

Article

Who Started, Stopped, and Continued Participating in Outdoor Recreation during the COVID-19 Pandemic in the United States? Results from a National Panel Study

B. Derrick Taff ¹ , William L. Rice ^{2,*}, Ben Lawhon ³ and Peter Newman ¹

¹ Department of Recreation, Park and Tourism Management, Pennsylvania State University, University Park, State College, PA 16802, USA; bdt3@psu.edu (B.D.T.); pbn3@psu.edu (P.N.)

² Parks, Tourism, and Recreation Management Program, University of Montana, Missoula, MT 59812, USA

³ The Leave No Trace Center for Outdoor Ethics, Boulder, CO 80306, USA; ben@LNT.org

* Correspondence: william.rice@umontana.edu; Tel.: +1-406-243-5477

Abstract: The COVID-19 pandemic has been proposed as a catalyst for many U.S. residents to re-engage in outdoor recreation or engage in outdoor recreation for the first time. This manuscript describes the results of a representative U.S. national panel study aimed at better understanding the socio-demographic profile (gender, ethnicity, community type, income, and age) of those participants new to outdoor recreation since the start of the COVID-19 pandemic. In doing so, we address how these new outdoor recreationists differ from (1) those who frequently participated in outdoor recreation prior to the pandemic and continue to participate in outdoor recreation, (2) those who did not frequently participate in outdoor recreation prior to the pandemic and remain un-engaged, and (3) those who frequently participated in outdoor recreation prior to the pandemic but stopped their frequent participation following the onset of the pandemic. Results from this U.S. national study suggest that 35.8% of respondents indicated that they did not participate regularly in outdoor recreation prior to the pandemic or during the pandemic, 30.4% indicated that they did participate regularly in outdoor recreation prior to the pandemic and continued to do so regularly during the pandemic, and 13.5% indicated that they did participate regularly in outdoor recreation prior to the pandemic, but did not continue to do so during the pandemic. More than 20% of the sample indicated that they were new outdoor recreationists. The majority of respondents in all categories, including those that were new to outdoor recreation amidst the pandemic, identified as being white, however these new outdoor recreationists were also the least ethnically diverse. The previously but no longer outdoor recreationist respondents were significantly more ethnically diverse than the other three groups, and they tended to live in more urbanized settings. Discussion of these results includes implications for outdoor recreation managers, and researchers who seek to better understand who the COVID-19 pandemic has influenced with regard to outdoor recreation participation. Implications regarding social justice, access and equity to public places that facilitate outdoor recreation, and health-related policies are discussed.

Keywords: COVID-19; pandemic; outdoor recreation; health; participation



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1. Introduction

Outdoor recreation participation in the U.S. has been steadily increasing since the 1960s [1,2]. However, the COVID-19 pandemic, declared by the World Health Organization in March of 2020, has been touted as significantly accelerating this broader increase in outdoor recreation [3], although impacting different settings and demographics disproportionately [4,5]. This has led to concerns and challenges for public land area managers and tourism operators as they attempted to manage outdoor recreation as it fluctuated (i.e., non-existent during closures; in some settings, all-time highs during openings) as the pandemic and associated health measures evolved [6].

Research regarding outdoor recreation trends associated with the pandemic suggest that despite some pandemic-related closures of recreation areas, outdoor recreation use spiked significantly in some settings [7–9]. For example, in large western U.S. national parks such as Yellowstone, Grand Canyon, and Yosemite, visitation increased significantly immediately following reduced restrictions on access [10]. Another study suggested that the number of hikers in the U.S. increased by approximately 135% from 2019 to 2020 [11]. However, the above findings reflect certain locations and demographics, as other research has noted decreases in use in locations such as urban parks, and discrepancies in visitation frequency with specific demographics [4,5]. Similarly, recreation behaviors of avid outdoor recreationists living in urban areas in the U.S. were more severely impacted by the pandemic than those residing in rural areas [12], and decisions to pursue outdoor recreation were influenced heavily by perceptions of risk [13,14]. Motivations for pursuing outdoor recreation during this period have been largely driven by needs associated with personal health and well-being [15], such as relieving stress and supporting mental health, and facilitating physical health through outdoor exercise [16]. And, research in the U.S. indicates that outdoor recreation during the pandemic has in fact, led to improved mental health outcomes [17,18]. Similar health-related trends have been discovered internationally [5,19,20].

