

# Evaluating Inclusivity and Access to Outdoor Recreation in Western North Carolina and Exploring Equity in Trail Maintenance Volunteer Work

Felipe Ahumada  
Economics  
University of North Carolina Asheville  
One University Heights  
Asheville, North Carolina 28804 USA

Faculty Advisor: Jonathan Brown

## 1. Abstract

The Outdoor Recreation industry in Western North Carolina is one of the main drivers of the economy, supporting over 37,000 jobs and bringing in just under 4 billion dollars each year. The problem with a city whose economy is based around tourism and outdoor recreation is that the economy of such cities is designed to work around those who have the time and money to spend. When it comes to outdoor spaces, getting to places where outdoor activities take place is non-issue for those vacationing. The problem with a city revolving around tourism is that it mostly forgets about those who reside in it. This leaves those who are in already vulnerable positions out. With most of the vulnerable communities being left out to the point where some people have never even tried outdoor recreation. In this paper, we look to find the main reasons keeping the more marginal communities away from outdoor recreation and how to integrate them. This is done through a literature review as well as a community survey which was answered throughout the course of the summer of 2023, receiving a total of 157 responses. The data collected is later analyzed and tabulated to help better understand what are the barriers to entry for outdoor recreational spaces. When it comes to outdoor recreation, there are both perceived and natural barriers to entry. With outdoor recreation being such a large source of income for the city and county, it gives the perceived idea that it is a pastime for the more affluent kind. This along with separation issues and mismanagement of public areas has made it very hard for certain communities to have access to outdoor spaces.

## 2. Introduction

The persistent challenge of trail accessibility in outdoor recreation has disproportionately impacted individuals in vulnerable circumstances since the inception of such activities. The disconnect between nature and marginalized segments of society, often rooted in systemic oppression and cultural disparities (Cavin, D, A, 2008), remains a pressing concern. As our community evolves, the core tends to drift further from those who lack equal opportunities, perpetuating a division that spans generations and separates those with access from those without.

Situated deep within the Blue Ridge Mountains, outdoor recreational areas, such as those in Asheville, North Carolina, are typically distanced from urban centers, posing substantial challenges for potential participants. Recognizing the numerous barriers that impede engagement in outdoor recreation and hinder the realization of associated health benefits, our objective is to identify and address these obstacles collectively. In collaboration with the Carolina Mountain Club (CMC), a local volunteer trail maintenance and hiking organization with a history dating back to 1923 (Slavishak, E. 2012), we have actively gathered data on trail user diversity. Our focus extends to exploring strategies for expanding the CMC's community outreach and volunteer base. Operating as a crucial steward of over 400 miles of trails in Western North Carolina, including portions of the Appalachian Trail and the Mountains-to-Sea Trail, the CMC organizes numerous hikes annually (Club, C. M. n.d.). Our research encompasses areas maintained by the CMC and popular locations among Asheville's residents, shedding light on those already engaged in outdoor activities and those interested but facing barriers.

This data will inform the Carolina Mountain Club's outreach and diversity committee, guiding efforts to create a more inclusive outdoor experience and environmentally aware communities. The demographic insights and suggestions for improving outdoor accessibility derived from our trail user data collection will encourage more individuals to explore trails and engage in volunteer trail work, ultimately diversifying club membership. Our study unfolds at the trailheads of the Mountains-to-Sea Trail along the Blue Ridge Parkway, spanning from Sleepy Gap to Mount Pisgah. Additional research will be conducted in Bent Creek Experimental Forest within Pisgah National Forest and the French Broad Greenway in Asheville, NC, which attracts a diverse range of hikers and outdoor enthusiasts, particularly during the warmer months.

The Asheville economic and demographic landscape is 81.4% White, 10.9% African American, 7% Hispanic, 1.3% Asian, 0.4% American Indian, 0.3% Native Hawaiian or other Pacific Islander, and 4.2% identifying as more than one race. With a median household income estimated at \$58,193—\$12,591 below the national average (2020 U.S Census)—and approximately 12% of the population lives in poverty, contributing to a lack of diversity among outdoor enthusiasts and volunteer groups, further exacerbated by geographical separation from urban centers. This separation perpetuates a disparity in access, limiting outdoor recreation opportunities to those with reliable transportation and deepening the divide between those who can easily participate and those reliant on public transportation. This research is looking to build on the findings of Riley Dunlap and Robert Heffernan which investigated the relationship between outdoor recreation and the environmental concern of the public. According to their study, there is a direct relation between these two, and due to issues such as lack of access for communities that have been systematically discriminated against, it has been extremely hard for

these communities to become more environmentally conscious. What we look to achieve with this research is apply the techniques and questions possessed by Dunlap and Heffernan, to the Asheville metropolitan area, and see how we can as a community, help better environmental awareness and consciousness for communities that have been systematically discriminated against.

