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July 20, 2020

Breaking Down the Lack of Diversity in Outdoor Spaces

Despite the current circumstances surrounding COVID-19, there is still opportunity to engage in outdoor recreational activity. In Los Angeles, community members can participate in outdoor activities, so long as everyone practices physical distancing, maintaining a minimum distance of six feet apart from others and wears a face mask. We encourage you to take preventative measures if partaking in outdoor recreational activities.

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In previous articles we have discussed the [lack of green space](#) and [parks in low-income communities of color](#) and inner-city neighborhoods, but we have yet to address why Black, Indigenous, People of Color (BIPOC) do not venture out into affluent communities where park space is abundant. After all, the outdoors does not discriminate....right?

What Makes the Outdoors Inaccessible and for Who?

The Black Lives Matter Movement has shed a light on how deeply rooted racism is in our society against Black communities. Racism goes beyond those establishments we typically associate with it, like law enforcement, and really is engrained in institutions across the board, such as the less expected parks and recreation departments. In better understanding the intersection of racism, policy, segregation, and access, one can argue that outdoor and recreational activities in general, have traditionally served white communities. A combination of economic inequality, legalized segregation, and other forms of historical and present-day overt/covert racial violence has perpetuated a diversity gap in the outdoors. Statistics collected from the [U.S. Forest Service](#), [National Park Service](#), and [Fish and Wildlife Service](#) show that although people of color make up nearly [40 percent of the total U.S. population](#), close to 70 percent of people who visit national forests, national wildlife refuges, and national parks are white, while Black people remain the most dramatically underrepresented group in these spaces.

Racialized economic policies, employment discrimination, unequal access to quality education, and other fundamental tools that can build a person's economic standing have historically been denied to BIPOC communities; which makes camping, hiking or any similar ventures inaccessible. Costs of camping gear, entrance fees, lack of vacation days, unpaid leave, and other factors make it difficult for families to participate in outdoor recreation, particularly, BIPOC individuals who are more likely to face these economic barriers. However, even though access to capital reduces the likelihood of a person visiting a park or forest, the underlying issue to acknowledge is race.

The Intersection of Race & Culture in Outdoor Recreation


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should be alarming to us that the few forms of outdoor activities that BIPOC individuals are depicted as participating in are noticeably distant from public lands like national parks. Often, this is chalked up to cultural factors, which in turn gives people less of a sense of urgency to enact change in our outdoor recreation system. While outdoor recreation in our local city parks is important and is being utilized where it is accessible, the experience of visiting a national park and being surrounded by the natural world holds an immeasurable value and should be accessible for all.

The question then is: how much are the cultural factors that influence us a reflection of the history of race relations in America?

A Deeper Look at Systemic Racism in Outdoor Spaces

For this we must take a deeper look into how ownership, access, and the perceived threat of violence play a role into the history of our outdoor system. The inaccessibility to outdoor and green spaces among BIPOC communities comes from institutionalized legislation that, in many cases, segregated people of color away from public lands, like national parks and forests, or deliberately banned them from accessing these spaces. It has only been a little over 50 years since the passing of the [1964 Civil Rights Act](#) which among other things granted permission for Black communities to enter public spaces like national and state parks – spaces they had been banned from prior.

Although new laws were introduced to dismantle legal segregation there is still a perceived threat of violence from generational trauma that keeps people of color from visiting the natural world. The monstrous amount of lynchings that [occurred from 1865 to 1950s](#) usually took place in forests or natural spaces.

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For example, the race riots of 1919, otherwise known as the Red Summer, started because of the wrongful murder of Eugene Williams, a 17-year old Black boy who was killed for crossing into the “white section” of the waters in Lake Michigan. In 2020, we continue to see this play out both in covert ways, as we saw with [Christian Cooper, a Black bird watcher](#) in Central Park, to more overt and life-threatening ways, as we saw with [Ahmaud Arbery who was fatally shot](#) during an outdoor run.

Another systemic component of what makes outdoor spaces inaccessible to BIPOC communities is the white-washing of history and land ownership. In history books and in even in the naming of outdoor spaces, there has been a deliberate and intentional erasure of Indigenous history and ownership of outdoor lands. We have been led to believe that white men like John Muir, were founding fathers of national parks, leading to this belief that park spaces are reserved and owned by white communities. We have yet to acknowledge that John Muir’s thinking, which is so embedded in environmental movements, was influenced by his own privilege and position as a white man in the 19th century. Preservation of the natural wilderness was executed at the expense of Indigenous communities.

How Do We Address Racism in Outdoor Spaces?

While many say ‘the outdoors does not discriminate,’ it is safe to say that our outdoor recreational system is built on the same underlying system of oppression governing our society. This means that we all have a responsibility to actively dismantle the systems that are widening this diversity gap.

To reverse the effects of racism on the outdoors, we must push for policies that have racial and spatial justice at the forefront. By using our social capital through spreading awareness and demanding greater accessibility to the natural world for all, we would be granting communities who have been historically separated from these spaces, an opportunity to enjoy them as well. Programs like [Every Kid Outdoors](#) strive to make the outdoors more inclusive by offering free or low-cost outdoor programs to children from low-income families. [Community Nature Connection](#) focuses on outdoor equity through access and exploration programs. Their Transit to Trails program offers free buses from low-income urban areas to natural spaces like beaches, national parks and mountains. There is also a growing social media movement with several social media accounts dedicated to championing the



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In addition to supporting organizations committed to environmentalism for all, we can also engage in active efforts to listen to BIPOC voices who share their experiences and knowledge so we can continue to mobilize through awareness and demanding greater accessibility to the natural world for all. In turn, we would be opening spaces to communities that have been historically

displaced and removed so they can enjoy them without fear.

Author Bio:

Naomi Humphrey is an alumna of National Health Foundation’s BUILD Health Initiative at Thomas Jefferson Senior High. She is currently an undergraduate student at UCLA, and continues to advocate for park equity and spatial justice for her home community as a member of Prevention Institute’s Powering Healthy Lives through Parks Community Advisory Board, and serving as NHF’s Health Equity Fellow. This article is the second of a series authored by Naomi exploring current issues regarding health equity and the built environment.

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Bitterroot

New Mexico & California Lead the Way on Outdoor Equity

Jake Bullinger • November 19, 2020



In the past two years, New Mexico and California have established state-run outdoor equity funds designed to get more kids participating in outdoor recreation. | [nicolas vadilonga](#)

A hike and picnic on nearby public lands might seem like a low-key family outing. But break down the activity, and it's clear that a lot of resources are required for a

successful trip.

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Consider the know-how involved: Where to go, and how to get there. What food to pack, and how to cook it. Dressing for the weather, and making sure the hike's not too long. And then there is the money. Hiking shoes, backpacks, insulated layers, and waterproof jackets can cost hundreds of dollars. Plus, you need a personal vehicle — preferably one that won't bottom out on the drive to the trailhead.

Factor in the embedded costs, and the act of walking and eating outdoors can be too much for some families to handle. But that's not necessarily the case in Las Cruces, New Mexico. There, Mateo Ortega and his teammates at the social services organization [Families and Youth, Inc.](#), can help.

“We can actually guide [families] through the process,” Ortega, who oversees Families and Youth's Outdoor Legacy Project, told me recently. The organization can help families choose where to go, loan them a cooler to store lunch, and give them a voucher to pay for the food. “They can check out equipment from us. They can even get a gas card from us, if gas is a barrier.”

