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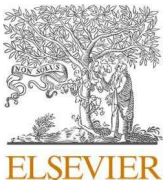

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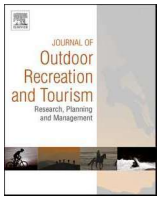

Research Article

Outdoor recreation shows promise as an equitable context for youth informal STEM learning in amenity-rich rural areas

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A B S T R A C T

Many state and federal agencies are promoting outdoor recreation as an economic development strategy in natural resource-dependent rural regions of the United States that have experienced sustained divestment and outmigration after the collapse of traditional extractive industries. An underappreciated dimension of these efforts is how to prepare a future workforce from within rural communities that can help develop this diverse and growing sector. This article reports on an intervention delivered to middle and high-school aged youth in a rural area in the northeastern U.S. that examined whether outdoor recreation activities can serve as an accessible context for informal STEM learning. Results show strong engagement regardless of sociodemographic barriers, suggesting that outdoor recreation activities may be harnessed to engage youth who have historically been excluded from STEM and other career pathways, yet whose future participation is important for achieving rural development aims.

Management implications

- Outdoor recreation economic development initiatives can be leveraged to advance STEM learning by connecting youths' interests with local assets, values, and opportunities.
- Mobile technology helps overcome access barriers and should be considered as a tool for engaging youth in informal learning experiences in the outdoors.
- Including STEM as a feature of outdoor learning experiences can expand youths' postsecondary options while helping prepare a highly skilled outdoor recreation workforce.
- Linking informal outdoor STEM learning with opportunities to earn financial compensation could be considered a useful strategy in rural youth engagement efforts.

The late 2010s and early 2020s was a watershed period for outdoor recreation (OR) in the United States. In 2016, the U.S. Senate passed the *Outdoor Recreation Jobs and Economic Impact Act* (Office of Senator Jeanne Shaheen, 2016), prompting an unprecedented effort to compile economic and jobs data on the OR sector. In response, the Federal Recreation Council partnered with the U.S. Bureau of Economic Analysis (BEA) to define outdoor recreation both broadly, as "all recreational activities undertaken for pleasure that occur outdoors," and narrowly, as "recreational activities undertaken for pleasure that generally involve some level of intentional physical exertion and occur in nature-based environments outdoors" (U.S. Bureau of Economic Analysis, 2017). Two years later, the *Confluence of States* was launched, representing a multistate commitment to creating OR offices in state government agencies (Outdoor Recreation Industry Confluence Accords, 2018). In early 2023, the U.S. Department of Agriculture announced, "building the recreation economy in the United States is one of USDA's top priorities" (United States Department of Agriculture, 2023), a commitment matched by the U.S. Department of Labor's investment in rural workforce development (Silva, 2023). Such initiatives place asset-based community development at the heart of rural renewal after decades of divestment and outmigration following the collapse of traditional extractive industries (Tolan, 2022).

Advocacy groups like the *Outdoor Recreation Roundtable* and industry partners such as Carhartt have since begun promoting OR careers (Baar, 2023; Outdoor Recreation Roundtable, 2023a). Central to claims about the viability of OR careers is a "bigger tent" approach that envisions a broader array of pathways into high-tech areas such as GIS/cartography, data analytics, and product design and manufacturing (Outdoor Recreation Roundtable, 2023b). One aspect of this rapidly evolving landscape that has yet to be addressed is how young people growing up in rural communities will access promising careers driving the field's evolution, many of which involve technological innovation (Tolan, 2022). Despite the fact that the outdoors is a core feature of the "rural lifeworld" (Yahn

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& Ricket, 2023), a complicating factor in rural economic and workforce ambitions is the reality that rural youth are often marginalized from science, technology, engineering, and math (STEM) careers for structural reasons such as fewer STEM mentors and difficulties accessing higher education, and for psychosocial reasons like not identifying as a "STEM person" (O'Neal & Perkins, 2021; Turner, 2023). Moreover, within rural communities there exists an "engagement gap" in youth activity involvement that reflects and reinforces underlying disparities (Sharp et al., 2020; Snellman et al., 2015). Unless these factors are addressed, OR economic development initiatives risk perpetuating rather than ameliorating the marginalization of under-engaged rural youth. However, if interventions are appropriately designed, these same youth may also represent "untapped potential" (Harris & Hodges, 2018) for cultivating a highly skilled outdoor workforce poised to contribute to economic revitalization in amenity-rich rural areas seeking to leverage their recreational assets.

The present study examined the feasibility of using OR activities as a context for informal STEM learning (ISL) in rural communities in a northeastern U.S. region that is prioritizing nature-based recreation as an engine of economic growth. The study centered on a ten-month intervention in the rural northeastern U.S. state of New Hampshire that was designed to aid middle and high school-aged youth in recognizing the STEM-related elements of outdoor recreation activities they pursue their free time. In this article we report on the *extent of youth engagement* in the intervention and the *quality of responses to STEM prompts* over the project duration.

1. Outdoor recreation as a context for informal STEM learning

STEM is instrumental to the production, management, and consumption of modern outdoor recreation goods, resources, and services. For example, drones are being used for trail design (Ancin-Murguzur et al., 2020), analyzing historical weather data helps ski areas manage water consumption (Wilson et al., 2018), and engineering principles are integral to high-tech mountain bike design (Waal, 2020). Even casual outdoor recreationists implicitly engage with underlying scientific processes when adapting to weather conditions (Gatti & Brownlee, 2024). As Tolan's 2022 report indicates, technological innovation is crucial for the future viability of rural recreation development and for producing gainful employment opportunities in the OR sector (see also McKean et al., 2005). Such examples illuminate how many aspects of the OR industry present opportunities to broaden participation in OR careers that increasingly require some degree of STEM competence.

Especially in mountainous and forested rural areas, the natural environment represents an abundant resource that historically has provided communities with a means of income, sustenance, and recreation (Sherman, 2009). For their part, rural youth participate in outdoor recreation to a greater degree than their urban and suburban peers, making the natural environment a source of identity strength and social capital that indelibly influences future residential decisions (McLaughlin et al., 2014; Seaman & McLaughlin, 2014; Seaman et al., 2014). However, rural youth also face compounding barriers to meaningful STEM participation because of underdeveloped workforce pathways (National Academies, 2024), limited family support and mentorship (Allen et al., 2020), and systemic disparities in extracurricular activity involvement (Sharp et al., 2020). These conditions, along with known material barriers like transportation and financial need, have prompted rural scholars to call for innovative ways to expand access to ISL and to consider variables like interest and engagement as important outcomes alongside STEM competencies (Cole, Dierking, in Kastelein et al., 2018, pp. 21–22). Because of the important cultural, economic, and psychological role the natural environment plays in rural communities, the outdoors thus offers a potential context for rural ISL programs to connect individual interests with locally available resources – key features of effective rural STEM interventions (Avery & Hains, 2017; De Mars et al., 2022; Saw & Agger, 2021).

2. Study context and intervention design

The present study examined an ISL intervention in rural northern New Hampshire involving an interactive mobile web platform, *ORfolio,* that enabled youth to document observations of STEM skills and knowledge in OR activities they expressed interest in or pursued in their free time. The *ORfolio* platform was initially developed for use in career and technical education settings (see https://www.cast.org/our-work/projects/ctefolio-supportinghands-on-learning-remote-environment). It is unique in its ability to asynchronously track competency development in youths' independent activities, and for its integration of Universal Design for Learning (UDL; Meyer et al., 2014; Kelly et al., 2022), a curriculum design approach that maximizes accessibility across learning differences. It was adapted for this project to fit an OR context.

The intervention launched in January 2023 at a daylong retreat where youth were trained to use *ORfolio* as co-researchers, including the ethics involved in photographing human subjects. In each subsequent month, youth received researcher-designed "challenges" in their *ORfolio* accounts prompting them to record experiences and reflections on their recreational activities with friends or family, in youth programs, or alone, where they believed STEM was involved, or other prompts tied to STEM use in OR settings and careers. Fourteen challenges were delivered during the program period: two at the kickoff event, ten over the ten months, and two at a culminating event in October 2023. An illustration of the app interface is shown in Fig. 1. (For further details see Bastoni et al., 2024).

Since attrition is a serious threat to ISL interventions (Staus et al., 2021) and because of ethical concerns about extractive research-participant relationships when working with marginalized groups (see Bothello & Bonfirm, 2023), youth received a $25 gift card for each challenge completed, framed as compensation for contributing to the study as co-researchers. Additionally, monthly check-in meetings occurred at youths' schools, where a member of our team helped troubleshoot, led brief reflections on progress, and reinforced expectations for challenge responses.

The purpose of the intervention was to involve youth in answering the project's overall question, *To what extent can outdoor recreation serve as a promising context for informal STEM learning in rural communities?* Key to answering this question was identifying whether youth participants themselves saw STEM in the OR activities available in their local communities. Sustained engagement throughout the project period was therefore a crucially important aspect in addressing both the motivational and knowledge dimensions of this question. Based on prior studies conducted in this region (Jaffee et al., 2019), we presumed youth would vary on both dimensions – project engagement and STEM recognition – for reasons related to antecedent characteristics such as family socioeconomic status, parental support for STEM interests, and outdoor interests and access barriers. The research questions examined in this report are therefore.

(1) What antecedent factors predict ISL program engagement and STEM response quality among rural youth?
(2) Did rural youth experiencing sociodemographic barriers to varying degrees engage in the project at different rates, or demonstrate different levels of STEM response quality?
(3) Did youth experience co-researcher compensation as a motivator?

3. Methods

3.1. Sample selection and data collection

Prior to the intervention launch in January 2023 and after receiving IRB approval from the University of New Hampshire, we surveyed 177 youth in grades 7–11 from communities in NH's three northernmost counties using a confidential pretest survey containing measures of

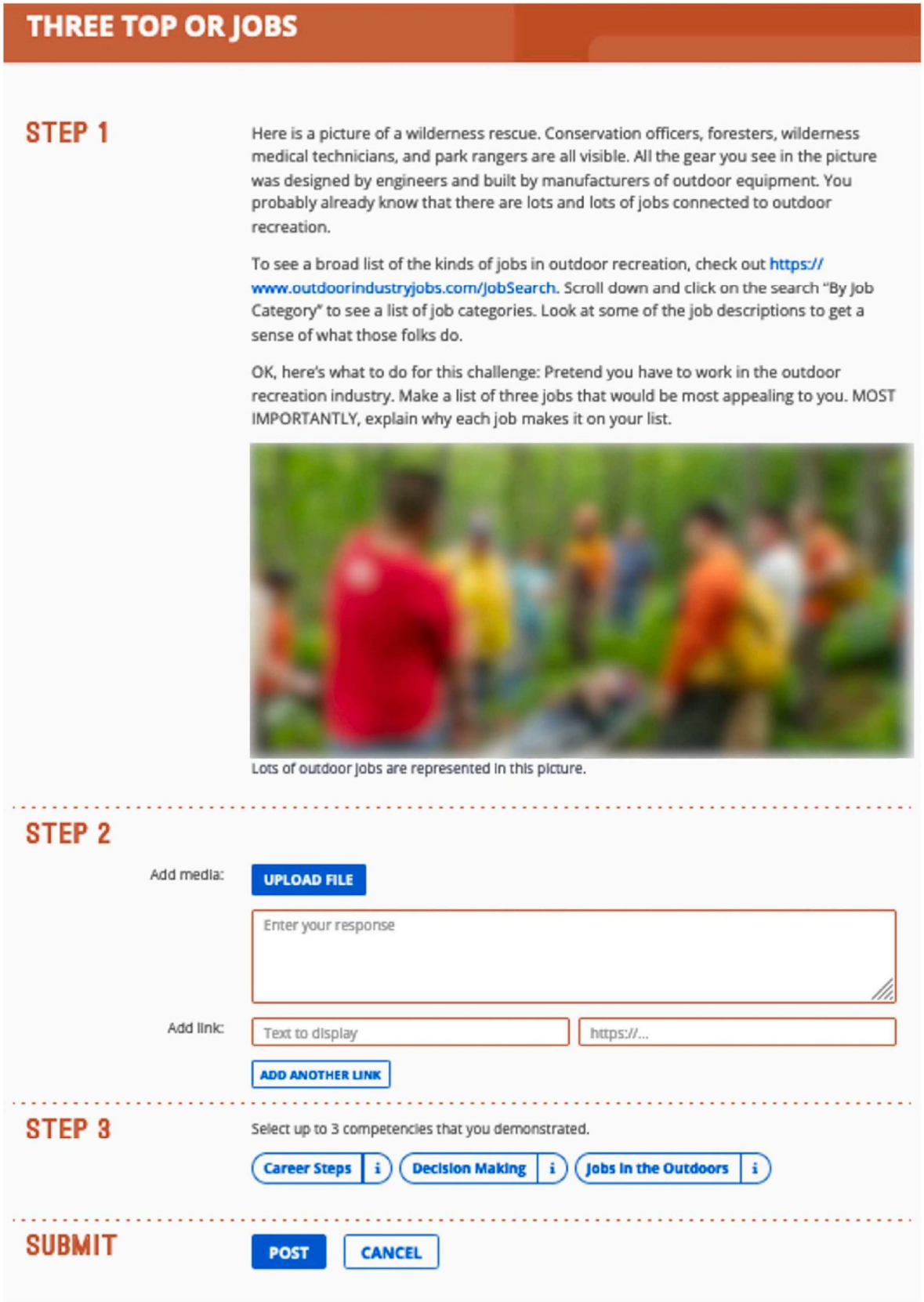

Fig. 1. ORfolio interface – example of user challenge.

Table 1
County characteristics for youth participant sample – rurality and natural amenity features.

County (2022 population; % change 2010–2020, 2020–2022)[1]	Rural-Urban Continuum Code (scale: 1 = less rural, 9 = more rural) [2]	Urban Influence Code (scale: 1–12)[2]	Land Surface Form Topography Code[3]	Natural Amenity Scale (distance from U.S. mean; scale: >3 = high amenity, <-2 = low amenity) [3]
Carroll (52,199; +4.8%, +4.2%)	6	6 – Adjacent to a small metro area without a city of at least 10,000	20 – Low mountains	4 (0.93)
Coös (31,504, −5.4%, +0.8%)	7	7 – Not adjacent to a metro area and with a city of 10,000 or more	20 – Low mountains	3 (−0.09)
Grafton (43,958, +2.2%, 0.02%)	5	7 – Not adjacent to a metro area and with a city of 10,000 or more	20 – Low mountains	4 (0.32)

1 https://www.census.gov/data/tables/time-series/demo/popest/2020s-counties-total.html.
2 https://www.ers.usda.gov/data-products/rural-urban-continuum-codes/(Updated 2020)
3 https://www.ers.usda.gov/data-products/natural-amenities-scale/(Updated 1999). "The natural amenities scale is a measure of the physical characteristics of a county area that enhance the location as a place to live. The scale was constructed by combining six measures of climate, topography, and water area that reflect environmental qualities most people prefer. These measures are warm winter, winter sun, temperate summer, low summer humidity, topographic variation, and water area" (U.S. Department of Agriculture, 1999).

sociodemographic barriers, outdoor recreation interests and access barriers, and prior STEM supports (personal interests in and family supports for STEM). Local adult partners from local schools and recreation agencies managed youth recruitment, assent, and parental consent prior to contact with the research team. Respondents were awarded a $10 gift card for completing the survey.

Fifty-four youth were selected from the initial pool to participate based on factors including sociodemographic diversity, outdoor interests, and STEM supports. To manage the monthly check-ins, participants were clustered across five school/community sites: one in Carroll County, one in Grafton County, and three in Coös County (See Table 1 for relevant location characteristics.). In selecting the final participant group we aimed to include youth who were sociodemographically similar to excluded peers but, due to the project's overall aim, expressed more outdoor interests and reported more prior STEM interests and supports (defined below). Table 2 compares the selected and non-selected groups on factors included in the present analysis. Fifty-two participants completed the study with two withdrawing due to changes in residential and schooling statuses, reflecting a 96% retention rate.

3.2. Scoring and analytic plan

Each month trained graduate assistants recorded the *ORfolio* challenge completion rates and scored youths' responses using a STEM quality rating developed for the project. The rating scale was adapted from Kelley and Knowles's (2016) *conceptual framework for integrated STEM education* which "seeks to locate connections between STEM subjects and provide a relevant context for learning the content" (p. 3). We thus sought representation of STEM concepts and their integration into an OR context. See Table 3 for rating scale.

To address research question #1, we ran separate regression analyses using the factors listed in Table 2 as predictor variables, and as criterion variables we created two additional measures: (1) A composite youth engagement score reflecting the percentage of *ORfolio* challenges completed + the percentage of check-in meetings attended; (2) The average of all STEM quality ratings applied to each participant's challenge responses. Multiple linear regression was selected for both tests because it is robust for different types of continuous variables provided the residuals of the dependent variable are normally distributed (Williams et al., 2013). We used stepwise regression in both cases with the removal level set at 0.1 and $p = .05$ and we hypothesized that sociodemographic barriers, outdoor access barriers, outdoor interests,

Table 2
Pre-survey scores for participating youth (predictor variables).

		Group	
Factor/Variable		Selected ($n = 54$)	Not selected or dropped out ($n = 127$)
1. Age		M = 14 (SD = 1.59)	M = 14 (SD = 1.62)
2. Gender		M = 29; F = 23	M = 55; F = 69; Transgender = 1[b]
3. Race/Ethnicity[1]	White	89% (N = 46)	88% (N = 108)
	Black or African American	2% (N = 1)	3% (N = 4)
	Native American or Native Alaskan	4% (N = 2)	6% (N = 7)
	Asian	4% (N = 2)	2% (N = 3)
	Native Hawaiian or Pacific Islander	2% (N = 1)	0
	Hispanic or Latino	6% (N = 3)	4% (N = 5)
4. Sociodemographic barrier score (Scale: 0–21; includes: SES, parental education, race/ethnicity [White = 0, non-White or multiracial = 1], ACTE special populations items[2])		M = 5.35 (SD = 2.31) Range: 0-12	M = 5.15 (SD = 3.11) Range: 0-17
5. Barriers to outdoor activities (Scale: 0–2, α=.826)[3]		M = 0.46 (SD = 0.40)	M = 0.44 (SD = 0.34)
6. Outdoor interests (10 items; Scale: 0–7 α = .898) [3]		M = 4.15 (SD = 1.48)	M = 3.55 (SD = 1.62)[a]
7. Prior STEM Supports (4 items; Scale: 0–5; α=.871)[4]		M = 2.68 (SD = 1.34)	M = 1.91 (SD = 1.37)[b]

1 Note: Youth could select more than one race/ethnicity. Percentages in the selected group resemble NH generally (see U.S. Census Bureau, 2023)
2 https://www.acteonline.org/about/structure/divisions/new-and-related-services-division/special-populations-section/[3] (The Nature Conservancy, 2011).
4 (Christensen & Knezek, 2017)
Gender $X^2(4, N = 177) = 90.262$, $p < .001$. Significant differences were found between boys selected versus boys not selected in STEM supports (M = 2.95, SD = 1.39 vs. M = 1.71, SD = 1.36, $p < .001$) and outdoor interests (M = 4.31, SD = 1.52 vs. M = 3.45, SD = 1.60, p = .019). Although selected girls scored higher than girls not selected on these measures, differences were nonsignificant.
[a] p = .023
[b] $p < .001$

Table 3
STEM response quality rating scale.

Rating	Depth of STEM Engagement	Depth of STEM-Outdoor Recreation Engagement
0	No mention of STEM in the response	No STEM-OR connection described in the response
1	Science, technology, engineering, or math are named/labeled/tagged only, but not explained further	Science, technology, engineering, or math are stated as part of an OR activity or skill only (e.g., "there's a lot of math needed to build good trails"), but not explained
2	A STEM component (knowledge) or process (e.g., critical thinking) is named and/or described	A STEM component is connected to OR and explained in terms of knowledge (e.g., "you have to think about how the materials used to build skis will respond in cold temperatures") and/or processes (e.g., "ski lift mechanics need to be able to find and solve problems they can't see … quickly!")
3	All of 2 above plus the response includes reference to a specific scientific (or T-E-M) principle	All of 2 above plus a specific scientific (or T-E-M) principle is referenced in the context of an OR activity, setting, context, or resource

and prior STEM supports would predict engagement, and that prior STEM supports would predict STEM response quality ratings.