### 3. Related Literature

This paper applies Riley Dunlap and Robert Heffernan's seminal theory to the community of Western North Carolina, investigating the intricate relationship between outdoor recreation and the public's environmental concern. Developed in 1975, their theory formulates three hypotheses, drawing from existing literature. These hypotheses posit that 1) engagement in outdoor recreation is positively linked to environmental concern; 2) appreciative activities, such as hiking and camping, exhibit a stronger correlation with environmental concern than consumptive activities like hunting; 3) the connection between outdoor recreation involvement and environmental protection for these activities is more robust than with broader environmental issues like air and water pollution.

Their research employed a statewide survey via mail, centered on the allocation of public funds, yielding nuanced results that underscore the complex dynamics between outdoor activities and environmental concern. In addressing the often-overlooked realm of African American individuals' experiences in outdoor recreation, this research delves into motivations, barriers, and emotional connections that shape their engagement with natural environments. Cavin's work illuminates this underrepresented perspective, providing insights into the intricate interplay of race, identity, and outdoor participation. The study reveals diverse motivations, including seeking solitude, stress relief, community connection, and a reclamation of ancestral ties to nature. It also identifies barriers such as safety concerns, feelings of isolation in predominantly white outdoor spaces, and limited access due to socioeconomic factors, making a significant contribution to the literature by addressing this marginalized perspective.

Building on the foundation laid by Cavin, Carolin Finney explores the experiences of the African American community in spaces traditionally enjoyed by white individuals in "Black Faces, White Spaces. The research endeavors to reshape the discourse on race, outdoor recreation, and environmentalism, investigating historical roots of racial bias and exclusion. Through an exploration of power dynamics shaping urban and rural landscapes, Finney challenges misconceptions and demonstrates deep connections to land, place, and environmental activism within the African American community. The study underscores the imperative of recognizing the interconnection between social and environmental justice, advocating for a more inclusive and equitable environmental movement. A significant segment of this paper focuses on the critical role of outdoor leaders, highlighting the importance of "Analysis on the Environmental Ethics Awareness of Outdoor Recreation Leaders" by Ceylan (2019). Ceylan's study employs quantitative methods to assess environmental ethics awareness among outdoor leaders, covering dimensions such as knowledge of environmental issues, conservation attitudes, and responsible outdoor behavior. This research significantly contributes to

the literature, emphasizing the pivotal role of outdoor leaders as advocates for environmental stewardship.

In exploring equity in access to outdoor recreation and its implications for achieving sustainability, this paper examines barriers preventing certain populations from enjoying outdoor activities. Factors such as socioeconomic status, race, ethnicity, gender, and location are considered. The research identifies strategies for promoting inclusive access, involving community engagement, policy interventions, and interdisciplinary collaboration (Winter et al., 2019). The study calls for collective efforts to create more accessible and inclusive outdoor spaces for a sustainable future. This research confronts the issue of racial discrimination experienced by people of color in park and outdoor recreation settings, aiming to empirically examine this often-overlooked aspect. Utilizing surveys to collect data on instances and perceptions of racial discrimination, the study reveals the prevalence of discriminatory incidents and their negative impact on participants' experiences (Floyd, 2005). The paper advocates for inclusive strategies to combat systemic biases and create welcoming outdoor environments for all individuals.

Williams' (2014) research explores the diversity and inclusivity of hikers on the Appalachian Trail, addressing the underrepresentation of diverse groups on the trail. The study sheds light on the experiences, challenges, and motivations of hikers from different backgrounds. Using qualitative methods, the research reveals barriers to inclusivity faced by underrepresented groups, such as feelings of exclusion and lack of representation. It emphasizes the need for creating welcoming and relatable environments to promote inclusivity and equity in outdoor recreation.

