





Headstand in the alpine of Rocky Mountain National Park. **Photo credit:** Tucker Stapleton

Constraints to Wilderness Recreation: A Scoping Review of Existing Research

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ABSTRACT

Considerable research has been conducted on the constraints to recreation that traditionally underrepresented communities in the United States confront; however, there remains a lack of synthesis concerning constraints to visitation to federally designated wilderness areas. This scoping review of the current available literature seeks to reveal what constraints have been identified to visitation to federally designated wilderness in the United States and what groups are experiencing them. Constraints identified include discomfort and safety concerns specific to wilderness settings, cultural expectations, and issues of time, cost, and access. Additionally, constraints are explored with reference to the influence of management actions focused on preserving wilderness character, and directions of future research are discussed.



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Outdoor recreation participation in the United States has risen substantially over the last two years; in 2020, 7.1 million more Americans participated in at least one outdoor activity than the previous year, driven in large part by the COVID-19 pandemic (Outdoor Foundation 2021). Despite more participation overall, particular groups remain underrepresented as visitors to parks and protected areas relative to their representation in the U.S. population at large (Outdoor Foundation 2021). These groups include historically marginalized communities such as BIPOC (Black, Indigenous, and People of Color), LGBTQ+ individuals, women, people with disabilities, people of lower socioeconomic status, and/or the elderly (Executive Order 14035, 2021). Concerning visitation to wilderness areas, white visitors are considerably overrepresented (USDA Forest Service 2018). For example, a 2018 US Forest Service visitor report identified that white visitors made up 94.6% of wilderness visitors (USDA Forest Service 2018). The lack of visitation by certain segments of the US population can be considered an environmental justice issue, given the health benefits provisioned through wildland recreation (Floyd and Johnson 2002). Thus, the purpose of this review is to shed light on the constraints underrepresented groups experience related to visitation to federally designated wilderness in the United States.

The study of constraints to leisure participation has received significant attention since the 1980s; constraints can be defined as anything that "inhibit(s) people's ability to participate in leisure activities, to spend more time doing so, to take advantage of leisure

services, or to achieve a desired level of satisfaction" (Jackson 1988, p. 203). Although different structures have been used to conceptualize constraints, and some researchers have found it to be limiting (Floyd et al. 1994; Stodolska and Jackson 1998; Stodolska et al. 2019), the tripartite model proposed by Crawford and Godbey (1987) has been the mostly widely used and organizes constraints into intrapersonal, interpersonal, and structural categories (Rushing et al. 2019). Intrapersonal constraints are internal to the individual and psychological, such as fear for personal safety or lack of interest; interpersonal constraints include individuals' interaction with others and can include the lack of a partner; structural constraints arise from environmental factors such as time available for recreation or proximity of leisure facilities (Zanon et al. 2013).

Recreation constraints can be influenced by factors such as age, race, and income (Crawford and Godbey 1987). Walker and Virden (2005) identified race/ethnicity, gender, cultural/national forces, and socioeconomic forces as macro-level factors antecedent to constraints. While researchers have found mixed results on the influence of different demographics on constraints, race and ethnicity are commonly associated with certain constraints such as affordability of recreation, distance to parks, lack of transportation, lack of information about recreational opportunities, and fear of crime (Rushing et al. 2019). Concerning park visitation, specifically, Zanon et al. (2013) conducted a meta-analysis of 22 studies examining constraints in North America. The authors identified 10 commonly perceived park visitation constraints,

including (1) the intrapersonal constraints of lack of interest, poor health, and fear; (2) the interpersonal constraint of lacking a partner to visit with; and (3) the structural constraints of "cost, lack of facilities, knowledge, information, transport, time and location or lack of proximity to a park" (Zanon et al 2013, p. 478). A more recent review by Sánchez et al. (2020) found that outdoor recreation managers most often focus efforts to address constraints within protected area boundaries and that additional effort should be taken to reach out beyond boundaries to underserved communities. While most research in this field has focused

on constraints to outdoor recreation in municipal and local park settings, less research has focused on constraints in more remote wildland settings or wilderness areas.