To address our second research question, we divided the selected participants into two groups according to the mean sociodemographic barrier score of 5.35 ("fewer sociodemographic barriers" group: N = 32, M = 3.97, SD = 1.15; "more sociodemographic barriers" group: N = 20, M = 7.55, SD = 2.0). We conducted independent samples t-tests for predictor variables and STEM response quality ratings to determine between-group differences. Due to a non-normal distribution of engagement scores across the two groups, we conducted a nonparametric Mann-Whitney test to determine between-group differences in engagement score. We hypothesized that youth who experience more sociodemographic barriers would also face higher outdoor access barriers, possess fewer prior STEM supports, and therefore engage in the project at a lower rate and have lower STEM response quality ratings.

To address the third research question, youth completed a brief post-project questionnaire which asked, "What motivated you to continue completing the challenges and attending the check-ins?" with "getting paid to complete challenges" as a yes/no response option. An independent samples *t*-test was used to compare engagement scores across youth selecting yes versus no, and a chi-square test was used to assess group differences across yes/no and more/fewer sociodemographic barriers, anticipating that youth who experience greater sociodemographic barriers would be motivated to a higher degree by financial compensation.

4. Results

Descriptive statistics for the variables used to answer question #1 are shown in Table 4 and Table 5.

Table 4
Challenge completion, check-in attendance, engagement score, and STEM response quality rating.

Criterion Variable	M (SD)
1. Challenge Completion (Average percent completed; Scale 0–1)	0.68 (0.20)
2. Check-in Attendance (Average percent attended; Scale 0–1)	0.71 (0.22)
3. Engagement Score (sum of #1 & #2 above; Scale 0–2)	1.40 (0.38)
4. STEM Response Quality Rating (Scale: 0–3)	0.72 (0.59)

Because of the sample size, we examined QQ plots for each criterion variable and ran Shapiro-Wilks tests of normality for their observed residuals. Results supported the use of linear regression for each of the two variables (engagement score W = 0.970, p = .211; STEM response quality rating W = 0.975, p = .343). Additionally, no problems with multicollinearity were detected in either model using variance inflation factor (VIF) and minimum tolerance indicators.

Regarding question #1, results from the first regression analysis revealed a significant relationship between age and engagement score, F (1, 49) = 5.107, p = .028. The model accounted for a significant proportion of the variance in engagement score, $R^2 = 0.094$, adjusted $R^2 = 0.076$. Age was found to be a significant predictor of engagement score ($\beta = -0.307$, p = .028), indicating that as age increases, engagement score decreases. The regression equation for predicting engagement score based on age is as follows:

Engagement score = 2.422–0.075(Age)

That is, for every one-unit increase in age, engagement score is expected to decrease by 0.075. Additionally, the 95% confidence interval for the regression coefficient for age ranged from −0.141 to −0.008. These findings suggest that age was a significant factor influencing engagement among participants, with engagement declining as age increases (see Fig. 2).

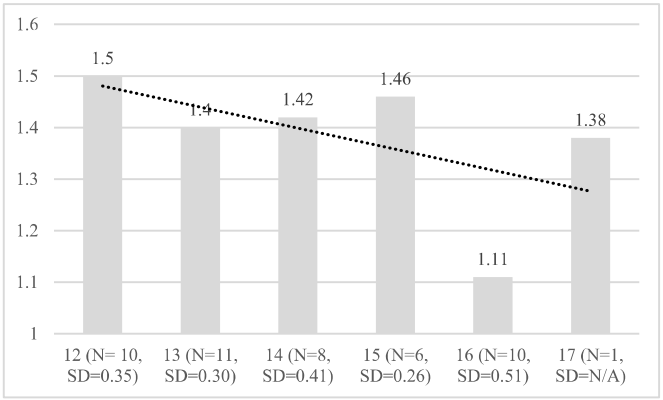

Fig. 2. Engagement score by age.

Table 5
Differences in predictor and criterion variables by group by M (SD).

Factor/Variable	Group	
	Fewer Sociodemographic Barriers N = 32	More Sociodemographic Barriers N = 20
Sociodemographic Barrier Score	3.97 (1.15)	7.55 (1.96)[a]
Gender	M = 18, F = 14	M = 11, F = 9
Barriers to Outdoor Activities (Scale: 0–2)	0.45 (0.36)	0.49 (0.47)
Outdoor Interests (Scale: 0–7)	4.12 (1.53)	4.20 (1.42)
STEM Supports (Scale: 0–5)	2.98 (1.25)	2.20 (1.38)[b]
Engagement Score (Scale: 0–2)	1.38 (0.45)	1.40 (0.28)[c]
STEM Response Quality Rating (Scale: 0–3)	0.72 (0.53)	0.70 (0.67)

[a] $p < .001$
[b] $p = .041$
[c] Mann-Whitney test: U = 300.0, p = .706

Results of the second regression analysis revealed a significant relationship between the predictor variables and STEM quality rating, $F(2, 48) = 8.610$, $p < .001$. The model accounted for a significant proportion of the variance in STEM quality rating, $R^2 = 0.264$, adjusted $R^2 = 0.233$. Both age ($\beta = 0.465$, $p < .001$) and engagement score ($\beta = 0.404$, $p = .003$) were identified as significant predictors of STEM quality rating. The regression equation for predicting STEM quality rating based on the significant predictors is as follows:

STEM Quality Rating = −2.43 + 0.169(Age) + 0.603(Engagement score)

That is, for every one-unit increase in age and engagement score, STEM quality rating is expected to increase by 0.169 and 0.603, respectively. Furthermore, the 95% confidence interval for the regression coefficients ranged from 0.074 to 0.263 for age and 0.212 to 0.994 for engagement score. These findings indicate that both age and engagement score influenced STEM quality ratings among participants.

Research question #2 concerned differences in predictor and criterion variables between groups reflecting "fewer sociodemographic barriers" and "more sociodemographic barriers" (see Table 5). Further analyses of specific sociodemographic barrier elements indicated that the factors driving the between-group difference were parents' level of education (Scale: 1 [graduate or professional degree] – 6 [did not complete high school]; Fewer sociodemographic barriers M = 0.91 [SD = 0.82], More sociodemographic barriers M = 2.65 [SD = 1.42], $p < .001$) and SES (Scale: 1 [wealthy] – 6 [struggling financially]; Fewer sociodemographic barriers M = 2.59 [SD = 0.88], More sociodemographic barriers M = 3.80 [SD = 1.01], $p < .001$). These figures suggest that, in this rural context, parents' level of education and SES were the most prominent sociodemographic barriers likely to predict marginalization from STEM. Although groups with fewer/more sociodemographic barriers differed significantly in their overall predictor measures and levels of prior STEM support, they did not differ in their reports of outdoor access barriers, outdoor interests, project engagement, or STEM response quality ratings. Put differently, regardless of group differences in parents' levels of education and SES, groups had equal access to outdoor recreation and equivalent levels of outdoor interest, and engaged with the project's STEM features to similar degrees.

Regarding question #3, 40 of 52 youth selected "getting paid to complete challenges" as a motivator to continue engagement. However, a significant difference in engagement scores was not found between youth who responded affirmatively (M = 1.44, SD = 0.38) versus those who did not select this response (M = 1.21, SD = 0.38, $p = .09$). Additionally, chi-square analysis found no significant relationship between more/fewer disadvantages and selecting/not selecting getting paid as a motivator: $x^2(1, N = 52) = 1.19$, $p = .27$. Thus, although financial compensation for serving as co-researchers was reported as a motivator by most youth, it was not significantly associated with project engagement or dependent on youths' status relative to the sociodemographic barriers we measured.

5. Discussion

The present study sought to determine whether OR shows promise as a context for ISL in natural amenity-rich rural regions leveraging natural resources as a driver of economic development, and whether antecedent sociodemographic disadvantages would moderate youths' engagement in an informal learning intervention designed around OR activities. Findings indicate that the antecedent factors we hypothesized would predict engagement and STEM response quality – namely disparities in sociodemographic factors, outdoor access, and prior STEM supports – did not significantly affect outcomes. Given rural youths' underrepresentation in STEM, using locally available, valued, and accessible resources that tap into local strengths may be a worthwhile strategy for expanding STEM-embedded career opportunities at the forefront of OR economic development. A number of findings support this assessment.

First, achieving a 96% retention rate throughout a 10-month, voluntary intervention in rural communities suggests that the project design holds promise as an engagement strategy given prior difficulties with retention in rural ISL programs (Allen et al., 2020). We believe that leveraging youths' interests, the remote, asynchronous, and accessible capabilities afforded by the mobile app, and providing compensation framed in relation to co-researcher roles were key factors. These would be useful areas to focus on more precisely in future research, ideally using comparison or quasi-experimental designs.

The finding that age predicted project engagement is not surprising as it is consistent with prior longitudinal research conducted in this region, which found organized activity involvement, including in the outdoors, to drop after middle school (Sharp et al., 2020). In the present study, however, participation appeared to be fairly consistent for every age except 16 year-olds (see Fig. 2), a finding that is worth bearing in mind when drawing conclusions from the first regression model showing an engagement decline by age. Reproducing the intervention with a larger sample would help confirm or refute findings associating age with engagement. It is likewise not surprising that age and engagement predicted STEM response quality, since older participants could be assumed to have received more STEM instruction in school and therefore are more likely to demonstrate competence in responding to STEM prompts.

Another promising finding was that a lack of prior STEM supports did not seem to pose a barrier to engagement or to the expression of STEM-related responses, regardless of sociodemographic group differences. Nonsignificant contributions of sociodemographic barriers, outdoor access barriers, and outdoor interests to regression outputs further suggest that the intervention's key design features may afford equitable access to informal STEM experiences. We are further encouraged about this finding given recent research linking OR to the development of career skills including self-efficacy, resilience, optimism, and hope (Tyne et al., 2024) and place attachment and community pride (e.g., Anderson et al., 2023), attributes that could expand youths' future plans while helping combat rural outmigration.

Taken together, these findings provide preliminary evidence that OR may be an engaging context for rural youth representing varied sociodemographic profiles, provided they have access to outdoor activities. Although this study was conducted in only one geographic region, New Hampshire's similarity to other rural states that are prioritizing OR as an asset-based community and economic development strategy, and the regression outputs reported here, suggest that our general design approach may be useful to implement and test in other, similar contexts.

We envision two directions for future intervention design and research improvements. In this study, challenges were written to be more exploratory than instructive and provided minimal scaffolding for specific STEM concepts. Although engagement rates were promising, the average STEM response quality rating of 0.72 (0–3 scale) illustrates that youths' expression of STEM knowledge was not particularly robust in this project. Future iterations could involve more explicit instructional guidance regarding focal STEM knowledge and competencies, while still affording flexibility in how youth identify and express them. A framework like Tan et al.'s (2023) integrated "STEM quartet" model that informs practical and scientific problem-solving in ISL contexts may be useful for refining future mobile prompts and scoring methods.

The finding that compensation motivated engagement was expected. In rural communities, *work* is often regarded as a key moral virtue (Sherman, 2009). Apart from mitigating potential trade-offs like choosing to participate in an ISL program versus working a shift in a local job, we were conscious of this ideological backdrop when we built compensation into the project budget. The fact that 96% of participants persisted over ten months in a voluntary program during their free time suggests that financial incentives deserve further study in learning interventions targeting rural youth.

6. Management implications

This study demonstrates potential value in considering youth as a crucial stakeholder group in rural recreation economic development initiatives, where the activities they enjoy and pursue in their free time can be leveraged to cultivate interest and engagement in emerging career options requiring some degree of STEM competence. Coalitions leading state-wide or local efforts can play a valuable role in helping schools and youth-serving organizations align their programs with local career pathways, so should consider them as collaboration partners. Mobile technologies can play a useful role in expanding access and facilitating engagement since they help overcome barriers related to geographic distance and scheduling conflicts (Ramsurrun et al., 2024), however it is important to consider accessibility strategies like UDL and other factors in their use in order to reach underrepresented and marginalized youth (Meyer et al., 2014; Nautiyal et al., 2023). Highlighting the ways STEM is reflected in outdoor activities and careers can help extend youths' interests in new directions while also building evidence that outdoor jobs can be "high skill, high wage, and in demand" – required qualities of modern career and technical education (CTE) (Advance CTE, 2020). Local and regional managers, owners, and agency directors may consider joining CTE advisory boards to create linkages between OR and career pathway areas. Finally, building incentives into program design may help retain participants.

7. Limitations, future research, & conclusion

Although this study's findings suggest promise in using OR as an equitable and engaging context for ISL, a notable limitation was that participating youth differed from excluded youth in key ways – most prominently, outdoor interests and prior STEM supports. The profiles of participating youth were necessary for our overall project but had we included less outdoorsy youth, the engagement patterns might have differed. Future studies would benefit from sampling more broadly while retaining outdoor interests and access barriers as predictors.

Outdoor recreation is being promoted in many rural areas as an economic development strategy, which we argue is implicitly dependent on STEM for managing resources, producing goods and services, and delivering high-quality experiences. In addition, our study shows that OR experiences have important affordances for rural youth to equitably engage with STEM in ways that can be aligned with educational and workforce objectives. Given its ascendance as a policy focus and current levels of federal and state investment, outdoor recreation may be a promising context for broadening equitable participation in STEM among rural youth and for expanding pipelines into rapidly developing outdoor careers.

CRediT authorship contribution statement

Jayson Seaman: Writing – original draft, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Andrew D. Coppens:** Writing – original draft, Project administration, Investigation, Funding acquisition, Data curation, Conceptualization. **Cindy L. Hartman:** Writing – original draft, Project administration, Investigation, Conceptualization. **Amanda Bastoni:** Writing – review & editing, Supervision, Investigation, Funding acquisition, Data curation, Conceptualization. **Kate Moscouver:** Writing – review & editing, Formal analysis, Data curation. **Courtney LaChaine:** Formal analysis, Data curation. **Janet Gronneberg:** Project administration, Funding acquisition.

Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this work the authors used the AI editing tool *Curie.com* for minor editorial suggestions. After using this tool/service, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication.

Declaration of competing interest

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Data availability

The authors do not have permission to share data.

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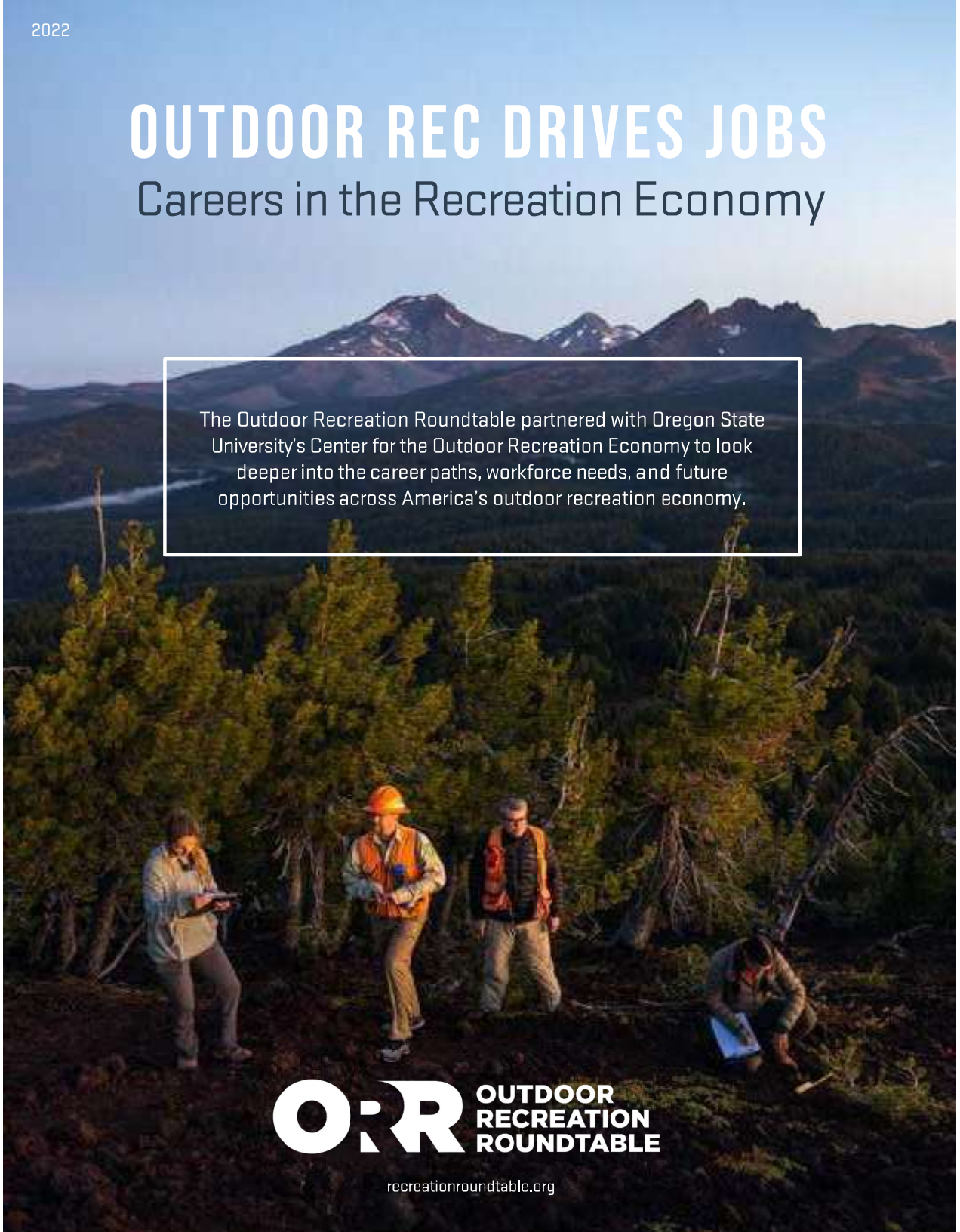
2022

OUTDOOR REC DRIVES JOBS

Careers in the Recreation Economy

The Outdoor Recreation Roundtable partnered with Oregon State University's Center for the Outdoor Recreation Economy to look deeper into the career paths, workforce needs, and future opportunities across America's outdoor recreation economy.



ORR OUTDOOR RECREATION ROUNDTABLE

recreationroundtable.org

BACKGROUND:
THE OUTDOOR ECONOMY IS TAKING OFF

The Outdoor Recreation Roundtable (ORR) partnered with Oregon State University's Center for the Outdoor Recreation Economy (CORE) to look deeper into the career paths, workforce, needs, and future opportunities across America's Outdoor Recreation Economy.

The outdoor recreation economy, which accounts for 2% of U.S. GDP and 4.3 million jobs (3% of all employees in the United States) connects people to high- quality outdoor experiences in environments from local parks to expansive backcountry lands and waters around the country.