## 4. Methods

This research aimed to explore the demographics and accessibility of outdoor recreational spaces in Western North Carolina. The study spanned a duration of four months, commencing in the summer of 2023. To ensure methodological coherence and comparability, our study adopted a framework inspired by the reexamination of the Dunlap-Heffernan Thesis, specifically mirroring the methods employed by Theodori, G.L.; Luloff, A.E.; Willits, F.K. This approach provided a basis for evaluating our results against a comparable study in the literature. Our research team employed a survey-based approach, striving to engage with as diverse a population as possible. Recognizing the potential biases in surveying only trail users, we extended our efforts to reach community leaders representing underrepresented segments of the population. This inclusive approach aimed to capture a more comprehensive understanding of both active outdoor participants and those who have limited access or exposure to outdoor recreation.

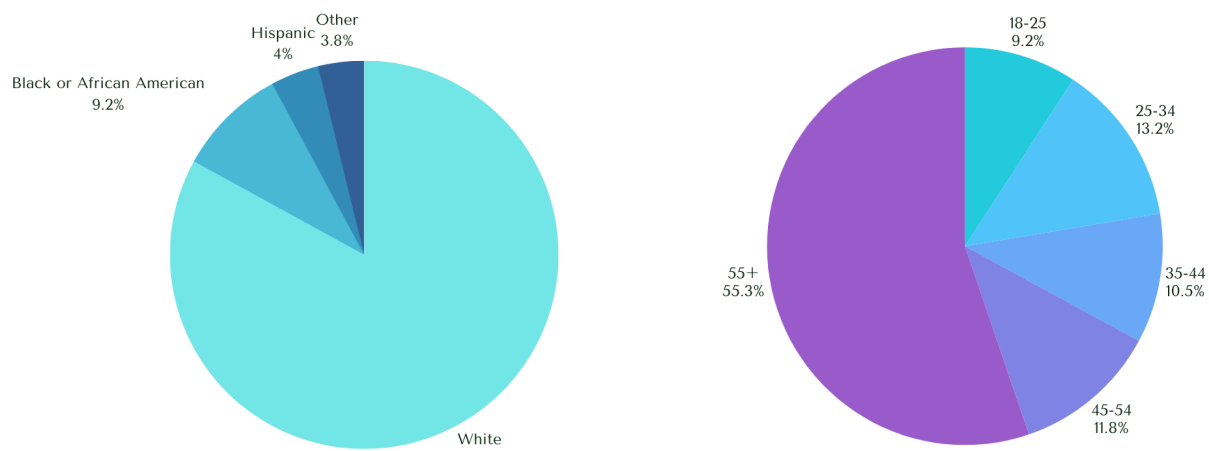
Situated in Western North Carolina, the city of Asheville has been a prominent tourist destination for over a century, attracting over 11 million visitors annually. The tourism industry, accounting for one in every seven jobs, has established Asheville as a hub for outdoor activities, particularly within the Blue Ridge Mountains. Thanks to the role that the outdoor industry plays on the local economy is why Asheville was chosen as a study area for our survey. Our data collection commenced with a questionnaire designed

around the Dunlap-Heffernan paper, incorporating additional inquiries to better understand respondent demographics, perceived barriers, and economic backgrounds. Prior to implementation, the questionnaire received approval from the Internal Review Board (IRB), ensuring ethical research practices. The sample population was chosen at random, and all participants had to be at least 18 years old. This questionnaire had 16 questions, which covered respondent background information, as well as their relationship with the outdoors. This was answered through questions such as “Outdoor activities they partake in”, “Favorite place to do outdoor recreation”, “Frequency in which you visit the outdoors” and “what would you more likely to spend more time outdoors”. These are all questions that helped us get a better understanding of the connection respondents had with nature.

Additionally, we asked people about their involvement and/or interest in participating in trail maintenance and becoming trail volunteer maintainers. Notable organizations such as N.O.I.R Asheville and Latinos Aventureros, serving the Black and Latinx communities respectively, were instrumental in disseminating the survey through their networks. While acknowledging the potential bias introduced through newsletter distribution, this approach aimed to amplify the voices of those typically excluded from discussions on trail accessibility and outdoor equity. The survey received a total of 157 responses, and was first released at the Carolina Mountain Club 100th-year celebration, enabling the identification of biases associated with respondents already engaged in environmental conservation. Data collected from the survey was subjected to a exploratoryF thematic analysis, with a particular focus on demographic patterns, economic backgrounds, and perceived barriers to outdoor recreation. The research adhered to guidelines set by the Internal Review Board to ensure participant confidentiality, voluntary participation, and respectful engagement with diverse communities. This comprehensive methodological approach, rooted in established frameworks, aimed to unravel the complexities of outdoor recreation in Western North Carolina, shedding light on both the experiences of active participants and the barriers faced by underrepresented segments of the community.

