

SUBURBAN DIRT: A GROWING ELEMENT IN NEW JERSEY'S COMMUNITY

GARDENING TREND

By

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## ABSTRACT OF THE THESIS

Suburban Dirt: A Growing Element in New Jersey's Community Gardening Trend

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Large-scale community gardens are an increasingly common feature in the suburbs of Central New Jersey, and yet the inner-city model has essentially defined how we think of community gardening. Community gardens indicate where people are, and yet the literature bias towards urban community gardens neglects this growing trend of large non-urban community gardens. This study, therefore, investigates three large format suburban community gardens – gardens that consist of one hundred or more individual plots – that are removed from the urban setting. The questions that this research seeks to answer are: Who is participating in large-scale suburban community gardening, and what are their reasons for participation? In answering these questions, the intent is to also begin to understand the conditions of suburbia that foster the impetus for creation of such gardens. In order to understand the gardens spatially as they relate to their contextual surroundings, I used methods of geospatial mapping. To understand the gardens structurally as a place, I made use of on-site observation and conducted interviews with garden coordinators representing each site. In order to understand the garden in terms of the user group, I conducted a series of personal interviews with participating gardeners that focused heavily on themes of community and social capital, food systems and production, and recreation and well-being. The study shows that gardeners participating in large-scale suburban efforts are doing so for many of the same reasons cited in the literature and by organizations such as

the American Community Gardening Association with regards to participation at urban locations; however, the suburban context has a significant impact on how these reasons are defined and the ways in which these reasons are described.

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## I. Introduction

### Purpose

Community gardens have been defined broadly as “any piece of land gardenized by a group of people”<sup>1</sup> and more specifically as a garden space in which individuals have their own plots but share in the general management.<sup>2</sup> Often community gardens are discussed in terms of the benefits they provide to those who garden, and these benefits translate easily to reasons why individuals or groups choose to participate in a gardening project. The American Community Gardening Association offers a list that includes such benefits as improved quality of life, community development, and production of nutritious food, which are values that extend to a definition that is inclusive of urban, suburban and rural gardens.<sup>3</sup> The majority of benefits commonly cited, however, such as neighborhood beautification, crime reduction, and heat island mitigation seem to reference the community garden that is situated in a dense urban context: the quintessential American community garden nestled on a small vacant lot in a neighborhood dominated by concrete and plagued by food insecurity. This particular version of the community garden, popularized in the 1970s, has been the subject of numerous studies and books.

Many of these gardens, established in cities suffering from urban blight during the 1970s, sought to transform deserted land and to provide local residents – who were, by and large, members of poor minority groups – with opportunities for social interaction, recreation and access to food.<sup>4</sup> This inner-city movement, which has essentially

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<sup>1</sup> This definition is provided by the American Community Gardening Association website, accessed 11 March 2013, <http://www.communitygarden.org/>.

<sup>2</sup> Lawson, Laura. *City Bountiful*. Berkeley: University of California Press, 2005 (page 3).

<sup>3</sup> A complete listing of benefits cited by the ACGA can be found on the organization’s website, accessed 11 March 2013, <http://www.communitygarden.org/>.

<sup>4</sup> Lawson, Laura. *City Bountiful*. Berkeley: University of California Press, 2005 (page 219).



Figure 1. Chestnut Avenue Community Garden, Trenton. Photo by the author.

defined the practice of community gardening, functions as a catalyst for social and environmental transformation, and has earned its place in academic journals and books as it continues to gain ground and garner support in cities like Detroit, New York and Chicago. Community gardens indicate where people are, and yet very little attention has been given to the growing trend of large non-urban community gardens in the United States. In his book *Urban Green*, Peter Harnik, who is director of the Trust for Public Land's Center for City Park Excellence, devotes a chapter to community gardens and writes that they are "overwhelmingly urban."<sup>5</sup> This study, therefore, investigates a group of large format suburban community gardens – gardens that consist of one hundred or more individual plots – that are removed from the urban setting and, surprisingly, from the neighborhood context altogether. The research seeks to understand the conditions of suburbia that create

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<sup>5</sup> Harnik, Peter. *Urban Green: Innovative Parks for Resurgent Cities*. Washington: Trust for Public Land, 2010 (page 83).

the need for community gardens, and subsequently what the motives are for participation in large-scale suburban community gardening.

Before going further, however, I find it essential to define and understand the term *suburb*, its variants *suburban* and *suburbia*, and the sprawl that is typically associated with the suburbs, as they will be used throughout this study. I will also introduce the sites selected and research methods used for the study, and then present a brief historical narrative of community gardening in the United States.

### **Defining the Suburbs**

Like the term *community garden*, suburbs have myriad ways in which they can be defined. Broadly speaking, the suburbs are the outlying districts of a city,<sup>6</sup> characterized by residential land use and single-family homes. Urban planning historians generally consider the dominance of the suburbs as a desired housing option to be born out of a convergence of several policies that encouraged urban dispersal in the years following the Second World War. Most notable of these were the Federal Housing Administration and Veterans Administration loan programs, which provided mortgages for millions of new houses.<sup>7</sup> These programs, coupled with major road improvement and interstate highway development, promoted a migration away from city centers for those who could afford to do so. To many, the suburbs promised space, convenience, family life and upward mobility, and as a result re-defined our notion of what it meant to be middle class.<sup>8</sup> The suburbs offered a yard of one's own and opportunity for green space that didn't need to be shared;

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<sup>6</sup> Definition by *The Oxford Dictionary*, 1996.

<sup>7</sup> Duany, Andres, et al. *Suburban Nation: The Rise of Sprawl and the Decline of the American Dream*. New York: North Point Press, 2000.

<sup>8</sup> *The End of Suburbia*. Dir. Gregory Greene. Electric Wallpaper Company (Canada) 2004. YouTube.



they met our desire for individualism and privacy. Separateness, historian Kenneth T. Jackson writes, became “essential to the identity of the suburban house.” He goes on to say, “The new ideal was no longer to be part of a close community, but to have a self-contained unit, a private wonderland walled off from the rest of the world.”<sup>9</sup> To others, particularly those with the benefit of hindsight offered by the span of decades since the 1940s, the suburbs represent the “greatest mis-allocation of resources in the history of the world”<sup>10</sup> and are, simply stated, places that offer “none of the amenities of the country and none of the amenities of the town.”<sup>11</sup>

Further decentralization, commonly known as sprawl, emanating from the suburbs has made dependence on the automobile even more essential and has pushed low-density development even farther afield. Andres Duany, American architect and leader in the New Urbanism movement, offers five characteristics of suburban sprawl<sup>12</sup> that are helpful in defining the surrounding contexts of the three gardens selected for this research. These components are as follows: housing subdivisions (places consisting only of residences), shopping centers (places exclusively for shopping and not easily accessed by walking), office parks (places only for work, more often than not surrounded by highways), civic institutions (town halls, schools and churches that no longer function as a focal point to the community as such places typically do in urban centers and are, like the shopping centers, not easily accessed by pedestrians but rather are designed to accommodate many automobiles), and roadways (miles of impervious surface made necessary by the disparate nature of the

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<sup>9</sup> Jackson, Kenneth T. *Crabgrass Frontier: The suburbanization of the United States*. New York: Oxford University Press, 1985. Page 58.

<sup>10</sup> James Howard Kunstler in *The End of Suburbia*. Dir. Gregory Greene. Electric Wallpaper Company (Canada) 2004. YouTube.

<sup>11</sup> *Ibid.*

<sup>12</sup> “The five components of sprawl,” pages 5-7. Duany, Andres, et al. *Suburban Nation: The Rise of Sprawl and the Decline of the American Dream*. New York: North Point Press, 2000.

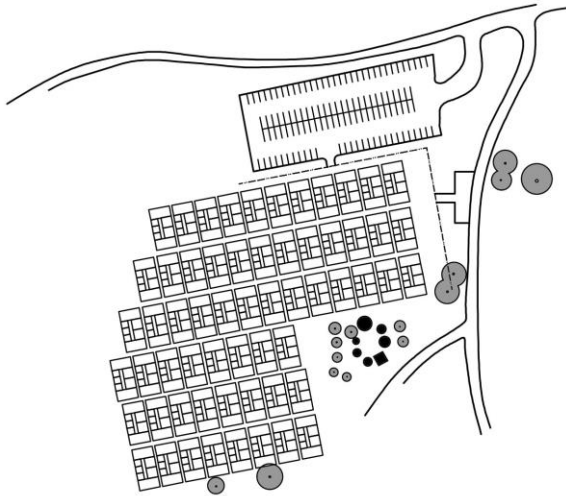
suburbs). In the case of this study, I am particularly aware of a reliance on the automobile for most of the suburbanite's daily needs, as well as the distinctive difference in population density between the urban center and its surrounding towns. The gardens selected as case studies in this research are situated in suburban contexts that are well defined by these two elements, as well as the others Duany lists.

### **Site Selection and Description**

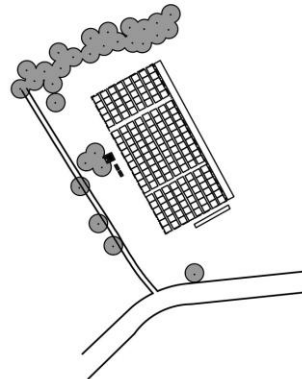
The sites selected for study are Duke Farms Community Garden, East Brunswick Community Garden, and Lawrence Township Community Garden. Duke Farms Community Garden is situated on a portion of the Duke Farms Estate located in Hillsborough, New Jersey and was opened in spring of 2011. In its first year the garden consisted of 210 plots, and in 2012 expanded to contain 420 plots, which are awarded by a lottery system to people who live and/or work in Somerset County. The plots range in size from 10'x10' to 15'x30' and are situated in blocks of seven, each with their own water source. An annual fee of \$20-60 is required of participants and is based on plot size. East Brunswick Community Garden, is located on municipal land and has been gardened since 2009. Those who live or work in East Brunswick may register to garden one of the 167 10'x10' plots for an annual fee of \$10 per plot. The Lawrence Township Community Garden is located on land granted yearly by the Lawrenceville School, a private boarding school situated on 700 acres in Central New Jersey. The garden is composed of 139 plots, each measuring 20'x20', and these are available to residents of the township for an annual fee of \$45 and to non-residents for \$90. (See figure 2)

These three gardens have been selected in order to provide a range of key factors. The selection includes gardens that exhibit three approaches to land access: preserved land

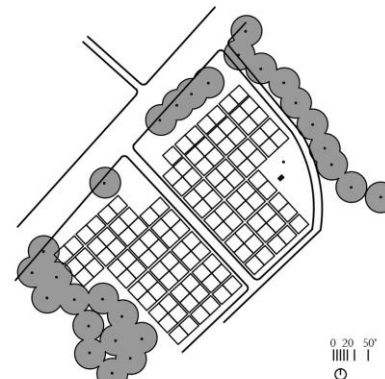
in the case of Duke Farms, municipal land in the case of East Brunswick, and private land in the case of Lawrence Township. They also exhibit a spectrum of gardener's median



Duke Farms Community Garden



East Brunswick Community Garden



Lawrence Township Community Garden

Figure 2 A comparative look at the site plans of the three gardens selected for this study. From top to bottom: Duke Farms, East Brunswick and Lawrence Township community gardens. Illustration by author.

household income, ranging from \$86,009 to \$121,788 annually, and provide an interesting comparison to the median household incomes typical of surrounding urban centers.<sup>13</sup> All three are intended to provide a lens through which to examine the non-neighborhood suburban community garden. The garden sites will be discussed further with the findings from my research.

## **Research Methods**

A mixed methods approach was selected in order to gain a more comprehensive understanding of the three community gardens chosen for this study. To understand the gardens spatially as they relate to their contextual surroundings, I employed methods of geo-spatial mapping. To understand the gardens structurally as a place, I made use of on-site observation and conducted expert interviews with garden coordinators representing each site. In order to understand the garden in terms of the user group, I conducted a series of personal interviews with participating gardeners.

The series of maps created for this study and their accompanying analysis can be found in chapter IV. They offer a broad description of the communities in which the gardens are located, and therefore are valuable in their ability to present a picture of how each of the sites is situated in terms of surrounding population density, income level, rate of home ownership, and racial and ethnic make-up. I begin by looking at the state of New Jersey as a whole in order to help define the areas of study in a much larger context that confirms their suburban quality, and then examine the gardens individually on a more nuanced level. The East Brunswick and Lawrence Township community gardens are

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<sup>13</sup> For the purposes of this research, I find it helpful to compare this data to nearby cities such as Trenton, Philadelphia and New Brunswick. 2010 census data from <quickfacts.census.gov> shows them to have median household incomes of \$36,727, \$37,016 and \$40,280, respectively.

mapped at the municipal level, and the garden at Duke Farms is mapped at the county level. These mapping extents are determined based on the area from which they draw gardeners.

The expert interviews that I conducted with the garden coordinators also lend themselves to a broader picture of each garden and help to answer particular questions regarding the garden's history, establishment, land tenure and management approaches. The time spent in observation on-site is also intended to provide a description of the experience of each garden as a place.

The bulk of my research, however, is focused on the individual gardeners in a qualitative manner. I conducted a series of personal interviews with individuals participating at each of the three sites in order to gain an understanding of the gardener's perspective. I designed the interviews in order to gather basic demographic data (e.g. race, age, income level) as well as specific information related to the gardening experience. I sought to understand a wide range of factors related to their experience, including initial motivations for becoming involved, descriptions of the community atmosphere, and forms of dialogue and exchange shared among gardeners. The motivating factors addressed during the interview process directly informed the conceptual framework of this paper, and themes of social capital, food systems, and the mental and spiritual well-being associated with community gardening are discussed in the following chapter.

### **A Brief History of Community Gardens in America**

Community gardens have a robust history in the United States. Geographer Thomas Bassett suggests that the emergence of community gardens comes as a direct response to larger socioeconomic issues. With this in mind, he organizes the history of community gardens into seven programmatic movements. These programs, which share some overlap in the early twentieth century, are: potato patches (1894-1917), school gardens (1900-20),

garden city plots (1905-10), liberty gardens (1917-20), relief gardens (1930-39), victory gardens (1941-45), and community gardens (1970-present)<sup>14</sup>. Laura Lawson has already written a detailed history of community gardens in her book, *City Bountiful: A Century of Community Gardening in America*, that follows the trajectory outlined by Bassett above; therefore, I will proceed here with only a brief overview of the garden programs in order to provide the framework from which today's community gardens have emerged.

Potato patch farms surfaced in Detroit in 1894 as Mayor Hazen Pingree's answer to urban hunger and unemployment, particularly among the Polish immigrant population. Despite a great deal of ridicule and an astonishing lack of government support, Pingree acquired 450 acres of donated urban land for the purpose of vacant-lot cultivation and received applications from more than 3,000 individuals who wanted to participate in the program. After a surprisingly successful first season, Pingree gained monetary backing from city council for the garden plots and the program grew, both in acreage and gardener participation. By 1896, Pingree's potato patches served 46.8 percent of Detroit's families seeking public relief. As word spread of Detroit's success, vacant-lot cultivation programs sprang up in other cities across the nation, and vacant-lot cultivation associations formed with the support of the Association for Improving the Condition of the Poor (AICP). Acquiring and keeping land was the primary challenge of these early programs, and many times land was lent with the understanding that it could be vacated on demand with no liability of the landowner to the urban gardeners.<sup>15</sup> It was primarily because of this impermanent approach to land tenure that most vacant-lot cultivation associations dissolved

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<sup>14</sup> Bassett, Thomas. "Reaping on the Margins: A Century of Community Gardening in America." *Landscape* 25 (1981): 1-8.

<sup>15</sup> Lawson, Laura. *City Bountiful: A Century of Community Gardening in America*. Berkeley: University of California Press, 2005. Page 37-39.

before the turn of the 20<sup>th</sup> century.

School gardens, which had previously been individual efforts, entered national awareness around the same time that Pingree's gardening programs for the poor were catching on. School gardens, however, managed to gain almost immediate support from government agencies, garden clubs and civic groups because they were seen as a way in which to address educational, social, moral, recreational and environmental issues.<sup>16</sup> By 1906 there were over 75,000 school gardens nationwide, and in 1914 the federal Bureau of Education established the Division of Home and School Gardening, which officially endorsed school gardens as an educational resource in curriculum.<sup>17</sup>

Garden city plots were promoted shortly after the turn of the century with the intention of beautifying the city. This time period, coined the City Beautiful movement, had roots in the belief that the physical environment has a great effect on human culture and behavior, and this belief was the underlying impetus for the planting of neighborhood gardens. Gardens provided an almost immediate visual improvement in the city, and as a result vacant lots once again became a natural place to sow seeds. Unlike the preceding vacant-lot cultivation that originated in Detroit, this later movement was geared toward improving moral character and civic consciousness via aesthetics.<sup>18</sup>

After the United States entered the First World War, urban gardening programs took on a much broader scope and were promoted on a national platform. The National War Garden Commission was founded in 1917 with the campaign mission to convince Americans of the need for war gardens that would lighten the burden of the food shortages caused by the Great War. Gardening became a patriotic act and called on all income levels

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<sup>16</sup> *Ibid.* 52.

<sup>17</sup> *Ibid.* 52.

<sup>18</sup> *Ibid.* 93-97.

for participation. It was, according to the National War Garden Commission, a war-time necessity,<sup>19</sup> a duty to help produce food for U.S. troops and her allies. As such, every piece of “slacker land” – idle soil that could be cultivated – in cities and towns held the potential to bring victory nearer. There was, as it turned out, an astonishing amount of available land: thousands of acres lying fallow as vacant city lots across the country, and by 1918, the estimated number of war gardens reached 5,285,000 and yielded at least 528,285,000 pounds of food.<sup>20</sup> The Commission produced books and pamphlets that provided instruction on gardening, canning and drying, as well as instruction for organizing community gardens. The liberty garden effort, in the words of Commission founder and president Charles Lathrop Pack, “surpassed the most sanguine anticipations of those who initiated the war-garden movement”.<sup>21</sup>

The onset of the Great Depression in the 1930s ushered in relief and subsistence garden programs with the dual aim of providing relief and reducing idleness for the unemployed and impoverished. Land for gardening was sought once again in places of vacancy, and although sites located in close proximity to residential communities were ideal, most gardens were located at the city’s edge in order to provide more efficient relief.<sup>22</sup> Often the gardens were strictly managed and most gardeners were required to carry identification and sign a pledge that bound them in writing to particular rules and regulations. Though intended most directly as an economic response to the Depression, other benefits of social and educational natures were revealed.

The attack on Pearl Harbor in 1941 catalyzed another large-scale, federally supported

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<sup>19</sup> Pack, Charles Lathrop. *The War Garden Victorious*.

<sup>20</sup> *Ibid.* 15-17

<sup>21</sup> *Ibid.* 23

<sup>22</sup> Lawson, Laura J. *City Bountiful*. 165



war garden effort. Initially the government intended only to promote more efficient large-scale rural and suburban gardening endeavors; however, public appeal to officials called for the inclusion of urban gardens as well, and approximately ten million victory gardens took root in cities in 1942 alone. By 1944 the USDA reported that an astonishing forty percent of the total U.S. vegetable supply was provided by the nearly twenty million family gardens.<sup>23</sup> Support for the victory garden campaign came from the Department of Agriculture, Office of Civilian Defense, and Office of Education. The Office of Civilian Defense was most closely involved with the urban garden movement and citizens found they could fulfill a sense of patriotic contribution by volunteering as garden coordinators and growers far from the front lines.

The urban dispersal following the Second World War brought with it a shift in gardening mentality. By and large, the practice transitioned from an act of patriotic duty to one of individual suburban backyard leisure, and with the exception of a few remaining urban victory gardens, this shift was in place until the mid-1970s. It was at this point, amid the energy crisis, rising food prices and an emerging environmental ethic, that urban community gardening saw a renewal. The striking difference between the gardens of this time period and those that had come before was the emphasis on community and an opportunity for social activism. In the words of Lawson, city residents and activists sought to reclaim and rebuild communities faced with racial tension, declining population, abandoned properties, and urban renewal projects that were causing more harm than good.<sup>24</sup>

While it is true that community gardens showed up in both rural and suburban environments and not only in urban centers during the 1970s, Lawson makes it clear that

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<sup>23</sup> *Ibid.* 170

<sup>24</sup> *Ibid.* 206

community gardening in the early stages of its current incarnation was “best known for revitalizing derelict urban land into usable open space,”<sup>25</sup> and it is this transformation of unproductive and vacant urban land into productive space that recurs across the trajectory of these different eras of garden programs.

The current approach to community gardening isn’t as easily defined as, for instance, the potato patches of Pingree’s Detroit. It is impossible to determine exactly how many community gardens there are nationwide, in part due to the impermanence that often accompanies their establishment and long-term viability; however, Laura Lawson and Luke Drake of Rutgers University have conducted a community gardening organization survey of the U.S. and Canada between 2011 and 2012. Their study does not claim to be comprehensive, but based on surveys completed by 445 organizations the results represent nearly twenty thousand community gardens.<sup>26</sup> When mapped, the survey sample shows a distribution that correlates with the general population density patterns, urban areas accounting for 73% of gardens, suburbs for 19%, and rural areas for 8%.<sup>27</sup> The data suggests a rising demand for community gardens of all types, and Lawson and Drake are transparent about the need to develop new strategies for measuring garden growth and activity in part due to the increasingly diverse nature of community gardening, particularly as the gardens become more prevalent in the suburban and rural context.

What is significant is that historically, community gardens have sprung up as a response to some kind of social or economic shift. Within the urban context, there are

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<sup>25</sup> *Ibid.* 220

<sup>26</sup> The 445 organizations surveyed account for 8,550 community gardens in the U.S. and Canada. Additional gardens of which these organizations are aware brings the number of gardens to 19,483. Lawson, Laura and Luke Drake. “Community Gardening Organization Survey 2011-2012.” *Community Greening Review*. The American Community Gardening Association, 2013: 25. \*

<sup>27</sup> *Ibid.* 23.

certain structural, social and economic matters, such as lack of open space, absence of yards and food insecurity that clearly lend themselves to garden development. As I began to consider the emergence of the large-scale suburban community gardens that are at the center of this study, I found it helpful to identify a number of factors particular to the suburban context that might function as a catalyst for the creation of such spaces. The conceptual framework that follows is intended to provide an overview of several key themes around which my interviews were structured.

## II. Conceptual Framework and Literature Review

The motivating factors for participation in community gardens that were addressed during the interview process with gardeners were based in part on existing literature that explores reasons for community gardening in a broad context. What follows is an examination of three themes – community and social capital, food systems, and the role of recreation as it pertains to mental well-being – as they might be understood within the framework of suburbia.

### Community and Social Capital in the Context of Suburbia

It seems only fitting that the notion of community is addressed first and foremost when framing a study of community gardens. More specifically, I hope to present an understanding of how the suburban context has altered the way in which we identify and experience community.

*The Oxford Dictionary* defines *community* as follows:

*n.* **1 a** all the people living in a specific locality **b** a specific locality, including its inhabitants **2** a body of people having a religion, a profession, etc., in common **3** fellowship of interests, etc.; similarity **4** a monastic, socialistic, etc., body practicing common ownership **5** joint ownership or liability **6** the public **7** a body of nations unified by common interests

The dictionary definition, as is often the case, can provide us with conveniently reduced and accessible phrases intended to present the essence of complex terms, but when we are speaking of something as multi-faceted and nuanced as *community*, I find we can be more informed by the way in which Wendell Berry defined the term nearly forty-five years ago. In 1969 he wrote,

“A community is not merely a condition of physical proximity, no matter how admirable the layout of the shopping center and the streets...A community is the mental and spiritual condition of knowing that the place is shared, and that the people who share the place define and limit the possibilities of each other’s lives. It

is the knowledge that people have of each other, their concern for each other, their trust in each other, the freedom with which they come and go among themselves”.<sup>28</sup>

Berry seems to get at the roots of community, a noun derived from the Latin *communitas*: a word imbued with partnership and participation; a word that connotes fellowship and kinship. Our fondness for the suburbs, however, seems to have pulled us from experiences of partnership and fellowship. Indeed, American novelist Steven Millhauser, author of *Dangerous Laughter*, writes of a “disturbing tendency in the American suburb: the longing for withdrawal, for self-enclosure, for expensive isolation”.<sup>29</sup> And yet, by Oxford’s definition, the suburbs are community.

Robert Bellah, et al. address the popularity – and misuse – of the word “community” within the context of the suburbs in *Habits of the Heart: Individualism and Commitment in American Life*. In this book they recognize the stripping down of a deeply connected condition to a substance-less feeling that might more appropriately be termed “expressive individualism.”<sup>30</sup> The prevalence of this expressive individualism in place of true community in the suburbs has led to a social landscape in which we find, according to American urban sociologist Robert Park, “little worlds that touch but do not interpenetrate.”<sup>31</sup> The failure to interpenetrate renders the experience of community anemic, and it is not surprising to find that surveys have shown two-thirds of Americans feel that societal focus places more emphasis on the individual than on the community.<sup>32</sup> With this in mind, it is not remarkable that community gardens are gaining popularity as individuals work to meet the need for a

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<sup>28</sup> Berry, Wendell. *The Long-legged House*. Washington, DC: Shoemaker & Hord, 1965 (pg 61).

<sup>29</sup> Millhauser, Steven. *Dangerous Laughter*. New York: Random House LLC, 2008.

<sup>30</sup> Bellah, Robert N. “Reading and Misreading *Habits of the Heart*” *Sociology of Religion* 2007, 68: 2, 192, accessed 15 October 2013, [www.robertbellah.com/Bellah\\_Reading\\_&\\_Misreading\\_2007.pdf](http://www.robertbellah.com/Bellah_Reading_&_Misreading_2007.pdf)

<sup>31</sup> Qtd. in Bellah, Robert N. et al. *Habits of the Heart: Individualism and Commitment in American Life*. Berkeley: University of California Press, 1985 (pg 178).

<sup>32</sup> Putnam, Robert D. *Bowling Alone: The Collapse and Revival of American Community*. New York: Simon & Schuster, 2000 (pg 25).

connection that has been thwarted by the very structure of suburban communities.

It is within this context that social capital theory can offer particular lenses through which to view the ways in which the suburbs have restructured our ability to experience community. As a sociological construct, the term *social capital* refers to the aggregate of actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition which provides each of its members with the backing of collectively-owned capital, or in layman's terms, the basic tenet that social networks have value, and that an investment in social relations will result in a return to the individual.<sup>33</sup> Robert Putnam discusses social capital at length in *Bowling Alone: The Collapse and Revival of American Community*, and emphasizes the point that these networks are about a social connection. In other words, social capital is a social connection manifested in doing *with* others, not simply doing *for* others.

Putnam makes the claim that social connectedness is one of the most powerful determinants of our well-being,<sup>34</sup> but he is also clear about the precarious state of the suburbs' social connectedness. Citing the 1995 Department of Transportation's Personal Transportation Survey, he informs us that American adults spend an average of seventy-two minutes behind the wheel every day.<sup>35</sup> Not only does this account for twice as much time as the average parent spends with their children daily, but these figures also indicate that each

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<sup>33</sup> Glover, Troy D. "Social Capital in the Lived Experiences of Community Gardeners." *Leisure Sciences*, 26: 143-162, 2004.

<sup>34</sup> Putnam, Robert D. *Bowling Alone* (pg 326).

<sup>35</sup> According to the National Household Travel Survey, 2001-2002, the average driver spends fifty-five minutes a day behind the wheel and drives twenty-nine miles a day. Eighty-seven percent of daily trips take place in personal vehicles and ninety-one percent of people commuting to work use personal vehicles. Forty-five percent of daily trips are taken for shopping and errands; twenty-seven percent of daily trips are social and recreational; and, fifteen percent of daily trips are taken for commuting.

[www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/subject\\_areas/national\\_household\\_travel\\_survey/daily\\_travel.html](http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/subject_areas/national_household_travel_survey/daily_travel.html), accessed 24 November 2013. The survey from 2011 indicates that in New Jersey, 71.85% of commuters drive alone, 8.48% car pool, and 11.03% use public transportation. [www.gis.rita.dot.gov/StateFacts/StateFacts.aspx?StateName=New%20Jersey](http://www.gis.rita.dot.gov/StateFacts/StateFacts.aspx?StateName=New%20Jersey), accessed 24 November 2013.

additional ten minutes in daily commuting time cuts involvement in community affairs by ten percent.<sup>36</sup> In Putnam's words, this is demonstrably bad for community life, and yet the demand for sprawling suburbs continues to grow, and we seem quite willing to accept the inevitable fragmentation that our preference for more space has produced.

Suburban living and its built-in driving requirements don't appear to provide particularly effective means of building or sustaining social capital, and as a result it becomes apparent that a sense of community that can provide this must be sought after elsewhere. A number of studies have been undertaken to examine the role of inner-city community gardens in fostering positive community development and generating social capital. Findings from one particular investigation published in 2011 indicate several ways in which participation in community gardens generates social capital. Cited as primary factors are the bringing together of people with a common purpose and the provision of a meeting place that enables interaction. Additionally, the inclusive nature of community gardens helps to cultivate an important sense of collective involvement, ownership and pride.<sup>37</sup>

In the case of the three sites selected for this study, I hope to gain an understanding of how participation in a large-scale suburban community garden is viewed as it relates to a sense of *being in community*, and whether it satisfies a desire for an element that may very well be lacking in suburban life.

## **Food Systems**

During the interview process, gardeners were also asked about the influence of food production on their decision to participate at one of the three sites. I did not enter into the interviews expecting to hear of anyone living without either financial means or convenient

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<sup>36</sup> Putnam, Robert D. *Bowling Alone* (pg 212-213).

<sup>37</sup> Firth, c., Maye, D., & Pearson, D. "Developing "community" in community gardens." *Local Environment*. Vol. 16, No. 6, July 2011, 555-568.

access to fresh and abundant produce; however, based in part on what I knew already of the three garden sites and their surrounding suburban contexts, I expected to hear more individuals speak about awareness of the current state of our nation's food systems. The section that follows will address the notion of food sovereignty, organic and local food movements, and public concern over genetically modified organisms (GMOs).

