ENVIRONMENTAL JUSTICE IN CITY-OWNED PARKS IN BIRMINGHAM, AL AND JACKSON, MS

by

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DEDICATION

This dissertation is dedicated to a few people, some of whom are no longer amongst us in the land of the living. This dedication may be long, but I believe in giving credit where credit is due.

First and foremost, to my husband and travel buddy, Nicolas, thank you for your unwavering support, love, understanding, encouragement (especially when I was overwhelmed), and sacrifices. I know it could not have been easy holding down the fort. We have married, traveled, and grown our love for each other during this process. Your sacrifices are not in vain. I love you to the farthest star and back.

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I just want to give hope like the fountains you throw pennies in.
--Jermaine Cole, *False Prophets*

Rest in Peace, Marcellus “Khaliifah” Williams.
#163729
Innocent until proven guilty with due process.

“To be absent from the body is to be present with the Lord."
2 Corinthians 5:8

“Indeed, we belong to Allah, and indeed to Him we will return.”
Quran 2:156

ABSTRACT

Parks are considered public goods, but scholarly discourse highlights social, racial, or economic disparities in allocating such spaces in Black neighborhoods. Given the predominantly Black demographics of Birmingham, AL, and Jackson, MS, and limited research surrounding these cities, they serve as ideal places for case studies to examine the disparities and environmental injustices in park distribution. This research aimed to understand residents' perceptions and quantitative metrics regarding park quality in these cities. The study is significant due to the inequitable allocation of parks and amenities in majority-Black cities, an environmental justice issue, reflecting unequal access to resources in Black neighborhoods. Using qualitative data from in-depth interviews and quantitative data from the Trust for Public Land ParkServe, combined with an Environmental Justice Framework and ground truthing, this study addressed three questions: Are there spatial disparities in the distribution of parks in Black communities in Birmingham and Jackson compared to majority-White communities? Do parks in the majority-Black study cities have comparable quality to parks in majority-White communities? What are residents' perceptions of conditions of their city parks being an issue of environmental justice? The results suggest no spatial disparities in park distribution in Birmingham and Jackson; however, most participants believed that park quality and amenities are not comparable to those in majority-White neighborhoods. Consequently, the participants did not see the parks as environmental justice issues, but issues of racism, in city parks in Birmingham and Jackson. These findings contribute significantly to the limited Environmental Justice literature concerning parks and can better inform future city park planning to address citizens' needs and desires.

Keywords: parks, spatial, Birmingham, Jackson, Black, communities, cnvironmental justice

CHAPTER 1: INTRODUCTION

This mixed-approach methodology study aimed to highlight an Environmental Justice issue by acknowledging disparities or inequalities in parks in majority-Black cities. As demonstrated in the literature review, research has been conducted on majority-Black cities with majority-Black populations and the correlation between city-owned parks and park access. Although studies have been performed in other cities, it is essential to answer whether there is an Environmental Justice issue in cities such as Birmingham and Jackson.

Background

Parks are a vibrant and vital infrastructure essential in planning (National Recreation and Park Association (NRPA), 2023). Before exploring the functionality of parks in the context of this work, it is crucial to examine the history of parks in the U.S. Although this research focuses on city-owned parks in the present day, it is essential to explore the history of parks as they were developed in the United States.

Around the mid-1800s, urbanization and the Industrial Revolution increased populations in urban areas. With the promise of jobs in factories, railroads, and warehouses, many families fled rural areas. With increased population came increased pollution, diseases, and overcrowding. Orders and building codes were created to control disease, pollution, and overcrowding. Even during this time, there were disparities in park access due to parks being located on the outskirts of cities (NRPA, 2021).

For example, Seneca Village, now Central Park, was once a thriving, predominantly Black village in New York. Nearly two-thirds of the population was Black, one-third of the population was Irish, and a small number was of German descent. Seneca Village was an area for Black people to escape Manhattan's unhealthy conditions and discrimination. Seneca Village

provided more than just safety for Black individuals; it also provided residents with prosperity and stability. Because many residents of Seneca Village owned property, they were given the right to vote. In the 1820s, New York state required Black men to own at least $250 in property and hold residency for at least three years. There were about 100 Black eligible voters in New York State, and 10 of them were residents of Seneca Village (Central Park Conservancy, 2018).

Nearly 30 years later, the city began planning for a park to relieve residents of unhealthy conditions in urban life and provide an area for recreation. Architect Frederick Law Olmstead influenced the early park movement during the Industrial Revolution. He dreamt of cities with open spaces for recreation and winding trails to increase access to nature and improve quality of life (Central Park Conservancy, 2018). Thus, through eminent domain and the New York legislature, the city acquired the land where Seneca Village once sat. The residents of Seneca Village were displaced (Central Park Conservancy, 2018).

Central Park was the first landscaped public park in the U.S. Olmstead's work on Central Park later influenced his design of the 'Emerald Necklace,' a 1,000-acre park in Boston, Massachusetts. The Emerald Necklace was partly developed to address issues like local flooding, stormwater, and sewage resulting from urban expansion. In the late 1800s and early 1900s, park design experiments aimed to replicate Olmsted's vision for neighborhoods inhabited by working-class citizens. Scholars like Galen Cranz have described the 'small park movement,' which created parks spanning one to four city blocks. During this period, the influx of European immigrants prompted a significant shift in park planning, transforming parks from spaces primarily for wealthy White people into central hubs for immigrant communities (Cranz & Boland, 2004).

In the 20th century, although Robert Moses, a master builder and major contributor to New York City's development, is credited with expanding park systems, playgrounds, pools, and recreational facilities, it is noted that he invested more in parks within wealthier neighborhoods. This led to access issues, particularly for Black neighborhoods, where bus routes were limited, making it difficult for residents to reach these parks (Robert Caro, 1975; Who Is Robert Moses? | Planopedia, 2021).

Nationally, redlining and urban renewal policies in the 1930s and 1940s significantly impacted park access. The Civil Rights Act of 1964 prompted the desegregation of national and state parks. Ernest Attwell, Field Director of the Department of Colored Work for the Playground and Recreation Association of America, was one of the first to advocate for recreation as a means to reduce delinquency. He made notable progress in providing playgrounds and recreational spaces in Black neighborhoods throughout the United States (NRPA, 2021).

Statement of Problem

Today, parks serve in a natural, historical, and even recreational capacity. Public parks are public goods that should be accessible by anyone regardless of race, ethnicity, or creed. Although anyone can access parks, there is a question about whether parks are conveniently located within specific marginalized neighborhoods. If they are situated within marginalized areas, are they equitable in quality? This means, is there the same amount of park acreage, is there an increase in crime, and are the available amenities the same compared to non-marginalized White-majority areas? Throughout history, Black people and other people of marginalized groups were never considered stakeholders in the decisions of parks (Gosalvez, 2020). The racist systems that have historically been employed are still relevant today (Mowatt, 2020).

In recent studies, minorities have been shown to live in nature-deprived areas (Gosalvez, 2020). According to Gosalvez (2020), members of low-income communities are also at a higher risk of living in minor nature-rich areas. Additionally, 82% of the park-poor areas are in communities of color. Even if these communities of color have parks and green spaces, they are much smaller and overcrowded (Moore et al., 2021). Areas like Atlanta have a significant Black population but decreased access to green spaces and parks (Moore et al., 2021).

In an article published by Hannah Reynolds in New Jersey Future, a third of Americans do not have efficient access to parks, leading to disparities in park access in underserved communities. Likewise, Trust for Public Land's (TPL) New Jersey State Director Scott Dvorak argued that although two-thirds of Americans have access to parks, there are still issues with the quality, size, demand, and maintenance of accessible parks (Reynolds, 2023).

Park-poor neighborhoods are usually neighborhoods that have a lower number of parks and an increased number of poverty and crime compared to "park-rich" neighborhoods. Research from the TPL states that parks in most Black and brown neighborhoods are half the size and almost five times more crowded than other spaces (Trust for Public Land, 2020).

Regardless of social, racial, or economic status, all people should have the opportunity to have adequate parks and green spaces, irrespective of where they live (Stanfield et al., 2005). Parks and green spaces are incredibly beneficial to the communities they are in and can provide critical economic, public health, and mental health benefits (Moore et al., 2021). Increased social interaction and links to lower crime rates also benefit green spaces and parks (Moore et al., 2021).

There has been much discourse over the past 20 years to prove or disprove spatial distributions in parks and green spaces. Many studies have been employed to understand if there

are spatial distributions and issues of equity and to measure the proximity of a particular population to parks and green spaces across the United States and other countries. Some publications suggest that associations vary across urbanization levels instead of being positively linked with race and class (Wen et al., 2013). Gordon-Larson et al. (2006) found disparities in park acreage and facilities, increasing obesity. Although many studies have been employed, there is still a gap in the literature. This study, like Rigolon's (2018), analyzed data on a city level.

Purpose of the Study

This study highlighted a scarcity of research addressing environmental justice issues, such as parks in the predominantly Black cities of Birmingham, Alabama, and Jackson, Mississippi. The qualitative method of semi-structured, in-depth interviews allows individuals to express their perspectives on parks in their cities. The quantitative method provides data to identify inequalities within parks further. This study emphasizes a need to investigate disparities in access and overall quality of parks in predominantly Black areas to promote a more equitable and fair distribution of park resources. This research also adds to environmental justice literature and advances the lens of environmental justice, which is more than polluted-related issues.

Importance of the Study

Although many believe racism and segregation only occur and have occurred in the southern United States, it is prevalent nationwide (Roberts & Rizzo, 2021). Looking into public parks and green spaces sheds light on history and continued racism. The study of the Environmental Justice of parks in Black cities can aid and address potential disparities (i.e., access, quality, and benefits) of parks. This study can bring awareness to issues that have gone unnoticed and rectify environmental inequalities amongst communities by promoting equitable and fair parks.

Studies show that including diverse voices, often marginalized, can lead to community empowerment and encourage community members to participate in decision-making efforts (Hussey, 2021). Community participation allows community members to express their needs and concerns to policymakers. When policymakers' plans fail, usually it's because they do not include community members. Therefore, they misunderstand the reality and actual needs of the community (Rabinowitz, n.d.).

Although it contains a small number of participants, this study allowed community members to express their feelings and perceptions on parks in their cities. This study may be beneficial to not only policymakers but also to individuals who frequent parks, including parents, kids, and even older people. Organizations may also use this research to dive into more profound, more centered studies on parks within specific marginalized communities.

By understanding residents' perceptions supported by ground truthing and quantitative data, policymakers will better understand the changes needed within the park system. This research may catalyze residents of other marginalized areas to push research in parks and result in more equitable parks. This study is also critical because it opens the lens to view Environmental Justice beyond a traditional pollution-focused lens.

Theoretical Framework

Since this research is a push for equitable environmental policies and laws, the Environmental Justice Framework is a valuable paradigm for this research. According to Ramirez-Andreotta (2019), the Environmental Justice Framework best analyzes and studies the distribution of green spaces and parks. Environmental Justice upholds the need for cultural integrity within communities, fair access to all environmental resources, and the enactment of ecological policies that benefit all people within urban and rural areas. Ramirez-Andreotta

states, “Environmental justice demands the right to participate as equal partners at every level of decision-making, including needs assessment, planning, implementation, enforcement, and evaluation” (pp. 573-583). Furthermore, Environmental Justice literature shows that wealthy and White people in urban areas benefit the most from access to parks, including quantity, quality, and safety (Rigolon, 2018). Spatial disparities, or uneequal distribution of resources, are issues of Environmental Justice because research shows that parks and green spaces are not equally distributed amongst urban spaces (Dashel Murawski, 2020; Schnalzer, 2021), and if they are, the quality of the parks is often not equitable to those in majority-White areas.

It is essential in this study since there is a need for Environmental Justice literature regarding the distribution of parks in Birmingham and Jackson. The lack of parks can result in an influx of environmental health issues, which are also issues of Environmental Justice (Rigolon & Flohr, 2014). The spatial distribution of parks and green spaces and Environmental Justice are mainly concentrated on a particular city or area, leaving much concern for studies conducted on the national level (Wen et al., 2013).

Environmental injustices have existed for a long time in the United States, and the Environmental Justice literature suggests that minorities, people of color, and those with lower socioeconomic status are often affected disproportionately when it comes to environmental burdens. These burdens include inadequate amenities, water and air pollution, access to adequate green spaces, and food deserts (Jack, 2020). Because Environmental Justice suggests that people of color and those of socioeconomic status have disparities in green space, Birmingham and Jackson are excellent case studies due to their high population of people of color.

Research Questions

Environmental Justice research aims to identify and fix the inequitable distribution of environmental problems. Upon its commencement, Environmental Justice mainly focused on issues such as pollution. Since then, it has begun to branch out and focus on other matters, such as access to healthy food, parks, and the impacts of climate change. Environmental justice has also factored in class, race, ethnicity, gender, and age. With overgrowing problems in the world, Environmental Justice must continue to blossom (Chakraborty et al., 2016). Given the limited research on parks in Birmingham and Jackson, the following research questions were asked:

1. Are there spatial disparities in the distribution of parks in Black communities in Birmingham and Jackson compared to majority White communities?
2. Do parks in the majority-Black study cities (Birmingham and Jackson) have park quality comparable to majority-White communities?
3. What are residents' perceptions of conditions of their city parks being an issue of environmental justice?

The results of the qualitative portion of this research, along with the support of ground-truthing, are used to identify similarities and differences to analyze and dissect residents' perceptions of park quality in their city by satisfaction with their city parks, access to parks, amenities, and environmental justice, and individuals that should be held accountable for park conditions. A quantitative analysis from secondary data provided a more definitive measurement using numbers. Data from this study may prove a correlation, but that does not necessarily suggest causation. A combination of many dimensions may suggest results to influence policy within both cities.

Overview of Research Design

The researcher conducted 12 semi-structured, in-depth interviews with participants from the Birmingham and Jackson areas. The results of the interviews, supported by ground truthing, were analyzed to find similarities and differences among residents' perceptions of park quality in their city. Park quality includes amenities such as satisfaction with their city parks, park equipment, or lack thereof, the convenience and access of their city parks, crime in the city and crime near parks, environmental justice, and individuals who should be held accountable for park conditions. An exploratory data analysis of race, park acreage, and income parameters was performed. In addition to the qualitative and quantitative methods, ground truthing supported the participants' interview responses. Ground truthing will be discussed more in Chapters 3 and 4.

Definition of Terms

The following terms are defined to aid in understanding the context of this study.

a) *Amenity (amenities):* a desirable or valuable feature or facility of a building or place (Merriam-Webster, 2019).

b) *Black:* (synonymous with African American, outdated term, Negro): individuals that are of African descent (Merriam-Webster, 2018). Although among the diaspora, Black is considered an ethnicity, in the context of this work and within the United States, Black is used interchangeably with African Americans.

c) *Disparity*: a condition, whether social or economic, that is deemed unfair (Merriam-Webster, n.d.).

d) *Environmental Justice:* fair or equitable involvement and inclusion for all people, including race, color, nationality, and ethnicity, with the implementation and enforcement of environmental laws and policies (United States Department of Energy, n.d.).

e) *Equity:* fair or equal (Merriam-Webster, 2019).

f) *Green Spaces:* areas surrounded by trees or natural habitats that increase recreation and decrease the urban heat effect (Mair, 2020).

g) *Minority:* a group of people with a minute population in a town, city, state, or nation (Merriam-Webster, 2019).

h) *Spatial Distribution:* geographic observations in a set area (Spatial Distribution, n.d.).

i) *Parks:* common green spaces used for recreation in towns and cities (Merriam-Webster, 2019b).

j) *Participants or Respondents:* (used interchangeably): individuals participating in the research study (Merriam-Webster, n.d.-b).

k) *Qualitative:* measuring a particular thing's quality (good or bad) (Cambridge Dictionary, 2023).

l) *Quality (in terms of parks):* structural condition of park infrastructure (Urban Land Institute, 2021).

m) Quantitative: measuring using numbers or amounts (Cambridge Dictionary, 2022).

Summary

Parks in the U.S. were initially developed as a means of escaping disease and overpopulation, primarily serving wealthy White residents in cities like New York. Over time, parks were also used to address environmental issues such as flooding. However, access to these green spaces became a luxury that many Black people and other communities of color were denied. Despite the end of segregation following protests and activism, access to parks for people of color remained limited.

Today, there remains a significant gap in park access within Black communities. Although parks are considered public goods meant to serve everyone, there have been instances where Black and minority residents have experienced racism while accessing them. These incidents raise the question: are public goods truly accessible to all?

Following this chapter, Chapter 2 reviews the literature that explains why the Environmental Justice theory is best for the research and why Birmingham and Jackson are compelling cities to research. Chapter 3, Methodology, explains the usage of primary sources, semi-structured in-depth interviews, and secondary sources on TPL's ParkServe. Chapter 4 reveals the study's findings, and Chapter 5 contains the Discussion.

CHAPTER 2: REVIEW OF THE LITERATURE

There has been much research over the past 20 years to prove or disprove spatial distributions in parks and green spaces (Rigolon, 2018). Many studies have been employed to understand if there are spatial distributions and issues of equity and to measure the proximity of a particular population to parks and green spaces across the United States (Boone et al., 2009; Wen et al., 2013; Wolch et al., 2014). While previous studies offer great insight, most focus on something other than the city (Rigolon, 2018), as this research does. There is limited research on Birmingham and Jackson's city parks, so they are essential to explore. Studies show that the Environmental Justice Framework was developed because environmental hazards are more prevalent in low-income and minority areas (Rigolon & Flohr, 2014). Analyzing environmental goods, or lack thereof, is an excellent approach to understanding social and spatial disparities (Rigolon & Flohr, 2014).

This literature review further explains why Birmingham and Jackson are compelling cities for study. It defines park quality and spatial disparities in the context of this research, explains Environmental Justice and Environmental Justice theory, and acknowledges Robert Bullard, the father of Environmental Justice. This literature review also includes this study's Environmental Justice Framework approach and how government agencies apply environmental justice.

Search Strategy

As iterated in the previous chapter, there is limited data on the cities of Birmingham and Jackson's city parks. This research strategy started with finding articles that focused on parks. Keywords included were spatial disparities, parks, Birmingham, Jackson, Black, Minority, city, urban, social justice, environmental justice, environment, justice, and park inequality. ProQuest,

EbscoHost, Google Scholar, and websites such as Trust for Public Land also yielded invaluable information and provided data for the quantitative analysis. Source types include peer-reviewed journal articles, new articles, government websites, dissertations, and books. Over 200 sources from the 1960s to the present are included in the dissertation. Although there is a suggestion to use articles at least five years old, many older articles provide history and context relevant to the study. Many of the articles were published between 2007-2023. Some articles may have had original publishing dates before the 1960s but were republished in later articles, resulting in later reference dates.

Study Cities

Both study cities are located in the "Deep South." The Deep South, home to 56% of the Black population in the U.S. (Tamir et al., 2021), has become the "Sacrifice Zone" (Bullard, 2001, p. 163), or pit of toxic waste. The legacy of slavery, Jim Crow, and racism plagues its ugly head. Also, the South is often characterized by "look-the-other-way environmental policies and giveaway tax breaks" (Schueler, 1992, pp. 46-47)—for example, places like Louisiana face environmental injustices. In the 1990s, the Louisiana government wiped away about 3 billion in property taxes to polluters. Cancer Alley, a stretch along the Mississippi River between Baton Rouge and New Orleans, has over 120 companies constantly poisoning that area's residents. Not only are they poisoning the residents, but they also are not increasing the economy. Between 1989 and 1997, only about 1600 jobs were created by the largest recipients of the tax abatements. A little over 100 jobs were made by the companies with the costliest jobs. Several lawsuits were filed in the 1990s, and with the current practices, there will be more in the future (Baurick et al., 2019; Bullard & Johnson, 2000).

Birmingham, Alabama

Birmingham had a bright start in recreation revitalization in the early 1900s. Fredrick Olmstead Jr., Frank Olmstead's son and Olmstead firm member Edward Whiting, wrote a report for Birmingham Parks in 1924. Olmstead Jr. gained his inspiration for parks from his father, and in 1925, the report called for a walkable distance of parks for all residents regardless of demographics for recreation. Before the report, Birmingham only had about 600 acres to serve a population of over 200,000 people. Between 1924 and 1926, the Olmstead firm designed plans for three parks that were beautiful and open spaces (The National Park Service, n.d.). Although Birmingham had a bright start with plans of the Proposed Park System for Birmingham from Olmstead, Jr. in the 1920s, it did not stay that way.

By the 1950s and 60s, Birmingham, Alabama, was considered "The most segregated city in America" (Spears, 2017, para 1). Birmingham may be most famous for civil rights marches, protests, and Alabama Governor George Wallace's philosophy, "Segregation Now, Segregation Tomorrow, Segregation Forever," stated in January of 1963 (Spears, 2017, para. 8). During the 1960s, Birmingham officials announced the closure of all city parks, golf courses, and playgrounds upon a federal court finding segregation unconstitutional. Bull Connor, the city's police commissioner at the time, defended the city's decision's necessity, insisting that integrating parks would be the catalyst for integrating other public spaces. Nearly two months after the federal court ruling, the city eliminated funding to almost all parks and closed 67 (MADEO, n.d.).

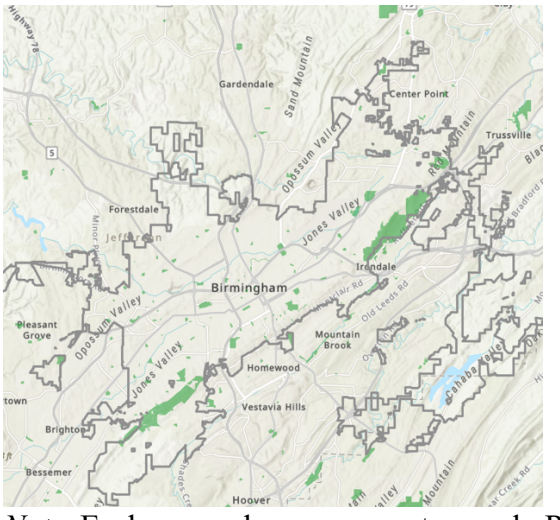
Afterward, Birmingham faced many ethical planning dilemmas, from racial zoning to segregation. Black residents became involved in city planning to improve their city (Smiley, 2016), but the fight for Environmental Justice continued. Residents suffered from air pollution

caused by railroads and heavy industries. Research showed that areas “zoned for Blacks” were in industrial sites (GASP, n.d.). The coke and coal industry plagued a city with one of America’s highest poverty rates, resulting in excessive toxic emissions. Many Black people fought segregation while White residents moved to the suburbs during segregation. By the 1970s, Birmingham saw a 200% increase in emphysema deaths. Federal officials declared Birmingham to have the worst air quality in the south. Even today, residents of Birmingham are still fighting large corporations in court (Blau, 2022).

According to TPL, 56% of residents in Birmingham live within a 10-minute walk of a park. The total park acreage in Birmingham is 4,075, with 118 parks serving 113,498 of the 203,354 population (Trust for Public Land, n.d.) (See Figure 1). When researching Birmingham, there are limited peer-reviewed or published articles on the current state of city parks. Therefore, Birmingham made an excellent case study because of the need for more research.

Figure 1

A map of parks in Birmingham



Note. Each green shape represents a park. Retrieved from (Trust for Public Land, 2024c). Adapted with permission.