For many families, those financial and logistical barriers prevent easy access to the outdoors. But two states recently launched grant funds designed to make outdoor recreation more equitable. New Mexico this year [doled out nearly \\$262,000](#) to organizations that help kids in low-income communities of color get outside; Families and Youth received a \$15,000 grant for its Outdoor Legacy Project. And in California, legislators have earmarked [\\$19 million](#) for an outdoor equity grant fund.

These funds send an important message: experiencing the outdoors is a right, not a privilege. Therefore, states should facilitate the ability of their residents — especially kids — to hunt, hike, climb, fish, and ski.

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don't end up ... with an over-emphasis on visitors and tourism and less on the people who live there.”

This story first appeared in the Bitterroot Newsletter. Sign up below to receive Jake's latest reporting right in your inbox.

California has been at the forefront of equity in the outdoors. In 2018, voters passed [Proposition 68](#), a sweeping public-lands bill that dedicated \$1.3 billion to creating and maintaining parks in underserved communities. A year later, lawmakers in Sacramento passed [Assembly Bill 209](#), which established the Outdoor Equity Grants Program. Overseen by the state Department of Parks and Recreation, the program will dedicate millions of dollars each year to outdoor environmental education programs that primarily serve low-income students.

Together, the measures serve as a public-lands double whammy. Prop 68 funds will bring nature closer to low-income communities with the creation of new parks, or by sprucing up neglected ones. Meanwhile, the equity fund prioritizes transportation to state parks, national forests, and other public lands in California, and it will fund programming to engage kids once they arrive.

“California is home to over 280 state parks and millions of acres of public lands that exhibit the natural beauty and history of our state. However, access to outdoor experiences is often out of reach for communities and students of low-income communities. AB 209 brings equity to the accessibility of our parks to these students,” state Assemblymember Monique Limón, the bill’s sponsor, said in a press release last year. (Limón won a seat in the state senate this month.)

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Mexico statehouse in 2019, state Representative Angelica Rubio and Las Cruces City Councilor Gabriel Vasquez, among others, argued that an equity fund be tied to any bill creating an office to promote New Mexico's ski slopes, rivers, and public lands. When the bill passed in [April 2019](#), it included a \$100,000 annual allocation for the equity fund (corporate and private contributions have swelled the pot).

While California's fund emphasizes education, New Mexico lawmakers wanted to promote fun. "The goal was to provide funds to established organizations who are already doing such great work to take young people — particularly kids with low resources, kids of color — outside not to learn a curriculum, but to get their hands dirty," [Rubio said on public radio station KRWG](#).

New Mexico and California aren't the only states trying to get kids outside — [Montana](#) and [Wyoming](#), for instance, have programs to introduce young folks to hunting — but their focus on equity is unique. And it's an important issue to address. An analysis by the Hispanic Access Fund and the Center for American Progress found that 76 percent of low-income people of color live in "[nature deprived](#)" areas that are losing green space at an exceptionally fast rate.

This year, New Mexico handed out its first grants to 25 programs looking to end that nature deprivation. The funds will help Zuni Pueblo get kids onto the Zuni River in both summer and winter, while nonprofit Heart of the Gila will direct the money toward youth activities and conservation work on the [Gila River](#). Numerous recipients will create or expand bicycling programs in communities around the state, while others will on get more kids with disabilities on the trail.

Ortega said the grant fund will help Families and Youth boost its existing outdoor initiatives. [Some of the money will be used to expand its gear library with more tents,](#)

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Christmas tree in nearby Lincoln National Forest. Along the way, participants will learn about conservation in their local forest.

“Our goal is not just to get young people outdoors, but to equip them with the education and equipment to fully become immersed in that experience,” Ortega said. “The Outdoor Equity Fund has allowed us to do what we do in a more robust way.”

The grants are also seeding brand new organizations. Fly Fish NM director Andrew Ortiz said the state’s \$15,000 grant is the first funding his group has received. With it, his fledgling organization plans to set up low-income kids with their own fly gear — waders, rod, reel, the works — and take them out to New Mexico’s waters for a day of fishing (once the pandemic recedes and they’re allowed to load folks into a van). The goal is to get kids hooked on a new activity they otherwise couldn’t afford — and get them to care about the state’s rivers in the process.

“It’s an investment in the youth,” Ortiz said of the state equity fund. “We want to turn these youth into good stewards of the outdoors, and they can keep the rivers clean, and preserve them for the next generation.”

From our sponsor

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The rural West is seeing a steeper and steeper decline into despair, especially among White men. In part 5 of [The Modern West's Ghost Town\(ing\)](#) series, we'll follow the unusual response of one small town when a Vietnam veteran's mental breakdown threatens the town's safety.

Worth a Read

Top stories from around the West

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package, and Senate Majority Leader Mitch McConnell “needs to get off his duff and deliver for the American people.”

...

Pending federal approval, [four dams on the Klamath River are coming down](#), *The Oregonian* reports. The deal to remove the dams required years of negotiations between tribes, Oregon, California, and PacifiCorp, the dams’ utility owner. “This dam removal is more than just a concrete project coming down. It’s a new day and a new era,” Yurok Tribe chairman Joseph James said.

...

Joe Biden [campaigns on mitigating climate change](#). The question now, the *Los Angeles Times*’ Sammy Roth writes, is whether his administration will try to [remove natural gas](#) from the energy mix.

...

Juliana Sukut of the *Billings Gazette* details the life of a [rural public-health worker](#) during the pandemic. “The phone rings off the hook with people upset about testing availability, angry about delayed test results, or mad about health directives being too restrictive or not restrictive enough.”

...

[Could predators be the answer to chronic wasting disease?](#) Researchers studying Yellowstone wolves think so, since they tend to kill the weakest animals in a herd, *The New York Times* reports.

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There's an important detail in [Utah's COVID-19 vaccine plan](#) that's worth noting: Essential workers are second in line, behind only those who work in health care. It'll be up to lawmakers to decide who is "essential," but it seems morally clear that the ag workers, grocery store clerks, and bus drivers who have risked their health throughout the pandemic should get vaccines ahead of those who work from home.

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Jake Bullinger

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Culture  Opinion

_____ culture)

Op-Ed: Access to the Outdoors Is a Basic Human Right

New Mexico wants to create a first-of-its-kind Outdoor Equity Fund for underserved youth. Other states that care about preserving the natural world and raising a new generation of activists should take note.



**By Angelica Rubio
and Stephanie
Garcia Richard**

Published
Feb 6, 2019

The Land of Enchantment: our state motto perfectly captures New Mexico and its sacred Zia, a harmonious symbol of friendship that originated in the Zia Pueblo.

The four words evoke a stunning landscape of mountains, rivers, deserts, forests, and Native American communities. The Land of Enchantment has sunsets that take your breath away, with skylines sketched on a canvas of reds, oranges, purples, and pinks.

The Land of Enchantment promises summers spent hiking, biking, and fishing along the Rio Grande, in the Sandias, or

(<https://www.facebook.com/outsidemagazine>). (<https://twitter.com/outsidemagazine>). (<https://instagram.com/outsidemagazine>). (<https://pinterest.ca>)

brings valley skies dotted with 1,000 hot-air balloons gliding across the horizon, while November sunrises attract early birds

Outside



The Land of Enchantment is the written and lived culture of New Mexico, forged among the distinct and unique cultures of our pre-Hispanic, Spanish, and Native American ancestors.

But for many of our state's youth, the Land of Enchantment is none of these things. It is not rafting, skiing, fishing, hiking, or wildlife watching. The barriers to access these opportunities are too numerous and too ingrained within their communities to overcome.