## 5. Results

Analyzing the outcomes of the voluntary questionnaire reveals an underrepresentation of racial minorities, with a predominant majority of respondents belonging to an older, white demographic. Noteworthy is the observation that these racial demographics bear a resemblance to the overall demographics of the Asheville metropolitan area. Each racial category was represented, ensuring a comprehensive view across all demographics (Fig 1).



**Figure 1.** Racial Demographics of respondents

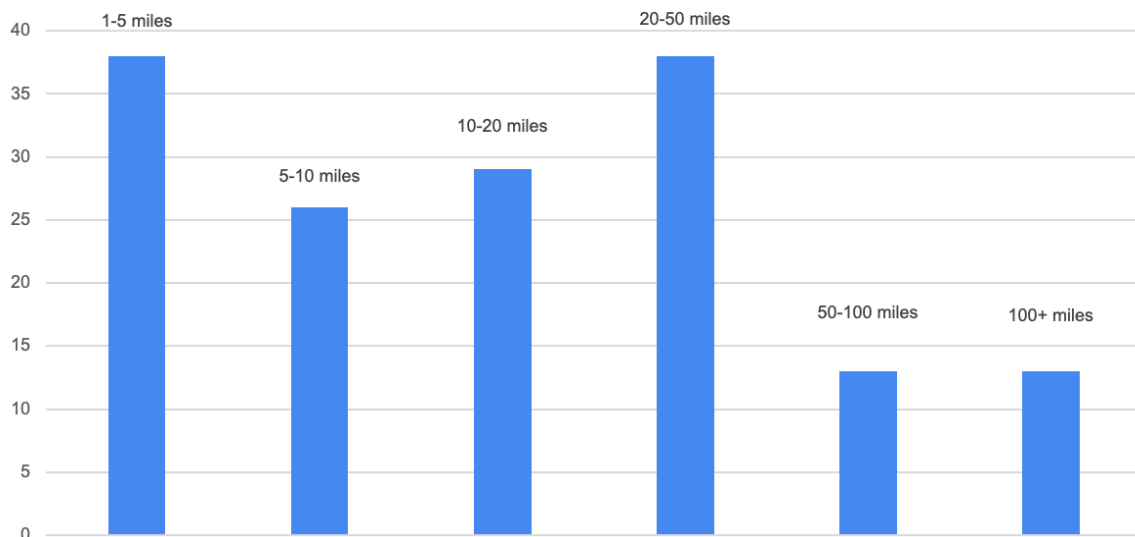
**Figure 2.** Age demographics of respondents

Upon further analysis of the survey data, a discernible trend comes to light. Despite the majority of respondents residing locally in the Asheville area, an apparent necessity is to travel a distance ranging from 5 to 50 miles to reach locations where outdoor recreation activities are available (Fig 3). This is explained in the geographical distances separating the city of Asheville, its densely populated residential zones, and the areas frequently chosen by outdoor recreation enthusiasts.

While there are few urban outdoor spaces available for the people of Asheville to get out and enjoy time outside, these are few and far between. The Riverside Park system extends alongside the French Broad River, and is a 4.2 mile stretch greenway which connects Hominy Creek River Park with the Craven Street Bridge on the French Broad River. This greenway is easily accessible for those who live in West Asheville, and can be used to connect with downtown. This could explain where most of those who travel between 1-5 miles to get to an area of recreation fall under. (Fig. 3)