This review focuses specifically on constraints to visitation to federally designated wilderness in the United States, as codified by the 1964 Wilderness Act. This law set aside lands – and created a process for designating new lands – included in the National Wilderness Preservation System (NWPS) to be "administered for the use and enjoyment of the American people" and mandated that managing agencies preserve and protect



Figure 1 - A woman backcountry skier climbs the south face of Mt. Fairchild in Rocky Mountain National Park Wilderness (Tucker Stapleton). Two studies have indicated that BI-POC communities are constrained from wilderness recreation in Rocky Mountain National Park Wilderness due to factors such as cultural expectations, lack of knowledge about opportunities, and fear for one's personal safety.

wilderness character (Hendee et al. 1990). Stewards of federally designated wilderness aim to preserve wilderness character, and NWPS administering agencies generally accept that wilderness character includes the following qualities: untrammled, natural, undeveloped, solitude or a primitive and unconfined type of recreation, and other features of value including scenic, scientific, or cultural values (Landres et al. 2012). However, it is hypothesized that management practices required to preserve wilderness character may have unintended consequences that constrain certain recreationists. For instance, management actions intended to enhance the undeveloped character of wilderness (e.g., limiting footbridges) may present an unintended consequence for individuals with physical disabilities. Further, management actions intended to enhance solitude (e.g., limiting group sizes) may present the unintended consequences of reducing perceptions of recreationist safety or creating the very feeling of societal oppression that solitude is intended to help us escape. Concerning the latter, Meyer and Borrie (2013) conclude:

Perhaps a common underlying premise is that oppression alienates and excludes people from full participation in society and thus we wonder if the search for refuge, connection, and belonging might be common links among how 'Othered' populations can experience wild nature. Saying this, we recognize that understanding wilderness as a refuge from other forms of oppression has limitations, particularly in terms of accessibility, histories of colonization, and assumptions of a singular able-bodied experience. It is important therefore to conceptualize wilderness as a dynamic socio-cultural and racialized space which necessarily recognizes the multiple and shifting meanings of wilderness experiences. (p. 314)

With this in mind, the unintended consequences resulting from wilderness designation are likely coupled with, or exacerbated by, the colonial origins of the wilderness construct (Erickson et al. 2009; Grebowicz 2015; Johnson et al. 2004). For instance, Hays (2019) proposes that the very concept of the park or protected area enables "the performance of colonial and contemporary whiteness" (p. 142), and "the idea of wilderness should therefore be seen as not simply socially constructed ... but as tethered to notions of race" (p. 142). Fletcher et al. (2021) describe the colonial and racial project of wilderness within the larger binary framework colonial powers overlaid on nature and culture (i.e., wild and civilized). As Swing (2011) notes, near the turn of the 20th century in the United States "the colonial desire to conquer the land evolved into the belief that it should be protected and preserved for something beyond its utilitarian use" (pp. 57–58). In some cases, maintaining the binary between nature and culture within protected and preserved wilderness areas meant the removal of Indigenous, non-Indigenous agrarian, or other resource-dependent communities and all signs of their historic presence to ensure the erasure of culture (or certain cultures) from the wilderness landscape (Watt 2002). Thus, considering the unique

management obligations and history of wilderness, this study aims to identify and summarize the available literature on constraints to wilderness visitation and seeks to answer the following research questions for the benefit of wilderness managers and researchers:

- 1. What is the scope (i.e., breadth and key findings) of the current available literature concerning constraints to recreation in designated wilderness?*
- 2. What constraints have been identified to visitation to federally designated wilderness in the United States?*
- 3. How are the identified constraints related to the mandates for management included in the Wilderness Act of 1964?*

Methods

This study was conducted as an empirical scoping review (see Arksey and O'Malley 2005; Levac et al. 2010). Scoping reviews are used to "map the concepts underpinning a research area and the main sources and types of evidence available" (Tricco et al. 2016). This approach differs from that of a systematic literature review in that it does not seek to assess the quality of included studies or engage in meta-analysis but rather is highly efficient in providing a comprehensive overview of literature when there is limited research (Hanneke et al. 2017). A scoping review was chosen to address this study's research questions because of the specificity of the research area and the low number of research items we expected to find. This study follows Arksey and O'Malley's (2005) methodological framework, which introduces a five-step process for conducting scoping reviews, later refined by the detailed recommendations of Levac et al. (2010). This review process proceeds as follows: identify the research question, identify relevant studies, select studies, chart the data, and summarize the results.