Despite the limited but growing body of research regarding outdoor recreation as it relates to the pandemic, very little is known about U.S. outdoor recreation participants during this time. For example, are there new outdoor recreationists, driven to participation by the pandemic? The Outdoor Industry Association and Naxion Research Consulting [21] began exploring this question through a national panel of $n = 613$ participants that had either “engaged in outdoor activities for the first time or for the first time in more than a year since the onset of the COVID-19 pandemic” or “participated in outdoor activities before the pandemic” (p. 21). This study indicated that outdoor recreationists during the pandemic tend to consist of more females, are generally younger, more likely to live in urban areas, and represent a slightly lower socioeconomic bracket than pre-pandemic outdoor recreation participants [21]. While these findings represent an important initial step in improving understanding of outdoor recreationists during the pandemic, the criteria for being considered as a new or existing outdoor recreation participant was as little as one occurrence [21]. Furthermore, the study was purposefully weighted to match the U.S. population for gender, ethnicity, age, household income, and region [21]. This robust census-matching approach is common for U.S. panel studies, but by purposefully defining the demographic criteria, it may inaccurately represent actual new or existing outdoor recreation participants. Additionally, the criteria for being considered as a “new outdoor participant” was fairly minimal (i.e., as little as one occurrence) and not mutually exclusive (i.e., first time in more than a year since the onset of the COVID-19 pandemic” or “participated in outdoor activities before the pandemic”) [21]. Finally, other pandemic and recreation-related research has highlighted inequities and decreases in recreational opportunities for some demographics amidst the pandemic [4,5,12], further driving the need for more understanding regarding recreation behaviors and demographics during this unique period of time.

The purpose of this study was to further advance this initial research by examining U.S. outdoor recreation demographic trends amidst the pandemic, by applying slightly different methodological approaches than those used by the Outdoor Industry Association and Naxion Research Consulting [21]. Additionally, given that there are currently no national studies examining the demographics of new, current, and non-outdoor recreationist during this unique and challenging time (at the time of this publication nearly two years since the World Health Organization’s pandemic declaration), this study advances understanding of these trends as well. Specifically, the purpose of this study is to examine how new outdoor recreationists differ from those who frequently participated in outdoor recreation prior to the pandemic and continue to participate in outdoor recreation, those who did not frequently participate in outdoor recreation prior to the pandemic and remain un-engaged,

and finally, those who frequently participated in outdoor recreation prior to the pandemic but stopped their frequent participation following the onset of the pandemic.

2. Materials and Methods

This study used panel data, collected through Qualtrics International Inc. following Institutional Review Board approval through the lead author's University. Data were collected through a paid panel of participants purposefully targeting adults age 18 or older, residing within one of four geographically representative regions of the U.S., including the Northeast, South, Midwest, and West [22]. While one main purpose was to further define new outdoor recreation participants amidst the pandemic, we first screened participants to determine who is, who is not, and who was but is no longer an outdoor recreationist. Our goal was to collect a geographically representative sample of $n = 1000$ new outdoor recreationists in the U.S. This sample estimate was informed by empirical political science studies regarding sample size and inference, and recent nationwide COVID-19 vaccination compliance research using similar sample sizes e.g., [23,24].

These data were not purposefully controlled to match the U.S. census, but rather were allowed to be collected in a manner that represents the U.S. geographically, based on outdoor recreation participation prior to and during the pandemic. This allowed us to determine who these individuals are, rather than place census parameters in which demographics may not match these outdoor recreationists groups. Panel respondents were screened by inquiring whether or not they were "new or returning to frequent outdoor recreation since the COVID-19 pandemic began" (Table 1). This was defined for respondents as "someone who has started pursuing activities undertaken for recreation in nature-based environments that generally involve some level of intentional physical exertion, at least ONCE PER MONTH since March 2020, when the COVID-19 pandemic began."