Jackson, Mississippi

Historically, Black people, minorities, and those of low income have suffered from systemic racism (Forms of Racism, n.d.). Systemic racism has resulted in a wealth gap, division of neighborhoods and homeownership, education, communities, parks, and green spaces. There is limited peer-reviewed research on combining the words: "Jackson, MS" AND "environmental justice." There is also not much evidence of surveys considering citizens' outcry. Upon contacting the City of Jackson Parks Department, they did not and did not seem too concerned about conducting surveys and interviews with citizens. Jackson, Mississippi, also does not make the TPL's list 100 top city parks.

In the 1960s, Jackson, Mississippi, was entirely segregated, prohibiting Whites and Blacks from sharing the same water fountain. Also, Blacks and Whites could not swim together in the city's taxpayer-funded public pools. Therefore, Black citizens began demanding integration of the pools, but instead of integrating, Mayor Allen Thompson, the mayor at that time, closed four pools. The fifth pool was sold to the YMCA and was still considered Whites-only. The few integrated pools were argued not to be safe or be of economic value. Although many citizens exclaimed "Racism" as a reason for the closing of the pools, the Supreme Court ruled that closing the pools did not deny equal protection according to the 14th Amendment or violate the 13th Amendment.

The challenging of racial segregation of recreational facilities caught the attention of federal Judge Sidney Carr Mize, who ruled it unconstitutional to segregate publicly owned recreational facilities. After the ruling, officials of the city of Jackson began to desegregate every recreational facility except public pools. They then sold the pools to private businesses. Jackson

has only five public pools, officially desegregated in 1975 and only open in the summer months (Pengarthit, 2019).

In a study by Leggett et al. (2018), Hinds County, where Jackson is housed, yielded the highest number of incivilities in parks, with overgrown grass being the most reported, followed by litter and auditory annoyances. The neighboring county of Madison has a higher mean of quality amenities, meaning Madison County has better quality parks. This research is vital in understanding Jackson's parks, how they are assessed, and how the views of parks within the city have changed over time.

Although environmental justice literature concerning Jackson is limited, it is not a new concept familiar to current Jackson, Mississippi residents. In 2022, numerous residents lacked adequate drinking water due to multiple water plant issues. However, 2022 was not the first year that pipes failed, and the river overflowed. It was just the first year that the incident received backlash and nationwide coverage. Like Flint, Michigan (also a majority-Black city), the blame for the existential crisis was placed on the governor (Smith, 2016).

Coincidentally, in a January 2023 news article by WWNO - New Orleans Public Radio, Birmingham residents encouraged residents of Jackson to "Stay Loud" to ensure their voices were heard during the environmental injustices. Birmingham residents also advised Jackson residents to have neighborhood meetings so that they could receive updates, address rumors, and gain support. Lastly, in the article, Birmingham residents urged Jackson residents to do their research (McArthur, 2023).

In recent years, the population of the City of Jackson has been declining. Because of the integration of schools in the 1980s, many White families fled to the suburbs, resulting in increased taxes (Perlis, 2023) and decreased revenue to maintain infrastructure. According to

Costly and Wagster Pettus (2022), Marcus Hendricks, an Associate Professor of Urban Studies and planning at the University of Maryland, stated,

> "The legacy of racial zoning, segregation, legaliand red redlining has ultimately led to the isolation, separation, and sequestration of racial minorities into communities (with) diminished tax bases, which has had consequences for the built environment, including infrastructure" (Costly and Wagster Pettus, 2022, para 9).

According to Costly and Wagster Pettus (2022), Heather McTeer Toney, an Environmental Justice advocate with the Environmental Protection Agency, stated:

> Any community suffering from a lack of infrastructure maintenance is dealing with the same problem, maybe on a different scale. However, across the nation, with …. poor communities often Black, brown, Indigenous and on the frontlines of the climate crisis, we see the same thing happening repeatedly. (Costly and Wagster Pettus, 2022 para 13)

The lack of funds and "White flight" (Hennessy-Fiske, 2022, para 10) may be why the city of Jackson, which is over 80% Black, is failing (Hennessy-Fiske, 2022). According to Bullard (2001), economically depressed communities do not have a lot of choices available to them, and communities of color become vulnerable due to the economic conditions.

Not only is Jackson dealing with Environmental Justice issues, but it is also suffering from a dramatic increase in crime. 2020 marked a historic wave of homicides in Jackson. St. Louis was labeled the deadliest large city in the United States, having about 87 homicides per year, but in 2020, Jackson exceeded that number with 128 (LeMaster, 2021). The crime may be attributed to a lack of economic growth and jobs. Many are left to have idle minds (CNN, 2021).

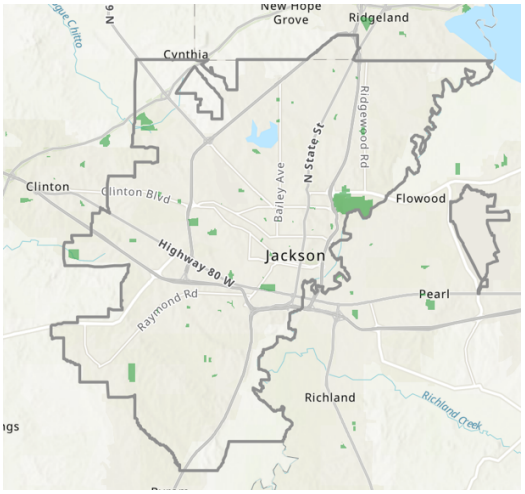
Not only is the city dealing with higher crime rates, but a study by Leggett et al. (n.d.) demonstrated the need for more healthy options in grocery stores. In the study, the more

nutritious options were costly, and the most affordable food was processed food. The study concluded that low-income communities needed access to healthier food options. Spatial disparity (discussed later in this chapter) plays a significant role in access to more nutritious food options, transportation, access to green spaces, and other environmental injustices. Although this research focuses on city-owned parks, it is essential to acknowledge the injustices that may have been overlooked.

In a 2020 study by the Centers for Disease Control and Prevention, crime had a detrimental effect on parks and park settings (Marquet et al., 2020). The increased crime resulted in fewer park visits and lower park ratings (Marquet et al., 2020). Considering the lack of peer-reviewed research concerning Environmental Justice and parks (and issues relating to Jackson and the state of Mississippi in general), this study could be the foundation of Environmental Justice and the City of Jackson parks. According to the TPL, Jackson has about 1,270 park acres, serving only 46,143 of the 149,494 population. In other words, only about 30.9% of the population can access a park within a 10-minute walk (Trust for Public Land, n.d.). A map of parks in Jackson is shown in Figure 2.

Figure 2

A map of parks in Jackson



Note. Each green shape represents a park. Retrieved from (Trust for Public Land, 2024e). Adapted with permission.

Parks

City parks are advantageous for cities. Not only do they provide recreational opportunities, but they also provide increased property values, aid in combatting crime, protect cities from environmental impacts, and increase property values (Chris van Wagoner, 2019).

Park Access

Several studies have been employed to examine the issue of inequality of access. Although they all use different techniques, they have all concluded that there are inequalities in park access (Rigolon, 2016). According to the National Recreation and Park Association (n.d.), park access is “The just and fair quantity, proximity and connections to quality parks and green space, recreation facilities, as well as programs that are safe, inclusive, culturally relevant and welcoming to everyone” (Park Access Campaign | Initiatives | National Recreation and Park Association, n.d.).

Rigolon (2016) emphasized that the definition of park access matters as different metrics yield different results. According to Rigolon, studies show that park quality assesses amenities, conditions, and crime, influencing park visitation. Rigolon concluded that multiple access aspects should be considered to address equity issues effectively (Rigolon, 2016).

The Trust for Public Land (TPL, 2020) stated that "Park disparities are health hazards. Parks serving non-White populations are half the size and five times more crowded than parks serving White populations" (TPL, 2020, para 1). Also, parks nationwide serving nonWhite populations on average are half as large (at about 45 acres) compared to 87 acres for parks serving majority-White areas (Chapman et al., 2021 para 4).

According to Reynolds (2023), park equity should be considered a matter of Environmental Justice. Parks accessibility, availability, and funding play crucial roles, which begs the question, "Why are there not more investments in parks?"

Resourcefulness of Parks

Environmental Justice issues such as extreme heat and flooding are plaguing communities of color with the least park space. For example, in Des Moines, Idaho, the city planted 1,500 trees in 2022. Daniel Culvert, the Planning and Development Administrator in Des Moines, stated,

> Parks are significant for addressing the urban heat island effect. We have seen through studies that parks are like sponges where we have green space and vegetated areas. They absorb water and reduce heat throughout the city. Fortunately, we have leadership that gets that, embraces it, and funds it. (Foderaro, 2022, para. 17)

The overcrowding and lack of trees are Environmental Justice issues (Stillitano, 2022). TPL explored possible climate change mitigation methods, including green spaces and parks.

According to TPL, parks “are very good at buffering the effects of climate change. Green space has the power to lower air temperature and absorb flood water and can be designed in such a way as to enhance those climate benefits significantly” (Foderaro, 2022, para 2).

According to Hoffman et al. (2020), there is a strong correlation between deadly heat and redlining. The study included 108 cities in the United States and found that the red-lined communities yielded the hottest neighborhoods in 94% of the cities. With park disparity, Black, Indigenous, Latinx, and other multicultural communities of color are at a heightened risk of the Urban Heat Island Effect. The Urban Heat Island Effect is a phenomenon in which densely packed areas trap heat, increasing temperatures in areas with limited green spaces. Parks are essential in coping with heat, according to the TPL (2020).

In (2022), the CEO of the TPL stated,

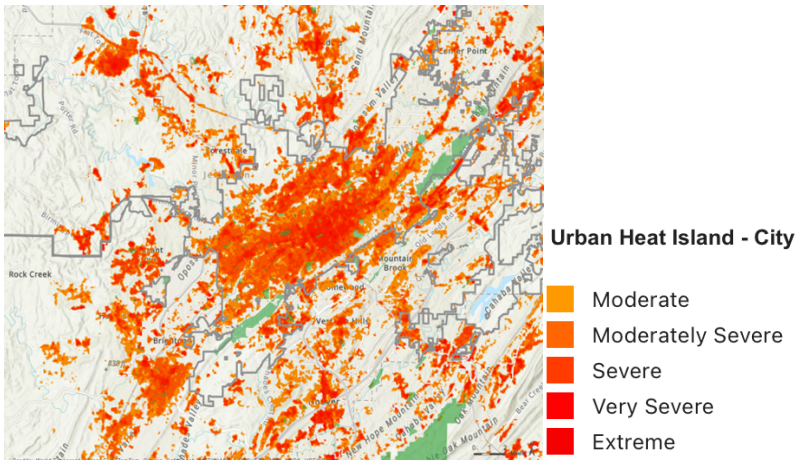
> As cities struggle with extreme heat this summer, parks are one of the best ways for residents to find relief. We all need and deserve parks—and all of the benefits they provide—all of the time. But during this period of compounded public health emergencies, unequal access to quality parks can be downright dangerous. (Trust for Public Land, 2022, p. 3)

A 2016 study conducted by the TPL demonstrated that the cooling effects of parks extend into surrounding neighborhoods. Reduced temperatures were apparent up to half a mile away (Trust for Public Land, 2022). According to the National Oceanic and Atmospheric Administration (2018), temperatures during the hottest days in August demonstrated up to 17 degrees between parkland and neighborhoods surrounded by buildings and pavement (National Oceanic and Atmospheric Administration, 2018).

The Urban Heat Islands are areas where thermal reflectance values are 1.25 degrees hotter than the selected city boundary. Concerning the temperatures within a city, the TPL's climate director, Brendan Shane, stated it comes down to the park's size and depth. Smaller neighborhood and pocket parks offer a solution but are less significant than larger, higher-quality parks (Trust for Public Land, 2022). Birmingham and Jackson have substantial amounts of Urban Heat Islands ranging from moderate to extreme heat reflectance (see Figures 3 and 4). Although this research does not dive deeper into Urban Heat Island, it is essential to consider how vital parks are and how Urban Heat Island looks within the study's cities.

Figure 3

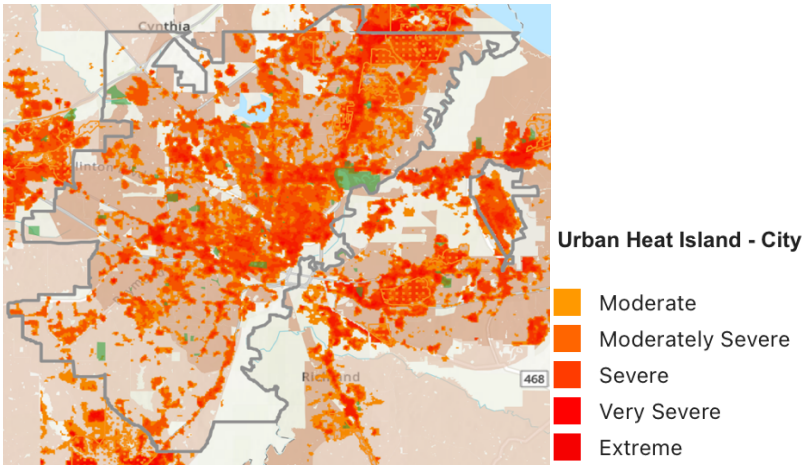
An Urban Heat Island map of Birmingham



Note. A map of Urban Heat Island where the geen represents parks, and the severity colors are represented above, retrieved from (Trust for Public Land, 2024b). Adapted with permission.

Figure 4

An Urban Heat Island map of Jackson



Note: A map of Urban Heat Island where the geen represents parks, and the severity colors are represented above, retrieved from Retrieved from (Trust for Public Land, 2024d). Adapted with permission.

Park Quality

Research published by the Urban Land Institute discusses the characteristics of high-quality parks. The condition of the parks, including maintenance, amenities, accessibility, equipment, safety, and infrastructure, determines the quality of a park (Urban Land Institute, 2021). This information is essential in this study because it answers whether park quality within the majority of Black study cities is comparable to parks in White communities within these cities.

Green Gentrification

Green gentrification is possible as funds are distributed to low-income communities of color. Green gentrification, synonymous with housing gentrification, displaces disenfranchised residents from green spaces. Studies show that there are quality-of-life enhancements with

environmental improvements. Green gentrification is an environmental and ethical issue and an environmental justice issue (Barcelona Lab for Urban Environmental Justice and Sustainability, n.d.). In an article titled "Green Gentrification in European and North American Cities," research showed a positive correlation between green spaces and gentrification (Anguelovski et al., 2022). Although some periods showed a negative correlation, the researchers concluded that green gentrification is a new phenomenon, which explains why there is now a positive correlation (Anguelovski et al., 2022). Additionally, **i**n a 2014 study conducted on public health and environmental justice, the author, Wolch et al. (2014) stated,

> Redressing park poverty in communities of color and low-income households can, however, create an urban green space paradox and lead to gentrification. As more green space comes online, it can improve attractiveness and public health, making neighborhoods more desirable. Such housing cost escalation can potentially lead to gentrification: the displacement and/or exclusion of the very residents the green space was meant to benefit. In turn, residents may face higher rents and thus become precariously housed, while those who are actually displaced may be forced to leave their communities, ending up in less desirable neighborhoods with similar park-poverty problems. (Wolch et al., 2014, para 6)

African American Park Visitation and Communities

There is much discourse on whether African Americans and other minorities visit parks. Studies conducted by Outdoor diversity groups like Outdoor Afro have found that it is common for Black people to feel excluded, uncomfortable, and unwelcomed when they try to enjoy outdoor activities (Gosalvez, 2020).

In February 2020, Ahmad Arbery was murdered while jogging because a neighbor thought he fit the description of a man involved in several break-ins in the area. In 2021, Christian Cooper, a Black bird-watcher, was threatened with arrest and violence while birdwatching in New York's Central Park. (Gosalvez, 2020) .

In a 2022 study conducted by Cox and Tamir (2022), over 50% of Black adults felt that where they live is essential to how they think about themselves, although only about 40% of Americans felt the same. Almost 30% of participants stated that where they live is essential to their identity. When asked who should be responsible for rectifying community issues (i.e., Park access, etc.), almost 50% of participants stated that local community leaders should be accountable.

It became apparent in the 21st century that there was a lack of research tailored to minority groups such as African Americans and Latinos. Amongst transportation and other costs speculation of why or why not African American recreationists frequented urban parks, research suggests that environmental perceptions and preferences differ amongst racial and ethnic groups. This means that each race may utilize urban parks in different capacities.

Myron Floyd, Dean of the College of Natural Resources at North Carolina State University, stated, “Black people must think twice about going outside and exploring outdoor areas they are unfamiliar with. Black people and other minorities may feel uncomfortable because the White majority may perceive them as out of place” (Gosalvez, 2020, para 14).

Some scholars have concluded that travel and park visitation patterns differ amongst racial groups because White people often travel further and visit parks more than African Americans (Dwyer, 1994; Scott & Munson, 1994; Washburne, 1978). Other scholars have suggested that Blacks and Whites equally enjoy the nearby outdoors (Kaplan & Talbot, 1988).

Research conducted by Paul Gobster (2002) concluded that minority visitors came from farther away to access the park. On average, African Americans traveled 22 minutes, and 36% of the sample size came from neighborhoods south of the park (Gobster, 2002). Although African Americans traveled farther to visit the park, Gobster explained that speculations about why they decided to travel to parks outside their neighborhoods should not be drawn.

Studies by Kaplan & Talbot (1988) concluded that African Americans prefer park settings with higher maintenance levels. This coincides with a study by Kweon et al. (2016), which concluded that African Americans were less likely to visit parks and rate them poorly. In the same study, African Americans also had a higher standard of cleanliness and maintenance of parks. In this study, African Americans rated crime and park facilities lower, decreasing visits. Overall, African Americans in this study were unsatisfied with their neighborhoods, and the closer they lived to a park, the more likely they were to rate the park negatively (Kweon et al., 2016).

Many conversations exist about why African Americans do not visit their neighborhood parks, but more substantial research is needed. It is essential to understand these statistics so that the planning process will not express biases (known or unknown). Learning and understanding communities are among the best steps in helping communities (The University of Kansas, n.d.).

Spatial Disparities in Parks

A spatial disparity, or inequality, is an uneven distribution of resources or opportunities across a geographical region. Infrastructure, economic development, access to food, transportation, education, and health highlight spatial disparity. Historically, spatial disparities exist because of practices such as segregation, redlining, and disinvestment within a community. These practices have left advances in specific neighborhoods, propelling their success while

leaving others to make do with less. These invisible barriers keep communities poverty-ridden, with resources just out of reach.

According to Fikri et al. (2021), social disparities or inequalities occur over several scales, including states, rural-urban continuum, countries, and even across zip codes. The groups most affected by spatial inequality are minorities. The COVID-19 pandemic served as a reminder that disparities exist. Research shows that Blacks and African Americans are three times more likely to live in distressed areas than Whites.

There is much discourse on spatial distribution in parks in Black and low-income areas. Research concerning spatial disparities in parks among scholars varies. In a study conducted by Wen et al. (2013), there are variations across urban levels, but race-ethnicity and poverty show a correlation between spatial access to parks and green spaces. While the data varies, data from the TPL shows that White-populated areas yielded more accessible parks (Trust for Public Land, n.d.).

Other research has proven smaller racial disparities in green space exposure in cities with less segregation. Whereas, where there is a higher amount of segregation, there is a higher amount of White people who live in neighborhoods with green spaces than people of color (Saporito & Casey, 2015). Spatial inequality affects individuals in communities and businesses and may contribute to urban sprawl. Urban sprawl is the phenomenon where businesses and groups of people leave an area because they no longer view it as a thriving area. What ends up happening is that these individuals and businesses leave the inner city, draining it of its vitality and resources, resulting in inequality (United Way NCA, 2023).

Research also shows that communities of color are more prone to live in areas where there are ecological hazards, such as air pollution, superfund sites, waste dumps, food deserts,

social disorganization, and crime. These areas also see an increase in dilapidated buildings. Scholars have also stretched their research to include access to social amenities like banks, grocery stores, movie theatres, and other recreational facilities (Saporito & Casey, 2015). In an equity mapping study conducted by the Sustainable Cities Program and GIS Research Laboratory in Los Angeles, low-income and poverty-ridden communities, as well as communities of color (Latinos, Blacks, and Asian Pacific Islanders), showed lower access to park resources than White communities within the city (Wolch et al., 2005).

In most cases, spatial inequality is calculated by the Gini Index or Gini Coefficient. The Gini index ranges from 0 to 1 and measures the dispersal of statistical significance of inequality. 1 represents perfect inequality, and 0 represents perfect equality. The Gini Index is calculated using the Lorenz curve, a graphical representation of the distribution of a variable against a share of the population (Trapeznikova, 2019). According to Sitthiyot and Holasut, the formula is: G= (A/(A+B)), where G is the Gini coefficient, "A is the area between the Lorenz curve and the line of perfect equality" (Sitthiyot & Holasut, 2020, p. 2), and B is the area under the perfect line of equality (Trapeznikova, 2019). The Gini Index is mainly used to calculate wealth and income inequality but can be used to calculate other disparities (Trapeznikova, 2019).

Few studies focus on the environmental justice of parks and expand on a quantitative approach using a Geographic Information System (GIS) to measure distances between an individual's home and the park (Gilliland et al., 2006; Rigolon & Flohr, 2014). A study conducted by Potwarka et al. (2008) suggested that researchers survey residents and ask them to report their distance from public places. To date, limited studies focus on accessibility in a mixed-method approach using quantitative and qualitative data. Rigolon and Flohr (2014), in their research limitations, suggested a qualitative approach and a quantitative approach to grasp

accessibility fully. The TPL has calculated the bulk of the quantitative data in this study, which will be discussed more in Chapter 3: Methodology.

Environmental Racism

Environmental racism, a systemic issue coined in the 1980s by civil rights activist Dr. Benjamin F. Chavis, Jr, is the intentional pollution of areas populated by minorities such as Blacks, Native Americans, Pacific Islanders, Asians, Latinos, migrant workers, and low-income workers. Dr. Chavis is known as the godfather of the Environmental Justice Movement (*"Ben Chavis Charges 'Environmental Racism,'" April 23, 1987; the Charlotte Post, Charlotte, NC*, 1987).

Environmental racism employs action by understanding and identifying environmental hazards (more prevalent in Black, minority, or low-income communities) and limited access to opportunity within communities (So, 2016; Tarrant & Cordell, 1999; Wen et al., 2013; Zhang et al., 2013).

According to Bullard (2001), environmental racism is reinforced by government, politics, and industrial institutions, causing communities of color to pay the cost while White communities reap the benefits. It is a form of "illegal exaction" where communities of color are forced to pay the costs of environmental benefits for the public. The roots of racism are deep and have played a massive role in the local land practices and environmental regulations enforcements, where people of color eat, live, play, and work. America's racist history continues to be a significant part of the disadvantaging of people of color within the sociopolitical system. The arrangements of policies and decision-making within the environment often mirror the American sociopolitical system. Communities of color are left to suffer while White communities make the decisions and manage the policies.

Recent incidents include moving the General Iron facility to Chicago's south side without the permission or consideration of the community. The community fought back by submitting a civil rights complaint against the U.S. Department of Housing and Urban Development (HUD), which led to other events, such as a hunger strike. Michael Regan, the first Black EPA administrator, requested an environmental justice analysis as part of the permitting process. After that, HUD, in response to the civil rights complaint, found that the city of Chicago had a pattern of violations and discrimination that relocated polluting businesses from White neighborhoods to Black and Latino ones. In May 2023, a settlement was reached (Ihejirika, 2023).

