

Who Visits the Park?

Analyzing Recreational Use Over a Four-Month Observation Study



Emileigh C. Parda



Advisors: Dr. Jessica Graham & Dr. Ryann Rossi
Department of Marine Sciences, Florida State University

Abstract

Recreational parks provide essential access to nature for both residents and visitors while also playing a crucial role in protecting natural ecosystems. However, previous research has suggested that as urbanization, technological advancements, and societal shifts continue to evolve, various social factors may influence park usage patterns. This study explores visitation trends over a four-month period through direct observations at two recreational parks in the Panama City area: Carl Gray Park and Asbell Park. Each month, four observational counts were conducted, with two at Carl Gray Park and two at Asbell Park. Utilization rates were then analyzed using a local model developed by the Environmental Protection Agency (EPA), known as extrapolation factors, to estimate total daily visits. Results showed that Asbell Park had a significantly higher overall visitation rate than Carl Gray Park, with an average of 153 daily visitors compared to 96 daily visitors. Additionally, Asbell Park had a greater average number of visitors per observation, with 19 people present at any given time, compared to 12 people at Carl Gray Park. Additional post-hoc analyses revealed that peak visitation at Asbell Park occurred at temperatures of 64°F, 67°F, and 79°F, whereas Carl Gray Park saw peak attendance at 65°F, 72°F, and 85°F. Across both parks, the most common activity observed was “Sitting, Standing, or Observing,” with Carl Gray Park recording 55 instances and Asbell Park recording 45 instances. These results could offer valuable insights into visitation trends, potentially helping to guide recreational management efforts and enhance community engagement.

Introduction

Urban parks and coastal recreational areas serve as critical spaces for public engagement, ecological conservation, and economic valuation.^{1,2} As urbanization expands and societal behaviors shift, understanding park visitation trends is essential for infrastructure planning, environmental management, and public policy development.^{1,2} Previous research has demonstrated that recreational areas provide significant non-market benefits, contributing to well-being, social equity, and economic sustainability.³ However, tracking visitation data remains a challenge, particularly for estuarine and coastal parks, where usage is often underreported despite their substantial recreational appeal.¹ Public parks offer multiple benefits categorized into park entry, small space, medium space, and size-determined advantages.³ These spaces have been shown to mitigate environmental stressors, promote mental restoration, and support equitable access to green environments.³ However, disparities in access and utilization persist, often influenced by socioeconomic status, race, and geographic location.^{3,4} Frequent users of urban parks report enhanced psychological and physical benefits, aligning with Attention Restoration Theory (ART), which suggests that natural environments could facilitate cognitive recovery and improved concentration.⁵ Despite the known advantages of urban parks, there remains a need for comprehensive data on how environmental and social factors influence park visitation patterns.¹ Understanding visitor trends can aid in assessing the economic and ecological value of these spaces, informing decision-making for sustainable recreational management.² This study seeks to contribute to this discourse by analyzing visitation trends at two recreational parks in the Panama City area, applying observational data and extrapolation models from the EPA to assess patterns of park usage.¹ This research aims to enhance our understanding of how public spaces are utilized and how they could potentially be optimized for community benefit.