Our state's kids have to contend with a whole host of issues that prevent them from getting outside, from a lack of transportation to a lack of resources to a lack of access to outdoor-education programs. Maybe they don't have anyone in their lives who cares enough to introduce them to this enchanting natural world. The problems are endemic to the whole state: New Mexico ranks last in child well-being and education, first in childhood hunger, and second to last in childhood economic well-being.

The two of us feel fortunate to have grown up in southern New Mexico, in communities where the outdoors was an integral part of our culture, from the Gila Wilderness to Organ Mountains Desert Peaks National Monument. And our respective upbringings, challenging in their own rights, still provided us with opportunities to see, value, understand, respect, and love the outdoors.

We are now also privileged to have been elected to positions to represent the people of New Mexico and trusted to make the right decisions for current and future generations. That commitment to our constituents drives our action in the state capital of Santa Fe. It drives our will to create and implement public policy that will impact the lives of all New Mexicans.

That's why we're championing efforts to create a state Office of Outdoor Recreation and—more importantly—a first-of-its-kind Outdoor Equity Fund.

The Outdoor Equity Fund, supported by more than 50 state and national organizations representing social, environmental, immigration, and health justice, will make the Land of Enchantment more accessible to everyone. All of our state's youth deserve an opportunity to take advantage of the outdoor recreation and education opportunities our state so bountifully offers. We believe that access to the outdoors is a human right.

Governor Michelle Lujan Grisham has promised to create an Office of Outdoor Recreation this legislative session within the Department of Economic Development. If passed by legislators, the Outdoor Equity Fund would also be created—the only fund of its kind in the nation that would be designed to spur the development of New Mexico's next generation of conservationists.

The Outdoor Equity Fund would live alongside the Office of Outdoor Recreation and be administered by the Youth Conservation Corps for the sole purpose of serving underserved youth up to age 18 in our urban, rural, and Native American communities.

The Fund asks for an initial appropriation of \$100,000 from the state, and it invites private industry, foundations, individual donors, and outdoor retailers to pitch in, too. From there, microgrants would be disbursed to local governments—cities, counties, villages, and towns—as well as nonprofit organizations and Native American communities to help power programs that serve at least a 40 percent low-income youth population.

These microgrants, although small, can have big impacts on underserved groups. They can mean the difference between buying 20 tents for a camping trip or having to sleep outside. They can mean the difference between buying kids fishing

poles or having them stand on the dock watching other families fish. They can mean the difference between visiting a local park or national forest or staying home because there's not enough transportation money in the family budget.

The Outdoor Equity Fund can help transform the youth of our state. We can create communities with leaders who care about our climate, air, water, environment, wildlife, and natural resources. But first we must get them outside.

Outdoor-recreation careers are numerous in New Mexico, with more growth expected with the creation of the Office of Outdoor Recreation. Kids from Deming, Española, Farmington, and Santo Domingo Pueblo can be our future forest rangers, wildlife biologists, soil scientists, and fishing guides. But first we must invest in the next generation as much as we're investing in tourists and retailers.

The benefits of going and playing outside are many—from mental and physical health gains to building community to learning outdoor skills to understanding the natural world and the impacts of a changing climate.

When New Mexico takes care of its youth, it takes care of its future. When we see the hands of many colors, communities, and income levels raised to those pink, purple, and orange skies and truly see the Land of Enchantment reflected on the horizon, then we can be proud of what the Zia symbol represents and all that it means for our kids.

We strongly encourage leaders in other states to create their own Outdoor Equity Funds. Come visit us here in the Land of Enchantment to see how sustainable, ethical outdoor recreation really gets done.

Stephanie Garcia Richard is the commissioner of public lands (<http://www.nmstatelands.org>) for New Mexico. Angelica Rubio is a representative for the state (<http://www.rubionm35.com>). Both women are from southern New Mexico.

Lead Photo: Mobilus In Mobili/Flickr

Article

Equity in Access to Outdoor Recreation—Informing a Sustainable Future

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Abstract: Despite an increasingly ethnically and racially diverse population in the United States (U.S.), growing evidence indicates that minorities are underrepresented in national forest visitation. Many reasons for continuing underrepresentation have been examined, involving research reaching back multiple decades. In the current study, a random sample of residents ($n = 1977$) from four large metropolitan statistical areas in California was involved in a telephone survey about forest visitation. Analysis revealed a continuing pattern of inequities in lifetime visitation to a national forest, as well as recency of visitation. Constraints to national forest visitation show similarities among groups. Lack of time was the most often mentioned constraint, with resource-related constraints more frequently cited by minority respondents. In contrast to prior studies, a lack of information or concerns about discrimination were not cited by survey respondents, though the open-ended approach to top constraints may underpin some of this variation from prior research. The primary information source for outdoor recreation used most frequently and most trusted was the Internet, followed closely by social networks (family and friends). In the presentation of U.S. outdoor recreation information, natural resource management agencies, use groups, and opportunity providers would benefit from incorporating culturally relevant messaging and images to affirm the message of inclusion and welcome.

Keywords: outdoor recreation; cultural diversity; equity; barriers; cultural competence

1. Introduction

Inquiries surrounding racial and ethnic disparities in United States (U.S.) outdoor recreation participation have been the focus of ongoing research for the past 40 years [1]. Research focused on equitable recreation participation in European countries is less abundant [2,3]. The U.S.-based research has consistently indicated that members of racial and ethnic minorities are not proportionally represented from proximate geographic areas among the visitors to federally managed natural resource areas, including national parks and national forests [4–6]. Although efforts in natural resource recreation management agencies have focused on increasing representation of ethnic and racial minorities to address concerns over equity, much remains to be done [1,5]. For example, U.S. national statistics show forest visitation by individuals of Hispanic or Latino descent is not proportionate to the overall population. The National Visitor Use Monitoring Survey Report (2013), the U.S. Forest Service systematic monitoring survey, showed that only 5.5 percent of national forest visits were from visitors of Hispanic or Latino origin [7], whereas Hispanics were 16.2 percent of the nation's 2010 population [8]. Ghimire et al. [4] reported that the most likely visitors to national forests and grasslands are Caucasian,

and least likely visitors are the elderly and ethnoracial minorities. Flores et al. [9] examined racial and ethnic demographic data for U.S. counties within a 50 mile radius of national forest boundaries against national forest visitation estimates across the U.S. to develop an equity index. Overall findings for the nation show an average equity gap of about 23.8 percent, suggesting a continuing issue of disproportionate use of national forest lands among ethnic and racial minorities. Forest Service regional differences were likewise concerning. For example, the Pacific Southwest Region, covering California, had an ethnoracial minority population of about 49.7 percent (± 6.47) and a reported 21.5 percent (± 2.51) minority use, resulting in a 28.2 (± 5.85) equity gap score [9]. Under-representation of ethnic minority groups has also been reported in European studies [2].

With an increasingly diverse population in the U.S., inequities in forest recreation use require continuing exploration to understand underlying factors that help explain differences in participation, and further, remedies that will aid improvements in equity and address environmental justice [10–14]. In part, increasing the share of population that engage in outdoor recreation may require specific attention to ethnoracial variations [12]. Such efforts to engage underrepresented groups are reflective of agency climate contributing to the sustainability of programs and the inclusion of natural resource managing agencies as a part of communities [15]. Broader conceptualizations of sustainability elevate the importance of equity, including the role of nature in contributions to well-being [16]. A number of studies have illuminated the benefits of outdoor recreation and nature exposure, including the benefits of such exposure in remedying income-related inequalities in health [17]; the psychological benefits of nature-based physical recreation [18]; contributions to social cohesion and social interaction [14]; and the myriad emotional, cognitive, and behavioral benefits of nature exposure for young people [19]. The equitable distribution of such benefits helps improve the longer-term prospects of socioecological resilience at the societal scale.

