

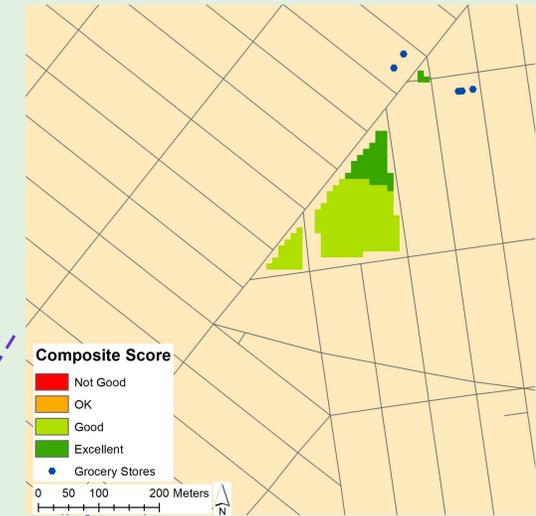
A Garden Grows in Brooklyn

Introduction

Community gardens in New York City allow residents the opportunity to connect with nature, foster community relationships, and receive fresh fruits and vegetables. This can improve overall well-being and alleviate food insecurity. South Brooklyn was chosen for this pilot model because it has significantly fewer community gardens than the rest of the borough. This model seeks to understand what conditions can be used to determine where to put a new community garden. This model looks at proximity to other community gardens, proximity to grocery stores, and neighborhood density. We want a greater distance from existing gardens and grocery stores, as a new garden would ideally be in an area lacking these, and a high density area. Based on this pilot exercise, we hope to learn whether this method and these conditions might be scaled up to cover the five boroughs of NYC.

Methods

This model uses data on three conditions: community gardens, grocery stores, and resident population. The garden data was collected by the NYC Department of Parks and Recreation, last updated in 2018. The grocery store data was collected by Reference USA and any results not considered grocery stores, such as convenience stores, were removed. The resident population data from the 2010 Census was used to calculate neighborhood density. All the data was reclassified into a 0-3 ranking system, with 3 being “excellent” and 0 being “not good”, and inputted into a raster calculator. For distance to existing gardens, 3=greater than 3,000 meters, 2=2,000-3,000 m, 1=1,000-2,000 m, and 0=less than 1,000 m. For distance to grocery stores, 3=greater than 1,000 m, 2=720-1000 m, 1=500-750 m, and 0=less than 500 m. Neighborhood density was determined as the number of residents living within a 500 m radius, with 3=greater than 18,000 residents, 2=15,000-18,000 residents, 1=10,000-15,000 residents, and 0= less than 10,000 residents. Due to the lack of available unused land in Brooklyn to propose be converted into a garden, this model only considers suitable areas as existing parks.

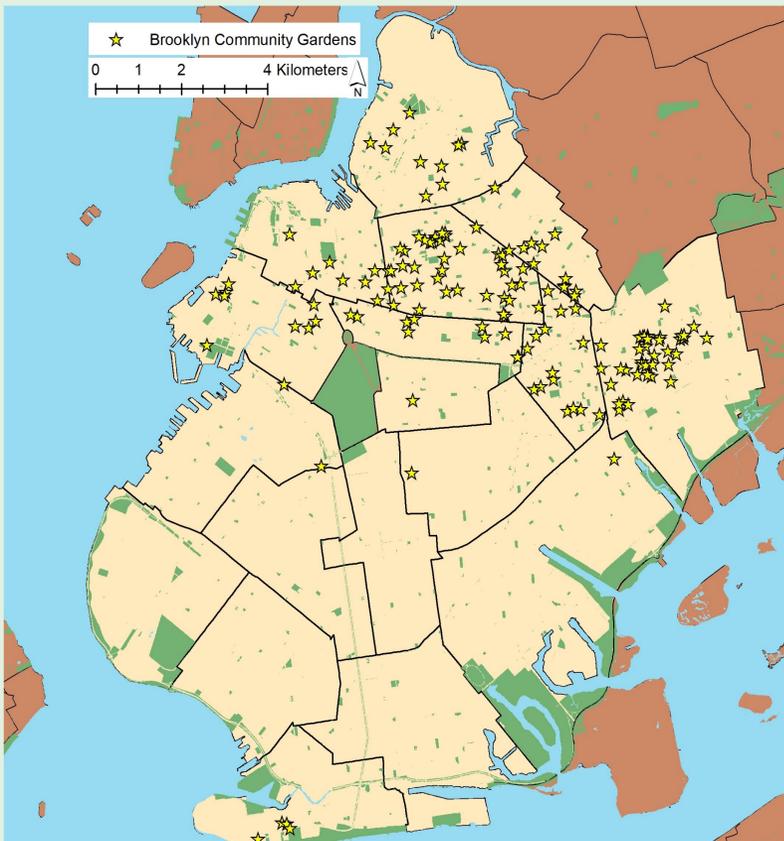


South Brooklyn — Suitable Community Gardens Locations

This model used a green to red scheme to illustrate best to worst areas. The scheme only appears on existing parks, as those would be the most convenient places to partially or completely turn into a garden.

Seth Low Square

This section is the only location within the study area considered “excellent” for a community garden location. This area is a “3” for distance to existing community gardens and neighborhood density. It is a “0” for distance to grocery store, indicating it is a “not good” location based on the grocery store level.



Brooklyn Community Gardens

The majority of the community gardens are clustered in north Brooklyn.



Conclusion

This pilot model determined that within the study area, one location was considered “excellent”, while a few other areas were considered “good.” Just outside the study area were another “excellent” areas, but the grocery store data did not extend to those neighborhoods. No area was considered “excellent” for grocery store proximity. This indicates that grocery store distance may not be an appropriate condition as the high number of grocery stores within Brooklyn means it’s difficult to be far from any. In addition, this model did not take into account park size, so the “excellent” locations may not be large enough to accommodate a garden. This model was able to estimate how certain conditions could determine potential locations for a new garden on land already designated as a park. Future models looking at other boroughs may choose to omit the grocery store condition or add in others. Overall, this model showed that certain areas are better than others for establishing a community garden in south Brooklyn based on the included conditions.

Projection: NAD_1983_StatePlane_New_York_Long_Island_FIPS_3104

- ◇ Carney, P. A., Hamada, J. L., Rdesinski, R., Sprager, L., Nichols, K. R., Liu, B. Y., ... Shannon, J. (2012). Impact of a community gardening project on vegetable intake, food security and family relationships: a community-based participatory research study. *Journal of community health, 37*(4), 874–881. doi:10.1007/s10900-011-9522-z
- ◇ Grocery Stores and Markets, Census North American Industry Classification System
- ◇ NYC Greenthumb Community Gardens, September 2018, Department of Parks and Recreation
- ◇ Open Space (Parks), September 2018, Department of Information Technology and Telecommunications
- ◇ Population and Housing Unit Counts – Blocks, 2010, US Census Bureau

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