Robert Bullard

Robert Bullard, the father of Environmental Justice, argued that racial and socioeconomic factors are essential to environmental injustice, but race remains the primary driver (Bullard, 1993a, p. 21). Bullard's 1990s publication, *Dumping in Dixie: Race, Class, and Environmental Quality*, is considered the first book to address environmental justice. Within Dumping in Dixie, Bullard explained how he assumed all have a right to a healthy and clean environment to live, work, and play (Bullard, 1994). Bullard stated that race plays a significant role in predicting the placement of locally unwanted land uses (LULUs). Bullard also argued that racial and socioeconomic factors are essential to environmental injustice, but race remains the primary driver. Bullard iterated that environmental justice is not a social program or a program resulting from Affirmative Action. Bullard argued that the sole issue of environmental injustice is a racially divisive country (Carder, n.d.).

Bullard (2001) expressed that eight out of ten African Americans live in a neighborhood where they are the majority. African Americans are exposed to higher crime rates, subpar

education, dilapidated surroundings, higher mortality (predominantly Black, pregnant women (Hoyert, 2023), and environmental threats because of their race, no matter their education level or any other achievement. Bullard wrote that in the South Coast air basin of the Los Angeles area, most residents are African Americans or Latinos and that many African Americans cannot say, “Not in my backyard” (Bullard, 2001, p. 158) because there is no backyard they own. When this research was published, only 44% of African Americans owned their homes compared to two-thirds nationally (Bullard, 2001, p. 158). This percentage can be attributed to redlining supported and practiced by the Federal Housing Administration (Gross, 2017).

Environmental Justice proponents have expressed that experiences of racism and injustice are not random or individual. This has influenced the Environmental Justice movement to be concerned with collectivism and perceived intentionality (Carder, n.d.).

Environmental Justice

Before understanding Environmental Justice, social justice must be discussed. Philosophers such as Plato addressed social justice issues of religious texts and practices thousands of years ago. Social justice was used in the 1800s to defend how poor people were treated in Europe. After the Great Depression and post-colonialism, social justice gained a moral code, but social justice did not get used interchangeably with equality and equity until the 1960s.

Theorists such as John Rawls, who argued that behavior depends on the institutions created, and Nancy Fraser, who was instrumental in the three dimensions of social justice: Redistribution, Recognition, and Participation, were strong advocates of social justice. Although there has been much discourse on social justice and its meaning, scholars argue that it should be defined based on the context in which it is used (*What Is Social Justice? Definitions and Examples of Social Injustice*, n.d.).

History of Environmental Justice

Environmental Justice is not a new concept but continues to grow as activists and researchers approach new world developments (Matsuoka & Raphael, 2024, pp. 4-5). The Constitution, along with Title VI 601, 602, and 42 U.S.C. 1983, contributed to the effectiveness and motivation of the Environmental Justice movement. This movement was backed by the Civil Rights Act of 1964 and Title VI, which prohibited discrimination of federal funds based on color, race, and national origin (U.S. Department of Health and Human Services, n.d.). Before the Environmental Justice movement, communities of unfair and unjust treatment used the Fourteenth Amendment to seek fair treatment. In several lawsuits, such as the 1974 *United Farm Workers of Florida v. City of Delray Beach,* farm workers fought for civil rights (*United Farm., Fla. H. Proj., v. City of Delray, 493 F.2d 799 | Casetext Search + Citator*, 1974). Also, the 1978 Johnson v. City of Arcadia case found discrimination in paved infrastructure, parks, and water supply (*Johnson v. City of Arcadia, Fla., 450 F. Supp. 1363 | Casetext Search + Citator*, 1978).

In 1978, in North Carolina, over 30,000 gallons of waste were illegally discharged across the state. Civil rights leaders, Black activists, and other community members fought against the environmental racism displayed. The illegal discharge of waste warranted one of the first incidents wooing systemic racism as a variable compared to race. The United Church of Christ Commission on Racial Justice published a 1987 article, “Toxic Waste and Race in the U.S.,” which focused on Environmental Racism and race being the strongest predictor of environmentally hazardous waste sites in the U.S. The report expressed how government agencies did little to no action in addressing these concerns that disproportionately affected Black and other communities of color. This report called for immediate action from the

government and other civil rights organizations to prioritize the cleanup and strive for policy changes (United Church of Christ Commission on Racial Justice (UCCCRJ), 1987).

The 17 Principles of Environmental Justice were adopted by The First National People of Color Leadership Summit head in D.C. in 1991 due to EPA discrimination in an Environmental Protection Law Report (Carder, n.d.). The 17 principles are below:

1. Environmental Justice states that Mother Earth should be preserved and has a right to be free from environmental harm.
2. Environmental Justice iterates that no discrimination or bias should be inflicted on public policy. All people should be mutually respected and treated fairly.
3. Environmental Justice demands sustainability for all living things through responsible and ethical land use practices.
4. Environmental Justice demands protection from practices that endanger the right to clean air, water, and food.
5. Environmental Justice upholds that everyone should have the right to political, economic, cultural, and environmental determination.
6. Environmental Justice demands the call for accountability for past and current pollution while trying to eliminate future pollution.
7. Environmental Justice calls for equal participation in decision-making in environmental matters.
8. Environmental Justice calls for a safe and healthy work environment for all workers.
9. Environmental Justice advocates for victims of Environmental neglect to be compensated.

10. Environmental Justice views environmental neglect as a violation of human and international laws.
11. Environmental Justice acknowledges Natives through treaties and self-determination.
12. Environmental Justice stresses the importance of policies that give fair access to resources and provide rebuilding of communities with cultural respect.
13. Environmental Justice calls for ending medical racism and unconsented medical testing and operation of people of color.
14. Environmental Justice international companies that sim to harm the environment.
15. Environmental Justice forbids military exploitative actions on land, people, and other organisms.
16. Environmental Justice stresses education for past environmental conditions and sustainability practices that aid future environmental injustices.
17. Environmental Justice encourages individuals to reduce waste and make sustainable choices (Carder, n.d., para 27).

According to Taylor & Torres (2020), Environmental Justice not only seeks to identify the maldistribution of hazards and deficits in terms of environmental benefits and outcomes from health and other social factors, but it also helps communities organize around these issues, reduce the inequalities, and seek positive legal and policy changes that address these inequalities and help to improve their life and health conditions.

Social Determinants of Environmental Justice

Although Environmental Justice has been in the works for decades and has evolved, it is essential to observe how it is used. According to Browne et al. (2022), Environmental Justice has been used broadly to understand how environments influence health, with numerous

environments inducing natural, built, social, and economic environments to determine health. In the research conducted by Browne et al., 2022, a figure is presented depicting how Environmental Justice is usually framed negatively and positively. The "Negative" environmental issues such as air pollution, odor, water pollution, noise, industrial waste management, litter, and soil contamination, are generally a concern of environmental protection agencies. The positive or "livability" environmental problems urban heat mitigation, access to open spaces, walkability, equitable transport, access to healthy food, and housing affordability are generally not of concern to environmental protection agencies. The determinants of livability within the scope of Environmental Justice are vital because they are not often acknowledged in environmental justice literature. Since access to Open Space[1] is within the scope of livability, it must be neglected as an environmental justice issue.

Ecology of Environmental Justice

The ecology of environmental justice is categorized as preventive, corrective, and retributive. The ecological model of Environmental Justice for recreation is important because it illustrates four environments: policy, physical, perceived, social, and individual. Each environment influences recreation opportunities and can help explore injustices limiting marginalized people's recreational capacity.

According to Rigolon et al. (2021), the policy environment contributes to procedural justice by shaping public policy, funding planning, and funding initiatives. The physical environment contributes to distributional justice by influencing locations of recreation settings such as parks near homes, adequate transportation, affordable housing, and environmental

[1] Access to Open Space is defined as publicly or privately owned land that offer ecosystem services and opportunities for recreation (i.e. Parks) (U.S. Forest Service, 2016).

injustices. Recreation settings are influenced by perceived and social environments' experiences, as well as shaping interactional and distributional justice and injustice. Although ecological, this model does not contain a hierarchical or causal relationship between the components.

Research on distributional justice highlighted by Rigolon et al. (2019) discussed disparities across demographic groups in recreation settings, specifically parks. Significant inequalities in low-income and minority neighborhoods yielded closer proximity to parks. Still, they face smaller park sizes, overcrowding, fewer amenities, and safety concerns, contributing to unequal physical activity opportunities. There was limited access for individuals with disabilities. Many scholars have highlighted that green gentrification is an issue of distributional justice due to low-income and minority populations being forced to move due to increased housing costs.

Interactional Justice discusses how individual factors influence perceptions of recreation settings. This research states that individuals of color may often be perceived as unwelcome or discriminated against in recreation spaces (Gosalvez, 2020). People of color also tend to face hard times finding recreational areas to meet their needs and wants. Even in instances where green gentrification has taken place, Black people's cultural routines are often seen as undesirable, and some have had the police called on them by their White counterparts (Rigolon et al., 2019).

Procedural justice examines processes and policies influencing distributional and interactional injustices. Scholars have conducted explanatory research to identify how public and private policies contribute to injustices in recreational settings. Segregation, park funding, and conniving practices have been essential in park access. Scholars call for transformative approaches such as action frameworks, community engagement, and civil rights advocacy of

applying civil and environmental justice laws. “Just green enough” approaches involving communities should be established to preserve the communities and avoid displacement. Grassroots organizations, along with procedural justice and social and physical environments, have played a significant role in public policies and shaping physical environments. This interconnectedness emphasizes the need for accurate and holistic approaches to reduce environmental injustices in recreation settings (Curran & Hamilton, 2012; Rigolon et al., 2019; Wolch et al., 2014). Suggestions for future environmental justice research include mixed-method approaches that investigate procedural injustice (qualitative methods) resulting in distributional injustices in parks (quantitative methods) (Boone et al., 2009; Rigolon et al., 2019).

Equity

Although they may be thought of all the same, equality, equity, and justice paint a different picture. Equality emphasizes the assumption that everyone benefits from the same equal treatment, equity suggests that everyone receives the support they need, and justice is used in addressing inequality (MobilizeGreen, 2018). According to Bullard (2001), equity is categorized in three ways: procedural, geographical, and social. Procedural equity infers “fairness” across governing rules, regulations, evaluation criteria, and enforcement in a non-discriminatory way. Geographic equity refers to a community’s proximity to environmental hazards, location, and spatial configuration. Social equity assesses sociological factors' role in environmental decision-making (MobilizeGreen, 2018).

Environmental Justice focuses on distributive and procedural dimensions. The distributive dimension focuses on the fair distribution of resources and concerns an individual’s outcomes in social exchanges, whereas the procedural dimension focuses on decision-making or distributing resources (Beretta, 2012). Also, according to Beretta *(*2012), Environmental Justice

can be categorized into preventive, corrective, and retributive. An example of preventive would be national environmental policy. An example of corrective would be using environmental justice to seek remedies and correct environmental injustices. Finally, an example of retributive is enforcing fines and sanctions when disregarding national environmental policy. While equity is essential, it should not be confused with environmental justice. Equity strictly focuses on distributive dimensions.

According to (MobilizeGreen, 2018, para 3), the EPA declares that environmental equity can be divided into two categories: fair treatment and meaningful involvement. Many communities of color are stricken when it comes to equity, especially in instances of environment. Acts of Environmental Justice are the outcome of equity. Environmental equity and environmental justice are not to be used interchangeably but are understood as equity being the driving force behind justice (MobilizeGreen, 2018).

Since equity is the driving force behind justice, observing it is vital. Still, in conjunction with the government, the equity framework focuses on a planner to persuade or influence opinions of policies and allocate resources to poor or underprivileged communities. Equity is essential because it catalyzes action to redistribute or allocate funds and resources; a gap must be understood within parks. There must be a deeper understanding of why things are the way they are and why change must occur.

Theories of Justice

Many liberal theories of justice focus solely on fair distribution of goods and services. American Political Philosopher John Rawls emphasized the “Justice as Fairness” theory. Within this theory, Rawls argued that “Justice as Fairness” is more obtainable than the utilitarianism theory. Rawls created the “Justice as Fairness” theory to emphasize a fair and just society where

interactions are based on fairness and reciprocity. Within this theory, Rawls opposed inequalities based on race or gender. Rawls emphasized that the best way to achieve a just and moral society was to create a society where everyone was treated equally (Wenar, 2017).

Although Rawls argued "Justice as Fairness," critics such as Young (1990) and Fraser (1996) argued that justice is not the only thing that should be considered. Still, there should be a recognition and respect for the differences and social conditions that lead to unequal distributions (Fraser, 1996; Young, 1990).

According to (Carder, n.d., para 8), even Environmental Justice advocates rejected Rawls' theory of justice as a fairness theory. Environmental Justice advocates viewed justice as a blend of distribution, recognition, and participation. By accepting Rawls' theory, Environmental Justice advocates believed there would be a tolerance of existing inequalities, preserving centuries of oppression (Carder, n.d.).

Environmental Justice Framework

The Environmental Justice Framework is a valuable paradigm for analyzing and studying the distribution of green spaces and parks. According to Bullard (2001), the Environmental Justice Framework addresses ethical and political assumptions of "who gets what, why and how much" (Bullard, 2001, p. 153). Although research states that Environmental Justice focuses on two dimensions, further research indicates that the Environmental Justice Framework operates in four dimensions: Distributive justice, recognition justice, procedural justice, and capabilities approach. According to (Schlosberg, 2007), justice within political practices is understood as a balance of multiple interlinked elements.

Even though criticized for how social structures and rules affect shared goods, distributive justice focuses on sharing environmental costs and benefits. Distributive justice has

evolved in empirical and theoretical research, focusing on the fair distribution of environmental costs, resources, income, wealth, and social standing. (Young 1990, as cited in Menton et al., 2020) suggests that power, division of labor, and cultural decision-making procedures influence Environmental Justice.

Scholars have recognized recognition justice as one of the critical dimensions of justice. Recognition of justice respects and recognizes differences. This is important when understanding how different people and cultures interact with their environments. Redistribution aims at achieving social equality through the redistribution of necessities for existence (Fraser, 1995, as cited in Menton, 2020), while recognition defines the conditions for a just society as the recognition of collective identities and individual needs and livelihoods (Menton et al., 2020).

Although procedural justice can lead to people being left out, attempts to ensure rules and systems are in place. Procedural justice aims to understand unjust distribution patterns and the link between social and political processes. Bell & Carrick (2017) state that power, influence, and politics all lead to procedural environmental injustice (Menton et al., 2020). Marginalized groups have been forgotten locally and globally by the same institutions that make decisions. Also, patterns of disrespect become institutionalized and influence participatory inequalities and inclusions within institutions and decision-making (Menton et al., 2020). Lastly, the capabilities approach chooses what is best for the individual by observing people's abilities and freedoms. The capabilities approach attempts to let people live full lives. The capabilities approach focuses on the freedoms that come from the capabilities and choices of individuals instead of outcomes (Menton et al., 2020).

According to Bullard and Johnson (2000), "the Environmental Justice Framework aims to develop tools and strategies to eliminate unfair, unjust, and inequitable conditions and

decisions." (Bullard & Johnson, 2000, p. 559). The framework also "attempts to unmask any underlying assumptions contributing to differential exposure and unequal protection" (Bullard, 2001, p. 153).

Empirical research has focused on the disproportionate burdens of low-income and minority groups by neighborhoods and exposure to environmental hazards (Gochfeld & Burger, 2011, pp. 53-54; Marshall Wesley, 2004, pp.24-25). Environmental Justice scholars strive to advocate for policies that include individuals and communities with small voices in governmental decision-making (Marshall Wesley, 2004).

There is a need for more studies on the spatial inequalities of underexposure to parks and green spaces, which can be considered environmental goods (Wen et al., 2013). This research will increase and bring to light the current environmental injustices minorities face. Hopefully, minorities will share adequate green spaces and feel welcomed (Taylor et al., 2007; US EPA, 2019).

Critical Environmental Justice

Even though scholars agree on four dimensions of the Environmental Justice Framework, a call for expansion focuses on Critical Environmental Justice. The critical Environmental Justice Framework must focus on state and institutional reforms and policies that do not implement change within power structures that make decisions that lead to environmental injustices. Four pillars will be added: intersectionality, multi-scalar approaches, embeddedness, and indispensability. Intersectionality recognizes that "social inequality and oppression in all forms intersect" (Pellow, 2018, p. 18, as cited in Menton et al., 2020). Multi-scalar approaches understand the spatial causes and consequences while searching for possible solutions. Embeddedness identifies that social inequalities are reinforced by state and institutional power

and, therefore, embedded in society. Indispensability recognizes that marginalized populations are excluded and dispensable (Menton et al., 2020). Critical Environmental Justice studies aim to address limitations within Environmental Justice studies.

Characteristics of Environmental Justice Framework

According to Bullard (2001), the Environmental Justice Framework has some general characteristics, including:

1. Incorporating the "right" of all individuals to be protected from environmental hazards as precedented by the Civil Rights Act of 1964, Fair Housing Act of 1968, and Voting Rights Act of 1965, amended in 1988.
2. Adopting a public health prevention model as the preferred strategy by shifting environmental problems from treatment to prevention.
3. Alleviating those harmed by pollution from having the burden of proof of being harmed. Under this system, corporations would have to prove that their chemicals are not harmful and disproportionately affect racial and ethnic minorities.
4. Inferring discrimination by allowing disparate impact and statistical weight as opposed to intent.
5. Targeting resources and action to redress disproportionate impact. (Bullard, 2001, pp. 153-155)

Environmental Justice of Parks

Even though the Environmental Justice movement began with toxic pollution, over the years, it has expanded to include the availability and convenience of environmental resources, including but not limited to green spaces and beaches (Zhang, 2023, p. 195). Although

Environmental Justice is a valuable topic, more research must be done on the Environmental Justice of parks.

When researching Environmental Justice, there are many studies on "environmental justice + air pollution" or "environmental justice + water pollution." More studies should be conducted on parks, especially in majority-Black cities (Dornfeld, 2019). According to (Bullard 1994a, as cited by Fl and Johnson 2002), due to the shift of the paradigm of Environmental Justice, a dominant environmental protection paradigm is needed to expand the interpretation of community spaces, outdoor recreation, leisure, and tourism activities. The Environmental Justice Framework will fit this study because the two study cities have a majority Black population and are already suffering from Environmental Justice issues. More research must be conducted on how residents view access and their opinions on mitigating access issues.

Community Participation

Community Engaged Research has allowed community members and leaders a voice and has escalated action that has inspired campaigns, justified policy changes, and provided a solid evidence basis for demands (Matsuoka & Raphael, 2024, pp. 31-32). Community-engaged research is not defined by methods but more by "participation on the part of those who live or work, which is the subject of the study and fundamentally affects all aspects of the research," as stated by the International Collaboration of Participatory Health Research (Matsuoka & Raphael, 2024, p. 33). Community engaged research has been applied across all disciplines and research methods.

Additionally, community-based participatory research is essential in Environmental Justice because it connects science and communities. Community-based participatory research can influence community policy solutions (WE ACT for Environmental Justice, n.d.).

Community-based participatory research adds community thoughts, ideas, and contributions to address issues and effect change (Israel et al., 2005). There have been many Environmental Justice movements since the 1980s. While Environmental Justice activists prioritized community engagement, nonviolent protests, and negotiations, other mainstream environmental organizations prioritized litigation and policy advocacy (Matsuoka & Raphael, 2024, p.19)

Government Agencies

Legislation such as the Justice40 Initiative is essential because it makes strides in combating work, play, and overall life disparities. The Department of Interior (DOI) is advancing the Justice40 Initiative, which the Biden-Harris administration implemented to deliver 40% benefits of climate change, clean energy, and investments to disadvantaged communities. The Justice40 Initiative aims to address disparities in low-income communities by scribing the following objectives: environmental equity, economic opportunity, increased economic opportunity, improved public health, and climate resilience (The White House, 2022). DOI is also focusing on making land more accessible and inclusive, cleaning legacy pollution, and fighting crises that arise from climate (US DOI, 2021). The DOI aims to provide sustainable, equitable, accessible, and inclusive management of natural and cultural resources for all (US DOI, 2021). The DOI has a total of 65 programs, along with ten bureaus. Currently, the DOI hosts online Environmental Justice training for federal employees and community advocates to understand better what environmental justice is and how it works. The DOI also has online interactive environmental justice story maps to address environmental injustices in marginalized communities (US DOI, 2021).

Executive Order (E.O.) 12898 (US EPA, OA, 2019), Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, is a federal action

signed in 1994 to address environmental equity in minority populations. E.O. 12898 intends to identify and address the disproportionately increased and adverse effects of human health on the environment in minority and low-income populations permitted by the law. E.O. 12898 promotes nondiscrimination, providing minority and low-income individuals access to public information, public participation, and strategy for implementing environmental Justice. E.O. 12898's objectives are to:

1. Identify disproportionately high impacts of environmental effects within low-income and minority communities.
2. Hold federal agencies accountable for incorporating environmental justice principles in their decision-making process and ensure They incorporate them into their programs.
3. Allow public and community participation in affected communities (US EPA, OA, 2019, Para 2).

The EPA defines Environmental Justice as the fair treatment and meaningful involvement of all people regardless of socioeconomic, racial, or any other discriminatory background while respecting the development, implementation, and enforcement of environmental laws and policies (US EPA, 2015). The EPA stresses that "Fair Treatment" means that no individual or group of people should be disproportionately affected by any industrial, governmental, or commercial environmental hazard. The EPA also stresses that "Meaningful Involvement" means that people should have voices to participate and advocate for environmental policies (US EPA, 2015). The EPA embraces laws implemented throughout the Agency that include "setting standards, making grants, permitting facilities, issuing licenses or regulations, and reviewing proposed actions of other federal agencies" (US EPA, n.d., para. 2). These laws consider public health, cumulative impacts, social costs, and welfare impacts (US EPA, n.d.). The EPA is holding

firm to its 2020 EJ Implementation, which includes stakeholder engagement, building partnerships, measuring, understanding best practices, and reporting (US EPA, n.d.)

In April 2023, the Biden-Harris Administration signed E.O.14096, emphasizing the government's commitment to Environmental Justice. In this E.O., the government aims to address environmental injustices in minority and low-income communities by promoting scientific data and supporting the newly established Office of Environmental Justice within the White House across federal efforts (The White House, 2023).

The Biden-Harris Administration made history by making grants available via the Inflation Reduction Act (IRA). The IRA is the most significant investment in climate history because it seeks to boost the economy through domestic manufacturing, create union jobs, and build more trusted supply chains. Additionally, the IRA is substantial because it provides funding to municipalities that would otherwise not receive funding (House, 2023). Grants such as the EPA Environmental Justice Government to Government program provide municipalities with monies to address environmental and climate challenges, and many cities, such as the city of Birmingham, have taken advantage of the program to address their park disparity (City of Birmingham, Alabama, n.d.; US EPA, 2020).