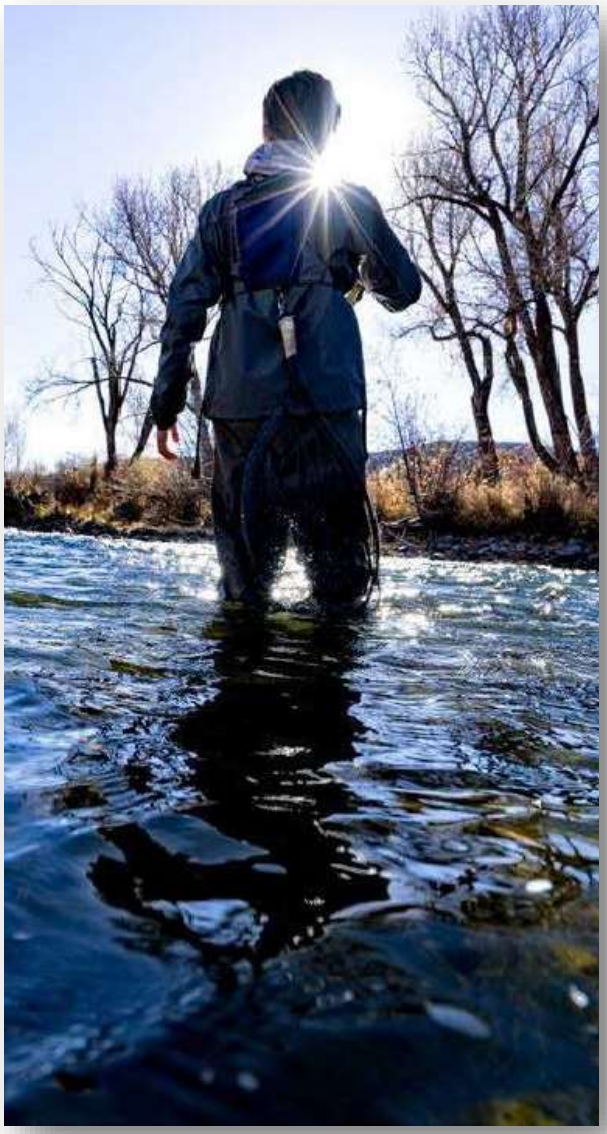
This sector helps develop economies and create jobs, increases rural prosperity, improves public health outcomes and quality of life, and promotes environmental stewardship and conservation.

The backbone of this thriving sector is a growing workforce that meets the dynamic needs of today's fast-paced industry.

While professionals from across the country are seeking roles in this exciting industry that supports a conservation ethos and enables high quality of life, we also know that there is a growing skills gap in the outdoor workforce and that there are tens of thousands of open jobs (31,000 in the marine industry alone) available for people seeking life-long and meaningful careers.

Despite wide-ranging and positive impacts to society, as well as ample opportunities to work in the industry, there are lingering misconceptions in the public and with policymakers about the types and diversity of jobs in the outdoor recreation economy.

To illustrate the wide array of career opportunities for workers with and without higher academic degrees, the skill sets required to excel in them, and the successful career paths that other professionals have followed, ORR presents this report.



> "Time outside isn't just a crunchy, nice to have, granola thing. Outdoor recreation is a true economic driver, as well as creating a higher quality of life. These jobs are part of our sustainable future."
>
> Marc Berejka, Director of Community and Government Affairs, REI

The $689 billion outdoor recreation economy–and its 4.3 million jobs around the country–has never factored so importantly into the American identity. A convergence of factors have made this the case.

- **New national conservation and recreation investments and initiatives** are going to work for recreation infrastructure to address deferred maintenance needs (repairs to infrastructure and assets that have been delayed due to budget constraints and lack of funding), mitigate impacts of climate change and unprecedented recreation demand on our natural resources, and expand access to nature for all.
- **The COVID-19 pandemic** pushed Americans to seek safe, rejuvenating experiences outside, and millions more recreated in 2020 and 2021 than any year prior.
- **Travelers are flocking to communities adjacent to outdoor recreation destinations** (aka gateway communities), and many are relocating to live in such regions of the country thanks to remote work opportunities near accessible recreation assets or recruitment by businesses using nearby recreation assets to attract and retain workers.
- **Staying close to home during COVID-19** also spotlighted opportunities to increase equitable access to outdoor recreation locations for communities who have historically lacked close-to-home opportunities.

Photo credit: Outdoor Afro

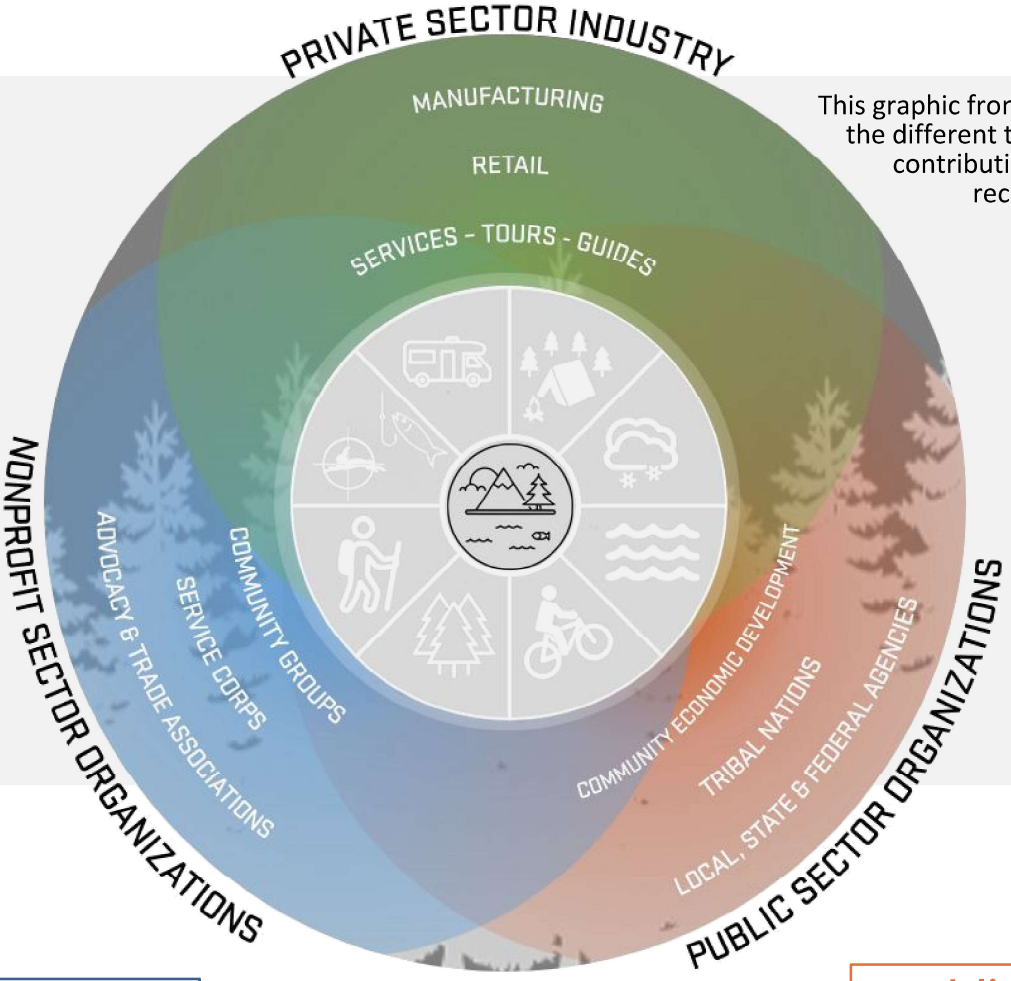
THE OUTDOOR WORKFORCE

As a newly organized sector including well over 110,000 small, medium, and Fortune 500 businesses across America, **many of the professional and technical careers in the outdoors are simply unseen or unknown by the public.** The majority of participants in outdoor recreation activities only interact with consumer-facing employees, including retail and hospitality staff members, guides and outfitters, parking and campground attendants, and concessionaires who sell food, beverages, supplies, and souvenirs at recreation hot-spots.

While these important jobs certainly make up a segment of jobs in the outdoor recreation economy, there are also millions of professional and technical, full-time positions across the sector that provide competitive wages and meaningful careers.

Private Sector

These for-profit organizations manufacture gear, apparel, and outdoor vehicles, provide services like guiding and outfitting to outdoor enthusiasts, and sell outdoor products both online and in-person.



This graphic from CORE illustrates the different types of segments contributing to the outdoor recreation economy.

Nonprofit Sector

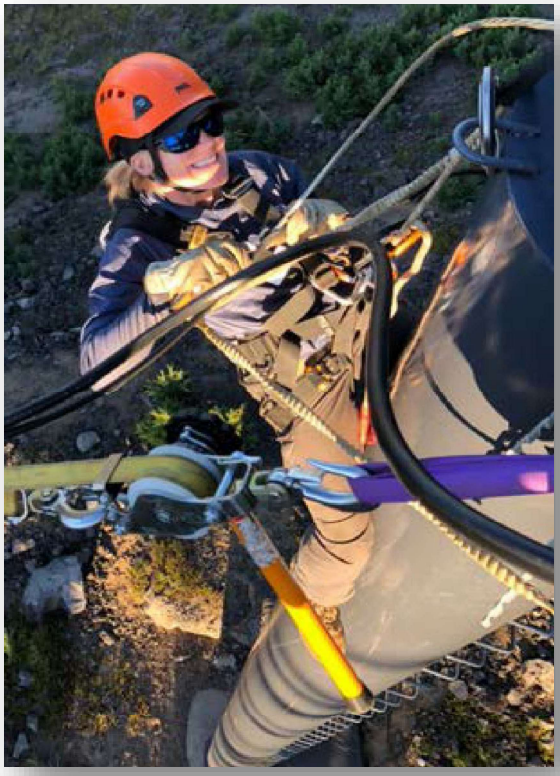
These organizations sustain the growth and development of the recreation economy, whether they are service corps that place people of all ages on stewardship projects on public lands and waters, community groups that connect the public to the outdoors, or advocacy and trade associations that help promote beneficial outdoor recreation policies at the federal, state, and local levels.

Public Sector

These organizations are responsible for managing recreation on public lands and waters and the people who use them, and also include organizations that connect outdoor recreation opportunities to community economic development. Importantly, Tribal Nations are critical stakeholders in the recreation economy, given their stewardship of, and connection to, today's public lands and waters since time immemorial.

As evidenced by this breakdown, outdoor recreation industry organizations span a wide range of sizes and functions, from well-known clothing and gear retailers like REI and Bass Pro Shops, to manufacturers like Brunswick (boats), Winnebago (RV), and Dometic (RV, marine, and camp equipment), to nonprofits like the Theodore Roosevelt Conservation Partnership, Outdoor Afro, and The Nature Conservancy, to agencies like the U.S. Forest Service, National Park Service, state and local land managers, and everything in between.

But what does work in the outdoor recreation industry look like in practice? **ORR researchers interviewed 18 industry experts** to provide a wide range of roles across segments of the recreation economy, illustrating the diversity of meaningful opportunities in the industry.



Technical Specialists

For those who crave systems, problem-solving, mechanics and technology. These workers are most likely to be found behind-the-scenes, designing new technologies and / or working diligently to ensure that outdoor products work efficiently and safely for all users.

- Auto and RV Technicians
- Ski Lift Technicians Inspectors
- Software Engineers and Web Developers
- Accountants
- Biologists /Ecologists
- Manufacturing / Engineering
- Trail, Infrastructure and
- Facility Design and Maintenance
- Permitting and Planning
- Landscape Architects and Engineers
- GIS / Cartography
- Shipping Logistics
- Business Analytics

Participant-Facing

For those who love the person-to-person interactions of connecting people to place. These workers are most likely to be found in front-facing roles, and live for the feeling of creating meaningful outdoor experiences for Participants.

- Sales and Customer Service
- Outdoor Education / Interpretation
- Community Managers
- Cultural Storytellers
- Public Affairs
- Communications and Development
- Travel Advisors
- Event Planning
- Client Relations
- Concessions Operators

Integrators

For those who possess both technical expertise and enjoy working with people, but don't have a preference for either. These workers help achieve outstanding outdoor experiences by utilizing a wide range of skill-sets—think "generalist" more than "specialist."

- Land Managers
- Community Economic Development
- Environmental Justice
- Recreation Management
- Social Scientists
- Risk Management
- Product Design and Development
- Corporate Sustainability
- Outdoor Recreation / Conservation Policy
- User Experience / Interface
- Guiding and Outfitting

MEET REAL PEOPLE IN THE OUTDOOR RECREATION INDUSTRY

To accompany this report, ORR and OSU interviewed a variety of outdoor recreation professionals to learn more about their career paths, day-to-day, motivations behind their work, and best aspects of their work / life balance. Access these Workforce Profiles here.

JOB IN HIGH DEMAND: RV TECHNICIANS

RV Service Technicians are in increasingly high demand in the outdoor recreation industry. **RV Service Technician became the third-fastest growing job nationwide in 2020**, according to the compensation platform PayScale's year-over-year report created through crowdsourced data. Despite employment challenges, RV manufacturers still produced more RVs than ever in 2020. With programs like the RV Technical Institute offering educational payment opportunities starting at $40,000 and $50,000, moving up to $90,000 through training, RV technicians can be a particularly good pathway for high school graduates, career pivots, and the formerly incarcerated.

[1] https://www.payscale.com/research-and-insights/end-of-year-report-2020/

WHY THE OUTDOOR RECREATION INDUSTRY?

Many workers gravitate towards work in the outdoor recreation industry to align with colleagues that share similar conservation values and work on products and places they care about. Outdoor workers frequently describe the outdoor recreation industry as "value-led," meaning that ideals like outdoor recreation access, environmental protection, or "a life outdoors" are shared by a wide breadth of workers.

It is not uncommon for coworkers in outdoor jobs to work hard together during the week and meet on the weekend for outings at the local trailhead, campground, or marina. Outdoor conferences, trade shows, and other gatherings tend to include a healthy balance of indoor work with outdoor socializing.

This combination of work and play leads to a more sustainable work /life balance compared to other industries, and provides benefits not just to the workers but also to their families. Other workers on the manufacturing side of the industry highlighted good-paying, stable jobs as a reason for pursuing their work.

"It's a quality of life decision for most - 'I want to work outside'."

Pitt Grewe, Director,
Utah Division of Outdoor Recreation

SALARY

A wide range of outdoor jobs offer pay to sustain lifelong careers. A 2019 survey from Outside Business Journal which collected self-reported data from over 1,400 respondents highlights key statistics across different descriptive and demographic categories in the industry. As this data is three years old, these figures have increased due to inflation.

OUTDOOR RECREATION INDUSTRY CAREER RESOURCES

Here is a sampling of online resources related to finding work in the outdoor recreation economy.

Basecamp Outdoor

Basecamp is an online community connecting individuals in the outdoor, active lifestyle, and action sports industries. Basecamp equips you with the best job opportunities and insider info so you can navigate your next move in the outdoor industry with confidence. Chat openly about the ups and downs of your outdoor industry career (including how to break in) and get real-time advice, camaraderie, and connections to opportunity from a supportive community.

Through an inclusive, supportive group of tens of thousands of members, a newsletter, a podcast, and other resources, we help a talented workforce grow their careers. We network, post jobs and news, share gear discounts, and talk about the industry in general. Including the important stuff like diversity and the wage gap.

Career Outdoors

Career Outdoors helps mission-driven outdoor lovers turn their passion into a paycheck by providing industry specific resources, strategies, and advice to help people create careers they love in outdoor and environmental sectors. We want the brightest people in positions that connect communities and help our planet - and we don't think that a confusing hiring process should be holding you back.

In Solidarity Project

We are passionate about building a better, stronger, more diverse outdoor recreation industry. We work closely with industry partners to sign The Outdoor CEO Diversity Pledge and to facilitate and lead DEI-focused consulting projects and speaking engagements. This site is a resource for job seekers from underrepresented communities looking for employment in the outdoor and travel industries.

CareerBoat.com

Careerboat.com is the recreational marine industry's leading online job board dedicated to advertising jobs for boat builders, yacht builders, boat yards, marinas, boat dealerships, yacht brokerage firms, yacht crew, and marine industry suppliers.

RV Industry Job Board

The RV industry is committed to promoting exploration, adventure, and responsible recreation, while advocating for innovation and conservation in our business practices. As an association, we encourage and promote sustainability, diversity, safety, and the many community activities of our member companies. Members of the RV Industry Association post jobs frequently here.

WORKFORCE CHALLENEGES

Like many other sectors, the outdoor recreation industry also faces urgent challenges with its workforce. The baby-boomer generation is retiring quickly, and taking with it a wealth of institutional knowledge and wisdom, creating a skills gap in maintenance, manufacturing, and management careers across the industry. The industry itself is also changing rapidly, with skilled workers and innovators needed for fiberglass, electric, and next generation technologies. **For these reasons, filling the workforce with qualified talent presents the biggest supply chain issue for the outdoor recreation industry.**

Additionally, due to historic exclusionary practices, the outdoor recreation industry has work to do to build a workforce that is representative of the American population, particularly in regard to race / ethnicity, disability, and sexual orientation.

Exacerbating these issues, job seekers can run into challenges as they try to break into this sector. **Additionally, there are not consistent degrees, trainings, job titles, or even categories of jobs across the outdoor recreation economy.**

Due to this lack of consistency, and because the sector has only recently been federally recognized for five years with the establishment of the Outdoor Recreation Satellite Account at the Bureau of Economic Analysis, there are currently several degree and certification programs offered by private and higher education institutions to prepare people for recreation job openings, but they are not unified nor consistent across the industry.

Lastly, many place-based outdoor businesses in recreation destinations have seen the cost of living rise dramatically during the COVID-19 pandemic and current inflationary environment as new residents take advantage of remote work opportunities and housing supply lags behind demand. **For these businesses and their employees, housing affordability has become increasingly difficult, and has forced tough questions about appropriate pricing strategies to provide affordable and accessible services while supporting employees' cost of living needs.** When industry executives were asked about barriers to hiring in a recent survey about the outdoor workforce, one of the top reasons listed was "housing opportunities where the job is located."

JOBS OF THE FUTURE

As the world becomes more digitally connected, **more marketing and digital engagement will be needed.** Several managers in our research stated the need for marketers, website technicians, social media professionals, and other creators to engage through these platforms.

As more electric transportation hits the road, more employees will be needed to sell and service them. From electric vehicles to electric bicycles, more outdoor recreators will be using electric technology. As sales of these products increase, so will service and manufacturing needs in this area.

With the United States firmly planted as the leader in outdoor recreation companies across the globe, **R&D, innovation, manufacturing and other skilled technical roles are expanding rapidly** to ensure the country's competitive advantage and keep up with product demand.

Oregon State University - Cascades

TOURISM, RECREATION, AND ADVENTURE LEADERSHIP

The tourism and outdoor recreation industries are among the largest in the world and continue to grow in Oregon and throughout the nation. As a tourism, recreation and adventure leadership (TRAL) graduate, you will be a leader, educator and entrepreneur in our most important natural spaces. You will be on the cutting edge of this exciting, ever-changing industry and go on to educate others about the natural world, lead life-changing adventure opportunities, and create brand new businesses based on the idea of sharing the outdoors with others.

BACHELOR OF SCIENCE IN OUTDOOR PRODUCTS

The Bachelor of Science in Outdoor Products will prepare you for a career in the outdoor industry. Leaders in the industry are looking to hire innovators who champion responsible systems approach to product commercialization with respect for our natural world. In this interdisciplinary degree, you'll study design, engineering, natural resources, outdoor recreation, sustainability, and business with expert faculty who have experience in research, industry and public agencies.

Oregon State University - CORE

SKI LIFT MAINTENANCE TECHNICIAN TRAINING, LEVEL 1

This training provides current ski lift staff the technical skills and expertise needed to become Level 1 ski lift maintenance technicians. Through a hybrid learning experience, students will have the opportunity to join employees from resorts across the country. Self-paced, online course modules present content such as lift systems and operations, safety standards, communication systems, drive line systems, preventative maintenance, sheave assemblies and more. This training covers all content included in the National Ski Areas Association Level One Technician Requirements.

OUTDOOR INDUSTRY LEADERSHIP CERTIFICATE

This professional development program helps aspiring leaders gain the skills, competencies, and knowledge needed to lead the future of the outdoor recreation economy. The cohort-based program brings together professionals from private industry, nonprofit, and public sectors in outdoor recreation to learn about leading in this unique, purpose-driven industry through online coursework, peer and self-reflection, one-on-one professional coaching, self-assessments, Masterclass sessions with industry experts, and networking.