Food sovereignty reaches beyond the basic concerns of access to fresh produce and encompasses a desire to eat locally and organically, and to have knowledge of where one's food is sourced and what it contains (e.g. genetically engineered or modified organisms). Here it is helpful to first make a distinction between food *security* and food *sovereignty*. Food security is the notion that an individual's daily food needs are met, but cares nothing for where that food comes from or how it is produced.<sup>38</sup> Food sovereignty, on the other hand, is:

“the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems. It puts the aspirations and needs of those who produce, distribute and consume food at the heart of food systems and policies rather than the demands of markets and corporations.”<sup>39</sup>

In recent years, awareness and concern about where our produce is coming from and what it contains has increased. Peter Harnik, director of the Trust for Public Land's Center for City Park Excellence, writes, “[E]ach frightening headline [of pesticide scares] drives a few more people off “the agro-chemical grid,” though it doesn't always last. Most recently, the new interest in saving energy by eating locally has made some easterners and northerners

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<sup>38</sup> Peter Rosset of Food First provides more on this aspect of food security in the following publication: "Global Small-Scale Farmers' Movement Developing New Trade Regimes", *Food First News & Views*, Volume 28, Number 97 Spring/Summer 2005, p.2.

<sup>39</sup> This definition is from the US Food Sovereignty Alliance website [www.usfoodsovereigntyalliance.org](http://www.usfoodsovereigntyalliance.org). It is taken from the Declaration of Nyéléni, written for the first global forum on food sovereignty, Mali, 2007. The US Food Sovereignty Alliance was not established until 2010.



swear off produce from places like California, Arizona and Florida.”<sup>40</sup> It is easy to see the correlation between this awareness and an increase in the number of farmers markets nationwide, which represents the growing interest in organic and/or locally grown produce.

According to statistics compiled by the USDA there has been a 3.6% increase in the number of farmers markets since 2012, and since 2000 a nearly 65% increase.<sup>41</sup> In New Jersey alone there are one-hundred forty-two markets listed through the state Department of Agriculture,<sup>42</sup> and this averages out to just over seven markets per county. The USDA also lists forty certified organic farms in the state, and though this doesn’t take into consideration additional small farms that are committed to growing organically without official certification, it does reflect the growing demand for locally sourced organic produce.<sup>43</sup> As reported by the Organic Trade Association’s 2011 Organic Industry Survey, the sale of organic fruits and vegetables in 2010 experienced an increase of 11.8% from the preceding year,<sup>44</sup> and sales continue to rise. And while the jury is still out on what exactly the demographic profile of the organic consumer is,<sup>45</sup> it is clear that the demand for organic is steadily growing, both in grocery stores and at farmers markets.

Hand in hand with the burgeoning market for organically grown produce is a push for more transparency regarding the sale of genetically engineered foods. According to a 2003 study conducted by the Rutgers University Food Policy Institute, between 60% and

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<sup>40</sup> Harnik, Peter. *Urban Green: Innovative Parks for Resurgent Cities*. Washington, D.C.: Island Press, 2010.

<sup>41</sup> Statistics from the USDA Agricultural Marketing service <[www.ams.usda.gov](http://www.ams.usda.gov)> Farmers market information is voluntary and self-reported, accessed 19 January 2014.

<sup>42</sup> <[www.jerseyfresh.nj.gov](http://www.jerseyfresh.nj.gov)>, accessed 19 January 2014.

<sup>43</sup> Though the purpose of this paper is not to argue the merits of organic versus local produce, it is worth noting that there is a significant element of controversy regarding this approach to sourcing produce. For more on this topic, one informative explorative look can be found at <[www.lexiconofsustainability.com](http://www.lexiconofsustainability.com)>, accessed 15 March 2014.

<sup>44</sup> <[www.ota.com/organic/mt/business.html](http://www.ota.com/organic/mt/business.html)>, accessed 15 March 2014.

<sup>45</sup> Rachael L. Dettmann (USDA) takes an in depth look at the conflicting demographic component of who is buying organic. The full report of her study can be found at <[ageconsearch.umn.edu/bitstream/6446/2/467595.pdf](http://ageconsearch.umn.edu/bitstream/6446/2/467595.pdf)>, accessed 15 March 2014.

70% of processed food contains some type of genetically modified ingredient. Despite this shocking percentage, only about one quarter of the subjects interviewed for the study believe that they had consumed genetically modified foods.<sup>46</sup> Less than half of the surveyed population believe that genetically modified foods are safe to eat, and almost two-thirds believe that “serious accidents involving GM foods are bound to happen”,<sup>47</sup> and yet there are no regulations in place in the United States that mandate the labeling of GM products and produce. Several propositions that would require the labeling of genetically modified foods have been initiated, most notably in California; however, large corporations such as Monsanto and DuPont have spent millions of dollars to defeat such efforts and to date nothing has been passed.<sup>48</sup>

In his book *In Defense of Food*, Michael Pollan asks the question, “What would happen if we were to start thinking about food as less of a thing and more of a relationship?”<sup>49</sup> With this in mind, my assumption when considering the individuals who choose to grow at least a portion of their food when access to fresh produce is *not* a factor is that there is some desire for more connection to and knowledge about one’s food system. It seems reasonable that this desire for direct involvement and transparency could be met through the act of community gardening.

### **The Role of Gardening as Recreation in the Context of Mental Well-being**

The third major theme that informed the structure of my interviews is the role that recreation plays in an individual’s motivation to garden, particularly as it relates to mental

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<sup>46</sup> Hallman, W. K., Hebden, W. C., Aquino, H.L., Cuite, C.L. and Lang, J.T.. 2003. *Public Perceptions of Genetically Modified Foods: A National Study of American Knowledge and Opinion*. (Publication number RR- 1003-004). New Brunswick, New Jersey; Food Policy Institute, Cook College, Rutgers - The State University of New Jersey, 6.

<sup>47</sup> *Ibid.* 11.

<sup>48</sup> <<http://www.greenmoneyjournal.com/fall-2013/gmo/>>

<sup>49</sup> Pollan, Michael. *In Defense of Food*. New York: Penguin Press, 2008. Page 102.

and spiritual well-being. Recreation plays a significant role in human psychology,<sup>50</sup> and much research has been undertaken since the 1970s to understand the correlation between positive recreation and the alleviation of depression, anxiety and stress, as well as an improvement in quality of life and spiritual well-being. According to a 2005 publication produced by the California State Parks Planning Division, recreation offers a social atmosphere that encourages us to come out of our houses and into community life. It presents opportunity in which to explore our inner spiritual nature and experience our sense of place in the world. Simply stated, recreation provides experiences to look forward to.<sup>51</sup> In his book *Urban Green*, Peter Harnik quotes Sue Donaldson, the former senior planner at the Portland Park and Recreation Department. She says, “People seek and remember recreation experiences. They may talk about a particular setting or an activity, but they usually mean they are seeking or have found an experience.”<sup>52</sup>

As a recreational pursuit, the gardening experience can offer a wealth of benefits. Rachel Kaplan, Professor of Environment and Behavior at University of Michigan, has studied the restorative gains linked to gardening since the 1970s,<sup>53</sup> and Laura Lawson draws a direct connection between gardening and overall well-being. In *City Bountiful*, she cites anecdotal evidence from individuals who have experienced the therapeutic effects of gardening, and writes, “As a diversion or hobby, gardening relaxed people and helped to soothe the tensions inherent in busy lifestyles.”<sup>54</sup> Additionally, the Permaculture Research

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<sup>50</sup> *Puritans at Play. Leisure and Recreation in Colonial New England*. Pg xi. – proper citation needed!

<sup>51</sup> California State Parks Planning Division. “The Health and Social Benefits of Recreation.” Sacramento: California State Parks, 2005. [www.parks.ca.gov/pages/795/files/health\\_benefits\\_081505.pdf](http://www.parks.ca.gov/pages/795/files/health_benefits_081505.pdf), accessed 23 February 2014.

<sup>52</sup> Harnik, Peter. *Urban Green: Innovative Parks for Resurgent Cities*. Washington, D.C.: Island Press, 2010. Page 23.

<sup>53</sup> For further reading of Kaplan’s studies, see “Some Psychological Benefits of Gardening,” *Environment and Behavior* 5, 2 (June 1973): 143-62.

<sup>54</sup> Lawson, Laura J. *City Bountiful*, pages 216-217.

Institute speaks about how gardening reconnects us to the cycles of nature, and cites Clare Cooper Marcus, Professor Emeritus of Architecture and Landscape Architecture at UC Berkeley, whose research indicates that one of the reasons why nature may be so successful at reducing stress is that it puts the mind in a state similar to meditation.<sup>55</sup>

### **Summary**

These themes of community, food systems, and the mental well-being associated with recreation are themes that are well-documented in studies focused on urban community gardens. My intent over the course of the previous pages has been to frame these themes in a fashion appropriate to a generalized understanding of the suburban contexts within which the garden sites of this study are situated. This was done in order to consider some of the ways in which the gardeners might discuss these topics based on the literature that explores a suburban-centered approach to community and social capital, food system concerns that are often thought of as pertaining primarily to an upper middle-class, and the myriad opportunities for recreation available to the suburban dweller.

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<sup>55</sup> <<http://permaculturenews.org/2013/06/05/wellbeing-gardening-gardening-for-the-body-mind-spirit/>> accessed 23 February 2014.

### **III. Research Findings: The Garden in Context**

#### **Geo-Spatial Mapping and Analysis**

The following series of maps was created using advanced geographic information systems (GIS) with data from the United States Census (2010) and the New Jersey Department of Environmental Protection (NJDEP). The imagery and analysis of the maps is intended to provide a broad description of the communities in which the gardens are located, and to present a picture of how each of the sites is situated in terms of surrounding population density, income level, rate of home ownership, and racial and ethnic make-up. The first set of maps looks at the state of New Jersey as a whole in order to help define the areas of study in larger demographic contexts. The ensuing three sets of maps then examine the gardens individually on a more nuanced level.

#### **The State of New Jersey: Land Cover and Demographics**

##### **Population Density (New Jersey, 2010)**

Figure 4 shows the locations of the three garden study sites in relation to population density (number of persons per square mile) for the state of New Jersey. According to 2010 census data<sup>56</sup> the average state population density is 1,195.5 persons per square mile. As one can see from the map, this average does not provide an accurate representation of how the state's population is distributed. Approximately half of the state's area is made up of large pockets of low population density (less than 250 persons per square mile), and this is primarily seen in the northwest region as well as large swaths of the southern half of the state. The very densely populated census tracts make up a much smaller portion of the state's area and are most notably seen in close proximity to New York City, Trenton and Camden.

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<sup>56</sup> <[www.quickfacts.census.gov](http://www.quickfacts.census.gov)>, accessed 12 January 2014.

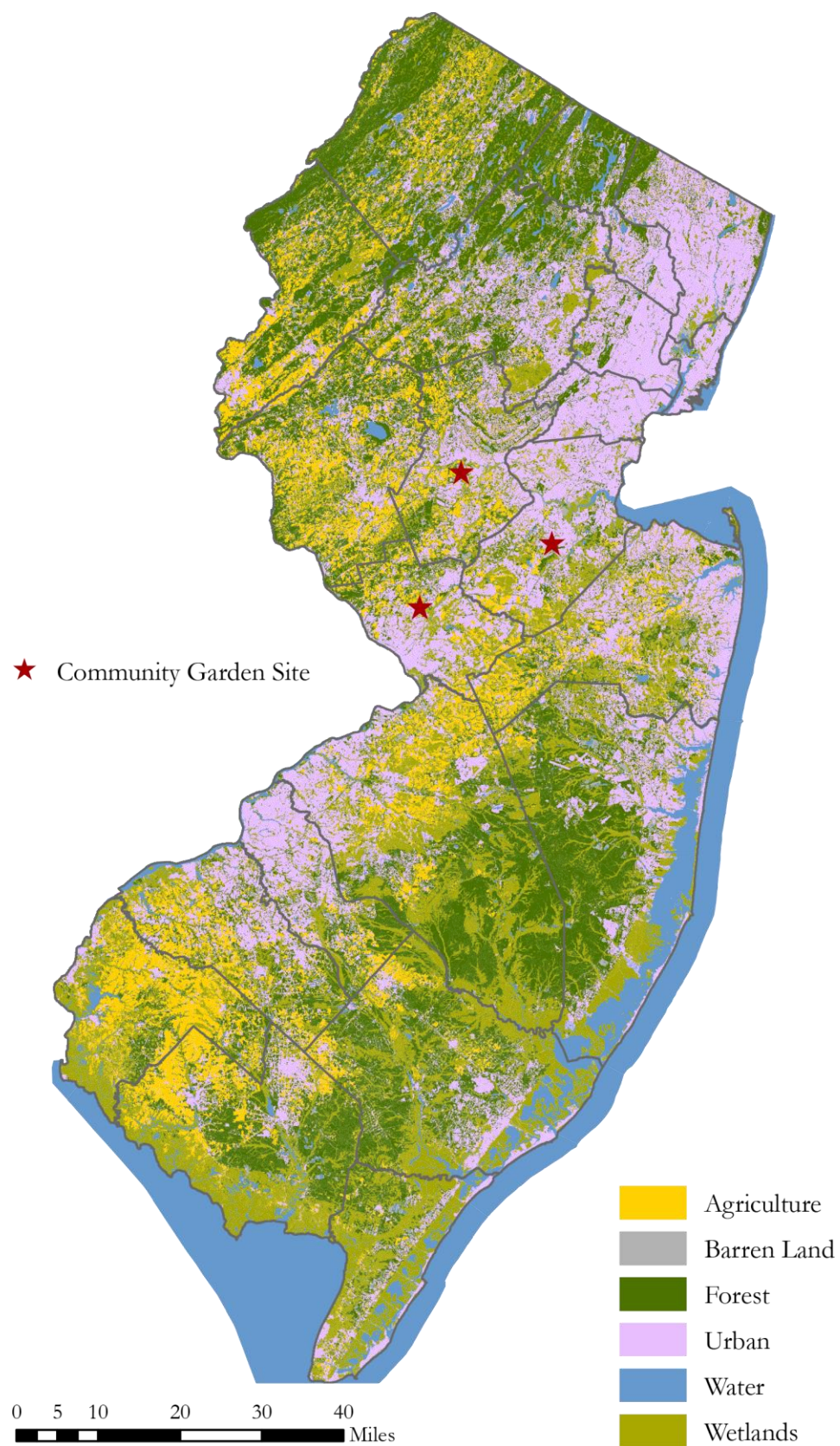


Figure 3 Land cover and usage for the state of New Jersey. Data source: NJDEP, OIRM, BGIS, 2007 using ArcMap 10.1

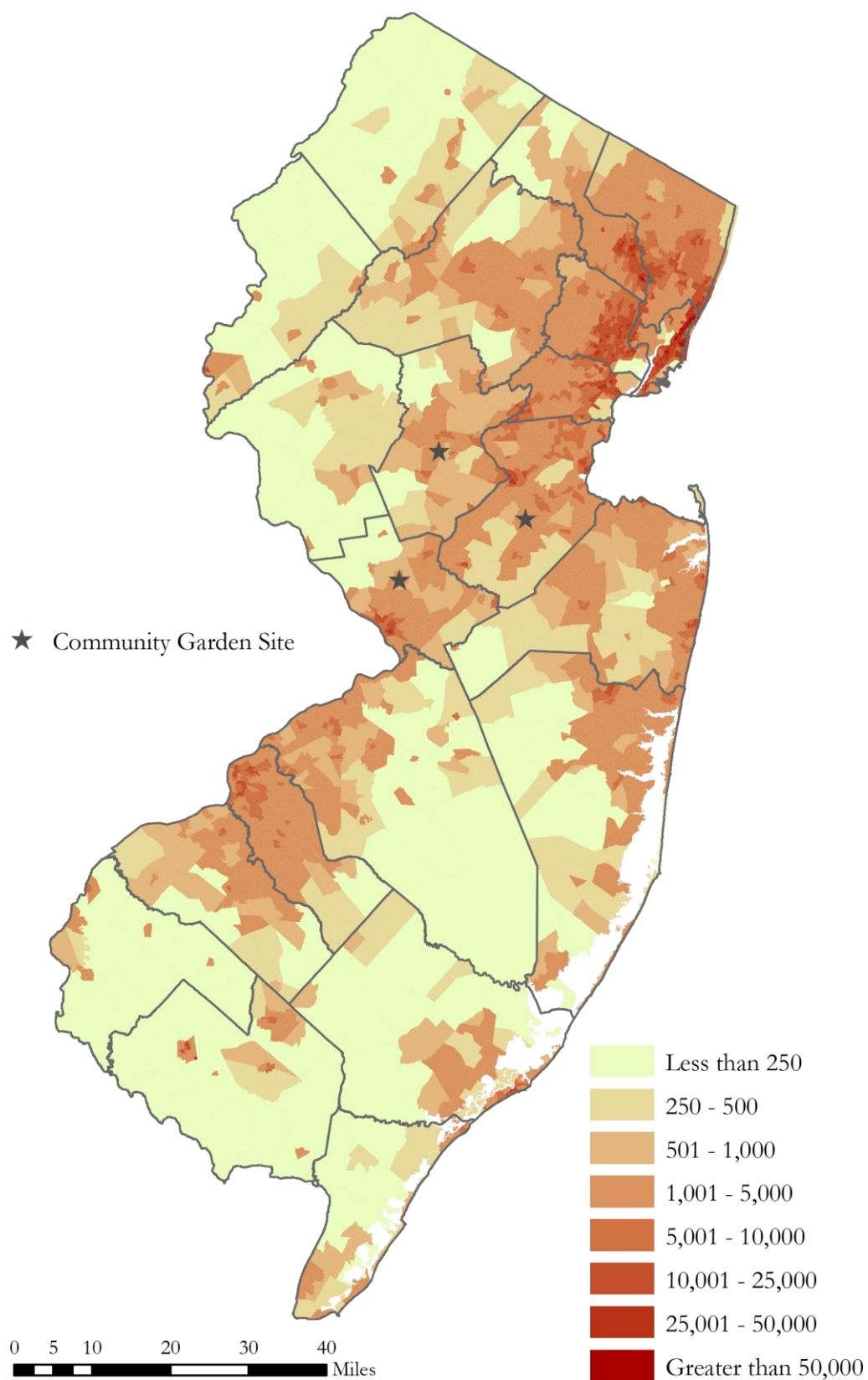


Figure 4 Population density of the state of New Jersey shown by census tract and organized by county. Data source: United States Census, 2010 (Esri Business Analyst) using ArcMap 10.1

All three gardens are located within census tracts that have a population density range within which the state's average falls (between 1,000 and 5,000 people per square mile); however, the majority of surrounding areas are of a significantly lower density, primarily in the range of 500 to 1,000 people per square mile. Hillsborough<sup>57</sup> has a population density of 702.3 persons per square mile, East Brunswick Township has a population density of 2,189.6 persons per square mile, and Lawrence Township has a population density of 3,731.1 persons per square mile. This is significant in defining the locations of the gardens as suburban as opposed to the more densely populated urban centers indicated by the darkest red areas on the map. For instance, the City of Trenton boasts a population density of 11,102.6 persons per square mile, and Union City claims 52,326.7 persons per square mile.<sup>58</sup>

### **Median Household Income (New Jersey, 2010)**

Figure 5 displays median household income based on the 2010 census. Statewide, the median household income is \$71,637.<sup>59</sup> The range of incomes is distributed as diversely as population density; however, there is no direct correlation between the two. When we look at the locations of the gardens in terms of income, we find that all three cities report a median household income significantly greater than the state average. Hillsborough<sup>60</sup> is reported at \$105,429, East Brunswick Township at \$92,120, and Lawrence Township at \$86,009.<sup>61</sup> While the map shows that there are also census tracts in near proximity to the gardens that fall beneath the state average, by and large, the surrounding areas are above the state average.

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<sup>57</sup> The majority of gardeners at Duke Farms come from Hillsborough, though the garden is open to any residents of Somerset County. The county itself has a population density of 1,071.7 persons per square mile.

<sup>58</sup> <[www.quickfacts.census.gov](http://www.quickfacts.census.gov)>, accessed 12 January 2014.

<sup>59</sup> <[www.quickfacts.census.gov](http://www.quickfacts.census.gov)>, accessed 12 January 2014.

<sup>60</sup> Somerset County reports a median household income of \$98,571. *Ibid.*

<sup>61</sup> *Ibid.*



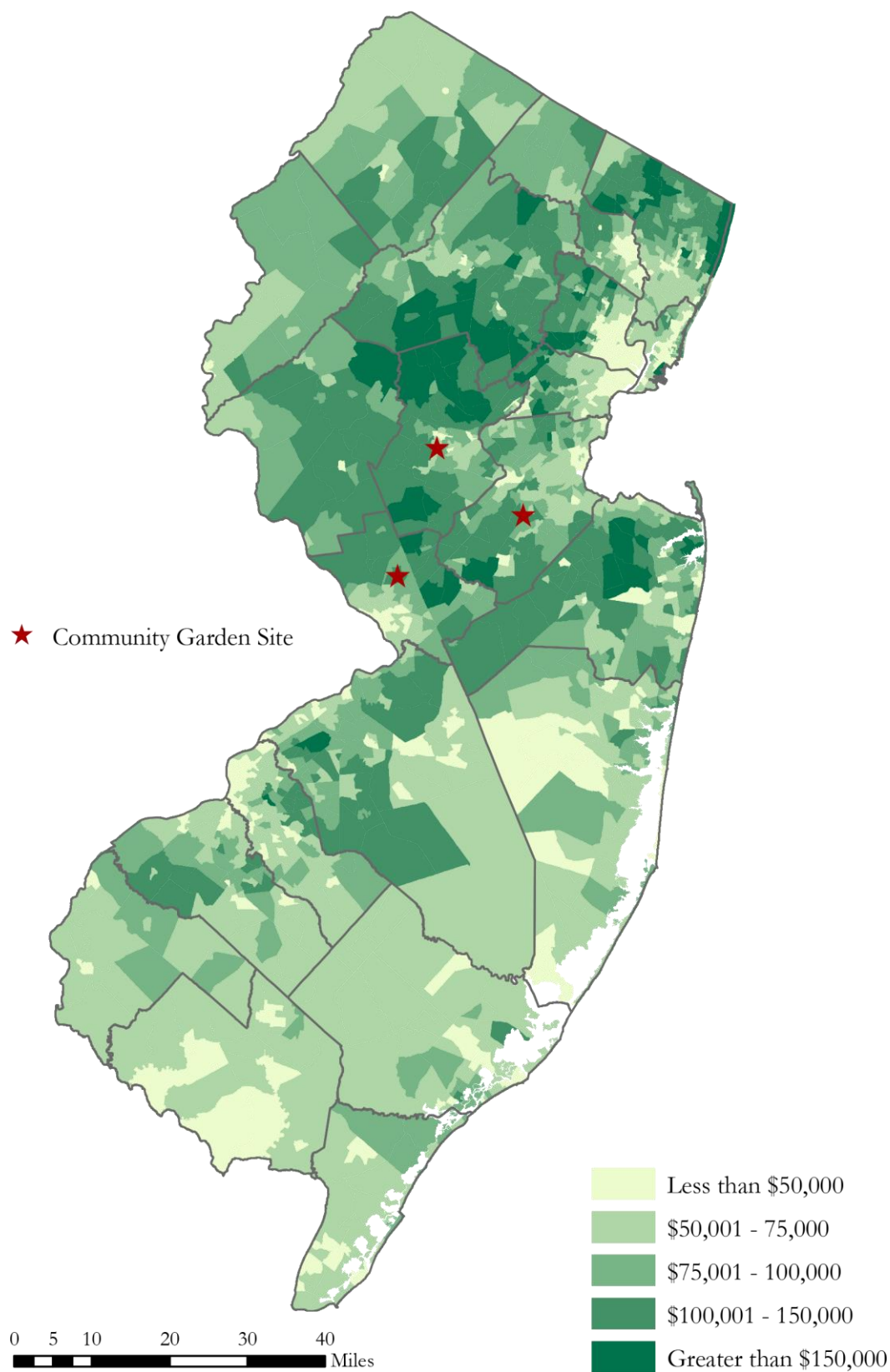


Figure 5 Median household income for the state of New Jersey shown by census tract and organized by county. Data source: United States Census, 2010 (Esri Business Analyst) using ArcMap 10.1

### **Owner and Renter Occupied Housing (New Jersey, 2010)**

Figures 6 and 7 portray data regarding owner and renter occupied housing statewide. According to the 2010 census, New Jersey data shows that 59.17% of housing is owner occupied and 31.29% renter occupied.<sup>62</sup> When we look at a breakdown of this data as it relates to the cities in which the gardens are located we find that Hillsborough<sup>63</sup> has an owner occupancy rate of 79.39% and a renter occupied rate of 13.94%. East Brunswick Township has an owner occupancy rate of 84.07% and a renter occupied rate of 15.92%, and Lawrence Township an owner occupancy rate of 75% and a renter occupied rate of 25%. From this data, it is significant that a much higher percentage of occupants own the unit they inhabit. However, this data does not include the percentage of units that are owned in a condo association where yards are limited and very strict rules may apply in terms of gardening. These types of restrictions, which are difficult to map, seem to play a significant role in community garden involvement and this will be discussed in more detail in chapter V.

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<sup>62</sup> There is also 9.55% vacancy.

<sup>63</sup> Somerset County has an owner occupancy rate of 78.6%. <[www.quickfacts.census.gov](http://www.quickfacts.census.gov)>, accessed 12 January 2014.

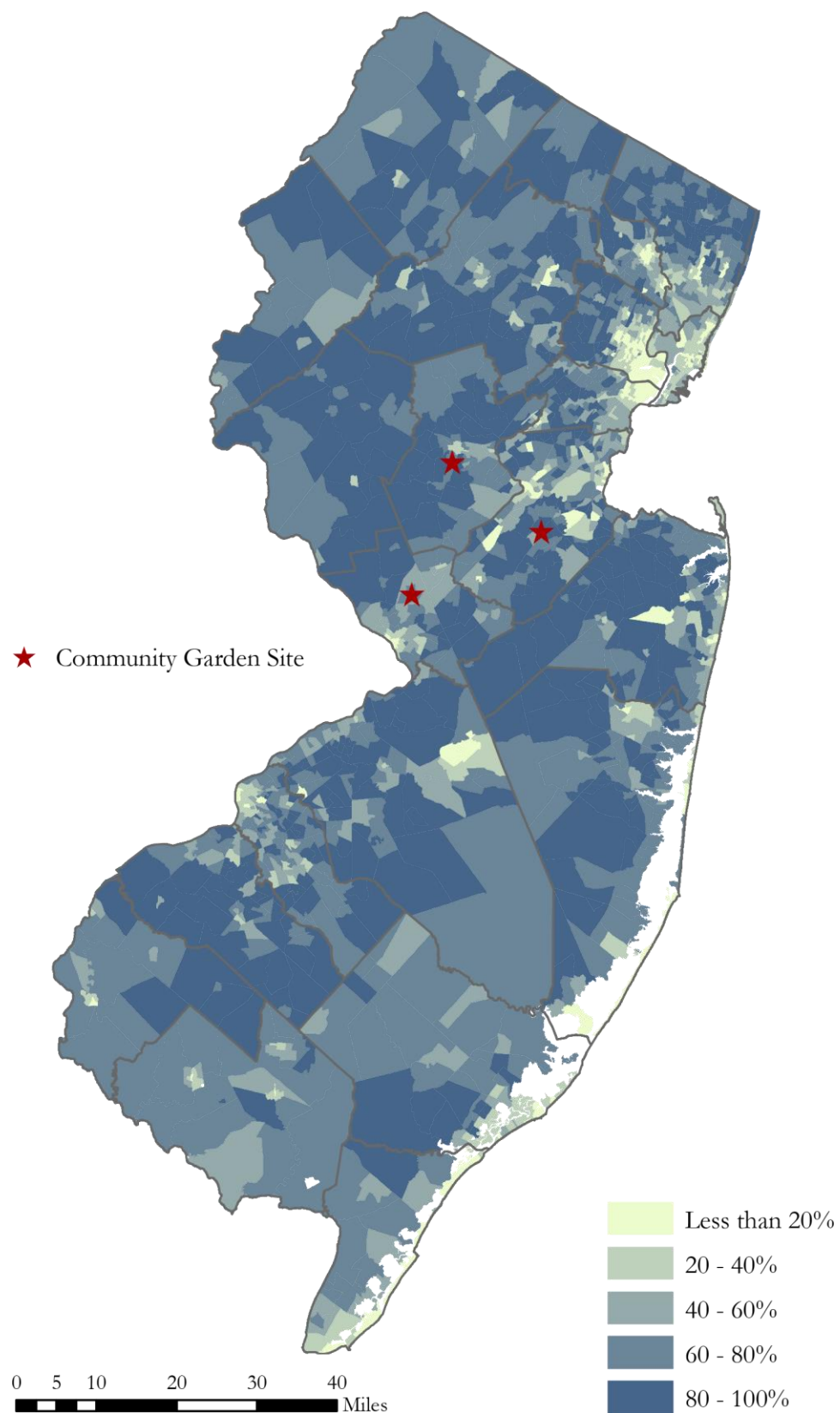


Figure 6 Owner occupancy rate for the state of New Jersey shown by census tract and organized by county. Data source: United States Census, 2010 (Esri Business Analyst) using ArcMap 10.1

