

Urban Farming: Continuing to Rebuild New Orleans



https://commons.wikimedia.org/wiki/File:New_Orleans_panorama_1919.jpg

Background

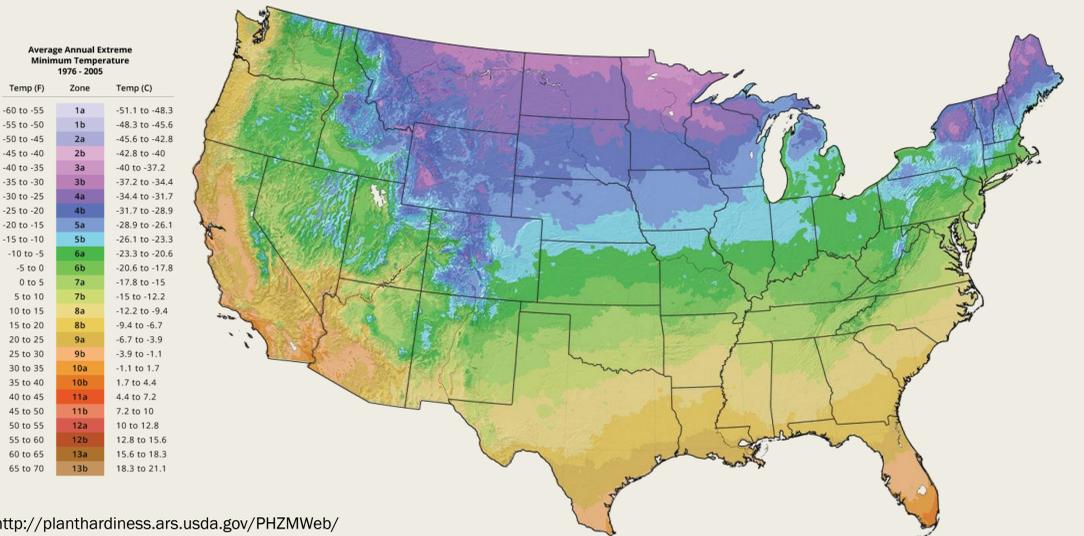
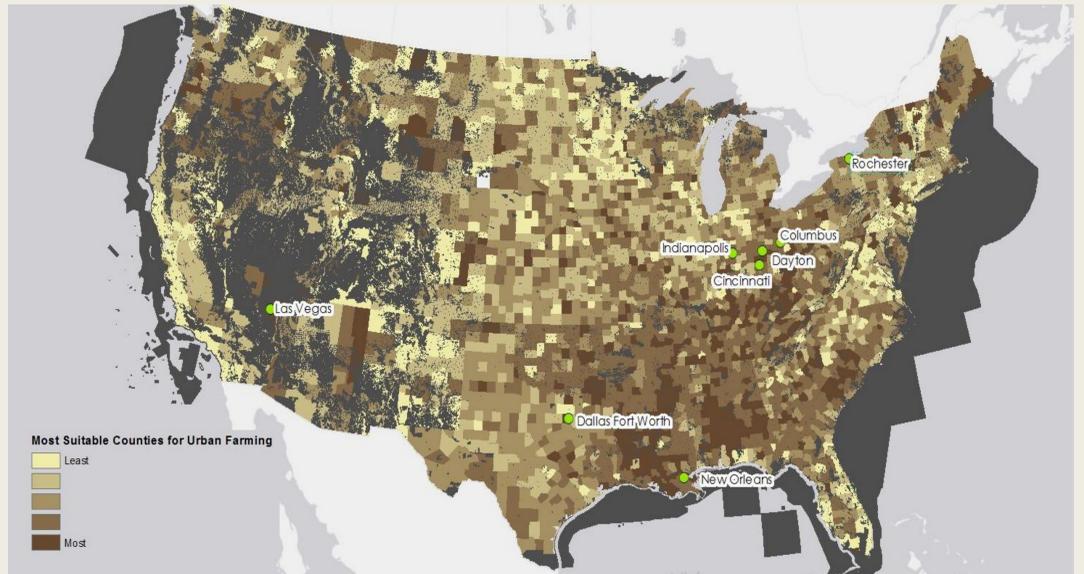
Urban farming is an expanding practice throughout the country to meet the food needs of an increasing population in a sustainable way, by turning empty lots or paved areas into hubs for biodiversity and infiltration. Community involvement in such projects also increases human wellbeing and public health. The research question being addressed by this study was which US cities and neighborhoods were both in the most need, and the best equipped to support an increase in urban farming initiatives using a combination of demographic, socioeconomic, and social factors. From the eight urban hubs identified, New Orleans was selected for a number of reasons. One was that it was contained within the agricultural growing zone most suited for year round farming. Additionally, New Orleans was chosen because of the lingering effects of Hurricane Katrina; sometimes disaster opens up increased opportunity for new development. Finally, New Orleans is a rich center of culture and cuisine, so a food-based initiative would thrive.