Research items were collected from a search of six databases: Aldo Leopold Wilderness Research Institute publication database, Google Scholar, US Forest Service Treesearch, Web of Science, Ebsco Host, and ProQuest's "Multiple Databases." In addition, four journals in the outdoor-related field were targeted and searched including the Journal of Outdoor Recreation and Tourism, the International Journal of Wilderness, the Journal of Park and Recreation Administration, and the Journal of Leisure Research. The searches used the same Boolean-based keyword inquiries (see Table 1). The research items yielded were then screened using predetermined inclusion criteria: the item is published in English, empirical research and not a commentary or essay, focused on visitors to one or multiple US. federally designated wilderness areas, and focused on constraints to visitation. Because of the expected limited number of research items, there was no date range specified for publication of the research items, and dissertations and theses were included.

Each item that met the inclusion criteria was coded for both emergent and theoretically relevant themes as guided by Crawford and Godbey's (1987) tripartite framework and tested for intercoder reliability. Constraints were classified into the following categories: structural, intrapersonal, or interpersonal. The specific types of constraints within each category for each research item were also recorded in a common spreadsheet; these constraint categories and the specific constraints found for each item can be found in Table 2. Additionally, the wilderness area studied, the encompassing state, and the administering agency of the area(s) were recorded, and counts were generated.

Results

Our search identified a total of nine papers that met the inclusion criteria (note: one item is a dissertation associated with an article published by the same author on the same study and was not included in further analysis). Of these items, three were focused on wilderness areas administered by the US Forest Service (USFS), three were focused on National Park Service (NPS) administered wilderness, and two included studies utilizing a national survey, and they therefore did

not focus on a single federally administered wilderness area or administering agency. Although the scope of the research items is limited, the geographic locations of the wilderness areas studied are varied and include the encompassing states of Georgia, South Carolina, Colorado, Minnesota, and Nevada. Three research items utilized only quantitative methods for data collection, three items utilized only qualitative methods, and two studies used a mixed-method approach. Three items focused on Black/African American visitors, and one item focused primarily on women. One item – Schneider and colleagues' (2011) paper on structural constraints to visitation of Boundary Waters Canoe Area Wilderness (BWCAW) – focused on the constraints experienced by all visitors to the wilderness area but did not include the demographic information of participants. The remaining research items sampled a variety of traditionally marginalized groups, including women, immigrants, minorities, lower-income and lower-educated groups, and the elderly.

The constraints identified in the research items were charted (see table 2), and common themes – as organized through the chosen theoretical framework – are outlined below.

Table 1 - Defined scoping review keywords

"wilderness"	"constraints" "barriers" "discrimination"	"visitation" "access"
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Note: See an example Boolean search phrase: "wilderness" AND ("constraints" OR "barriers" OR "discrimination") AND ("visitation" OR "access")

Intrapersonal Constraints

Five studies reported the perceived danger of the area as a constraint to wilderness visitation. For example, Bond's (2007) study of women wilderness users identified that some of the women interviewed felt significantly constrained by "fear of assault by men" (p. 57), resulting in a general vulnerability and uneasiness about wilderness. Additionally, Davis's (2015) study of African American fishers in Congaree National Park identified that some perceived the wild animals found in the park as "dangerous" (p. 92) and considered the subsequent inability to defend themselves due to the park's restrictions on firearms as a constraint to visitation. More broadly, Green et al. (2007) identified concern for people's "personal safety" (p. 31) as one of the most common constraints experienced by those surveyed as part of the 2001 National Survey on Recreation and the Environment. Two studies explored how historical racism related to this intrapersonal constraint: Erickson et al. (2009) discussed how it influenced their study's Black/African American participants' fear for their physical safety in perceived "White spaces" (p. 538) such as Rocky Mountain National Park, and Roberts and Rodriguez (2008) discussed how perceived racism influenced study participants' reports of feeling unsafe in the presence of certain groups.