Work on inequities in recreation use has expanded over the years to incorporate a greater number of multi-ethnic groups and methodologies in comparative studies [1]. Some of this work has incorporated heterogeneity within a broader ethnoracial category (cf. [20–22]). Racial and ethnic preference differences for park amenities have been identified in many studies [13,20,23,24]. For example, Latino recreationists' preferences for developed sites (such as restrooms and picnic sites in group configurations), and amenities in areas designed for dispersed use (such as parking areas and trash cans along the river) support use patterns involving extended family or larger groups (see [24] for a review). Whiting et al. [25] associated the preference for developed and maintained areas with social interaction motivations during outdoor recreation outings, and reported this motivation was strongest among Latino visitors. Kloeck et al. [26] reported similar preferences for amenities that would support large, recreating groups among Turkish immigrants to the Netherlands, but not among Chinese immigrants to the same region. They found that Chinese immigrants participating in their study tended to engage in outdoor recreation in smaller groups or alone.

Other factors, too, have been implicated in the complex issue of underrepresented ethnic groups' forest visitation. Over the years, research primarily in the U.S. has identified many barriers to racial and ethnic minority groups' wider use of recreational facilities, including differences in leisure time preferences [27,28], and a lack of time, money, or access [13,29–31].

Another set of studies has pointed to the role of perceived racism/discrimination [5,10,13,20,31,32], and perceptions of compromised safety [23,33,34] as constraints to ethnoracial minority participation in outdoor recreation. Roberts and Chitewere [35] reported experiences of discrimination and 'silent exclusion' as a shared constraint among ethnic minorities that limits visitation to the Golden Gate National Recreation Area. Krymkowski et al. [5] reported differences in outdoor recreation visitation between African Americans and Whites growing over time, owing in part to experiences of discrimination and concerns surrounding safety. General statements indicating perceived lack of safety may also be attributed to these more subtle, yet influential perceptions of discrimination, which may be expressed as not feeling part of the community of recreationists [32,36], or not feeling as though one belongs in a place or among a group [26].

Contemplating the potential role of perceived discrimination benefits from consideration of two general models of discrimination. Gordon's theory of the process of assimilation suggests that as minority groups become increasingly incorporated into the mainstream (majority) society, discrimination will eventually dissipate [37]. In Gordon's view, the problem of ethnic discrimination may prove self-correcting, because as minority groups become more assimilated into the mainstream, prejudice and discrimination may be expected to abate. Following the application of this theory, we would expect that as a nation's ethnic diversity grows, underrepresentation in national forest visitation would abate, and recreating publics would be proportionally representative of the larger population.

This idea stands in stark contrast to that of Portes and his colleagues [38,39], who suggested that as minority groups move into the majority culture they do not all necessarily become more integrated or assimilated; rather, their gradual and segmented movement into the mainstream poses an acute economic and social threat to others occupying subordinate roles. As such, growing (and economically expanding) minorities are more, rather than less likely to face discriminatory treatment (for underlying factors see [40,41]). An unavoidable conclusion arising from Portes' idea is that the current disparities in the use of public and private recreational facilities will widen as time passes, assuming minority groups' economic progress continues. In part, this view reflects a perception of society as increasingly separated by racial and ethnic factors, and as increasingly segregated. Following this approach, the social hierarchy would limit access to resources for some groups, including access to leisure activities.

Additional cultural and social factors likewise influence segmented recreation use by ethnic and racial minorities. For example, ethnic subgroups may prefer to spend their leisure time, composed of discretionary activities, with individuals from similar backgrounds, or engaged in similar recreation activity and forest use practices. Ethnically concentrated use may reflect normative mechanisms helping to define a 'place' and the common activities occurring within it, in part inspired by information transmitted through community networks and direct experience [1,33,42]. Or, ethnic concentrations may reflect the underlying desire to avoid conflict and tension among groups with differing expectations and demands upon a shared space [32,33,42].

A lack of awareness of opportunities or general lack of information has also been more frequently identified as a barrier to outdoor recreation use among minority groups in the U.S. and other countries [21,30,31,33,43]. Researchers have offered communication-based solutions to problems of unequal access. These solutions are of sufficient generality to potentially mitigate some factors that lead to ethnic-based inequalities in natural resource area recreation use [24,29,44]. Communication approaches may be particularly helpful in increasing awareness of opportunities and programs that may be of interest, as well as incorporating messages of inclusion and expanding the awareness of active engagement of diverse cultural groups in outdoor recreation [11,24,30]. Additionally, work has shown the value of targeting messaging paths that reflect cultural variations in information sources that are relied upon and trusted [44–46]. Focused programming is instituting a message of outdoor recreation as a shared cultural experience among ethnoracial minorities to advance inclusion through various means, including the use of social media platforms [11], and involving representatives from members of minority groups to share culturally relevant messages [45,46] and experiences [21,30]. These efforts aim to improve equity through affirming a message that outdoor recreation is part of ethnoracial minority cultures, increasing messages of belonging, and contributing to outdoor recreation as a part of cultural identity [11,26].

Earlier work [29] reported a continuing pattern of ethnoracial differences in reliance on, and trust in various sources for information about outdoor recreation. For example, pre-visit communications among ethnoracial minorities rely heavily on word-of-mouth [24], including from family and friends and other social networks. A detailed examination of information sources (e.g., magazines and newspapers, or radio) used in one culturally diverse region of California revealed a pattern of more frequent reliance on ethnic media outlets and programming among ethnoracial minorities [29,44]. The Internet was reported as a common information source that study participants used and trusted [29]. Inequitable access to computers and the Internet was offered as a cautionary note in this earlier work,

however, as a limitation to using the Internet to reach out to diverse communities regarding outdoor recreation opportunities [44]. The digital divide has been remedied to some degree given broader adoption of smartphone use among Blacks and Hispanics in the U.S., although traditional access through a home computer remains inequitably distributed for these same groups when compared to Whites [47]. Maintenance of culture through enjoyment of ethnic media continues [48], suggesting that although a platform may be similar (e.g., the Internet), particular message streams (e.g., specific webpages) or information sources tailored to communities of interest may be more powerful than a general expectation that increased access will facilitate generic messaging approaches across all ethnic/racial groups [48].

The issues addressed in the present U.S.-based research speak to many of the questions that arise from this brief consideration of research surrounding equity in national forest visitation. The current work contributes to the state of knowledge by advancing assessment of whether or not inequities in forest visitation persist, and reasons reported for non-visitation or less frequent visitation. Further, the work contributes to current practice by augmenting the ability to use the most effective information dissemination routes for outdoor recreation information. Specifically, this paper examines reported outdoor recreation participation, whether or not respondents have ever visited a national forest (and reasons provided for not doing so), and recency of national forest visitation among those who had visited (and reasons for not visiting more often). These outdoor recreation participation questions are examined by ethnoracial group. In addition, aspects of intersectionality concerning gender and age cohorts are explored to continue to contribute to the dialogue focused on the nuances of diversity [21,26,36,49].