Table 1. Example of screening questions and subsequent groupings.

	Participant Group			
	Non-Outdoor Recreationist	Existing Outdoor Recreationist	Previous, but No Longer Outdoor Recreationist	New Outdoor Recreationist
Participated in outdoor recreation regularly <i>prior to</i> pandemic?	No	Yes	Yes	No
Participated in outdoor recreation regularly <i>during</i> pandemic?	No	Yes	No	Yes

The definition of outdoor recreation was derived from the U.S. Bureau of Economic Analysis's definition: "All recreational activities undertaken for pleasure that generally involve some level of intentional physical exertion and occur in nature-based environments outdoors" [25] (p. 4). This more stringent definition and criteria for evaluating outdoor recreation participation was purposefully chosen to provide information for land managers and the outdoor recreation industry regarding consistent and fairly frequent outdoor recreationists. Outdoor recreation activities such as hiking, running outdoors, fishing, gardening, camping or RVing, boating or sailing, and surfing for example, listed in the survey instrument, mimicked previous research on national outdoor recreation participation [21]. Respondents were categorized into the four groups listed in Table 1 and responses in all categories propagated until the quota of $n = 1000$ new outdoor recreationists in the U.S. was met. Thus, data collection began on the 10th of May 2021, and concluded on the 13th of June 2021, allowing for more than one-year of pandemic conditions to be considered as context for the respondents.

Qualtrics conducted ongoing data cleaning throughout this period to ensure the sample was collecting valid responses. Two binary questions asking about the same behaviors were placed at different points in the survey to ensure identical responses.

When identical responses were not recorded, the survey was removed from the dataset. Further cleaning measures ensured that respondents were not “straight-lining” (answering the same response to each question) [26]. Statistical comparisons between the four groups were analyzed using analyses of variance and Kruskal-Wallis H tests through social science statistics software (SPSS)—depending on the nature of the variables measured (nominal vs. continuous).

3. Results

3.1. Non, Existing, Previous but No Longer, and New Outdoor Recreationists Groups

Based on the initial screening questions, $n = 1763$; 35.8% of respondents indicated that they did not participate regularly in outdoor recreation prior to the pandemic or during the pandemic (Table 2). These individuals are noted as “non-outdoor recreationists.” A total $n = 1501$; 30.4% indicated that they did participate regularly in outdoor recreation prior to the pandemic, and continued to do so regularly during the pandemic. These individuals are noted as “existing outdoor recreationists.” The smallest subset of respondents ($n = 665$; 13.5%) indicated that they did participate regularly in outdoor recreation prior to the pandemic, but did not continue to do so during the pandemic. We note these respondents as “previous, but no longer outdoor recreationists”. Finally, the sample quota of $n = 1000$ (20.3% of the overall sample) “new outdoor recreationists” were collected for comparison.

Table 2. Breakdown of non, existing, no longer, and new outdoor recreationists.

	Participant Group			
	Non-Outdoor Recreationist	Existing Outdoor Recreationist	Previous, but No Longer Outdoor Recreationist	New Outdoor Recreationist
Participated in outdoor recreation regularly <i>prior to</i> pandemic?	No	Yes	Yes	No
Participated in outdoor recreation regularly <i>during</i> pandemic?	No	Yes	No	Yes
	($n = 1763$)	($n = 1501$)	($n = 665$)	($n = 1000$) ^a
Percent of total	35.8%	30.4%	13.5%	20.3%

^a Sampling ceased once 1000 valid responses were collected for the No → Yes group.

3.2. Demographics and Respondent Categories

Demographic comparisons were examined to determine statistical differences between the groups based on gender, ethnicity, community type, income, and age (Table 3). There were significantly more respondents identifying as women in the *non-outdoor recreationist* group compared to the other categories (existing, those that stopped, and those that are new). While the overall sample had more female respondents than male, there were not statistically significant differences in gender between the *existing*, *previous but no longer*, and *new outdoor recreationists* groups.