Perceived physical abilities and skill level was another intrapersonal constraint identified by two studies. Bond (2007) discussed the physical challenge aspect of wilderness recreation, as well as self-doubt in abilities, as common obstacles experienced by the women interviewed in the study. More

broadly, Green and colleagues' (2007) study found the constraints of "hiking and climbing trails [being] difficult and physically tiring activities," "physical disability," and not having "enough hiking, map-reading, or camping skills" (pp. 30–31) as more significant for the elderly, women, Black/African American, Hispanic/Latinx, and lower-income groups.

Finally, three studies identified feelings of general discomfort as a constraint. According to Green and colleagues (2007), the constraint of "feeling] uncomfortable in wild, remote, natural areas" (p. 31) was commonly reported among the elderly, women, Blacks/African-Americans, and Hispanics/Latinx. Erickson and colleagues' (2009) study found that many study participants felt uncomfortable occupying traditionally "white spaces" (p. 538) as a result of historical racism and associated negative connotations with natural spaces. Finally, Roberts and Rodriguez's (2008) study participants identified feeling uncomfortable with bugs/wildlife as a constraint to visitation.

Interpersonal Constraints

Five studies identified lack of knowledge as a significant constraint to visitation to wilderness areas, including lack of exposure as a young child. Bond (2007) reported that some women who felt as if they had a lack of experience and knowledge about hiking in wilderness felt constrained, but those constraints were easily negotiated. Similarly, Green's (2007) study identified the lack of awareness of wilderness areas and the knowledge of recreation opportunities as a significant constraint for women, lower-educated people, and Blacks/African Americans. Both Erickson and colleagues' (2009) study and Roberts and

Constraint Categories	Specific constraints identified
<i>Intrapersonal</i>	
Bond, 2007	<i>Fear of male assault, physical challenge, self-doubt, lack of knowledge</i>
Davis, 2015	<i>Sense of danger</i>
Erickson et al., 2009	<i>Negative connotations of natural spaces</i>
Green et al., 2007	<i>Physical ability, lack of skills, feelings of discomfort, safety concerns</i>
Roberts and Rodriquez, 2008	<i>Personal discomfort/safety issues</i>
<i>Interpersonal</i>	
Bond, 2007	<i>Family obligations, lack of companions, cultural expectations, doubts of others</i>
Davis, 2015	<i>Lack of community outreach, lack of knowledge of park information/regulations</i>
Erickson et al., 2009	<i>Lack of exposure as a child, cultural expectations of activities</i>
Green et al., 2007	<i>Family and friends don't visit</i>
Johnson et al., 2004	<i>Lack of acculturation (time in the US)</i>
Roberts and Rodriquez, 2008	<i>Socialization, lack of knowledge of benefits, lack of exposure as a child, need for cultural permission</i>
Schneider et al., 2011	<i>Family obligations</i>
<i>Structural</i>	
Bond, 2007	<i>Time, cost, proximity</i>
Davis, 2015	<i>Traditional use limited, lack of access to fishing sites, lack of preferred facilities</i>
Erickson et al., 2009	<i>Cost, historical travel patterns still in place</i>
Green et al., 2007	<i>Time, cost, lack of basic services (restrooms)</i>
Porter, 2001	<i>Proximity and access (travel time), income</i>
Roberts and Rodriquez, 2008	<i>Culture of NPS, lack of representation, insufficient interpretive efforts</i>
Schneider et al., 2011	<i>Time, access (permit restrictions, campsite availability)</i>

Table 2 - Constraints identified in the research items retrieved through the scoping review

Rodriguez's (2008) research mentioned the lack of exposure as a child to wilderness areas as being a significant constraint to Black/African American and Hispanic/Latinx visitation to Rocky Mountain National Park and also discussed the lack of knowledge of the available opportunities as a finding in the study. The question, "How would I benefit?" (p. 54) was common among focus group respondents in Roberts and Rodriguez's study. A key finding of Davis (2015) was the lack of knowledge about Congaree National Park boundaries, designation, and regulations and park staff's insufficient outreach to the community.