Figures

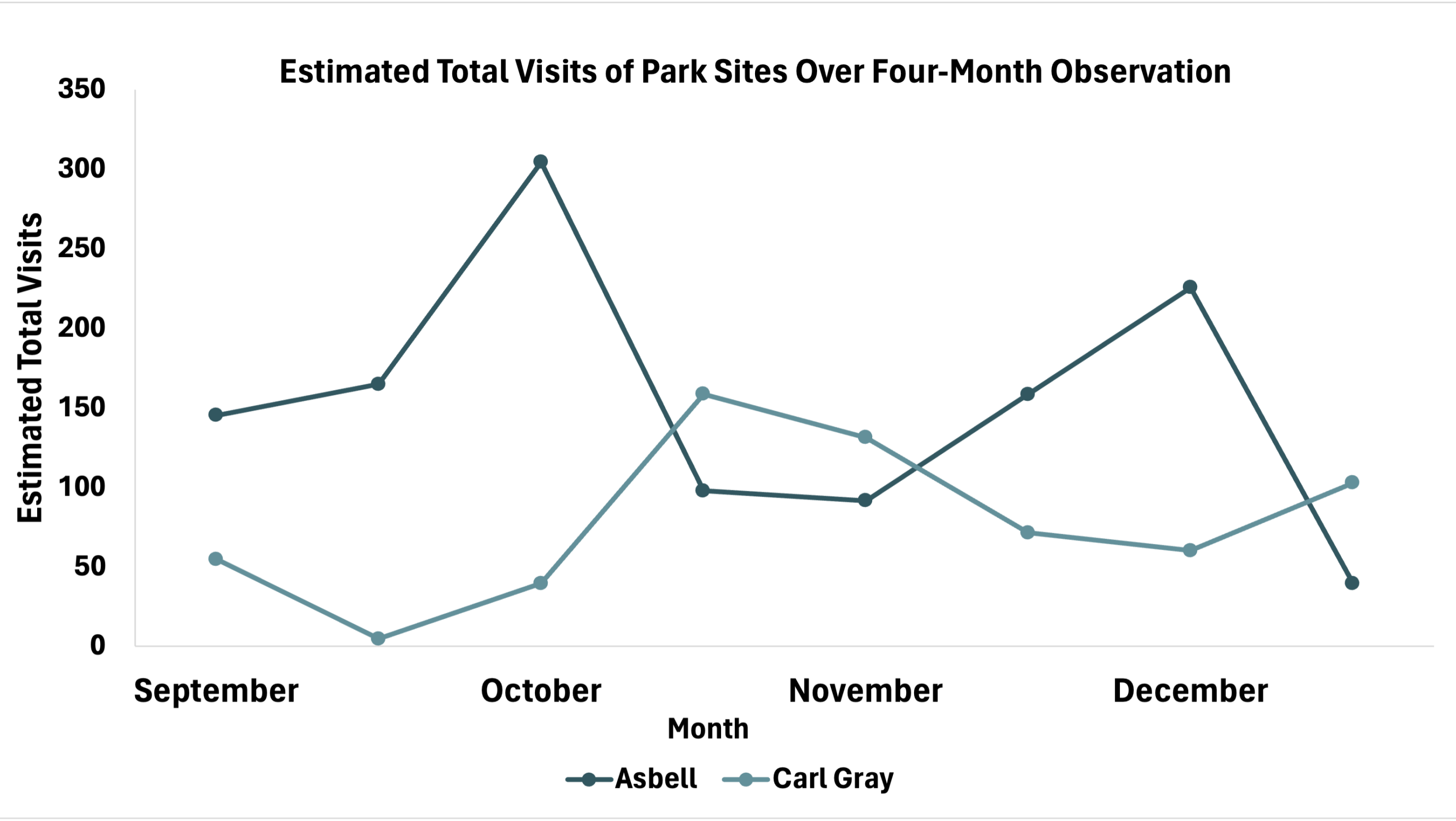


Figure 1: Lines depict differences in estimated total visits across park sites. Markers indicate the month of each periodic count and the estimated total visits for the recorded day, based on the extrapolation factor.