With regard to ethnicity, the majority of respondents in all four categories identified as being white. Within the *non*, *existing*, and *new outdoor recreationist* groups, the percentage of white respondents ranged between 73.4% to 76.6%. Ethnicity was not statistically different between these groups, and the least ethnically diverse group resulted from the *new outdoor recreationists* category. The *previously but no longer outdoor recreationists* respondents were significantly different that the other three categories, as they were more ethnically diverse compared to the other groups.

Table 3. Breakdown of non, existing, no longer, and new outdoor recreationists by demographics.

	Participant Group			
	Non-Outdoor Recreationist (<i>n</i> = 1763); 35.8%	Existing Outdoor Recreationist (<i>n</i> = 1501); 30.4%	Previous, but No Longer Outdoor Recreationist (<i>n</i> = 665); 13.5%	New Outdoor Recreationist (<i>n</i> = 1000); 20.3%
Gender ¹				
Woman	71.0% (1252)	61.9% (929)	62.1% (413)	61.7% (617)
Man	27.2% (479)	36.0% (541)	35.5% (236)	36.2% (362)
Non-binary	0.9% (15)	1.5% (23)	1.4% (9)	1.7% (17)
Prefer not to disclose	0.6% (11)	0.5% (7)	0.9% (6)	0.2% (2)
Prefer to self-describe	0.3% (6)	0.1% (1)	0.2% (1)	0.2% (2)
Differences between groups ⁶	A	B	B	B
Ethnicity ²				
White	74.8% (1318)	73.4% (1101)	61.8% (411)	76.6% (766)
Hispanic or Latina/Latino/Latinx	7.1% (126)	7.4% (111)	11.9% (79)	7.5% (75)
Black or African American	9.2% (163)	11.3% (170)	14.7% (98)	8.0% (80)
Native American, American Indian, or Alaska Native	1.2% (21)	1.2% (18)	2.0% (13)	1.0% (10)
Asian or Pacific Islander	5.0% (88)	4.6% (69)	6.3% (42)	5.5% (55)
Other	1.4% (24)	1.3% (19)	1.7% (11)	1.1% (11)
Prefer not to say	1.3% (23)	0.9% (13)	1.7% (11)	0.3% (3)
Differences between groups ⁶	A	A	B	A
Community Type ^{3,*}				
Rural (population < 5000)	30.9% (545)	31.2% (469)	25.9% (172)	29.7% (297)
Urban cluster (population between 5000 and 50,000)	25.0% (440)	26.6% (400)	22.4% (149)	24.6% (246)
Urbanized area (population > 50,000)	44.1% (778)	42.1% (632)	51.7% (334)	45.7% (457)
Differences between groups ⁶	A	A	B	A
Income ⁴				
\$0–\$40,000	53.8% (948)	40.7% (611)	47.2% (314)	39.3% (393)
\$41,000–\$60,000	17.8% (314)	22.6% (339)	20.2% (134)	21.1% (221)
\$61,000–\$80,000	10.6% (187)	14.5% (217)	13.1% (87)	14.5% (145)
>\$80,000	17.8% (314)	22.3% (334)	19.5% (130)	25.1% (251)
Differences between groups ⁶	A	B	C	B
Age ⁵				
Mean	54	46	44	42
Differences between groups ⁷	A	B	B,C	C

¹ A Kruskal–Wallis H test showed that a statistically significant difference exists in gender between the participant groups at a 99.9% confidence interval. ² A Kruskal–Wallis H test showed that a statistically significant difference exists in ethnicity between the participant groups at a 99.9% confidence interval. ³ A Kruskal–Wallis H test showed that a statistically significant difference exists in community types between the participant groups at a 99.9% confidence interval. ⁴ A Kruskal–Wallis H test showed that a statistically significant difference exists in income between the participant groups at a 99.9% confidence interval. ⁵ Welch’s ANOVA test showed a statistically significant difference exists in age between the participant groups at a 99.9% confidence interval. ⁶ Different letters indicate significantly different ($p < 0.05$) group compositions using a Dunn’s post-hoc test. ⁷ Different letters indicate significantly different ($p < 0.05$) means using a Tamhane’s T2 post-hoc test. * New outdoor recreationists indicated residing in the following geographic areas of the U.S.: Northeast $n = 210$; South $n = 190$; Midwest $n = 370$; West $n = 230$. Note: Tests used to analyze differences between participant groups were determined based on guidance from [26,27].