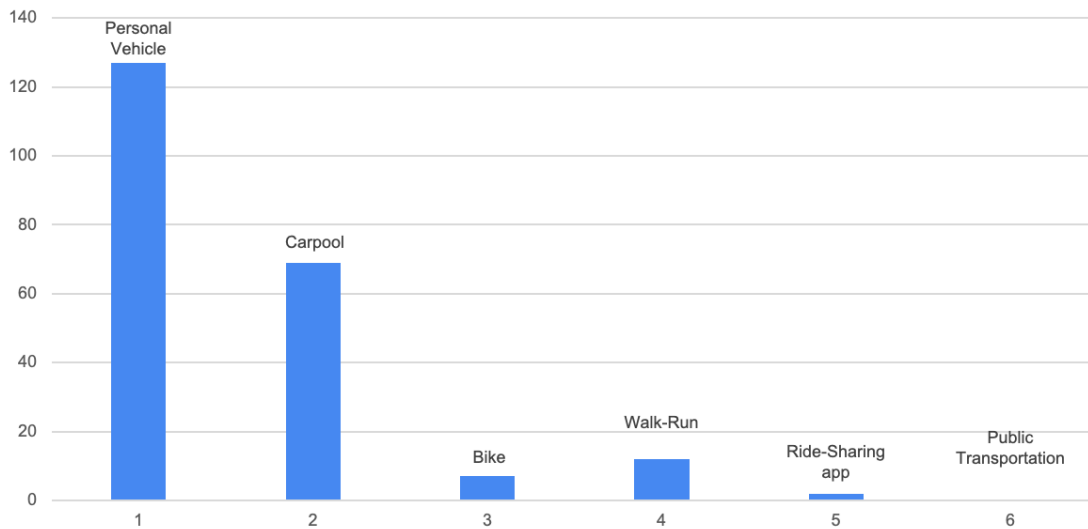
The problem with outdoor hotspots in the area is the physical distance needed to be traveled in order to get to these popular destinations. This allows only those with access to reliable transportation to partake in outdoor activities such as hiking, mountain biking, kayaking or fly fishing, and derive the associated health benefits. Given Asheville's historical reliance on tourism for a significant period, it becomes crucial to recognize the scarcity of more paths and trails traversing through the city. These urban pathways and parks could serve as gateways to outdoor recreation for city dwellers. The absence of such gateways renders the cultivation of environmental consciousness and trail stewardship nearly impracticable.

This scarcity of spaces can be attributed to the recent surge in urban housing, wherein potential areas suitable for parks and green spaces are being repurposed into economic hubs, aligning with the city's growth trajectory.



**Figure 3.** Distance traveled to get to an outdoor recreation space

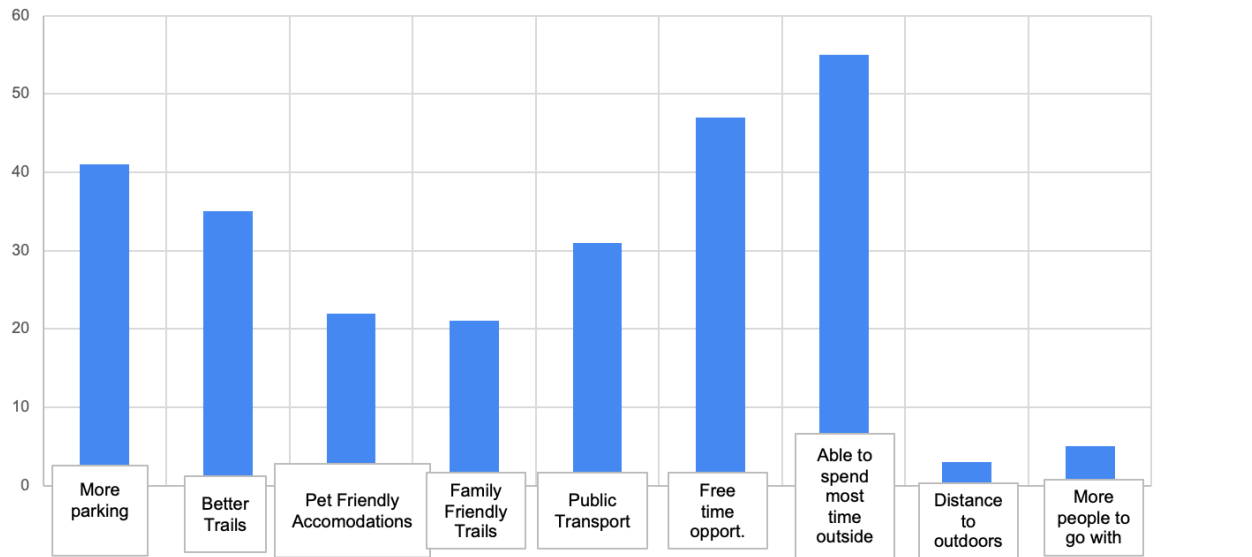
Accessing outdoor recreation destinations, such as the Blue Ridge Parkway, Pisgah National Forest, Bent Creek Experimental Forest, Craggy Gardens, and various other popular tourism spots, can pose a significant challenge for individuals without a reliable means of transportation. This obstacle is particularly pronounced for those who depend on public transport or others for commuting to outdoor leisure spots. The data collected underscores this, revealing that none of the respondents have utilized public transportation to reach outdoor recreation areas (Fig 4.). Instead, personal vehicles overwhelmingly dominate as the preferred mode of transportation. This trend reflects the considerable distances that need to be covered to reach outdoor destinations. While a minority of respondents can either walk, run, or bike to these spaces, the majority are reliant on automobiles for access.