Environmental Justice Framework Approach

As previously stated in this chapter, the "Environmental Justice Framework seeks to create tools and strategies to eliminate unfair, unjust, and inequitable conditions and decisions" (Bullard & Johnson, 2000, p. 559). It also aims to "reveal any underlying assumptions contributing to differential exposure and unequal protection" (Bullard, 2001, p. 153). The overall goal of the Environmental Justice Framework in this study is fourfold:

1. Identify and determine an issue of disparity concerning parks in the cities of Birmingham, AL, and Jackson, MS. There is limited research on "EJ + Birmingham city parks" or "EJ + Jackson, MS city parks." According to Van Horne et al. (2022), the EJ Framework should be a standard practice and be at the center of its community. This is more relative to the distributive justice element of the Environmental Justice Framework. Distributive justice focuses on the fair distribution of benefits and resources, which this study aimed to determine.
2. Allow an approach for residents to voice their concerns. According to many Environmental Justice scholars, communities often need more political advantage, which prevents them from being part of the decision-making process (Carder, n.d.). "Funds of knowledge" from the community are essential to incorporate since they acknowledge the lived experience community members have (Van Horne et al., 2022). This approach utilized recognitional justice, an essential element of the Environmental Justice Framework, by understanding and respecting differences in concerns, needs, and livelihoods. This approach also utilized procedural justice by including areas of marginalized groups. The cities themselves have marginalized populations, which are not usually included in decision-making.
3. Provide the necessary data. By assessing the data collected through primary research and the data available through secondary research, policymakers and communities can better understand (Van Horne et al., 2022). Environmental ethics, justice, and public discourse allow all investors an equal voice in policy and regulation changes (Marshall Wesley, 2004).
4. Suggest recommendations following the results of the study. A better understanding of data can aid funding and laws that reduce future Environmental Justice issues. Engaging in the community during and after the research phase is essential. Institutional and Funding

Agencies, or in this study, the researcher can and should provide the community and stakeholders with support in concluding the research. This support includes, but is not limited to, dissemination mechanisms, capacity building, and engagement (Van Horne et al., 2022). The capabilities approach is used in steps 3 and 4 by understanding an individual's capacity to flourish and focusing on freedoms from multi-dimensional well-being.

Summary

Although some studies suggest no spatial disparities in green spaces within parks, others suggest otherwise depending on the location and what is being measured. Many studies suggest that communities of color and low-income communities have less access to parks and green spaces. Evidence shows that many communities have parks and green spaces but are riddled with subpar amenities, crime, and overcrowding. Evidence also shows that there are communities of color that have access to revitalized parks and are forced to leave their homes due to green gentrification. There is limited research on Environmental Justice and parks in Birmingham and Jackson. The goal of this study is to add to that which is missing. Using a mixed-method approach (discussed more in Chapter 3), this research will answer the research questions and provide community-based research that may have not yet been collected.

CHAPTER 3: METHODOLOGY

This chapter introduces the research methodology. This research includes a mixed-approach methodology that allows qualitative and quantitative data to prove or disprove the relationship between environmental justice and parks in Birmingham and Jackson. The qualitative approach allowed residents to express their thoughts and opinions via semi-structured, in-depth interviews. The quantitative approach allowed for correlation analysis of numbers such as park acreage/size and demographics, such as income and race. The applicability of selected research methods, along with the methodology, participants, data sources, data collection, procedures, analysis method, ethical concerns, and timeline, will be discussed in this chapter.

Research Questions

This research sought to answer the following questions:

1. Are there spatial disparities in the distribution of parks in Black communities in Birmingham and Jackson compared to majority White communities?
2. Do parks in the majority-Black study cities have park quality comparable to majority-White communities?
3. What are residents' perceptions of conditions of their city parks being an issue of environmental justice?

Research Design

This research utilized a mixed-approach methodology. Mixed methodology combines qualitative and quantitative research approaches for a deeper understanding and validation of the research. Furthermore, mixed methodology strengthens the study and answers the researcher's research questions.

In a Convergent parallel design, the best mixed-method design for this research, the qualitative and quantitative data are collected independently but brought together for interpretation. Parallel mixed designs can be performed simultaneously or with a time-lapse but integrated into quantitative and qualitative data that answers research questions (*Basic Mixed Methods Research Designs*, n.d.; Schoonenboom & Johnson, 2017). This research utilized a qualitative approach through semi-structured in-depth interviews (Boyce & Neale, 2006; Workbook e: conducting in-depth interviews, n.d.) and a quantitative approach by measuring data from the secondary source.

Quantitative methods are used in research and measured in numbers. Quantitative research is any data counted in definite numbers and units. Quantitative research is numerical and contains discrete or continuous data. A quantitative approach is necessary since park acreage is analyzed (FullStory, 2022; Godbee, 2022). On another note, qualitative research gathers participants' interpretations, experiences, and behavior. This type of research allows participants to have a voice, considering that citizens often may never have a voice of feeling heard. Qualitative research is rich in open-ended questions that do not follow a linear path as quantitative research. According to some researchers, attitudes, behaviors, feelings, and perceptions are difficult to measure quantitatively (Schmidt, 2010). Still, they can be quickly answered with a how, when, where, and why (Tenny & Sharts-Hopko, 2022).

Commonly used data collected in qualitative studies include semi-structured and unstructured interviews, in-depth interviews, and focus groups taken by field notes and audio recordings (Busetto et al., 2020). Since there are no universal standards for how many participants to conduct semi-structured in-depth interviews (Dworkin, 2012), 12 participants were interviewed (Arthur et al., 2012).

Researcher (Goger, 2021) suggest that qualitative research increases the value of equity in policy. Qualitative research can advance equity in policy by understanding different perceptions and “how” and “why” a program may fail or succeed. The results from qualitative research allow stakeholders insights and encourage the opportunities to steer policies and programs that are helpful for individuals experiencing the shortage or lack thereof. Qualitative research is fundamental in forming equitable policies and practices in the case of equity analysis. It aids in developing possible remedies, which is essential in this study (Goger, 2021). Although many researchers suggest not using quantitative techniques for qualitative data analysis, quantitative treatment can benefit qualitative data. Regardless, open-ended qualitative responses remain an excellent area for quantitative research.

Open-ended questions allow participants to provide a more detailed answer. Open-ended questions are crucial when risks, such as data loss, occur. Open-ended questions also open the door for future studies by other researchers (Bhattacherjee, 2019; Colorado et al., 2020; Jones et al., 2013). Interview research involves asking questions to obtain data about people, their preferences, thoughts, and behaviors (Bhattacherjee, 2019; Jones et al., 2013). In-depth interviews are essential in this study because theywill identify people's perception of parks.

Independent and Dependent Variables

Independent variables are controlled variables. Dependent variables affect the dependent variables (USC Libraries, 2010). The independent variables in this research include Total Population, Income, and Race. The dependent variables are the participants' responses and the park acreage, as demonstrated in Table 1. The complete variable list can be found in Appendix F.

Table 1

Names, Data Sources, and Descriptions of Independent and Dependent Variables

Variables	***Description***	***Data Source***
Total Population	Total Population within a 10-minute walk of a park.	Trust for Public Land
Income		Trust for Public Land via ESRI 2022
Low Income	Total number of low-income households (<75% urban area median income) within a 10-minute walk (2022)	
Medium Income	Total number of middle-income households (75% - 125% urban area median income) within a 10-minute walk (2022)	
High Income	Total number of high-income households (>125% urban area median income) within a 10-minute walk (2022)	
Race		Trust for Public Land
White	Total White Non-Hispanic population within a 10-minute walk (2022)	
Black	Total Black Non-Hispanic population within a 10-minute walk (2022)	
Asian	Total Asian Non-Hispanic population within a 10-minute walk (2022)	
Pacific	Total Pacific Islander Non-Hispanic population within a 10-minute walk (2022)	
Native	Total Native American Non-Hispanic population within a 10-minute walk (2022)	

Study Participants

The study participants included residents of Birmingham and Jackson. Although there were no specific time limits for living within the area, each resident living in Birmingham and Jackson was born and raised in those cities. All participants were fluent in English, and there was no specificity of race, gender, socioeconomic status, or education.

The participant sampling pool was based on the participant's willingness to participate. An informed consent form was signed (a copy can be found in Appendix B). The study called for 5-7 participants from each city or 10-14 total participants. The final number of participants was 12.

Participants were recruited via the snowball sampling method by using established contacts to recruit participants for the study. The researcher contacted the initial contact via phone and sent a copy of the IRB-approved flyer found in Appendix A. The researcher had no active personal relationships with the participants.

All but one interview was conducted individually. The other participants requested a joint interview, and the requests were respected. Each participant still gave their separate responses, which allowed both participants to remain active.

Data Sources

In this research, snowball sampling was most fitting. Snowball sampling uses existing or designated contacts to identify potential participants (*Workbook E: Conducting In-Depth Interviews*, n.d.). Using the snowball method, the researcher started with designated contacts. The designated contacts assisted in identifying potential participants until the desired number of participants was obtained. For the best possible accommodation, the participants chose the date and time most convenient for them to complete the interview (Tenny & Sharts-Hopko, 2022).

This research utilized semi-structured in-depth interviews containing 21 questions developed by the researcher. The semi-structured in-depth Interview Guide can be found in Appendix C. The semi-structured in-depth Interview Guide was developed to answer, in part, the research questions and to offer insight into other contributors to park conditions. No demographic information was taken during the semi-structured in-depth interview, and the only requirements to participate were as follows: (a) Participants had to be 18 years or older, and (b) Participants had to have lived in the study city.

The researcher first attempted to contact the Parks and Recreation Department in both cities to verify if any surveys or interviews had been conducted. Those advances yielded no results. Following this, the researcher defended the proposal and received approval from the Dissertation Committee. Before submitting the approval to the IRB for this research, the researcher contacted the TPL for permission to use their ParkServe data as a secondary source. TPL's ParkServe database contains data for over 15,000 cities, towns, and villages and an inventory of parks for every urban area in the US, including Puerto Rico. ParkServe data are updated monthly, pending verification of public submissions. The TPL spent about two years gathering data via contact with each city or town, followed by GIS park data and satellite imagery (The Trust for Public Land, n.d.).

A copy of the permission can be found in Appendix D. Once IRB approval was received, the researcher contacted established contacts to begin interviews. The interviews took approximately three months to complete.

As discussed in Chapters 1 and 2, the Trust for Public Land provides comprehensive park data. For this study, it is relevant to note that the data from their ParkServe website is updated annually, ensuring the most current information for analysis. (The Trust for Public Land, n.d.).

Data Collection

The qualitative data collection of this research used a self-made, semi-structured, in-depth interview guide found in Appendix C. Each interview was recorded electronically on a non-serviced iPhone XR. The interviews began with an introduction of the researcher, followed by an introduction to the research and the types of parks that should be focused on within the research context. In this case, the parks selected were those owned and operated by the study city. The entire interview contained open-ended questions and concluded by allowing participants to share any other comments or concerns that they had not already addressed regarding parks in their cities.

Although contact methods were offered for interview completion, many participants chose the phone option. Regardless of the type of method chosen, each participant was recorded on a non-serviced (meaning no cellular capability) iPhone XR. No interviews were conducted before confirming that the consent form was signed.

A copy of the consent form was uploaded to Qualtrics for accuracy, safety, and confidentiality. Each participant was emailed or texted a link to sign the form via Qualtrics. Qualtrics recorded the date and time of the signature. A PDF copy of each consent form is printed and locked in a file cabinet, allowing only the researcher to access it. Each interview was recorded as an MP4 file and uploaded to Dovetail.com for Transcribing.

The TPL utilized an Esri Geodatabase. Permission by the TPL to use the quantitative data was obtained via email. A copy of the email can be found in Appendix D.

Data Analysis

Exploratory Data Analysis

Exploratory data analysis was employed for this research. The US EPA (2015b) defines Exploratory Data Analysis (EDA) as “an analysis approach that identifies general patterns in the data. These patterns include outliers and features of the data that might be unexpected” (para 1). The exploratory analysis assisted in determining similarities in interviewees' answers and thoughts for theming and grouping responses. It also assisted in identifying correlations in park acreage, among other parameters.

After each interview, the researcher uploaded the MP4 file Dovetail.com to observe the transcription. This process allowed the researcher to have a fresh mind regarding what was just stated and allowed the researcher to review any inaudible transcriptions. Transcribing the recordings aided the researcher in understanding the participants' perceptions and allowed a more straightforward method of grouping similarities and differences among responses.

Dovetail then allowed the researcher to highlight and tag parts of each transcription, allowing a deeper dive into clustering and theming. Dovetail then clustered the transcriptions, creating themes that will be discussed in Chapter 4.

Geographic Information Systems

Concurrently, the researcher downloaded Esri File Geodatabase from the ParkServe website to extract the data from GIS and export the data to Excel. Geographic Information Systems (GIS) is a spatial system that allows for data creation, management, and analysis. GIS connects data to maps and provides descriptive information. The TPL’s quantitative data was used to analyze park acreage. The TPL has a Geodatabase of all parks in America, including park location, park name, park acreage, total population of people within a 10-minute walk, and

parameters such as race and income within a 10-minute walk of each park. The GIS export to Excel file can be found in Appendix E. The Excel file contains, most importantly, the name of each park in Birmingham or Jackson, Park size, total population within a 10-minute walk, household income (low, medium, and high), and race within a 10-minute walk (ESRI, 2023).

The researcher utilized GIS due to the easiness of deleting unneeded information from the attribute table. The attribute table is defined as a table that contains data to describe or quantify an entity. In this case, the researcher deleted unnecessary park information from the attribute table and extracted the table to allow a more accurate account of each park in each study city (Pannell, 2022). There are 113 parks in TPL's geodatabase, although Birmingham has 116. There are 51 parks, although Jackson has 56. There is no way of knowing which parks were excluded in Jackson and for what reason. Upon extracting the data from GIS, the researcher could export the data to an Excel file. The Excel file was then uploaded to SPSS, and the data was used to measure correlation.

Statistical Package for the Social Sciences (SPSS)

Statistical Package for the Social Sciences, or SPSS, is a statistical software program that analyzes social science data. Core features of SPSS include statistical analysis of quantitative data, text analysis, and predicting modeling (SPSS Tutorials, 2009; Williams, 2022). Upon extracting the data from GIS, the researcher imported the Excel file into SPSS, and Pearson's correlation of parameters such as race, income, total population, and park acreage was calculated. See Figure 5.

Figure 5

Pearson's correlation coefficient

$$r = \frac{\sum_i (x_i - \overline{x})(y_i - \overline{y})}{\sqrt{\sum_i (x_i - \overline{x})^2} \sqrt{\sum_i (y_i - \overline{y})^2}}$$

Note. Pearson's correlation coefficient Formula Retrieved from (Kent State University, 2018). In public domain.

The Pearson correlation measures the strength of the linear relationship of two variables. Pearson's correlation is essential because it is a fundamental statistical tool in this research. -1 means a complete native linear correlation, 0 means no correlation, and +1 means a toral positive correlation (Kent State University, 2018). Figure 5 shows the formula used to calculate Pearson's correlation coefficient. Pearson's correlation coefficient is essential in fields such as statistics, psychology, sociology, and economics because it provides a numerical value of how strong a relationship two variables have. Pearson's correlation coefficient is essential in this research because it will allow the researcher to answer the research questions and understand the individual strengths of each variable within the research. Pearson's correlation was used to examine each variable separately. If there is a need to analyze multiple independent variables and the dependent variable to understand how each independent contributes to the variation of the dependent variable while controlling the other, multiple regression analysis can be performed.

Amenities

Each participant was asked 21 questions that assessed their perception of parks in their city. The 21 questions were divided into seven categories: familiarity with parks in your city and events, city park satisfaction, the convenience and size of parks in your city, crime and safety in city parks, improvements to city parks, environmental justice, and comments and concerns about city parks; these questions can found in Appendix C. The analysis of the quality of parks, as defined in this research, directly reflects the amenities available. Amenities include but are not limited to park benches, drinking fountains, bicycle racks, playground equipment, security guards, cameras and lights, tennis courts, swimming pools, dog trails, basketball courts, a multi-use field, track, sand volleyball courts, picnic facilities, walking trails, or any technology, advancement or placement that allows for a more enjoyable park experience (*Park Site Amenities That Help Make Your Park Enjoyable for All!*, n.d.).

Ground Truthing

The qualitative data was themed and expressed in numbers and direct quotes to represent more straightforward data. Quantifying qualitative data complements generating new hypotheses and relationships that cannot be measured qualitatively. Ground truthing is essential to supporting data that otherwise cannot be supported by databases or maps. Ground truthing is not a new concept. In a 2013 study by (Sadd et al., 2013), Ground truthing was conducted to advance Environmental Justice and strengthen the gap between community members and researchers in Los Angeles (*An Overview of ground truth data | 4 tips for success*, 2020; Halevi Hochwald et al., 2023; Sadd et al., 2013). This study used ground truthing to support participants' responses, which could not be determined via maps or satellite. There was a total of four parks between

Birmingham and Jackson that were visited. The parks were assessed by their quality on the day they visited. The results are presented in the next chapter, Chapter 4.

Ethical Considerations

The IRB committee authenticated the study to ensure it is ethical. Each participant signed a consent form found in Appendix B and was made aware that participation was entirely voluntary. The risks associated with this study were minimal, but participants were notified that they were allowed to discontinue the interview at any time if they felt uncomfortable. All participants were over the age of 18, and none were determined to be a part of a protected group (minors, incarcerated, disabled). Additionally, all recorded and consent form items are locked in a file cabinet only accessible by the researcher and destroyed after three years, reducing confidentiality risks.

Assumptions, Delimitations, and Limitations

This study assumed that all participants would answer interview questions honestly and completely. Another assumption is that participants would have a general idea of Environmental Justice. The final assumption was that using the snowball method to recruit participants would be easy.

A delimitation of this study was that most participants were African American, suggesting a lack of a diverse group that may have a different insight. The researcher was directly connected to communities of color, so while using the snowball method, initial participants recruited other participants who were also African American. Being that the researcher is African American, she likely had some unconscious and conscious bias from her living in Jackson, MS. Although the researcher may have had some bias, the literature review and actual data supported the study instead of being only based on opinion.

One possible limitation would be that participants' responses may have been affected due to the researcher having to be present. For example, participants may have felt pressured to answer a certain way (Anderson, 2010). To reduce limitations, the researcher reiterated to participants that they could withdraw from the study without penalty. The researcher also ensured that the participants did not feel badgered or forced to answer. Another limitation was that the qualitative portion of this study was comprised of a small sample size, which could not reflect the entire population. The final limitation was that this study did not focus heavily on demographics. Different age groups may have provided different perceptions.

Role of Researcher

The researcher was a Ph.D. student in the Urban and Regional Planning program at Jackson State University. The researcher was also a former resident of Jackson, MS, and reminisced on how the parks once looked in Jackson. The researcher also aimed to raise awareness of the disadvantages of parks in Birmingham and Jackson.

Summary

Utilizing semi-structured in-depth interviews makes it necessary to take a qualitative research approach. Qualitative research allows for a less linear approach and freedom to answer open-endedly. Analyzing the park acreage requires a quantitative approach. The semi-guided, in-depth discussion consisted of 12 participants from Birmingham and Jackson. Participants signed a consent form and were assured that their responses would be confidential and reported only in the aggregate. The data collected from the semi-structured in-depth interviews and the park acreage, among other variables, were analyzed for correlation. Combining the primary supported by ground truthing and secondary research methods, this research aimed to answer the research questions:

1) Are there spatial disparities in the distribution of parks in Black communities in Birmingham and Jackson compared to majority White communities?
2) Do parks in the majority-Black study cities have park quality comparable to majority-White communities?
3) What are residents' perceptions of conditions of their city parks being an issue of environmental justice?

The limited availability of peer-reviewed research in these cities and the desire to bring awareness to park planning issues in Birmingham, AL, and Jackson, MS, makes this research pertinent.

CHAPTER 4: RESULTS

This mixed-method study aimed to identify the spatial distribution and environmental justice in parks in Birmingham and Jackson. This chapter includes a discussion of significant findings as related to literature and to answer the following questions:

1. Are there spatial disparities in the distribution of parks in Black communities in Birmingham and Jackson compared to majority White communities?
2. Do parks in the majority-Black study cities have park quality comparable to majority-White communities?
3. What are residents' perceptions of conditions of their city parks being an issue of environmental justice?

This chapter includes an analysis consistent with exploratory data analysis to observe how the analysis ties back to the research questions. Using Dovetail, 12 semi-guided, semi-structured, in-depth interview responses were transcribed, summarized, and clustered into appropriate categories. These clusters also represent the theme that emerged from the data. This chapter includes tables that have been clustered via AI.

Sample

There was a total of 12 participants for this study. As described in Chapter 3, no official demographic information was collected during the interviews besides the participants' geographic location. A total of 58.33% of the respondents were residents of Jackson, while 41.66% were residents of Birmingham.

As described in Chapter 3, there were two methods of data collection: primary data via semi-structured in-depth interviews and secondary data via trust for public land. Both methods were used to support the study. After each interview, the recording was uploaded to Dovetail, transcribed, and summarized. Although the data was electronically transcribed, the transcriptions could manually adjust words or phrases that were not accurately translated due to accents or grammatical limitations. Each summary was then reviewed line by line for accuracy and tagged "Negative, Positive, or Suggestions." From there, Dovetail determined if specific sentences or phrases should be clustered together and what the overall theme should be. If certain items did not cluster together, no matter the tagging, they were manually clustered into the correct category.

Before beginning the interviews, the 21 questions were divided into seven categories to understand the quality of parks. The categories include familiarity with parks in your city and events, city park satisfaction, the convenience and size of parks in your city, crime and safety in city parks, improvements to city parks, environmental justice, and comments and concerns about city parks (Appendix C). As iterated in Chapter 3, perceptions of quality are reflective of amenities.

After tagging and theming, Dovetail then categorized the responses into crime and safety, environmental justice and racial inequality in public park funding and maintenance, improving parks and recreation, dissatisfaction with upkeep and offerings of parks, suggestions for improving parks, perception of parks, parking at local parks, park size and accessibility, park responsibility, park funding, and park visitation and overall rating.

The letters "B" and "J" are used for "Birmingham" and "Jackson." The numbers beside each letter represent a different participant. These designations helped the researcher sort and

accurately represent each participant without names or identifiers. “Participant” and “interviewee” are used interchangeably. The qualitative data will be expressed quantitatively via percentages to summarize similarities and differences among responses. Direct quotes follow the quantifying of the qualitative data.

Primary Data Results

Park Size and Accessibility

A total of 40% of Birmingham participants felt the city's parks are smaller than those in other cities or wealthier suburbs. A total of 20% expressed that Birmingham's parks are not overcrowded, while another 20% felt that the parks are less convenient than those in cities like Atlanta. The remaining twenty percent did not directly answer the question. Birmingham residents made statements such as:

“They are smaller, but you have a few that're bigger. But a majority of them are like little parks in by near neighborhoods or schools.” -- Interviewee B5

Almost 86 % (85.7) of Jackson participants felt that parks are accessible and are of nice size. Fourteen percent did not directly answer the question. Interviewee J1 expressed that Jackson's parks compared well to other cities, citing “nice-sized parks like Smith Park downtown and parks on Fortification Street and Medgar Evers Boulevard.”

Crime and Safety

The crime and safety at Birmingham parks were a significant concern for 80% of the participants. Almost all participants felt that Birmingham suffered at the hands of crime. Forty percent believed that the high crime rate is affecting park conditions. Interviewee 2 expressed that Birmingham parks are moderately unsafe, rating them a 5-6 on a safety scale due to

shootings and crimes. This participant also states that the "north and east sides of Birmingham are cited as having high crime rates affecting parks."