Another interpersonal constraint, cultural expectations, was reported in four studies. The women interviewed in Bond's (2007) study discussed how cultural expectations of their role as women imposed by society and family members were constraining to wilderness recreation. Concerning race, Erickson and colleagues' (2009) study discussed how many Black/African American study participants felt that visiting Rocky Mountain National Park was a "white thing" (p. 540) and didn't want to be perceived as rejecting Black/African American culture if they visited. Similarly, Roberts and Rodriguez (2008) reported the importance of "social permission" (p. 54) from the community and peers in the Black/African American study participants' outdoor recreation preferences. Finally, Johnson et al. (2004) discussed how fewer years spent in the United States, or the lack of acculturation of immigrants, was a constraining factor affecting visitation and on-site wilderness use values. The lack of a partner or other companions was identified as an interpersonal constraint in two studies. In Bond's (2007) research, the women study participants reported feeling constrained by not being able to find a compatible backpacking partner.



Figure 2 - A mostly white, male audience watches President Lyndon B. Johnson sign the Wilderness Act of 1964 (Lyndon B. Johnson Presidential Library). Bond (2007) discusses how cultural expectations of women's roles – as imposed by society and family members – were constraining to wilderness recreation management.

Additionally, Green et al. (2007) identified the lack of family and friends visiting wilderness areas as a significant constraint for higher-income groups.

In addition, family obligations, specifically feeling restricted because of lack of childcare or needing to be present for partners and family, was included as a significant constraint to women in Bond's (2007) study. Similarly, Schneider and colleagues (2011) found that "children and other family commitments were important factors that determined available time" (p. 17) for BWCAW visitors. Participants in this study explained how having young children, particularly infants, limited the amount of free time to get out and enjoy the Boundary Waters (Schneider et al. 2011).

Structural Constraints

Three studies discussed time as a significant structural constraint experienced by study participants. Both Bond (2007) and Schneider and colleagues' (2011) studies mentioned time away from work, both familial/domestic unpaid labor as well as careers, as being difficult to achieve. Similarly, Green et al. (2007) listed the constraints of not having "enough time because of long work hours" (p. 31) as being significant for higher-income groups and groups with a higher education level.

Cost was another structural constraint mentioned in three studies. Both Erickson et al. (2009) and Green et al. (2007) discussed lack of affordability in terms of travel and buying necessary equipment as salient constraints for Blacks/African Americans, Asian-Pacific Islanders, and individuals living in the southeastern United States. Bond's (2007) study mentioned cost as a constraint but not

a significant one for highly educated, higher income women study participants. Through a different approach, Porter's (2001) study utilized a GIS-based network analysis to show socioeconomic inequalities related to use and nonuse values of wilderness areas in North Georgia and discussed income as a constraint due to the high cost of necessary equipment to participate in wilderness activities, as well as rising home prices in the areas closest to wilderness due to an influx in higher-income retirees drawn to these areas.

Four studies discussed access issues and proximity to wilderness as being a significant constraint. Porter's (2001) study showed that women and nonwhite groups lived farther away from the Georgia wilderness areas studied, increasing drive time to those areas and restricting access. Similarly, some women in Bond's (2007) study identified lack of proximity to wilderness areas, transportation, and crowding as constraints to visitation. On a more focused scale, Davis's (2015) study in Congaree National Park discussed how the wilderness designation within the park increased the distance Black/African American anglers had to walk to access fishing sites, specifically constraining for the elderly and those with mobility issues. Additionally, not being able to afford a boat and the lack of access to private hunting clubs was constraining for the anglers. In a different context, Schneider et al. (2011) identified permit restrictions and campsite availability to be particularly restraining for visitors of the BWCAW.

In addition to access issues, the lack of preferred facilities and basic services was



Figure 3 - To date, no research has examined the specific constraints those with disabilities face when visiting federally designated wilderness.

mentioned as a structural constraint in two studies. Davis (2015) discussed how Congaree National Park's lack of game and sport facilities, and wilderness restrictions on music, cooking, and large gatherings restricted the preferred activities of the Black/African American community. More broadly, Green and colleagues' (2007) study found that the "lack of basic services" was particularly constraining for the elderly, women, Blacks/African Americans, and Hispanics/Latinx.