Earlier research [30] revealed ethnoracial variations in access to information, furthering the idea that culturally competent information delivery may help address some constraints on ethnic groups' participation in recreation on national forest lands (cf. [4,24]). Information sources used and trusted among study respondents are reported to improve efforts that focus on information routes and messaging to address recreation inequities. Although prior work demonstrated patterns of inequity and attributed barriers for underrepresented groups, and in some cases addressed information sources that may aid in remedying gaps, continuing work is important in assessing evolving trends, as well in identifying information paths and messaging aligned with societal shifts.

Owing to the nature of the research, causal statements will be avoided [50]. However, this limitation may be offset by information that is sensitive to subpopulation differences, where the utility of findings may be high despite the restriction on causal inferences imposed by the non-experimental research design. Although patterns of outdoor recreation use by population subgroups may vary across nations, studies of equitable access and strategies aimed at improving equitable use outside the region of study may be informed by the findings in this paper.

2. Materials and Methods

Two phases of telephone interviews were conducted involving residents of selected regions from California, a state that is known for its ethnic and racial diversity and abundant national forest lands. Both phases were designed and overseen by the first and second authors of this report, adhering to the overall approved information collection with the Office of Management and Budget (OMB, control # 0596-0221), designed to reduce the paperwork burden of the public from federal information collections. The first phase of work covered San Diego County, California, and was administered under contract with the Survey Research Center at the University of Georgia. The second phase of work covered three large regions defined as Northern Sierra, Southern Sierra, and Ontario/Riverside/San Bernardino, made up of grouped metropolitan statistical areas within California, and was completed under contract with the Social and Economic Sciences Research Center at Washington State University. For each of these research centers, an Institutional Review Board approval was granted, covering the procedures for the study and the survey instrument. In general, the approach in both phases was modelled after earlier work involving a similar emphasis focusing on Los Angeles County [29]. The

findings are designed to aid forest recreation management and planning, and communication with the public surrounding forest lands.

2.1. Sampling Approach—Phase I

The Center purchased a Random Digit Dial (RDD) sample from Survey Sampling International (SSI), following SSI's Random B methodology, which uses a measure of size (MOS)—typically estimated telephone households—to allocate sample by county such that sampling units are proportional to their size in each county. Numbers were drawn from landlines only. The method helps to prevent bias toward counties with larger proportions of listed households and ensures unlisted households are adequately represented among the sampling units. Random B methodology is a variation of the Waksberg [51] method, which results in a more efficient hit rate of working household numbers.

The household sample consisted of 4879 RDD phone numbers that were dialed at least once to attain the final sample of respondents. Approximately half of all numbers dialed ($n = 2439$ numbers) were either of unknown eligibility or resulted in a non-interview (e.g., the phone line was busy), were not eligible (e.g., disconnected numbers), technological circumstances impeded interview (e.g., number changed, mobile phone), or the number was not a household (e.g., was a business). Of the 2440 eligible phone numbers, 39.6% were refusals, 31.7% were connected to answering machines, and 5.8% were callbacks. The final sample consisted of 508 complete interviews (20.8% of all 2440 eligible attempts), with 8 partial interviews, which were not included in the analyses. Using the American Association for Public Opinion Research (AAPOR) [52] guidelines for survey results, these figures resulted in a cooperation rate of 34.3%, using the cooperation rate 3 formula (cooperation rate = interviews/(interviews + partials + refusals) [52]). Estimates based on this sample were subject to a sampling error of $\pm 4.3\%$ at the 95% confidence interval overall based on the area population at the time of the survey, although these estimates vary for specific question items.

2.2. Sampling Approach—Phase II

A dual frame random digit dial survey distributed proportionally across landlines and cell phones was used for each of the three regions in this phase of our research. Cellular phones were included in this phase in recognition of the continuing transition to wireless service among adult populations [52]. This work began with the purchase of 17,926 telephone numbers from SSI—4675 were landline numbers and 13,251 were wireless numbers. Equal probability selection methods based on telephone area codes and known prefixes or exchanges were used, sampling with equal probability within eligible 100-blocks of numbers. Numbers for the landline sample were selected using standard RDD methods from active blocks (area code + exchange + two-digit block number) that contained three or more residential directory listings. All nonworking and nonresidential numbers (e.g., businesses or schools) were screened out. The cellular sample was not list-assisted, but was drawn through a systematic sampling from dedicated wireless 100-blocks and shared service 100-blocks with no directory-listed landline numbers.

Sampling included a random probability sample within each of the selected metropolitan statistical areas (MSAs) with a goal of gathering 500 fully completed interviews from each regional area proximate to urban national forests, for a goal of 1500 completed interviews as outlined below:

- Region 1: 'Inland Empire': California MSA #40140 (Riverside–San Bernardino–Ontario).
- Region 2: 'Southern Sierras': California MSAs Bakersfield–Delano (12540), Visalia–Porterville (47300), Hanford–Corcoran (25260), Fresno (23420), Madera–Chowchilla (31460), Merced (32900), and Modesto (33700).
- Region 3: 'Northern Sierras': California MSAs Stockton (44700), Sacramento–Arden–Arcade–Roseville (40900), Yuba City (49700), Chico (17020), and Redding (39820).

Using the household as the unit for sampling, a randomly selected adult (age 18 or older) was invited to participate in the phone survey, asking for the adult in the household with the most recent

birthday. In the cellular sample, an adult would be interviewed if they agreed to participate, after ensuring the adult was not currently driving an automobile.

Using the AAPOR guidelines for survey results, these figures result in a cooperation rate of 34.3%, using the rate 3 formula (cooperation rate = interviews/(interviews + partials + refusals), see [52]). Estimates based on this sample within each region were subject to a sampling error of $\pm 5.0\%$ at the 95% confidence interval overall, although these estimates varied for specific question items and the number of respondents answering each question.

2.3. Survey Instrument

The survey instrument used in both phases for the telephone interview was programmed into computer-assisted telephone interviewing systems at the respective research centers, maintaining question structure, order, and response options to ensure compliance with the OMB approval, covering both phases of work and to ensure the capacity to compare phases of work. The first author reviewed training protocols and interviewer instructions to ensure comparability of procedures and approach between the two phases. The telephone interview consisted of open- and close-ended questions designed to explore respondent's self-identified ethnicity and primary racial identity, estimates of time spent outdoors and recreating outdoors, national forest visitation, methods and common sources of information when seeking information about natural resource recreation and sources trusted, and demographic items in addition to ethnicity. Respondents were presented a list of 14 common sources of information and were asked to indicate how frequently they used these sources of information to learn more about outdoor recreational opportunities (using the options: 1 (never), 2 (sometimes), 3 (frequently), 4 (very frequently), or 5 (don't know—then coded as missing)). The 14 common sources of information were television, radio, newspapers, magazines, land management agencies, pamphlets, books, the Internet, relatives, church, neighbors, work, friends, and community organizations. A subset of these were explored for more general weekly exposure to the source, by asking number of hours the respondent watched television, listened to the radio, read magazines, spent time on the Internet, participated in community-based organizations, and participated in faith-based organizations. As a follow-along, respondents were asked which sources they trusted most for information about outdoor recreational opportunities (posed as an open-ended question and then coded to reflect the common sources of information).