**Figure 4.** Method of Transportation to get to outdoor recreation area

To comprehend how we can enhance diversity in outdoor spaces and increase participation in trail maintenance volunteering, it is essential to grasp the factors that would encourage people to engage in outdoor recreation. Therefore our survey included the question, "What would make it more likely for you to go outdoors". The responses illuminated that outdoor recreation is perceived as time-consuming, primarily because there are limited options for activities like hiking, mountain biking, or kayaking within the city. Consequently, these pursuits often take place in locations situated 20-50 miles from the city center, distances challenging to traverse without a motor vehicle in Asheville's car-dependent infrastructure. The prevalent reliance on cars explains why "more parking" emerged as the third most popular response concerning ways to increase

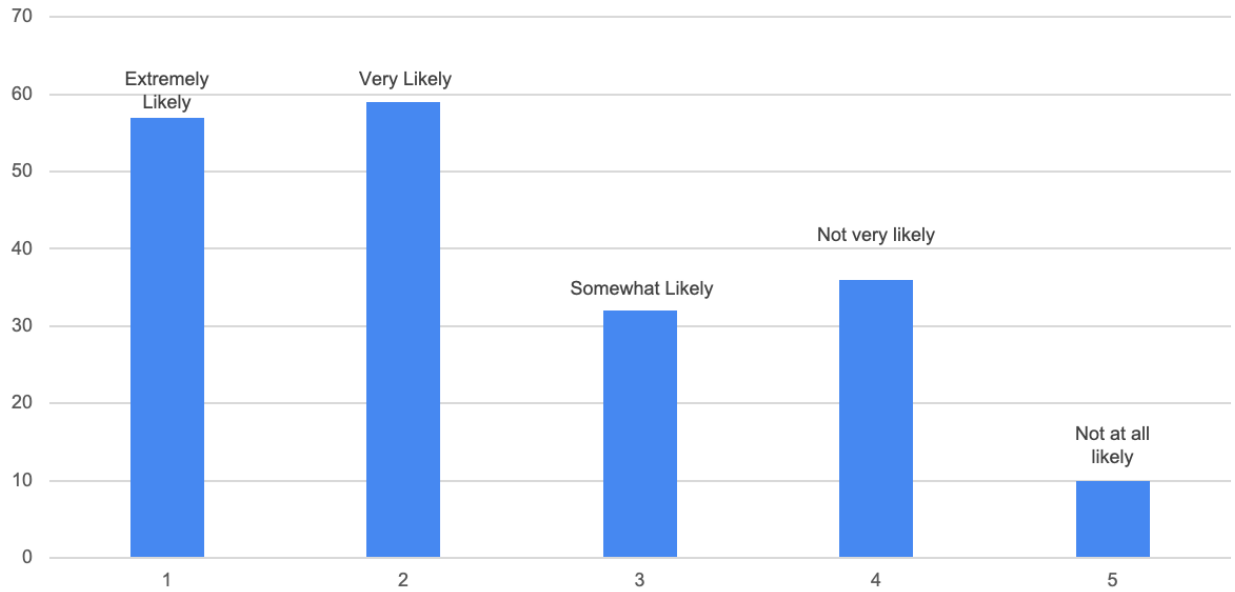
outdoor space visitation frequency. Nevertheless, survey respondents emphasized a clear preference for public transportation as an alternative. This preference underscores that people would be more inclined to participate in outdoor recreation if public transportation were a viable means of reaching these spaces. This emphasizes the impact of the considerable distances people must travel to access outdoor areas and foster a stronger connection to nature. Not only can extensive travel in personal vehicles pose potential risks, but it can also incur higher costs.