The results of residential community type mimicked the ethnicity findings. More than half of the *previous but no longer outdoor recreationists* group indicated residing in urbanized areas with a population of more than 50,000. The *previous but no longer recreationists* group also represented the smallest percentage of individuals living in rural communities under 5000. The *non, existing, and new* did not differ significantly by residential area type, but the largest proportions for these three groups lived in urbanized areas, ranging from approximately 42.1% to 45.7%.

With regard to income only the *new* and *existing outdoor recreationists* were similar. These two groups differed significantly (i.e., generally larger annual income) from the *non* and *previous but no longer outdoor recreationists*, and the *non* and *previous but no longer* resulted in statistically significant differences as well. The *new outdoor recreationists* had the largest percentage of individuals reporting annual incomes of greater than \$80,000 (25.1%) as well as the smallest percentage of individuals making \$0–\$40,000 annually. The majority of *non outdoor recreationists* indicated earning \$0–\$40,000 annually (53.8%), which was the

largest percentage of respondents compared to the other groups, followed by *previous but no longer* (47.2%).

The *new outdoor recreationists* were significantly younger than *non outdoor recreationists*, as this category, on average was the youngest group ($M = 42$). The *non outdoor recreationists* were also significantly older ($M = 54$) than the other groups (*existing* $M = 46$; *previous but no longer* $M = 44$).

4. Discussion

This is one of the first studies to examine *new outdoor recreationists* during this unique and challenging time in history, while also exploring who is, who is not, and who was but is no longer an outdoor recreationist. These results highlight the substantive amount of U.S. residents that now consider themselves as outdoor recreationists. Based on this geographically-representative sample, this could be as much as half of the U.S. population.

It is concerning from the public health standpoint that 13.5% of respondents stopped outdoor recreation during the pandemic. This points to inequities associated with access to public lands as health resources [28], based on demographic differences. For example, *previous but no longer* respondents were significantly more ethnically diverse, and tended to reside in more urban environments and earn less annually than the other groups. This aligns with recent findings from an exploration of park use in New York City during the pandemic, where the gap between a sense of belonging in greenspace grew across racial and economic lines [29], and aforementioned research as well [4,5]. This is alarming for land managers, land use planners, and policy makers, and points to the need for continuing efforts that increase equity and access with regard to outdoor recreation opportunities and public park and protected areas.

On the other hand, it is also encouraging from the public health perspective that amidst one of the more challenging periods in recent history, that a new group of U.S. outdoor recreationists (20%) have emerged during the pandemic, likely benefiting from the health outcomes they receive from these activities [16–20,28]. This creates a tremendous opportunity to engage this group of new recreationists in life-long healthy recreation and conservation behaviors that promote the preservation of the resources, sustaining outdoor recreation.

However, it must be highlighted again, that with regard to equity, these *new outdoor recreationists* tend to be predominantly white, and in general are less diverse, and have higher annual incomes than the other groups analyzed in this study. Furthermore, the *new outdoor recreationists* are largely not very different demographically, from *existing outdoor recreationists*. They are predominantly white, on average in their early 40s, with perhaps more disposable income. These two groups do however, differ from *non-outdoor recreationists* in the U.S. For example, on average *new outdoor recreationists* are twelve years younger than *non-outdoor recreationists*, on average. Finally, there were significantly more women, proportionately, in the *non-outdoor recreationists* group, pointing to the large body of empirical research that has highlighted gender inequities and associated constraints with regard to outdoor recreation participation e.g., [30,31].

