



Urban Food Policy, Planning, and Security: A Location Analysis and Potential Impacts of Creating Community Gardens in DeKalb County, Georgia

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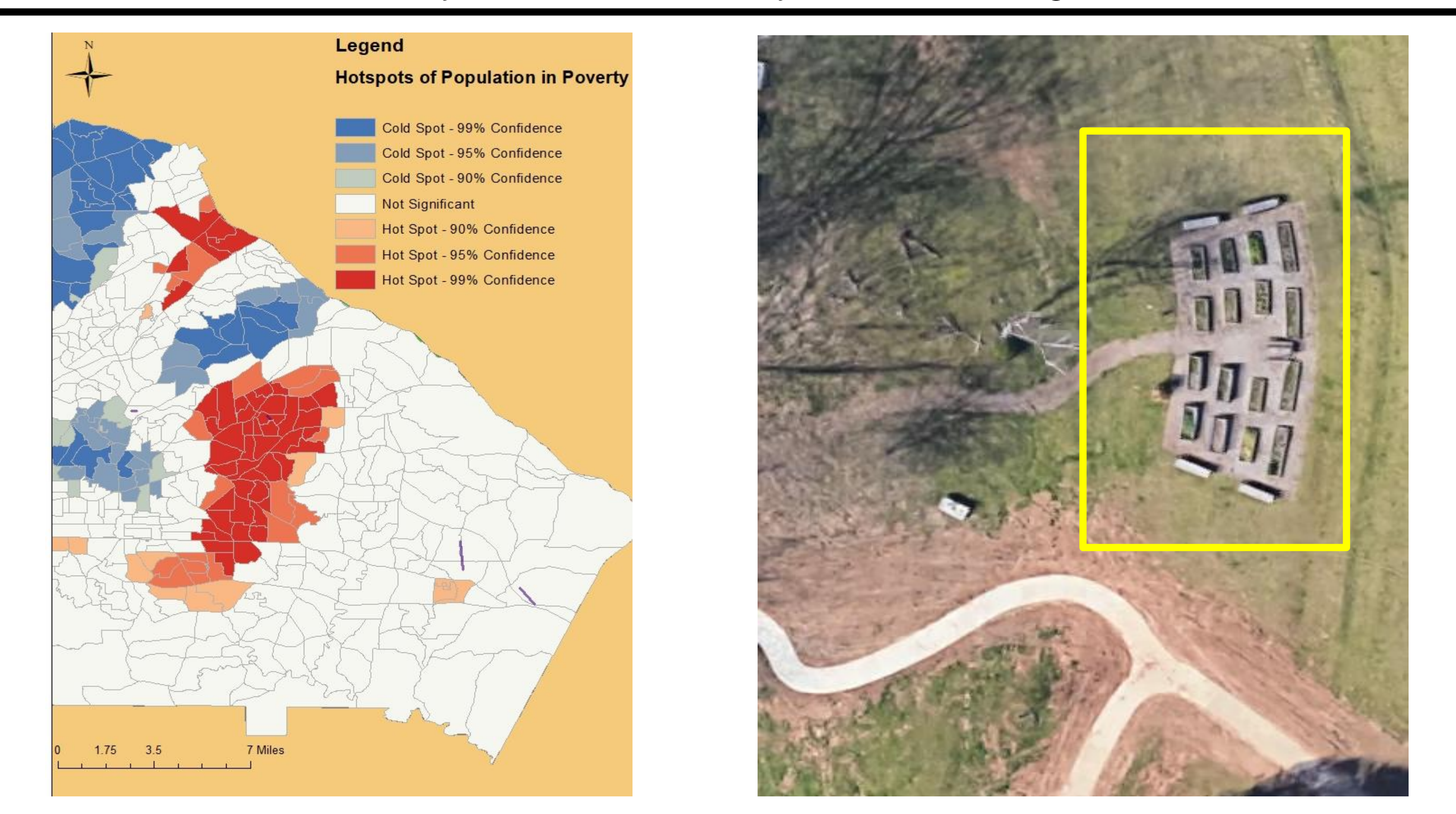
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Introduction

