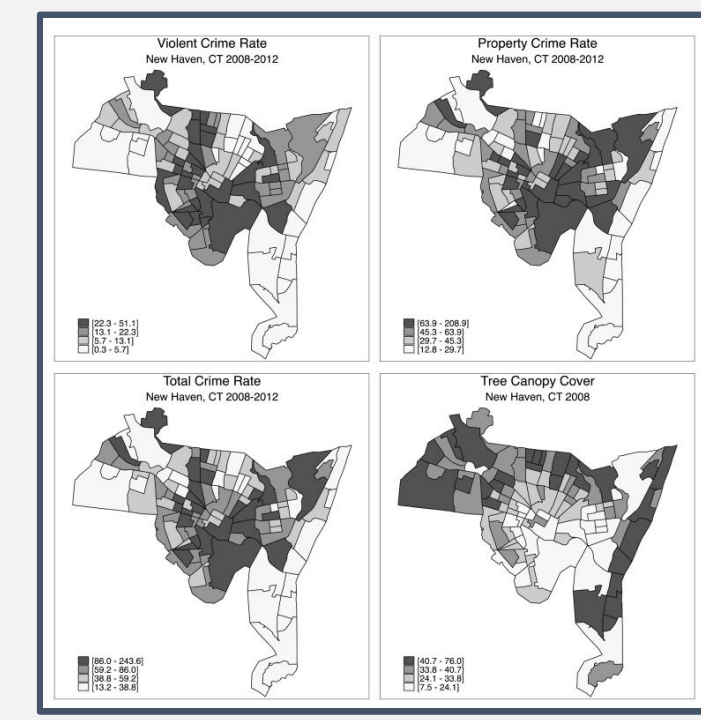
Fig. 2: "Quantile classified choropleth maps of crime outcomes and tree canopy cover by census block group. Notes: Darker shading indicates more crime or more tree canopy cover."[2]

Methods

Willimantic River Trail, Windham CT
September 2023 - November 2023

- The Willimantic River Trail intersects with the Hop River Trail, the Airline Trail, and the East Coast Greenway.
- My Community Partner, Jean de Smet of the Garden Club of Windham, provided me with this opportunity to plant native plants and got me into a pollinator pathway class at UConn.
- Got permission to plant on the Willimantic River Trail from Windham Public Works Director, Don Fascio.
- Mapped the future location (coordinates) of each tree to send to Don for Public Works support to prepare the sites.
- Worked with Prides Corner Farms, a nursery, to get the best Sugar Maple varieties.
- Coordinated with Public Works who provided pick up and delivery of the trees to the site along with soil, compost, and mulch, and dug the holes at the coordinates we provided.
- Jean made sure to bring other materials for our planting day: water, shovels, chicken wire, wooden stakes, fence post driver.

Fig. 3: (Left) A photo of the materials we used for most of the plantings. (Middle) Writing labels for each plant we planted. (Right) Pawpaw planting with wooden stake label.

Project Outcomes

- **I completed three plantings of native trees and pollinator plants** (Table 1 & Fig. 4):

Planting	Species Planted & Quantity	Benefits to Ecosystem
Planting #1	• Pawpaws [**2**] • American Smoke Tree [**1**]	• Pollinator-friendly • Food for humans and wildlife
Planting #2	• Wildflowers: *rudbeckia, aster, echinacea, anise hyssop* [**handfuls of seed heads**] • Bottlebrush buckeye [**15-20 nuts**]	• Pollinator-friendly • Food for wildlife
Planting #3	• Sugar Maple Trees [**4**]	• Pollinator-friendly • Food for wildlife • Wildlife habitat

- In addition to the wildlife and the pollinator benefits, the social impact of my project provides my local community with knowledge of native plants and creates a more colorful trail, which people can use to enjoy more of nature (Fig. 4).

- The project in itself left me feeling accomplished and made me want to look more into activism projects going on, not only in my community but around the world and what people are doing in their communities to help it become more eco-friendly. I can say I gained knowledge about native trees and their impacts on wildlife.

- A major outcome was replacing past trees which were gnawed on by beavers. We planted new trees, which we used chicken wire to protect from being destroyed, benefiting pollinators who live around the trail (Fig. 4 (Middle)).

Fig. 4: (Left, upper and lower) Photos from the first planting where Laura, Jean, and I planted sapling Pawpaws and labeled them along the trail. (Right, upper and lower) Pictures from the second planting where Jean, Adriana, and I planted bottlebrush buckeye nuts donated by Jean from the trees in her backyard, and scattered wildflower seeds donated by people of our community. (Upper Middle) The third planting with students in my NRCA CAP mentoring group, another Difference Maker Mentor Andy, my Difference Maker Mentor, Adriana (not pictured) and Community Partner, Jean (not pictured), and I working together to plant four Sugar Maple trees. (Lower Middle) Map of location of planting sites.