2.4. Respondents

For purposes of analyses and reporting in this paper, the two datasets were combined into a singular dataset, yielding 1977 usable responses from California residents aged 18 or older residing in the San Diego MSA, Inland Empire MSA, Southern Sierra MSAs, and Northern Sierra MSAs. Seeking to examine broad patterns, rather than to characterize the similarities and differences that may describe each of these MSA groupings, determined our approach. Slightly more females (50.9%) than males completed the phone survey. A majority of respondents self-identified as White/non-Hispanic (55.9%), about one-fifth (21.8%) as Hispanic/Latino, with the remainder indicating they were multi-racial (8.5%), Black/African-American (4.8%), Asian/Pacific Islander (3.8%), or American Indian/Alaskan Native (2.2%). For purposes of this paper, multi-racial respondents were excluded from in-depth analyses contrasting ethnoracial groups. Mean respondent age was 49.01 years ($SD = 18.11$, $n = 1908$), and a mean residency of 44.32 years in the United States ($SD = 20.84$, $n = 1927$). Questions surrounding use of English or another primary language in the home were designed to further understand degree of acculturation or maintenance of subculture within the home. The vast majority had primarily English language reading materials in the home (88.7%), or a combination of English and Spanish (2.7%), although almost one-tenth had primarily Spanish language reading materials (7.4%). Similarly, English was the primary language spoken in the home (80.8%), or a combination of English and Spanish (2.8%), though more than one-tenth spoke primarily Spanish in the home (13.3%). Additional languages beyond English, Spanish, or a combination spoken in the home included Chinese, Russian,

French, Tagalog, Japanese, Greek, Yaqui, Hmong, Portuguese, Korean, Mede, Persian, Hindi, Bulgarian, Cambodian, Mandarin, Armenian, and Turkish. Each of these was mentioned by less than 1% of respondents as a group. About one-third (37.0%) had completed a bachelor's degree, its equivalent, or greater, whereas another third (36.2%) had attained a high school diploma or less. The remainder (25.5%) had completed some college, or refused to answer (0.5%).

3. Results

3.1. Time Spent Outdoors

Average time spent outdoors on a weekly basis was about 18 h ($M = 17.73$, $SD = 18.43$, median = 10, $n = 1935$) after adjusting for extreme outliers through Winsorizing. This first analysis grouped respondents by combined ethnoracial category and gender, yielding 10 subgroups. The number of hours spent outdoors varied significantly by ethnoracial category and gender (ANOVA, $F_{9,1707} = 10.79$, $p < 0.001$); missing from this analysis were respondents who did not answer the question on time spent outdoors. Post-hoc comparisons (Scheffé tests; $p < 0.05$) revealed males spent more time outdoors than their female counterparts among White/Caucasian respondents as well as for Hispanic/Latino respondents. Number of hours spent outdoors was not significantly different within Black/African American, Asian/Pacific Islander, and American Indian/Alaskan native groups by gender (Table 1).

Table 1. Average hours spent outdoors per week by ethnoracial category and gender (adjusted for extreme outliers).

Gender	White/Caucasian	Hispanic/Latino	Asian/Pac Islander ^a	Black/Afr American ^b	Amer Ind/ Alaska Native ^c
	<i>M</i> (<i>SD</i> , <i>n</i>)	<i>M</i> (<i>SD</i> , <i>n</i>)	<i>M</i> (<i>SD</i> , <i>n</i>)	<i>M</i> (<i>SD</i> , <i>n</i>)	<i>M</i> (<i>SD</i> , <i>n</i>)
Female	14.33 (13.61, 571)	11.97 (14.84, 218)	14.54 (12.96, 28)	14.17 (16.96, 41)	21.05 (20.35, 19)
Male	21.85 (20.33, 524)	20.48 (21.48, 198)	15.93 (17.37, 45)	22.43 (24.27, 49)	31.38 (28.19, 24)

^a Abbreviation for Asian/Pacific Islander. ^b Abbreviation for Black/African American. ^c Abbreviation for American Indian/Alaska Native.

However, for the question of how many hours per week were spent recreating outdoors, the ANOVA ($F_{9,1104} = 0.977$, $p = 0.457$) revealed no statistically significant effects (grand mean = 10.57, $SD = 10.31$, mode = 10, $n = 1264$), after adjusting for extreme outliers through Winsorizing (Table 2).

Table 2. Average hours per week spent outdoors recreating by ethnoracial category and gender (adjusted for extreme outliers).

Gender	White/Caucasian	Hispanic/Latino	Asian/Pac Islander	Black/Afr American	Amer Ind/ Alaska Native
	<i>M</i> (<i>SD</i> , <i>n</i>)	<i>M</i> (<i>SD</i> , <i>n</i>)	<i>M</i> (<i>SD</i> , <i>n</i>)	<i>M</i> (<i>SD</i> , <i>n</i>)	<i>M</i> (<i>SD</i> , <i>n</i>)
Female	9.66 (9.04, 363)	10.06 (12.51, 107)	11.25 (12.64, 12)	8.96 (8.11, 24)	11.88 (10.46, 16)
Male	11.38 (12.43, 396)	11.39 (11.68, 105)	9.81 (10.64, 36)	12.69 (15.19, 36)	13.89 (14.74, 19)

3.2. National Forest Visitation

Respondents were asked if they had ever visited a national forest. The vast majority of respondents (83.5%) had visited a national forest in their lifetime, whereas more than one-tenth (15.6%) had not (the remainder were uncertain or refused to answer). National forest visitation history was distributed

unequally across ethnoracial categories by gender ($\chi^2 (9, n = 1733) = 325.60, p < 0.001$). Where the majority of all respondent groups had visited a national forest, Latinas, and Black/African American males and females were much less likely to have done so (Table 3).

Table 3. Respondents who had ever visited a national forest by ethnoracial category and gender.

Gender	White/Caucasian	Hispanic/Latino	Asian/Pac Islander	Black/Afr American	Amer Ind/ Alaska Native
	Pct ^a	Pct	Pct	Pct	Pct
Female	94.1	54.5	74.2	63.6	78.9
Male	96.4	71.9	73.3	56.2	100.0

^a Abbreviation for percent.

An ANOVA was conducted to examine age by ethnoracial category combined with gender. Age varied significantly in the 10 ethnoracial/gender subgroups (ANOVA, $F_{9, 1681} = 22.74, p < 0.001$). Older groups included White/Caucasian male and female respondents (Table 4), Black/African American females, and American Indian/Alaska Native males and females. Youngest were Asian American/Pacific Islander males. The remaining groups averaged around early to mid-40s. These differences indicated the need to include age in subsequent analyses regarding ethnoracial groups, gender, and outdoor recreation patterns.

Table 4. Respondent age by ethnoracial category and gender.

Gender	White/Caucasian	Hispanic/Latino	Asian/Pac Islander	Black/Afr American	Amer Ind/ Alaska Native
	<i>M</i> (<i>SD, n</i>)	<i>M</i> (<i>SD, n</i>)	<i>M</i> (<i>SD, n</i>)	<i>M</i> (<i>SD, n</i>)	<i>M</i> (<i>SD, n</i>)
Female	54.58 (17.83, 559)	40.50 (14.89, 215)	41.57 (18.01, 30)	50.29 (18.67, 42)	47.58 (14.26, 19)
Male	52.40 (17.70, 514)	42.02 (16.42, 194)	34.98 (16.52, 44)	42.86 (17.27, 50)	50.08 (15.47, 24)

Lacking sufficient numbers of respondents in some groups, we focused on Whites/Caucasians and Hispanic/Latino respondents exploring the combination of gender (male/female), ethnoracial identity (Whites/Caucasians; Hispanic/Latino), and age group (by seven decades grouped 18–19, 20–29, 30–39, 40–49, 50–59, 60–69, 70 and over) to predict whether or not the respondent had visited a national forest. Using a binary logistic regression analysis in SPSS, the full model was statistically reliable, $\chi^2 (6, n = 1467) = 279.36, p < 0.001$ (Table 5). The predictors reliably accounted for 0.17 (Cox and Snell R^2) to 0.31 (Nagelkerke R^2) of the variance. The Wald criterion revealed each predictor (gender, ethnoracial identity, and age group) as a significant contributor to the model at $p < 0.001$. Males were more likely to have visited national forests, as were older respondents and those who self-identified as White/Caucasian.