Methods

Using ArcMap, a suitability map for urban farming across all US counties was created. An attribute join between socioeconomic factors and a county shapefile was used to create polygons for proximity to grocery stores, food insecurity, poverty rates, diabetes and low access/income. These polygons were then converted into rasters and reclassified from one to four, with four indicating the most suitable counties for urban farming. The raster calculator was then used to identify what county is the most suitable. This produced a raster layer that was used to identify which urban cities fell within the most suitable counties. A spatial query identified eight cities that are most suitable for urban agriculture. Finally, conservation areas were blocked off in grey as not eligible for urban farming. The suitability map was compared to a growing zone map of the US to select New Orleans.



Craig Stanfill: https://www.flickr.com/photos/photo_fiehd/8025318160



<http://planthardiness.ars.usda.gov/PHZMWeb/>

Human Need Suitability Factors

Health Outcomes - Diabetes and obesity rates by census tract were used to identify areas in the city that had worst health outcomes. Studies have shown that urban farms increase access to healthy food and improve these health outcomes. Therefore, it was important to locate which areas in the city were in greatest need of a health intervention. Census tracts with highest rates of diabetes and obesity were ranked as most suitable.

Population Density - Total population by census tract was used to identify the most densely populated areas in the city. This was important when accessing need because the urban farms should be accessible to the greatest amount of people possible.

Minorities - Studies have identified that minorities are most affected by food deserts and nutrition problems so it was important to target this specific population in the study. Areas with higher percentage of minorities were ranked as most suitable.

SNAP recipients - Number of people receiving food stamps by block group were used to measure food insecurity in New Orleans. People who are food insecure would benefit most from access to urban farms so census blocks with highest number of SNAP recipients were ranked as most suitable.



Tracie McMillan: <https://www.theatlantic.com/health/archive/2010/11/5-urban-farms-reshaping-the-food-world-in-new-orleans/66473/#slide2>

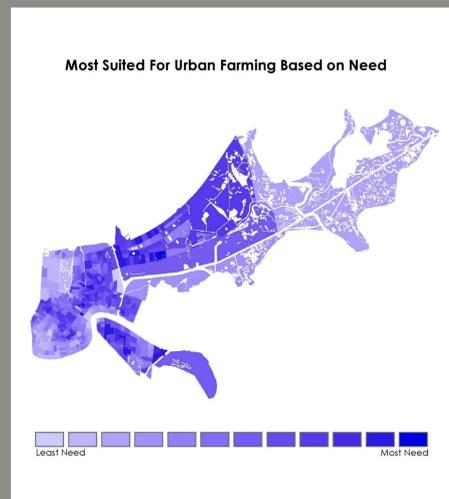
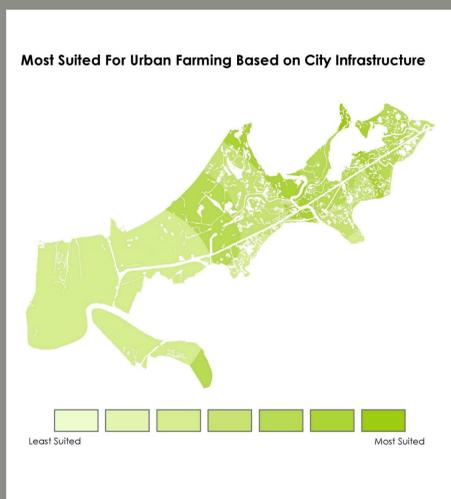
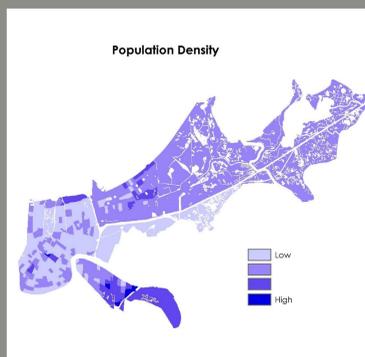
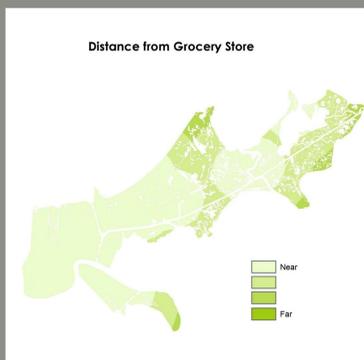
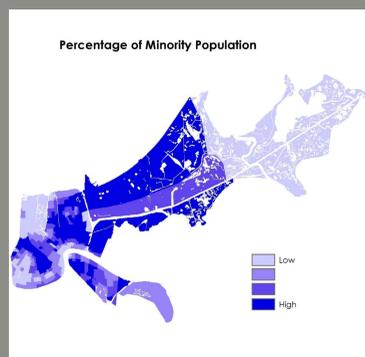
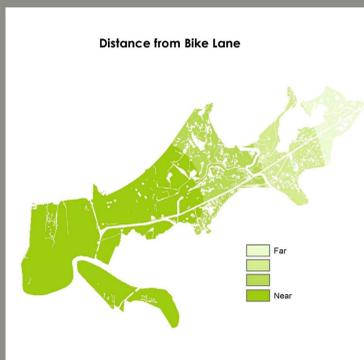
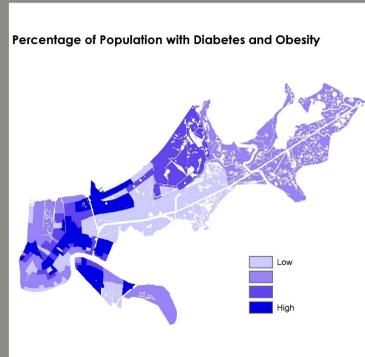
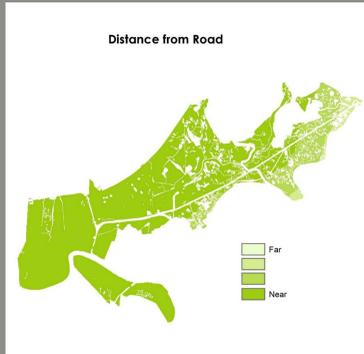
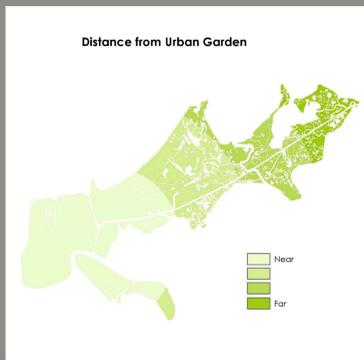
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Infrastructure Based Factors