Community gardens and greenspaces in urban and suburban spaces serve many roles as spaces of recreation and community gathering. Food gardens help establish local and more place-based food systems that can positively impact access to fresh fruits and vegetables, while also creating a space for health programming, community action in city planning, and opportunities related to education and workforce development (Butterfield, 2020). Gardens could be privately owned but also incorporated into public parks for residents to access. As gardeners have increased engagement with democratic processes and municipal governments, contacts for community organizing, and the desire to protect vacant land from environmental degradation or unwanted development, the popularity of community gardening and urban agriculture has surged (Jermé & Wakefield, 2013; Meenar & Hoover, 2012; Butterfield, 2020). Community food systems planning is recognized as an important part of community resilience and is being incorporated into municipal policy (Jermé & Wakefield, 2013). With this context in mind, this project assesses:

- 1) How community gardens can be incorporated into DeKalb County parks; and
- 2) The potential for integration of future gardens onto public land.

The mixed-methods approach includes a GIS analysis to locate hotspots of social vulnerability and indicators of food insecurity combined with finding potential garden locations within an accessible vicinity. The creation and use of these existing gardens has not been studied formally, which gives opportunity for researchers to not only examine existing gardens in public parks, including the policies and impacts on food insecurity in the surrounding neighborhoods, but also to evaluate the potential success for new garden projects. Using information from DeKalb's Gardens in the Parks (GITP) program, this analysis yields potential sites to be used to address food insecurity in the most socially vulnerable neighborhoods.



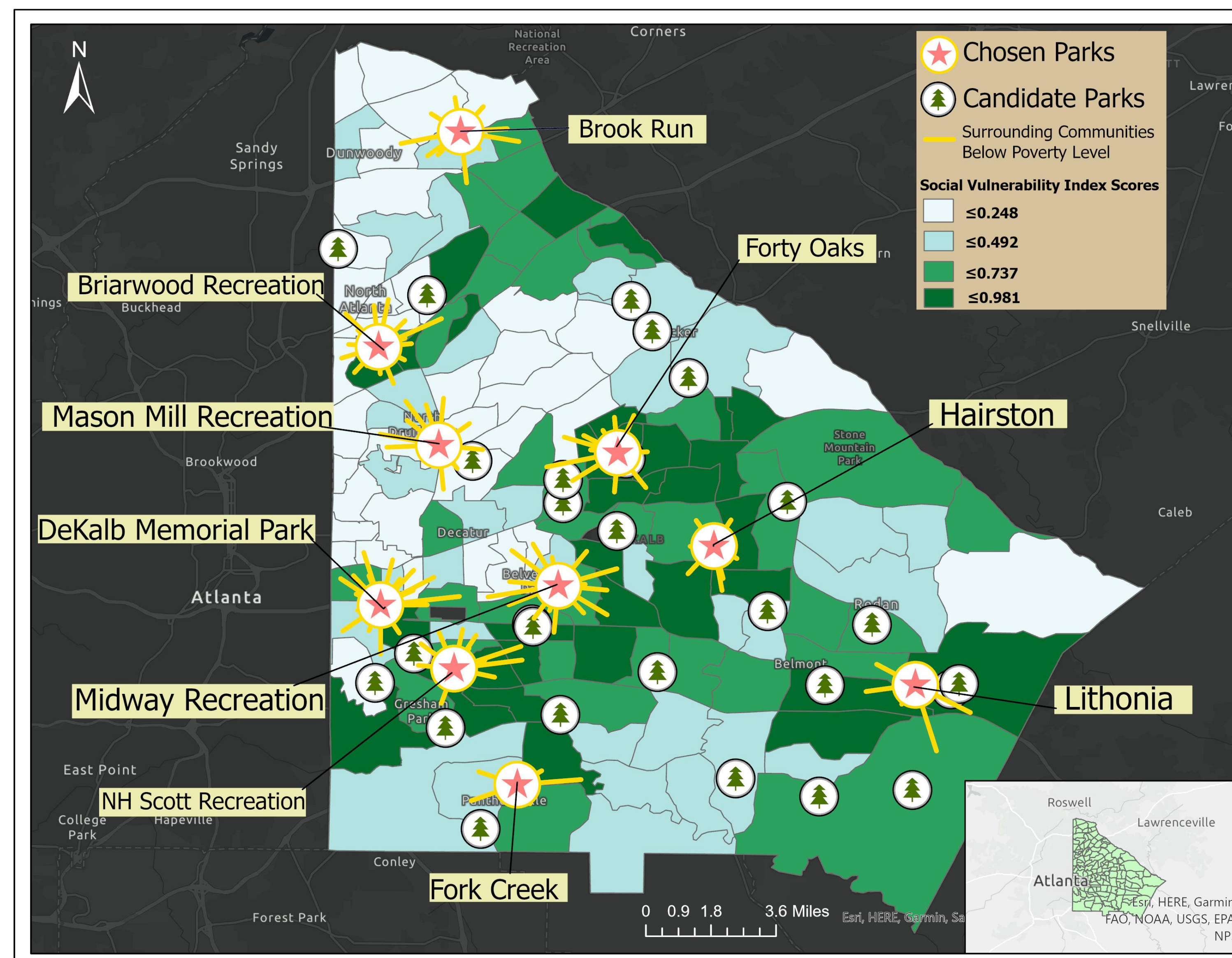
Hotspots of high social vulnerability in DeKalb County census tracts with garden candidate locations