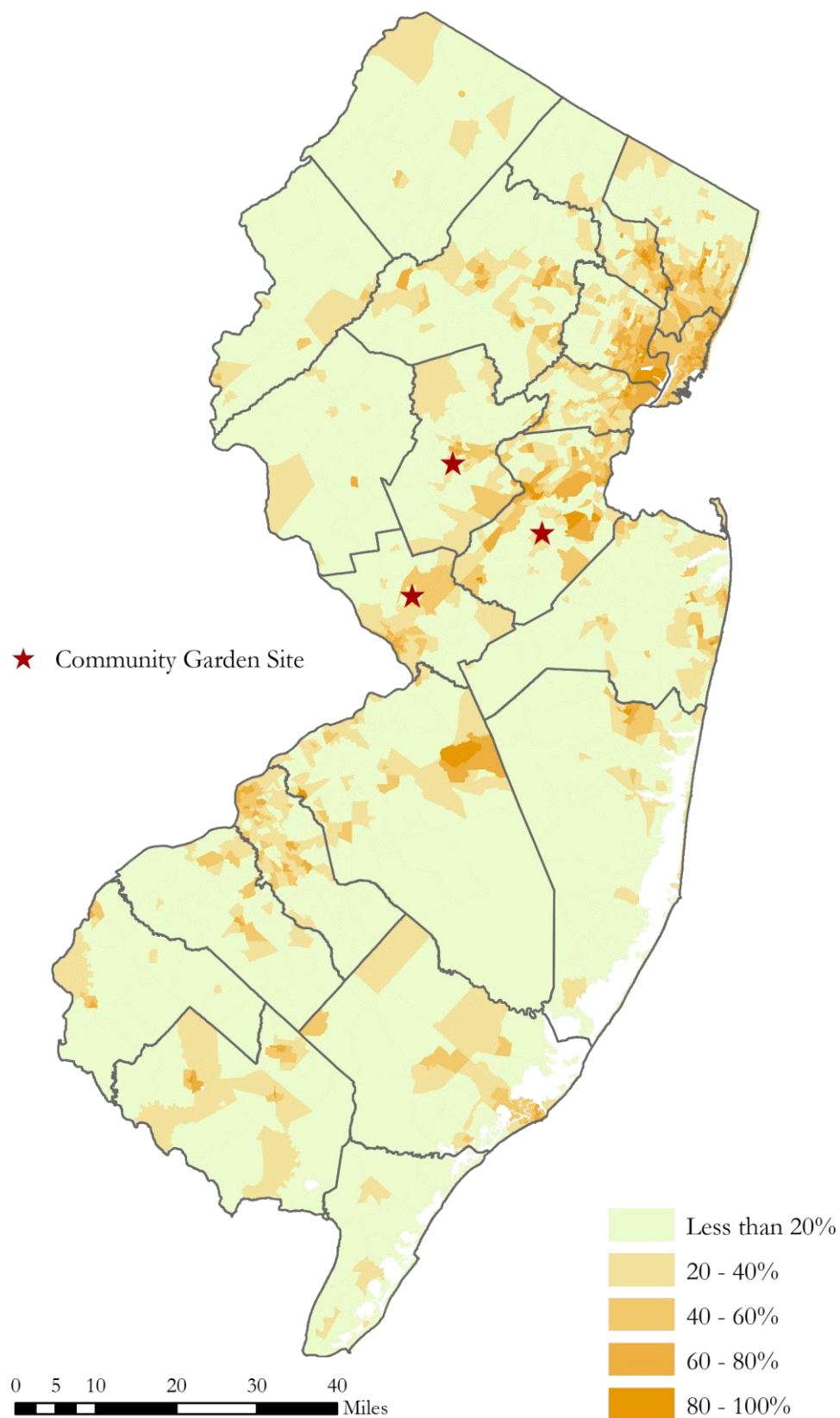


Figure 7 Renter occupancy rate for the state of New Jersey shown by census tract and organized by county. Data source: United States Census, 2010 (Esri Business Analyst) using ArcMap 10.1

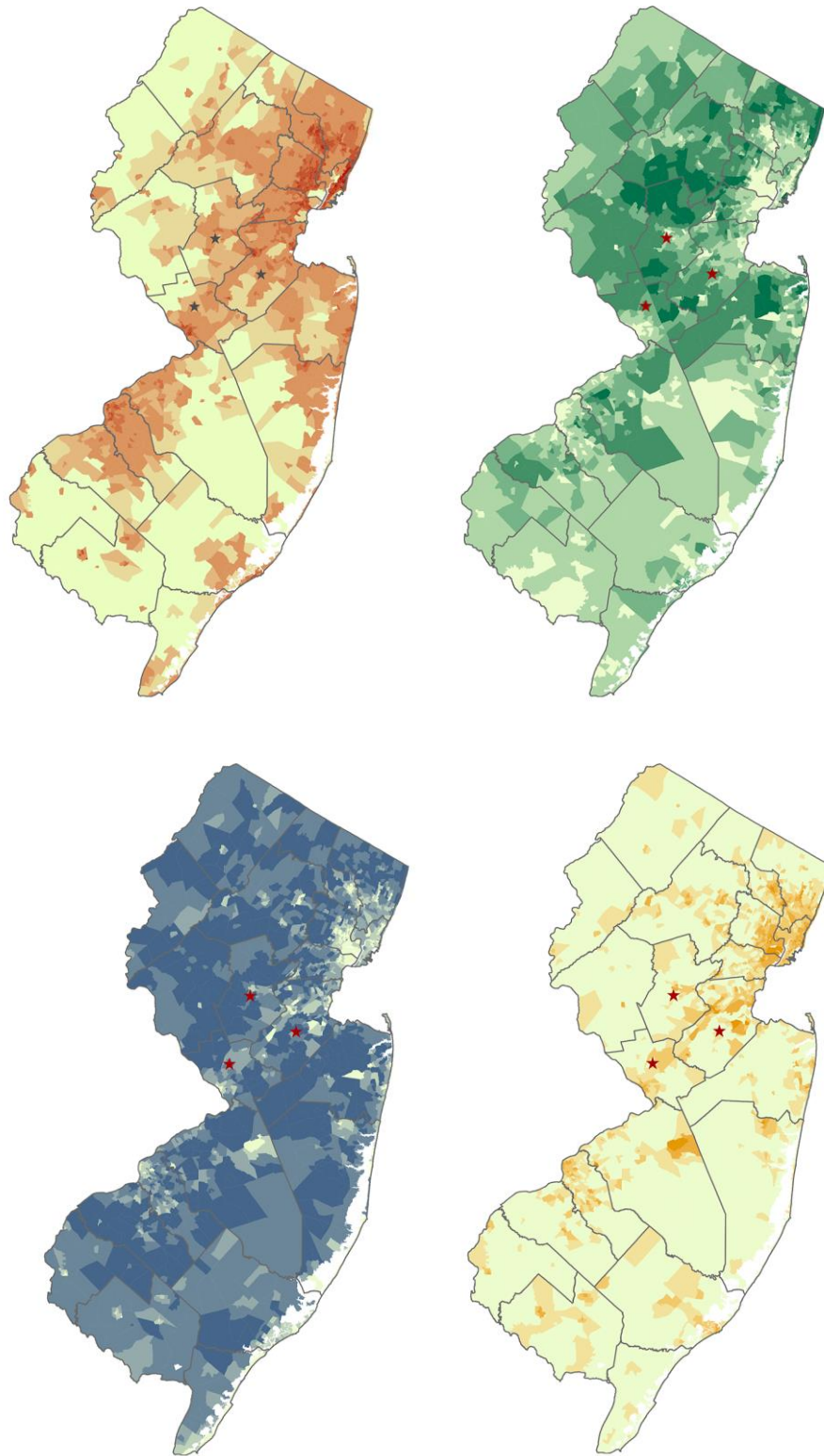


Figure 8 A comparative look at population density, median household income, and owner and renter occupied housing for the State of New Jersey. Data source: United States Census 2010 (Esri Business Analyst) using ArcMap 10.1

### **Racial and Ethnic Demographics (New Jersey, 2010)**

Figures 9-12 show the individual breakdown of race for the State of New Jersey and represent Asian, Black, Hispanic and White populations by census tract. According to the 2010 census for the state as a whole, the Asian population is 9.0%, the black population is 14.7%, the Hispanic population is 18.5%, and the non-Latino white population is 58.2%. In comparison, the racial profile of Hillsborough<sup>64</sup> is 12.38% Asian, 4.59% black, 7.55% Hispanic, and 78.6% white. East Brunswick Township's population is 22.8% Asian, 3.98% black, 6.7% Hispanic, and 69.36% white. Lawrence Township's population is 9% Asian, 9.2% black, 6% Hispanic, and 76.6% white. All three gardens are situated within areas that have significantly higher populations of white persons than the state average, and two of the three have Asian populations significantly higher than the state average.

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<sup>64</sup> Somerset County has the following racial profile: 60.8% white, 13.5% Hispanic, 15.4% Asian, and 9.6% black. <[www.quickfacts.census.gov](http://www.quickfacts.census.gov)>, accessed 12 January 2014.



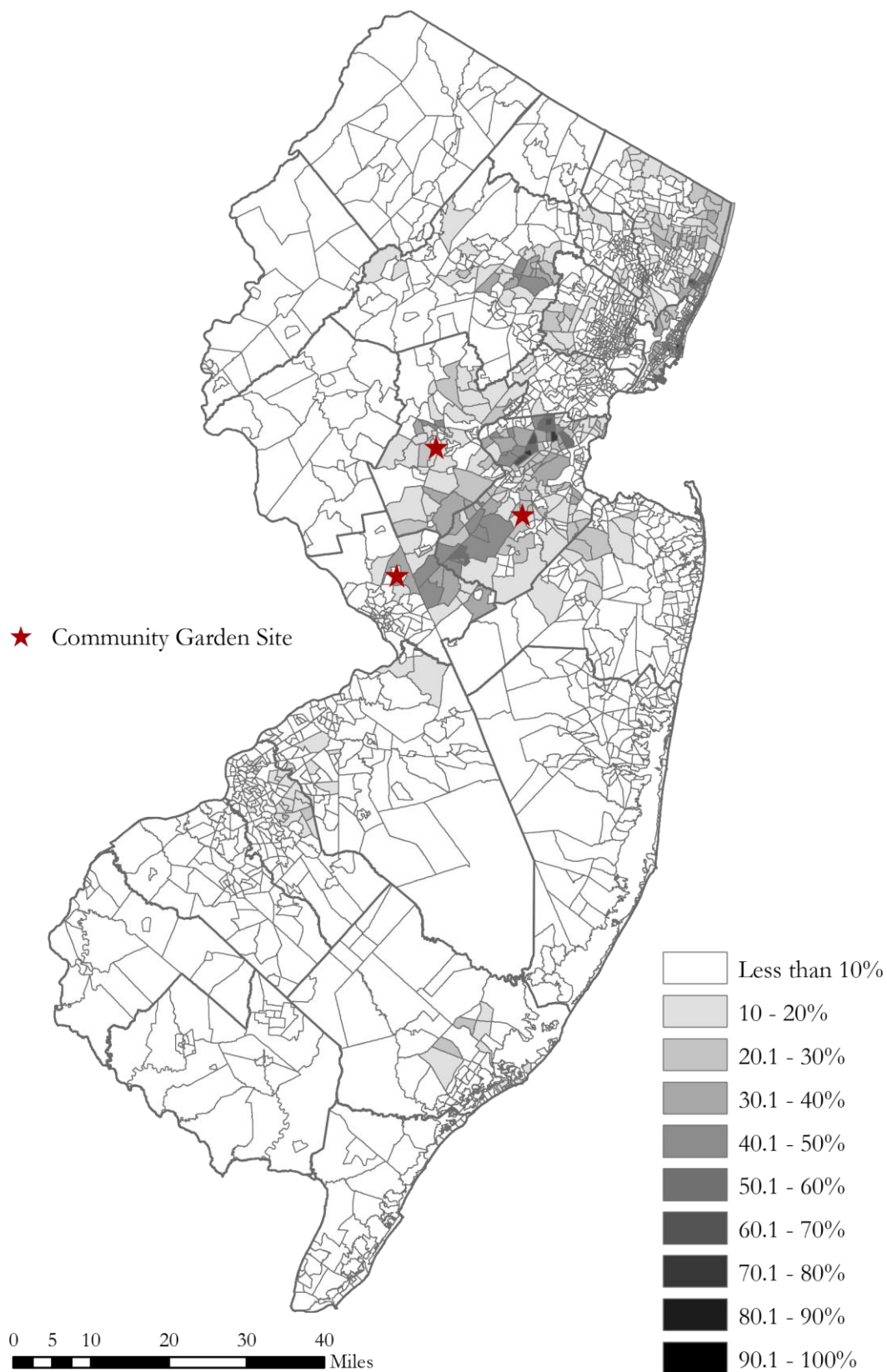


Figure 9 Asian population (as a percentage of the total population) by census tract. Data source: United States Census, 2010 (Esri Business Analyst) using ArcMap 10.1

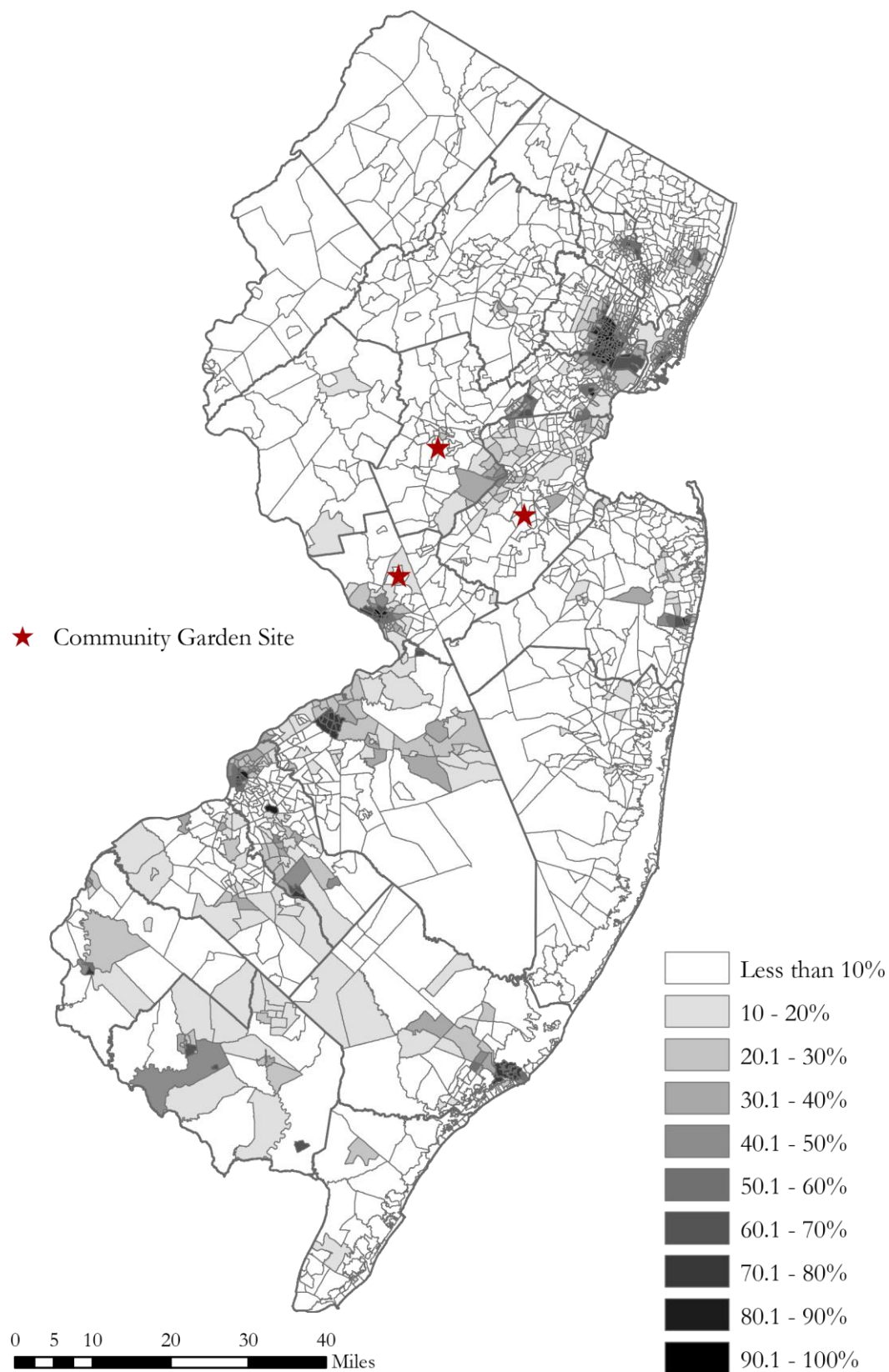


Figure 10 Black population (as a percentage of the total population) by census tract. Data source: United States Census, 2010 (Esri Business Analyst) using ArcMap 10.1



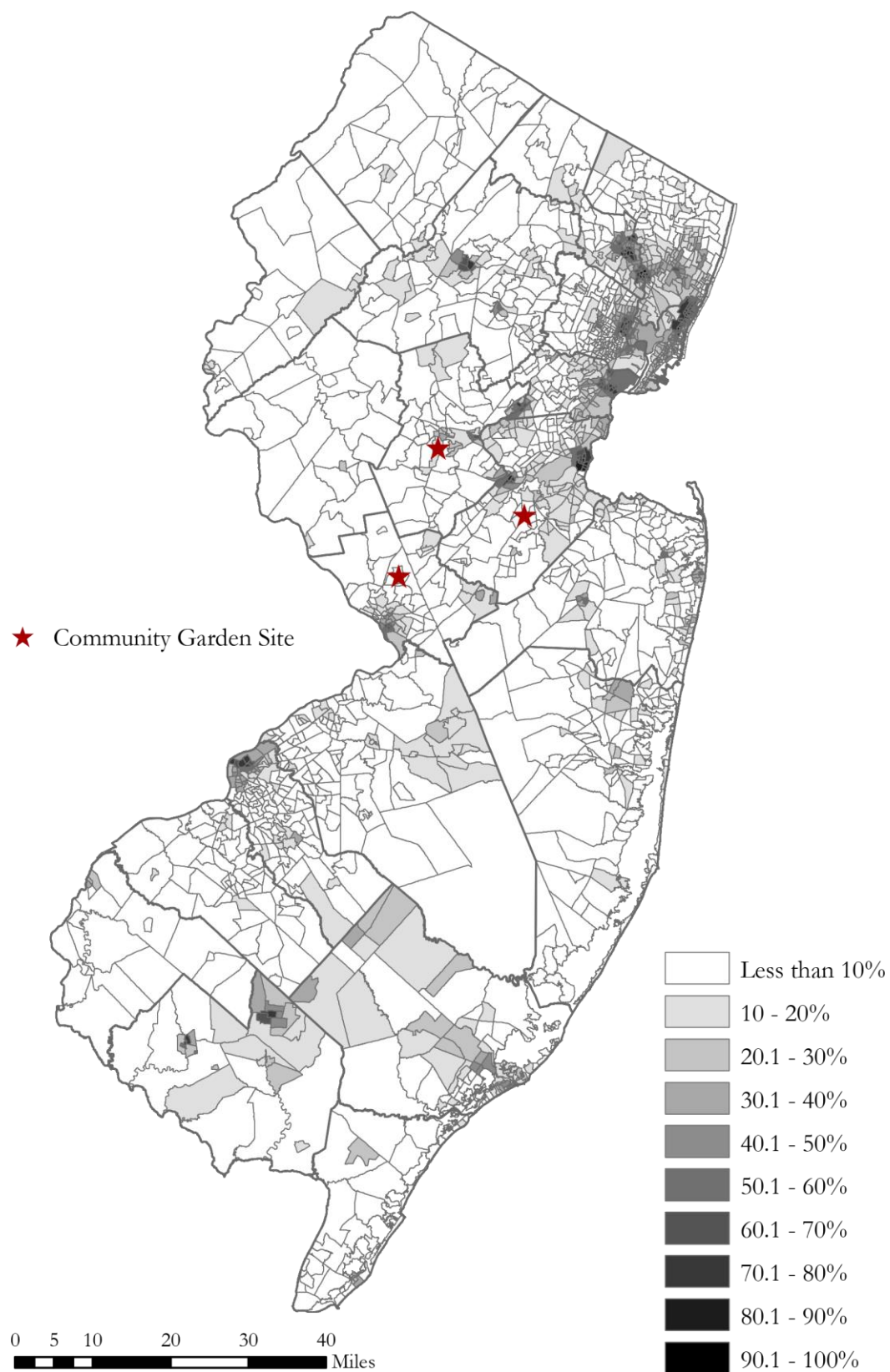


Figure 11 Hispanic population (as a percentage of the total population) by census tract. Data source: United States Census, 2010 (Esri Business Analyst) using ArcMap 10.1

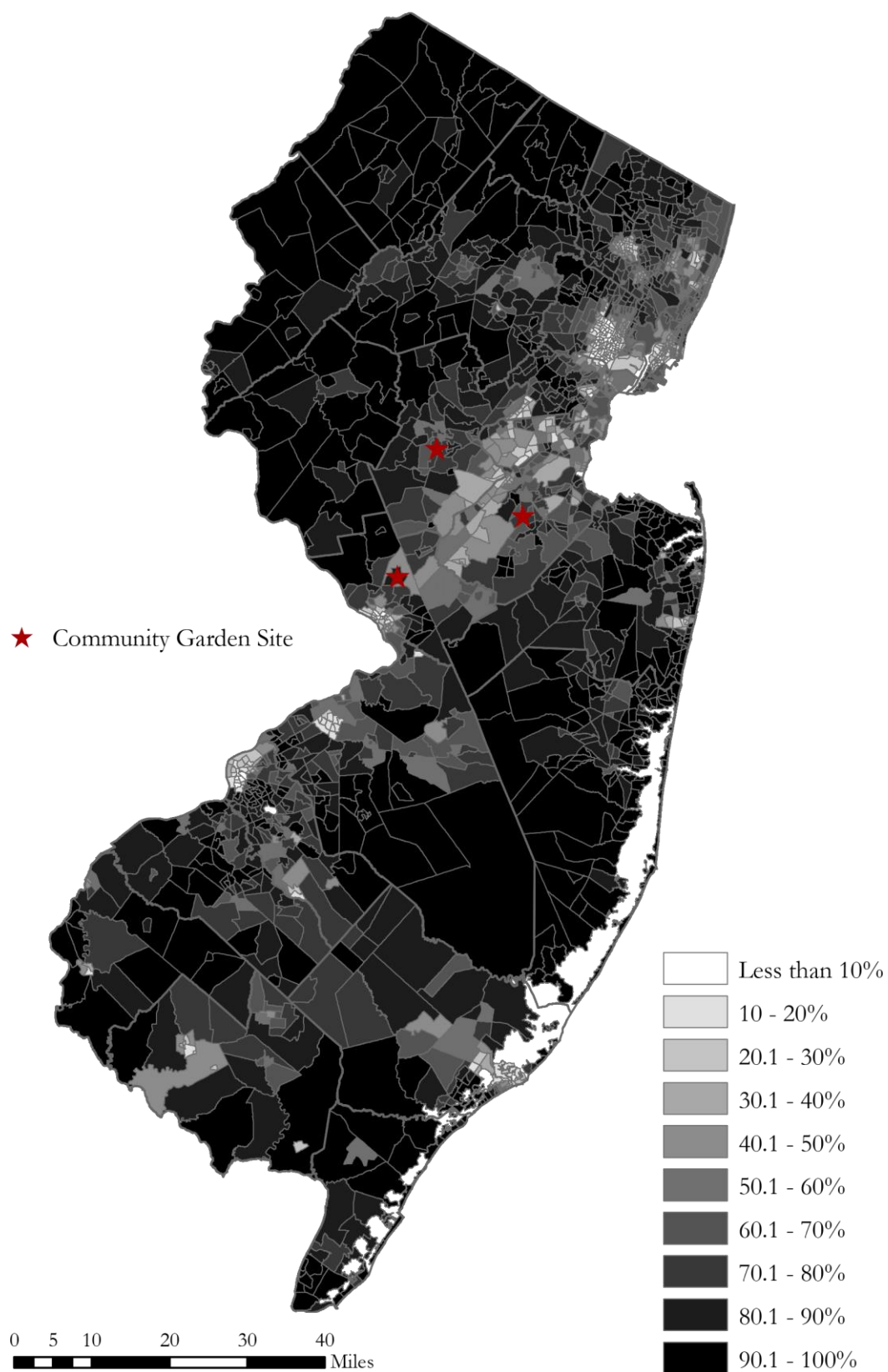


Figure 12 White population (as a percentage of the total population) by census tract. Data source: United States Census, 2010 (Esri Business Analyst) using ArcMap 10.1

### **Gardener Residences (Duke Farms and East Brunswick Community Gardens)**

Figure 13 maps the residences of persons who garden at Duke Farms, which is open to those residing or working within Somerset County.<sup>65</sup> The largest group of gardeners (106 of 232) are coming from the town of Hillsborough, to the south of the garden, and the second largest group (67 of 232) is coming from Bridgewater, to the north. The majority of the gardeners live within approximately four miles of the garden. The closest residence is located just over one mile from the garden, and the furthest distance an individual travels from residence to garden is 19.35 miles.<sup>66</sup>

Similarly, figure 14 maps the residences of persons who garden at East Brunswick Community Garden.<sup>67</sup> This garden is only open to those residing in the township of East Brunswick, so it is not surprising that the majority of gardeners are traveling a shorter distance than is the case for Duke Farms. Most East Brunswick gardeners are coming from within 1.5 miles of the garden. The shortest distance traveled is three-tenths of a mile from the site, and the longest distance is 4.1 miles.

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<sup>65</sup> 232 addresses were provided by Duke Farms in December of 2013. The discrepancy between the number of addresses provided and the number of plots available at the garden (440) can be accounted for to some extent because one individual can have more than one plot. At the time the data was provided, there were still approximately fifty slots that had opened up following the 2013 gardening season, and this vacating of plots also accounts for the discrepancy to some degree.

<sup>66</sup> This residence is not shown on the map, because it is located beyond the county boundary. The furthest distance an individual travels within the county is 12.8 miles. These distances are measured as the crow flies, not by road mileage.

<sup>67</sup> This data was provided in October of 2013 by the East Brunswick Community Garden director. The list includes 260 addresses. Any addresses that are listed twice are only mapped once. Since that time, it is likely that there has been some fluctuation, but in general, the data should give a good indication as to how far and from where the gardeners are traveling.

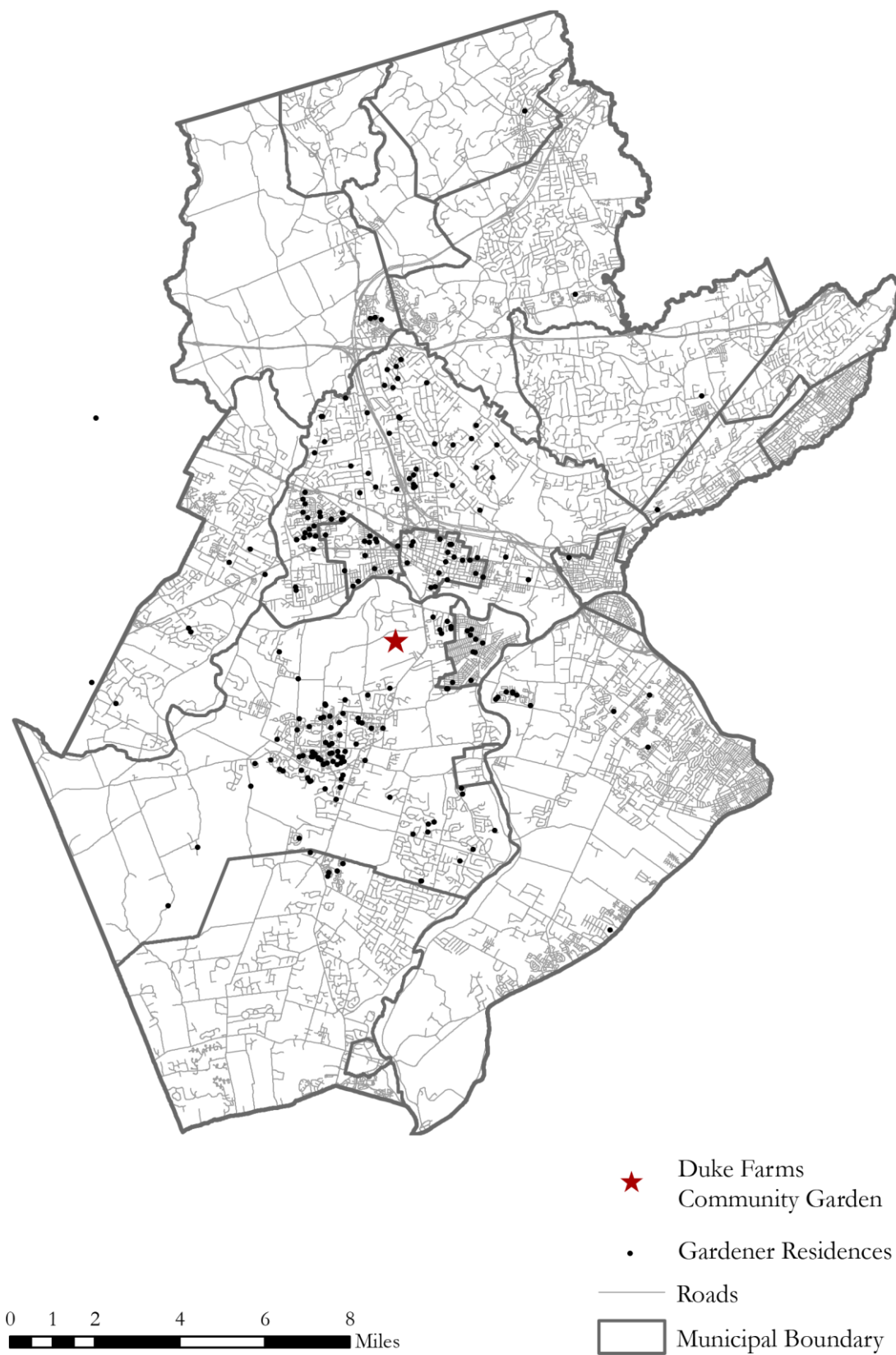


Figure 13 Gardener residences for Duke Farms Community Garden, Somerset County, New Jersey. Data source: NJOT, NJDOT using ArcMap 10.1. Addresses provided by Duke Farms Community Garden, January 2014.