Community Partnership

My community partner, Jean de Smet from the Garden Club of Windham (Fig. 5) provided insight on what the community needed, while taking into account that I wanted to plant trees. She knew **Don Fascio, Windham Public Works Director**, because she had ongoing permission to plant on the Willimantic River Trail, so that made planting the trees and receiving help from him much easier. The Sugar Maples were planted in hope of the future of the trail. I hope they benefit the animals who live on the trail by providing food and shelter, and the people who frequent the trail by providing shade and creating an inviting trail in years to come. I hope to see the trees we planted stay healthy and grow to aid native animals who live in the area.
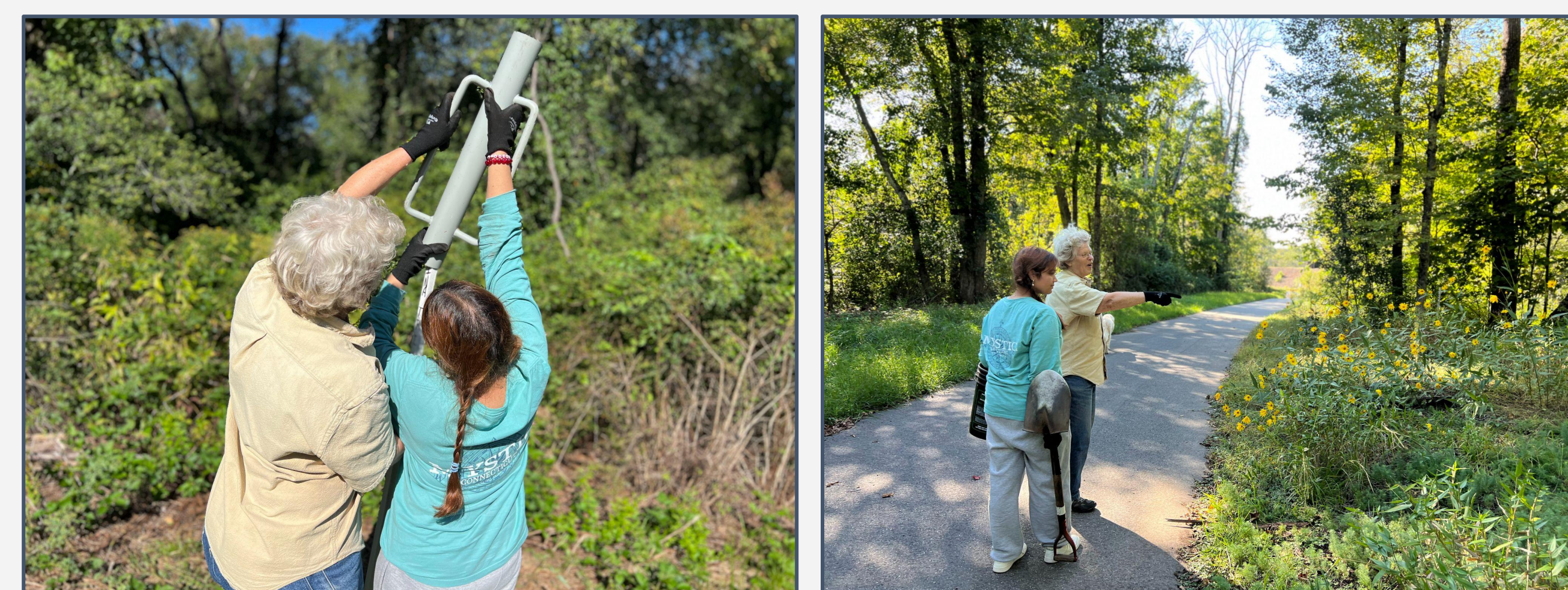

Fig. 5: (Left) My community partner (Jean de Smet) and I using a fence post driver to install a plant label into the ground; (Right) my community partner and I as she explains to me the different native plant species that live on the trail.

Conclusion and Next Steps

Conclusion
We planted trees and other plants native to the Northeastern United States with benefits to people and wildlife. The purpose of the plantings were to restore and revitalize the Willimantic River Trail by increasing tree canopy and adding pollinator-friendly plants in Willimantic, an urban setting with a lower tree equity score than its surrounding towns.

Next Steps
The next steps to this project are to maintain the plants and trees we planted in continued collaboration with the Garden Club of Windham.

Fig. 6: Our team (left to right: Adriel, Abiezer, Jilliana, Jean, Jacob, Andy, Adriana) after finishing our major tree-planting event on the Willimantic River trail.

Acknowledgements and References

References
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