Oregon State University

EXAMPLES OF OUTDOOR DEGREE AND CERTIFICATE PROGRAMS

Below is a small sampling, non-exhaustive list of some of the academic and training programs related to career advancement in the outdoor recreation industry.

RV Technical Institute

The mission of the RV Technical Institute is to provide world-class training for RV maintenance and repair that will reduce the RV industry's shortfall of trained RV technicians. The RV Technical Institute seeks to improve the RV consumer experience, reduce repair event cycle times and aggressively reduce the RV industry's shortage of trained technicians.

Utah State University

OUTDOOR PRODUCT DESIGN AND DEVELOPMENT

A degree in Outdoor Product Design & Development (OPDD) from Utah State University is the first step to a high skill, high wage, high demand career opportunity in product design, development, or management. The OPDD program prepares students for an exciting career bringing innovative, sustainable, and impactful product to market in the dynamic sports, outdoor, and active industries.

Western Carolina University

OUTDOOR INDUSTRY CERTIFICATE PROGRAM

WCU's Professional Outdoor Industry Certificate program provides skills, insight, knowledge, and networking opportunities to students and learners from a variety of backgrounds who are interested in a rewarding career or thriving business in the outdoor recreation industry.

Western Colorado University

OUTDOOR INDUSTRY MBA

The two-year program includes an MBA Core as well as specialized tracks for either the product or service side of the industry. The MBA Core includes traditional MBA courses with content focusing on the outdoor industry. The Product Concentration has specialized courses in Sustainable Outdoor Product Development and Material Sourcing; Supply Chain and Logistics in the Outdoor Industry; and Sustainable Finance. The Service Concentration has specialized courses in Resort and Hospitality Management, Natural Resource Regulation and Economics, and Sales and Customer Experience.

University of Colorado Boulder

OUTDOOR RECREATION ECONOMY PROGRAM

The Outdoor Recreation Economy program at CU Boulder provides learners with a variety of opportunities to expand their knowledge and advance their careers in the outdoor recreation industry. This program's flexible options allow you to engage in a way that fits both your career goals and your budget. Become an innovative leader, foster sustainable business operations, govern and promote access to public lands, or leverage outdoor amenities to grow local, sustainable economies.

OTHER RESOURCES FOR REFERENCE

U.S. Bureau of Economic Analysis
OUTDOOR RECREATION SATELLITE ACCOUNT

The Outdoor Recreation Satellite Account (ORSA) measures the economic activity as well as the sales or receipts generated by outdoor recreational activities, such as fishing and RVing. These statistics also measure each industry's production of outdoor goods and services and its contribution to U.S. GDP. Industry breakdowns of outdoor employment and compensation are also included.

Outside Business Journal

For almost four decades, we've served our community of brands, retailers, nonprofits, advocacy groups, PR agencies, media outlets, and outdoor recreationists as the most trusted source of news in the outdoor industry. We also publish an award-winning print magazine of the same name, formerly known as The Voice.

Oregon State University
CENTER FOR THE OUTDOOR RECREATION ECONOMY

The Oregon State University Center for the Outdoor Recreation Economy (CORE) is delivering a new kind of workforce development to meet the unique needs of the vast, extremely entrepreneurial, and rapidly growing outdoor recreation industry.

WORKFORCE STUDY EXPLANATION

This project was developed with the assistance of the Oregon State University Center for the Outdoor Recreation Economy. Chris Perkins, Senior Director at Outdoor Recreation Roundtable, Kristen Freaney, Founder at Path to Peak, and Lee Davis, Executive Director at the Oregon State University Center for the Outdoor Recreation Economy were project leads. The project leads owe great gratitude to graduate researchers Jasmine Brown, Ph. D candidate at Michigan State University, and Miles Radin, Masters in Environmental Management Degree Recipient at the Yale School of the Environment, who conducted interviews in the Spring of 2022 to inform this report. Additionally, we wish to recognize:

Jay Landers
Vice President of Government Affairs, RV Industry Association

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President, RV Technical Institute

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Oregon State University Center for the Outdoor Recreation Economy

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Executive Director, Continental Divide Trail Coalition

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Director of Professional Programs in the Department of Environmental Studies, University of Colorado – Boulder

Gordie Blum
Director: Recreation, Heritage and Volunteer Resources, U.S. Forest Service

Aaron Bannon
Executive Director, America Outdoors

Pitt Grewe
Director, Utah Division of Outdoor Recreation

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Founder and Partner, Basecamp

Marc Berejka,
Director, Community Advocacy & Impact, REI

Laurel Harkness
Executive Director, Society of Outdoor Recreation Professionals

Wendy Mackie
Director of Workforce & Foundation Development, Marine Retailers Association of America

Warren Meyer
President, Recreation Resource Management

Aaryn Kay
Executive Director, Professional TrailBuilders Association

Kelly Davis
Director of Research, Outdoor Industry Association

Elizabeth Cross
Economist, Bureau of Labor Statistics

Julie Broadway
President, American Horse Council

OUTDOOR RECREATION ROUNDTABLE

Oregon State University
Center for the Outdoor Recreation Economy

THE CONVERSATION

Academic rigor, journalistic flair

shutterstock

Forest schools: how climbing trees and making dens can help children develop resilience

Published: June 13, 2019 7:46am EDT

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English

https://theconversation.com/forest-schools-how-climbing-trees-and-making-dens-can-help-children-develop-resilience-117920

Despite all the research that tells parents how good it is for their children to spend time playing outside, they are spending more time indoors than ever before. It seems that concerns about the dangers of climbing trees or getting lost means that many parents are nervous about allowing their children to engage in risky play.

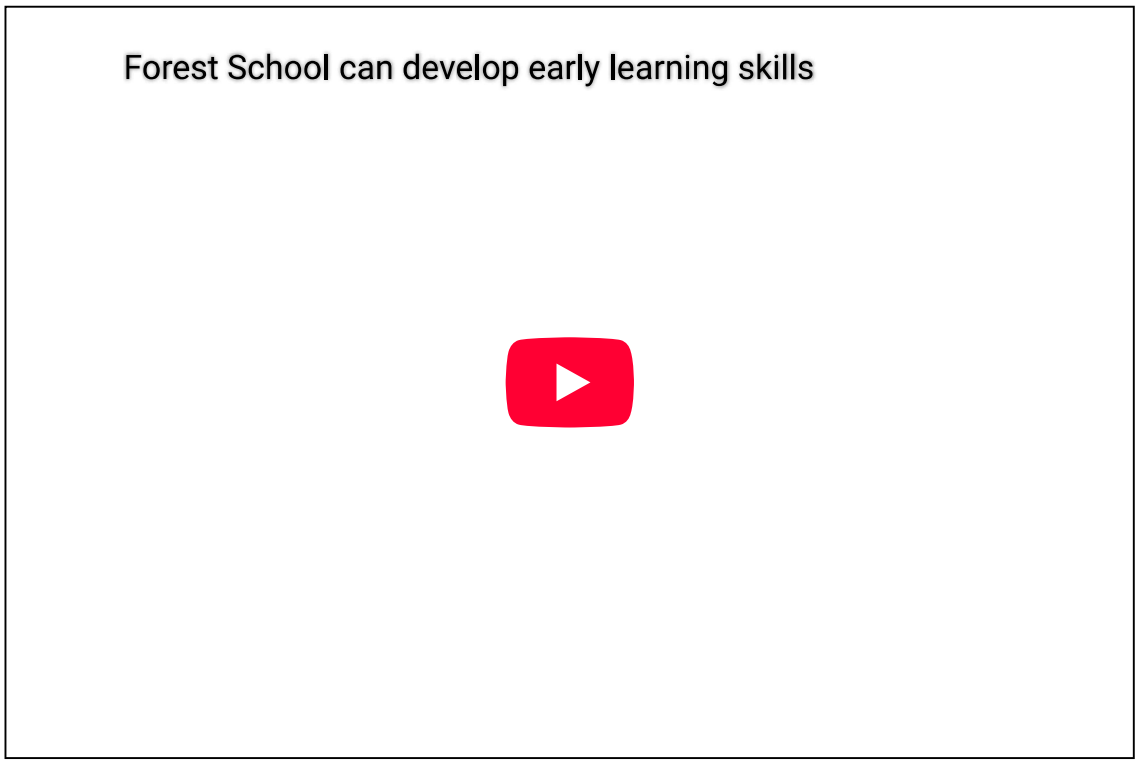
But research suggests that this element of outdoor play has significant benefits for children and can help to develop their emotional resilience.

Over the last decade and a half, schools have started to recognise the importance of outdoor time for children – resulting in the development of programmes that take learning outside the classroom. One of these programmes which has increased in popularity over recent years, is Forest School.

What is forest school?

Forest School is an outdoor learning initiative which embraces outdoor play in wooded spaces as a tool for learning and development. In the UK, the Forest School movement can be traced back to the early 1990s when a group of early years educators at Bridgewater College in Somerset day went on a trip to Denmark.

They noted how the Scandinavian values of open-air living were embedded in the education system. Upon their return from Denmark, they developed the first Forest School in the college creche, followed by a B-Tech qualification in Forest School practice. The Bridgewater group set in motion the development of Forest School provision through structured training programmes for Forest School practitioners. Today the Forest School Association – the UK professional body for Forest School practitioners – has more than 1,500 members.



During Forest School, children and young people are provided with opportunities to explore the natural environment, experience appropriate risk and challenge, and direct their own learning. Research has shown that Forest School stimulates imaginative play through hands-on engagement with the natural environment.

In our research, which included more than 30 interviews with children aged between four and nine, we wanted to understand how play in Forest School might facilitate learning. We found that during Forest School, children felt more independent, and as a result, had a greater sense of personal, social and environmental responsibility.

Children felt that they were able to apply skills they had learned in school in more meaningful ways and developed a range of non-academic skills. Forest School encouraged them to think creatively – to step out of their comfort zone and take risks – and to work more closely with their peers. They also reported being more physically active during Forest School – learning how to move safely in the unpredictable and challenging space of a woodland.

Making movements matter

The World Health Organisation has recently argued that young children need more opportunity to play in order to grow up healthy. But despite the clear benefits, Forest School is still somewhat misunderstood.

To the outsider, it is often considered as a separate form of education provision – and indeed, there are some full-time outdoor Forest School nurseries operating in the UK, such as Wildawood Forest School in Cambridgeshire. But most Forest Schools operate within mainstream state schools, where children leave their classrooms for a half or full day, usually once or twice a week, to attend Forest School.

We spoke to children, headteachers and Forest School leaders in two primary schools and found that this bridging of formal and informal learning can be complementary to one another. Children and headteachers acknowledged that the school system can stifle children's natural curiosity about the world. Children recognise that while they learn a lot in the classroom, this tends to be directed by teachers and focused on passing tests.

Headteachers also recognised the pressure children are put under from a young age, and of the need to frequently demonstrate pupil progression against set targets. Forest School, for both pupil and teacher, is an opportunity to move away from the monotony of classroom learning and instead to engage in hands-on, self-directed learning.

This gives children the opportunity to develop other skills beyond the academic – including negotiation, resilience and independence. And in this way, the blending of these approaches to learning ensures that children have opportunity to develop a broader range of skills. All of which, prepares them for later life, while helping them to harness a love of the great outdoors from an early age.

Emergency Medical Responder (EMR) & Wilderness First Responder (WFR) Pathway in Arkansas

Overview

This document outlines a structured pathway within the Outdoor Leadership CTE Program that integrates both urban and wilderness emergency response certifications. This prepares students for real-world first response careers while aligning with Arkansas Department of Health and national credentialing standards.

Year 1: Foundations of First Response

Semester 1: First Aid & CPR

- **Industry Credential:** First Aid and CPR (American Red Cross or American Heart Association)
- **Recommended Age:** 14+

Semester 2: Outdoor Recreation Safety & Risk Management

- **Industry Credential:** Leave No Trace Trainer Certification (Leave No Trace Center for Outdoor Ethics)
- **Recommended Age:** 14+

Year 2: Intermediate Response Skills

Semester 1: Wilderness First Responder (WFR)

- **Industry Credential:** WFR
- **Recommended Age:** 16+
- **Certification Providers:** NOLS, SOLO, Wilderness Medical Associates
- **Key Competencies:**
    - Remote trauma management
    - Extended care and evacuation
    - Environmental emergencies
    - Decision-making in wilderness environments

Semester 2: Emergency Medical Responder (EMR)

- **Industry Credential:** National Registry of Emergency Medical Responders (NREMT-EMR)
- **Recommended Age:** 16+
- **Certifying Bodies:** Arkansas Department of Health, Arkansas Fire Training Academy
- **Curriculum Topics:**
    - Scene safety and patient assessment
    - Airway management, oxygen administration
    - CPR & AED use
    - Medical and trauma emergencies
    - Legal/ethical responsibilities

Year 3: Career Exploration and Readiness

Semester 1: Leadership in Emergency Settings

- Applied leadership in medical scenarios
- Peer-to-peer instruction and emergency simulation coordination

Semester 2: Industry Shadowing & Micro-Certifications

- Clinical observation with EMS professionals (where possible)
- Introduction to FEMA ICS-100 and NIMS-700 (online certifications)
- Optional: Stop the Bleed, Basic Life Support (BLS)

Year 4: Advanced Practice & Capstone

Semester 1: Integrated Capstone Planning

- Students plan a field-based response simulation
- Incorporate WFR and EMR protocols into scenario design

Semester 2: Internship & Community Response Project

- Internship with a local EMS, fire department, outdoor program, or search and rescue team
- Students present a final portfolio including certifications, reflections, and project outcomes

Credential Summary by Age

Credential	Recommended Age	Certifying Body
CPR & First Aid	14+	American Red Cross / AHA
Leave No Trace Trainer	14+	LNT.org
Wilderness First Responder	16+	NOLS, SOLO, WMA
EMR (NREMT)	16+	ADH / Fire Training Academy
BLS / Stop the Bleed / FEMA ICS-100	16+	Various (optional)

Post-Secondary Pathways

Students completing this dual certification pathway are eligible to pursue:

- EMT and Paramedic Licensure Programs
- Outdoor Recreation Therapy, Fire Science, or Public Safety Degrees
- Wilderness EMT or Search and Rescue Team Membership

This integrated model ensures students are equipped to serve in both rural and urban emergency response environments and emerge with strong resumes, field readiness, and a clear path to licensure and employment.

Outdoor Conservation Sciences CTE Pathway

Aligned with Arkansas Career Clusters

Primary Cluster: Agriculture, Food, and Natural Resources
Alternate Cluster: Energy and Natural Resources

This four-year CTE pathway prepares students for careers in conservation science, land and water resource management, and environmental education, aligned with Arkansas Department of Education policies and credentialing standards.

Grade 9 – Level 1: Foundation

Course Title: Introduction to Conservation & Ecosystems
Focus:

- Arkansas ecosystems
- Biodiversity and habitat awareness
- Outdoor ethics and safety
- Land and water stewardship basics

Industry Credentials:

- **First Aid/CPR/AED** (American Red Cross or AHA)
    - **Recommended Age:** 14+
- **Leave No Trace Trainer** (LNT.org)
    - **Recommended Age:** 14–15

Grade 10 – Level 2: Intermediate

Course Title: Natural Resources & Water Systems
Focus:

- Watershed systems, soil conservation, forestry
- Invasive species, erosion control, and habitat restoration
- State and federal land use regulations

Industry Credentials:

- **Certified Environmental Steward (CES) –** National Association for Interpretation
    - **Recommended Age:** 15+
- **Trail Building Certification –** Professional Trail Builders Association (PTBA)
    - **Recommended Age:** 15–16+

Grade 11 – Level 3: Advanced

Course Title: Conservation Management & GIS
Focus:

- Conservation planning and project design
- Use of GIS in habitat mapping and spatial planning
- Wildlife monitoring and ecosystem data collection

Industry Credentials:

- **Esri GIS Fundamentals Certificate** (online or partner-led)
    - **Recommended Age:** 16+
- **Optional:** Certified Floodplain Manager or Water Quality Sampling credentials
    - **Recommended Age:** 17+

Grade 12 – Capstone & Internship

Course Title: Environmental Capstone Project + Internship
Focus:

- Field-based internship with local, state, or federal conservation partners
- Capstone project in restoration, education, or land stewardship
- Final portfolio and presentation defense

Industry Credentials:

- **Internship Completion Certificate**
    - **Recommended Age:** 17+
- **Capstone Portfolio**
- **Optional:** CPRP (Certified Park and Recreation Professional), CTRS (Therapeutic Recreation), or additional sector-specific credential
    - **Recommended Age:** 18

Summary of Industry Credentials by Age

Credential	Provider	Recommended Age
First Aid & CPR	American Red Cross / AHA	14+
Leave No Trace Trainer	Leave No Trace Center	14–15
Certified Environmental Steward (CES)	National Association for Interpretation	15+
Trail Building Certification	Professional Trail Builders Association	15–16+
GIS Fundamentals Certificate	Esri (online or local delivery)	16+
Certified Floodplain Manager (optional)	Association of State Floodplain Managers	17+
Internship Completion Certificate	School or conservation partner	17+

Credential	Provider	Recommended Age
CPRP / CTRS (optional, advanced)	NRPA / NCTRC	18+

Postsecondary and Career Pathways

Graduates may pursue further education or careers in:

- Environmental science, biology, or forestry degree programs
- Outdoor education and interpretation
- Conservation corps or land trust positions
- Trail building and restoration
- State or federal agencies (e.g., ANHC, AGFC, USFS)

This structured pathway aligns with Arkansas's 3-tier CTE system and supports success-ready graduates with real-world, industry-validated skills and credentials.

Outdoor Tourism and Recreation CTE Pathway

Aligned with Arkansas Career Clusters

Primary Cluster: Hospitality and Tourism
Alternate Cluster: Marketing, Sales, and Service

This four-year CTE pathway prepares students for careers in outdoor tourism, adventure guiding, parks and recreation management, and visitor services. It is aligned with Arkansas Department of Education's CTE framework, offering foundational to advanced skill development, industry certifications, and workforce readiness.

Grade 9 – Level 1: Foundation

Course Title: Introduction to Outdoor Tourism & Hospitality
Focus:

- Overview of tourism and recreation industries
- Outdoor destinations in Arkansas
- Principles of hospitality and guest services
- Outdoor safety and ethics

Industry Credentials:

- **First Aid & CPR** (American Red Cross or AHA)
    - **Recommended Age:** 14+
- **Arkansas Tourism 101 Certificate** (local delivery or partner-based)
    - **Recommended Age:** 14+

Grade 10 – Level 2: Intermediate

Course Title: Outdoor Adventure Planning & Interpretation
Focus:

- Trip logistics and customer experience design
- Risk management and emergency planning
- Outdoor interpretation and storytelling
- Guiding practices for hiking, biking, paddling, and climbing

Industry Credentials:

- **Leave No Trace Trainer** (LNT.org)
    - **Recommended Age:** 14–15
- **Certified Interpretive Guide (CIG)** (NAI)
    - **Recommended Age:** 15–16

Grade 11 – Level 3: Advanced

Course Title: Outdoor Recreation Business & Leadership
Focus:

- Fundamentals of outdoor business and tourism marketing
- Trip leadership, budgeting, and group management
- Event planning and partner engagement
- Visitor experience evaluation and sustainability principles

Industry Credentials:

- **Certified Hospitality and Tourism Management Professional (CHTMP)** – AHLEI
    - **Recommended Age:** 16+
- **Optional:** AMGA SPI, ACA Instructor (select modules)
    - **Recommended Age:** 16–17+ (activity dependent)

Grade 12 – Capstone & Internship

Course Title: Outdoor Tourism Internship & Capstone
Focus:

- Internship with local tourism bureau, park, guide service, or outdoor organization
- Capstone project (e.g., tour design, event plan, or sustainable tourism strategy)
- Final presentation and career portfolio

Industry Credentials:

- **Internship Completion Certificate**
    - **Recommended Age:** 17+
- **Capstone Portfolio & Presentation**

Summary of Industry Credentials by Age

Credential	Provider	Recommended Age
First Aid & CPR	American Red Cross / AHA	14+
Arkansas Tourism 101 Certificate	Local/Regional Delivery	14+
Leave No Trace Trainer	Leave No Trace Center	14–15
Certified Interpretive Guide (CIG)	National Association for Interpretation	15–16
CHTMP (Certified Hospitality & Tourism Prof.)	AHLEI	16+
AMGA SPI / ACA Instructor (optional, selective)	AMGA / ACA	16–17+
Internship Completion Certificate	School or Tourism Partner	17+

Postsecondary and Career Pathways

Graduates may pursue further education or employment in:

- Parks, recreation, and tourism management
- Outdoor guiding, trip leadership, and interpretation
- Hospitality management and customer service
- Entrepreneurship in adventure tourism
- Municipal, state, or national park systems

This program of study aligns with Arkansas CTE standards and prepares students for diverse careers in the growing outdoor tourism and recreation economy.