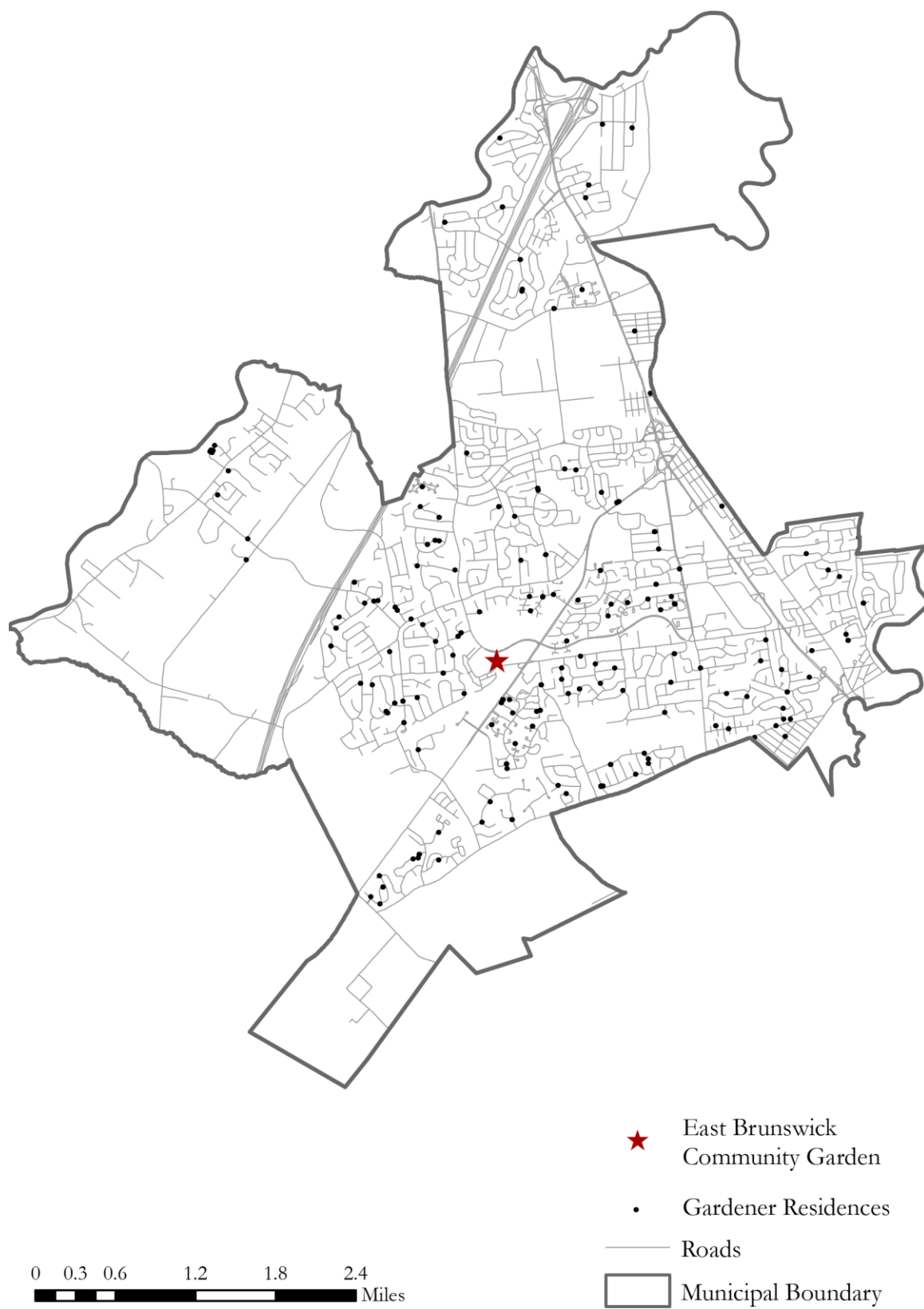


Figure 14 Gardener residences for East Brunswick Community Garden, East Brunswick Township, New Jersey. Data source: NJOIT, NJDOT using ArcMap 10.1. Addresses provided by East Brunswick Community Garden, October 2013.



**Duke Farms Community Garden in the context of Somerset County, NJ: Land Cover and Demographic**

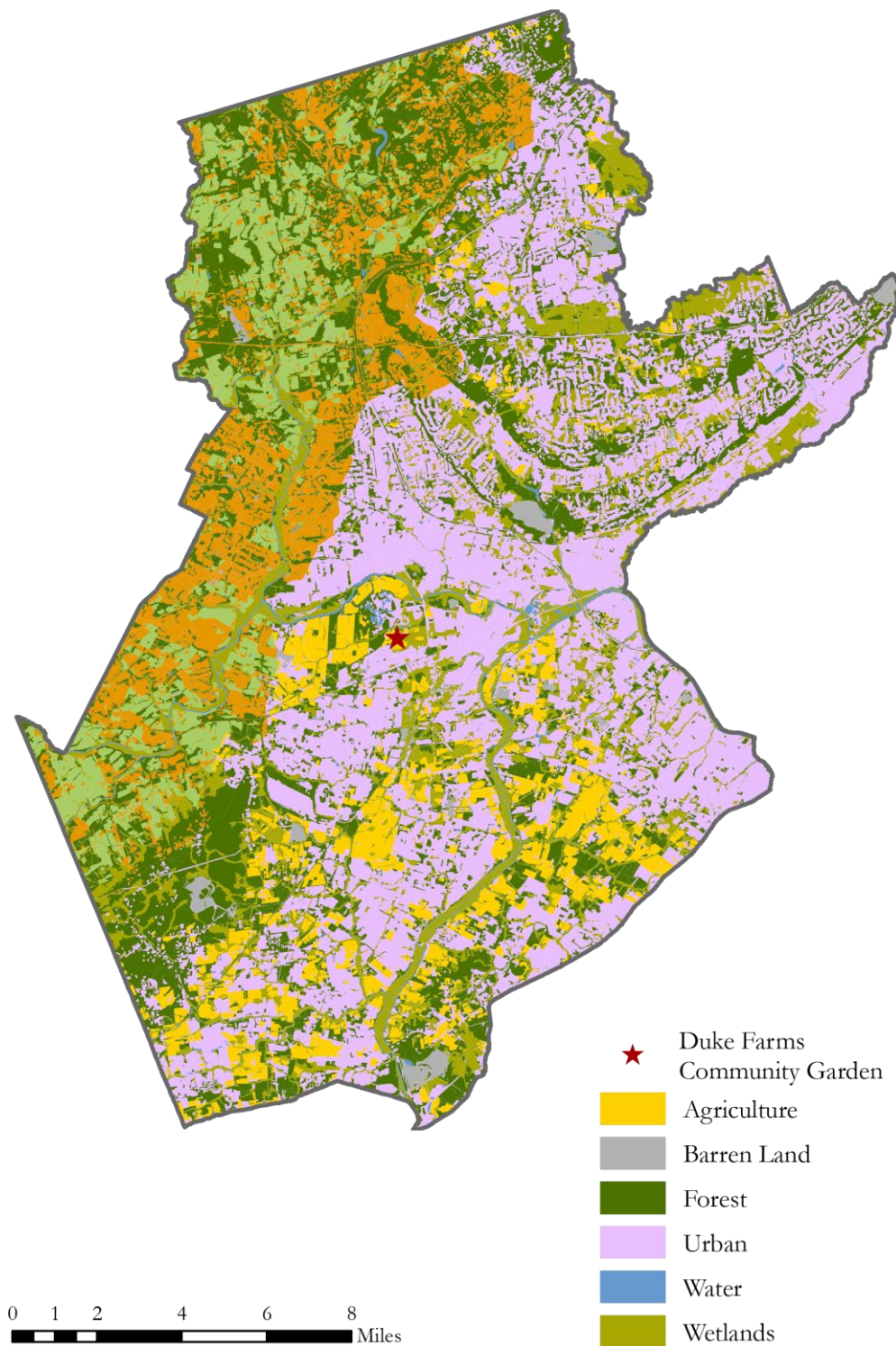


Figure 15 Land cover and usage for Somerset County, New Jersey. Data source: NJDEP, OIRM, BGIS, 2007 using ArcMap 10.1

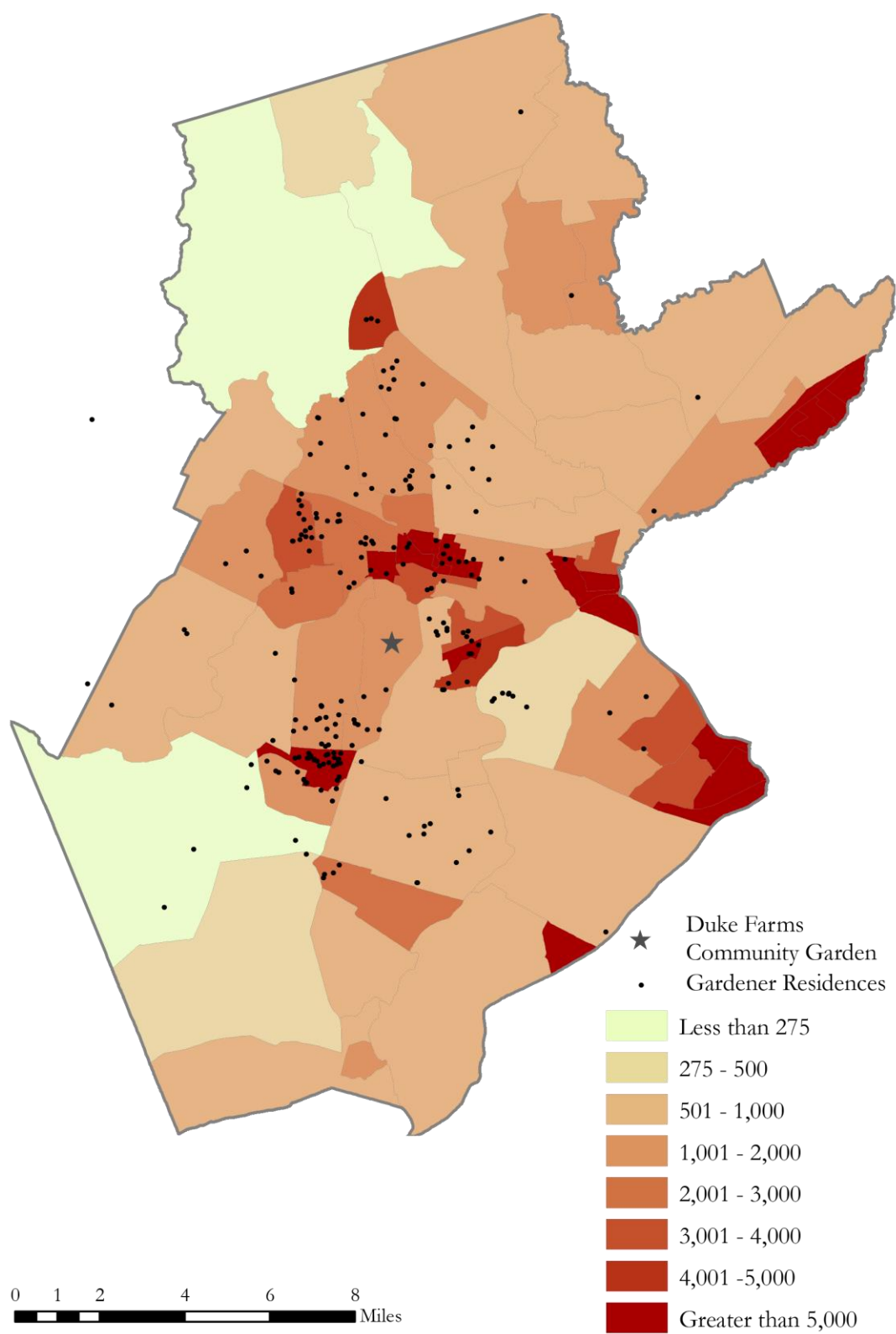


Figure 16 Population density of Somerset County, New Jersey shown by census tract. Data source: United States Census, 2010 (Esri Business Analyst) using ArcMap 10.1

### **Population Density (Somerset County, 2010)**

Figure 16 shows the population density of Somerset County as it relates to the residences of gardeners at Duke Farms. Generally speaking, gardeners are coming from census tracts in which there is a population density above 1,000 persons per square mile, and the largest clusters of individual residences are found in tracts populated by 7,500-25,000 persons per square mile. Very few gardeners are coming from areas of lower population density, a fact that suggests access to land might play a role in participating at the garden.

### **Median Household Income (Somerset County, 2010)**

Figure 17 represents the median household income of Somerset County. This map provides an interesting comparison between population density and income. As one can see, there appears to be a distinct correlation between the two data sets, and to a great extent, the higher the population density, the lower the household income is. Very few gardeners reside in census tracts reporting an annual household income of less than \$50,000, and even fewer from tracts reporting an amount greater than \$150,000 annually. As a whole, Somerset County has an annual median household income of \$98,571,<sup>68</sup> and while the majority of Duke Farms' gardeners reside in tracts that range from \$75,000 to \$150,000 and thus reflect this general figure, there are also a significant number of gardeners residing in tracts that report incomes of between \$50,000 and \$75,000 and thus fall well below the county's median figure. This particular data can be helpful in determining if and to what extent pockets of lower income in suburbia influence involvement in community gardening.

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<sup>68</sup> [www.quickfacts.census.gov](http://www.quickfacts.census.gov), accessed 12 January 2014



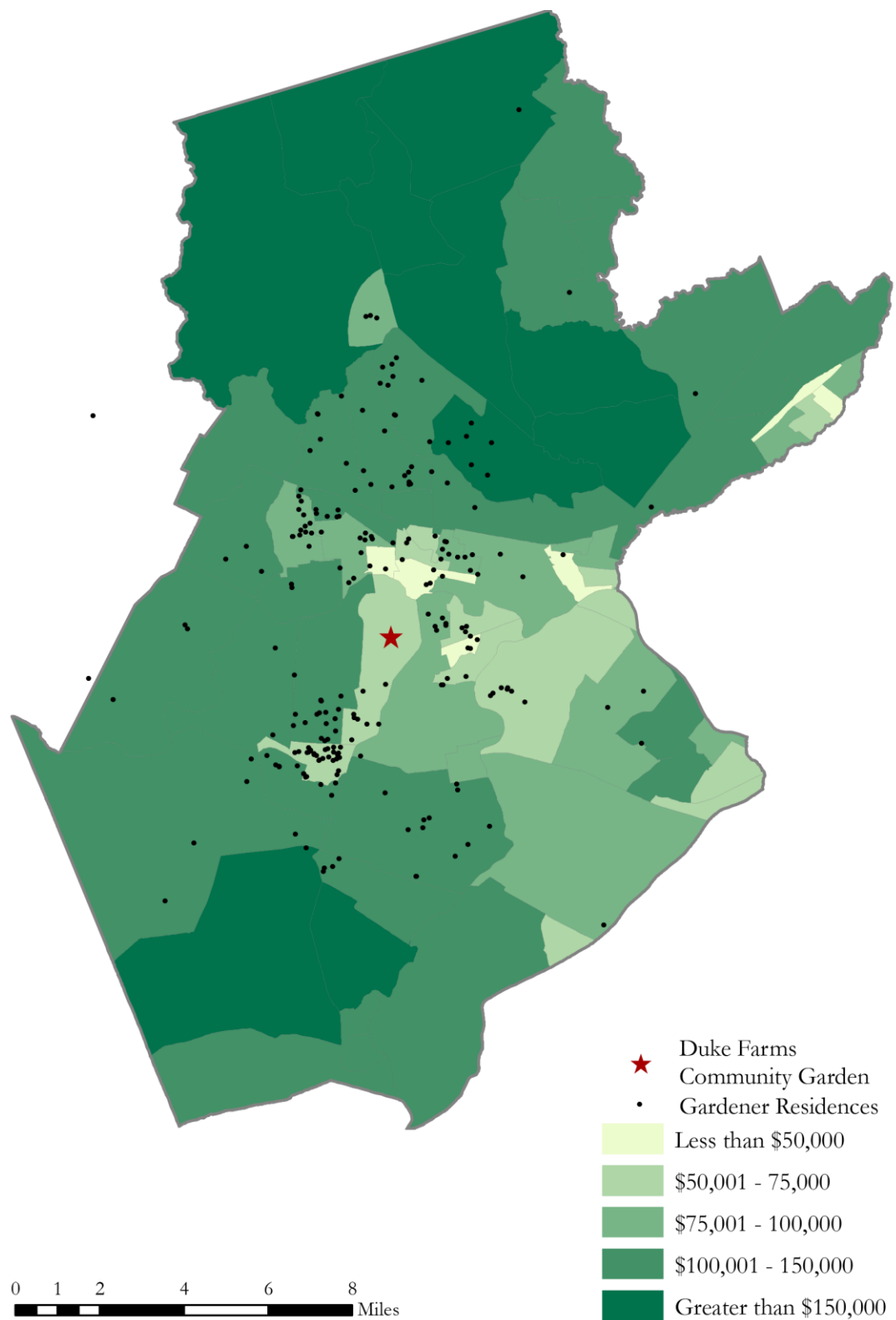


Figure 17 Median household income of Somerset County, New Jersey shown by census tract. Data source: United States Census, 2010 (Esri Business Analyst) using ArcMap 10.1

### **Owner and Renter Occupied Housing (Somerset County, 2010)**

Figures 18 and 19 represent owner and renter occupied housing in Somerset County, and provide an additional layer of data that is useful in understanding the particular demographic of the Duke Farms Community Garden population. Home ownership rates can indicate, to some extent, whether or not a resident has access to or authority over a yard, a factor that seems significant in terms of decisions related to gardening. Again, it is important to keep in mind other factors, such as condo association rules and regulations, which can affect even an owner's freedom with regards to gardening.

The maps show that the distribution of owner and renter occupied housing in Somerset County follows closely the patterns of population density and income, and generally speaking, lower population density and higher incomes correlate with a higher percentage of home ownership. A large number of gardeners come from tracts in which the home ownership rate falls near the county average of 78.6%.<sup>69</sup> However, there are once again significant outliers north of the garden in which home ownership is far below the county average.

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<sup>69</sup> [www.quickfacts.census.gov](http://www.quickfacts.census.gov), accessed 12 January 2014

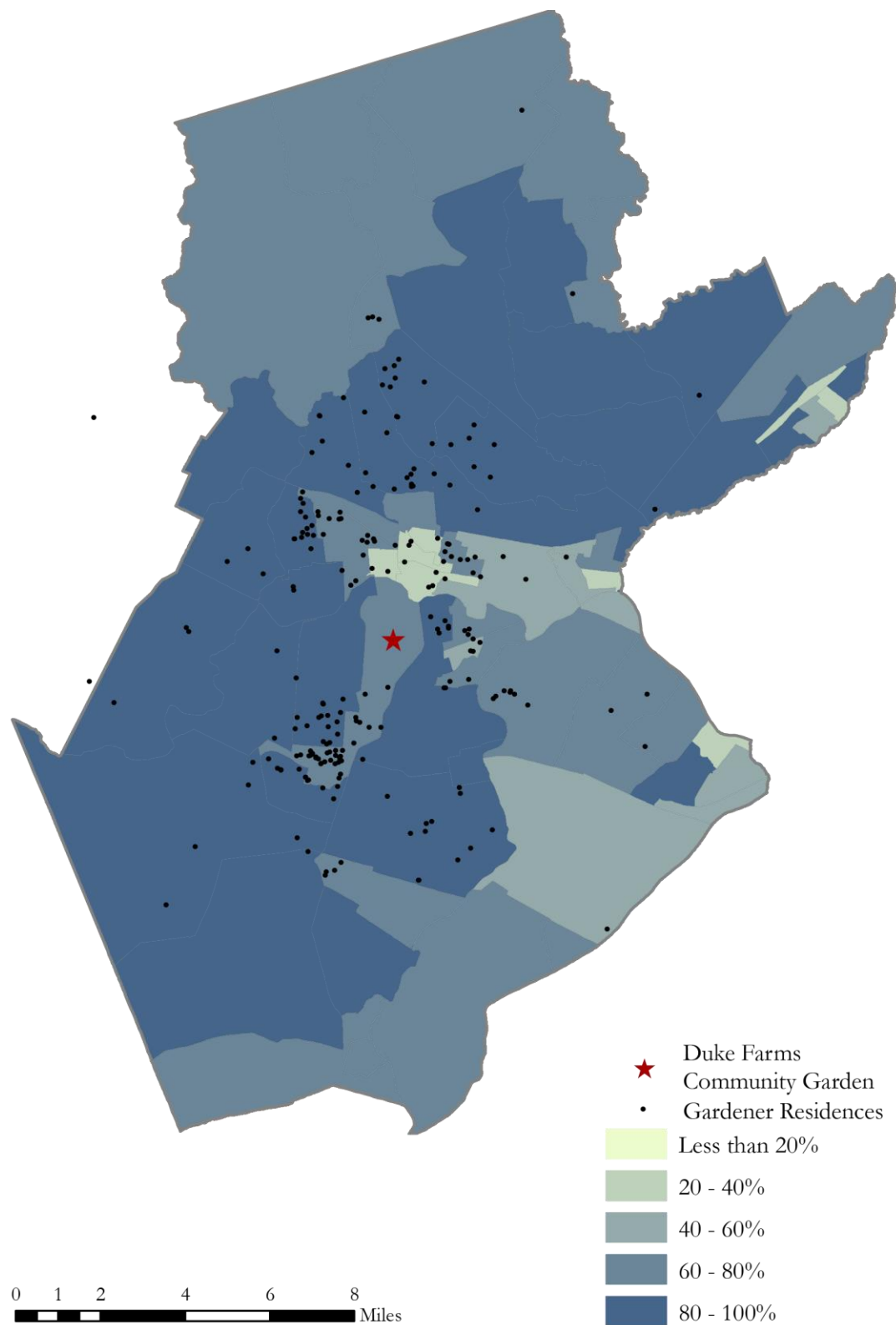


Figure 18 Owner occupancy rate of Somerset County, New Jersey shown by census tract. Data source: United States Census, 2010 (Esri Business Analyst) using ArcMap 10.1

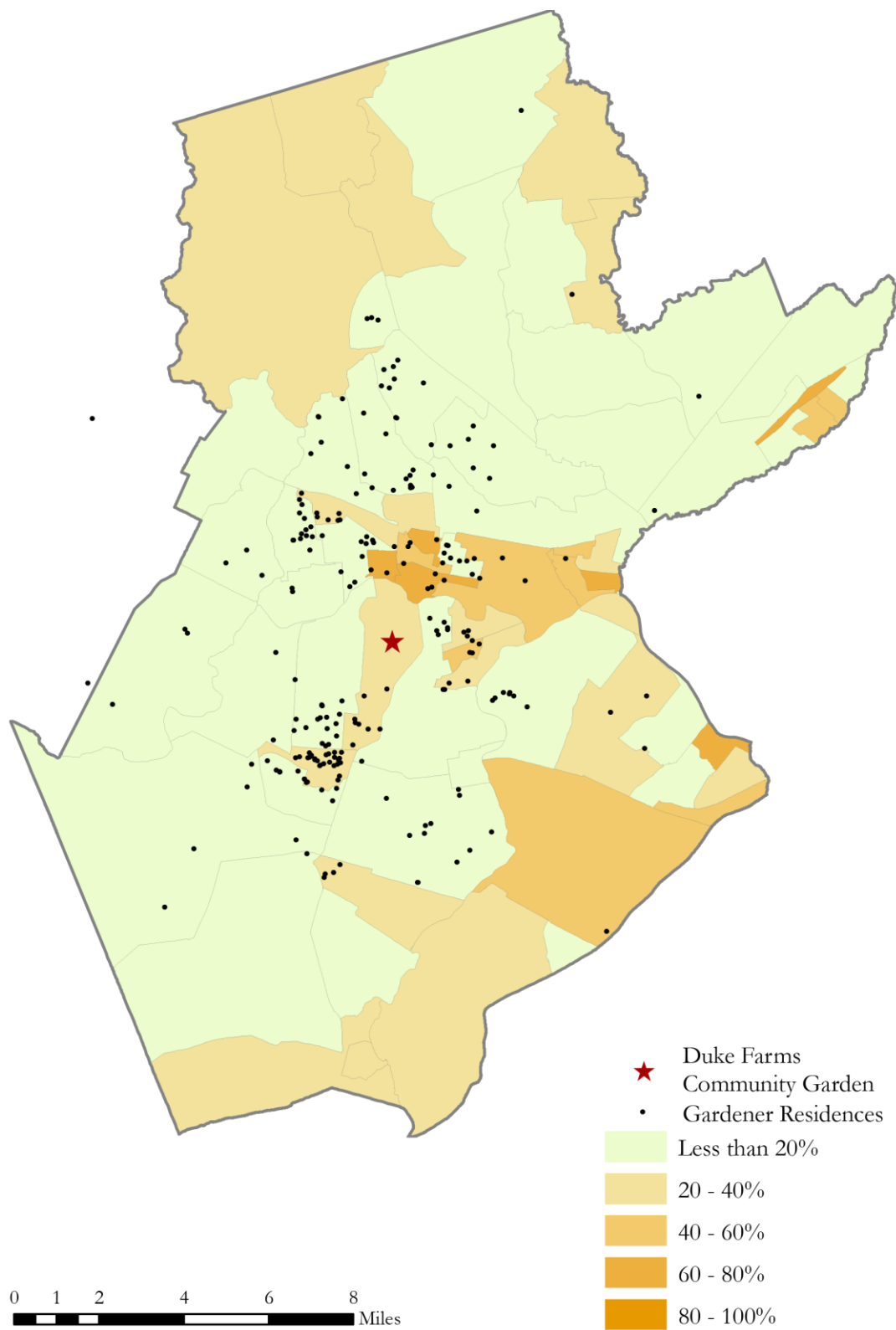


Figure 19 Renter occupancy rate of Somerset County, New Jersey shown by census tract. Data source: United States Census, 2010 (Esri Business Analyst) using ArcMap 10.1

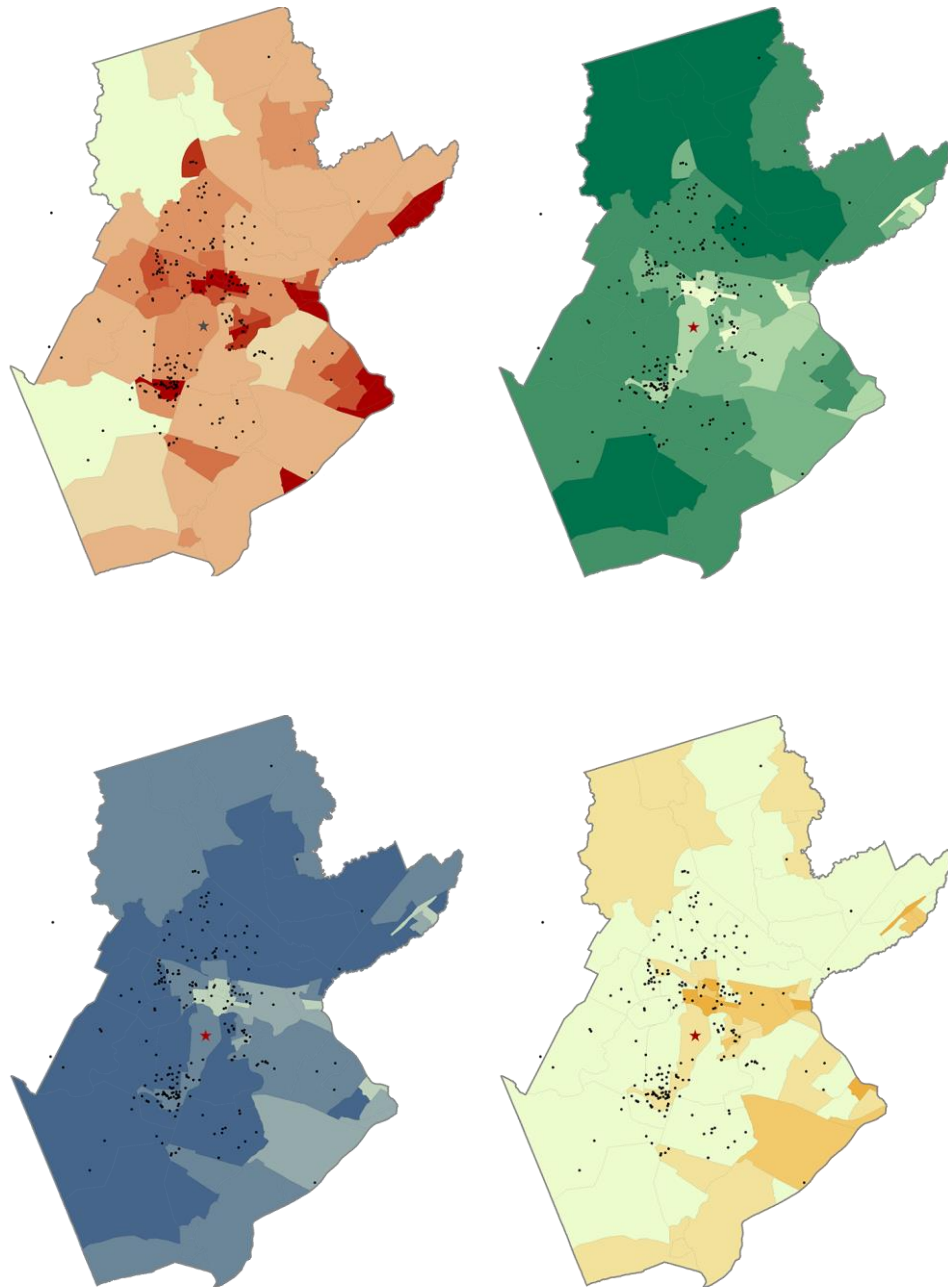


Figure 20 A comparative look at population density, median household income, and owner and renter occupied housing for Somerset County, New Jersey. Data source: United States Census, 2010 (Esri Business Analyst) using ArcMap 10.1

East Brunswick Community Garden in the Context of East Brunswick Township,  
NJ: Land Cover and Demographics

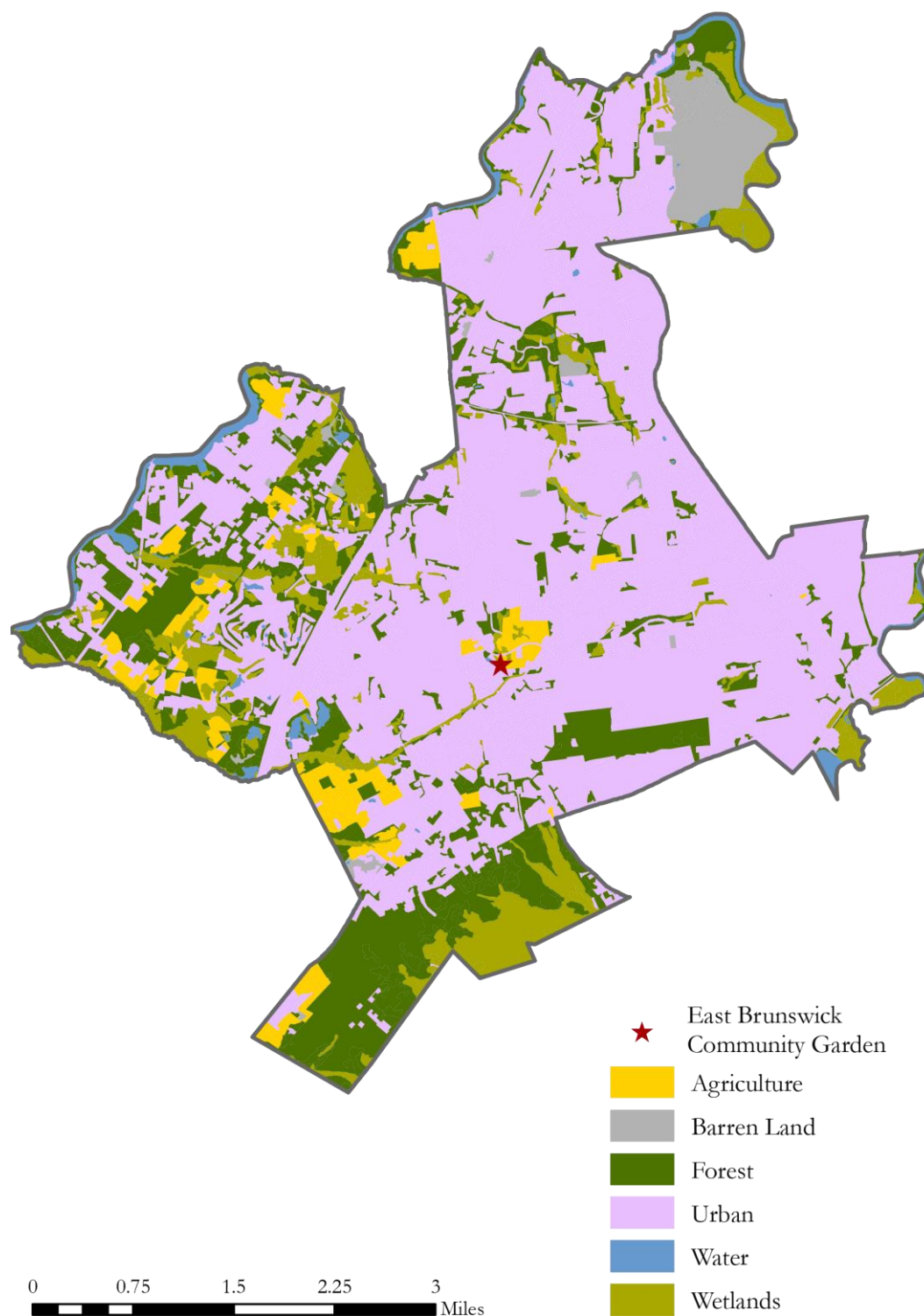


Figure 21 Land cover and usage for East Brunswick Township, New Jersey. Data source: NJDEP, OIRM, BGIS, 2007 using ArcMap 10.1

### **Population Density (East Brunswick Township, 2010)**

Figure 22 represents the population density in East Brunswick. As stated previously, the township has a population density of 2,189.6 persons per square mile, and based on this map, the population appears to have a fairly even distribution, save for the westernmost census tract, which has a population density of 500-1,000 persons per square mile. Only a handful of gardeners comes from this particular tract.