While this study purposefully did not recruit or weight data based on the U.S. census (beyond region), these results in some circumstances align with other new outdoor recreation studies e.g., [21] suggesting that these individuals are slightly younger, and living in more urban environments. However, our results did not align with previous research [21] with regard to ethnicity or income, as the new outdoor recreationists in this study are predominantly white with higher reported annual incomes. These results also align with other national research regarding outdoor recreation trends [32], not associated with the pandemic, suggesting that approximately half of the U.S. population now participates in outdoor recreation. However, the national outdoor recreation participation frequency criteria established in this study (i.e., once per month) is more stringent than previous national studies, suggesting a substantial increase in participation since the pandemic began.

There were several notable limitations to this research, which should be addressed by future studies. We used a paid Qualtrics panel, which may have influenced responses and representativeness. The classification of outdoor recreation activities [21,25] may have missed some important behaviors, particularly more passive activities such as simply relaxing outdoors. Future research should consider broadening outdoor recreation activities to include both active and passive behaviors. This study purposefully did not weight the sample to match the U.S. census, which could be done with future samples for comparison. Data collection took place in May and June of 2021, over a year into the pandemic, which could have influenced responses in a variety of ways. It would be informative if future research could ask the same questions of these respondents at multiple points over the next few years. The grouped samples as a whole tended to consist of more female respondents. While national trends indicate that an increasing proportion of women are participating in outdoor recreation, our overarching results are perhaps skewed slightly based on the gender distribution we received from our sampling approach.

This study used Qualtrics to facilitate the paid panel, but comparing these results with other paid panel services (e.g., MTurk) would be useful methodologically. While the *new outdoor recreationists* may not differ substantially from *existing* with regard to demographics, it is unknown how their behaviors might differ. Additional analyses examining how these new outdoor recreationists behave (i.e., activities, locations, frequency, anticipated future behaviors) are needed to further inform long-term public land management and associated policies. We did not ask *previous but no longer outdoor recreationists* why they no longer participate, and future research must address why the *previous but no longer outdoor recreationists* are not able to pursue these activities any longer. Is it access, fiscal constraints, fear of virus transmission, or other reasons that have led to a halt in these activities? Finally, it is important to recognize that annual income and leisure time may have been abnormal for respondents during this unique period in time, and may have influenced results. Future research exploring outdoor recreation behaviors should consider asking about specific fluctuations in income and spare time as it pertains to the pandemic.

5. Conclusions

This study examined who is new to outdoor recreation amidst the COVID-19 pandemic. This research also explored who is not, those who were but are no longer, and finally, those who have been and still remain an outdoor recreationist in the U.S. To our knowledge, this is one of the first national studies to examine these important groups and differences between them demographically. This research suggests that amidst the pandemic, approximately half of the U.S. population now participates in outdoor recreation, at least once per month (at the time of this study/manuscript).

Several important demographic differences exist between the groups discovered through this study, as *new* recreationists tend to be younger and wealthier than the other three groups. *Non outdoor recreationists* are older, earn less annually, and tend to consist of more females than the other groups. *Non, existing, and new outdoor recreationists* are predominantly white. *Previous but no longer outdoor recreationists* are the most ethnically diverse, and this group tends to live in more urban environments and make less annually than the other groups. Demographically, *new outdoor recreationists* are not vastly different from *existing outdoor recreationists*.

This study highlights demographic inequity issues with regard to outdoor recreation pursuits, particularly during the pandemic, meriting greater focus on this important social justice issue. Access to outdoor recreation, the parks and protected areas that facilitate recreational health benefits remains a concern in the U.S. Future research must expand upon why these inequities continue to exist and inform strategies and policies that promote equal opportunities and access to outdoor recreation, for all.

Policy makers must work harder to ensure that access and availability to outdoor recreation is equitable. Finally, land managers and public health officials may consider employing additional and new ways to encourage diverse demographics to enjoy outdoor

recreation. A vital strategy that merits more attention is the promotion of outdoor recreation activities and the places they occur, as health resources [28].

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Institutional Review Board Statement: The study was conducted according to the guidelines of the Declaration of Helsinki, and approved by the Institutional Review Board (or Ethics Committee) of Pennsylvania State University (STUDY00017511; date of approval 4-23-2021).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Conflicts of Interest: The authors declare no conflict of interest.

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