Table 5. Factors predicting lifetime national forest visitation.

Variable	B ^a	SE ^b	Wald	df ^c	p
Gender	−0.656	0.176	13.878	1	<0.001
Ethnoracial cat ^d	−2.200	0.183	143.944	1	<0.001
Age group	−0.308	0.055	31.366	1	<0.001
Constant	0.853	0.235	13.168	1	<0.001
Observations	1467				
Wald χ^2	0.17				
Nagelkerke R^2	0.31				
Overall %	86.4				

^a Abbreviation for beta, the unstandardized coefficient. ^b Abbreviation for standard error of the coefficient.

^c Abbreviation for degrees of freedom. ^d Abbreviation for ethnoracial category.

Respondents who had never visited a national forest ($n = 309$) were asked the primary reason why they had not visited a national forest. Of the 258 specific reasons provided to the open-ended question (excluding ‘don’t know’ or reasons that were not listed by others) the majority involved a lack of time (including work, school, or family responsibilities—106 mentions), a lack of money (35 mentions), lack of interest (27 mentions), distance to the forest (23 mentions), lack of information (18 mentions), or transportation (17 mentions) as barriers.

Among the respondent majority ($n = 1650$) who had visited a national forest in their lifetime, the recency of the last visit was queried using the response categories of last week, last month, last six months, last year, and more than one year (Table 6). Variation in recency was different by ethnoracial group (comparing recency of visitation measured in five response categories by the five ethnoracial groups; insufficient numbers within some cells limited the ability to apply valid statistical comparisons across all groups and response categories). Specifically, the majority of Black/African American respondents (66.7%) had visited more than a year prior, in comparison to a majority of American Indian/Alaska Native (62.5%) and the slight majority of Whites/Caucasians (50.6%) who had visited within the last six months. Respondents who had visited a national forest in the last 12 months reported a median of 2 visits ($n = 1182$).

Table 6. Last time visited national forest by ethnoracial group.

Last Time Visited	White/Caucasian	Hispanic/Latino	Asian/Pac Islander	Black/Afr American	Amer Ind/ Alaska Native
	Pct, n	Pct, n	Pct, n	Pct, n	Pct, n
Last week	10.1, 105	5.7, 15	7.1, 4	5.6, 3	17.5, 7
Last month	14.3, 149	7.2, 19	8.9, 5	9.3, 5	17.5, 7
Last six months	26.2, 272	24.9, 66	30.4, 17	7.4, 4	27.5, 11
Last year	13.0, 135	18.1, 48	21.4, 12	11.1, 6	10.0, 4
More than one year	36.4, 378	44.2, 117	32.1, 18	66.7, 36	27.5, 11

Respondents were further asked to identify constraints to more frequent forest visitation. Of 1754 responses (where multiple responses for one respondent were possible), most often listed were lack of time (360 mentions), work or school (322 mentions), lack of money (264 mentions), too far/distance to national forest (151 mentions), health or physical limitations (124 mentions), age (93 mentions), family responsibilities (61 mentions), and transportation (49 mentions). These represent responses to an open-ended question, with up to three responses allowed for any one individual.

Pooling responses into four major categories of lack of time (including general response, family, work or school), travel (too far/distance and transportation), age or health/physical limitations, and lack of money allowed comparisons across selected sociodemographic categories (following [45]). Given the lower number of survey participants within some ethnoracial categories, and challenges of using an open-ended format, the first approach was to explore the frequency of listings for each of the four major barrier types by assigning ranks, moving from most to least often mentioned (Table 7) similar to Crano et al. [29]. Patterns indicate that across ethnoracial groups, time was the main constraint cited, though ethnoracial minorities were more likely to cite resources-related issues of money and travel/transportation concerns compared to White/Caucasian respondents who cited age/health related constraints second-most often.

Additional responses not falling into these top five categories were also considered. A general lack of interest was mentioned 26 times among those who had visited a national forest in their lifetime, but cited this constraint for not visiting the forest more often. Fear-related issues were mentioned 23 times, with general fears, concerns about crime, fears about snakes or animals, or fire listed as the source of concern. “No one to go with” was mentioned 19 times as a constraint to more frequent forest visitation; a lack of information was mentioned only 9 times as a constraint. Discrimination was not specifically cited as a constraint.

Table 7. Respondents listing any of four major constraints by ethnoracial category.

Constraint	White/Caucasian	Hispanic/Latino	Asian/Pac Islander	Black/Afr American	Amer Ind/ Alaska Native
	Rank	Rank	Rank	Rank	Rank
Time	1	1	1	1	1
Age/health	2	4	4	3	3
Money	3	2	3	2	2
Travel	4	3	2	3	4

3.3. Sources for Outdoor Recreation Information

The source most frequently used for information about outdoor recreation was the Internet (Table 8), which was the second highest weekly exposure to a potential information source (Table 9). The Internet was also selected as the most trusted source for information about outdoor recreation (Table 10). Response patterns were similar across the five ethnoracial categories considering trust in Internet as an information source for outdoor recreation ($\chi^2(4, n = 1625) = 2.519, p > 0.10$).

The second-most frequently used source for information about outdoor recreation was friends (Table 8), also the second-most trusted source (12.6% of respondents). Relatives were listed third-most frequently as a source for information (Table 8), but were the most trusted as an information source by less than one-tenth of respondents (Table 10). Forms of social networks were also reflected in frequent use of faith-based organizations as a source of information (Table 8), with a reported average of 2 h per week spent at church or a faith-based organization (Table 9). Other possible social networks included work, community-based organizations, and neighbors as frequent information sources for outdoor recreation (Table 8). Respondents spent an average of 3 h per week involved in community-based organizations (Table 9).

Magazines were listed as the fourth-most frequently used source for information about outdoor recreation (Table 8), with an average of less than 3 h per week spent reading magazines (Table 9). As a trusted information source for outdoor recreation they were infrequently listed (Table 10). Newspapers were sometimes used as an information source (Table 8) for outdoor recreation, but were only read about 2 h per week (Table 9). Other print materials queried as sources of information were pamphlets and books (Table 8).

Respondents reported the highest average weekly time watching television (Table 9), considering general information pathways. Television was used by about one-tenth of the respondents as a frequent source of information about outdoor recreation (Table 8), and was least often listed among the top-trusted sources for information (Table 10). Radio was listened to about 10 h per week (Table 9), and was used as an information source for outdoor recreation by less than one-tenth of respondents (Table 8). A number of the radio stations that respondents listened to featured ethnic oriented programming, and about one-tenth listened to programming with Spanish language, or Spanish and English (11.8%).

Visitor centers or park offices from land management agencies were frequently used by more than one-tenth of respondents (Table 8), and were listed as the third most trusted source for information about outdoor recreation (Table 10). Notably, the Hispanic/Latino respondents less often cited these information sources as most trusted (5.6% compared to a range of 9% to 11.6% among the other groups, $\chi^2(4, n = 1625) = 9.617, p < 0.05$). Travel-related agencies and member organizations such as the auto club were listed less frequently as top information sources (provided as open-ended response), but were cited among sources most trusted (Table 10).