### **Median Household Income (East Brunswick Township, 2010)**

Figure 23 indicates median household income for East Brunswick, a data set that appears to offer a more nuanced variation than that of population density. Based on this map, one can see that the township itself does not include any census tracts that report a median income of either less than \$50,000 or greater than \$150,000. As shown, the residences of gardeners at the East Brunswick Community Garden are more or less evenly distributed among the income brackets that make up the range between \$50,000 and \$150,000. No direct correlation is evident with regards to population density and income level.

### **Owner and Renter Occupied Housing (East Brunswick Township, 2010)**

Figures 24 and 25 represent owner and renter occupied housing rates for East Brunswick Township. On average, the owner occupancy rate for East Brunswick is just over 84%. What we can see from these two maps is that when broken down to the census tract level, there is a fairly diverse distribution of home ownership rates, and the gardeners once again are evenly spread among them. What is surprising is that the correlation between ownership and income does not appear to be as strong as it is in the maps of Somerset County; however, this does not seem to have much statistical significance in terms of the East Brunswick gardener demographic.

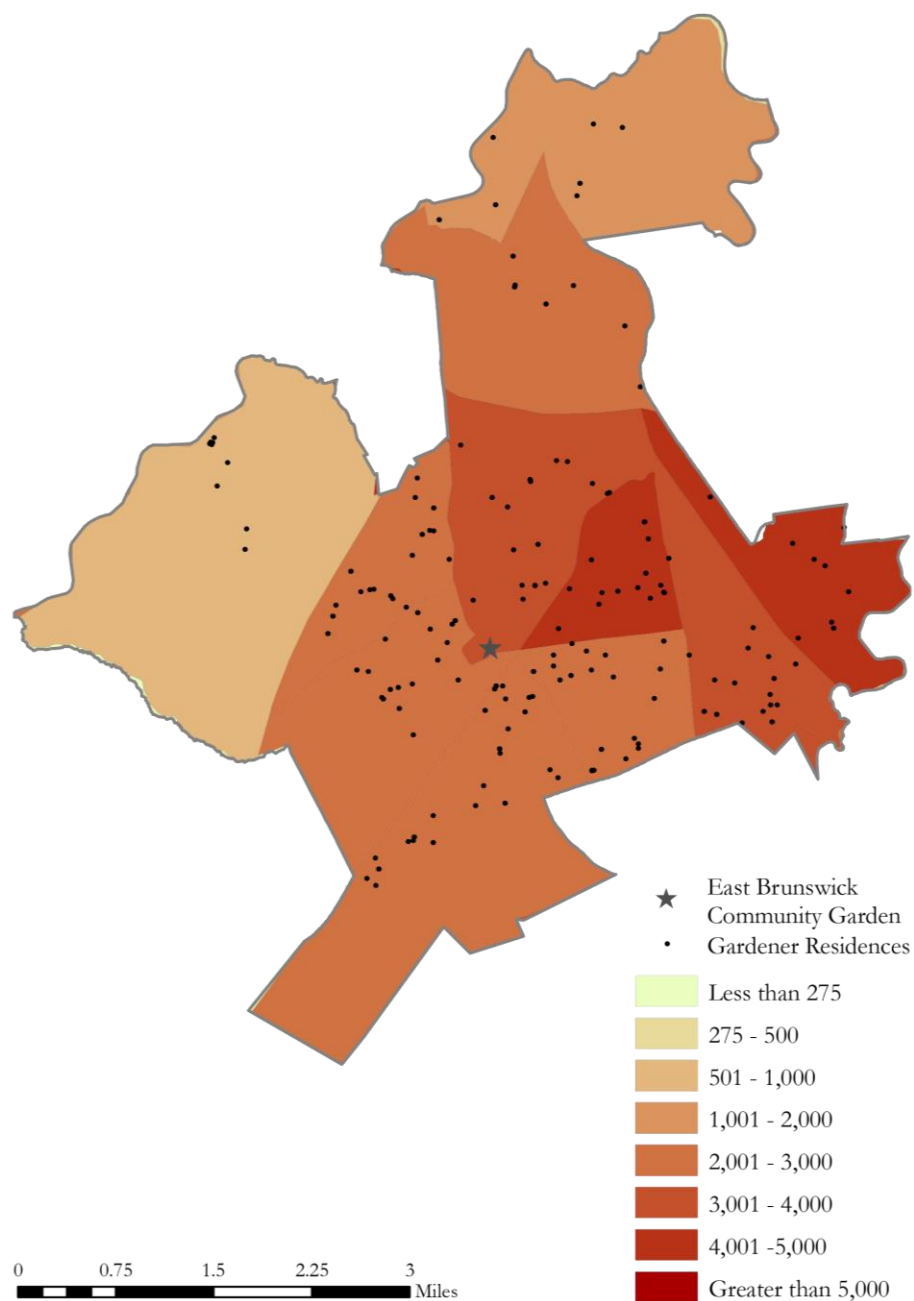


Figure 22 Population density of East Brunswick Township, New Jersey shown by census tract. Data source: United States Census, 2010 (Esri Business Analyst) using ArcMap 10.1



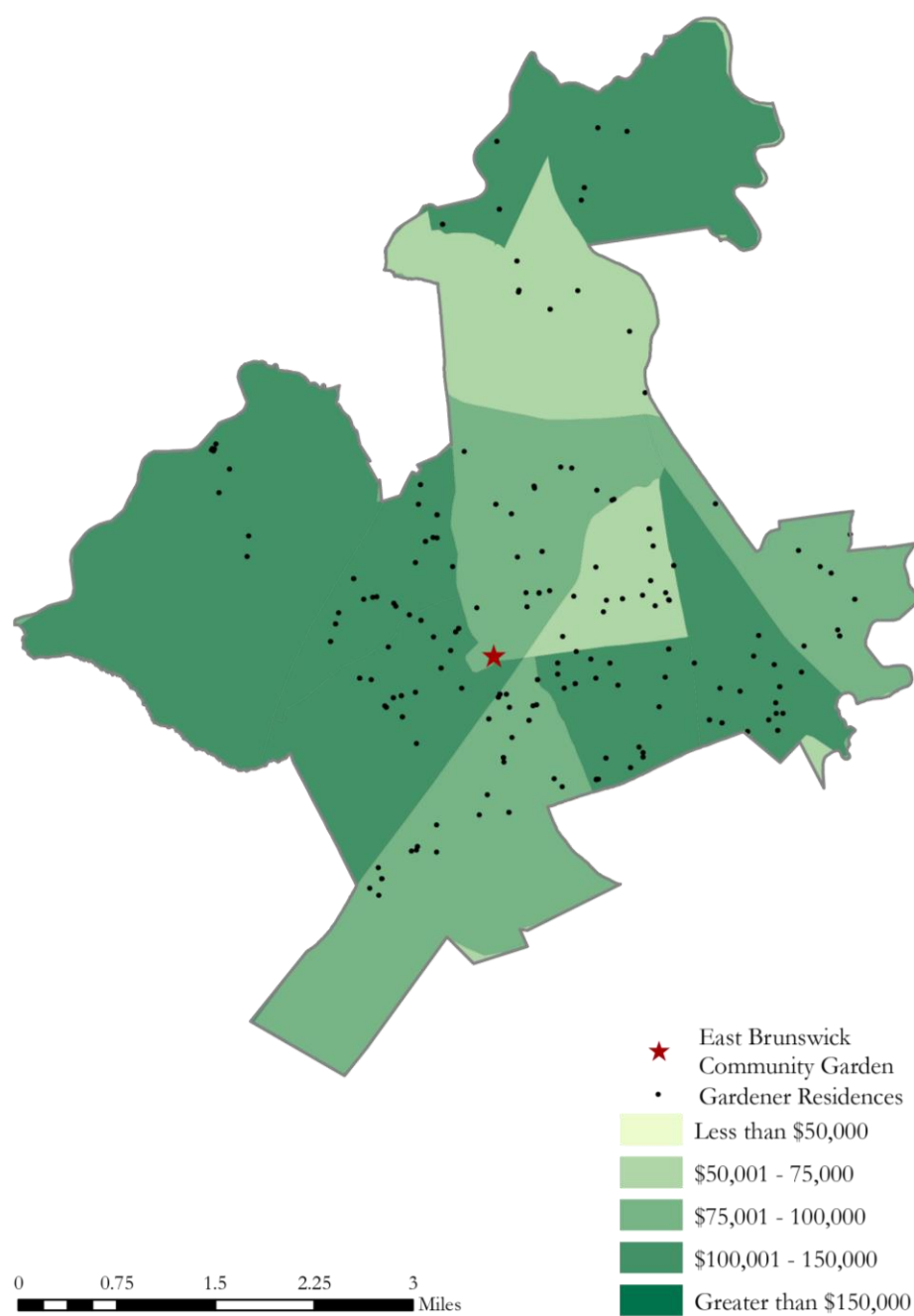


Figure 23 Median household income of East Brunswick Township, New Jersey shown by census tract. Data source: United States Census, 2010 (Esri Business Analyst) using ArcMap 10.1

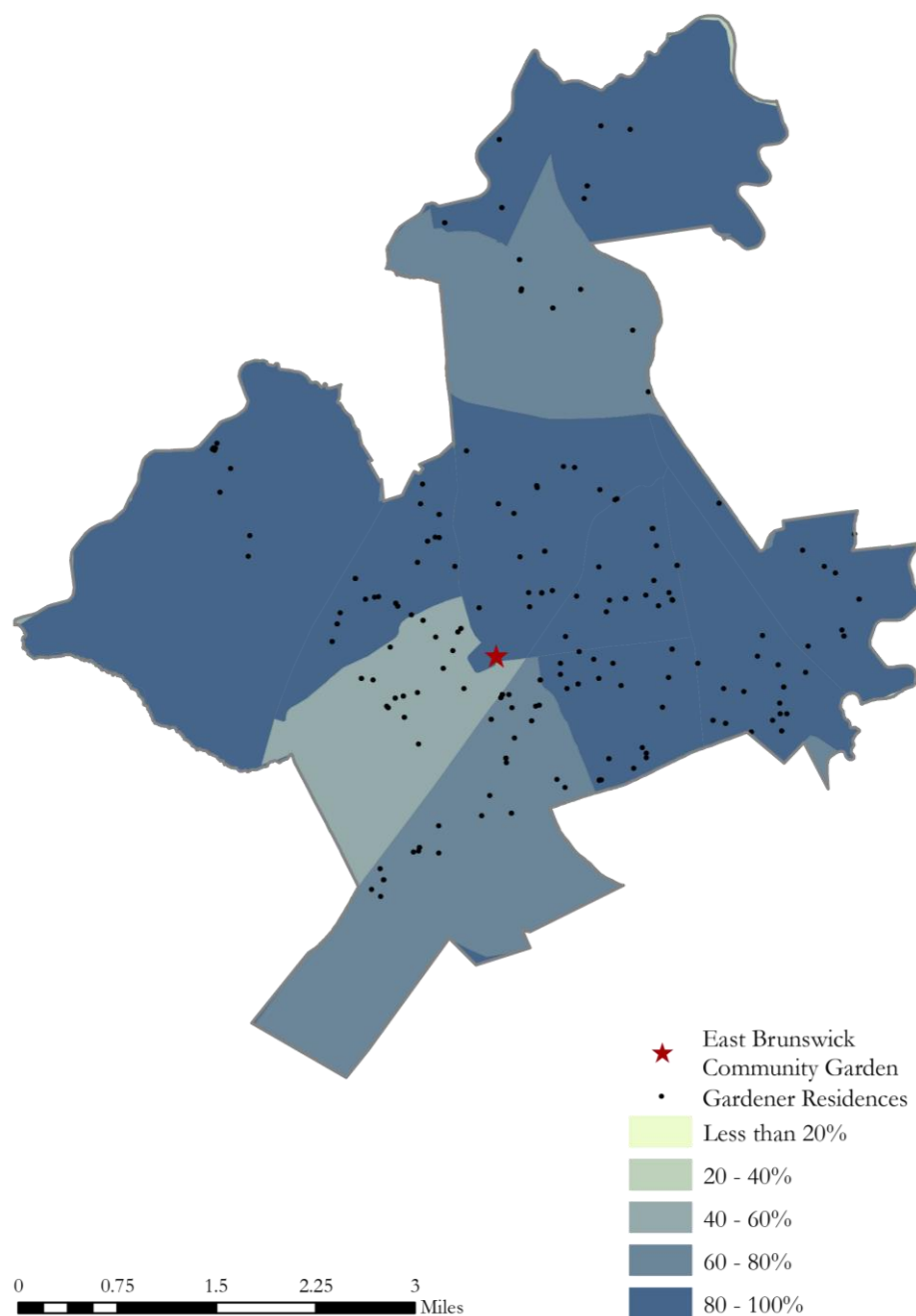


Figure 24 Owner occupied residency rate of East Brunswick Township, New Jersey shown by census tract. Data source: United States Census, 2010 (Esri Business Analyst) using ArcMap 10.1

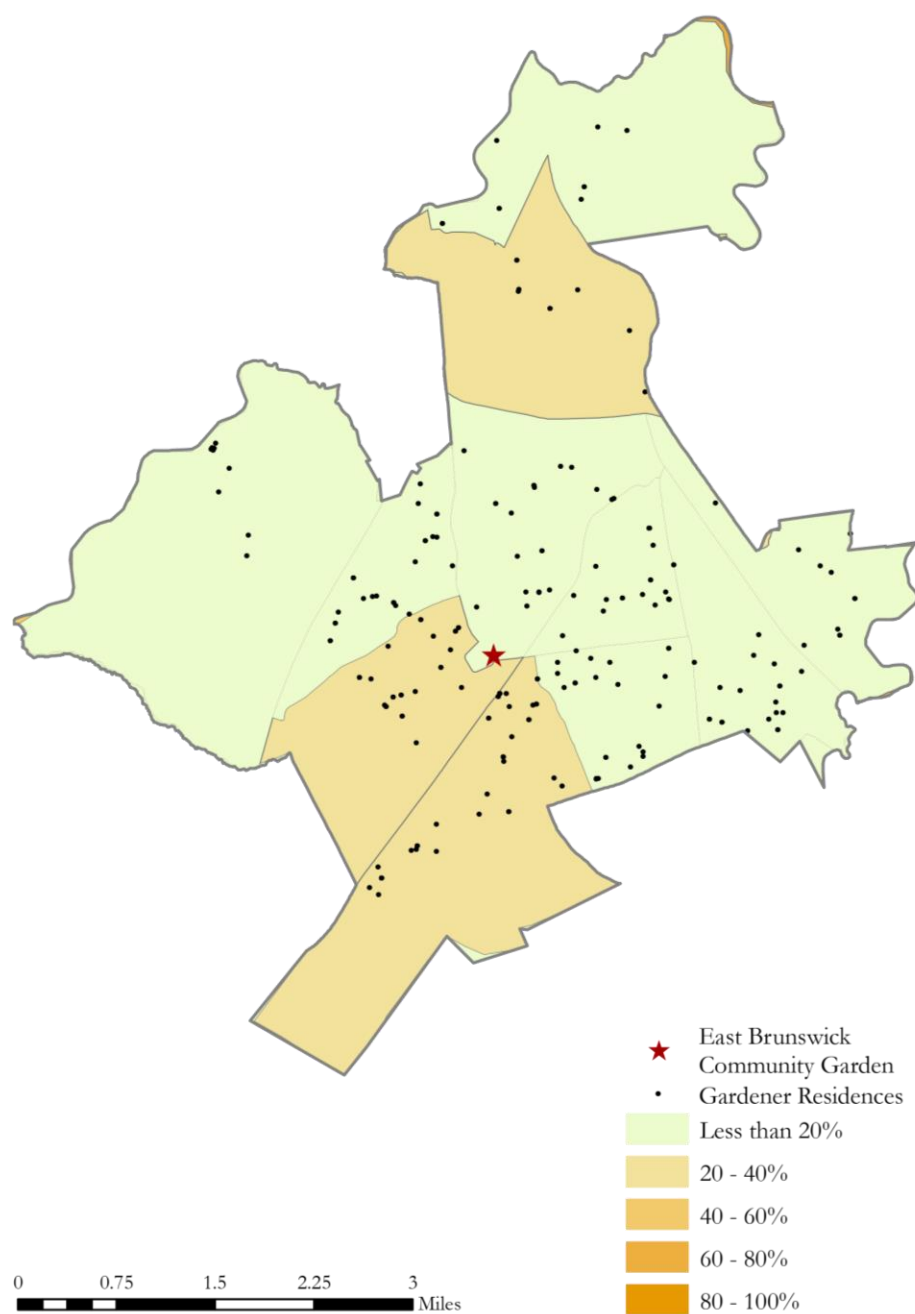


Figure 25 Renter occupied residency rate of East Brunswick Township, New Jersey shown by census tract. Data source: United States Census, 2010 (Esri Business Analyst) using ArcMap 10.1

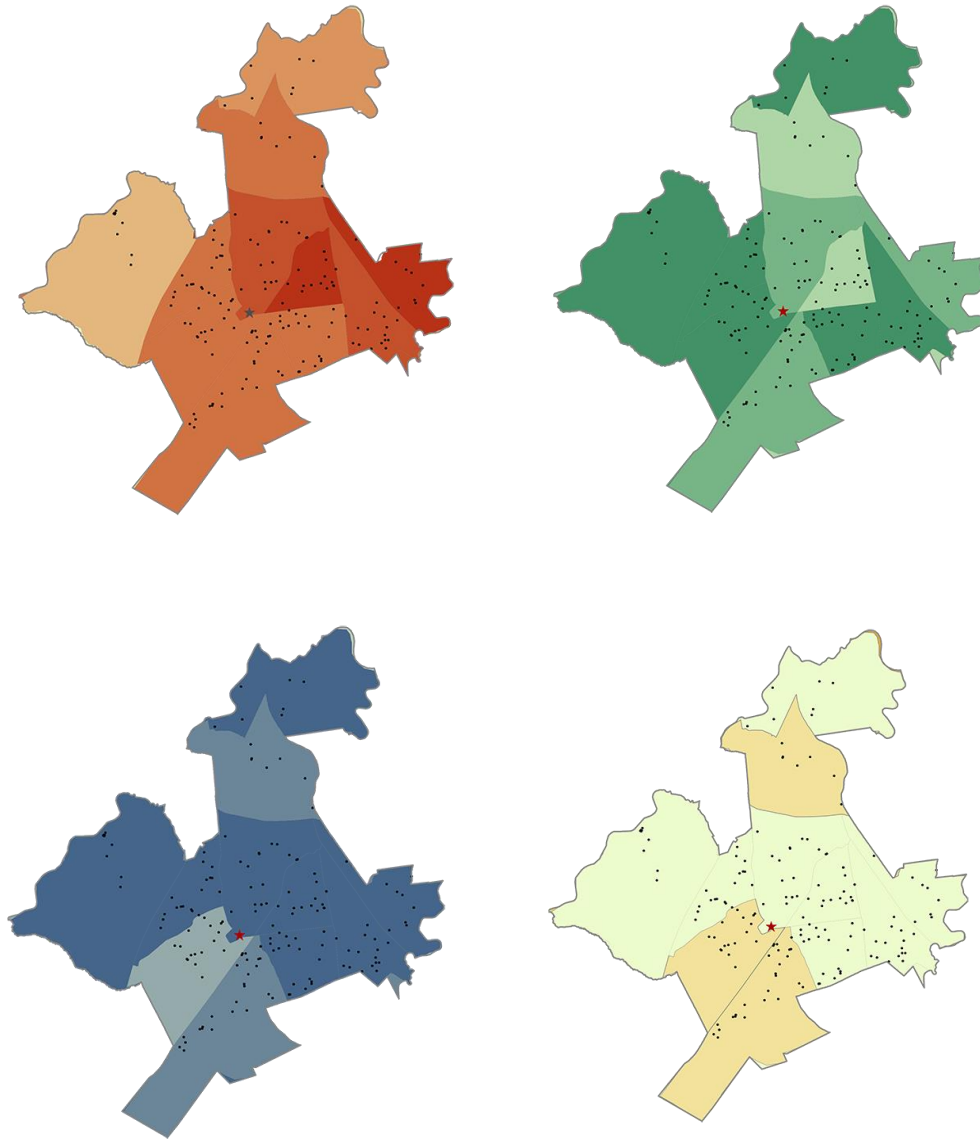


Figure 26 A comparative look at population density, median household income, and owner and renter occupied housing for East Brunswick Township, New Jersey. Data source: United States Census, 2010 (Esri Business Analyst) using ArcMap 10.1

**Lawrence Township Community Garden in the Context of Lawrence Township, NJ:**  
**Land Cover and Demographics**

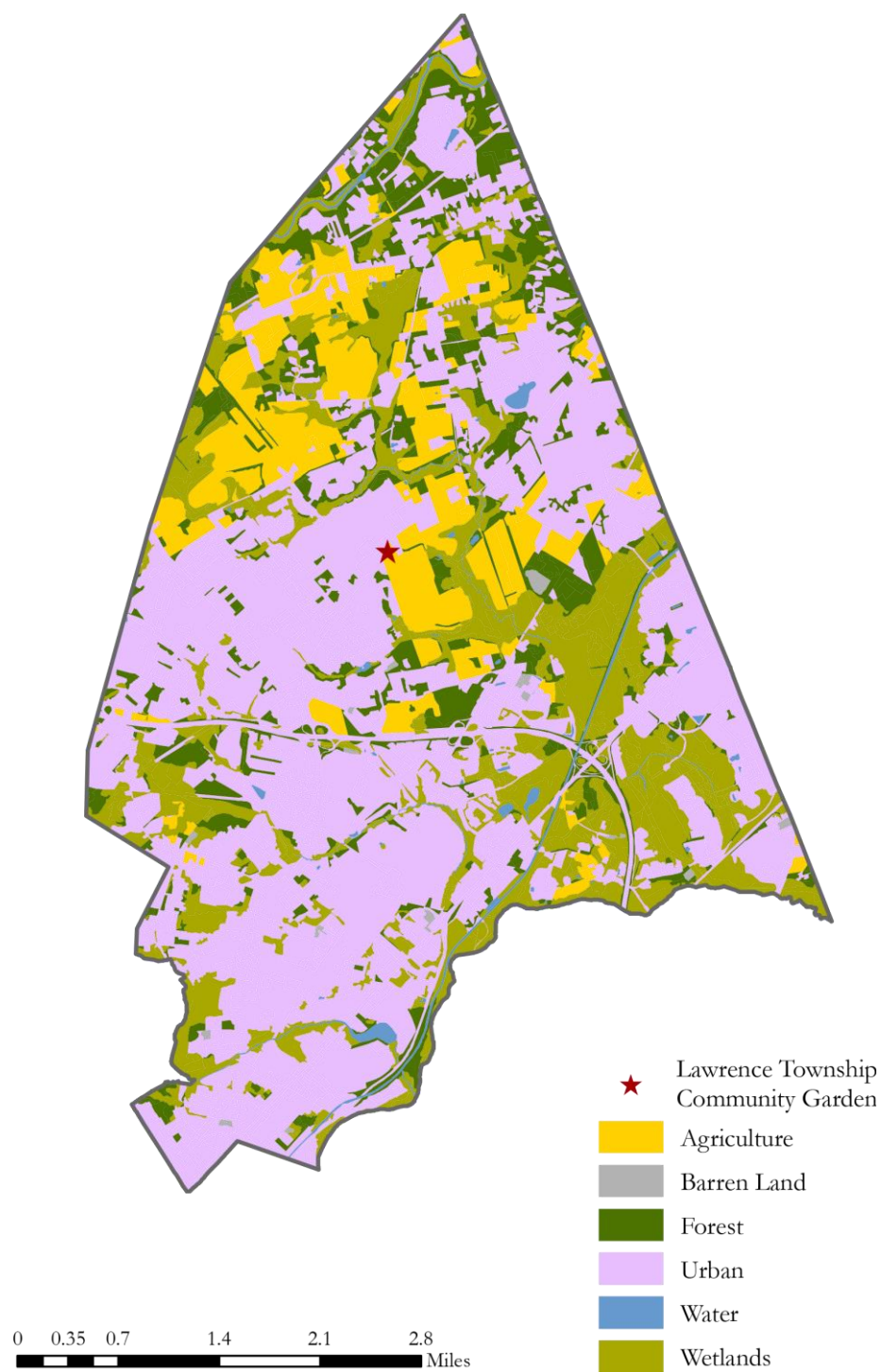


Figure 27 Land cover and usage for Lawrence Township, New Jersey. Data source: NJDEP, OIRM, BGIS, 2007 using ArcMap 10.1

### **Population Density (Lawrence Township, 2010)**

Unfortunately, I was unable to obtain a list of gardener addresses for the Lawrence Township Community Garden, and therefore it is not possible to map precisely where the gardeners fit in terms of the more detailed representation of population density, or the following three demographic sets of median household income and owner and renter occupied housing. However, one can still see from the map shown in Figure 28 that the garden itself is located in a less densely populated census tract of the Township, and is immediately surrounded by an even lower density. Nearly half of the Township falls into a density range of 500 – 1,000 people per square mile, but as one nears the state capital of Trenton, to the south, the population density increases significantly. The Township itself measures 22.06 square miles, and though these southern census tracts are smaller, they are responsible for bringing the Township's average population density to just over 3,731 people per square mile.

### **Median Household Income (Lawrence Township, 2010)**

As one can see from the map shown in Figure 29, the Lawrence Township Community Garden is situated in a census tract that boasts a median household income of \$100,000 – 150,000 annually. Most gardeners interviewed at this site reported a yearly household income of between \$75,000 and \$150,000, which is in line with the median household income of \$86,009 for the Township.<sup>70</sup> There does seem to be a correlation between population density and median household income, in that the more densely populated census tracts to the south, and nearer to Trenton, have a lower median household income.

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<sup>70</sup> Estimated 2009 median household income for Lawrence Township <<http://www.city-data.com/township/Lawrence-Mercer-NJ.html>>, accessed 15 March 2014.