**Figure 5.** What would make it more likely for you to spend more time outdoors

Becoming a trail maintainer involves establishing a connection with the trail (or trails) that you commit time and effort to care for. This process is gradual and cannot be accelerated abruptly from 0 to 100 in a single day. Figure 5 illustrates that individuals would express greater interest in outdoor activities if there were "better trails" available to them. These are the individuals that organizations like the CMC should target—those explicitly interested in outdoor recreation, who would enhance their outdoor engagement if trails were improved or more tailored to their preferences. Organizations can make a substantial impact by reaching out to individuals who desire to explore trails but face obstacles such as time constraints, distance from trails, or a lack of community support. By assisting these individuals in forming lasting connections with the outdoors, organizations can contribute to the development of lifelong relationships with the land. This, in turn, fosters environmental consciousness, encouraging people to care about their surroundings and the trails they traverse. Therefore, it becomes crucial for organizations like the CMC to explore strategies that can facilitate increased participation in outdoor recreation, recognizing that building connections with nature is a prerequisite for cultivating trail maintainers.





**Figure 6.** How likely are you to volunteer in trailwork

When analyzing the responses in Figure 6, it's crucial to bear in mind that, although the survey managed to capture input from various demographics, it does not provide an accurate representation of the entire Asheville population. It is essential to recognize the inherent biases among respondents. These individuals, by participating in a volunteer survey about equity in outdoor recreation and trail volunteerism, demonstrate at least a predisposition toward environmental concern. This predisposition likely contributes to the notable trend where nearly half of the responses to the question "how likely are you to volunteer in trail work?" fall into the categories of "extremely likely" or "very likely" (Fig 6). To effectively address the needs of volunteer-driven organizations like the CMC, special attention should be directed toward the segment of respondents categorized as "somewhat likely" or "not very likely." This group represents individuals who are currently undecided or hesitant about volunteering in trail work maintenance, making them a pivotal target for organizational engagement and encouragement.

## 6. Conclusion

The disparity between outdoor recreation spaces and the average resident of Asheville and its environs is substantial. The collected data underscores this gap, revealing that a significant portion of respondents who are not actively engaged in volunteer groups overseeing parks and trails struggle to name places they frequently visit. Some respondents are just discovering the abundance of locations within city limits that they could regularly explore. This discrepancy can be attributed to the prevailing perception among the general public regarding outdoor recreation, especially in a city heavily reliant on tourism for revenue. While visitors from around the world flock to Asheville to indulge in the natural beauty and engage in outdoor activities during vacations, locals often perceive these activities as reserved for those with sufficient time and financial

means to travel to the city, paying tourist prices for accommodations and meals. This perception further widens the divide between those who travel from afar to partake in outdoor activities and the residents within city limits who have yet to explore such opportunities.

## 7. Acknowledgements

I extend our sincere gratitude to the McCullough Institute for their invaluable support, which played a pivotal role in making this study possible. Additionally, we would like to express our appreciation to the Carolina Mountain Club for their generous backing and collaborative efforts. Special thanks to Dr. Alison Ormsby, Dr. Casey King, and Dr. Jonathan Brown for their guidance, expertise, and unwavering support throughout the research process. We are also grateful to Rachel Muir, Karen Schultz, and Jan Onan for their crucial contributions and participation in this study. Without their assistance, dedication, and involvement, the successful completion of this research would not have been achievable.

## 8. References

1. Club, C. M. (n.d.). *Carolina Mountain Club History*. History. <https://www.carolinamountainclub.org/index.cfm/do/pages.view/id/39/page/History>
2. Cavin, D. A. (2008). *Understanding the experiences of African American outdoor enthusiasts*. Texas A&M University.
3. [https://www.researchgate.net/publication/41030764\\_Understanding\\_the\\_experiences\\_of\\_African\\_American\\_outdoor\\_enthusiasts](https://www.researchgate.net/publication/41030764_Understanding_the_experiences_of_African_American_outdoor_enthusiasts)
4. Ceylan, M. (2019). Analysis on the environmental ethics awareness of outdoor recreation leaders. *Journal of Physical Education and Sport Management*, 10(1), 1-10. [https://www.researchgate.net/publication/333719700\\_Analysis\\_on\\_the\\_environmental\\_ethics\\_awareness\\_of\\_outdoor\\_recreation\\_leaders](https://www.researchgate.net/publication/333719700_Analysis_on_the_environmental_ethics_awareness_of_outdoor_recreation_leaders)
5. Finney, C. (2014). *Black faces, White Spaces: Reimagining the relationship of African Americans to the Great Outdoors*. The University of North Carolina Press.
6. Green, G. T. (2000). *The effect of an outdoor recreation program on the resilience of low-income, minority youth*. University of Georgia. <https://www.proquest.com/openview/22e3f11b4963d516131a09437a8deb92/1?cbl=18750&diss=y&parentSessionId=5wH5Q8KyzG5yAF0I5zhcl0Lww0RNGxBgIV017yxTVdw%3D&pq-origsite=gscholar&accountid=8388>