Forty percent of participants in Birmingham believed that the high crime rate is affecting park conditions. Interviewee B2 stated,

> But, like, here downtown, if you go to the park, you really have to worry about a lot of people, you know, whether they be homeless people or whatever that's roaming. So, it's just like if you are a woman and you are going by yourself or you, with your kids, it is kind of like safety, you know, Not feel so safe.

Almost all participants expressed concern about crime in Jackson. Just over a quarter of Jackson participants (28.5%) felt that while crime exists everywhere, it is more prevalent in Jackson due to factors such as higher population density, low-income residents, and limited resources. Another 28.5% mentioned feeling unsafe when visiting parks, while 14.2% did not share this concern. A larger significant portion, 57.3%, did not directly express discomfort but emphasized the importance of ensuring citizens feel safe when visiting parks. This group also suggested that improving parks could help reduce crime rates. Additionally, 14.2% felt leaders had neglected parks due to crime-related issues.

Parking at Local Parks

Forty percent of participants believed that parking was convenient in both cities. Fewer than 1% mentioned that parking could occasionally be inconvenient depending on the location, while another small percentage (less than 1%) suggested insufficient parking. However, 43.2% of participants did not express their opinions on parking.

Participants' Suggestions for Improving City Parks

When asked what can be done to improve the parks in Birmingham, various participants shared their thoughts. Interviewee B2 expressed,

> Get somebody on hand to be there. Or even if they cannot do that, like, probably you do not want to regularly check it, you know, like check the part throughout the day or something like that. Maybe getting, I do not know, they like supplying the people that have the dog with a, like, pooper scooper or something or bags or something. Everybody supplying them with that kind of controlling the ducks, which, now that I'm talking about it, I do not know how easy that would be because I'm sure they, you know, poop too, but I just get somebody to be there just to maintain it, you know, throughout the day.

Additionally, Interviewee B4 stated,

> If I had, if I had to change anything about. It would be, I mean, that I did that for us, that be open more for, like, the kids and have, like, more activities and get more activities too for, like, the kids, you know, for to do, or have like, after school care for, like, the kids or give them, just give the kids something to do at school.

Finally, Interviewee B5 expressed,

> Even though they have like the slides and all this other stuff if you go, like, 15 minutes down. So I cannot think of the other city, right next to it. If you go down the road, they have, just, you, you can have like parties there. They have a softball field, baseball field connected, they just, it's just like a whole big, it is a part that's filled with everything in and everything. Soccer fields, like, just expanding, and I like making them just basic parts.

All participants had strong feelings about improving parks and recreation in Jackson—many suggestions called for community involvement and city leadership/mayor funding. J2 discussed

traveling to other cities outside Jackson to take children to adequately equipped and safe parks. Interviewees J5 and J6 discussed the underutilization of parks compared to their usage in the past due to population decline.

Furthermore, 71.4% of participants wanted more satisfaction with Jackson's parks. 14% did not express dissatisfaction, and 14% missed the nostalgia of Jackson's parks. When asked what can be done to improve the parks in Jackson, Interviewee J2 responded with the following,

> … I would say maybe security, I do not know if that's a thing but, I would say maybe, like, you know, how they have, like, the guard shacks, like to enter, like, they keep a count of how many people coming in and out.

Table 2 demonstrates the suggestions provided by interviewees regarding park improvements in Birmingham and Jackson. The participants offered insights on various aspects of park conditions, highlighting the need for better maintenance, updated facilities, enhanced security, and more community engagement. Interviewees emphasized the importance of leadership from city officials and the need for increased funding to ensure that parks are safe, accessible, and well-maintained for all residents. Specific suggestions include adding lighting, improving playground equipment, expanding recreational facilities, and addressing safety concerns to make the parks more family-friendly and appealing to the community.

Table 2

Summation of participants' suggestions for improving local parks

Participants/Interviewees	Suggestions
Birmingham 1	Interviewee suggests parks need more funding for maintenance and to keep facilities open. Many parks, pools, and libraries were closed over the past year.

Birmingham 2	Interviewee suggests having staff present daily to maintain cleanliness, better lighting and security cameras to improve park safety, and more updated recreational facilities.
Birmingham 2	Interviewee suggests improvements were updating facilities and having regular staffing to improve cleanliness and safety.
Birmingham 3	Interviewee suggests improvements like better equipment, more lighting, and adding hydration stations to make the parks more appealing.
Birmingham 3	Interviewee suggests adding more lighting and softer ground material to the parks.
Birmingham 3	Interviewee suggests adding water fountains at the parks.
Birmingham 4	Interviewee suggests improvements include better management and clean up.
Birmingham 4	Interviewee suggests improvements including better leadership from the city down to the community level.
Birmingham 5	Interviewee feels Birmingham parks are just okay, and thinks they need better equipment and facility updates compared to neighboring cities. Interviewee suggests Birmingham parks need expanded facilities like those in neighboring cities, with things like baseball

	fields, soccer fields, and indoor bathrooms.
Jackson 1	Interviewee says city leadership needs to properly plan and maintain parks for citizens. Interviewee suggests the mayor and city council should collaborate better on plans for parks. The right leadership and plans, the parks could match what children see on TV.
Jackson 1	Interviewee suggests improvements like keeping the parks clean and attractive, adding walking trails and playground equipment, and better maintenance.
Jackson 2	Interviewee suggests finding more funding and community outreach to improve conditions of Jackson parks. Interviewee believes the city leadership like the mayor and city council should be responsible for park improvements.
Jackson 2	Interviewee suggests improving Jackson parks include updating playground and park facilities, adding security measures, and making them more accessible. The interviewee feels Jackson parks are worse than parks in surrounding cities, potentially due to lack of investment by city leaders in the predominantly Black community.

Jackson 3	Interviewee suggests improvements like more equipment, trails, security patrols, and youth activities to make Jackson parks safer and more engaging. Interviewee feels the mayor should be responsible for investing in and improving Jackson parks.
Jackson 4	Interviewee suggests improvements include better maintenance, groundskeeping, water parks, and splash pads.
Jackson 4	Interviewee suggests Jackson needs to start improving some parks even if they can't fix them all at once, particularly ones used by youth.
Jackson 4	Interviewee suggests improvements include adding security, charging a small fee, adding a water park, improving facilities, and better maintenance. The state parks and recreation department should be responsible for making these improvements.
Jackson 5 and 6	Interviewee suggests ideas for improving park conditions like making them more family-friendly, consolidating underutilized parks, and increasing community events and engagement.

Jackson 5 and 6	Interviewee suggests improvements include better maintenance like keeping ditches cleared, opening more pools, adding updated playground equipment and workout equipment, and more community events held in the parks. In terms of safety, having better lighting, security patrols, and a stronger police presence could help improve the parks.
Jackson 7	Interviewee suggests improvements like better upkeep, more playground options for all ages, adding basketball courts and pools.

Perceptions of Local Parks

Tables 3 and 4 represent interview responses highlighting local perceptions of parks in Birmingham and Jackson. Interviewees provided insights based on their familiarity with the parks and recreation departments and their personal experiences with park usage, access, and maintenance. In Birmingham, as indicated in Table 3, responses ranged from concerns about declining maintenance in less affluent areas to positive feedback about accessibility. However, several limitations were mentioned regarding park size and safety. In Jackson, as indicated in Table 4, interviewees were generally familiar with the parks. Still, they expressed dissatisfaction with the parks, such as poor upkeep, crime, flooding, and slow responses to maintenance needs. These varied perceptions reflect the challenges both cities face in maintaining their parks.

Table 3

Perceptions of Local Parks in Birmingham

Interviewee B2 was not very familiar with Birmingham's parks and recreation department.
Interviewee B1 dislikes that as Birmingham's population declines, so does maintenance and service in less wealthy park areas. Many swimming pools and libraries have closed without replacement.
Interviewee B1 has not visited Birmingham parks in the past year because they have not had programs and Interviewee has lived in Birmingham her whole life and raised children there but has not had reason to go.
Interviewee B2 had visited Birmingham Park about a month ago, so once in the past year.
Interviewee B3 visits parks in Birmingham frequently with their child.
Interviewee B2 had visited Birmingham Park about a month ago, so once in the past year. Interviewee B4 Concerns about Birmingham parks include many not being open or having leadership, and not providing enough opportunities for kids.
Interviewee B5 feels access to Birmingham parks is easier compared to neighboring cities that require advance planning, but most parks are small with limited parking. The interviewee feels safe visiting most Birmingham parks, but not smaller ones dropped into neighborhoods.

Table 4

Perceptions of Local Parks in Jackson

Interviewee J1 was somewhat familiar with Jackson’s park and recreation department.
Interviewee J2 is fairly, familiar with the city of Jackson parks and recreation department because they visit the parks and notices that they are barely functional.
Interviewee J3 has some familiarity with Jackson parks from visiting them a few times, but is not very satisfied with them overall. Interviewee also states that the parks have crime issues.
Interviewee J4 is very familiar with the city of Jackson parks and recreation department, but does not visit parks because of the lack of upkeep.
Interviewee J5 is kind of familiar. I know, but has only visited parks twice in the past year due to unsatisfaction with current state of parks.
Interviewee J6 is very familiar with the city of Jackson’s park and recreation department and visits parks a few times a year, but is overall unsatisfied with park conditions.

Interviewee J7 is very familiar with the city of Jackson's park and recreation department, but not very satisfied with the maintence of the park across from them. The park across from them has issues with flooding and park maintence does a good job when they do come, but there is still no sense of urgency of coming.

Racial Inequality in Public Park Funding and Maintenance

Residents of both cities had much to say about racial inequality. When asked about Environmental Justice, one-third of participants suggested that it played a role in the conditions of parks in Birmingham and Jackson. A small portion, 1.6 %, believed that Environmental Justice is not an everyday practice and felt that addressing Environmental Justice issues would improve parks. Less than one percent felt that environmental justice did not affect parks. The remaining participants, 64.6 %, expressed concerns about other Environmental Justice issues but did not directly link parks to this topic.

Although only a third of participants felt that Environmental Justice impacted park conditions, a majority—58%—believed that racism played a role. Many indicated that parks in predominantly White communities within the city were noticeably better maintained. Less than one percent believed racism had no connection to park conditions. The following are some statements from participants.

Interviewee J1 expressed, "There is a correlation between environmental justice issues and the poor condition of parks in lower-income Black areas compared to higher-income White areas."

Similarly, Interviewee J2 stated, "Racism plays a part in worse conditions of parks in majority Black Jackson compared to majority White cities in Mississippi." For Birmingham's parks,

Interviewees B3, B1, and B2 shared their sentiments. Interviewee B3 stated, “Parks in wealthier Birmingham neighborhoods like Hoover[2] and Mountain Brook[3] were more updated and appealing than parks in lower-income neighborhoods.” Interviewee B1 stated,

> Racism correlates with park disrepair, similar to food deserts and redlining in Birmingham. Older park facilities in Black neighborhoods are closing without replacement. Population declines mean less young people to use parks, but parks should still serve seniors and provide green space.

Also, on this issue, Interviewee B2 expressed, “Park conditions were related to racism, though some parks are predominantly used by Black residents.” Interviewee B4 stated, “Environmental justice is not practiced everywhere, and some people benefit more than others”.

Park Visitation and Overall Rating

Almost all participants rated their city parks and park departments negatively. Many had not visited parks in the past year for various reasons such as work, crime, or conditions of the parks. Some participants rated the parks and park department 6 or 7 out of 10 or “okay.”

Secondary Data Results

The secondary data included an analysis of park acreage correlated with income, total income, and race. Exploratory data analysis was used to increase the study's validity. There are 118 city parks in Birmingham and 56 in Jackson, according to TPL. TPL only has data for 113 parks in Birmingham and 51 in Jackson. The total list can be found in Appendix E. Data was extracted from Esri Geodatabase on the TPL website. Each city park not located in Birmingham

[2] Hoover, Alabama's population is almost 70% White.
[3] Mountain Brook’s population is almost 98% White

or Jackson was removed, and the list was exported to Excel. The list included park name, park acreage, income, and race. There were only three income categories: low, middle, and high. A short description of how income is measured in this study can be found in Appendix F. Race included White, Black, Hispanic, non-Hispanic, Native American, Pacific Islander, and two or more races.

Tables 5-10 demonstrate Bivariate Pearson correlations performed via SPSS on Birmingham's Park size and race, park size and income, income and race, total population, and park size, and the same for Jackson.

Table 5

Correlation of Birmingham Park Size and Race

		Park Size (Acres)	White	Black	Asian	Native American	Pacific	2 or more races	Other	Hispanic
Park Size (Acres)	Pearson Correlation	1	.118	.300**	.012	.191*	-.030	.263**	.144	.325**
	Sig. (2-tailed)		.214	.001	.897	.042	.753	.005	.128	<.001
	N	113	113	113	113	113	113	113	113	113

**. correlation is significant at the 0.01 level (2-tailed).

*. correlation is significant at the 0.05 level (2-tailed).

Table 6

Correlation of Birmingham Park Size and Income

		Park Size (Acres)	Low Income	Medium Income	High Income
Park Size (Acres)	Pearson Correlation	1	.195*	.273**	.147
	Sig. (2-tailed)		.039	.003	.120
	N	113	113	113	113

*. correlation is significant at the 0.05 level (2-tailed).

**. correlation is significant at the 0.01 level (2-tailed).

Table 7

Correlation of Birmingham Park Size and Total Population

		Park Size (Acres)	Total Population
Park Size (Acres)	Pearson Correlation	1	.290**
	Sig. (2-tailed)		.002
	N	113	

**. Correlation is significant at the 0.01 level (2-tailed).

Table 8

Correlation of Jackson Park Size and Race

		Park Size (Acres)	White	Black	Native American	Asian	Pacific	Other	2 or more races	Hispanic
Park Size (Acres)	Pearson Correlation	1	-.108	-.173	-.050	-.097	-.152	-.148	-.189	-.168
	Sig. (2-tailed)		.452	.226	.726	.499	.287	.301	.183	.239
	N	51	51	51	51	51	51	51	51	51

*. correlation is significant at the 0.05 level (2-tailed).

**. correlation is significant at the 0.01 level (2-tailed).

Table 9

Correlation of Jackson Park Size and Income

		Park Size (Acres)	Low Income	Medium Income	High Income
Park Size (Acres)	Pearson Correlation	1	-.291*	-.220	-.045
	Sig. (2-tailed)		.038	.120	.756
	N	51	51	51	51

*. correlation is significant at the 0.05 level (2-tailed).
**. correlation is significant at the 0.01 level (2-tailed).

Table 10

Correlation of Jackson Park Size and Total Population

		Park Size (Acres)	Total Population
Park Size (Acres)	Pearson Correlation	1	-.234
	Sig. (2-tailed)		.098
	N	51	51

***. correlation is significant at the 0.01 level (2-tailed).*

As indicated in Table 11, parks in Birmingham serve 47,544 low-income individuals, 12,319 medium-income individuals, and 23,935 high-income individuals. Birmingham parks also serve 60,473 White individuals and 99,787 Black individuals, indicating a higher presence in predominantly Black areas. In addition, they serve 222 Native Americans, 3,348 Asians, 85 Pacific Islanders, 484 individuals categorized as 'Other,' 4,341 individuals of two or more races, and 7,738 Hispanics.

In Birmingham, most Black neighborhoods contain significantly more park acreage (2,689.12 acres) than White neighborhoods (416.55 acres), suggesting that most park space is concentrated in areas where the Black population exceeds the White population.

In minority Black neighborhoods (where Black residents make up less than half the population), the park acreage totals 435.07 acres. In comparison, minority White neighborhoods (where White residents make up less than half the population) have 2,692.79 acres of park space. This suggests that, although majority Black areas have the most park space overall, minority White neighborhoods also have substantial park acreage, likely serving diverse communities.

Table 5 demonstrates a correlation between the Black, Native American, Hispanic, and two or more races and park acreage, but no necessary spatial disparity. This correlation may be linked to Birmingham being 68.6% Black (Census.gov) and the location of the parks having these populations within a 0.5-mile (or 10-minute) radius.

As indicated in Table 6, the correlation analysis of Birmingham park size and income levels shows that park size has a significant positive correlation with both low-income and medium-income groups. The correlation between park size and low income is significant at the 0.05 level, while the correlation with medium income is stronger and significant at the 0.01 level. However, no significant correlation was found between park size and high income.

Table 7 indicates that Birmingham has a significant correlation between park size and total population, proving that there are no spatial distributions within specific communities in Birmingham. The city of Birmingham has parks evenly distributed across Black neighborhoods.

Table 11

The sum of acreage serving various demographics in Birmingham

Type	***Category***	***Population Served***
Income Level	**Low-Income**	47544
	Medium-Income	12319
	High-Income	23935
Race	**White**	60473
	Black	99787
	Native American	222

Asian	3348
Pacific Islander	85
Other	484
Two or More Races	4341
Hispanic	7738
Majority Black Neighborhoods	2689.12
Majority White Neighborhoods	416.55
Minority Black Neighborhoods	435.07
Minority White Neighborhoods	2692.79

The result from the secondary source suggests no spatial disparity in parks in Jackson. In majority Black neighborhoods, the total park acreage is 695.22 acres, compared to 70.16 acres in majority White neighborhoods. This stark contrast implies that Black communities in Jackson have access to significantly more park space than White communities.

The total park acreage across Jackson Parks covers 765.38 acres, lower than the 2000 Trust for Public Land (Trust for Public Land, 2024), which will be discussed in Limitations in the next chapter.

Table 12

The sum of acreage serving various demographics in Jackson

Type	***Category***	***Population Served***
Income Level	**Low-Income**	11568
	Medium-Income	8136
	High-Income	4243
Race	**White**	8602
	Black	45254
	Native American	83
	Asian	275
	Pacific Islander	11
	Other	125
	Two or More Races	1294

Hispanic	1235

As indicated in Table 12, parks serve 11,568 low-income individuals, 8,136 medium-income individuals, and 4,243 high-income individuals. Parks also serve 8,602 White individuals and a significantly larger population of 45,254 Black individuals. Additionally, parks serve 83 Native American individuals, 275 Asian individuals, 11 Pacific Islander individuals, 125 categorized as 'Other,' 1,294 individuals of two or more races, and 1,235 Hispanic individuals.

This comparison highlights that majority Black neighborhoods in both cities tend to have access to much larger parks than majority White neighborhoods. In contrast, minority White neighborhoods in Birmingham also have substantial park space, suggesting more park diversity in these areas. The data supports the idea that, while Black communities have access to larger parks overall, there is a significant imbalance in park distribution across racial lines. These numbers are essential for addressing park accessibility and equity concerns in urban planning.

The result from the secondary source suggests no spatial disparity in parks in Jackson. There is a negative coefficient between the variables of park size and race in Jackson, as indicated in Table 8.

As indicated in Table 9, the correlation analysis of Jackson Park's size and income levels shows a significant negative correlation between park size and low income. As park size increases, low-income areas tend to have smaller parks. This correlation is significant at the 0.05 level. No significant correlations were found between park size and either medium or high-income groups. The significant negative correlation between park size and low-income areas in Jackson implies that low-income communities tend to have smaller parks, which indicates a potential spatial disparity but not so much as a disparity in the distribution of the parks.

There is also a negative correlation coefficient between the total population and park size in Jackson, as shown in Table 10. The correlation coefficients are negative, signifying that the variables are moving in opposite directions. There is a correlation, but it is not as significant as in Birmingham. The negative coefficient in correlation suggests that as one variable increases, the other decreases and works vice versa. There may be many reasons as to why this trend exists. In the scope of this research, no speculation will be given.

It is essential to understand that correlation does not mean causation. The two variables have a strong relationship when there is a 0.01 level (2-tailed). The chance of this relationship occurring is low, less than 1 in 100 (0.01), and the significance is tested in both directions. The same goes for 0.05. Although the research questions specifically ask if there is a spatial disparity in the distribution of parks, it should be noted that park quality, park acreage, accessibility, etc., is a spatial disparity due to spatial disparity being defined as an uneven distribution of resources. It is not specified if this distribution is just for the city or specifically for Black communities.

The results varied regarding park quality, comparable to that of majority White communities. The quantitative data suggests that the park acreage in Birmingham did not correlate with White. This does not signify that there is not a relationship. It is just suggested that if there is a relationship, it is not linear. The two variables do not move consistently. Only a linear relationship is observed in this study.

The qualitative data suggests that, regarding access to the parks in Birmingham, 40% of the participants felt that Birmingham parks are smaller than other cities or wealthier communities. Overall, the thought was that Birmingham parks are not overcrowded or less convenient. A small percentage did not comment on the access to Birmingham parks.

Crime and safety were a significant concern in Birmingham. Although 80% of participants were concerned with crime, only about 40% felt that the crime affected the conditions of parks. Many participants also felt that the equipment and facilities within the parks needed updating. Some suggested better management and cleanup, while others suggested increased funding. Suggestions for regular staffing and equipment, such as cameras and lighting, were also provided. Some participants also noted that neighboring communities were more updated and appealing than the parks in the low-income neighborhoods in Birmingham. There were differing opinions of racism being a factor in park conditions. One participant felt that racism did not play a part in park conditions, while another one suggested that racism does correlate with park despair.

In Jackson, many participants believed that the parks were accessible and of a nice size. Interviewee J5 stated,

> "They are a lot more accessible. But you know, the city of Jackson is a lot more urban place compared to the suburbs. Suburbs are not made to be walkable. So there are parks, we pretty much have to drive to Clinton Madison, all the places with Jackson. We honestly they, they're not all open, but we have a bunch of parks throughout the city even in, in places that you just wouldn't even pay attention to their parks everywhere. So as long as it's, as long as they're open, most of them are walkable and easily accessible from the from the surrounding neighborhood, everything".

Another participant expressed that although some parks may be updated, they are limited in capacity. Interviewee J7 stated,

> "Like I went to Battlefield in June, I went for a picnic but my niece and nephews played on the tours. I think that is the latest or the only updated park in Jackson that I've known

> or seen and I mean, they're updated but it's, it's only, maybe 10 kids can play on it at a time. It's not big enough for enough kids. It's, there's no for it to be a part. There's no, there's not a lot of children options there".

Although most participants felt that Jackson's parks were accessible, over 70% were not satisfied with the parks in Jackson. Some Jackson participants suggested increased funding for cleaner and more attractive parks. Participants also suggested walking trail security and overall updating equipment.

All were concerned about crime and safety in Jackson. Some attributed the high population density, low-income citizens, and few resources as why crime is elevated in Jackson. Although almost 30% of participants felt unsafe when visiting parks, 60% did not express their comfort. Interviewee J1 stated,

> "People have to feel safe when going anywhere, especially to an open public park. People have to feel safe. I know we have a somewhat huge, not huge, but homeless population. It's like the city's fault, not the residents' fault. It's, you know, homeless people brought here and dropped out from other cities. So, I think people have to feel safe when they go to a city park city will be around one, you know, asking for money or help or anything or, you know, and then also, you know, people have mental issues. I think people need to have, need to be in an area where people feel safe because if someone is not mentally well, they'll do anything to anyone".

About 40% of participants suggested that parking is convenient for both cities and about the same number did not have an opinion on parking.