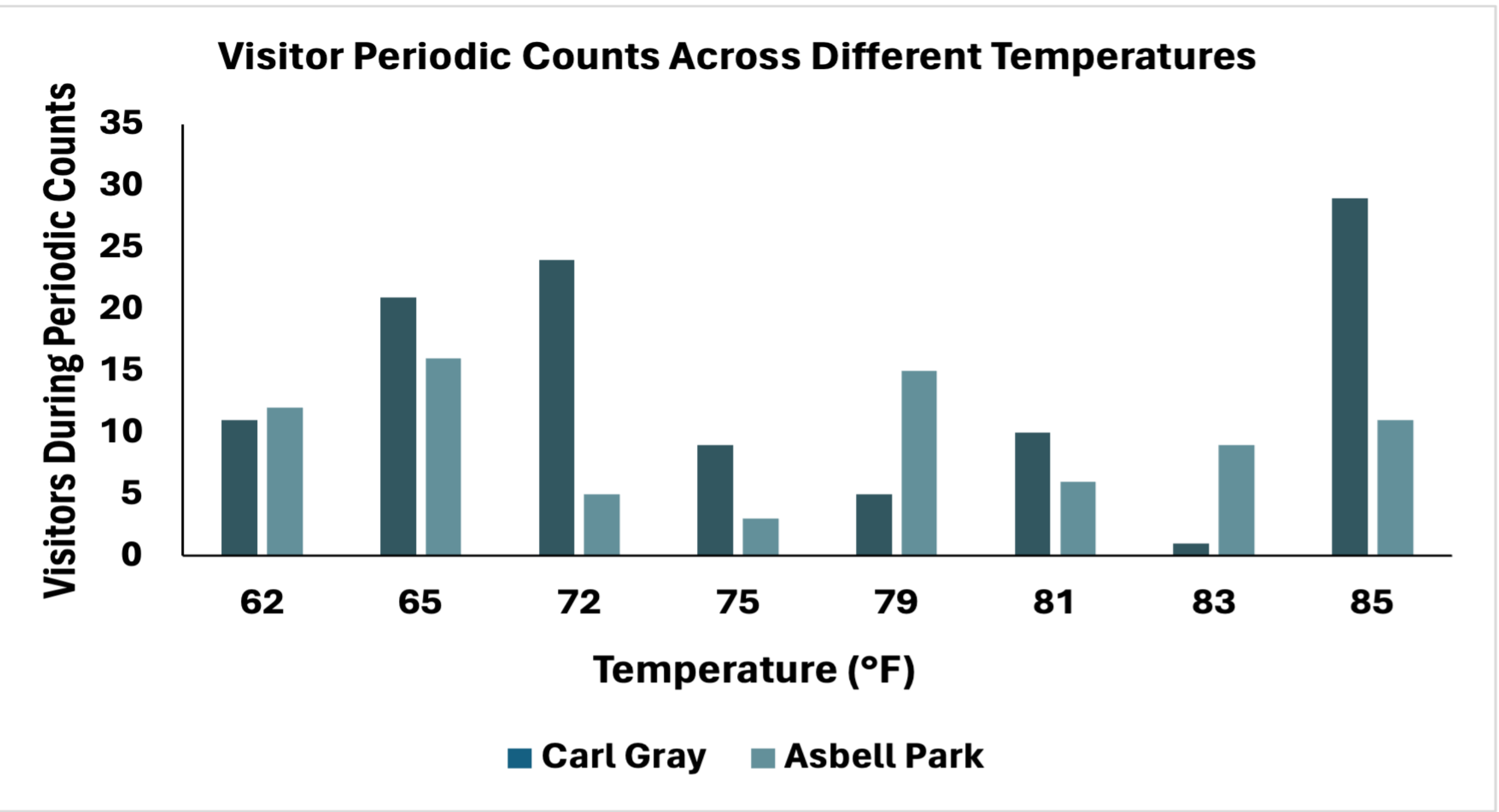


Figure 2: Bars represent the raw visitor count recorded during each periodic count at Asbell Park and Carl Gray Park. The corresponding temperature for each count is shown to highlight potential variations in visitation due to temperature differences.