Table 8. Frequently used sources for information about outdoor recreation.

Used for Outdoor Recreation Info		
Source	Pct	<i>n</i>
Internet	57.1	1129
Friends	27.4	540
Family	24.6	486
Magazines	17.9	354
Visitor ctrs/parks ^a	15.3	303
Pamphlets	14.5	288
Newspapers	12.8	253
Books	12.3	243
Work	10.6	210
Television	10.4	206
Community based org ^b	10.1	160
Faith based org/church	8.4	165
Neighbors	7.7	153
Radio	7.3	144

^a Abbreviation for visitor centers/parks. ^b "Org." is abbreviation for organization.

Table 9. Average weekly exposure to selected information sources.

Source	<i>M</i>	<i>SD</i>	<i>n</i>
Watch television	14.14	14.10	1942
Use the Internet	12.00	15.05	1963
Listen to radio	10.30	15.81	1946
Participate in community organizations	3.00	7.64	1949
Read magazines	2.58	4.96	1958
Read newspapers	2.47	4.00	1960
Participate in faith-based organizations	2.11	5.07	1958

Table 10. Sources trusted most for information about outdoor recreation.

Most Trusted		
Source	Pct	<i>n</i>
Internet	52.0	1029
Friends	12.6	250
Visitor ctrs/parks	9.3	183
Family	6.7	132
Magazines	3.6	71
Television	3.0	60
Auto club or travel agencies	1.9	37

4. Discussion

Prior studies exploring outdoor recreation on forest lands have highlighted disparities in national forest visitation associated with traditionally marginalized groups [1,4,5,9–15]. In lieu of inequities abating, as might have been expected in an increasingly diverse state following Gordon's hypothesis [37], we observed marked patterns of continuing inequities. Others have noted the inequities in participation appear to be increasing over time [5]. The current research also demonstrated marked inequities and are cause for continuing concern, where lifetime visitation experience (had/had not visited), as well as recency of national forest visitation among those who reported prior visitation were inequitably distributed among the ethnoracial categories of survey respondents. Prior visitation was more likely among males, Whites/Caucasians, and elderly respondents (with significant differences

comparing White/Caucasians with Latino/Hispanic respondents). Prior national forest visitation reports among older respondents could be a reflection of extended life opportunity aligned with the number of years lived, or could be a reflection of a decreasing trend of forest visitation among younger respondent cohorts.

The main constraints cited for not having visited a national forest primarily aligned with those most often cited for not visiting the forest more often (e.g., lack of time [13], money, distance [6], or transportation [13]). The exceptions to the set of constraints for lack of lifetime visitation include a lack of interest, cited as the second-highest constraint, and lack of information. Lack of interest may be reflective of more subtle aspects of discrimination, as was mentioned, where respondents may have used this general explanation for a feeling of not being welcomed, not fitting in, wishing to avoid a negative experience, or more generally not having developed an interest through lack of access and opportunity while growing up [26]. Studies applying specified response sets, and those employing in-depth qualitative approaches, have revealed some of these nuances in past research [24]. However, intensive efforts to include diverse ethnoracial communities in outdoor recreation, particularly on national forest lands, warrants ongoing studies to determine if these patterns are shifting over time, or showing increased patterns of exclusion or segregation of experiences [5].

Recency of visitation revealed a somewhat different pattern, where ethnoracial variations were again evident, with ethnoracial minorities reporting greater gaps in the last visit to national forest lands, especially among Black/African American respondents. However, American Indian/Alaska Native respondents were similar in frequency of visitation to White/Caucasian respondents, indicating the importance of considering heterogeneity among ethnoracial minorities, where minorities are not homogeneous [22,26].

Constraints in information about outdoor recreation were reported as reasons for a lack of national forest visitation entirely, as well for more frequent visits (though less often a constraint when assessing frequency), in keeping with prior findings pointing to lack of information as a constraint to recreation use [13,29]. To remedy the gap in lack of information, we explored information sources typically exposed to on a weekly basis, sources used specifically for outdoor recreation, and sources trusted. Used and trusted information sources in the current study point to the Internet primarily, and secondarily to family and friends (though these associations may have been categorized as being from church, community, neighborhood, or work depending on how respondents viewed the response categories). Use of social networks again suggests the importance of understanding recreation patterns among known individuals and associates with whom one may recreate or share an experience, but more broadly, with one who may share information about places to go and likely enjoyable activities. Information from trusted sources is important as a leverage point for change in addressing inequities, where, for example, the desire to recreate with similar others may hinge in part on these others being aware of opportunities [30]. Additionally, among different age cohorts, younger groups may benefit from knowing about places where emerging trends in recreation may be experienced, or among older groups, locations, and opportunities that fit shifting interests and patterns, including perhaps those that may accommodate physical challenges associated with advanced age [4]. As the aging cohort in the U.S. continues to increase with the longevity of the baby-boomer generation, messaging about appropriate opportunities to encourage continued use will increase in importance [4].

Implications of our research approach are worth noting. We selected telephone surveys over the internet-administered approach. We held a lingering concern over internet access, particularly among ethnoracial minorities, as well as a desire to ensure inclusion of older age cohorts. In the second phase of work we included a portion of cellphone numbers in our sample. This step led to more young adults included as respondents, including those who relocated but kept the same telephone number. In an area-specific analysis we would have lost a portion of our completed surveys as a result. Using a single method may not be ideal; however, larger scale surveys still hold considerable merit in informing assessment of trends and can be informed by a solid review of studies relying on other methods, such as was done here. Finally, the use of open-ended questions addressing barriers to recreation and

information sources most trusted was an approach designed to limit the time burden of each individual participant. Presenting established response categories would have facilitated comparison to prior research, especially regarding the role of discrimination as a specific perceived barrier.

Natural resource managers may use these findings as inspiration to ongoing programs designed for outreach to engage ethnoracially diverse audiences. Further, the indication that the Internet is the most used and trusted resource is encouraging it as a pathway to provide information, given its broader reach and capacity to provide timely updates of content. Findings about the Internet may be of assistance in determining information platforms for natural resources outdoor recreation messaging, where radio, newspapers, and magazines may prove less fruitful, given that our study respondents tended to indicate less exposure and trust in these sources. Information sources will continue to shift over time with media and technology, thus it will remain important to replicate studies examining information sources that are used and trusted. That said, it was more typical among respondents to report spending hours on a weekly basis interacting with members of community organizations and faith-based organizations, representing a continuing pathway for sharing information about outdoor recreation.

Extending the value of our current findings and other recent studies of ethnoracial groups and outdoor recreation access involves myriad possibilities. As recommended by Jay et al. [2], cooperation of scientists in different nations to address ethnicity and use of natural areas would contribute considerably to the understanding and improvement of planning and design for equitable access and use. In the near-term, the value of continuing assessments of outdoor recreation on national forest lands and other natural resource areas remains. This is especially true given the myriad contributions that equitable access and use make to a sustainable future. Although we were not encouraged by the continuing gaps in national forest recreation use, the continuing identification of information pathways, updated as media and information pathways shift with generations and cultural changes, may be especially helpful in working to address outdoor recreation inequities. This may be accomplished by providing basic information about outdoor recreation locations and activities that may be of likely interest to different age cohorts, physical abilities, and cultural traditions. It is likely further accomplished by ensuring messages appealing to individuals focused on culturally relevant and valued themes, and through using pathways trusted and relied upon.

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