When asked about Environmental Justice, most participants from both cities did not know what it was. After giving examples and defining Environmental Justice during the in-depth

interview, some participants expressed Environmental Justice issues but did not directly link park conditions in their cities to Environmental Justice issues. Only 33% suggested that Environmental Justice played a role in the conditions of the parks in Birmingham and Jackson, but 58% suggested that racism played a part in parks and suggested that parks in White communities or suburbs were much nicer. Interviewee J3 noted, "Crime is a continuing issue in Jackson, making parks unsafe at times, but no relation to racism or environmental justice issues." Additionally, Interviewee J7 expressed:

> Racism plays a significant role in the lack of funding, quality, and accessibility of amenities like parks in the predominantly Black city of Jackson and environmental justice issues in Jackson parks and public spaces, citing lack of access to quality, safe green spaces and healthy food options.

Almost every participant, no matter the city, suggested that the mayor and city council should be responsible for improving the parks. One participant expressed that the citizens are partially to blame and that parks and recreation should do their jobs. Interviewee J1 stated,

> …I was at PointDexter Park two years ago for my birthday, passing out food to people without housing. While I was setting up, a Parks and Recreation worker approached me, frustrated because he said he would have to clean up after people without housing again the next day. I get it—he was tired of seeing the same mess daily. However, at the same time, that is his job. Yes, we citizens should do more to keep things clean, but Parks and Recreation is also responsible. The government could hire more people or increase funding, but it starts with all of us.

Ground Truthing Results

The researcher performed Ground Truthing to support participants' responses.

Most participants expressed that Birmingham has small parks. Although there are 116 parks in Birmingham, the parks the researcher visited yielded results similar to those of the participants. The parks in the majority-Black communities had little equipment, such as playgrounds. Although the parks were clean, they had few visitors despite it being the weekend in the afternoon. The parks visited in majority-White communities had no equipment, serving as green spaces that many people enjoyed. Many participants iterated that Birmingham parks are smaller and need updated equipment. From observation, that claim is supported. Arthur Shores Park in Birmingham was one of the smallest parks in terms of amenities (See Figure 6). Highland Park was a more sociable green space (See Figure 7). There was no playground equipment, but there were well-maintained grounds and benches—plenty of green space to relax.

Figure *6*

Arthur Shores Park, Birmingham, AL

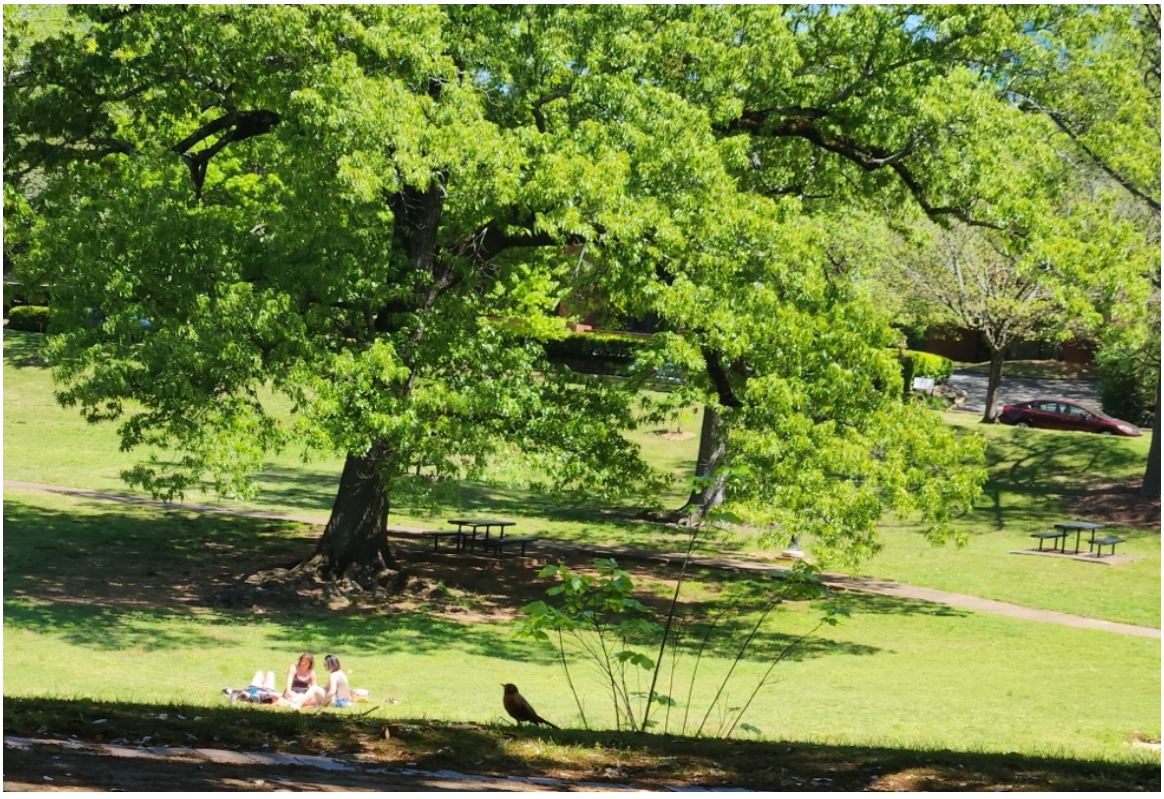




Note. Photos of Arthur Shores Park in Birmingham, AL, captured April 13, 2024

Figure 7

Highland Park, Birmingham, AL



Note. Photo of Highland Park in Birmingham, AL, captured April 13, 2024

For Jackson, many participants stated that the parks in Jackson are accessible. Ground truthing supported that statement. While the parks were accessible, keeping the park clean seemed like an issue. The responses of trash in the parking lot and the outdated equipment proved to be supported. Battlefield Park is a heavily used park, but the park seemed to be too small to handle a medium to large party size (See Figure 8).

Figure 8

Photos of Battlefield Park, Jackson, MS



Note. Photos of Battlefield Park in Jackson, MS, captured on September 6, 2024

On the other hand, Parham Bridges Park was clean and had many visitors occupying the playground, walking trail, and tennis court (See Figure 9).

Figure 9

Photos of Parham Bridges Park, Jackson, MS



Note. Photos *of Parham Bridges Park in Jackson, MS,* captured on September 6, 2024

Ground Truthing, in no way, proves correlation or causation. It is simply an observation to support participants' perceptions of the quality of parks in their city. Also, the photos taken in

Jackson were not taken on the original day of Ground Truthing. The actual date of the photos taken is in the caption.

Conclusion

This chapter presents the results from interviews and exploratory data analysis, tying the findings back to the research questions and illustrating the mixed-method methodology used in the study. A total of 12 participants were interviewed, offering diverse perspectives on parks in Birmingham and Jackson. Although the 21 questions were grouped into seven categories, new but related themes emerged after responses were analyzed using Dovetail.

In both Birmingham and Jackson, park size and accessibility were significant concerns. In Birmingham, 40% of participants felt the parks were smaller than other cities or wealthier suburbs, while 85.7% of Jackson participants found the parks accessible and adequately sized. Birmingham respondents noted that many parks were small and located near neighborhoods or schools, while Jackson participants pointed out specific parks that compared well to those in other cities.

Crime and safety were significant issues for participants in both cities. In Birmingham, 80% expressed concerns about crime in parks, particularly in high-crime areas, and 40% believed that crime affected park conditions. In Jackson, 28.5% of participants felt unsafe in parks, while a more significant portion highlighted the need for safety improvements to reduce crime. Many participants across both cities suggested better park management, maintenance, and security could improve the overall park experience. Although only a third of participants identified environmental justice as a critical issue, nearly 60% believed that racism played a significant role in park conditions, with parks in predominantly White communities perceived to

be better maintained. Ground truthing observations further confirmed participants' perceptions of park quality and accessibility.

Overall, the results suggest no spatial disparities in the distribution of parks in Black communities in Birmingham and Jackson. Parks are evenly distributed within the communities in Birmingham and Jackson.

CHAPTER 5: DISCUSSION

Literature has shown that minorities and people of color live in nature-deprived areas. Historically, due to redlining and other malicious practices in the United States, minorities and communities of color have not been granted the same access to parks and green spaces as other majorities (i.e., White communities). Many studies have been employed to observe the association of minority and Black communities to park access and inequalities (Boone et al., 2009; Leggett et al., 2018; Wen et al., 2013; Wolch et al., 2005). The following research questions guided the study:

1. Are there spatial disparities in the distribution of parks in Black communities in Birmingham and Jackson compared to majority White communities?
2. Do parks in the majority-Black study cities have quality comparable to those in majority-White communities?
3. What are residents' perceptions of conditions of their city parks being an issue of environmental justice?

The study collected primary data via in-depth research and secondary data from the TPL's ParkServe website. The study's results suggested no spatial disparities in the distribution of parks in Birmingham and Jackson. Both cities have an equitable number of parks within the city. Although there are no spatial disparities in the spatial distribution of parks, the results suggest a spatial disparity in equal access to resources such as amenities, directly affecting the quality.

Results from the secondary data study suggest that park acreage is fair in both cities, and participants did not see any significant issues with park acreage. However, participants suggested that parks in Birmingham are smaller than those in the suburbs. Most Jackson participants felt that the parks in Jackson were accessible and of a nice size. Additionally, almost all the

Participants (for both cities) felt that improvements could be made to parks in their cities, including cameras, updating facility equipment, hiring and maintaining staff, cleaning grounds, etc. Many also suggested events and benefits that would benefit children.

Among improvements to parks, participants in both cities felt that crime was an issue. Almost half of the participants for Birmingham felt that crime played a part in the conditions of the parks, and almost a third of the participants in Jackson felt unsafe when visiting parks. Over half of the participants in Jackson did not express their comfort but said that everyone should feel safe when visiting parks. Some participants felt that crime would decrease if the park's conditions were improved. Almost all participants felt that the mayor and city council were responsible for park improvements. A few suggested that the Parks and Recreation Department should be held accountable.

As for the participants' views on the conditions of the parks being issues of environmental justice, only about a third of the total participants (both cities) felt that the conditions of their parks were issues of environmental justice. Although only a third of the participants felt park conditions were an environmental justice issue, over half of the participants, felt that the parks in their city were due to racism and suggested that parks in suburbs or White communities are nicer.

Interpretations

Similar studies to this research include *Spatial Disparities in the Distribution of Parks and Green Spaces in the USA*, conducted by (Wen et al., 2013). Within this study, Wen et al. (2013) aimed to study the distribution of parks and green spaces on a national level due to limited evidence. The study resulted in poverty levels not being negatively associated in urban and suburban areas to the distance of green spaces. The results also revealed that areas with

higher percentages of Black and Hispanic populations tend to have parks and green spaces that are less abundant and farther away. The scholars concluded that the relationship depended on the urbanization level.

Like Wen et al.'s (2013) research, racial aspects were heavily used. However, unlike in Wen's research, ParkServe was available to calculate all the data instead of solely using American Community Survey (ACS) data and extracting the data into GIS. The data suggested over 62,000 parks, but this research only focused on about 170. Neighborhood access did not have to be calculated because ParkServe calculated race and income within a ten-minute walk radius of each park. The difference in this research methodology compared to Wen's is that this study was completed in Birmingham and Jackson (two cities with majority Black populations), so the results differ.

"Environmental Justice in the Urban Neighborhood Parks of Minneapolis, MN and Chicago, IL," conducted by Dornfeld (2019), recognized the unequal distribution of parks and how underserved communities are not recognized within decision-making. Dornfeld suggested that access to parks reduces health benefits, making it an issue of Environmental Justice. Dronfield concluded that collaborative decision-making did not align with governmental offerings and that public participation should be used to address disparities using knowledge of Environmental Justice.

Like Dornfeld's research, this study understands parks as an issue of environmental justice issue. The primary data in this research resulted from semi-structured, in-depth interviews. These interviews suggested that residents also have opinions about their communities, and if given the opportunity, they will express their grievances. Like Dornfeld's

research, this study aims to address environmental injustice using Environmental Justice dimensions.

This study, similar to a study conducted by Rigolon et al. (2018), analyzed city parks as a whole unit instead of specific neighborhoods. This study is also based on Environmental Justice as the underpinning of the research.

Patterns in this research include similar answers given by participants in both cities. Overall, the quantitative results were similar, with a few outliers. The questions were clear cut, and the results were clear cut, but the researcher did not expect the results.

The results of this research were unexpected because the researcher believed there was a spatial disparity in the distribution of parks in Birmingham and Jackson. The alternative explanation for the results proving no spatial disparity in the distribution of parks in Birmingham and Jackson is that both cities are predominantly Black. If the community population is predominately Black, of course, there would not be evidence of a spatial disparity. Birmingham has a population of almost 70% Black, and Jackson has a population of over 80%. The large percentage of Black populations may explain why there is no spatial disparity in park distribution.

The researcher also thought that more people would view their parks' conditions as environmental justice issues. Even after giving a definition and examples of Environmental Justice, most participants felt that racism and not Environmental Justice played a role in the conditions of parks. In the literature review, a brief discussion of a study expressed the negative and positive aspects of environmental justice. The researcher Browne et al. (2022) believed that when people think of Environmental Justice, they automatically think of the negative Environmental Justice described in the text involving environmental government agencies.

Examples include air pollution, soil, noise, and water pollution. Each is on the negative side of the chart, representing Environmental Justice issues that were actively and sometimes immediately addressed. Although most participants did not suggest Environmental Justice as a direct cause of the conditions of parks, the validity of this study should not be questioned. As stated in the literature review, there is a need for more studies that focus on parks and green spaces. Whether parks, green spaces, or open spaces are on the chart's positive "livability" side as discussed in Chapter 2, they should be inclusive of Environmental Justice issues (Browne et al., 2022).

Implications

While previous but significant research has focused on parks on a large scale (Wen et al., 2013), larger urban cities such as Chicago (Dornfeld, 2019) or randomization of neighborhood parks on a small scale in metropolitan Jackson (Leggett et al., 2018), this research focused on two cities that have a predominantly Black population with a mixed method approach. There have been limited studies available (at least at the time of this research) on the two cities, and it is essential to identify that there are issues and ways to suggest solutions. Using multiple methods within this research can validate results from different sources. Although the researcher or others may have thought there was a spatial disparity in the distribution of parks within these cities, it is essential to have data to prove or disprove and support arguments. Also, even though evidence suggests there is not a partial disparity in the distribution of parks, this research can be the basis for understanding other disparities. The qualitative data allows one to understand the lived experiences and involves the community. The quantitative data provides statistical trends and numbers that give context to the study. This study can inform policymakers and advocate for changed park conditions with the voices of familiar stakeholders who are often left out (citizens).

Finally, this research adds to the limited literature on Environmental Justice and parks based on an entire city rather than within a specific neighborhood. It also advances the thoughts on Environmental Justice being more than pollution-centered. The implications of this study can be used for planning purposes and offer a greater understanding of minority communities within the scope of parks and Environmental Justice.

Limitations and Recommendations for Future Research

Limitations of this research include a small sample size. Although the researcher believes the mixed-method approach was the best method for this study, a different form of qualitative methods, such as surveys or focus groups, could have been performed, allowing more people to contribute. Although the researcher was flexible with the interviews, surveys would allow even more flexibility to participants. Another possibility of future research could be a combination of interviews and surveys. The two would strengthen the study's validity and offer different insights and more questions. Participants may be more prone to answer questions on their phone or computer than over the phone.

Another limitation of this research is the understanding of Environmental Justice. As stated, parks, green spaces, and open spaces are on Environmental Justice's livability or positivity side and may not be seen as actual or immediate issues. This study is critical because it identifies accessibility and conditions of parks and green spaces as Environmental Justice issues. As more literature becomes available, people may be able to expand on the literature on Environmental Justice.

As stated previously in Chapter Three, a linear regression was not performed. Instead, this research utilized exploratory data analysis. Exploratory data analysis only shows a relationship between two variables and does not identify independent or dependent variables.

Unlike Pearson's correlation, multiple linear regression assesses the impact of multiple predictors, considering the effects of the other variables. Further investigation of this research should include a multiple linear regression.

There is also a limitation in the Trust for Public Land data. In Birmingham, TPL data was missing (to the researcher's knowledge, two parks, Rotary and Vulcan, while adding two other parks not owned and operated by the city. In Jackson, the same exists for Smith Park and Livingston Park. It is not fully understood why certain parks are not recognized by the Trust for Public Land (TPL), but it should be noted that the parks mentioned above are not included in the results. The total acreage also differs from what is stated in the literature review, as TPL includes all parks within each city—whether city-owned, private, or state—in its analysis. For this research, only city-owned parks were assessed. City-owned parks were extracted from the geodatabase and analyzed, while any private, state, or non-city-owned parks were excluded based on specific ownership criteria outlined in the geodatabase.

There are some parks in this study, and it remains to be seen why TPL excluded them from their analysis, possibly due to data reporting discrepancies or differing criteria for park inclusion, such as park size thresholds or incomplete data submissions. Regardless, the legitimacy of this research should not be questioned, as the study still provides valuable insights into gaps in the existing literature on park distribution and access, particularly in the context of environmental justice.

While these limitations exist, this work remains a significant contribution by offering a focused analysis of city-owned parks and highlighting significant spatial disparities in park availability, even if some parks were excluded. These findings are critical to understanding the broader inequities in park access across different demographics.

Also, there is a need for more park data. The researcher contacted several city departments in Birmingham, AL, including the Parks and Recreation Department, City Records, and eventually the Mayor's Office, which recommended contacting the library archive department to obtain established park dates. The IT specialist and library assistant noted that park and recreation minutes before the 1940s were unavailable, though many parks were established earlier. A FOIA request may be the best option to obtain the city's department of records, but the timeline is expected to extend beyond the dissertation submission deadline. Some information on significant parks is accessible (See Appendix G), while details for all parks will take additional time to gather. Future versions of this dissertation will include any further data that becomes available.

Similarly, the researcher contacted the City of Jackson's Parks and Recreation Department to request park establishment dates. The department indicated that such records are not maintained. The secretary took the researcher's name and contact information and noted that they would contact the legal department to determine where it would be stored.

The researcher received a call from the secretary of the City of Jackson's Parks and Recreation department, followed by an email of documents containing dates and the history of some of the city parks in Jackson. Upon reviewing the updated park data provided by the City of Jackson Parks and Recreation Department, it was found that two parks—Smith Park and Livingston Park—were not initially included in the Trust for Public Land (TPL) data despite their historical and recreational significance to the city. Smith Park, for example, was acquired by the city in 1883, making it one of the oldest parks in Jackson. Similarly, Livingston Park, although lacking an exact acquisition date in the data, is a central park in the community, contributing to the recreational landscape of the city. Conversely, two parks—Woodrow Wilson

Walking and St. Paul's—were included in the original TPL data despite not being owned by the City of Jackson. The Parks and Recreation Department secretary provided this updated information, noting that while it is not comprehensive, it represents a significant portion of the requested data (See Appendix G). Additional information remains to be gathered regarding the acquisition dates for some parks. Verifying these details will continue through further research, possibly requiring additional Freedom of Information Act (FOIA) requests.

A FOIA request should be submitted, but the response will likely extend beyond the dissertation submission. Currently, some park information for significant parks is available, but locating data for all parks was not readily available during the study period, and this is an opportunity for future research.

Finally, another limitation was snowball sampling. The snowball method is excellent when there are reliable initial contacts. The issue of having to "start over" occurred during this research because initial contacts were unreliable. If snowball sampling is used, a reliable initial contact is suggested, especially in unfamiliar cities. While conducting this research, establishing and reestablishing initial contacts added about two months to the study. This is not to question the validity of this study but to state that if there is a specific deadline, this should be kept in mind.

Future research for this study should include targeted diverse demographics that could prove beneficial. The researchers' quantitative data for this study were Black, and it would add different perceptions by incorporating other races. Along with diverse demographics, demographic information could be collected during the interview process to determine the interests of specific populations and the characteristics of communities.

Future research could include other cities that are about half majority and half minority. Those cities could yield different results due to a city being predominately White or Black, such as Birmingham and Jackson. Future research could also include parks in cities like the populations and size of Birmingham and Jackson but with different demographics to add to the literature. Both Birmingham and Jackson have a majority Black population surrounded by suburban populations. This research could continue with larger significant cities that are neighbored by other large major cities and compare for results.

Potential studies could also include residents who left Birmingham and Jackson for similar or larger cities and returned. This would allow participants to offer comparison in disparity. This would allow other communities to express how parks in other cities are managed and may help identify a common problem within the city park system.

Lastly, ground truthing was performed in this research for only one day on a Saturday afternoon. Observations over months and, eventually, years could be possible for future studies. The time could represent a time-lapse of parks and park conditions, examining if they improved or started to diminish in Birmingham and Jackson. For this study, one day of ground truthing is sufficient because there are no dramatic changes to park conditions daily. Both cities operate on a budget, and tracking updates via news reports and articles was easy.

City's Overview and Suggestions

City of Birmingham's Efforts

In partnership with Trust for Public Land, AARP, Cawaco RC&D Council, and Live Healthsmart Alabama, Birmingham has submitted a comprehensive plan to the EPA's G2G Program. This grant expresses environmental justice in parks in Birmingham and aims to bridge the environmental equity gap. The main environmental issues include air and water. The result of

this project will be equitable and climate resilience focused on the Birmingham Parks master plan. City Planners have identified 15 Critical need neighborhoods with a high poverty and minority population percentile (>70-100). This project aims to improve these communities' heat islands, flooding, and overall health. This plan is expected to commence in December 2023 and end in June 2025. A copy of this plan can be provided upon demand. Due to the plan not being published and delivered to the researcher via city planners, it will be omitted.

Although this list is not exclusive, programs such as Outdoor Recreation Legacy Partnerships, AmeriCorps National Service, Urban Wildlife Conservation Program Partnerships, Urban and Community Forestry, People's Garden Initiative, along with organizations such as Trust for Public Land, National Recreation and Park Association, and National Parks Conservation have all aimed in bridging the gap in park-poor, disenfranchised areas.

In the fiscal year 2025 budget for Birmingham, AL, the Parks and Recreation Department is allocated approximately $24.1 million, up from $18.7 million in 2022. This represents about 4.3% of the city budget, $554.8 million.

This budget allocation impacts park amenities by determining the level of maintenance, upgrades, and services that can be offered at facilities such as swimming pools, athletic fields, recreation centers, and community centers. The increased funding for parks could result in improved infrastructure and more robust recreational programming. However, the competition for city resources across other departments may still limit the overall impact on amenities (City of Birmingham, 2024). The City of Birmingham should also prioritize documenting park-established dates, whether digital or physical.

City of Jackson's Efforts

Like Birmingham, Jackson should consider submitting a comprehensive plan to improve park conditions. To date, there needs to be more knowledge of what the city of Jackson has or plans to update its Parks Comprehensive Plan.

Like Birmingham, Jackson should consider submitting a comprehensive plan to improve park conditions. The city of Jackson should also consider applying for outside funding or grants to handle the lack of economy of parks. In the 2023-2024 budget for the City of Jackson, the Department of Parks and Recreation in Jackson, MS, outlines that the total estimated funding required for city recreational facilities and parks is $51,570,040. The Revenue streams have been affected as well, with a noted decrease in critical areas:

- Athletic fees decreased by 5%
- Golf course revenue decreased by 5%
- Zoo revenue decreased by 50%

However, there was a 10% increase in facility rentals and a 5% increase in cemetery revenues.

The city faces several challenges, including aging infrastructure, staffing shortages, theft, vandalism, and storm damage. These issues limit the ability to maintain and improve parks. Despite these obstacles, the department continues to operate 57 parks, 72 athletic ballfields, and several community centers, although budget constraints affect the quality and availability of amenities. Also, litter and broken tree branches may remain problematic since the department needs dedicated maintenance to address the issues.