AOA Workforce-Ready CTE Pathway

For students entering the workforce after high school

This track prepares students for direct employment in outdoor recreation, conservation, hospitality, and emergency response careers. All IRCs are stackable, age-appropriate, and aligned with real job opportunities across Arkansas.

Grade 9 – Foundational Skills (Age ~14–15)

Focus: Safety, environmental ethics, and basic tourism knowledge

Credentials:

- **First Aid & CPR/AED**
  - **Provider:** American Red Cross or AHA
  - **Recommended Age:** 14+
- **Leave No Trace Trainer Certification**
  - **Provider:** Leave No Trace Center for Outdoor Ethics
  - **Recommended Age:** 14+
- **Arkansas Tourism 101 Certificate**
  - **Provider:** Local delivery or regional tourism partner
  - **Recommended Age:** 14+

Grade 10 – Industry Exploration (Age ~15–16)

Focus: Hands-on skills in environmental stewardship and trail management

Credentials:

- **Certified Environmental Steward (CES)**
  - **Provider:** National Association for Interpretation (NAI)
  - **Recommended Age:** 15+
- **Trail Building Certification**
  - **Provider:** Professional Trail Builders Association (PTBA)
  - **Recommended Age:** 15–16+
- **Certified Interpretive Guide (CIG)**
  - **Provider:** NAI
  - **Recommended Age:** 15–16+

Grade 11 – Advanced Practice (Age ~16–17)

Focus: Emergency response, leadership, and technical skills

Credentials:

- **Wilderness First Responder (WFR)**
    - **Provider:** NOLS, SOLO, or Wilderness Medical Associates
    - **Recommended Age:** 16+
- **GIS Fundamentals Certificate**
    - **Provider:** Esri (online or in partnership with local instructors)
    - **Recommended Age:** 16+
- **Certified Hospitality and Tourism Management Professional (CHTMP)**
    - **Provider:** American Hotel & Lodging Educational Institute (AHLEI)
    - **Recommended Age:** 16+
- **FEMA ICS-100 & NIMS-700**
    - **Provider:** FEMA (online and free)
    - **Recommended Age:** 16+

Grade 12 – Workforce Transition (Age ~17–18)

Focus: Real-world experience and capstone validation

Credentials:

- **Internship Completion Certificate**
    - **Provider:** Local outdoor or tourism partner
    - **Recommended Age:** 17+
- **Capstone Portfolio and Presentation**
    - **Provider:** AOA evaluation team
    - **Recommended Age:** 17+

Optional Add-On Certifications:

- **AMGA Single Pitch Instructor (SPI) –** climbing
- **ACA Instructor –** canoe/kayak
- **Basic Life Support (BLS) –** healthcare/emergency services
    - **Recommended Age:** 17–18+, depending on provider and local partnership

Career Pathways After High School

Students graduating with this credential track can immediately enter fields such as:

- Outdoor adventure guiding (climbing, hiking, paddling, biking)
- Trail maintenance and construction crews
- Park operations and visitor services
- Conservation field technician roles with agencies or nonprofits
- Recreation therapy support roles
- Entry-level hospitality and eco-tourism jobs
- Emergency response and search-and-rescue assistance

This pathway provides students with nationally recognized credentials, real experience, and industry-specific skills—all aligned with Arkansas's outdoor economy.

Monthly Cashflow - Year 1

	FY26 Total	Fiscal Year 2026											
		JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
Foundation Funding	2,430,000	202,500	202,500	202,500	202,500	202,500	202,500	202,500	202,500	202,500	202,500	202,500	202,500
ELL Funding	18,750	1,563	1,563	1,563	1,563	1,563	1,563	1,563	1,563	1,563	1,563	1,563	1,563
Professional Development Funding	11,250	938	938	938	938	938	938	938	938	938	938	938	938
Enhanced Student Achievement Funding	330,900	27,575	27,575	27,575	27,575	27,575	27,575	27,575	27,575	27,575	27,575	27,575	27,575
NSLA Funding/Lunch	339,000							56,500	56,500	56,500	56,500	56,500	56,500
Title I,II, III, and IV Funding	10,000							1,667	1,667	1,667	1,667	1,667	1,667
Donations													
Bridge Loan Proceeds	350,000	29,167	29,167	29,167	29,167	29,167	29,167	29,167	29,167	29,167	29,167	29,167	29,167
Total Receipts	3,489,900	261,742	261,742	261,742	261,742	261,742	261,742	319,908	319,908	319,908	319,908	319,908	319,908
Salaries & Benefits	1,630,000	25,000	76,429	152,857	152,857	152,857	152,857	152,857	152,857	152,857	152,857	152,857	152,858
Facilities (building)	285,182	23,765	23,765	23,765	23,765	23,765	23,765	23,765	23,765	23,765	23,765	23,765	23,765
Utilites	75,000	6,250	6,250	6,250	6,250	6,250	6,250	6,250	6,250	6,250	6,250	6,250	6,250
Technology	75,000	18,750	18,750	18,750	18,750								
Professional services	285,000		25,909	25,909	25,909	25,909	25,909	25,909	25,909	25,909	25,909	25,909	25,909
Professional Development	11,250		1,023	1,023	1,023	1,023	1,023	1,023	1,023	1,023	1,023	1,023	1,023
Health Services	5,000			500	500	500	500	500	500	500	500	500	500
Transportation	50,000			5,556	5,556	5,556	5,556	5,556	5,556	5,556	5,556	5,556	0
Outdoor Programs/Gear	100,000	25,000	25,000	25,000	25,000								
Special Education	200,000		20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	0
Classroom Instruction/Curriculum	102,500	25,625	25,625	25,625	25,625								
Food Services	250,000		25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	0
Bridge Loan Payback													
Bridge Loan Interest													
Bridge Loan Origination Fees													
Total Disbursements	3,068,932	124,390	247,751	330,235	330,235	260,860	260,860	260,860	260,860	260,860	260,860	260,860	210,305
Monthly Net Income		137,352	13,991	-68,493	-68,493	882	882	59,049	59,049	59,049	59,049	59,049	109,603
Ending Cash Balance	420,968	137,352	151,342	82,849	14,356	15,239	16,121	75,169	134,218	193,267	252,316	311,365	420,968

Economic Impact of Outdoor Recreation in Arkansas

BEA Data Story

2025 Outdoor Participation Trends Report

Rural Recreational Roads

Partner Institution/Org	Contact
Arkansas Tech University	Jay Post/Kathy McMahon/Michael Bradley
Hendrix University	James Dow
University of Arkansas-Montecillo	Michael Blazier
Arkansas Climbing League	Sharon Bennett
Ferncliff Nature School	Hollie Sanders
City of LR Parks and Rec	Leland Couch
Lake Sylvia State Park	Aaron Presser
Nature Conservacy	Mitchell Allen
City of NLR Parks and Rec	Heather Kouns
National Park Community College	Chuck Argo
NW Arkansas Community College	
Arkansas Game and Fish	Joseph Gladden
Round Table Funding	Monty Hardy
Apptegy	Blakeslee Deuschle
Gil Ragon Owen	Chad Cummings
USDA Forest Service	Donna Kridelbaugh
Friends of the Ouachita Trail	

2024 OUTDOOR PARTICIPATION TRENDS REPORT

EXECUTIVE SUMMARY

OUTDOOR FOUNDATION

OUTDOOR INDUSTRY ASSOCIATION

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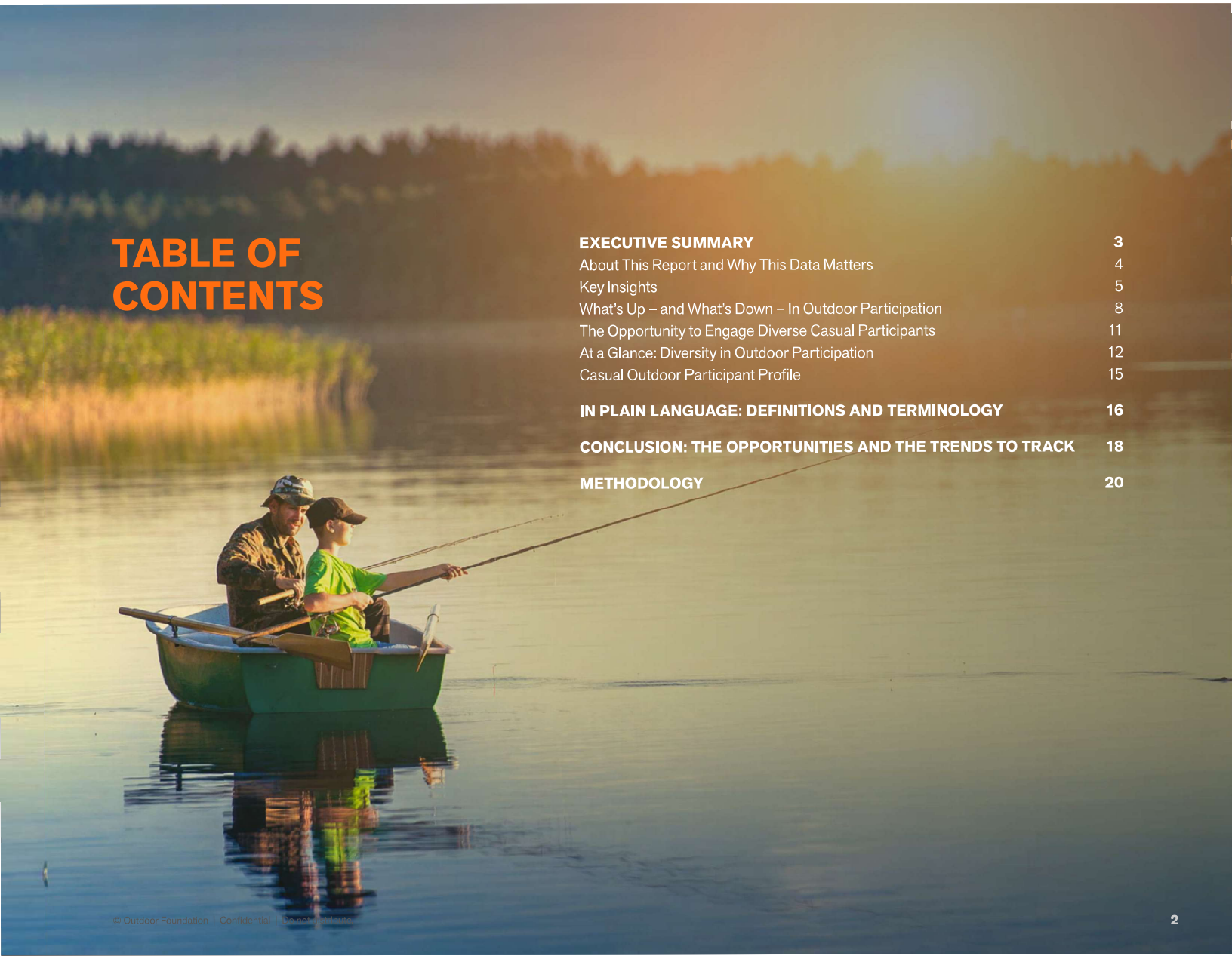


EXECUTIVE SUMMARY

This year's Outdoor Participation Trends Report goes beyond the data — use it to stay on top of trends, allocate resources, and inform your overall marketing strategy.

In 2023, the outdoor recreation participant base grew 4.1% to a record 175.8 million participants: 57.3% of all Americans aged six and older. The number of participants increased across demographics and activities as new, more casual participants began hiking, biking, camping, running, and fishing. In 2023, 7.7 million Americans tried one or more outdoor recreation activities for the first time. New and young outdoor recreation participants are driving growth and increased diversity in the outdoor recreation participant base, including increasing numbers of women, people of color, and seniors. The growth that began in 2016 and accelerated during the COVID pandemic is showing few signs of slowing. Engaging these new, more diverse, more casual participants to participate more frequently is the key opportunity for the outdoor industry today.

IN 2023,

THE OUTDOOR RECREATION PARTICIPANT BASE GREW 4.1%

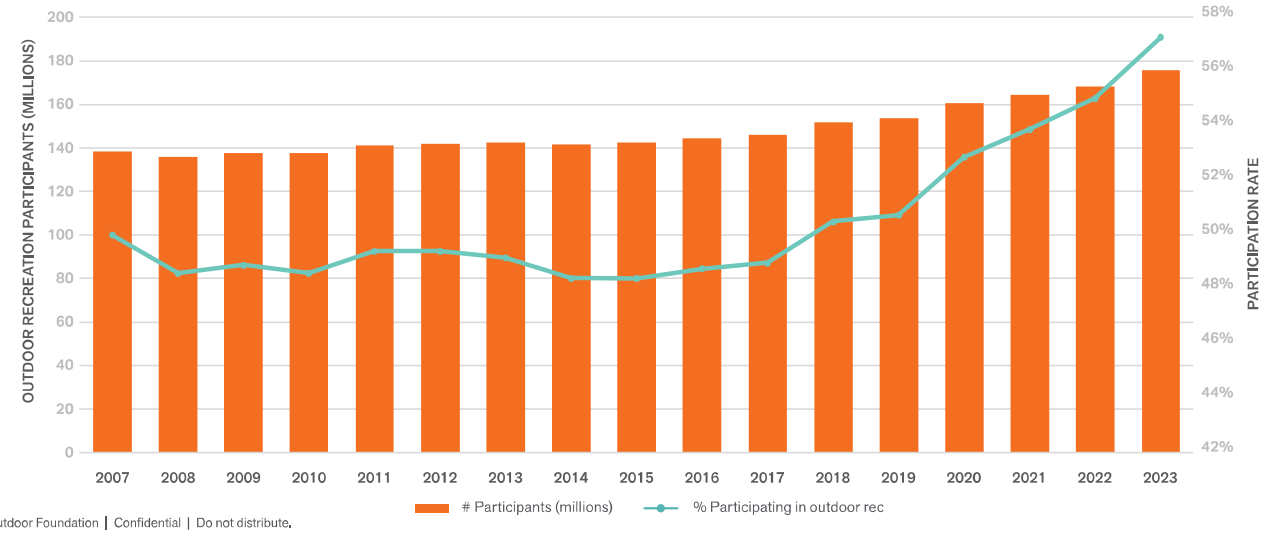
TO A RECORD 175.8 M PARTICIPANTS:

57.3% OF ALL AMERICANS AGED SIX AND OLDER.

About this Report

For over 15 years, the Outdoor Participation Trends Report has served as the most trusted and comprehensive source of insights and narratives around who's doing what, when, and how outdoors. The Outdoor Foundation, the philanthropic arm of Outdoor Industry Association (OIA), funds the research that produces the Annual Outdoor Participation Trends Report and publishes the findings in partnership with OIA every year.

OUTDOOR RECREATION PARTICIPANT COUNT AND PARTICIPATION RATE 2007 TO 2023



WHY DOES THIS DATA MATTER?

Understanding the size, demographics, and participation trends of outdoor recreationists is crucial for both outdoor brands as well as organizations and initiatives striving to promote outdoor participation. For outdoor brands, this knowledge aids in forecasting sales, allocating resources, and tailoring products and marketing campaigns to meet the diverse needs and preferences of customers. For nonprofit organizations, programs, and initiatives increasing outdoor access, this information serves as a cornerstone for gauging impact and need, designing inclusive programs, fostering engagement among underrepresented groups, and advocating for resources to advance outdoor diversity and inclusion.

By understanding the frequency of participation in outdoor activities, outdoor brands and organizations can identify opportunities to develop products, services, and programs that cater to both frequent (core) and infrequent (casual) participants, thus broadening access to outdoor recreation. The data provided in this report offers invaluable insights into the size, geographic distribution, and preferred activities of outdoor enthusiasts, serving as a primary resource for informing decision-making in both the outdoor industry and public sector.

Demographics are changing quickly in the U.S. population, and the outdoor recreation market has lagged behind. As demographics evolve rapidly, it's essential for our "outdoor ecosystem" (including outdoor industry and public sector efforts to increase participation) to work in concert to prioritize diversity and inclusivity in design, marketing, programming, outreach, and advocacy. Efforts such as the Outdoor Foundation's Thrive Outside Initiative exemplify the industry's commitment to fostering greater access to outdoor recreation for underrepresented and historically excluded individuals in collaboration with community-based efforts. In 2023, Thrive Outside Communities helped to connect over 95,000 children, youth, and families to transformative and ongoing experiences in outdoor recreation. Read more about the Thrive Outside Initiative in the Outdoor Foundation's 2023 Annual Report.

In summary, understanding outdoor participant and consumer demographics is essential for any entity aiming to succeed in today's competitive and evolving marketplace and promoting equitable access to the outdoors. By leveraging insights into the needs and preferences of their target audience, both businesses and community initiatives can create inclusive environments, foster community and brand loyalty, and drive growth in outdoor participation that promote the health of people, communities, and the outdoor industry.

KEY INSIGHTS

KEY INSIGHTS

WHAT'S UP IN OUTDOOR PARTICIPATION:

Participation in outdoor recreation grew 4.1% in 2023 to 175.8 million, amounting to 57.3% of the U.S. population. 22.2M more Americans aged six and older are participating in outdoor recreation in 2023 than were participating in 2019. (153.6M in 2019 to 175.8M in 2023)

THE IMPORTANCE OF BUILDING "CORE" STRENGTH:

The average number of outings per participant in 2023 fell 11.4% from 70.5 outings per participant in 2022 to 62.5 outings per participant in 2023. This data provides us with a leg of the triangle explaining why retail sales are down even though the number of participants increased materially.

THE DIVERSITY AND INCLUSION OPPORTUNITY:

The participant base became more ethnically and racially diverse in 2023, but not by much. 69.7% of participants are White, 10.3% are Black, 13.4% are Hispanic, 5.3% are Asian or Pacific Islander, and 1.4% identify as people with other ethnic/racial origins.

THE "CORE" DIVERSITY OPPORTUNITY:

74% of core participants are White, 8% are Black, 11.5% are Hispanic, and 5.4% are Asian/Pacific Islander people. While the number and percentage of Hispanic and Black people in the core have increased, the slower rate of increase compared to growth in the overall participant base indicates a lack of engagement in the more diverse participant base.

WOMEN AS TRAILBLAZERS:

For the first time ever, more than half of American women are participating in outdoor recreation. The female participation rate reached 51.9% in 2023, up from 50% in 2022. American males found a new level in their participation rate too, which reached a record high of 62.9% in 2023.

SENIORS DRIVE GROWTH:

The participation rates for Americans aged 55 to 64 increased from 41.2% in 2019 to 49.7% in 2023; those 65 and older increased from 28.8% in 2019 to 39.5% in 2023. The participation rate for Americans aged 65 and older grew 11.5% between 2022 and 2023 alone.