7. Metcalf, E. C., Burns, R. C., & Graefe, A. R. (2013). Understanding non-traditional forest recreation: The role of constraints and negotiation strategies among racial and ethnic minorities. *Journal of Outdoor Recreation and Tourism*, 1, 29-39.  
<https://www.sciencedirect.com/science/article/abs/pii/S2213078013000066>
8. Slavishak, E. (2012). Loveliness but with an Edge: Looking at the Smoky Mountains, 1920–1945. *Journal of Social History*, 45(4), 1074-1096.  
<http://www.jstor.org/stable/41678951>.
9. Stanfield, R., Manning, R., Budruk, M., & Floyd, M. (2005). Racial discrimination in parks and outdoor recreation: An empirical study. In *Proceedings of the 2005 Northeastern recreation research symposium* (pp. 10-12). Newtown Square, PA: USDA Forest Service, Northeastern Research Station.  
[https://www.fs.usda.gov/ne/newtown\\_square/publications/technical\\_reports/pdfs/2006/341%20papers/stanfield341.pdf](https://www.fs.usda.gov/ne/newtown_square/publications/technical_reports/pdfs/2006/341%20papers/stanfield341.pdf)
10. Tarin, C. A., Upton, S. D. L. S., & Hernández, L. H. (2021). “We Need to be Better”: Race, Outdoor Recreation, and Corporate Social Advocacy. *Frontiers in Communication*, 6, 726417.  
[https://www.researchgate.net/publication/356809807\\_We\\_Need\\_to\\_be\\_Better\\_Race\\_Outdoor\\_Recreation\\_and\\_Corporate\\_Social\\_Advocacy](https://www.researchgate.net/publication/356809807_We_Need_to_be_Better_Race_Outdoor_Recreation_and_Corporate_Social_Advocacy)
11. Theodori, G.L.; Luloff, A.E.; Willits, F.K. The Association of Outdoor Recreation and Environmental Concern: Reexamining the Dunlap-Heffernan Thesis 1. *Rural Sociol.* 1998
12. Wang, J., Sankaridurg, P., Naduvilath, T., Li, W., Morgan, I. G., Rose, K. A., ... & He, X. (2023). Time outdoors positively associates with academic performance: a school-based study with objective monitoring of outdoor time. *BMC Public Health*, 23(1), 645.  
[https://www.researchgate.net/publication/369791308\\_Time\\_outdoors\\_positively\\_associates\\_with\\_academic\\_performance\\_a\\_school-based\\_study\\_with\\_objective\\_monitoring\\_of\\_outdoor\\_time](https://www.researchgate.net/publication/369791308_Time_outdoors_positively_associates_with_academic_performance_a_school-based_study_with_objective_monitoring_of_outdoor_time)
13. Winter, P. L., Crano, W. D., Basáñez, T., & Lamb, C. S. (2019). Equity in access to outdoor recreation—Informing a sustainable future. *Sustainability*, 12(1), 124.  
[https://www.researchgate.net/publication/338118789\\_Equity\\_in\\_Access\\_to\\_Outdoor\\_Recreation-Informing\\_a\\_Sustainable\\_Future](https://www.researchgate.net/publication/338118789_Equity_in_Access_to_Outdoor_Recreation-Informing_a_Sustainable_Future)
14. Williams, G. (2014). *An investigation of hiker diversity and inclusivity on the Appalachian Trail*. Prescott College.  
[https://www.researchgate.net/publication/282132774\\_An\\_Investigation\\_of\\_Hiker\\_Diversity\\_and\\_Inclusivity\\_on\\_the\\_Appalachian\\_Trail](https://www.researchgate.net/publication/282132774_An_Investigation_of_Hiker_Diversity_and_Inclusivity_on_the_Appalachian_Trail)