This limited budget and revenue generation directly impact the ability to upgrade and maintain amenities, such as pools, sports fields, and playgrounds, as well as staffing for maintenance and recreational programming. The economic constraints highlight the need for

increased funding to address both infrastructure improvements and operational costs, which may attributed to the disparities that the parks in the city are facing (City of Jackson, 2023).

In the 2024-2025 Budget, funding for parks will still be constrained due to the city's other priorities. Significant funding has been obtained for an insurance settlement, but some parks' aging facilities and infrastructure will remain an issue despite the investments. The percentage of the city budget dedicated specifically to parks was not explicitly stated, but there is a focus on other departments like the police (Warren, 2024).

To date, there needs to be more knowledge of what the city of Jackson has or plans to update its Parks Comprehensive Plan. The City of Jackson should prioritize keeping a record of park opening/established dates.

The future of parks in Birmingham and Jackson should be approached with a sense of urgency regarding community capacity building. Community capacity building ensures diverse members plan, fund design, and maintain effective solutions to problems. Community capacity building is essential in both cities because it aids in addressing inequalities. Racism and other acts ensured that not all people had an equal voice in decisions. Community capacity building builds an inclusive and meaningful rapport, benefiting diverse perceptions and populations. This, in return, aids in healthier and equal places to live, work, and play, which is the premise of environmental justice (Cobleigh, n.d.).

Examples of community capacity-building include volunteering, networking, and engagement:

- *Volunteering*: Host park clean-up days, plant trees/flowers days
- *Networking:* Survey and network within the community for valuable talent to the parks department (i.e., grant writers, construction workers, teachers).

- *Engagement:* Host children's holiday events (i.e., easter egg hunts, Halloween trunk or treat), meet the staff days, voice concern days, summer camps, and classes.

There are infinite activities and opportunities to build capacity and rapport within communities. The first step would be for the Parks Department to rebrand itself into an approachable and vital stake in the community and understand and identify problems. Once this research is complete, a copy will be delivered to each Parks and Recreation Department.

Conclusion

The United States has had a troubled past with inequality. Research suggests that there may be a disproportionate number of parks and green spaces in White communities compared to Black communities. City parks have been proven to reduce stress, reduce urban heat islands, reduce flooding, and potentially reduce crime. Unfortunately, research shows that Black communities are prone to having such problems. Research on these cities, Birmingham and Jackson, regarding their city parks, is limited, although most Black cities are not new to environmental injustices.

Environmental Justice is equal access and opportunities to work, play, and live. It focuses on procedural (decision-making or distributing resources) and distributive fair distribution of resources regarding an individual's outcomes). Despite being around for decades, environmental justice must be expanded to meet the demands of holding agencies and organizations to expand. The Environmental Justice Framework aims to help identify disparity issues, including access, conditions, and amenities, allow for resident participation, provide necessary data, and suggest recommendations and stop injustices before they occur.

This study examined parks in Birmingham and Jackson. This research was motivated by a former concerned citizen in Jackson and the need for policy advocacy. The findings suggest no

spatial disparity in the distribution of parks in Birmingham and Jackson. However, Birmingham and Jackson have accessible parks that residents feel are not safe or have adequate amenities compared to majority White communities. Even though disparities in parks are considered an Environmental Justice issue, most residents did not express their thoughts of environmental justice being an issue, but that crime was. Ground Truthing also supported some of the responses participants gave. Given these results, this research raises concerns about the understanding of environmental justice and how Environmental justice of parks is seen on a positivity spectrum (Browne et al., 2022).

Further research should be conducted using various quantitative data collection methods to gather diverse opinions and apply those results to specific communities. From the theoretical standpoint of Environmental Justice, this research can help address inequalities within parks in Birmingham and Jackson. This research also increases the literature on Environmental Justice and hopes for advocacy and policy to catalyze change in the study of cities and similar cities.

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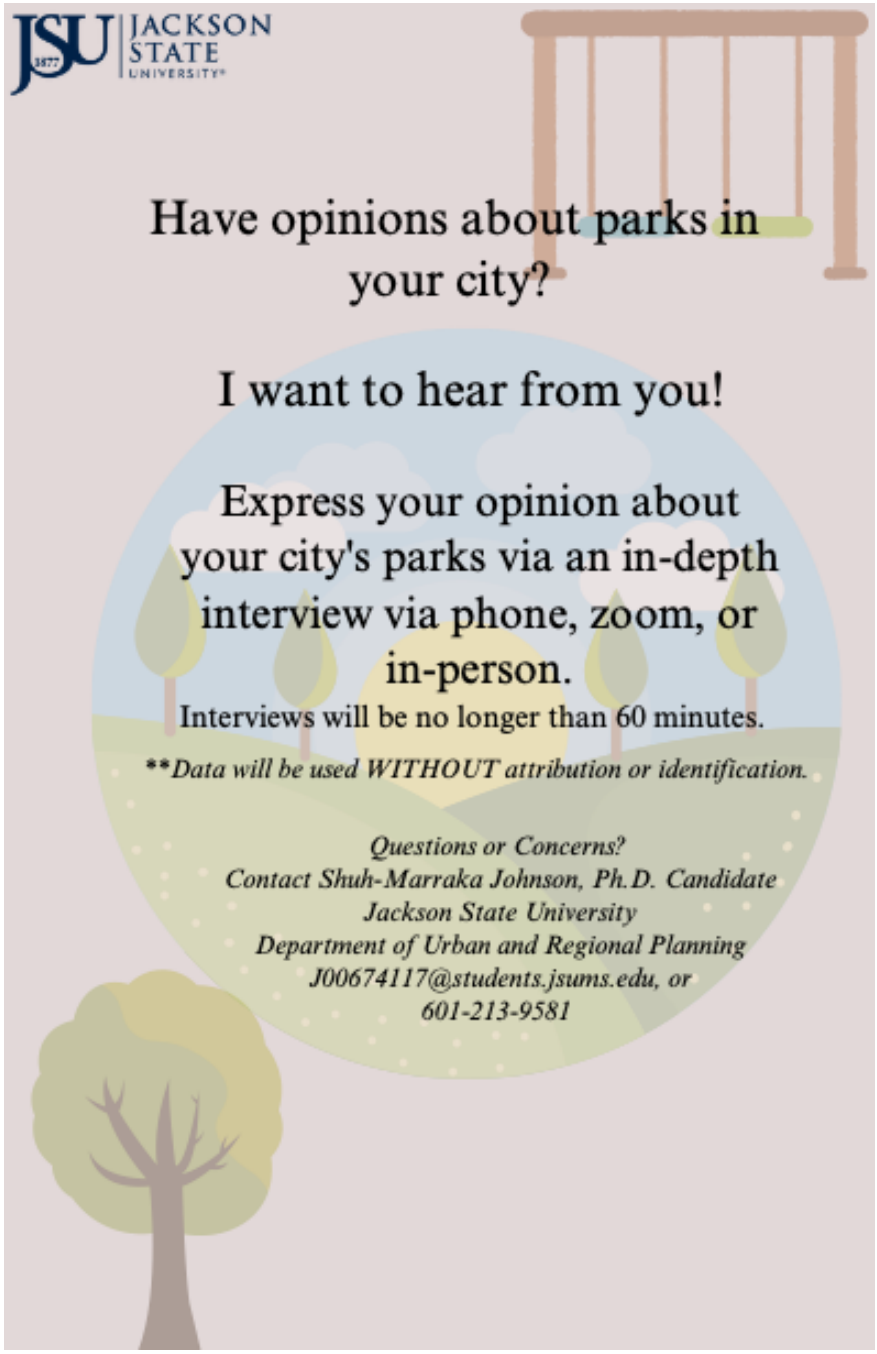
APPENDICES

APPENDIX A: IRB-APPROVED RECRUITMENT FLYER



APPENDIX B: CONSENT FORM VIA QUALTRICS

Default Question Block

Jackson State University
Division of Research & Federal Relations
CONSENT FORM FOR RESEARCH PARTICIPANTS
Survey Participants

Part I:
Section I: Investigator
Name: ShuhMarraka Johnson
Department: Urban and Regional Planning
Address: 101 W. Capitol St
City, State, Zip Code: Jackson, MS 39201
Telephone Number: 601-213-9581
JSU Email Address: shuh-marraka.v.johnson@students.jsums.edu

Section II: Advisor (if submitting student application)
Name: Joan Marshall Wesley, Ph.D.
Department: Urban & Regional Planning
Address: 101 W. Capitol St.
City, State, Zip Code: Jackson, MS 39201
Telephone Number: 601-979-8730
JSU Email Address: joan.m.wesley@jsums.edu

Part II: Project Information You are invited to participate in a novel research project, Environmental Justice of city-owned Parks in Birmingham, AL and Jackson, MS. The research aims to understand residents' thoughts on their city's parks and how to improve them.

METHODS AND PROCEDURES: The In-Depth interview will take about 60 minutes and can be completed in-person, virtual, or by phone. The discussion will be recorded for data accuracy. By participating, you confirm that you understand the information this consent form provides. All information is confidential, and participant responses are reported only in the aggregate, meaning no names or identifiers will be attached to your responses. By participating, you are giving the researcher permission to publish findings, which may include community newsletters, academic journals, or other media. You may ask questions at any time. If you have any questions or concerns, contact me at: shuh-marraka.v.johnson@students.jsums.edu or 601-213-9581.

RISK AND DISCOMFORTS: We expect no risks or discomfort to participants in this study. However, it is possible that you may feel somewhat uneasy answering some of the questions involved.

BENEFITS: There is no financial benefit, but your feedback may provide vital information regarding your thoughts about parks in your city, which may benefit your community and prompt city officials to examine and address concerns identified and expressed.

CONFIDENTIALITY OF RECORDS: All the information obtained during this study is private. We protect the people's privacy by withholding their names and other personal information from all persons not connected to this study. The raw data shall be retained for three years, and all records relating to this research shall be kept for three years after completion of the study. All records shall be accessible for inspection and copying by authorized representatives of the Institutional Review Board at reasonable times and in an appropriate manner. Information will be stored securely for three years as federal law requires. Although the information in this study is private, the security of the data can only be promised within the boundaries of the university and researcher or faculty advisor. Confidentiality will be broken if the information obtained reveals that you intend to harm yourself or another person.

VOLUNTARY PARTICIPATION: There is no obligation to participate. Taking part in this study is entirely voluntary. You may refuse to answer any specific question. Participants may withdraw at any time without penalty or prejudice.

PARTICIPATION CONSENT: I have read and had the purposes and procedures of this study explained to me and have had the opportunity to ask questions. My signature below indicates that I am 18 years older. My signature below indicates my understanding that my responses will be recorded for accuracy. My signature below indicates that I have read and understand the procedures of this study. This study has been reviewed by the Institutional Review Board of Jackson State University, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research participant should be directed to the Vice President for Research and Federal Relations, Jackson State University, P.O. Box 17057, Jackson, Mississippi, or (601)-979-2931.

SIGN HERE

clear

APPENDIX C: INTERVIEW GUIDE

In-Depth Interview Questions (Finalized)

Semi-guided In-Depth Interview Questions

In this interview, parks are exclusive to those owned, operated, and/ or facilitated by the city. This may include playgrounds, pools, trails, tennis courts, basketball courts, baseball fields, facilities, etc.

Familiarity with parks in your city and events

1. How familiar are you with the city's Parks and Recreation Department?
2. How often have you visited parks in your city in the past year? If you have not, why?
3. How satisfied are you with the Parks and Recreation?

City Park Satisfaction

4. What can be done to improve the playground/park facilities?
5. What would you change about parks in your city?
6. How do you feel about the parking at parks in your city, and why?
7. What do you like most about the parks in your city and why?
8. What do you like least about the parks in your city and why?

The convenience and size of parks in your city

9. What do you think about the convenience and access of parks in your city compared to nearby cities?
10. What do you think about the size of parks in your city compared to nearby cities?
11. What do you think parks in your city are worse than parks in surrounding cities?

Crime and Safety in City Parks

12. What do you feel about crime in your city?
13. How safe do you feel when visiting parks in your city?
14. What do you feel about the relationship between crime and the current state of the parks in your city?
15. Follow up: What areas are most affected by this issue?

Improvements to City Parks

16. What can be done to improve the parks in your city?
17. Who should be responsible for improvements to the parks in your city and why?
18. What do you think about racism contributing to the convenience, size of the park, accessibility, upkeep, management, and equipment available in the parks?

Environmental Justice

19. What are your thoughts on environmental justice?
20. What are your thoughts on the quality, accessibility, size of parks, upkeep, management, and equipment available in parks being an environmental justice issue?

Comments and Concerns about city parks

21. What comments or concerns do you have about parks in your city?

APPENDIX D: TRUST FOR PUBLIC LAND PERMISSION

Gmail Shuh-Marraka Johnson <johnsonshuhmarraka@gmail.com>

RE: New Contact Form has been submitted

ParkServe Manage <ParkServe.Manage@tpl.org> Fri, Jun 9, 2023 at 1:13 PM
To: "johnsonshuhmarraka@gmail.com" <johnsonshuhmarraka@gmail.com>, ParkServe Manage <ParkServe.Manage@tpl.org>

Hi Shuh-Marraka – Thank you for reaching out! This is allowable use of our data. For your reference, you can review our Legal Disclosure and Terms of Use from our Data Downloads page here: https://www.tpl.org/park-data-downloads.

Thank you,

Jennifer DeVore

Administrative Coordinator – Geospatial Team

Trust for Public Land

From: Web Submissions <info@tpl.org>
Sent: Tuesday, June 6, 2023 6:30 PM
To: ParkServe Manage <ParkServe.Manage@tpl.org>
Subject: New Contact Form has been submitted

First Name

Shuh-Marraka

Last Name

Johnson

Email

johnsonshuhmarraka@gmail.com

What is your Email Concerning?

APPENDIX E: PARK LISTS

Table 13

Birmingham Parks exported from GIS provided by TPL ParkServe

Park name	Park size (acres)	Total population	Low income	Medium income	High income	White	Black	Native American	Asian	Pacific	Other	2 or more races	Hispanic
4th Avenue History (Mini Park)	0.183532316	943	299	62	158	524	332	0	20	0	3	25	29
A G Gaston	2.909912311	1292	413	40	34	48	1170	3	1	0	0	14	53
Alma P Dennis	0.428691409	1258	395	74	91	27	1159	2	0	0	3	22	34
Altamont	9.630240599	1939	230	163	602	1599	183	0	25	0	4	59	46
Arthur Shores	2.66765713	1685	535	61	81	180	1335	0	3	0	5	36	121
Avondale Park	36.50634212	3127	785	275	686	2228	582	3	64	0	11	100	129
Barker	1.386960154	1082	266	48	42	170	779	0	3	0	3	22	101
Bessie Estell	5.200239459	1672	455	147	148	897	350	2	214	0	18	61	127
Birmingham Botanical Gardens	56.68242669	2386	233	113	769	2184	36	0	22	0	3	66	65
Brother Bryan	2.203552276	3096	1109	129	316	1288	1332	8	238	3	9	82	118
Caldwell	2.686048242	4052	1349	334	881	2554	1114	7	82	0	18	113	147
Central	9.293501335	3099	676	320	301	95	2814	1	2	0	6	59	122
Clairmont	0.800773995	1526	136	142	504	1350	61	1	11	0	2	49	38
Cooper Green (Crumpton)	96.33044839	1791	524	107	117	62	1627	0	11	1	1	22	65
Crestline	2.699496888	2033	215	100	629	1832	65	3	20	0	5	64	42
Crestwood	12.1073404	2185	302	193	606	1718	283	2	30	0	6	72	70
Cromwell-Young Memorial Park	2.454794379	1360	378	98	99	215	1041	3	4	0	5	38	53
Dolomite Park	68.13647497	322	70	21	43	68	219	0	1	0	4	9	21
Dorothy Spears	24.19035976	1006	256	112	71	28	794	1	3	0	4	18	156
Downey	10.31384079	2011	574	128	65	125	1732	3	3	0	10	39	97
East Brownville	4.580921516	1070	290	76	92	33	997	2	2	0	5	17	10
East Lake	61.47337869	1832	561	102	45	237	1348	3	9	0	5	38	192
Echo Highlands	12.85906181	771	150	38	120	39	703	0	3	1	1	12	11
Eddie Kendricks Memorial	0.175385269	1242	393	85	208	698	409	0	40	0	3	34	44

Park name	Park size (acres)	Total population	Low income	Medium income	High income	White	Black	Native American	Asian	Pacific	Other	2 or more races	Hispanic
Elder Street Nature	37.641 08457	2282	428	156	428	1550	509	1	41	0	6	77	91
Eldorado	6.2279 48287	1225	236	114	133	188	930	2	8	0	5	26	65
Ellsberry (Vp #37)	0.4347 20304	241	86	15	0	17	182	0	0	0	2	3	35
Elyton	1.7778 22247	1272	492	42	68	61	1148	0	3	1	3	16	37
Ensley	30.803 78118	3337	1104	223	157	108	3057	9	6	0	6	67	80
Erskine Hawkins	1.3177 28687	1314	479	46	79	16	1248	1	0	0	0	14	25
Evergreen	1.0544 95498	748	291	37	16	28	649	1	1	0	1	14	53
Exchange	2.6918 95477	1635	555	62	107	29	1513	1	0	0	3	28	50
Fairmont (North Birmingham Vp #5)	1.1454 41382	228	68	11	10	31	171	0	0	0	2	5	18
Fairview	1.9294 97205	2138	684	78	160	50	1958	1	0	0	6	34	80
Fountain Heights	13.999 26966	1810	683	71	74	89	1561	1	2	0	5	42	110
Garden Highlands	4.7450 11167	654	174	49	71	17	611	0	1	0	2	11	12
George Ward	83.732 46641	3711	1058	384	457	1906	898	5	287	1	28	165	415
Germania (Powderly)	20.010 34844	1190	341	95	79	17	1113	4	0	0	2	19	34
Grasselli Heights	0.3279 39096	774	215	50	63	13	736	2	0	0	2	12	6
Grayson, Claude	4.0306 45232	1388	251	107	131	162	1089	1	4	0	3	37	95
Green Acres #2	9.1380 70601	1271	356	105	86	26	1199	2	0	0	2	14	25
Greenwood	36.141 01078	433	133	17	16	27	351	1	0	1	1	8	40
Hanover	0.3455 04677	3530	1066	315	866	2376	811	5	63	0	19	107	131
Harriman Park Recreation	0.2567 22778	317	95	12	16	39	241	1	1	0	3	7	25
Harrison, Charles	8.7118 32711	2840	832	228	181	42	2644	3	2	0	3	36	106
Highland	97.418 35992	6023	1511	539	1520	4368	1029	6	145	0	14	194	231
Hillman Park	0.5630 04786	389	132	29	19	7	365	0	0	0	0	8	7
Hooper City	11.817 20083	323	83	31	30	3	303	0	0	0	0	4	12
Howze Sanford	10.931 48021	718	256	18	39	13	663	1	1	0	2	17	21
Hugo Black	0.8727 52652	3365	848	343	930	2608	421	3	56	0	13	110	123
Inglenook	6.1946 83759	1523	420	64	89	92	1239	11	0	9	0	30	137
Jenny Justo	0.3304 27923	639	101	73	66	51	560	4	2	0	0	10	13
Jimmie Hudson (Sandusky)	1.5107 44925	613	180	17	49	27	565	1	0	0	1	8	11

Park name	Park size (acres)	Total population	Low income	Medium income	High income	White	Black	Native American	Asian	Pacific	Other	2 or more races	Hispanic	
Kelly Ingram	3.679156266	877	274	49	131	434	375	0	13	0	2	21	22	
Key Circle	0.142840167	1992	387	169	563	1709	107	0	29	0	5	59	70	
Learning Tree	1.795876067	809	237	68	50	20	734	2	0	0	1	15	34	
Lewis, Beulah	3.880727194	1760	500	130	60	63	1613	3	0	0	7	27	43	
Lowery, Wynelle	10.70943538	2085	601	171	110	13	1941	0	0	0	1	24	100	
Lynn	7.300595906	688	229	24	13	62	532	0	2	0	2	14	77	
Lynn Park	7.049762771	2256	626	110	279	710	1395	0	19	0	6	50	58	
Maclin, Agnes	7.177962365	1262	406	22	34	9	1204	1	0	0	2	27	21	
Marconi	3.708891601	2108	611	107	264	661	1310	1	19	0	7	51	56	
Martin Luther King Center	5.346193127	943	220	38	29	30	854	0	0	4	1	32	20	
Mcalpine, William	9.882650164	877	277	19	82	20	822	1	0	0	2	6	22	
Mclendon (Legion Field)	74.27406858	4238	1579	191	189	185	3788	14	6	0	4	107	130	
Mcmahon, John (Harris)	6.859519304	2698	960	117	134	63	2489	2	1	0	8	43	86	
Memorial	8.465805174	1018	436	14	36	74	841	0	5	0	0	13	83	
Minnieville	2.732451654	262	71	9	23	17	227	0	0	0	1	3	12	
North Birmingham	13.42326875	720	278	17	23	19	632	0	0	0	0	20	50	
Norwood	6.547083163	1342	276	135	48	190	1039	1	7	1	2	28	70	
Norwood Boulevard	18.84219955	2318	546	233	105	247	1897	1	8	1	5	48	107	
One Pratt Park	6.733770791	987	230	34	128	33	920	2	0	1	1	10	19	
Overton	1.074216706	199	17	10	55	154	28	0	2	0	0	9	7	
Oxmoor Park (Sandridge)	9.406353208	436	57	41	127	177	199	1	26	0	3	15	16	
Phelan	0.380967893	5896	1002	326	585	3221	1348	14	775	36	19	197	279	
Pine Knoll Park	0.785611302	151	31	13	18	11	133	0	0	0	0	3	3	
Pratt City	15.82018451	524	151	37	35	6	483	2	0	2	0	7	19	
Railroad Park	21.18544552	3074	1267	225	386	1761	640	7	357	1	15	98	187	
Ramsay I-A	0.838173829	1060	99	77	368	954	17	0	9	0	0	28	28	
Ramsay Ii	3.382066649	3012	612	273	838	2471	269	2	41	0	3	90	100	
Ramsay Park	5.457933919	1107	99	76	387	1003	17	0	10	0	0	30	27	