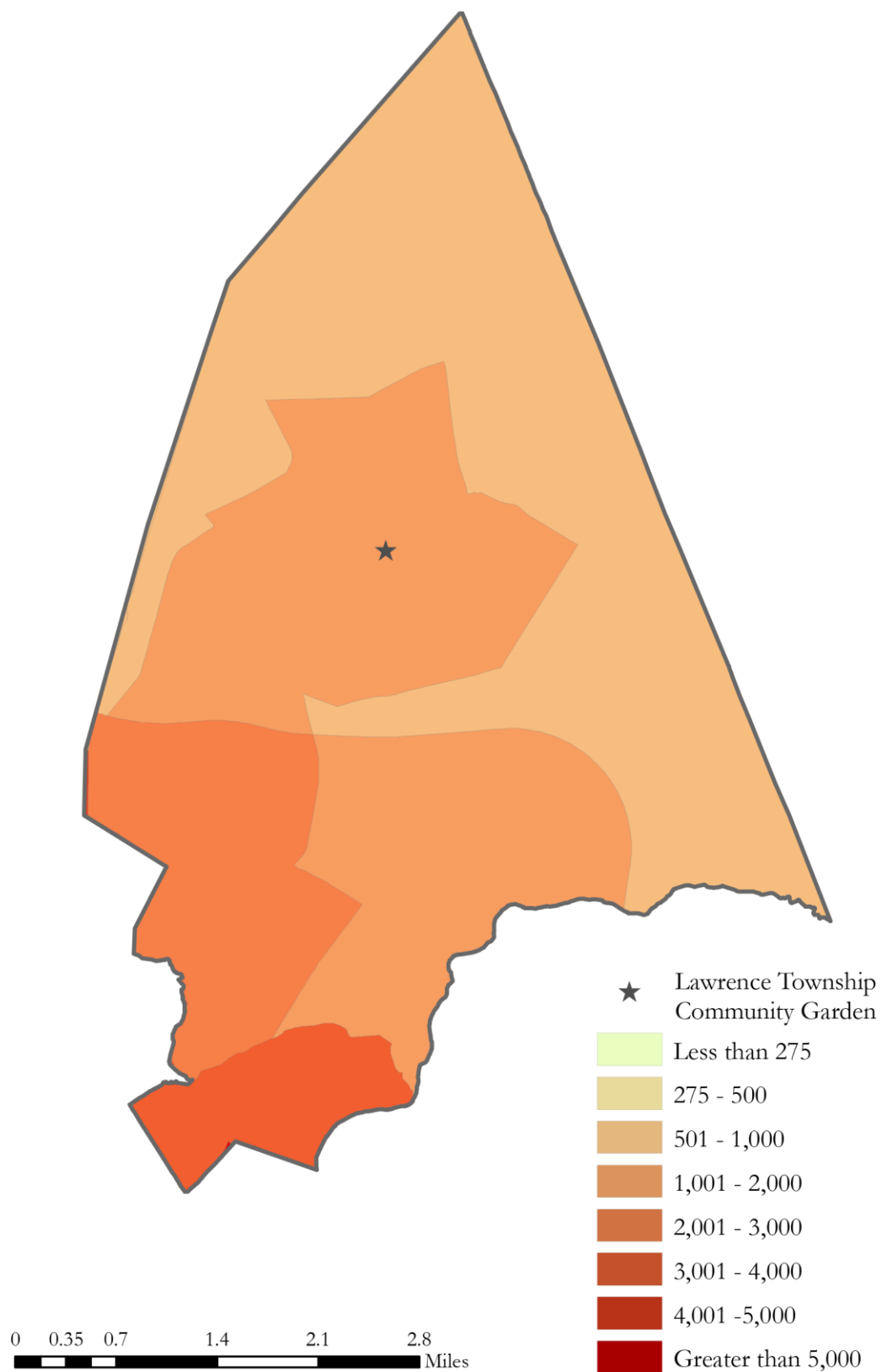


Figure 28 Population density of Lawrence Township, New Jersey shown by census tract. Data source: United States Census, 2010 (Esri Business Analyst) using ArcMap 10.1

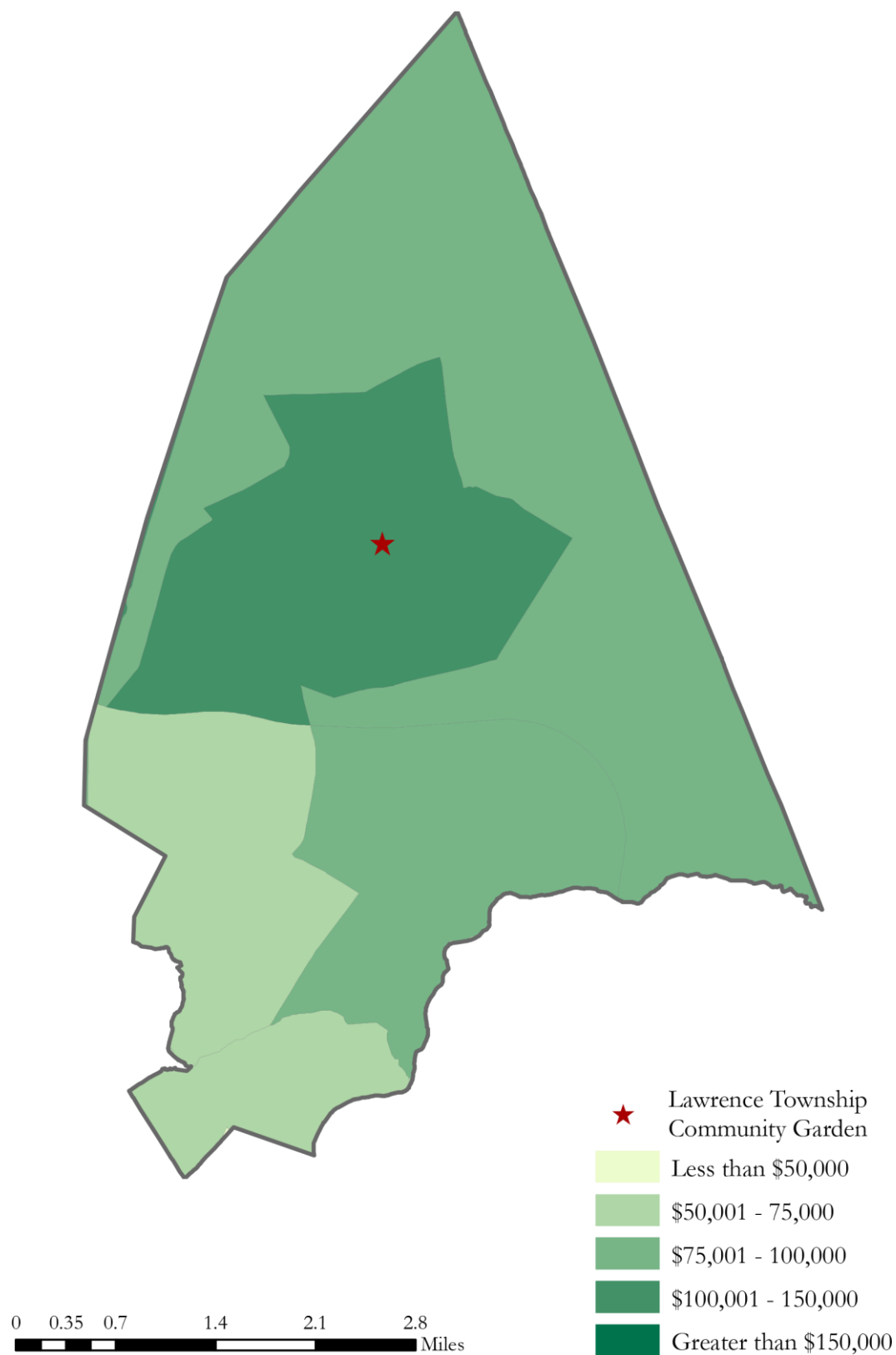


Figure 29 Median household income of Lawrence Township, New Jersey shown by census tract. Data source: United States Census, 2010 (Esri Business Analyst) using ArcMap 10.1



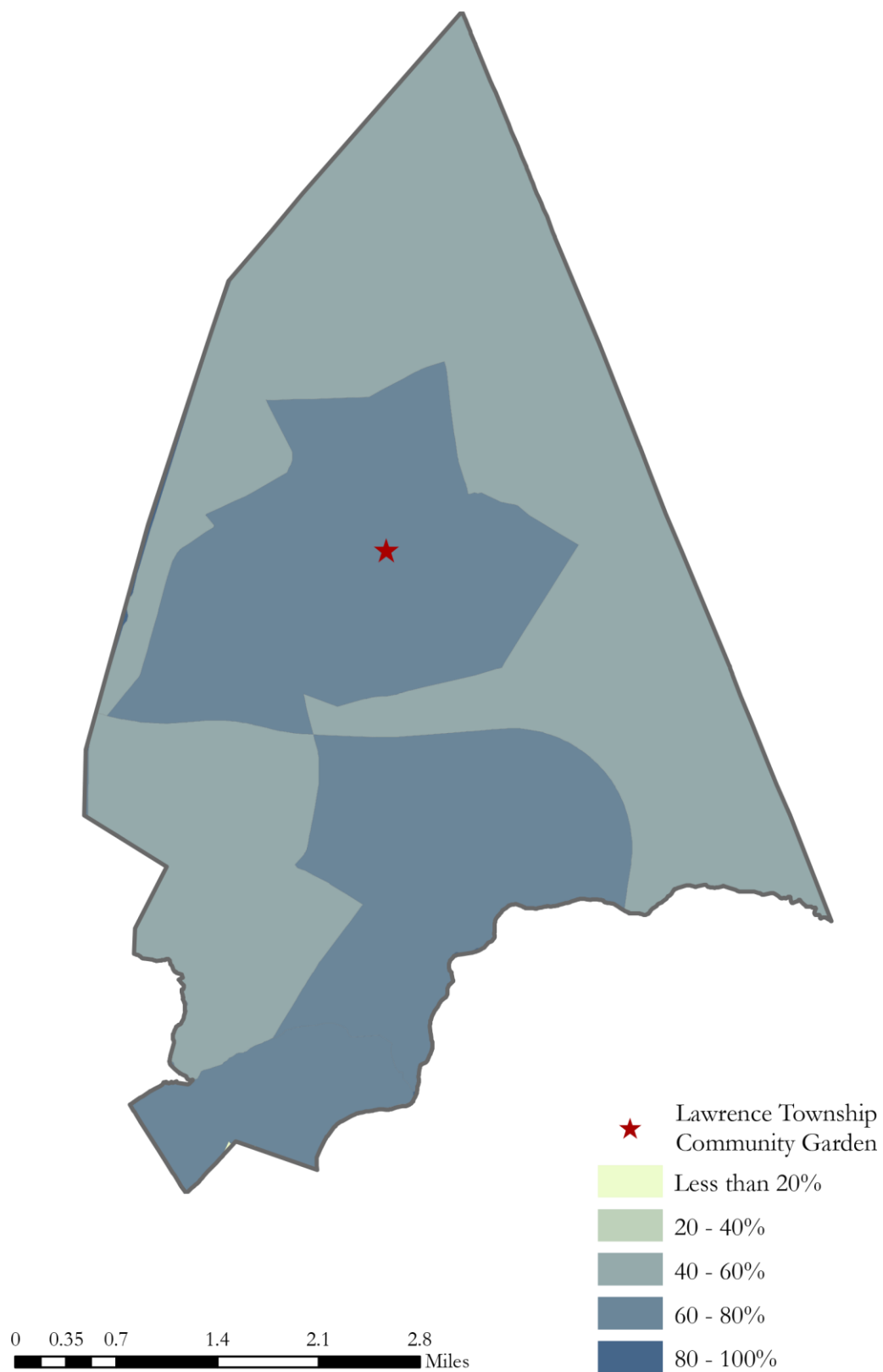


Figure 30 Owner occupied residency rate of Lawrence Township, New Jersey shown by census tract. Data source: United States Census, 2010 (Esri Business Analyst) using ArcMap 10.1

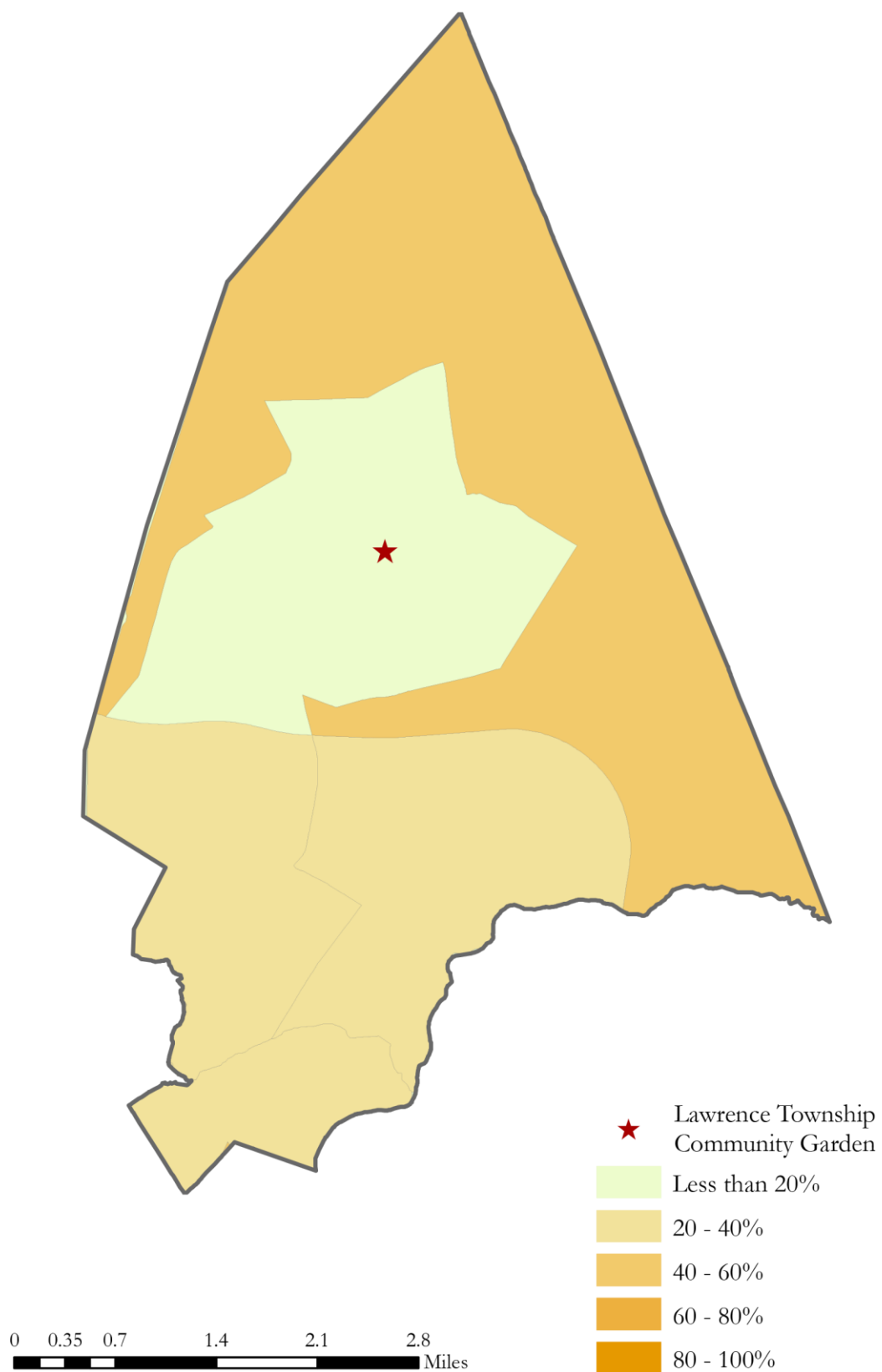


Figure 31 Renter occupied residency rate of Lawrence Township, New Jersey shown by census tract. Data source: United States Census, 2010 (Esri Business Analyst) using ArcMap 10.1

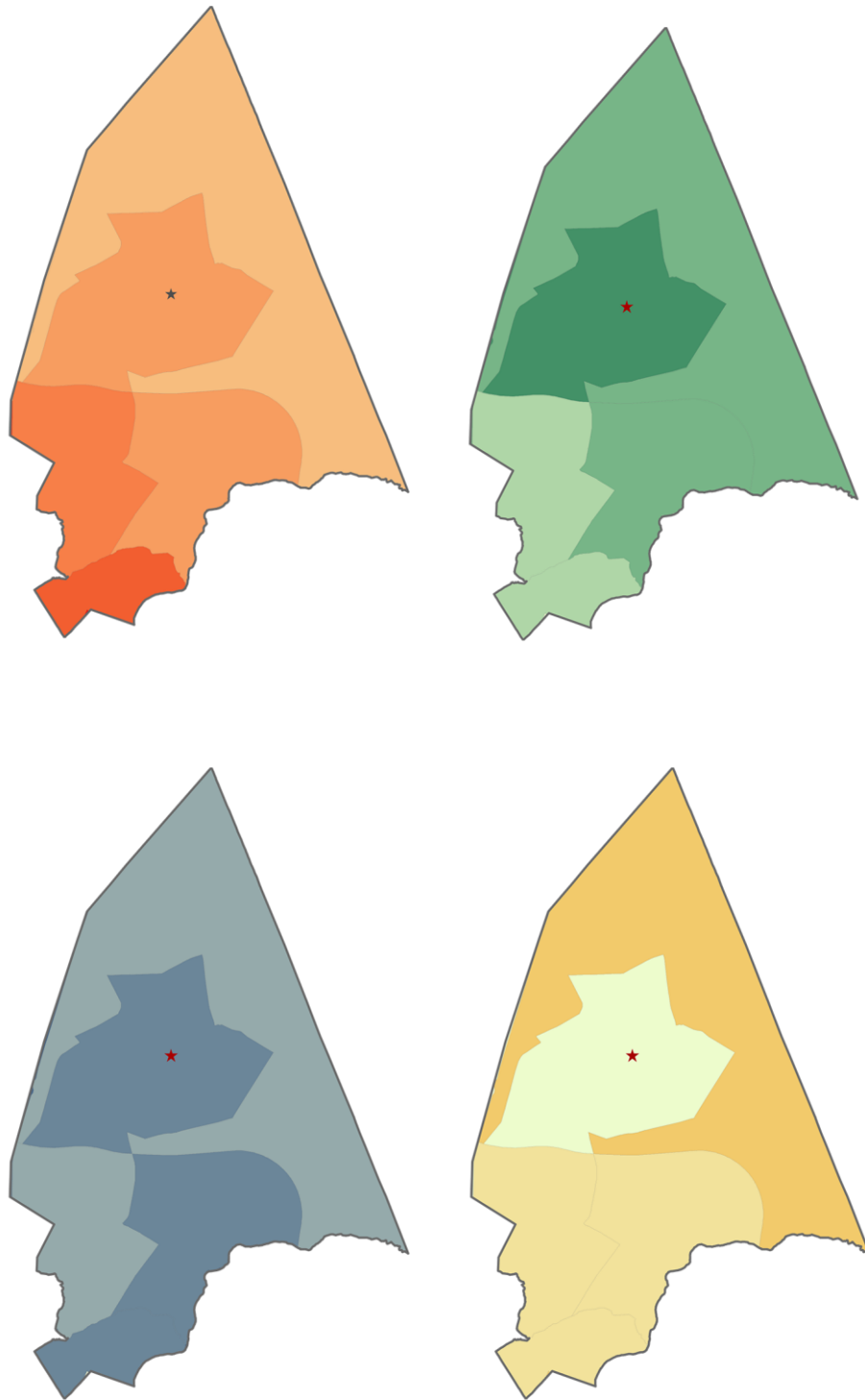


Figure 32 A comparative look at population density, median household income, and owner and renter occupied housing for Lawrence Township, New Jersey. Data source: United States Census, 2010 (Esri Business Analyst) using ArcMap 10.1

### **Owner and Renter Occupied Housing (Lawrence Township, 2010)**

The owner and renter occupied housing in Lawrence Township, depicted in Figures 30 and 31, show a trend that does not appear to be in strong correlation with population density and household income. Census data shows that the Township is comprised of approximately 75% owner occupied housing and 25% renter occupied housing.<sup>71</sup> One might expect the southernmost census tract, which has the highest population density and is lower on the income spectrum, to have a low home ownership rate. However, this is not the case, and unfortunately, without specifically mapped gardener addresses, it is impossible to ascertain in which census tracts the majority of the Lawrence Township gardeners are living, and therefore difficult to know if home ownership has a bearing on a decision to drive elsewhere in order to garden.

### **Summary**

The maps presented and discussed above offer a broad description of how each of the sites is situated in terms of surrounding population density, income level, and rate of home ownership. They provide a useful visual tool, particularly in the cases of Duke Farms and East Brunswick, in which to better understand the suburban quality of the areas from which gardeners are coming. The mapping of gardener residences provided useful information in terms of the distance that gardeners are willing to travel in order to participate, but more significantly, these maps help to reinforce the defining characteristic of the suburbs as a place in which the car is a necessity, even for the purposes of gardening. Additionally, the demographic mappings offer a spectrum of data from which to draw more specific conclusions about how population density, income level and home ownership play into community garden involvement in the suburbs. Again these conclusions can be most

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<sup>71</sup> *Ibid.*

reliably drawn from the maps produced for Duke Farms and East Brunswick due to the layer of gardener residence data available. Here the maps reveal potential pockets of lower than average household income for the county or municipality, as well as pockets that indicate a lower rate of owner occupied housing. Both of these factors may be at work in motivating individuals to participate in a large-scale community gardening project due to absence of personal yard space.

## **IV. Research Findings: The Garden as Place**

### **Observations and Expert Interviews**

In order to understand the gardens structurally as a place, I used on-site observation and conducted expert interviews with garden coordinators representing each of the three sites. These interviews, like the preceding maps, lend themselves to a broader picture of each garden and help answer particular questions regarding the garden's establishment, land tenure and management approaches.

### **Duke Farms Community Garden**

The Duke Farms Community Garden is part of the Duke Farms Foundation, a privately owned estate situated on 2,740 acres in Hillsborough, Somerset County, New Jersey that offers 18 miles of hiking trails and 12 miles of biking trails.<sup>72</sup> The garden proper is situated on a portion of the estate measuring approximately 350'x400', and is partially enclosed by a 10-foot high deer fence. (Figures 33 and 34) It is surrounded by restored native habitats, pastureland and a solar field. There is ample parking, and not far beyond the lot are the Orientation Center and Café, both located in the Estate's historic farm barn. The setting for the garden is pastoral, and the views to the surrounding fields idyllic.

During my first visit to Duke's garden in late May, I walked along the gridded paths and watched several dozen gardeners tend their early crops of onions, peas and lettuces. I was greeted in a friendly manner by those with their hands in the dirt, and found the gardeners to be readily conversant about the work they were doing. I quickly realized that I was not the only non-gardener milling about the plots, and understood that because of the nature of the site on which the garden is located, visitors are very common and warmly

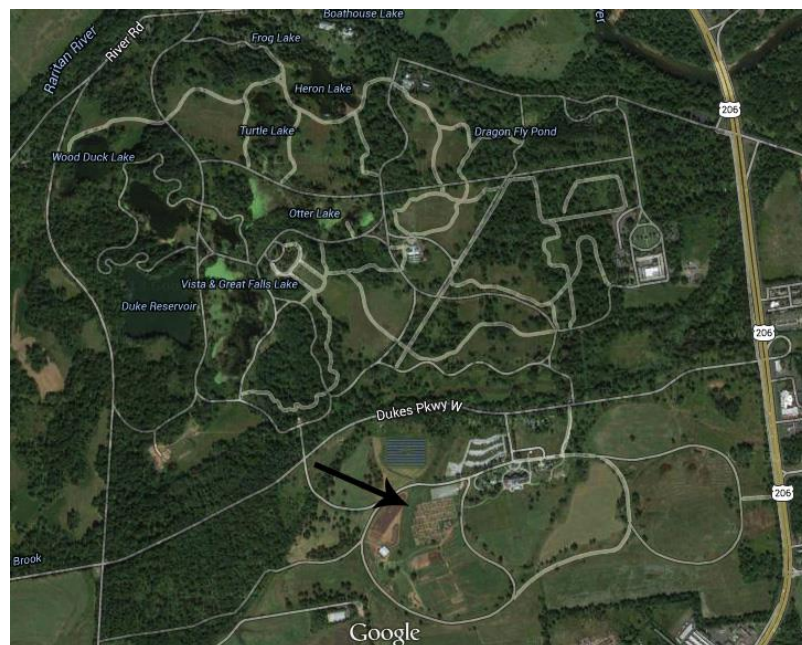
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<sup>72</sup> These figures are from the Duke Farms Foundation website <[www.dukefarms.org](http://www.dukefarms.org)>, accessed 21 February 2014.

welcomed within the garden gates. In the southeastern corner are several picnic tables, a gazebo, compost pile and community wheelbarrows. Along the fence is a series of native bee houses made by the local Boy Scout troop.



Figures 33 and 34 Aerial views of Duke Farms Community Garden. Image source: GoogleMaps, 2014.



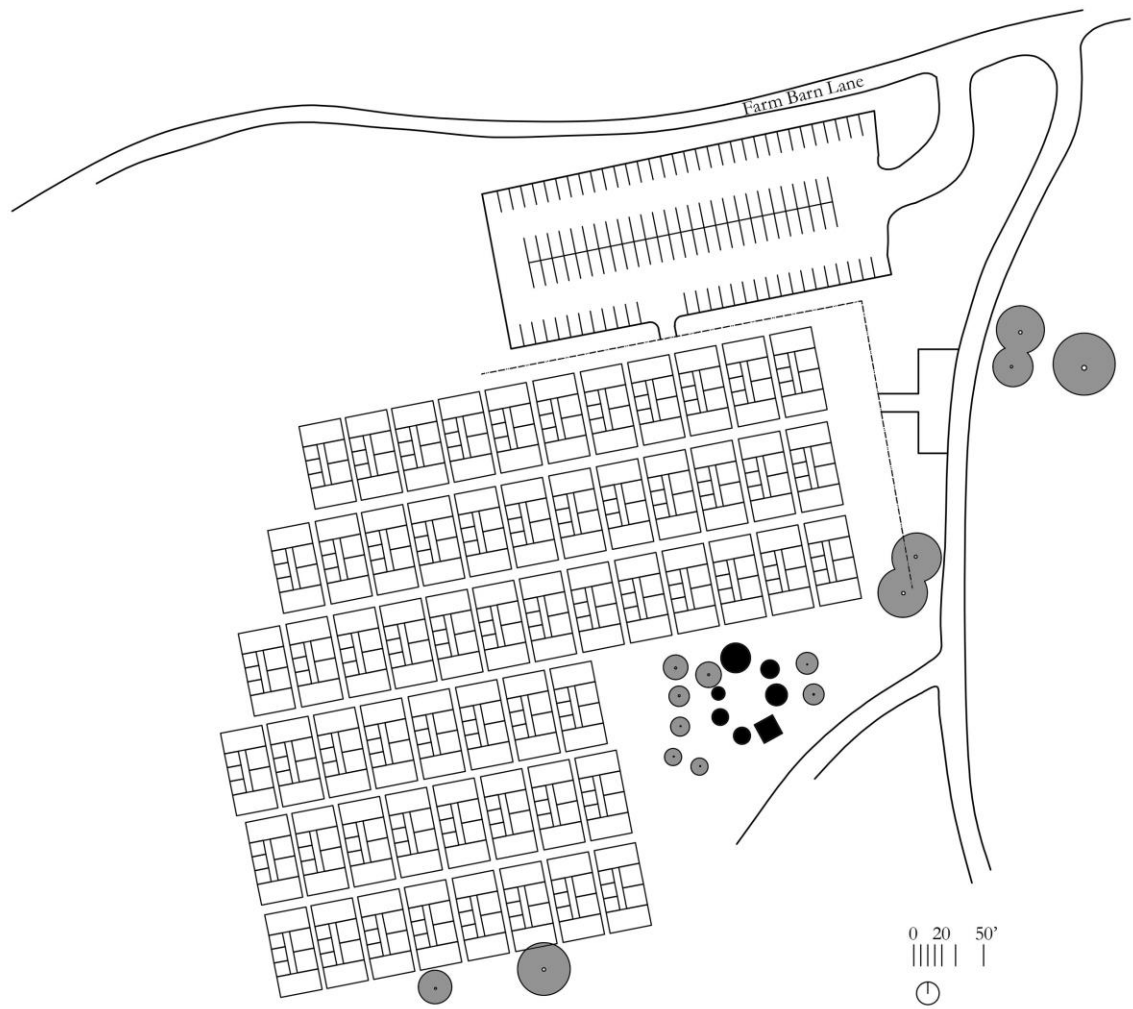


Figure 35 Site plan of the Duke Farms Community Garden. Illustration by the author.





Figure 36 Native bee houses made by Boy Scouts, May 2013. Photo by the author.

My visits to the garden over the course of the summer and fall revealed an ever-changing visual experience. I observed different approaches to vegetable garden design, various mulching techniques, unique trellising methods and an enormous range of produce growing. I also noticed many plots in which perennial sources of food such as raspberries, blackberries and asparagus are planted, and this indicated to me a significant investment by the gardeners as well as an intent and commitment to garden at this location for more than a season or two.

The community garden at Duke Farms opened in 2011 with 210 plots, and at the start of the 2012 gardening season, the site offered 420 plots to those living or working in

Somerset County for a fee of \$20-60, based upon size.<sup>73</sup> These plots are grouped into “blocks” composed of three 10’x10’, two 15’x15’, and two 15’x30’ plots, and each block is numbered and has a centrally located water pump. When I met with garden coordinator Stan Layton in September, he stated that the increase in the number of plots was planned from the beginning, and he mentioned that he thinks they have the capacity to double the size again if they want to. According to Layton, interest in the garden continues to increase, and there is currently a waiting list of approximately 65 people.



Figure 37 Overview of the community garden on the Duke Farms Estate, May 2013. Photo by the author.

According to Layton, the garden was established by the Duke Farms Foundation to help teach environmental stewardship and is designed to be a permanent part of the Duke estate. It is situated on former pastureland and organic practices of gardening are strictly enforced. There is an advisory group comprised of garden members; however, all policies

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<sup>73</sup> According to Duke Farms Foundation website, at the start of the 2014 gardening season, 462 plots will be available.

have already been set by the Foundation, so the responsibilities of this group primarily lie in the organization of garden activities and donations of produce to a local food bank. They also tend the plots of any individuals who may be absent due to illness or injury. Layton himself deals with any issues regarding plot maintenance and policy enforcement. The garden, which does not receive any financial support outside of the Foundation, provides compost, water, woodchips and hay to gardeners. One relationship that the garden has developed is with a local horse farm. The DEP mandates that the manure produced on the farm be removed, so now it is delivered to the Duke garden and mixed with the compost on site. Duke also offers courses to gardeners throughout the spring and summer on such topics as Integrated Pest Management, organic methods of disease control, and techniques for growing specific crops like tomatoes and root vegetables. In Layton's own words, "We're spoiled here. We don't have to go far for resources."

According to the Duke Farms website, each new gardener is required to attend the "Intro to Organic Gardening" session at the start of the season. Additionally, each plot is required to volunteer four hours during the gardening season. There are regularly scheduled maintenance opportunities at the garden in which to fulfill this requirement, as well as larger volunteer opportunities such as a Japanese garden cleanup, spruce grove planting, and a Raritan River cleanup. Gardeners are also expected to help tend the designated Giving Gardens located throughout the site. It is the produce grown in these plots that is donated to a local food bank.

Towards the close of our interview, Layton said, "As far as community gardens go, this one is really well planned." He then mentioned that the time the Foundation took to bring in experts during the planning for the garden has paid off, and this is in part evidenced by the fact that a number of other local community gardens have begun calling to ask for

input. When asked what the biggest challenge is that Duke Farms Community Garden faces, he immediately exclaimed, “Mexican bean beetles!” All kidding aside, organic pest management is a major challenge for the gardeners at Duke. In a set-up of this nature, it’s almost certain that if one plot gets a particular pest, the whole community ends up sharing it.



Figures 38 and 39 Top: A gardener works his plot at the Duke Farms Community Garden, May 2013. Bottom: Garden plots at the Duke Farms Community Garden, September 2013. Photos by the author.





### East Brunswick Community Garden

The East Brunswick Community Garden is situated on a parcel of land within the municipal complex of the Township. The cultivated garden area measures approximately 110'x210'. (Figures 40 and 41) A trailer for garden waste, two picnic tables, a small shed and outdoor bulletin board sit to the southwest of the plots on a band of turf approximately 30' wide that runs around the perimeter of the garden. It is flanked to the northeast by agricultural fields that, at the time of my study, were planted in feed corn, and to the northwest by a small wooded park and pond around which a pedestrian path loops. To the southwest of the garden are the East Brunswick Police department, Senior Center, Public Library, Municipal Building and associated parking lots.



Figure 40 Aerial of East Brunswick Community Garden. Image source: GoogleMaps, 2014.