Three studies discussed institutional or historical discrimination as a constraint, specifically to Black/African American visitation. Davis (2015) explored how wilderness management at Congaree National Park limits the traditional environmental relationship of

consumptive use that Black/African American anglers have with the park. Further, Erickson and colleagues (2009) discussed how racism excluded Blacks/African Americans from certain destinations and formed the basis for historical travel patterns that are still in place today. Finally, in Roberts and Rodriguez's (2008) study, the exclusionary culture of the National Park Service – specifically, hiring practices, lack of representation, lack of outreach, and insufficient interpretive efforts – was identified by many study participants as being rooted in historical racism and a significant constraint to visitation.

Discussion

The purpose of our review was to examine the available literature and explore what constraints are being experienced by visitors to federally designated wilderness areas in the United States. It is evident from the identified constraints that visitors are experiencing a complex variety, and that women, BIPOC groups, immigrants, the elderly, lower-income, and lower-educated groups are disproportionately affected. Elderly people were primarily constrained by ability. Women were constrained by sense of danger, cultural expectations, ability, lack of companions, familial obligations, and time. BIPOC and immigrant participants were more likely to be constrained by sense of danger, discomfort, lack of awareness, cultural expectations, discrimination, facilities, ability, and money. Many of these constraints are due to a feeling of "otherness" or not belonging in a white space (Roberts and Rodriguez 2008). While many of these constraints are like those identified in previous studies on outdoor recreation more generally (Ghimire et al. 2014; Rushing et al. 2019; Zanon et al. 2013), federally designated wilderness in the United States has numerous unique characteristics that may influence the types of constraints experienced by certain visitor groups.

As evidenced through this review, management actions aimed at preserving wilderness character qualities (e.g., untrammled, natural, undeveloped, solitude, etc.) can create constraints for visitors. Management focus on maximizing opportunities for solitude, coupled with increasing wilderness visitation, has often resulted in implementation of permit systems that inequitably restrict visitation of certain groups (Shelby et al. 1989). In this review, BWCAW visitors were constrained by the inability to obtain a campsite or permit (Schneider et al. 2011). Remoteness is often a unifying characteristic of wilderness areas that can amplify constraining factors identified in this review such as discomfort and sense of danger, which are particularly constraining for BIPOC and women (Bond 2007; Davis 2015; Erickson et al. 2009; Green et al. 2007; Roberts and Rodriguez 2008). To further a sense of remoteness, wilderness is managed for minimal development, which this review found particularly constraining for Blacks/African Americans in Congaree National Park Wilderness (Davis 2015). Research shows that other BIPOC and immigrant communities, such as Hispanic/Latinx people, traditionally prefer facilities to provide cooking and camping opportunities for large, intergenerational family groups (Chavez and Olson 2009; Irwin et al. 1990; Larson et al. 2014; Thomas et al. 2022). The centrality of self-reliance, skill, and challenge in the wilderness character quality of primitive and unconfined recreation can be an impediment to individuals who lack experience, expertise, or who have a physical disability (Johnson et al. 2005). The elderly, women, and BIPOC were more likely to feel constrained by ability-related constraints (Bond 2007; Green et al. 2007), which was often due to cultural expectations and lack of exposure to wilderness and necessary skills associated with wilderness recreation (Bond 2007; Erickson et al. 2009; Roberts and Rodriguez 2008).

In addition, as discussed in the introduction, several researchers have argued that the concept of wilderness – as codified in the Wilderness Act – is a social construction that often reinforces

settler colonialism, whiteness, and masculinity – while concealing the historical displacement, violence, and exploitation of nonwhite and Indigenous people (Corliss 2019; DeLuca and Demo 2001). Critics argue that this elitist construction and subsequently the management of wilderness areas reflect the interests of an exclusive, powerful minority of the population and does not consider the disparate relationships other groups have with these spaces (Johnson et al. 2004; Swing 2011). Constraints related to discrimination, negative connotations, and cultural segregation as discussed in this review are largely contingent on the often-tragic history of dispossession and trauma experienced by marginalized groups in wilderness spaces (Grebowicz 2015).

“While understanding specific constraints to wilderness recreation is useful, movement toward more wholistic understanding of historic and cultural factors informing constraints may facilitate targeting root causes and providing a more equitable, accessible, and inclusive NWPS.”