Park name	Park size (acres)	Total population	Low income	Medium income	High income	White	Black	Native American	Asian	Pacific	Other	2 or more races	Hispanic	
Rhodes	3.199622055	4053	1061	400	1128	3085	561	3	66	0	18	141	153	
Rickwood Field	11.38629483	2235	711	121	99	83	2015	9	1	0	5	36	84	
Roebuck/Hawkins (Don)	113.2906884	1348	347	79	91	236	901	1	11	0	1	22	173	
Roosevelt City Recreation Center	10.33336118	653	174	43	61	28	573	1	0	0	0	9	39	
Rozelle Reynolds	2.061974027	1904	548	144	146	57	1756	1	1	1	3	33	52	
Ruffner Mountain Nature Center	1536.545758	4908	1037	380	590	1454	3002	7	32	0	11	137	253	
Rushton, William	4.368114412	4317	1099	433	1177	3232	644	3	86	0	15	145	160	
Samuel Hairston Sr	6.412881661	162	41	16	15	1	152	0	0	0	0	2	6	
Shades Creek Park	22.20803321	1537	305	110	254	1178	234	1	24	0	4	43	48	
Sherman Heights North (Vp6)	10.49258367	170	34	21	13	62	93	1	0	0	0	5	9	
Sherman Heights South (Vp18)	3.841455596	320	82	16	31	33	267	0	0	0	2	4	12	
Smithfield Estates	16.42612958	551	72	30	132	2	543	0	0	0	0	3	4	
Spring Haven	1.530137291	675	156	79	88	18	561	0	2	0	2	13	77	
Spring Water Park	6.917782197	71	15	8	5	24	33	0	1	0	0	3	9	
Stockham, William	6.522026185	1898	484	95	106	60	1721	0	0	1	1	26	89	
Tarpley City	1.117282862	737	188	53	81	40	662	1	5	0	1	13	13	
Thomas	0.382412803	315	68	53	19	11	259	0	1	0	2	6	35	
Tom Bradford Park	57.31236747	1182	138	99	211	247	822	2	6	0	7	28	71	
Tom Bradford Park	108.4384744	528	42	44	119	122	372	1	4	0	3	13	16	
Tuxedo	3.366109650	768	251	31	64	9	718	0	0	0	0	9	23	
Tuxedo Heights (Vp #41)	0.263744729	205	53	22	16	2	186	0	0	0	0	3	11	
Underwood	2.713884456	3632	1252	262	760	2042	1231	6	78	0	20	99	134	
Valley View	1.234246961	2164	654	181	454	1327	405	0	235	18	2	81	86	
W C Patton	28.03474405	386	112	19	16	13	335	0	0	0	0	7	30	
Wahouma	16.13363991	1702	531	97	51	172	1334	2	5	0	7	44	137	
West Brownville	1.836073913	513	159	36	27	20	426	2	0	0	0	13	49	
West End Walking Trail	2.239574697	1354	439	63	85	69	1193	1	6	1	3	16	56	
West Goldwire	2.532494293	603	147	49	79	44	524	0	6	0	3	11	15	

Park name	Park size (acres)	Total population	Low income	Medium income	High income	White	Black	Native American	Asian	Pacific	Other	2 or more races	Hispanic
Wiggins	20.52711831	1309	416	92	63	27	1213	3	2	0	1	27	37
Willow Wood	2.867683554	1144	300	94	91	197	843	3	9	0	1	40	49
Woodward	8.803498454	1662	592	83	65	54	1504	9	3	1	4	30	54
Wylam	13.43557559	713	205	32	50	47	621	0	1	0	3	10	29

Table 14

Jackson Parks exported from GIS provided by TPL ParkServe

Park name	Park size (acres)	Total population	Low income	Medium income	High income	White	Black	Native American	Asian	Pacific	Other	2 or more races	Hispanic
Aaron Henry Park	12.58	835	285	83	19	2	815	0	0	0	1	11	4
Alta Woods	9.818633248	1566	270	237	70	140	1346	0	8	0	5	42	23
Battlefield	65.735084151473	1473	287	175	73	153	1213	4	4	0	2	43	52
Belhaven	1.028509802	2256	352	332	414	1547	526	9	61	0	6	57	51
Belhaven Heights Par	0.585989378	973	321	249	89	361	539	1	14	0	0	26	30
Benjamin Brown Park	0.653993937	908	254	95	16	98	747	3	9	0	1	20	25
Broadmoor	1.111554954	1228	156	193	119	181	957	0	3	0	3	29	54
Buddy Butts Park	64.66997509	219	16	25	45	55	143	0	11	0	0	5	4
Cherokee Heights Par	0.143269387	1416	241	267	185	596	708	2	13	1	4	48	44
Fairmont	1.186256898	1371	238	153	41	128	1154	2	0	0	5	36	45
Farish Street Green	0.467073108	564	171	69	27	48	484	1	2	0	1	14	12
Flowers	7.331536226	666	87	105	54	45	590	1	1	0	1	20	9
Forest Hill	97.30656323	493	22	82	76	67	409	1	2	0	2	7	5
Grove	16.061955543	824	174	138	68	7	797	0	2	0	0	12	5
High	1.453957347	867	265	123	34	81	740	1	2	0	1	21	15
Jamie Fowler-Boyl11	9.076703221	583	31	77	153	496	49	0	9	0	0	14	11
Jaycee	3.509576498	1465	411	208	46	10	1390	0	0	0	2	36	21
Jayne Ave Park	14.25872658	1982	569	200	87	53	1827	3	1	0	4	60	29
Jones	5.370089381	1913	467	310	63	14	1832	0	0	3	4	40	17
Kevin Garnett Park	0.125536425	1107	300	161	34	6	1048	0	0	0	1	30	18
Kurts Gymnasium	1.134480023	301	81	25	10	4	282	0	0	0	0	7	6
Lake Hico	8.32898288	1305	228	214	109	33	1235	1	2	0	6	14	12
Laurel	9.968552595	1186	89	183	294	962	130	4	23	0	5	28	34
Leavell Woods	11.40889464	1380	207	201	99	135	1160	3	1	0	6	32	34
Legion	55.848461135	1083	253	117	33	60	958	1	0	0	0	28	30
Manhattan	8.69986178	2318	506	372	150	84	2136	0	11	1	7	29	49
Medgar Evers Gym	0.801849787	1274	314	191	56	13	1221	4	0	0	0	26	9

Park name	Park size (acres)	Total population	Low income	Medium income	High income	White	Black	Native American	Asian	Pacific	Other	2 or more races	Hispanic
Mynelle Gardens	9.826610646	1114	223	167	71	26	1025	1	0	0	5	21	37
Northgate	8.515045969	906	69	161	143	24	859	0	2	0	0	11	5
Parham Bridges	24.74582117	1917	142	342	396	11	1313	66	2	3	23	0	5	54	52
Poindexter	6.409284367	1191	244	88	36	17	6	938	0	0	2	10	16	44
Police	22.251700667	2431	653	274	100	60	2242	3	1	0	3	73	43
Presidential Hills	90.5716629	534	65	103	61	4	513	1	0	0	1	7	5
Presidential Hills	57.54255092	379	62	63	30	4	362	1	0	0	1	7	3
R. Jess Brown	4.330442337	1000	265	133	48	50	897	0	1	1	3	25	20
Rainbow Park	3.18396368	607	180	84	23	49	529	1	0	0	1	12	11
Raines	10.41612778	1542	311	242	103	43	1419	2	0	0	6	28	42
Road Of Remembrance	0.181851935	1166	277	105	36	40	1058	1	0	0	0	32	30
Sheppard	5.032951564	1257	217	195	58	84	1114	2	1	2	1	32	20
Sheppard Brothers	22.43439927	656	129	81	22	74	540	1	11	0	1	13	15
Smith Wills Stadium	19.81982832	293	15	40	76	24	9	25	0	5	0	0	7	6
St. Paul'S	2.97962729	1257	406	145	47	23	1198	1	0	0	3	22	8
Sykes	15.70232166	1472	226	211	99	14	4	1241	4	1	0	5	32	35
Tennis Center	7.89074967	1951	271	329	115	13	3	1744	5	0	1	1	49	20
South Terry	7.610137493	1273	181	248	81	16	5	1002	2	1	0	5	33	60
Tougaloo Park	4.728638029	461	123	67	14	12	432	0	2	0	0	6	8
Vine	3.878600039	527	148	76	14	20	485	0	2	0	2	12	3
Westside	19.20904328	995	305	108	39	35	905	2	0	0	2	16	34
Wightman	1.367487856	1225	320	122	24	19	5	925	4	19	0	1	26	51
Willie Henry Park	2.561464059	321	40	71	33	1	311	0	2	0	0	4	1
Woodrow Wison Walkin	5.521446642	984	101	96	110	49	9	392	8	25	0	2	21	34

APPENDIX F: TPL LEDGER

Income Measurement
Race Measurement

Field Name	Description	Domain
ParkID	Unique ID	
Park_Name	Park Name	
Park_Designation	Park Designation	Park_Designation
Park_Owner_Type	Owner type	Park_Agency_Level
Park_Local_Owner	Local Owner Name From Source	
Park_Manager_Type	Manager type	Park_Agency_Level
Park_Local_Manager	Local Manager Name From Source	
Park_Access	Public Access	Park_Access
Park_Status	Park status	Park_Status
Park_Land_Acquisition	Fee or easement or other	Park_Land_Acquisition
Park_Est_Date	Establishment date	

Field Name	Description	Domain
Park_Size_Acres	Automatically Generated	
Park_Address_1 **Park_State**	Street Address Automatically Generated	
Park_State_FIPS	Automatically Generated	
Park_County	Automatically Generated	
Park_County_FIPS	Automatically Generated	
Park_Place	Automatically Generated	
Park_PlaceFIPS	Automatically Generated	
Park_UrbanArea	Automatically Generated	
Park_UrbanArea_ID	Automatically Generated	
Park_Zip	Automatically Generated	

Field Name	Description	Domain
Park_Boundary_Source	How the park features were added to the database, either collected or created	
Park_Source_Agency	Data provider	
Park_DateAdded	Date added to the database	
SUM_TOTPOPSVCA	Total population within a 10-minute walk (2022)	
SUM_KIDS_SVCA	Total population < 20 years of age within a 10-minute walk (2022)	
SUM_YOUNG_PRO_SVCA	Total population > 20 and < 65 years of age of within a 10-minute walk (2022)	

Field Name	Description	Domain
SUM_SENIORS_SVCA	Total population > 64 years of age within a 10-minute walk (2022)	
SUM_HHILOWSVCA	Total number of low income households (<75% urban area median income) within a 10-minute walk (2022)	
SUM_HHIMEDSVCA	Total number of middle income households (75% - 125% urban area median income) within a 10-minute walk (2022)	

Field Name	Description	Domain
SUM_HHIHGHSVCA	Total number of high income households (>125% urban area median income) within a 10-minute walk (2022)	
SUM_WHITE_SVC	Total White Non-Hispanic population within a 10-minute walk (2022)	
SUM_BLACK_SVC	Total Black Non-Hispanic population within a 10-minute walk (2022)	
SUM_AMERINDSVC	Total Native American Non-Hispanic population within a 10-minute walk (2022)	

Field Name	Description	Domain
SUM_ASIAN_SVC	Total Asian Non-Hispanic population within a 10-minute walk (2022)	
SUM_PACIFICSVC	Total Pacific Islander Non-Hispanic population within a 10-minute walk (2022)	
SUM_OTHRACESVC	Total population of 2 or more races (Non-Hispanic) within a 10-minute walk (2022)	
SUM_RACE2UPSVC	Total population of other races (Non-Hispanic) within a 10-minute walk (2022)	

Field Name	Description	Domain
SUM_HISP_SVC	Total Hispanic population within a 10-minute walk (2022)	

*This legend was last updated on May 15, 2023. Adapted with permission.

APPENDIX G: Park Established and Acquirement Dates

Table 15

Park year established by the City of Birmingham

Park name	Date Established in Birmingham	Original Excluded from Trust for Public Land Data Yes (Y) or No (N)
4Th Avenue History (Mini Park)	No Date Found	N
A G Gaston	No Date Found	N
Alma P Dennis	No Date Found	N
Altamont	1921	N
Arthur Shores	Dedicated in 1986	N
Avondale Park	1885	N
Barker	No Date Found	N
Bessie Estell	No Date Found	N
Birmingham Botanical Gardens	1962	N
Brother Bryan	Approx.. 1880s	N
Caldwell	1884	N
Central	2019	N
Clairmont	Redirected 2001	N
Cooper Green (Crumpton)	No Date Found	N
Crestline	No Date Found	N
Crestwood	1946	N
Cromwell-Young Memorial Park	No Date Found	N
Dolomite Park	No Date Found	N
Dorothy Spears	No Date Found	N
Downey	1951	N
East Brownville	No Date Found	N
East Lake	1918	N
Echo Highlands	No Date Found	N

Eddie Kendricks Memorial	No Date Found	N
Elder Street Nature	No Date Found	N
Eldorado	No Date Found	N
Ellsberry (Vp #37)	No Date Found	N
Elyton	No Date Found	N
Ensley	No Date Found	N
Erskine Hawkins	No Date Found	N
Evergreen	No Date Found	N
Exchange	No Date Found	N
Fairmont (North Birmingham Vp #5)	No Date Found	N
Fairview	No Date Found	N
Fountain Heights	1901	N
Garden Highlands	No Date Found	N
George Ward	1925	N
Germania (Powderly)	No Date Found	N
Grasselli Heights	No Date Found	N
Grayson, Claude	No Date Found	N
Green Acres #2	No Date Found	N
Greenwood	2012	N
Hanover	No Date Found	N
Harriman Park Recreation	No Date Found	N
Harrison, Charles	No Date Found	N
Highland	1903	N
Hillman Park	No Date Found	N
Hooper City	No Date Found	N
Howze Sanford	1925	N
Hugo Black	No Date Found	N
Inglenook	1941	N
Jenny Justo	No Date Found	N
Jimmie Hudson (Sandusky)	No Date Found	N
Kelly Ingram	1883	N
Key Circle	No Date Found	N
Learning Tree	No Date Found	N

Lewis, Beulah	No Date Found	N
Lowery, Wynelle	1931	N
Lynn	1883	N
Lynn Park	1883	N
Maclin, Agnes	No Date Found	N
Marconi	1872	N
Martin Luther King Center	No Date Found	N
Mcalpine, William	No Date Found	N
Mclendon (Legion Field)	1923	N
Mcmahon, John (Harris)	No Date Found	N
Memorial	1942	N
Minnieville	No Date Found	N
North Birmingham	2019	N
Norwood	1950	N
Norwood Boulevard	No Date Found	N
One Pratt Park	2019	N
Overton	No Date Found	N
Oxmoor Park (Sandridge)	No Date Found	N
Phelan	No Date Found	N
Pine Knoll Park	No Date Found	N
Pratt City	1913	N
Railroad Park	2010	N
Ramsay I-A	No Date Found	N
Ramsay Ii	No Date Found	N
Ramsay Park	No Date Found	N
Rhodes	1884	N
Rickwood Field	1910	N
Roebuck/Hawkins (Don)	No Date Found	N
Rotary Trail	2014	Y
Roosevelt City Recreation Center	1988	N
Rozelle Reynolds	Redirected 2002	N
Ruffner Mountain Nature Center	1977	N
Rushton, William	1884	N

Samuel Hairston Sr	No Date Found	N
Shades Creek Park	No Date Found	N
Sherman Heights North (Vp6)	No Date Found	N
Sherman Heights South (Vp18)	No Date Found	N
Smithfield Estates	No Date Found	N
Spring Haven	No Date Found	N
Spring Water Park	No Date Found	N
Stockham, William	No Date Found	N
Tarpley City	No Date Found	N
Thomas	No Date Found	N
Tom Bradford Park	1978	N
Tom Bradford Park	1978	N
Tuxedo	Approx. 1920	N
Tuxedo Heights (Vp #41)	No Date Found	N
Underwood	1921	N
Valley View	No Date Found	N
Vulcan Park	1939	Y
W C Patton	2012	N
Wahouma	1948	N
West Brownville	No Date Found	N
West End Walking Trail	No Date Found	N
West Goldwire	No Date Found	N
Wiggins	No Date Found	N
Willow Wood	No Date Found	N
Woodward	No Date Found	N
Wylam	No Date Found	N

Note: **Acquired by (***Altamont Park - Bhamwiki, 2022; Avondale Park - Bhamwiki, 2022; Birmingham Botanical Gardens - Bhamwiki, 2022; Brother Bryan Park - Bhamwiki, 2022; Caldwell Park - Bhamwiki, 2022; Central Park - Bhamwiki, 2022; Crestwood Park - Bhamwiki, 2022; Downey Park - Bhamwiki, 2022; East Lake Park - Bhamwiki, n.d.; George Ward Park - Bhamwiki, 2022; Greenwood Park - Bhamwiki, 2022; Highland Park Golf Course - Bhamwiki, 2022; Howze-Sanford Park - Bhamwiki, 2022; Inglenook Park - Bhamwiki, 2022; Kelly Ingram Park - Bhamwiki, 2022; Linn Park - Bhamwiki, 2022; Lowery Park - Bhamwiki, 2022; McLendon Park - Bhamwiki, 2022; Memorial Park - Bhamwiki, 2022; North Birmingham Park - Bhamwiki, 2022; Norwood Park - Bhamwiki, 2022; One Pratt Park - Bhamwiki, 2019; Pratt City Park - Bhamwiki, 2022; Rhodes Park - Bhamwiki, 2022; Rickwood*

Field - Bhamwiki, 2024; Roosevelt City Park - Bhamwiki, 2022; Rozelle Reynolds Park - Bhamwiki, 2022; Rushton Park - Bhamwiki, 2022; Triangle Park - Bhamwiki, 2022; Tuxedo Park - Bhamwiki, 2022; Underwood Park - Bhamwiki, 2022).

Table 16

Park year acquired by the City of Jackson

Park name	Date Acquired by city of Jackson	Excluded in original Trust for Public Land Data Yes (Y) or No (N)	Included in original Trust for Public Land Data and not owned by City
Aaron Henry Park	1963	N	
Alta Woods	1951	N	
Battlefield	1927	N	
Belhaven	No Date Found	N	
Belhaven Heights Par	1993	N	
Benjamin Brown Park	No Date Found	N	
Broadmoor	Platted 1948	N	
Buddy Butts Park	1974	N	
Cherokee Heights Par	No Date Found	N	
Fairmont	1974	N	
Farish Street Green	1974 and 1975	N	
Flowers	1964	N	
Forest Hill	1981	N	
Grove	1959	N	
High	1972	N	
Jamie Fowler-Boyl11	Suggested Acquired before rezoning Jackson	N	
Jaycee	1950	N	
Jayne Ave Park	1967	N	
Jones	No Date Found	N	
Kevin Garnett Park	No Date Found	N	

Kurts Gymnasium	1972	N	
Lake Hico	1985	N	
Laurel	No Date Found	N	
Leavell Woods	Acquired by Leavell Woods Community foundation in 1947; Acquired by city of Jackson 1970	N	
Legion	Opened 1943; Acquired by city of Jackson 1970	N	
Livingston Park	No Date Found	Y	
Manhattan	1964	N	
Medgar Evers Gym	No Date Found	N	
Mynelle Gardens	1973	N	
Northgate	1974	N	
Parham Bridges	1971	N	
Poindexter	1901	N	
Police		N	
Presidential Hills	1978	N	
Presidential Hills	1983	N	
R. Jess Brown	1952	N	
Rainbow Park	1974	N	
Raines	No Date Found	N	
Road Of Remembrance	No Date Found	N	
Sheppard	1981	N	
Sheppard Brothers	1974	N	
Smith Park	1883	Y	
Smith Wills Stadium	Built 1975	N	
St. Paul's	No Date Found	N	Not City of Jackson Park
Sykes	1961	N	

Tennis Center South	1973	N	
Terry	1974	N	
Tougaloo Park	1994*	N	
Vine	1974	N	
Westside	1980	N	
Wightman	1972	N	
Willie Henry Park	Acquired by community organization in 1986	N	
Woodrow Wison Walkin	No Date Found	N	Not City of Jackson Park

Note: Acquired by (Ewing, 2019).

VITA

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Education:
Doctor of Philosophy in Urban and Regional Planning
December 2024
Jackson State University, Jackson, MS

Master of Science in Hazardous Materials Management
May 2020
Jackson State University, Jackson, MS

Bachelor of Science in Biology, Concentration: Environmental Science
August 2018
Jackson State University, Jackson, MS

Research Interests:

- Environment and Land Use
- Climate Justice
- Environmental Justice
- Social Justice
- Labor Justice
- Public Policy
- Environmental Planning
- Equity Planning
- Usage of GIS for Planning
- History of Urban Planning
- Transportation Planning and Equity Housing

Dissertation: Environmental Justice in City-Owned Parks in Birmingham, AL and Jackson, MS
Research Focus: The dissertation explores the nuances of environmental justice within the context of public parks, specifically analyzing disparities and inequalities in access, amenities, and environmental quality between urban communities in Birmingham, AL, and Jackson, MS.
Methodology: Incorporates mixed-methods approach involving quantitative spatial data analysis, qualitative assessment through interviews and surveys, and critical discourse analysis.

Publications:
Marshall Wesley, J., Johnson, S., Cooper, J. (2023). “Residents’ Perception of Crime and Safety in Jackson, MS: A Pilot Study,” 108th Annual Conference, The Association for the Study of African American Life and History, 003

Chandler, S., Brandon, E. (2015). “Hyperinsulinemia Does not Affect Melanoma Proliferation.” Mississippi Academy of Sciences. Vol 60. P2.08. p55.

Professional Experience:
Jobs to Move America | Mississippi (Hybrid)
Senior Mississippi Strategic Researcher | 05/2024-Present

Emerald Cities Collaborative | Birmingham, AL (Hybrid)
Freedom Fellow - City of Birmingham Dept of Transportation | 06/2023 - 08/2023

Mississippi Urban Research Center (Jackson State University) | Jackson, MS
Graduate Research Assistant | 02/2023 - 07/2023

American Conservation Experience (Bureau of Land Management) | Remote
Outdoor Recreation Intern | 06/2022 - 09/2022

Jackson State University Dept of Urban and Regional Planning | Remote
Graduate Research Assistant | 10/2021 - 03/2022

Jackson State University Dept of Urban and Regional Planning | Remote
Graduate Research Assistant | 10/2021 - 03/2022

Teaching Experience:
Eastern Gateway Community College | Remote
Personal Computer Applications Adjunct Instructor | 01/2021 – 04/2024

Kelly Services | Jackson Public School District | Jackson, MS
K-12 Substitute Teacher | 10/2016-05/2019

AmeriCorps | SR1 | Jackson Metropolitan Area, MS
Middle School Peer Educator | 02/2017-08/2017

Skills:
- Technical Writing
- Communication
- Microsoft Office
- Geographic Information System (GIS)

- Data Analysis
- Teaching
- Organization
- Community Engagement
- Creative Thinking
- Research

Community Service:

- Peer Health Educator, Project S.A.F.E, HIV Peer Health Education, Jackson, MS, 2013-2016
- Student Volunteer, Jackson State University School Service, Jackson, MS, 2013-2015
- Volunteer, University Mississippi Medical Center, Jackson, Mississippi, 2015 Mentor, TALKS mentoring program, Pecan Park Elementary, Jackson, MS, 2015-2016
- Big Sister Mentor, Big Brothers, Big Sisters, Jackson, MS, 2016-2018
- Children Church Teacher, Jackson Revival Center, Jackson, MS, 2018-2020
- Volunteer, The National Maps Corps (U.S. Geological Survey), 2023-present
- Volunteer Urban Planner, Dynamite Hill-Smithfield Land Trust/Community, (Remote) Birmingham, AL, 2024-present
- Public Relations Committee Chair, Jackson State University National Alumni Association, Rankin County Chapter, 2024-present

Professional Memberships:

- Air and Waste Management Association, Member
- Alpha Epsilon Lambda, Member
- American Planning Association, Member
- Jackson State University National Alumni Association (JSUNAA), Member
- MANRRS (Minorities in Agriculture, Natural Resources & Related Sciences), Member
- National Association of the Advancement of Colored People (NAACP), Member
- The National Society of Leadership and Success, Member
- Society for Conservation Biology, Member
- American Planning Association, Student Planning Officer
- Partnership for the National Trails System, Trails Apprentice (2021-2022 Cohort)
- National Black Environmental Justice Network, Member