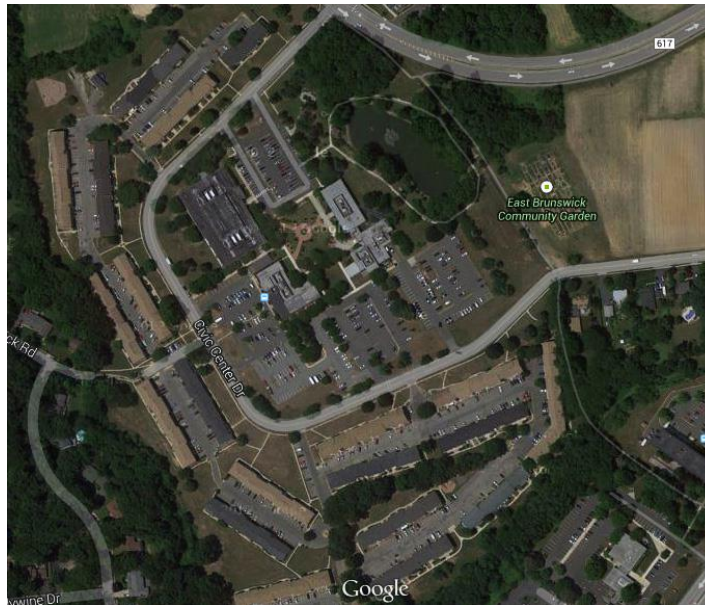


Figure 41 Aerial of East Brunswick Municipal Complex. Image source: GoogleMaps, 2014.

As one approaches the garden, a brightly painted carrot on the side of the wooden shed is highly visible. The text beside the image boasts that during the 2012 gardening season more than 2,000 pounds of produce were donated to the nearby Senior Center. Upon entering the garden proper through one of the two front gates, one can see several large plastic coolers, their white lids painted in capital letters: VEGGIE DONATIONS.



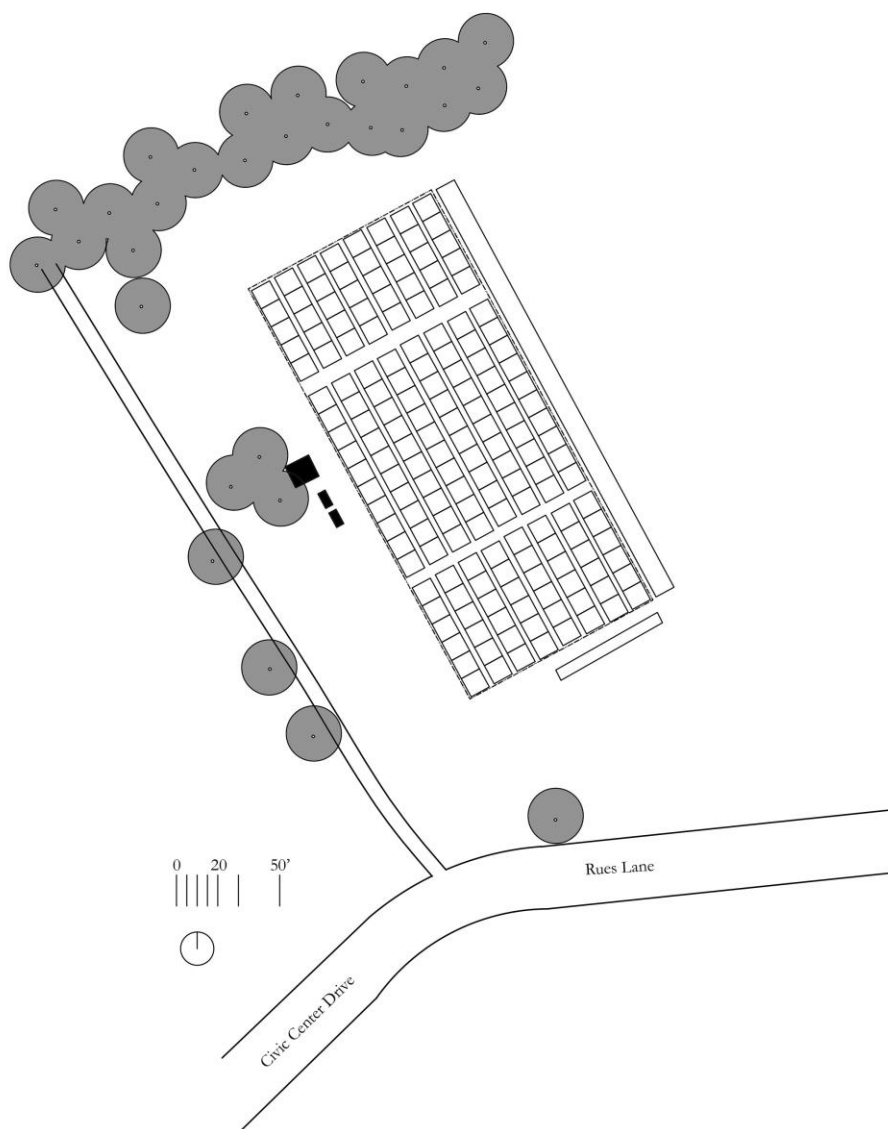


Figure 44 Site plan of East Brunswick Community Garden. Illustration by the author.

Figures 42 and 43 (preceding page) Garden shed and produce donation at East Brunswick. Photos by the author.

Mulched paths run lengthwise between each row of square plots and are intersected by two wider paths running perpendicular from the gates to the rear of the garden along which are several posts where water hoses hang. The majority of garden plots are planted almost entirely with edibles, and this includes the expected lettuces, tomatoes and beans, as well as a strong presence of ethnic vegetables such as bitter melon, Chinese fuzzy melon, okra and

Indian beans. Several plots have been personalized with low decorative borders, stepping-stones or flags. Many include some type of flower planting, whether it is intended as ornamental value or pest management.

A third perpendicular path runs the length of the southeastern end of the garden beside which the plots are devoted to single crops, such as strawberries, potatoes, corn, lettuce, beans and asparagus. These, I learned during my first visit to the garden from a man weeding the asparagus patch, are for harvest by the entire community of gardeners and are cared for by the gardeners together. The raspberries, melon patch, fig trees and grapes that lie just beyond the fence are also for community harvesting, and when I interviewed Lois Moskowitz, the plot manager of the garden, in August, she informed me that there are also two plots in which produce is grown specifically for the East Brunswick Senior Center. During that interview, Moskowitz also shared the garden's history and approach to management.



Figure 45 Approach to the East Brunswick Community Garden in August. Photo by the author.

Moskowitz's husband, David, and the Friends of the East Brunswick Environmental Commission first presented the idea for a community garden on this parcel of municipally



owned land in 2003. The land was, and still remains, designated Open Space; however, at the time of the original suggestion, the township was not in support of the garden. When the administration turned over, David Moskowitz once again proposed the project, and in 2009 the East Brunswick Community Garden was established. The garden is designed to be permanent, and according to Lois, there has been no concern that there will be changes made to the land tenure that currently exists. There is no fee for the land, and the township also provides water and wood chips, mows the surrounding lawn area, and picks up garden waste.

In its first year, the garden held 80 10'x10' plots and had a waiting list. The following year, the garden was expanded to include 167 individual plots, and although there is no longer a waiting list, Moskowitz estimated that at least 50% of the gardeners return year after year.



Figure 46 View from within the East Brunswick Community Garden. Photo by the author.

Each gardener pays an annual fee of ten dollars for a plot. Moskowitz stated that there has been some mention of increasing the plot fee, but she has defended against this because she believes that as a community garden, the plots should be available to the

gardeners at a very affordable price. As such, the annual plot fee doesn't cover many costs; however, the garden has proposed and received grants from places like Home Depot in order to purchase tools and fencing material.

The East Brunswick Community Garden has a nine-member board that heads several committees to which gardeners are assigned during the growing season. These supervise and tend to the senior center plots and the berry patches, manage general garden communications, oversee community areas and take care of general maintenance. One committee acts as the garden "police" and handles any warnings that need to be sent to gardeners who, for example, do not comply with rules regarding such things as use of fertilizer and pesticides, or those who fail to keep up with harvesting. The garden has a very diverse ethnic composition. At the time of our interview, Moskowitz was attempting to conduct an informal survey that encouraged individuals to write down on a diagram of the garden their ethnic origins. She said the garden has drawn participants from Indian, Korean, Israeli, Chinese, Portuguese, Egyptian, Pakistani and Spanish backgrounds, and this is evidenced in the faces and languages of the gardeners, and also in the crops that are tended. East Brunswick Community Garden also has a "sister garden" in Melbourne, Australia and participants in both locations exchange emails and recipes throughout the season.

When asked what the biggest challenge is that the garden faces, Moskowitz wasted no time before exclaiming, "Politics!" She elaborated on this point by saying that participants often have different expectations about how the garden should look, and she finds it lamentable when some enter and "see the weeds and not the hard work." I was struck by this last comment and considered how this notion of neat appearances might relate to an individual's decision to vegetable garden elsewhere than their suburban front yard.



Figures 47 and 48 Garden plots in the East Brunswick Community Garden, July 2013. Photo by the author.



Figure 49 Aerial of Lawrence Township Community Garden. Image source: GoogleMaps, 2014.

### **Lawrence Township Community Garden**

The Lawrence Township Community Garden is located directly off of Route 206 in Lawrenceville. An unmarked single-lane gravel road bisects the garden and wraps around the northeastern edge, and gardeners park along this stretch or in the grass that lies between Route 206 and the garden plots. The site is neighbored on three sides by large deciduous trees and productive agricultural fields and pastureland. (Figures 48 and 49) To the northwest, small residential streets along which single-family homes are built intersect Route 206, and the small downtown of Lawrenceville is located approximately three-quarters of a mile further south.

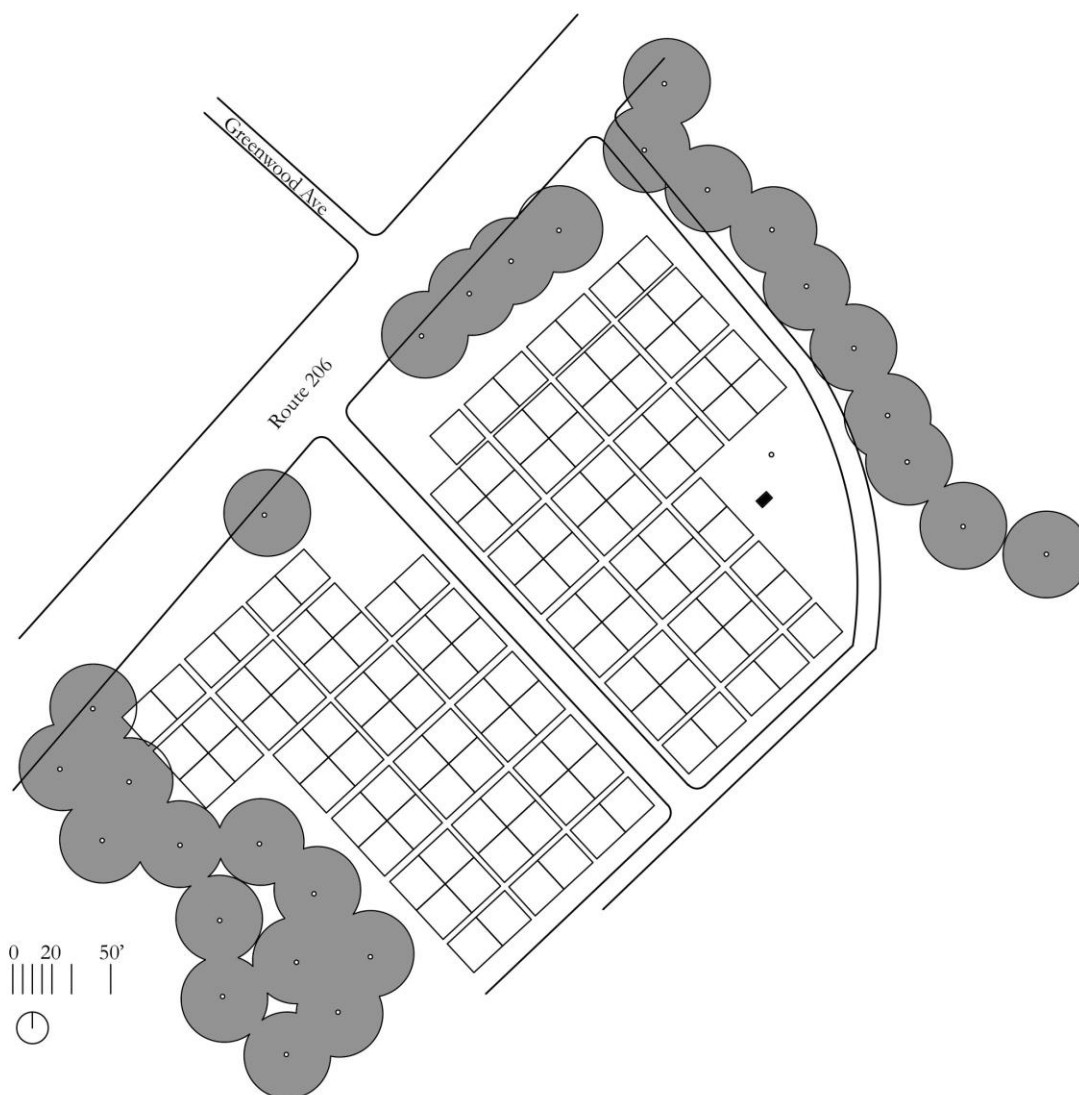


Figure 50 Site plan for Lawrence Township Community Garden. Illustration by the author.

My first garden observation at this site was on a weekend during the first days of June. About a dozen gardeners were tending their plots, planting, weeding and watering. I spoke casually with several of them and watched as they placed tomato stakes or transplanted chili peppers, and except for the periodic noise of traffic nearby, the atmosphere of the place seemed pleasing. The garden, which spans roughly 300'x400', is composed of 139 plots, each measuring 20'x20' and marked with a numbered stake. Most



plots had some kind of fencing material around the perimeter and this ranged from chicken wire to plastic snow fencing; none were more than four feet in height. The haphazard manner in which many were erected, combined with the variation in material and low height suggested they were intended more to delineate the edges of individual plots than to keep out rabbits or deer. Orange and white five-gallon buckets and watering cans punctuated the fence posts and weedy paths, and dozens of volunteer sunflowers (which would grow to be giants later in the season) were flourishing between plots. Here and there a garden plot was celebrated with a clever sign or decorative stepping-stones. Many gardeners had put down plastic, fabric or newspaper as weed-suppressant mulch, and there appeared to be a wide spectrum of plot maintenance, evidenced by meticulous weed-free rows of lettuces on the one hand, and jungle-like masses of weeds on the other.



Figure 51 Lawrence Township Community Garden, June 2013. Photo by the author.

Alongside the center gravel road is an area designated for garden debris, and beneath the trees along Route 206 is a large water storage container. On the eastern edge of the garden there is a single water pump and a small wooden structure that houses a wide shelf for donations to a food bank and exchanges among gardeners, and a bulletin board for

garden announcements. During this first visit, I learned from one of the gardeners that the water sources are not always reliable, and therefore some participants haul water from home.



Figures 52 and 53 Water sourcing at the Lawrence Township Community Garden, June 2013. Photos by the author.

Steven Groeger, Superintendent of Recreation, oversees the management of the project and provided additional information to me regarding the community garden, which was established by the Lawrence Township Recreation Department in 1969 in order to provide residents with another form of leisure activity.<sup>74</sup> The Lawrenceville School has owned the land on which the garden sits since its purchase in 1997 from the Township. The School, an independent college preparatory boarding school, has agreed to allow the Township continued access until there are other plans for use of the land. As such, the permanence of the garden is not guaranteed. The garden plots are available to residents of the township for an annual fee of \$45 and to non-residents for \$90. Prior to the

<sup>74</sup> I was unable to interview Steven Groeger, Superintendent of the Lawrence Township Recreation Department, in person or over the phone and instead sent him the series of questions for the garden directors via email. The information here is primarily drawn from his responses, which were received on October 11, 2013.

establishment of the garden, the acreage existed as farmland that came from the conversion of a nine-hole golf course in the 1940s.



Figure 54 Plots at the Lawrence Township Community Garden, June 2013. Photo by the author.

The Township prepares and maintains the garden site with Public Works staff. Materials such as stakes, string and compost, and services such as repairs to the water pump, mowing of the walkways and removal of trash are provided. The municipal budget for the garden is approximately \$5,000 annually, and this includes employee time. The garden lacks a leadership committee, and according to Groeger, the two biggest challenges the garden faces are ensuring that the gardeners maintain their plots, and guaranteeing the Township's ability to maintain the program despite diminished staff and resources.





Figures 55 and 56 The Lawrence Township Community Garden, September 2013. Photos by the author.

## Summary

The discussion of the three gardens here is intended to provide a relatively broad image of each; however, the dual approach of on-site observation and expert interviews also revealed interesting characteristics of the study sites. While all three gardens share an element of size and the marked suburban characteristic that these are places primarily accessed by car, they are also significantly different. These differences are particularly

evident in the individual garden histories, land tenure and management practices. Despite the long establishment of the Lawrence Township garden, its longevity seems most precarious. It is the only garden that was not designed with the intent to be permanent, and is the only site that lacks any kind of involved leadership by and of the garden participants. Whether there is a correlation between these two facts remains to be seen; however, the general upkeep and appearance of the garden site, as well as a more formal sense of community – manifested, for instance, in end-of-season potlucks at Duke Farms and East Brunswick – seems directly connected to the presence of some kind of leadership committee.

In concluding this particular method of the research, it is somewhat difficult to compare the establishment histories of the three sites due to their distinct differences; however, it seems worthwhile to note that in the case of East Brunswick, the garden was established out of a strong local interest, and as a result is focused on a more immediate context. In contrast, the Duke Farms garden was established by the Foundation without any push or involvement from the surrounding community, and draws on participation from a much larger and more removed context. In order to understand the implications of this, however, it is necessary to look at the individual gardeners.

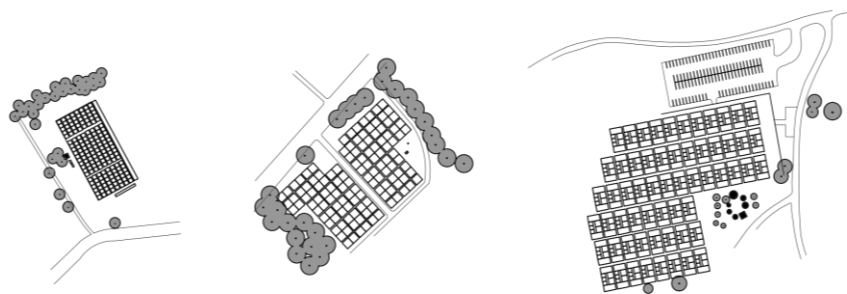


Figure 57 Comparison of three study sites, from left: East Brunswick, Lawrence Township and Duke Farms. Illustration by the author.

## **V. Research Findings: The Garden as People**

### **Interviews with Gardeners**

Over the course of the 2013 gardening season, I conducted twenty-two personal interviews with gardeners at the three sites. Six were interviewed from Duke Farms, twelve from East Brunswick, and four from Lawrence Township. All but two of the interviews took place at the garden site, either scheduled in advance or conducted on the spot while gardeners worked, and the conversations ranged in length from fifteen to forty-five minutes. During the interview process, gardeners were asked whether or not they had a yard, and if so, to describe it. The conclusions drawn from the answers to this particular question challenge the assumption that life in suburbia comes with a yard. Just over half of the participants in the study live in a condo, townhouse or apartment complex that has strict rules about what can and cannot be planted. Some associations allow minimal container plantings; however, none permit the resident to plant vegetables in-ground on the property. Those participants who do have a yard offered a variety of reasons as to why they don't grow vegetables at home. These ranged from the yard simply being too shady to pet dogs that like to dig. Only one, whose backyard does not receive adequate sunlight, said, "The front yard's not the place to have a vegetable garden."

Gardeners were also asked to rate on a scale of 1-5 several reasons often cited as motivations for involvement in community gardening. These included food production, recreation, exercise, being in community, and saving on grocery bills. In addition, there was room for participants to fill in their own "other" motivation for gardening. At all three gardens, food production and recreation were consistently given high ratings, exercise and

being in community received ratings spread much more evenly, and saving on grocery bills was repeatedly ranked quite low. (Figures 56-60) While it is helpful to look at the numerical data drawn from this particular section of the interviews, it is the much more nuanced way in which participants speak about these reasons that truly sheds light on what motivates individuals to participate in large-scale suburban community gardening. The following pages are intended to present the poignant responses of gardeners with regards to food production, the connection between recreation and psychological or spiritual well-being, and community.

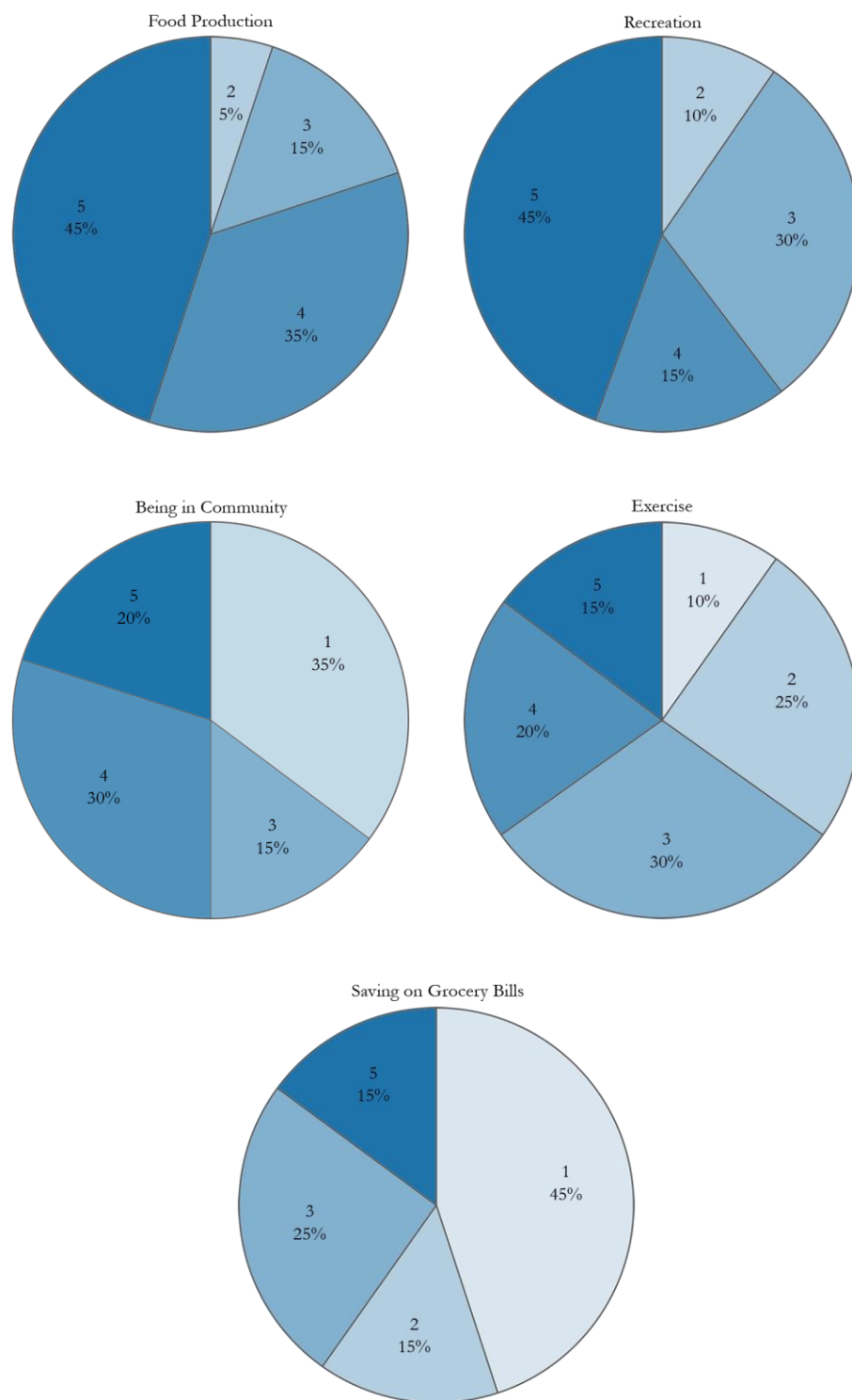
### **Food Production**

When the topic of food production came up with gardeners, there was a great deal of awareness and commentary surrounding organic growing practices, locally sourced produce and GMOs. None of the gardeners interviewed for this study expressed any difficulty in terms of access to or availability of fresh produce, and all but one are regular shoppers at and supporters of local farm stands and markets.

Some participants, who are expressively committed to buying organic produce, whether at the farmers market or supermarket, cite policies of organic growing practices as a driving force behind their decision to garden at a particular location.<sup>75</sup> Others express distrust in the quality of supermarket produce or worry over the carbon footprint they leave when purchasing out of season and non-locally. One gardener from East Brunswick summed up this view saying, “I don’t want to have any negative environmental impact. I want to have a light carbon footprint. That is why I want my garden to be productive.”

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<sup>75</sup> Duke Farms and East Brunswick Community Garden strictly enforce organic methods of growing; Lawrenceville does not.



Figures 58-62 Break-down of responses to interview questions in which gardeners were asked to rank the importance of food production, being in community, recreation, exercise, and saving on grocery bills as reasons for participation. Answers were on a scale of 1-5, 5 being the most important.

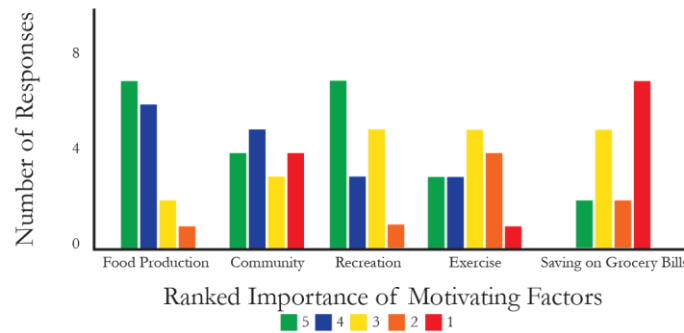


Figure 63 Tally of responses to interview questions in which gardeners were asked to rank the importance of food production, being in community, recreation, exercise, and saving on grocery bills as reasons for participation. Answers were on a scale of 1-5, 5 being the most important.

And while nearly all gardeners are very clear that gardening at this scale and in this fashion is very rarely a money-saving exercise, there is a valuable sense of contentment or relief in knowing where and how their food was grown. One Lawrenceville gardener who cites quality and safety of food as the primary incentive to garden says, “Eventually it probably will [save money], but up front there are more costs.” A husband and wife at Duke Farms who are willing to drive longer distances in order to buy produce direct from farms rather than from a supermarket laugh a bit when I ask them if the community garden helps to save on grocery bills. The wife says anyone claiming to save money by participating at this level is perhaps a bit misguided, and tells me quite matter-of-factly, “Homemade just costs more.”

One pair of gardeners at the East Brunswick Community Garden reports that having a garden gives them opportunity to grow items they aren’t willing to buy at the supermarket, like fresh cilantro and basil. Another couple a few plots down tells me that growing their own tomatoes has spoiled them, and one gardener at the Lawrenceville site excitedly tells me that his experience of growing vegetables has inspired him to try all kinds of new recipes at home. For him, this has led to better and more enjoyable food choices, but has also,

somewhat ironically, led to *more* spending on groceries. Others have decided to plant new vegetables after seeing them grown by fellow gardeners, and one participant proudly showed off his tidy row of okra inspired by his Indian garden neighbor, and another sent me home with an armful of sweet potato greens from the patch in her garden inspired by a Chinese grower.

When I speak to the gardeners about food production, there is a clear sense of pleasure and satisfaction associated with producing one's own food. Some delight in the simple act of nurturing a plant from seed to mature fruit, others find the community garden to be a haven in which to grow ethnic foods that can be difficult to find fresh in markets. At least one individual at Duke Farms is using his 15x30' plot at the community garden to discover if he might be cut out to pursue larger scale food production of his own someday, and our interview returns time and again to ideas of self-sustainability.

As one can see from these results, these gardeners are not participating out of food insecurity, but are entering into the practice of growing a portion of their food with environmental and health consciousness. This seems closely linked to the message of Michael Pollan referenced earlier in which he frames food, and the production of it, in terms of a relationship. The desire for more connection to and knowledge about one's food system that this relationship requires seems evident among the gardeners.

### **The Influence of Recreation on Mental and Spiritual Well-Being**

The effect of the recreational act of community gardening on mental and spiritual well-being was not directly addressed during the interviews; however, it was a recurring theme that came up when gardeners were asked if there were other reasons why they participate in community gardening.

One gardener at Duke Farms spoke of a spiritual connection to the land he finds while working at the garden. For him, it is more a matter of heart than mind. Another Duke participant considers the garden “a peaceful place in which to find serenity.” At the Lawrenceville site, one participant said, “It’s all about the psychological benefit and peacefulness of being in the garden.” As an afterthought, he then added, “Plants don’t talk back!”

Many of the participants used the word “peaceful” in their descriptions of the community, and one young woman spoke about her discovery of how nice it is to interact with people at the garden. Another woman at the East Brunswick garden shared with me what a typical garden visit is like for her. She spoke in a reverent tone of her routine that begins with a walk around the whole garden and said, “I just look around first at the other plots, at the lovely flowers and the birds visiting the flowers, the hummingbirds, the butterflies. And I just admire the beauty around me. It really soothes my soul, and it calms me down. I forget about all my troubles and [then] I focus myself on my plot.” She finishes each visit with another stroll around the garden, admiring and gleaning ideas from what others are doing, and then, as she eloquently stated, “I shut the gate and walk back home, very much enlightened and more enthusiastic about life than ever before.” A few rows down, a husband and wife gardening together at this location summed up the psychological benefits they gain from gardening simply by saying, “It’s like therapy.”

### **Community**

Gardeners from all three locations had overwhelmingly positive things to say about their experience of community at the gardens. Several gardeners spoke about the lack of connection they share with their neighbors at home, and used the words “distant” and “unfriendly” to describe their experience of the suburban communities in which they reside.



In keeping with the definition of *community* provided previously, the garden, for these individuals in particular, fills a desire for an experience of partnership and participation. As one young female gardener at the Lawrence Township site put it, “Everyone is here for a common reason, and everyone is approachable.” Another participant at East Brunswick Community Garden states that in her home country of India she experienced a strong sense of community, but that this is lacking in her current neighborhood in East Brunswick. She assigned high ratings to all of the motivations I listed, but when asked about the importance of “being in community”, she laughed briefly and said, “That is [the] number one reason.” Later in the interview, she elaborated on the sense of community at the East Brunswick garden saying, “It’s a very bubbly community. The people are very enthusiastic about gardening and they look very happy when they come here. I find myself opening up to other gardeners...and I find that people are very accepting and very inviting and they also like to talk. There is a sense of community and family.”