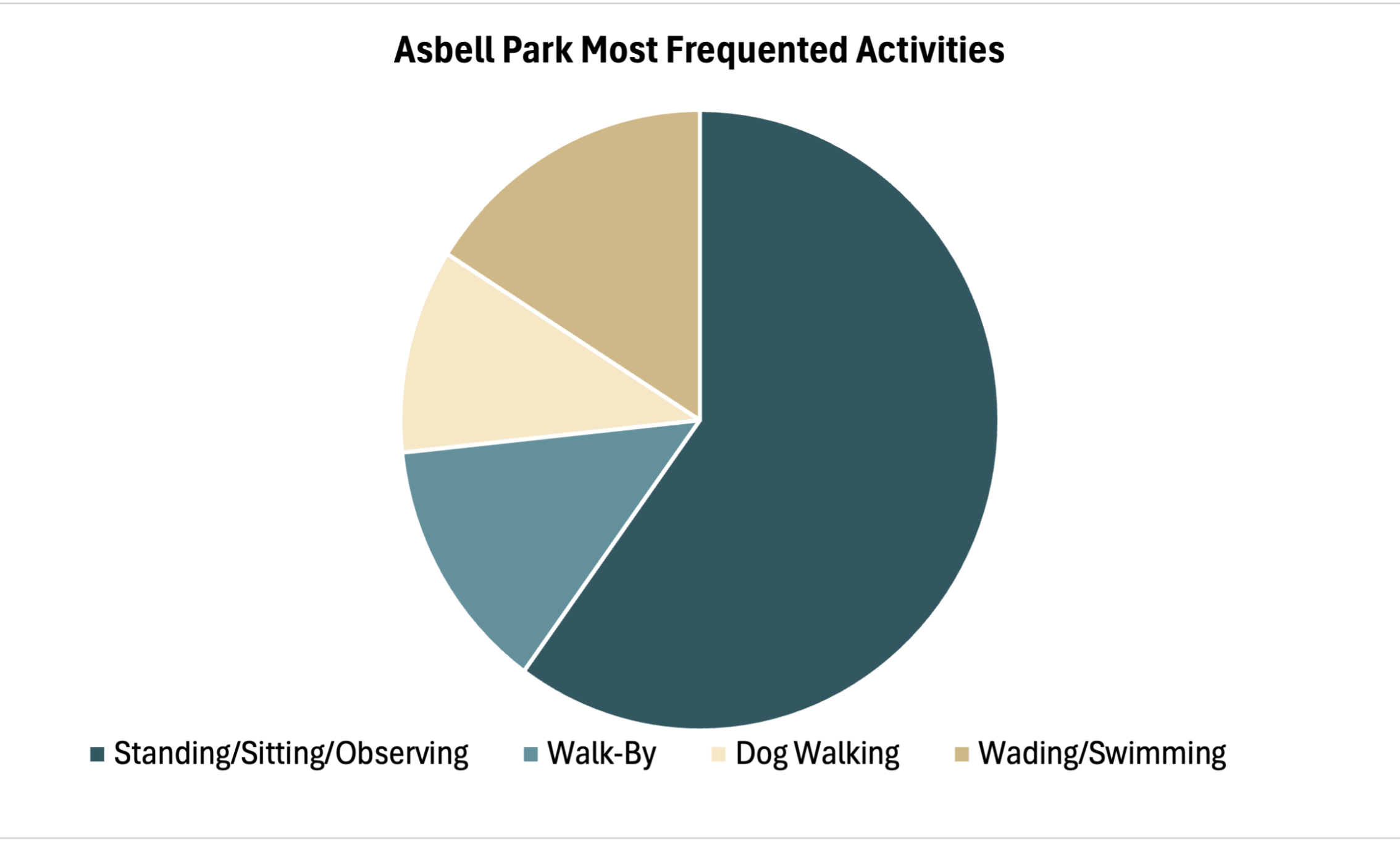


Figure 3: Distribution of most frequented activities at Asbell Park. The pie chart illustrates the proportion of various activities observed over the four-month data collection period. Standing/sitting/observing shown as the most common activity.