LGBTQ+ BREAKING DOWN BARRIERS:

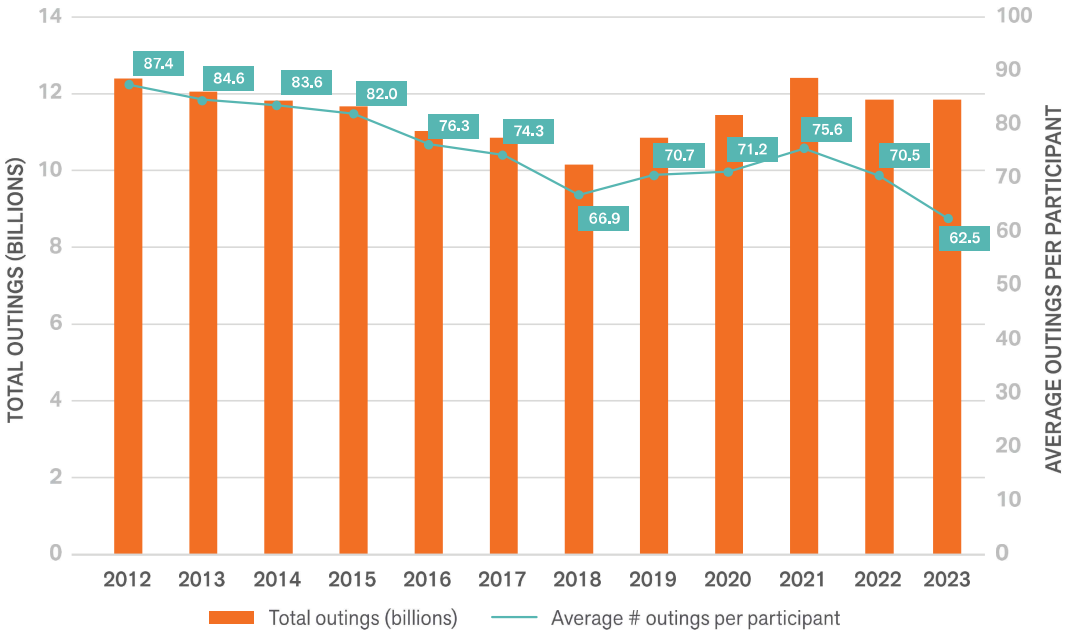
Members of the LGBTQ+ community make up 11.3% of the outdoor participant base (19.9M) and continue to be the most active adult cohort in outdoor recreation with total participation rates above 60%. At 65.6%, people who identify as Bisexual had the highest participation rate of any adult cohort.

WHAT'S UP – AND WHAT'S DOWN – IN OUTDOOR PARTICIPATION

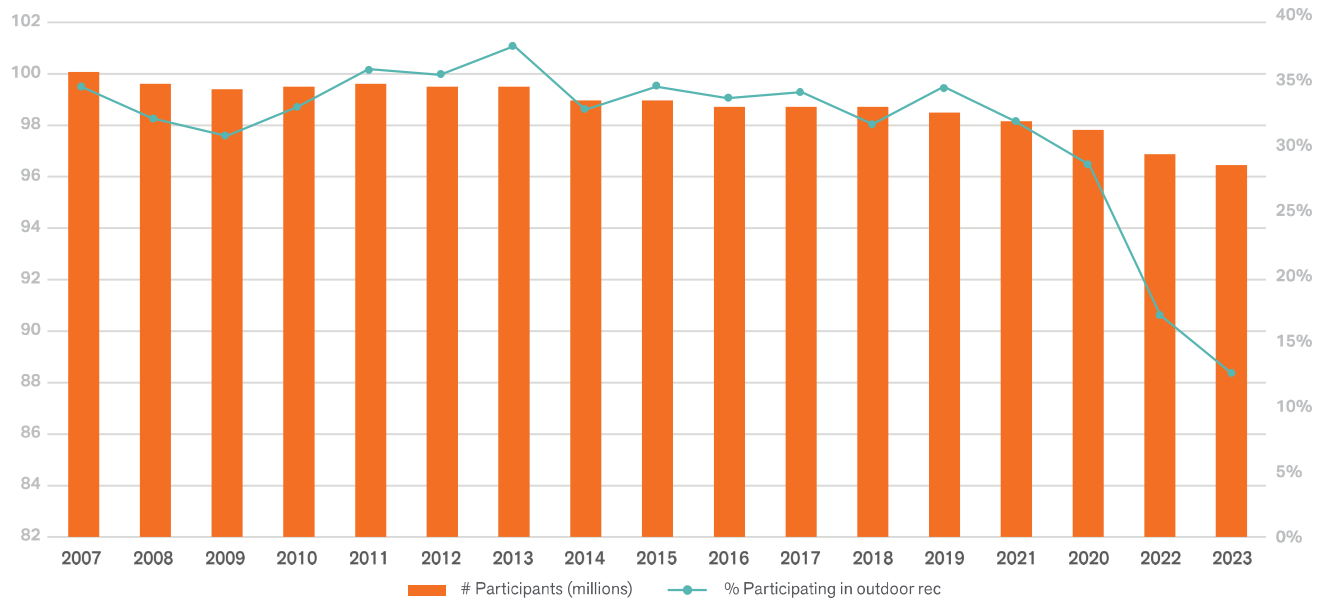
The good news: More people than ever are getting outside and recreating.
The bad news: They are participating less frequently.

Although the number of outdoor recreation participants has increased significantly, the number of outdoor outings has remained relatively flat over the past decade. Over the same ten-year period that we have seen record growth in the number of outdoor recreation participants, the frequency of participation has fallen significantly. Ten years ago, the average number of outdoor outings per year was 84. In 2023, the average had slipped to 62.5 per year.

TOTAL OUTINGS AND AVERAGE OUTINGS PER PARTICIPANT 2012 TO 2023



COUNT AND AVERAGE PERCENTAGE OF CORE (VERY FREQUENT) PARTICIPANTS 2007 TO 2023



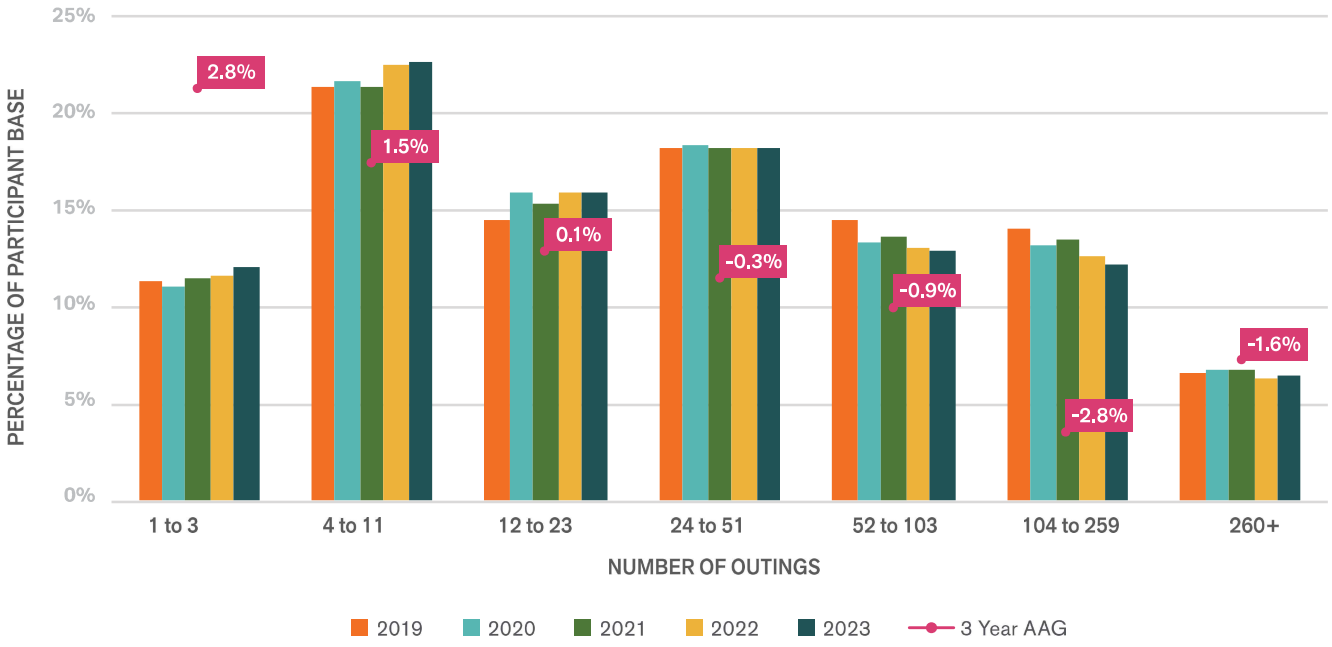
Both the count and the average percentage of core (very frequent) participants in outdoor recreation activities show a long decline. In 2023, 88.4 million outdoor participants were core participants in at least one activity, down from a recent peak in 2019 of 99.4 million core participants. The average percentage of core participants in each outdoor recreation activity measured was 28.8% in 2023, down from a recent peak of 33.2% in 2018. (Note that the percentage of core participants is not calculated by dividing core participants by total participants (88.4M/175.8M). The percentage of core participants is an average of the percentage of core participants in each activity.)

Some of the precipitous drop in the average percentage of core participants in outdoor activities between 2020 and 2023 is explained by an influx of new participants, but the actual count of core participants is dropping. When the drop in the actual number of core participants is coupled with significant growth in the number of total participants, we know that new participants are participating less frequently.

The decline in the frequency of outings is concentrated in the highest frequency-of-outings categories. Declines begin showing in the 24-to-51-outings-per-year category, with the sharpest declines in the 104-to-259-outings-per-year category and the 260-or-more-outings category. Notice the increase in the low-frequency (1-to-3 and 4-to-11-outings-per-year) categories. There are more casual participants in the low-frequency categories and fewer participants in the high-frequency categories, perfectly illustrating the decline of the core participant base and the growth and dominance of the casual outdoor recreation participant.

TRENDS IN OUTINGS FREQUENCY FOR ALL OUTDOOR RECREATION PARTICIPANTS 2019 TO 2023 WITH THREE-YEAR AVERAGE ANNUAL GROWTH (AAG)/CHANGE

This data on the declining frequency of participation is a flashing red light in the outdoor market; it warns us that we are losing committed participants and reliable consumers of outdoor products.

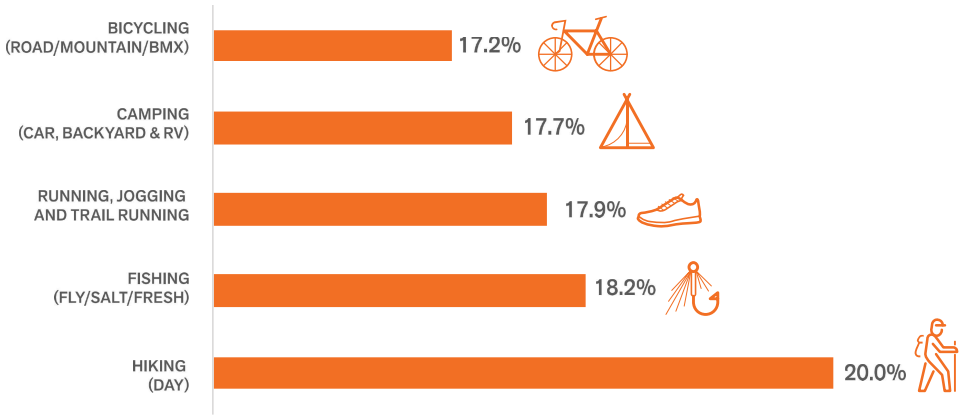


THE OPPORTUNITY TO ENGAGE DIVERSE CASUAL PARTICIPANTS

The data on declining frequency of participation indicates significant opportunities to engage millions of new participants and even incentivize them to participate more frequently.

This data indicates that currently, very few participants who are new to outdoor recreation are converted to core participants. It isn't hard to identify the potential for growth when you do an analysis on the outdoor participant base — there is a more diverse group of Americans who are casual participants in the most accessible activities, such as hiking, running, camping, bicycling, and fishing.

2023 TOP FIVE OUTDOOR RECREATION ACTIVITIES BY PARTICIPATION RATE (% OF THE TOTAL POPULATION AGED SIX AND OLDER)



The typical participant in this new casual group might hike or fish while they're camping over a weekend, then go for a few bike rides with friends over the course of a year. There are many opportunities to engage casual participants to participate more frequently. Further engagement of new participants requires us to get to know them better and learn more about their motivation for participation in outdoor recreation activities.

We know they are not out there perfecting turns on their skis, through-hiking the PCT, or setting the fastest time running the Grand Canyon rim to rim. What makes this group different, and how will they drive change in the overall outdoor participant base? This report explores this new participant: their diversity, their participation preferences, how often they like to participate, what barriers they face to do so, and why they continue to flock to outdoor spaces four years after the pandemic that accelerated participation growth across outdoor recreation.

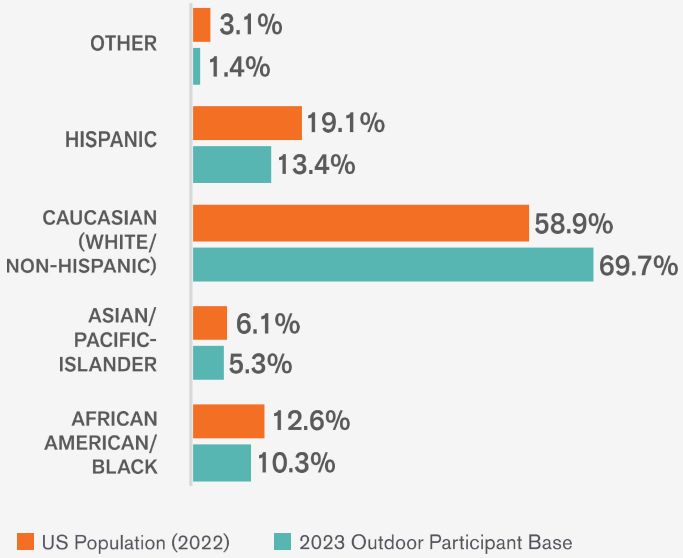
AT A GLANCE: DIVERSITY IN OUTDOOR PARTICIPATION

Increasing numbers of participants of color are driving diversity across ethnic/racial categories in outdoor recreation.

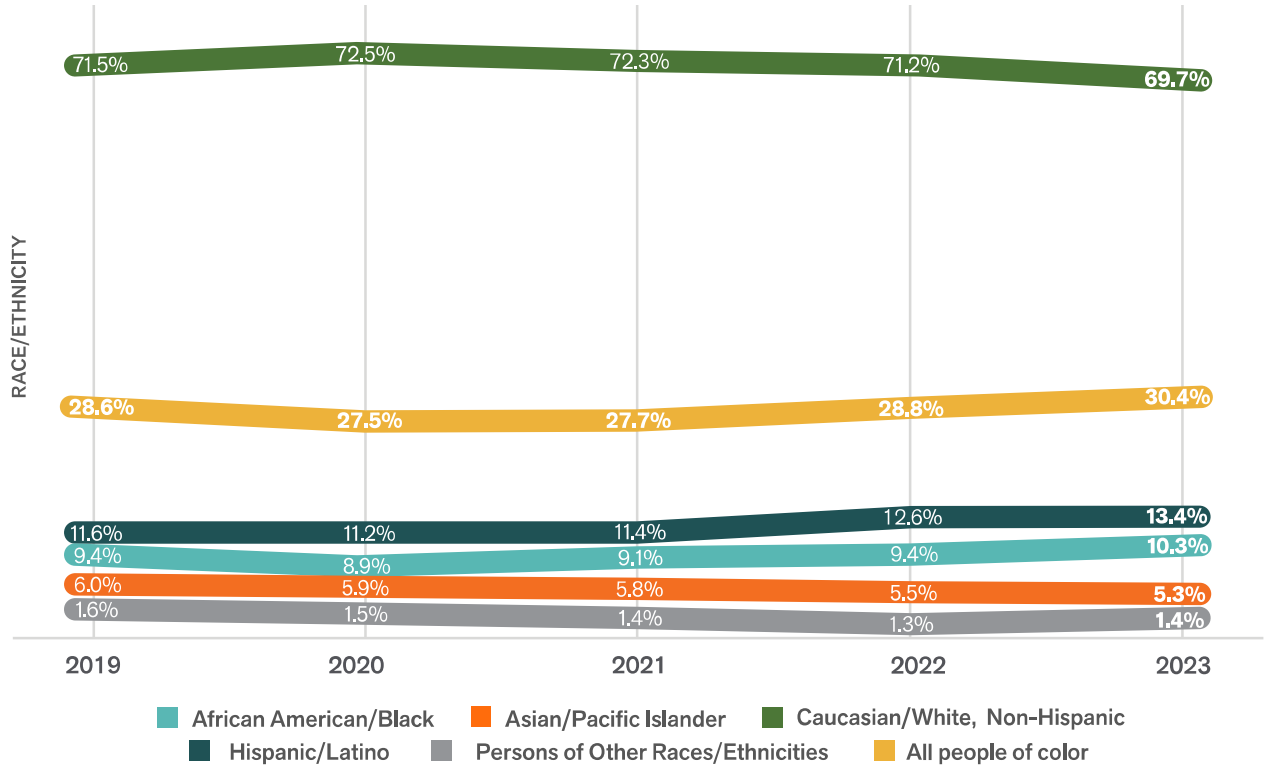
The percentage of outdoor participants who are Black increased from 9.4% to 10.3% of the outdoor participant base in 2023. The percentage of Hispanic people in the outdoor participant base increased from 12.6% in 2022 to 13.4% in 2023. In 2023, the percentage of White Non-Hispanic people in the outdoor participant base decreased from 71.2% in 2022 to 69.7%.

Growing ethnic/racial diversity in the overall population is mirrored by growing diversity in the outdoor recreation participant base.

ETHNIC/RACIAL DIVERSITY IN THE OUTDOOR RECREATION PARTICIPANT BASE AND THE U.S. POPULATION

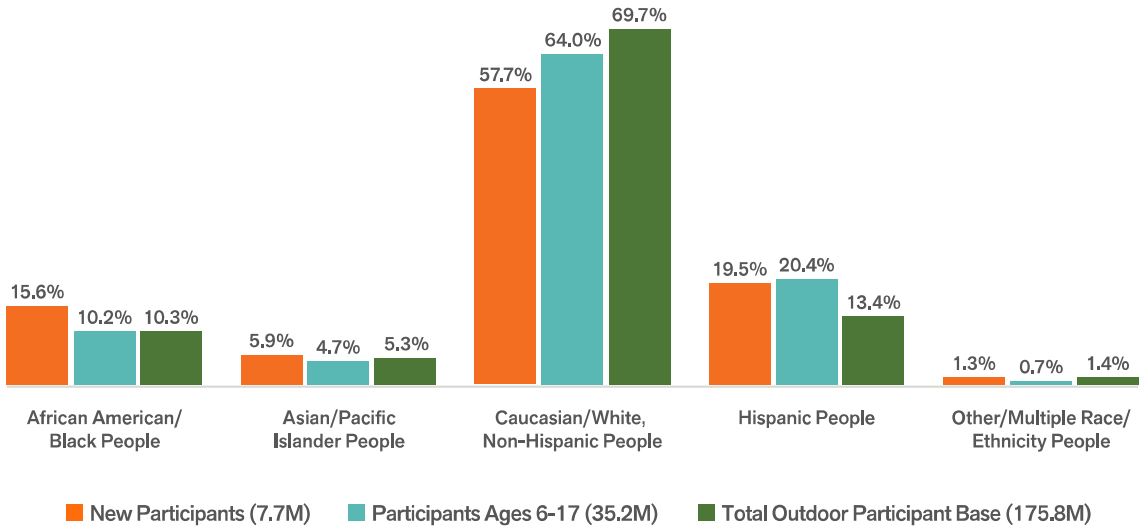


OUTDOOR PARTICIPATION BY RACE/ETHNICITY 2019 TO 2023



The injection of more diverse participants new to outdoor recreation and youth participants entering the participant base is not merely a trend; it's destiny. Shifting demographics, especially along ethnic/racial categories, is happening in the general population of the United States. In fact, the outdoor recreation participant base is less diverse than the U.S. population overall.