While most gardeners seem to be in primary connection with their near-neighbors at these large sites, whether on a first-name basis or simply with enough familiarity to borrow and share tools, one retired participant at Duke Farms, who admits that he spends a good deal of his daily visits socializing, tells me during our interview that he intentionally walks around the garden in pursuit of conversation and is “struck by the kindness” of other gardeners. He humbly tells me that he even once was gifted the opportunity to utilize his prior experience as a counselor to help a fellow gardener who was going through a difficult time. Another woman, who typically gardens with her husband, describes the joy of making friendships with “people you wouldn’t otherwise meet.”

Nearly everyone describes the garden atmosphere at each location as pleasantly quiet during the weekdays and livelier on the weekends. A high percentage of those interviewed at

all three gardens indicate that they prefer the quieter social aspect of weekday visits for their own gardening activities, but speak fondly of the bustling end-of-season potlucks that bring everyone together over food prepared from a summer of growth. Two female participants in their late seventies begin their shared interview by reminiscing about last year's gathering, and I can almost taste the Indian samosas and green tomato pie they describe with unselfconscious pleasure. One sums up her experience by saying, "You get to know everyone, and they're practically your neighbors: You exchange recipes." Her companion, new to the garden this season, readily agrees.

Even for the participants in the study who are self-described "anti-social gardeners", the garden community is spoken of in positive terms. Two couples, who make it clear that their motivations for gardening do not stem from an unmet desire for community, still describe their fellow gardeners as congenial and easy to approach. Another woman, who at first seems somewhat ambivalent about the influence of community on her desire to garden, describes her fellow gardeners later in the interview as "friendly and forthcoming" and says, "Every [time I visit] I learn something new."

What is spoken of here is certainly a form of social connectedness that has the potential to produce social capital, and clearly there seems to be some correlation between the sensed lack of community in suburban neighborhoods and the intentional seeking of community in another location. However, the type of community spoken of by those participating in the study seems to get at only one half of Wendell Berry's idea. The words of the gardeners indicate that gardening at one of these sites is much more about a commonality or shared experience rather than an opportunity in which concern and trust is built.

## Summary

Based on the preceding interviews, it is evident that all three gardens function to give back to those participating, whether it is in the form of simple satisfaction stemming from the productive recreation of vegetable gardening, or in the immeasurable form of mental well-being. The current literature discourse with regards to food systems, benefits of recreation, and community does indeed help structure a framework within which to both compare and contrast how the suburban gardener describes these themes, or reasons for participating. Precisely because the suburbs lack some of the constraints or challenges that urban areas typically present with regards to community gardening – lack of open space, the need to protect a neighborhood from crime, food insecurity and financial hardship, to name a few of those often cited – it is not surprising that reasons for gardening at one of the three study sites hint at a slightly different experience than what takes place in an inner-city garden. By this I mean that there is certainly a strong aspect of community at work in these large-scale suburban gardens, but it is a form of community that might more appropriately be defined as a distracted interaction. Still, the fact that at least two of the three gardens have grown in size since their inception indicates that there is indeed social capital at work, and this speaks volumes about the important role that large-scale community gardens play in the context of suburbia.

## VI. Conclusions

This study indicates that gardeners participating in large-scale suburban community gardens are doing so for reasons that at first appear to be in line with many of the reasons cited by gardeners participating in urban locations. I believe, however, that there is a distinct difference between large-scale suburban community gardens and their generally small urban counterparts, and therefore these sprawling suburban gardens are worthy of study. The research method of geo-spatial mapping provided a good lens through which to focus some of the broader ways in which contextual elements, such as population density and income level, describe the garden and its users. This mapping also provided a more detailed representation of how linked garden location is to the car culture of suburbia.

The literature review aided in understanding the ways in which themes of community and social capital, food systems, and recreation have or haven't been discussed relative to suburban living, and therefore how they might be discussed in terms of a suburban community garden. In direct connection with this review, the personal interviews demonstrated that a significant distinction between the urban and suburban model is derived from the way in which reasons for gardening are defined and the ways in which these reasons are described. In the same way that the definition of a community garden can be multi-layered and be fitted to describe myriad gardening set-ups, the broad range of reasons given for gardening tend to have much more nuanced ways in which they are spoken of by participants. It is, therefore, important to note the manner in which things like community, food production, mental health and access to gardening space are discussed. We can say *community* and mean two very different things. Similarly, we can say *food production*, and it has a very different connotation in the suburbs, where fresh food is at our fingertips, than in the city, where food deserts can be prevalent. Quite simply, the experience of living in the

suburbs influences and informs the ways in which elements of community, food production and recreation are discussed.

That Central New Jersey's suburbs hold tracts of available land large enough to comfortably contain hundreds of garden plots is a remarkable fact unto itself, and given more time, it would make for an interesting study to discover what role size of the garden plays in the experience of community at sites such as these. Initial responses suggest that the physical scope of East Brunswick, Lawrence Township and Duke Farms community gardens offers a broad spectrum of community experience. There is certainly an abundance of what I have termed "distracted interaction" but there are also moments of much more direct connection. Here I think of conversations overheard between gardeners as they rested at picnic tables together or reminisced over previous gardening seasons; most specifically, I think of the one gentleman at Duke Farms who established enough trust with a fellow gardener that he was able to offer some moments of counseling. Simply stated, there is room for complete anonymity as well as for intimate bonding among gardeners. Both ends of the spectrum were represented in the interviews, and even within individual interviews, the experience of community was expressed in varying ways. Precisely because the large size of these gardens allows for an overlap of independence and community, it is worthwhile to consider that there may be an optimal size, layout and management strategy that fosters an appropriate balance of these two experiences for the intended use group, and the implications that size and siting of these three gardens have for planning and design of programed open space in the suburbs could benefit from future study.

What is particularly interesting is that none of the gardens in this study were established for lack of designated recreational or open space, nor were they born out of a need for neighborhood beautification. As Steven Groeger of the Lawrence Township

Recreation Department stated, the intent of the garden was to provide residents with *another* form of leisure activity (*italics mine*). It is common knowledge that there is a deficit of open space in densely populated urban centers, and community gardens can help to ameliorate this deficiency. However, the need for programed open space, such as Duke Farms' nearly four-acre garden – established in order to teach environmental stewardship – *within* an additional 2,740 acres already open to the public for hiking and biking is less clear. Here Duke Farms provides us with a prime example of the community garden as a suburban amenity. While it is important to recognize the enormous difference between the establishment of a community garden as an amenity and the establishment of a community garden out of a need for open space, I am inclined to suggest that a significant number of those who are participating at these large-format sites are doing so out of what I would term a privileged necessity.

It is, of course, important to recognize that the assumption that the suburbs necessarily mean a yard in which to garden is false. As the interviews revealed, many of those participating in this study live in a townhouse, condominium or apartment complex that either has no yard at all, or has strict association rules that prohibit anything more than a lawn and container plantings. Of the eight interview participants who did report having a yard, there was a variety of reasons as to why they chose to garden at a location removed from their home or immediate neighborhood. The reasons ranged from lack of sun, to digging dogs, to the belief that, as one gardener stated, "The front yard's not the place to have a vegetable garden." It would certainly take a much larger and more comprehensive study in order to determine how much, generally speaking, aesthetic preference – or suburban expectation of what a yard ought to look like – influences decisions about where to garden. The results from this future study could directly address what Lois Moskowitz of

the East Brunswick Community Garden stated about wishing users of and visitors to the site would recognize the hard work instead of only noticing the weeds, and could provide some interesting discussion regarding the aesthetics of neatness in gardening.<sup>76</sup>

Related to this is the evident correlation between the level of management and the perceived or real organization of the garden, and this may be due to actual enforcement of policy, or it may be due simply to the presence of a coordinator or manager at the site. This correspondence was particularly evident during the latter part of the growing season. During this time, the gardens at Duke Farms and East Brunswick remained well tended, particularly along the pathways, edges and common spaces; however, the garden at Lawrence Township became increasingly overgrown with weeds and neglected plots. With this in mind, it would be interesting to look more closely at this correlation to determine how deeply the two are connected. Again this could offer important insights regarding future garden design and management.

Finally, the research begins to hint that the suburban lifestyle of getting fresh food locally, whether through CSAs, farmers markets or the “grow your own” approach, is gaining ground. The notion of going to the farm and buying directly from the grower seems to have taken on an element of pride in the suburbs, and something akin to the notion of “doing good” is present. Again, there is an element of privilege tied up in this form of food consciousness. On the other hand, this sense of doing good is manifested in the act of donating produce to soup kitchens or food banks, and examples of this are present at all three sites. The questions that this particular mode of civic duty gives rise to are many, and

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<sup>76</sup> In “The Aesthetics of Horticulture: Neatness as a Form of Care,” Joan Nassauer, Professor of Landscape Architecture at the University of Michigan has written of the role of aesthetics in horticulture and agriculture and the “perceived care of the landscape is a primary determinant of landscape attractiveness. (Citation: HortScience, vol. 23, no. 6, December 1988, pp. 973-977)

further conversation with gardeners at these and other sites could provide a very interesting look at the suburban community gardener's complex relationship to and with food.

In closing, this study provides a basic understanding of who the gardeners are at the Duke Farms, East Brunswick and Lawrence Township community gardens and why they are participating. To continue to develop the research questions that inspired this thesis might involve development of a larger pool of interviews and expansion of questions that would seek more detailed responses about the experience of community, more directly explore the participant's concern with food systems, and more specifically inquire about how the act of gardening in a recreational manner benefits the gardener's well-being. Large-scale suburban community gardens, by their very structure and size, accommodate an impressive number of gardeners. As such, their ability to provide and promote experiences of community, social capital, food sovereignty, local food production, recreation, and mental and spiritual well-being is a valuable resource to those who participate.



## **Appendices and Bibliography**

### **I. Interview Questions**

#### **Template for Garden Coordinators**

Date:

Garden:

Coordinator:

Who established the garden?

How, why and when was the garden established?

Is the garden designed to be permanent?

Who owns the land on which the garden sits and what kind of arrangement is there for land tenure?

What was situated on the land prior to the garden?

What partnerships, if any, does the garden have? (e.g. Extension agents, organizations, food banks)

Do you receive any support from local government?

What other types of support does the garden receive? (e.g. materials, compost, etc.)

Do you have any relationship with other community gardens?

Where does funding come from? How much funding is there?

Has water been an issue?

Have you seen gardener interest and commitment increase or decrease over the years?

Have there been concerns about the garden “closing”?

What type of leadership committee does the garden have?

What responsibilities does the committee have?

What are the biggest challenges that the garden faces?

## Interview Template for Gardeners

Date:

Garden:

Participant:

For how long have you been gardening at this location?

What were your initial motivations for becoming involved in the community garden?

Please rank the following on a scale of 1-5, 1 being unimportant and 5 being very important: Food production; Recreation; Exercise; Being in community; Saving on grocery bills; Other

Have your reasons for gardening changed since that first season? If so, how?

Please describe your garden plot:

What do you do with the items from your plot?

How often do you come to the garden, and what do you do while you are at the garden?

How far do you travel to get to the garden and by what means do you travel?

Do family members garden with you?

Please choose from the following options to describe your own gardening skills:

Beginner with no prior experience, Beginner with some prior experience, Intermediate gardener, Proficient gardener

How or from whom did you learn to garden?

How has your knowledge of gardening changed or grown since participating in the community garden?

Is there significant sharing of knowledge among gardeners?

How would you describe the social or community atmosphere of the garden?

What forms of dialogue and exchange have you seen between gardeners?

Please describe your yard.

What do you consider your neighborhood?

Does having a community garden plot affect your grocery purchases during the growing season?

Does it save you money?

Where do you typically purchase fresh produce?

Does this change depending on the time of year?

Do you shop at farmers' markets?

How often do you purchase fresh produce?

How many members are in your household?

What type of work do you do for a living?

How do you typically commute to work?

What is your total household income?

## II. Table of Community Garden Statistics

<b>Garden</b>	<b>Garden Size</b>	<b>Plot Size</b>	<b>Number of Plots</b>	<b>Cost to Gardener</b>
Duke Farms (organic)	140,000 sq. ft. (3.21 AC)	10x10' 15x15' 15x30'	420	\$20 \$40 \$60
East Brunswick (organic)	23,100 sq. ft. (.53 AC)	10x10'	167	\$10
Lawrence Township	120,000 (2.75 AC)	20x20'	139	\$45 (resident) \$90 (non- resident)

### III. Garden Handbooks/Rules

#### Duke Farms Community Garden<sup>77</sup>

##### REGISTRATION, POLICY & FEES

Residents who live and/or work in Somerset County, New Jersey are eligible to apply for a community garden plot at the Duke Farms Community Garden. Gardeners are responsible for the annual fee for a community garden plot. Additionally, four (4) hours of volunteer work are required, which contributes to the stewardship of the common areas of the garden. Please note that fees are non-refundable and are due in full before the opening of the gardening season.

##### FEES BY PLOT SIZES & TYPES

10x10 100 sq ft \$20

15x15 225 sq ft \$40

15x30 450 sq ft \$60

Unless otherwise requested, garden plots are for personal use only. Commercial endeavors may be considered upon request depending on availability of plots.

##### TRANSFERABILITY

Gardeners may not transfer, exchange or sublet their plot.

##### ORIENTATION REQUIREMENTS

Orientation is required for every participant whether they are a new or returning gardener. These sessions will be held in the first quarter of each calendar year to provide an opportunity to meet your garden neighbors, review garden rules, discuss approved materials, hours of operation, volunteer service, special events, classes, etc. The orientation session will last approximately one hour and will be held on various days and times. Due to the high volume of gardeners, requests for independent orientations will not be accommodated. Returning gardeners will be brought up to date with any changes for the new garden season. New gardeners will get oriented for the first time and will also need to attend an “Intro to Organic Gardening” course, which is free to participating community gardeners. Failure to complete the orientation session or required classes will result in forfeiting awarded plot. Please refer to the Community Garden Course Schedule for all dates and times of the orientation sessions and “Intro to Organic Gardening” courses.

##### PLOT APPLICATION & REGISTRATION

Community Garden plots will be awarded on a lottery basis each year. Each returning gardener will be given the option to keep their existing plot for up to five years with an option to renew for five more provided all payment, maintenance and volunteer requirements have been met. All gardeners must have a valid email address to receive messages and updates from the Community Garden Team Leader at Duke Farms. It is the Community Garden (CG) participants’ responsibility to check for messages on a regular basis (weekly at a minimum) to stay in touch with updates and current events. Messages will be provided via email blasts, website notices, and CG kiosk postings located at both CG entrances. Unless specifically requested in writing, phone calls will not be made to CG participants to alert them of these messages and updates. The first name to appear at the end of the Gardener’s Participation Agreement (available at the orientation) is considered

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<sup>77</sup> The following text is taken directly from the Duke Farms Community Garden Handbook, which can be found at < <http://dukefarms.org/Documents/Images/Programs/CG/CGHandbook-Online.pdf>>, accessed 16 March 2014.

the “Primary Gardener”. This gardener agrees to be the designated contact for all correspondence regarding the garden plot and assumes full responsibility for the other gardeners on the application. It is the responsibility of the Primary Gardener to keep the Community Garden Staff at Duke Farms notified of their current contact information, including an email address, as correspondence emailed to that address will be considered delivered. The Primary Gardener is responsible for communicating all correspondence and information regarding their plot to all participants involved with their garden plot. The Primary Gardener is also responsible for fulfilling the maintenance, volunteer hours, and fee requirements for each of their garden plots. All gardeners on the application are collectively bound by the Participation Agreement. Any new gardener must be added to the Participant Agreement before being allowed to garden in the plot. This can be done by having the new gardener sign and submit a waiver form to the Community Garden Staff at Duke Farms.

#### GARDENER ABSENCES (REPORTING ISSUES)

Gardeners are required to notify the Garden Manager if unable to maintain the plot for any period of time or if they wish to relinquish their plot to Duke Farms (please note that registration fees are non-refundable). Please notify the Garden Manager if you wish to have someone attend to your plot during any absence. Gardeners going on vacation for a period of time that will impact their plot’s maintenance must advise the Garden Manager and make their own provisions for the maintenance of their plot. Remember that all visiting gardeners must complete and submit a waiver of liability form to the Community Garden Staff at Duke Farms before working in a plot in the Community Garden. This form is available at the Community Garden website.

#### ANNUAL RENEWALS

Gardeners who want to renew their plots for the following season must notify the Community Garden Staff at Duke Farms by October 1st. Renewals are based on fees being paid in full, keeping their plots properly maintained and fulfilling their volunteer service obligation.

**UPGRADING TO A LARGER SIZED PLOT:** If a gardener wants to rent a larger-sized plot than what they currently have, there may be an opportunity to upgrade if a plot is available. Requests for a larger plot will be entered into the lottery for the next growing season. No guarantee of adjacent plot upgrades can be made.

**PLOTS ADJOINING EXISTING PLOTS:** If a gardener wants to rent a plot adjoining one they currently have for the following year, they may request it. If chosen in the lottery process, we will do our best to accommodate that request providing all other renewals have been satisfied and that a plot in close proximity is available.

**MOVING TO ANOTHER LOCATION WITHIN THE GARDEN:** All plot assignments are final.

#### OPERATION & CONDUCT

The primary goal of following these rules and responsibilities is to ensure the safety and well-being for all of our gardening participants and visitors.

**GARDEN MAINTENANCE:** Garden plots are offered in AS IS condition and need to be prepared each season by the participating gardener. All organic improvements are the responsibility of each gardener, including creating raised beds in wet seasons and trenching (for water conservation or shedding excess water). Composted materials may be available in limited supply at the CG at the beginning of the gardening season. Organic fertilizers are the sole responsibility of each gardener and may be necessary to supply ample nutrients throughout the season. Each gardener is responsible for the maintenance and regular upkeep of their plot. All garden plots are to be maintained in a clean and neat manner for the

entire season. Watering, weeding, harvesting and all other garden-related maintenance issues are the sole responsibility of each gardener (plan on a minimum time commitment of four hours per week for regular maintenance).

**WORKDAYS AND VOLUNTEER HOURS:** Participation in the Duke Farms Community Garden is contingent upon a gardener's continued maintenance of his or her individual or group plot as well as assistance with the overall upkeep of the Community Garden. Requirements for each plot include: volunteering a total of four (4) hours during the gardening season, assisting with specific tasks and participating in various duties for the benefit of the entire Community Garden. Volunteer Workdays are held on each Saturday from 10am - 2pm. A detailed task list and instructions for logging volunteer hours will be posted online and on the message board kiosk located near each garden entrance. Volunteer service may include garden maintenance, moving compost and wood chips, and other tasks as needed and identified by the Garden Manager.

#### **HOURS**

The Duke Farms Community Garden will be open from March 1 to December 15. The hours of operation are 6am - 8pm and the Community Garden is available to gardeners seven days a week.

#### **PARKING**

The entrance to the Community Garden is located on Duke Parkway West in Hillsborough. Please park in designated areas in the Duke Farms Community Garden gravel parking lot. There is a second small short-term parking lot located in front of the Eastern entrance gate for dropping off heavy items. Please keep in mind that Saturdays and Sundays during the Spring and Summer months are high visitation days at Duke Farms. The Community Garden parking lot is also used for overflow visitor parking so it is important to plan accordingly during these times of high visitation.

#### **USE OF COMMUNITY GARDEN EQUIPMENT**

Gardeners are responsible for bringing their own tools, hoses, watering cans and other materials to the site. Wheelbarrows and garden carts are provided by the Community Garden and can be used by all participants if available for transporting tools, flats of plants, seedlings, and other materials to plots. Please return them to their designated areas when you are done transporting your needed materials. Additional supplemental tools may be available via permission from the Garden Manager. Gardeners are responsible for the security of any materials that they bring to the site, and the Duke Farms Foundation (DFF) takes no responsibility for lost or missing materials. The use of DFF provided tools and equipment are at your own risk. Power equipment can only be used by trained or certified participants.

#### **SAFETY & SECURITY**

Please drive carefully and slowly through the Duke Farms parking lot, observing posted speed limits of 10 mph and being aware of pedestrians. Please do not bring anything into the garden that will compromise the safety or enjoyment of the gardeners such as radios, BBQs or pets (unless it is a service animal such as a seeing-eye dog). All garden gates are to remain closed AT ALL TIMES to prevent animals from entering. Duke Farms does not warrant against the safety of the consumption of food grown on the property. Participants will hold Duke Farms harmless for any and all illnesses that may arise out of consuming food produced on Duke Farms property.

#### **BEHAVIOR**

Please be courteous in the garden at all times. We expect gardeners to be polite and respectful to their neighbors and Community Garden Staff at all times. Inappropriate behavior will be grounds for expulsion from the garden. No alcohol or illegal substances are

allowed on Duke Farm's property. Do not enter or take anything from another gardener's plot, even if you think they have neglected their plot. Entering or taking from an unauthorized plot will be grounds for expulsion from the garden. Disputes between gardeners that cannot be resolved will be referred to the Garden Manager. Smoking and chewing tobacco are prohibited within the Community Garden. Unlawful discrimination will also not be tolerated.

#### VISITORS & CHILDREN

All participating gardeners agree to supervise guests or children accompanying them in the Community Garden at all times and agree to be responsible and liable for their conduct. It is expected that children will be well-behaved and stay close to the adult supervising them at all times. All guests and children are expected to follow the rules and guidelines of the Community Garden. Anyone under the age of 18 is considered a child. If a gardener encounters an issue with another participating community gardener at any time, please contact the Garden Manager immediately. We encourage all gardeners to communicate with one another, but we would like disputes to be mediated through the Garden Manager for a quick and calm resolution.

#### GENERAL RULES & GUIDELINES

Each Community Garden participant (CGP) accepts full responsibility for their plot(s) and any and all amendments it may or may not require. For example, if the soil Ph is low (or high) it is the CGP's responsibility to make any and all adjustments required to bring the soil to desired levels for effective plant growth. DFF is not and will not accept responsibility for soil and overall garden plot conditions, including drainage and other related issues. A limited amount of soil amendments such as composted horse and cow manure, composted leaves, and mulch hay may be provided at the outset of each season, but it is the CGP's responsibility to appropriately apply them. Certified organic fertilizers may be used if pre-approved by the Garden Manager.

#### OUTLAW PLANTS

Some plants are not allowed in the gardens due to their habit of spreading out of control and becoming impossible to manage.

- No illegal plants, trees, cacti, castor beans or other poisonous plants are allowed.
- No invasive plants may be planted. If you aren't sure about a plant, please check in with the Garden Manager. A list of invasive plants will be posted on the Community Garden website.
- No mint, catnip, Jerusalem artichoke or comfrey is allowed, except in pots.
- Be thoughtful while planting vines, corn, sunflowers and other tall plants so as not to shade or invade a neighbor's plot.

#### WATERING

Please conserve water whenever possible. The water supplied to the Community Garden is derived from a nearby well and is tested semi-annually for its quality (for health purposes). The watering system is non-potable and is only to be used for watering plants. Hose bibbs are located in each cluster of plots. While watering from a hose is permissible, sprinklers are not allowed. Report any problems concerning water to the Garden Manager.

#### STRUCTURES

Structures may be erected only if they are pre-approved by the Garden Manager. Gardeners will be asked to remove all unauthorized structures. There is a 5-foot height restriction for trellises so as not to shade neighbors' gardens. Stakes that mark plot corners and identify plot numbers must be left in place all season. No altering of the dimensions of any plot is permitted. Materials made of PVC are not allowed in the garden although similar products



made of High Density Polyethylene (HDPE) will be allowed due to its negligible ability to leach toxins. Lumber used in raised bed construction must be untreated. The use of chemically treated wood is not allowed. These products contain arsenic, hexavalent chromium and other toxic substances, which can contaminate the soil and plants.

#### USE OF FERTILIZERS & PESTICIDES

For the health and safety of all participants, only organic products are to be used in the garden. Non-organic pesticides, fungicides, herbicides, and fertilizers are prohibited. Please visit our website at [www.dukefarms.org](http://www.dukefarms.org) for more details and also talk to the Garden Manager for more information. Keep all organic pest-control products away from children and remove the products from the Community Garden after use. There will be an overview of allowable substances during the Orientation Meeting. Insect lures and/or traps will only be used on the site with pre-approval from the Garden Manager.

#### MULCHING

Biodegradable mulches such as compost, leaves and straw are permitted. Carpet mulch is not allowed. Wood chips can be used in paths only. Black plastic is allowed, but unless you plan to keep the plot for the following season it must be removed at the end of the season.

Limited quantities of top soil, shredded leaves, manure, compost and other organic materials may be made available for gardeners' use.

#### COMPOSTING

A service area is provided for finished compost as well as for composting your plant debris. Weeds, diseased and insect infested plants should be put in weed refuse piles. Please do not place non-garden trash in the piles. Please do not add kitchen/meat or dairy scraps to the plant refuse piles because they are likely to draw animals. Take home your non-garden trash to be disposed of properly or dispose of in the trash receptacles on site. The composting area is for on-site composting only. No off-site materials are to be brought to Duke Farms in order to prevent the possible spread of invasive plants, insects and/or diseases.

#### WEEDING

Gardeners are expected to keep their plots neat and productive through the consistent removal of weeds along with regular harvesting all season long. If a plot is not in compliance with these basic expectations, the gardener will be notified via email and will have one week to bring the plot into compliance as stated in the notice. Repeated non-compliance will result in forfeiture of your garden plot and all plot fees will be non-refundable. Remember to keep plot boundaries between neighbors weeded as well. Gardeners are responsible for maintaining all adjacent pathways bordering their plot(s) which includes 1/2 of the pathway between their garden plot and their neighbor's garden plot. Keep plot edges and fencing free of weeds.

**NOTICE OF NON-COMPLIANCE:** If your plots become excessively weedy you will receive your first notice advising you to visit your garden for maintenance. If you have not followed up or contacted the Garden Manager within a week you will receive a second notice and see a sign in your garden notifying you that the garden needs to be weeded immediately and may be at risk of forfeiting your plot if area is not attended to. The third notice will be the final notice at which point we take back the plot and you forfeit all future opportunities to hold a plot at Duke Farms. It is therefore to your advantage to effectively communicate with the Garden Manager so that we can help you overcome any hardships or shortcomings that are preventing you from successfully maintaining your plot. If we determine together that you can't sustain the plot any further then we'll take it back, but you will still maintain the opportunity to hold a plot again in the future when you're in a better position to do so.

## WILDLIFE

DFF will do everything within its control to manage wildlife to help prevent damage to garden plots but DFF makes no claim or guarantee against such damage from occurring. It is each gardener's responsibility to protect his/her own plots as needed, provided such action meets DFF's organic approach and it does not affect the surrounding neighbors. DFF will set wildlife friendly Havahart traps to capture and relocate damaging wildlife. No one is to handle these traps. If you see an animal in one of the traps you must call Duke Farms Security at 908-722-3700 (dial 0 after the prompt). They will take care of the handling of the trapped animal.

## FALL CLEANUP

Please note that a seasonally well maintained and thoroughly cleaned garden plot is required in order to be invited to return as a gardener each season. During fall cleanup, all plants and weeds must be removed and disposed of properly in the garden compost pile. Unless you plan to keep your current plot for another gardening season, you need to completely clean up the plot by removing all stakes, trellis, netting, fencing, tomato cages, watering cans, plant materials and other personal items. Please advise the Garden Manager via email when you have finished your gardening season. If you are keeping your plot for another year, perennial plants should be neatly pruned back, annual plants pulled and composted, and all extraneous materials removed for winter. Fences, paths, stakes and other secure items may stay as they are.

## **East Brunswick Community Garden Rules and Guidelines<sup>78</sup>**

I will pay a fee of \$10 to help cover garden expenses.

I will have something planted in the garden by June 1<sup>st</sup> and keep it planted all summer long.

If I must abandon my plot for any reason, I will notify the garden leadership within two (2) weeks (at [ebcgarden@gmail.com](mailto:ebcgarden@gmail.com)).

I will keep weeds at a minimum and maintain the areas immediately surrounding my plot, if any. (There will be scheduled group weeding days once a month).

If my plot becomes unkempt, I understand I will be given two (2) week's notice to clean it up. At that time, it will be re-assigned or tilled in.

I will keep trash and litter out of the plot, as well as from adjacent pathways and fences.

I will dispose of all organic (plant) matter in the compost bins and non-organics in the garbage cans.

I will participate in the spring and fall cleanup of the garden.

I will pick only my own crops unless given permission by another plot user.

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<sup>78</sup> The East Brunswick Community Garden Rules and Guidelines can be found on the organization's webpage: < <http://ebcommunitygarden.webs.com/2014rulesandguidelines.htm>>, accessed 16 March 2014.

Ripened produce, unless harvested, will be picked by the garden board and donated after notification.

I will use only community garden board approved fertilizers, pesticides or weed repellents.

I agree to volunteer four (4) hours during the season toward community gardening efforts.

I will not bring pets into the garden.

I will not smoke in the garden.

I will ensure that the person responsible for the plot is at least 18 years of age.

Parking for gardeners and their guests is permitted in the municipal parking lots. DO NOT WALK THROUGH THE POLICE PARKING LOT UNDER ANY CIRCUMSTANCES. Handicapped Parking is available on the graveled area on the Rues Lane side of the garden. There is an adjacent area for drop off of garden supplies only.

I understand that neither the garden group nor owners of the land are responsible for my actions. I THEREFORE AGREE TO HOLD HARMLESS THE GARDEN GROUP AND OWNERS OF THE LAND FOR ANY LIABILITY, DAMAGE, LOSS OR CLAIM THAT OCCURS IN CONNECTION WITH USE OF THE GARDEN BY ME OR ANY OF MY GUESTS

I will have fun!

*I understand that failure to comply with these rules will result in forfeiture of my plot after a two (2) week notification*

### **Lawrence Township Community Garden Guidelines<sup>79</sup>**

#### **2014 GARDENING GUIDELINES**

1. Gardens must be planted by June 1 or the plot(s) will be reassigned to another individual and the registration fees forfeited.
2. Gardens must be kept free of weeds - not only for appearance but they rob plants of food and water.
3. Nothing should be used such as fertilizers or insecticides that will affect neighboring plots-no weed repellents are permitted.
4. All trash is to be put in receptacles provided. At the end of the season the gardener must clean up his/her plot (s).

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<sup>79</sup> The 2014 guidelines for the Lawrence Township Community Garden can be found on the Recreation Department's webpage: < <http://www.lawrencetwp.com/recreation/GardenRegistration.pdf>>, accessed 16 March 2014.

5. No structures are permitted and gardeners should be careful not to leave tools at the plot.
6. The time frame for use of the garden(s) is April 15, 2014 to November 15, 2014 or until the Superintendent of Recreation elects to terminate the assignment.

NOTE: FAILURE TO ADHERE TO THESE GUIDELINES WILL RESULT IN TERMINATION OF THE PRESENT ASSIGNMENT AND FUTURE PLOT ASSIGNMENTS MAY BE JEOPARDIZED.

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