Aerial view of existing community garden beds in Fork Creek Mountain Park, managed by DeKalb Recreation, Parks, and Cultural Affairs and a Hotspot Analysis of social vulnerability zones within DeKalb. Source: Google Maps and CDC.

Study Area

DeKalb County is among the most populated counties in the Atlanta, Georgia, metro area, which is among the top ten largest and fastest growing metro areas in the U.S. In 2017, 17.9% of DeKalb County's 753,253 population were reported to struggle with food insecurity, according to Feeding America (Shannon, et. al., 2018). Community gardens in food-insecure areas can be a tool to combat the deficit of fresh food available to residents (Butterfield, 2020). In recent years, small food gardens have been established in DeKalb County public parks under the GITP initiative to assist community members with an interest in urban agriculture to have access to information regarding start-up and maintenance.

Location Allocation Results of Potential Garden Sites



Results, Discussion & Conclusion

The analysis yielded hotspots of overall social vulnerability, and further analysis identifies potential gardens in these areas with a high SVI ranking, with a buffer to identify distance to the nearest garden candidate within a certain proximity. These sites located in areas with a high SVI ranking should be assessed for potential garden development. The location allocation analysis yielded 10 sites within these hotspots that would best serve the populations living below the poverty line. Of the 10 proposed park locations, 2 parks, Fork Creek and DeKalb Memorial, currently support community garden projects.

As critical as understanding the policies that govern community gardening are, it is equally as imperative to find places where policy can be translated into practice. The applied location-allocation analysis connects policy and data from the Social Vulnerability Index to potential site locations. The preliminary analysis yielded the hotspots with a high SVI score in DeKalb County in addition to establishing a 1-mile buffer zone to each candidate garden location. This analysis accounted for social vulnerability but may be repeated with data on rates of food insecurity in census block groups. These 10 potential sites will provide access to socially vulnerable communities if there is interest in developing an urban agricultural project or community garden.

Methodology

Data used for the analysis included GITP sites and demographic information generated from Simply Analytics and the Center for Disease Control's (CDC) Social Vulnerability Index (SVI). While the SVI is typically utilized for crisis and disaster management, it addresses access to transportation, income, and other demographic factors relevant to the study. For the GIS analysis, the following techniques were employed:

- 1) Geocoding addresses of existing and potential garden locations from the GITP.
- 2) Joining SVI and Census data with the county boundaries and parks information.
- 3) Performing a hotspot analysis to find trends between the population of socially vulnerable people and the location of existing and potential garden locations.
- 4) Performing a Location-Allocation to find park garden candidates that would best support low-income and food insecure communities.
- 5) Interpreting data and spatial relationships that demonstrate where gardens should be located for maximum impact.

References

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Acknowledgments

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