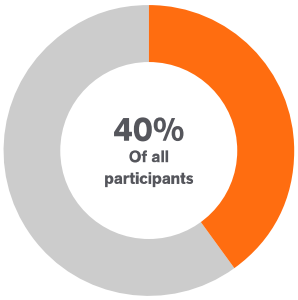
DIVERSITY IN THE 2023 OUTDOOR RECREATION PARTICIPANT BASE - TOTAL BASE, AGES 6-17 YEARS, AND NEW PARTICIPANTS

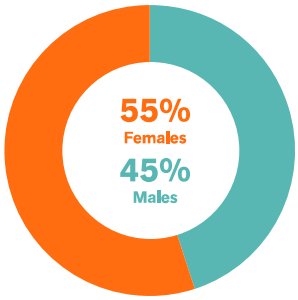


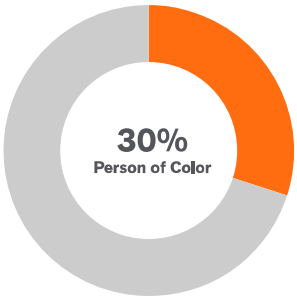
Diversity brings new participants, new ideas, and new ways of engaging outdoors, more support for outdoor and environmental policies, and more dollars into the outdoor recreation market.

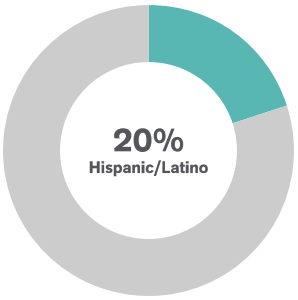
In this report, we will dive deeply into demographic shifts, trends in the declining frequency of participation, and the growth or decline of participation across outdoor recreation activities. Our overarching objective is to provide a clear view of the outdoor recreation participant base and offer insights on how to continue growing the number of participants and take advantage of opportunities to increase the frequency of participation. More people partaking more frequently provides a higher level of support for outdoor recreation causes, like climate change mitigation and protection/expansion of public lands, as well as more spending in the outdoor market.

CASUAL OUTDOOR PARTICIPANT PROFILE









Motivated to get outdoors to spend time with friends/build community, boost mental health, connect with nature, and have awe-inspiring experiences (especially shareable ones)

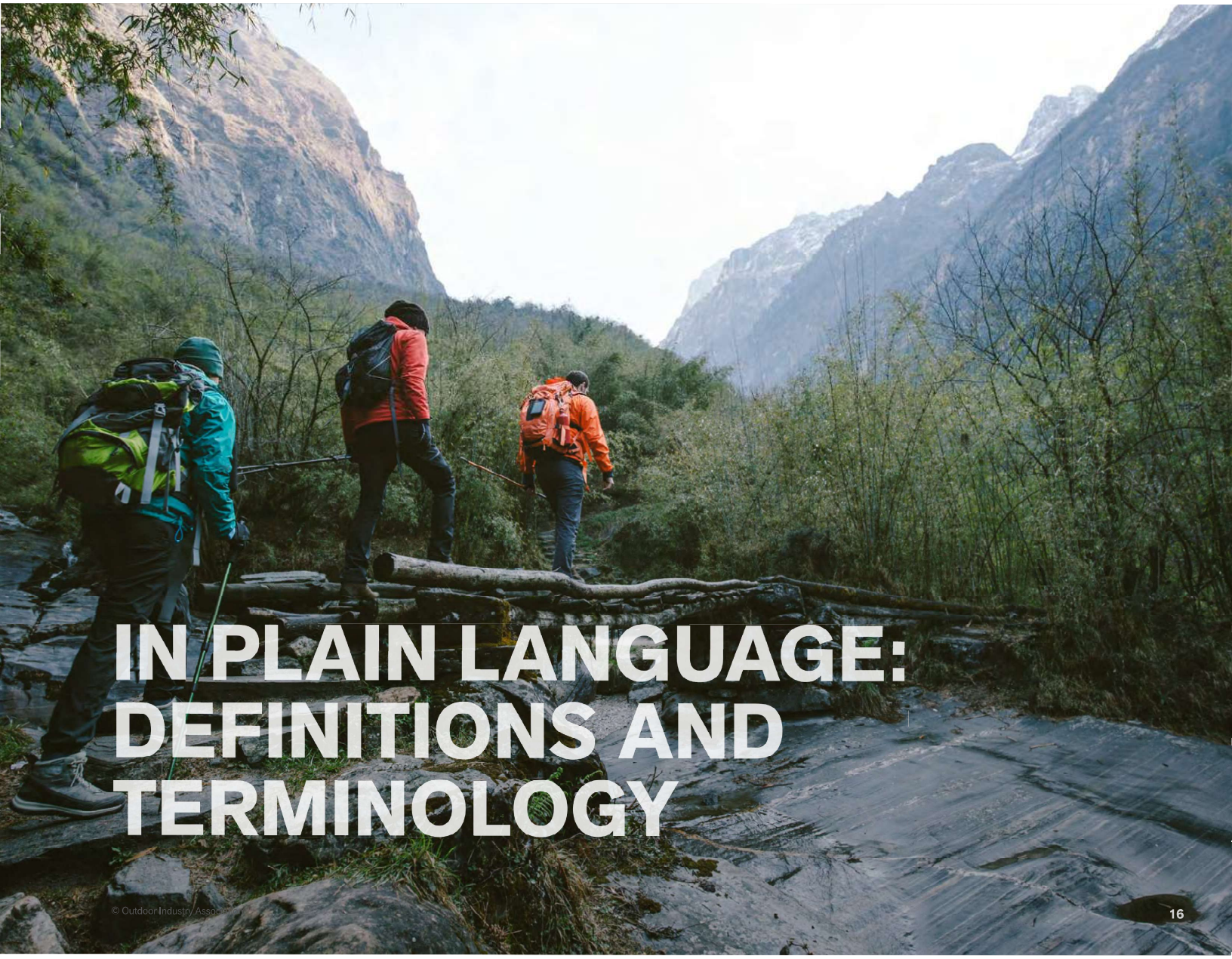
Probably started with hiking, camping, fishing, cycling, and/or running

Older participants likely to gravitate to wildlife viewing, birding, and/or fishing

Participate in outdoor activities
4 to 24 times a year

Likely to be either 24 or younger or 55 and older

Not interested in high tech gear, perfecting outdoor skill sets, winning races, setting speed records



IN PLAIN LANGUAGE: DEFINITIONS AND TERMINOLOGY

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out-doors /ˈau̇t-ˈdȯrz/
the natural world; any environment beyond the confines of built infrastructure, typically characterized by natural landscapes, fresh air, and exposure to weather elements.

outdoor recreation /ˈau̇t-ˈdȯr ˌre-krē-ˈā-shən /
Any leisure or recreational activities that take place in natural environments or outdoor settings. Note that this report more narrowly focuses on contemporarily defined, and mostly human-powered, outdoor activities, and is not exhaustive of the diverse ways people recreate in the outdoors.

participant /pär-ˈti-sə-pənt/
A survey respondent who reported participating in at least one outdoor activity in calendar year 2020. Participants often reported undertaking multiple activities multiple times throughout the year.

participation rate /pär-ˈti-sə-pənt ˈrāt/
The proportion of a group who participated in outdoor recreation or an outdoor activity. For example, if 6 in 10 teenagers bicycled in 2020, their bicycling participation rate was 60 percent.

core participant /ˈkȯr pär-ˈti-sə-pənt/
A person who takes part in outdoor activities 51 times or more in a year.

outing /ˈau̇-tiŋ/
A single trip during which outdoor activity was undertaken.

CONCLUSION

CONCLUSION: THE OPPORTUNITIES AND THE TRENDS TO TRACK

The data is more than a mere snapshot of what's happening in outdoor recreation — it can inform the road map we create to pave a healthier future for participants, our community and the industry.

The outdoor recreation participant base was healthy in 2023. There were 175.8M participants, a 4.1% growth in the number of participants, increasing diversity, and strong growth in the most popular outdoor activities (hiking, camping, fishing, bicycling, and running).

At a 57.1% participation rate, a larger share of all Americans participate in outdoor recreation than see a movie in a theater (43%), possess at least an associate degree (52.5%), or eat breakfast daily (35%). Outdoor recreation can shoot for participation rates as high as the percentage who follow professional and/or college sports (62%), are on social media (68%), or drink coffee every day (73%).

However, a sharp drop in the frequency of participation is a flashing red warning light for the outdoor industry and a call to opportunity. Considering the growth in the number of Americans from all demographic groups participating in outdoor recreation, focusing on engagement that increases the frequency of participation could pay large dividends in the future.

Efforts to better segment the outdoor participant base as it transitions to a more diverse, more casual base of participants will help the industry better understand participants who approach outdoor recreation with more relaxed attitudes and expectations. The traditional hard-core, high-frequency participants, who are most often male and white, will make up a smaller share of the participant base year-over-year into the indefinite future. Efforts to build core participation in a more diverse market will be key to growing outdoor participation in depth as well as breadth.

This report focuses on detailing how many Americans are participating in outdoor recreation and aspects of their identity, including age, sex, geographic location, education, income, and frequency of participation across outdoor recreation activities from adventure racing to wake surfing.

The data produced by the Physical Activity Council does not explain why these trends are happening. It is up to both OIA Research and market researchers across the outdoor industry to look deeper into consumer intelligence resources to determine why trends occur and where they are likely to head in the coming years. Businesses that do this work will have a significant competitive advantage. Additionally, organizations that get people outdoors as either a primary or secondary goal should also look deeper into consumer intelligence offered by OIA Research and other resources in their communities to maximize their efforts.

METHODOLOGY

METHODOLOGY

All participation statistics are from a nationwide study conducted during the 2023 calendar year by Sports Marketing Surveys USA (SMS). Under the guidance of the Outdoor Foundation, the Sports and Fitness Industry Association (SFIA), and six other sports industry associations that make up the Physical Activity Council (PAC), the participation study was designed and launched by Digital Research (DRI). All other data is attributable to the SFIA/SMS research partnership. This survey began in 2007.

SAMPLE SPECIFICATION

During 2023, a total of 18,000 online interviews were carried out with a nationwide sample of individuals from U.S. proprietary online panels representative of the U.S. population for people aged six and older. Strict quotas associated with gender, age, income, region, and ethnicity were followed to ensure a balanced sample.

The 2023 participation survey sample size of 18,000 completed interviews provides a high degree of statistical accuracy. All surveys are subject to some level of standard error: the degree to which the results might differ from those obtained by a complete census of every person in the U.S. A sport with a participation rate of 5% has a confidence interval of plus or minus 0.32 percentage points at the 95% confidence level.

A weighting technique was used to balance the data to reflect the total U.S. population over six years old. The following variables were used: gender, age, income, ethnicity, household size, region, and population density. The total population figure used was 304,745,039 people aged six and older.

Activity reported is based on a rolling 12-month participation rate. All charts represent data from U.S. populations aged 6 and over unless otherwise specified.

If you have specific questions regarding the methodology, please contact Sports Marketing Surveys at info@sportsmarketingsurveysusa.com.

OUTDOOR FOUNDATION

OUTDOOR INDUSTRY ASSOCIATION

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Boulder, CO 80308 USA
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Questions? Please contact research@outdoorindustry.org

2023 OUTDOOR PARTICIPATION TRENDS REPORT

EXECUTIVE SUMMARY AND KEY INSIGHTS

OUTDOOR FOUNDATION
OUTDOOR INDUSTRY ASSOCIATION

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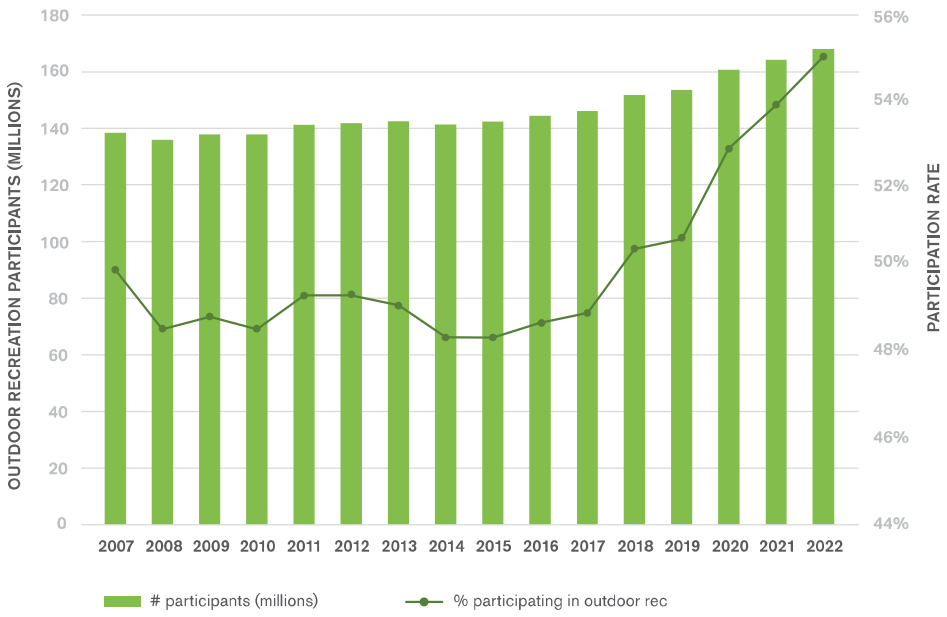
EXECUTIVE SUMMARY

The outdoor recreation participant base grew 2.3% in 2022 to a record 168.1 million participants or 55% of the U.S. population ages 6 and older. The outdoor recreation participant base has grown each of the last eight years, adding 14.5 million participants since January 2020. Although 2022 outdoor recreation included record numbers of participants and participation rates, the number of outings per participant declined in 2022 for the first time since the pandemic began in 2020.

OUTDOOR RECREATION PARTICIPANT COUNT AND PARTICIPATION RATE 2007 TO 2022



We saw continued growth in the number of Americans who participate in outdoor recreation, even as pre-pandemic routines are reestablished, indicating that outdoor recreation is effectively engaging participants gained over the past three years, but they participate less frequently than earlier cohorts did. The participant base is becoming more diverse across ethnicity/race, education, and age. The data reveals a stable outdoor recreation participant base with key opportunities in demographic segments showing significant growth.

About this report: For over 15 years, the Outdoor Participation Trends Report has served as the most trusted and comprehensive source of insights and narratives around who's doing what, when, and how outdoors. The Outdoor Foundation, the philanthropic arm of Outdoor Industry Association, funds the research that produces the Annual Outdoor Participation Trends Report and publishes the findings in partnership with OIA every year.

KEY INSIGHTS

PARTICIPANT BASE GROWTH

THERE HAS BEEN RECORD GROWTH IN THE TOTAL PARTICIPANT BASE.

The number of outdoor recreation participants **increased 2.3% to a total of 168.1 million Americans in 2022.**

This equates to

55%

of the U.S. population over the age of 6

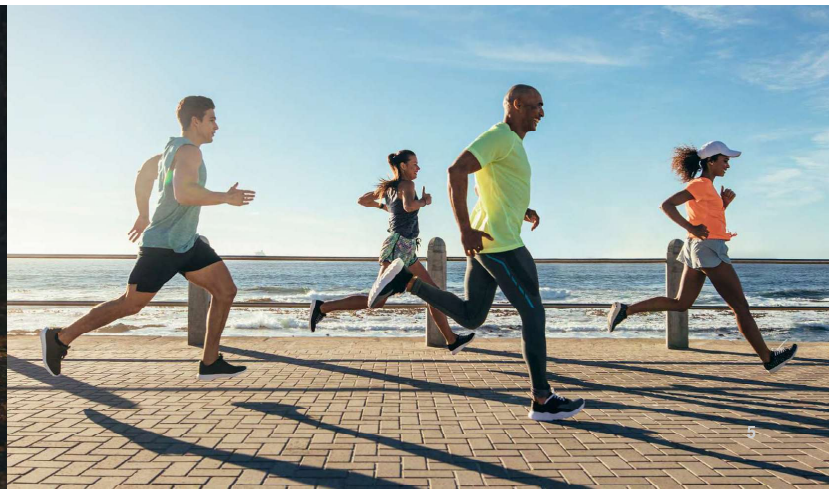
For purposes of comparison, here are 2022 statistics reflecting total American participation in other activities.

34%
OF AMERICANS ATTENDED SPORTING EVENTS

51%
OF AMERICANS READ A BOOK

70%
OF AMERICANS WORKED FULL-TIME

74%
OF AMERICANS DRANK COFFEE



DIVERSITY

THE RECREATIONAL PARTICIPANT BASE IS MUCH MORE DIVERSE THAN EVER BEFORE.

New and young outdoor participants are significantly more diverse than the current outdoor base and overall U.S. population and are accelerating quickly.

As a whole, **diverse ethnic/racial groups are still underrepresented** in the outdoor participant base. We've got a lot more work to do here to engage and retain them.

The participation rate for Hispanic people has increased from 34% in 2015 to 56% in 2022.

The average annual growth rate for the Hispanic participant cohort is the highest of any group at 5.5% over the past five years.

The participation rate for Black people increased more than 5% in 2022 to 40.7%.

Black people continue to have the lowest overall participation rate in outdoor recreation, but that rate has increased in each of the past five years.

The only racial/ethnic group with increased average outings per participant in 2022 were Black outdoor recreation participants.

Black participants engaged in the highest number of outings on average compared to people in other racial/ethnic groups in 2022, at 80.9 outings per Black participant.

LGBTQIA+
(Lesbian, Gay, Bisexual, Transgender, Queer, Questioning, Intersex, Asexual plus)
participate in outdoor recreation at higher rates than heterosexual cisgender (people who retain the gender that was presumed for them at birth) Americans. In 2022, 61% of LGBTQIA+ people of all genders participated in outdoor recreation. From 15.8 million in 2021, more than 18 million outdoor recreation participants identified as LGBTQIA+ in 2022.

SENIORS

A SIGNIFICANTLY HIGHER PERCENTAGE OF SENIORS ARE PARTICIPATING IN OUTDOOR RECREATION.

As recently as 2018,
JUST 28%
of seniors (ages 55+) participated.

In 2022, the senior participation rate hit a record high of
35%
and rising.

This equates to
1 IN EVERY 5
outdoor participants and a total of 1 million new participants in 2022.

GATEWAY ACTIVITIES

GATEWAY ACTIVITIES CONTINUE TO DRIVE NEW ENTRANT OUTINGS AND FREQUENCY OF PARTICIPATION.

More people participated in most categories of activity in 2022.
In fact, 80% of outdoor activity categories experienced participation growth in 2022, including large categories like camping and fishing and smaller categories like sport climbing and skateboarding.

Hiking is the most popular outdoor activity. Running, bicycling, fishing and camping round out the top five.

There were 881,000 new hikers in 2022. "Core" frequency increased 6% and casual was flat.

Camping had the second highest growth rate over the past three years at 29.1% per year.

94% of campers and 83% of hikers **participate in at least one other outdoor recreation activity.**

Running has the highest average outings per runner at 54 per year.
The average hiker heads to the trail just six times per year.

The outdoor activity categories with the highest growth rates among kids in 2022 included **backpacking, snowshoeing, canoeing, climbing, and off-road triathlon.**

"Gateway activities" are typically the first or one of the first outdoor recreation activities people participate in at any age. These are the activities that serve as magnets to outdoor activity and commonly lead to more activity outdoor in more niche categories like adventure racing or backpacking. It's important to engage these newly minted participants and help them explore more outdoor activity options.

PARTICIPATION RATE DECLINE

RECORD GROWTH IN THE PARTICIPANT BASE DOES NOT TRANSLATE TO PARTICIPATION RATES, WHICH ARE DOWN FOR THE FIRST TIME SINCE THE PANDEMIC.