Human Need Based Factors

Infrastructure Suitability Factors



Major Roads - Distance from major roads was used to assess which parcels are most accessible by transportation mechanisms in order to facilitate distribution. Higher suitability values were assigned to areas closest to major roads.

Bike Lanes - Proximity to bike lanes was used as a measure of accessibility to community members regardless of their ability to own a car. Areas with the shortest distance from a bike lane were given higher rank than those further away.

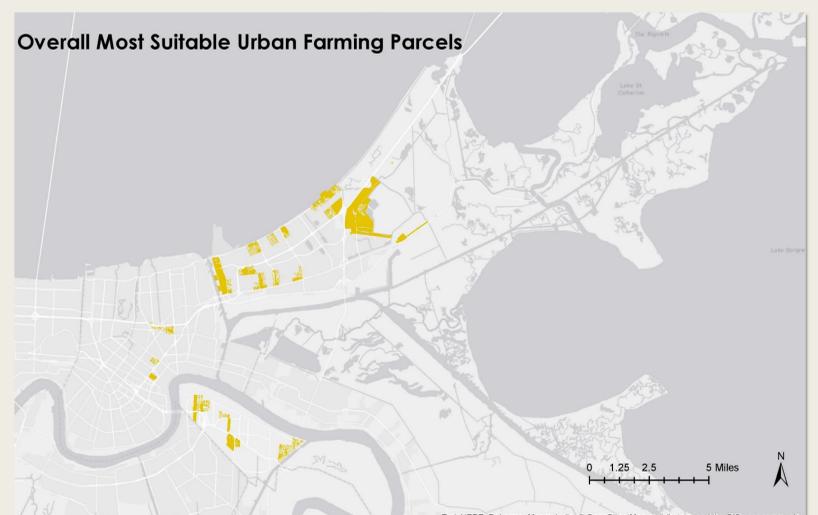
Urban Gardens - Existing urban gardens were used in order to determine which sites were already taking advantage of urban farming. The goal of this project is to expand urban farming into areas of need so longest distances from existing urban gardens were given higher suitability values.

Grocery Stores - Distance from supermarkets, convenience stores and food markets were used in to identify potential food deserts in New Orleans. Most suitable locations for urban farming are those furthest away from food outlets.

Methods

Suitability maps for urban farming in the city of New Orleans were created using Louisiana State Plane. To identify food insecurity, a polygon was created using an attribute join between block groups and number of people receiving food stamps. Other need based factors such as health data from the CDC and census data were joined to census tracts. These resulting polygons were then converted into rasters and reclassified from one to four (four being most suitable). Next, to calculate suitability based on infrastructure, vectors for urban gardens, grocery stores, and lines for bike lane and major roads were converted into rasters using the Euclidean distance calculator. The resulting rasters were reclassified one through four. Then, suitability raster maps were created using the raster calculator. Finally, to identify the most suitable parcels in New Orleans the zonal statistics table calculator was used between the parcels polygon and the most suitable raster. A join between the resulting table and parcels shapefile produced the final map of most suitable parcels. To take it one step further, we also created a map that identified those parcels with the highest possible suitability through an attribute query.

Results



The parcels selected are those most suited for urban farming when considering the socioeconomic factors, health outcomes, and infrastructure of New Orleans. We recommend that the city prioritize these locations when expanding their urban agriculture as it will benefit those most in need and have the largest positive impact on the community because of its accessibility and supportability from the infrastructure already in place in New Orleans.



When looking at the pattern of the most suitable parcels in the above map, it appears that most are clustered in three specific neighborhoods; New Orleans East, the Algiers Neighborhood, and the Mid-City area. As these are also some of the poorest areas, we suggest that these areas be considered most heavily for increased education and implementation surrounding how to incorporate urban farming into everyday life.