It became evident when exploring the research items in this review that many of the presented constraints – such as discrimination, cultural expectations, and feelings of discomfort – are not mutually exclusive, and their nuances cannot always be contextualized through the tripartite framework of constraints proposed by Crawford et al. (1991). This framework was chosen to be used in this review since it has been widely referenced in the literature, and, after examining the articles included in the review, the authors found it was the clearest way to present the findings. Other theoretical models such as the marginality, ethnicity, and discrimination hypotheses have been used to study the interplay of socioeconomic barriers, intergenerational leisure patterns, and historical discrimination that minority groups experience and may be better suited to describe the interrelated nature of constraints and how certain groups negotiate them (Erickson et al. 2009; Floyd et al. 1994; Washburne 1978). The research items in this review present constraints in a variety of ways, which can make it difficult to categorize them for generalizability.

Although no two items use the same approach to categorize constraints, two dominant trends emerged: (1) a wholistic and more constructivist approach to understanding the role of cultural expectations and discrimination on wilderness constraints (e.g., Bond 2007; Johnson et al. 2004; Davis 2015; Erickson et al. 2009; Roberts and Rodriguez 2008), and (2) an approach focused more on specific constraints without a cultural or historic context (e.g., Green et al. 2007; Schnei-

der et al. 2011). Porter (2001) and Roberts and Rodriguez (2008) merged these two approaches by using environmental justice (Porter 2001) and discrimination (Roberts and Rodriguez 2008) frameworks to help explain structural constraints. While understanding specific constraints to wilderness recreation is useful, movement toward more wholistic understanding of historic and cultural factors informing constraints may facilitate targeting root causes and providing a more equitable, accessible, and inclusive NWPS.




Figure 4 - An undated photo from Congaree National Park's archives depicts an angler and their catch. Following wilderness designation in the park, Black/African American anglers had to walk increased distances to access fishing sites.

Management Implications and Conclusions

In light of the studies compiled through this review, it is posited that the wilderness areas set aside for the "use and enjoyment of the American people" (Wilderness Act 1964, p. 1131) present unintended barriers that disproportionately constrain groups such as the elderly, BIPOC, and women from visiting these spaces. These constraints may help explain why these traditionally underserved communities visit wilderness less than white Americans. For land management agencies to increase these areas' relevance to diverse communities, there may be value in seeking to identify the groups who disproportionately experience constraints and provide targeted management interventions (Johnson et al. 2004; Zanon et al. 2013).

There are several ways that managers could address these constraints within the bounds of the Wilderness Act. For instance, although managers do not have the authority to designate new wilderness areas near large population centers, there is an opportunity to address issues of access by working within their authority, such as improving road conditions to trailheads. Similarly, and for good reason, most developed facilities are prohibited in wilderness; however, offering women-led or BIPOC-led trainings to help aspiring wilderness recreationists negotiate this lack of facilities (e.g., lack of restrooms) is an achievable goal to address some of the constraints revealed in this review. Additionally, to help aspiring recreationists negotiate constraints related to lack of experience, discomfort, and perceived danger, managers could focus education efforts and communication strategies to better manage expectations and provide skill-building opportunities. Improving public outreach and engagement with outdoor recreation affinity groups (e.g., Latino Outdoors, Outdoor Afro, Black Folks Camp Too, Fat Girls Hiking, etc.) could also help build community and inclusion within wilderness spaces. Finally, on an agency level, there is value in striving for a federal wilderness workforce that is more representative of the nation it serves.

Given the number of research items included in our analysis, it is clear that more research should be conducted specifically focused on federally designated wilderness in the United States to further explore how its unique mandate affects associated constraints. Conducting research in a wider variety of geographical areas and in wilderness areas administered by different agencies such as the Bureau of Land Management and the US Fish and Wildlife Service would be beneficial given the variation in the way areas are managed. Given the understudied nature of urban-proximate wilderness, future research in those areas could be insightful considering the continued lack of visitation by certain groups given that proximity was a salient constraint (Rice et al. 2021; Erickson et al. 2009; Roberts and Rodriguez 2008). In addition, while many of the research items studied a variety of traditionally marginalized groups, certain groups were not included, and future research efforts should focus on other groups who may be experiencing significant constraints, such as LGBTQ+ individuals and people with disabilities. Finally, while this review focused exclusively on federally designated wilderness in the United States, additional research is merited concerning constraints across wildlands more generally. 

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