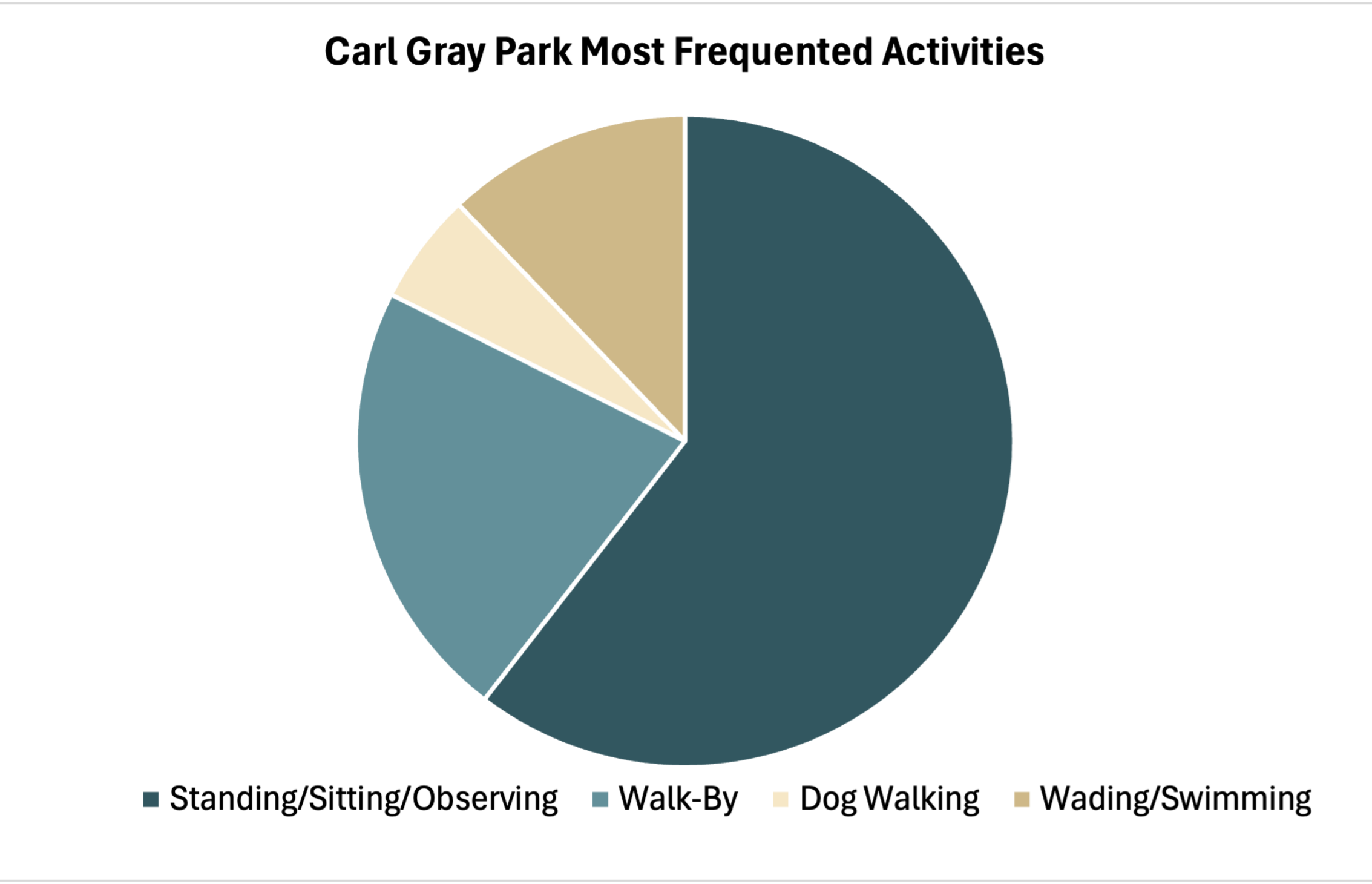


Figure 4: Distribution of most frequented activities at Carl Gray Park. The pie chart illustrates the proportion of various activities observed over the four-month data collection period. Standing/sitting/observing shown as the most common activity.

Methods



Carl Gray Park



Asbell Park

Figure 5 (Carl Gray Park) and **Figure 6** (Asbell Park) show delineation of park sites used for data collection.

• Methods replicated from the EPA¹

- 1. Study Area & Site Selection:** Identify the study area, select evaluation sites, compile site characteristics, and delineate counting zones.
- 2. Sampling Plan:** Define sampling methods, select counting days/hours, and organize logistics based on study goals.
- 3. Data Collection:** Conduct sampling, record data on designated sheets for each site and count type.
- 4. Data Analysis:** Enter data into Excel, calculate summary statistics, and display results.

Results

- Peak Visitation:**
 - Carl Gray Park:** 65°F, 72°F, 85°F
 - Asbell Park:** 64°F, 67°F, 79°F
- Most Common Activity:**
 - Carl Gray Park:** 55 instances
 - Asbell Park:** 45 instances
- Average Visitation:**
 - Carl Gray Park:** 96 average daily visitors, 12 per observation
 - Asbell Park:** 153 average daily visitors, 19 per observation

Discussion

This study provides insights into visitation trends at two recreational parks in Panama City. Asbell Park consistently experienced higher visitation rates than Carl Gray Park. While the exact reasons for this difference remain uncertain, potential contributing factors may include variations in amenities, accessibility, and surrounding land use. Additionally, differences in peak visitation temperatures suggest a possible need for more user-centered park design. Several limitations should be considered. The absence of demographic surveys restricted the ability to analyze visitor characteristics. While periodic observational counts were a practical method for data collection, they lack the precision of continuous count monitoring. Furthermore, the four-month study period limited the assessment of seasonal variations and long-term trends. Another limitation stems from the available EPA data. While the EPA conducted both periodic top-of-the-hour (TOH) counts and continuous counts for the park sites, this study relied solely on random periodic counts. As a result, the overall visitation estimates for both Carl Gray Park and Asbell Park may not fully capture actual attendance patterns. Regarding park activities, both this study and the EPA's data identified "Chilling" (as classified by the EPA) or "Sitting, Standing, or Observing" (as categorized in this research) as the most frequent activity. However, the EPA's categorization could benefit from greater specificity and consistency to enhance clarity in future research. To improve data accuracy and depth, future studies should integrate mixed method count approaches and visitor surveys. Expanding comparative analyses across diverse park environments could further show the social and environmental factors influencing visitation. Addressing these research gaps would contribute to more effective strategies for sustainable recreational management, urban planning, and equitable access to public green spaces.

References

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