Americans racked up more than 11.8 billion outdoor recreation outings in 2022, **but the frequency of participation is declining across outdoor recreation.**

In 2013, the average number of outings per participant was 84.6; **10 years later, it was down to 71.8 per participant.**

Opportunity exists in finding ways to engage these new consumers and consider strategies to increase frequency across several growing and emerging activities for seniors, families, youth and BIPOC individuals.

Gender, ethnicity, income and education levels somewhat predict participation rates. For instance, white males with higher incomes correspond to higher participation rates.

Outings for families with children (people 17 and younger) are declining; this statistic dropped from 85 outings in 2012 to 66 in 2022. Families with young children tend to be more active than families with older children; the rate drops off in teenage years.

RESEARCH HIGHLIGHTS

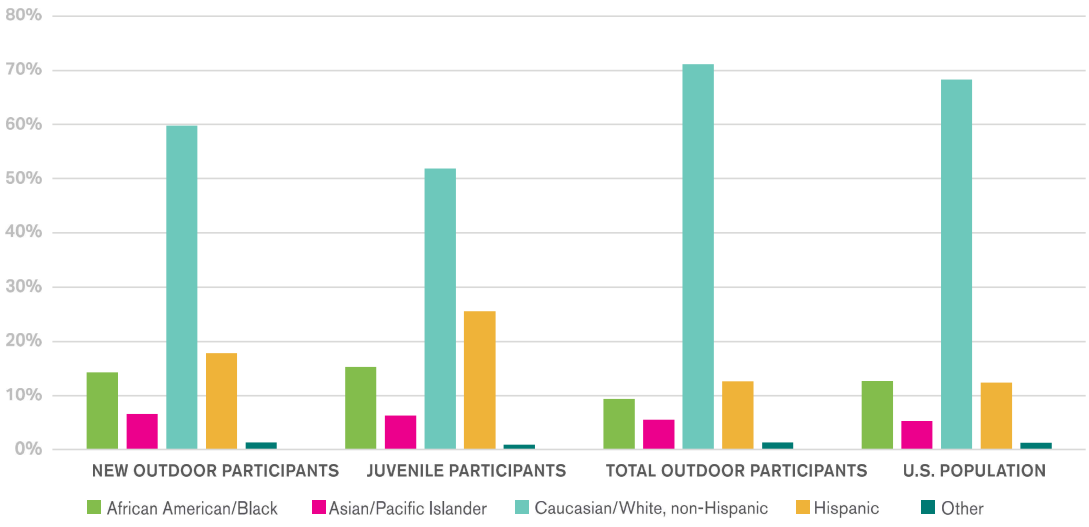
A high-level overview of 2022 research into recreational participation reveals greater diversity and more young people; the most popular activities and those that are declining; and the average number of outings per participant. See many more specific pieces of information in the meat of the report.

NEW OUTDOOR PARTICIPANTS: YOUNG AND DIVERSE

The outdoor recreation participant base became more diverse in 2022 including increases in participation among Black people, Hispanic people, and LGBTQIA+ people. Additionally, Americans ages 55 and older continue to become more active and now represent 1 in every 5 outdoor participants.

Although the outdoor participant base isn't as diverse as the U.S. population, diversity among kids who participate and of new participants (participated for the first time in 2022) strongly indicate that efforts to maximize inclusivity in outdoor recreation are resulting in greater diversity.

NEW OUTDOOR PARTICIPANTS, YOUNG OUTDOOR PARTICIPANT, TOTAL OUTDOOR PARTICIPANTS, AND U.S. POPULATION DIVERSITY COMPARED 2022



MOST POPULAR OUTDOOR ACTIVITY CATEGORIES

More people participated in most categories of activity in 2022. In fact, 80% of outdoor activity categories experienced participation growth in 2022, including large categories like camping and fishing and smaller categories like sport climbing and skateboarding.

ANNUAL GROWTH IN LARGE OUTDOOR CATEGORIES INCLUDED:

22.9%
GROWTH IN CAMPING TO
51.4 MILLION CAMPERS

22.9%
GROWTH IN HIKING TO
59.6 MILLION HIKERS

22.9%
GROWTH IN FISHING (FLY, SALT, FRESH) TO
54.5 MILLION ANGLERS

22.9%
GROWTH IN ALL BIKING CATEGORIES (ROAD, BMX, MOUNTAIN) TO
54.7 MILLION CYCLISTS

THE FASTEST GROWING CATEGORIES IN OUTDOOR INCLUDED:

21%
ANNUAL GROWTH IN SNOWSHOEING

12%
ANNUAL GROWTH IN CAMPING

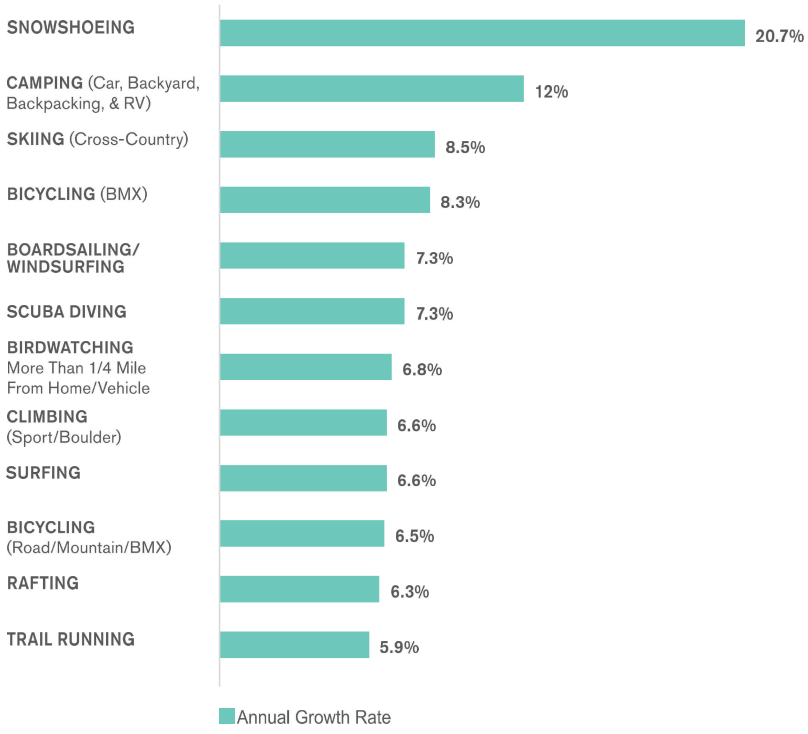
8.5%
ANNUAL GROWTH IN CROSS-COUNTRY SKIING

8.3%
ANNUAL GROWTH IN BMX BICYCLING

Outdoor recreation categories that experienced decline in 2022 included trap and skeet shooting, overnight backpacking, road running, and adventure racing. These categories lost 3.1 million participants in 2022 and have experienced year-over-year declines since 2020.

OUTDOOR ACTIVITY GROWTH RATES

ANNUAL GROWTH RATE 2021 TO 2022



AVERAGE NUMBER OF OUTINGS PER PARTICIPANT DECLINED

In 2022, as the total number of participants increased, the average number of outings per participant declined for the first time since the pandemic started. This was also reflected in a decline in "core" participants who participate in outdoor recreation activities 51 times or more each year. The percentage of participants who met the criteria for "core" dipped below 30% for the first time in 2022, a long-term trend that has persisted for more than a decade despite a short and small pandemic driven bump.

AVERAGE # OUTINGS PER PARTICIPANT 2013 TO 2022

Younger generations including Gen Alpha (2013-present), and Gen Z (1997-2012) participated slightly less in outdoor recreation in 2022 while their elders in Gen X (1965-1980) and the Baby Boomers (1946-1964) participated more.

WHY DOES THIS DATA MATTER?

Knowing the size of the target market can help outdoor brands determine the potential demand for their products and services. This can assist in forecasting sales and production and allocating resources and marketing budgets accordingly. Understanding the demographics of the target market can help outdoor brands tailor their products and messaging to better meet the needs and preferences of their customers. For example, if a brand knows that a significant portion of its target market is made up of women in the middle Atlantic region who run trails a few times per month, it may choose to develop products and marketing campaigns that specifically target this demographic.

Information showing the frequency of participation in outdoor activities helps outdoor brands understand the level of engagement of their customers and identify opportunities to develop new products or services that will appeal to frequent (core) and infrequent (casual) participants.

Outdoor retailers know their customers, but keeping up with consumer, market, and industry trends takes a lot of time. The data available in this report is foundational; it is the primary source of information about the size, geographic dispersal, demographics, preferred activities, gateway activities and trends across outdoor recreation participation.

Demographics are changing quickly in the U.S. population, and the outdoor recreation market has lagged behind. Recognizing the need for increased diversity in the participant base, many industry-wide efforts to increase access to outdoor recreation for BIPOC (Black, indigenous, and people of color) people, including the Outdoor Foundation's Thrive Outside Initiative, have been established. The new and young outdoor participant bases are significantly more diverse than the total participant base, a formula for long-term growth in diversity for outdoor recreation. Monitoring progress on diversity is key to understanding if efforts are bearing fruit.

In summary, understanding consumers is essential for any business that wants to succeed in today's competitive marketplace. By gaining insights into the needs and preferences of their target audience, businesses can create products that meet their customers' needs, build loyalty, and drive sales and revenue growth.

Note:
A few types of statistics must be distinguished to promote clear understanding of the data. For instance, there's the number of participants but also the rate at which they participated, which may seem to contradict each other. For instance, it may be that thousands of people went skeet shooting, but if they only did so once (frequency), the rate of their participation is very low.

We also track two general groups of outdoor recreationalists: core participants, a person who participates in outdoor activities 51 times in a year or more; and casual, or infrequent ones.

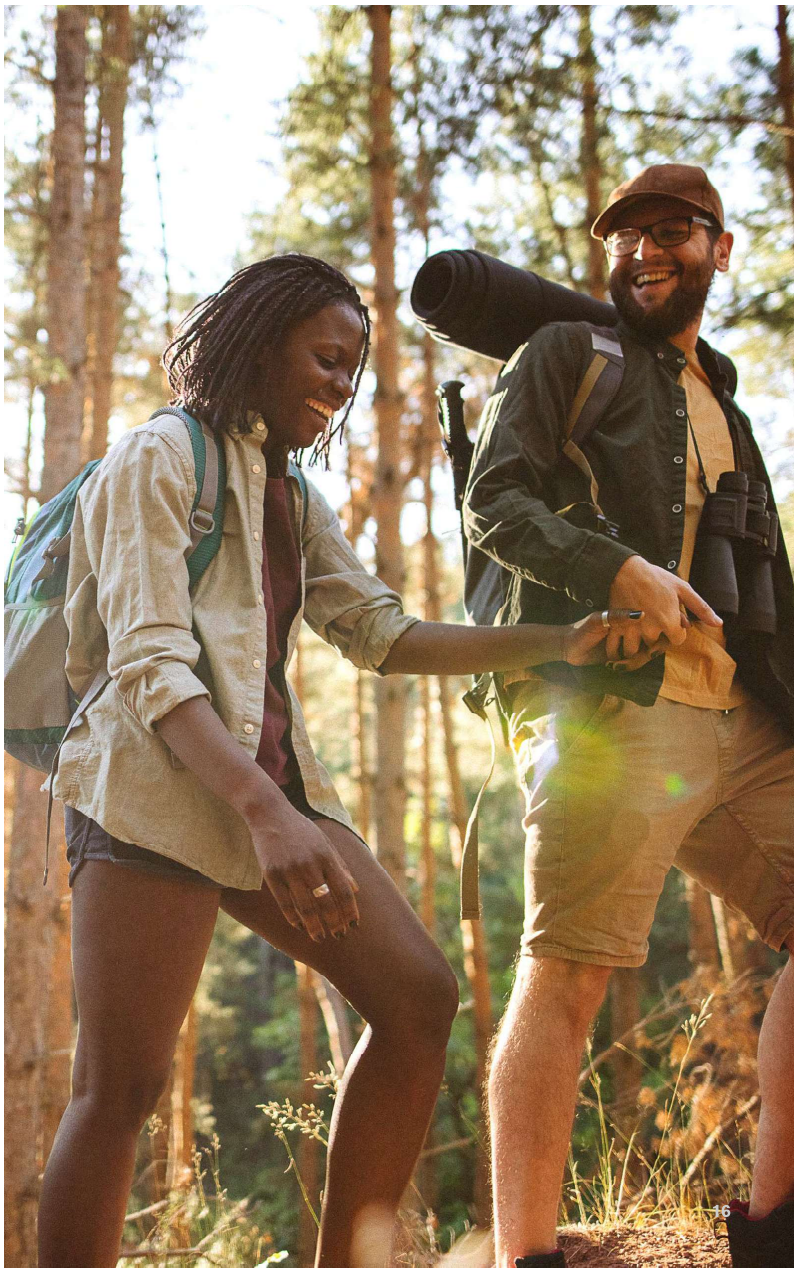
CONCLUSION

The outdoor recreation participant base has grown significantly over the past three years, but the frequency of participation is dropping. The Covid-19 pandemic spurred growth in 2020, and that growth continued through 2022. Over the past three years, the participant base expanded by 14.5 million participants.

Many new participants begin their journey into outdoor recreation on a casual basis like camping with the family a few times a year, hiking from time to time with friends, and spending a little bit more time outdoors. While more casual consumers of outdoor experiences have swollen the ranks of outdoor participants, the frequency of participation as well as the base of core participants is declining. The percentage of the market that are considered core participants who participate in outdoor activities at least once per week are becoming scarcer.

Diversity is growing in the outdoor recreation participant base, especially among new and young participants. New and young outdoor participants are more likely to be BIPOC and are driving more ethnic/racial diversity into the participant base. In addition to racial/ethnic diversity, new participants are driving increased participation among older Americans and members of the LGBTQIA+ community. These trends appear to be accelerating along with the increase in diversity across the US population.

The casual outdoor consumer is in. This data tells us that more casual participants are going to be seeking out experiences outdoors and will be shopping for products that are a little less technical and sell at lower price points. Additionally, it shows us that the new participants who showed up in outdoor recreation because of disruptions related to the pandemic did not leave outdoor recreation in droves as the inside world re-opened and they could once again dine out, go to movies and shows, etc. Messaging tailored to casual participants searching for notable outdoor experiences is likely to bring in the highest engagement.



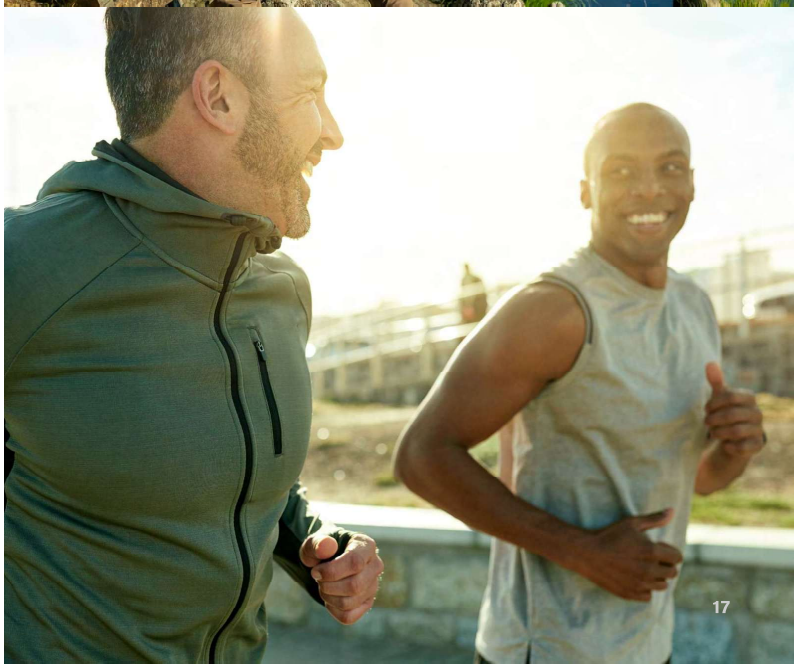
DEFINITIONS AND TERMINOLOGY

PARTICIPANT
A survey respondent who reported participating in at least one outdoor activity in calendar year 2022. Participants often reported undertaking multiple activities multiple times throughout the year.

PARTICIPATION RATE
The proportion of a group that participated in outdoor recreation or in an outdoor activity. For example, if six in 10 teenagers bicycled in 2020, their bicycling participation rate was 60 percent.

CORE PARTICIPANT
A person who participates in outdoor activities 51 times in a year or more.

OUTING
A single trip during which outdoor activity was undertaken.



OUTDOOR INDUSTRY ASSOCIATION

P.O. Box 21497
Boulder, CO 80308 USA
303.444.3353

OUTDOORINDUSTRY.ORG

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Director of the Steel Center for Religion and Philosophy
Hendrix College
Philosophy, Cognitive Science, and Environmental Studies
Ellis Hall 205
1600 Washington Avenue
Conway, AR 72032
dow@hendrix.edu
501.242.2431

To Whom It May Concern:

I am writing with complete support for the mission of the Arkansas Outdoor Academy. The programs offered by the Arkansas Outdoor Academy would be transformative for Arkansas students. Outdoor education has benefits for people of all ages, but incorporating outdoor experiential education is necessary for central Arkansas students.

Apart from my training in philosophy, I am an ultrarunner, a rock and ice climber, a mountain biker, a backpacker, an eco-farmer, and a wilderness survivalist. Through these experiences I have learned skills of integrity, resilience, and empathy. I learned to overcome hardships in my own life, learned to cooperate with others, and learned about connecting with the natural world. I have made it my goal to guide and share these experiences with students at Hendrix College because I know personally what such engagement meant to me, but also I have experienced how students are deeply changed by outdoor experiences as well.

At Hendrix, we have the Odyssey program, through which students explore their passions through Odyssey experiences. Through my experience sponsoring several outdoor education projects, students report that they found it more engaging learning material being immersed in the outdoor experiences. Especially students from the central Arkansas region suffer from nature deficit, which negatively impacts physical and mental health of students. Learning through trail running, learning to become a mountain guide, training to lead float exhibitions, or backpacking the Appalachian trail, students become more connected with the natural world. But also the material from the curriculum that they are reading and writing and analyzing is more deeply informed by their practical engagement.

For over 10 years, on our eco-farm Wildland Gardens, we have hosted interns from local liberal arts colleges. Students have learned how to tend to the soil, plant seeds, tend to seedlings, transplant into gardens, naturally fertilize, irrigate plants, build gardens and greenhouses, harvest vegetables to bring to market, can and preserve, dry foods, make hot sauce, make soap and salves, and make paper. Throughout these experiences, they are also learning basic educational skills, like mathematics, physics, chemistry, biology, civics, history,

and ethics in ways that are immediately meaningful. When education is outdoor education, there is no need to defend what students are learning as being practical because its usefulness is immediately obvious. Again, our interns tell us time and again that they wish they had not only learned these skills earlier, but that they wish they had learned in engaged and experiential ways earlier in their educational journeys.

Recent trends in Arkansas point towards increased interest in outdoor education, especially in the Central Arkansas region. Throughout Arkansas my prediction is that we will develop into The Natural State that supports outdoor experiences not only for Arkansans but also for travelers from outside the state and abroad. At Hendrix I will be working on developing learning experiences for students in outdoor education to enable them to be prepared for the jobs that we know will open up. It is necessary to incorporate outdoor education in primary and secondary education for Arkansas students to be positioned to take advantage of the opportunities that will arise in the state.

I would like to offer my sincere support for the Arkansas Outdoor Academy. If you have any questions or concerns, please contact me for more information.

Sincerely,

Dr. James M. Dow
Professor of Philosophy

John Shawn Allen Rea
5050 Trinity Crossing Drive
Conway, Arkansas 72034

Subject: Arkansas Outdoor Academy

Please know for several years I worked as a Territory Manager in the Outdoor Industry for an independent sales agency, Murski Breeding Sales, representing over 40 brands throughout Arkansas, Kansas, Louisiana, Mississippi, and Missouri. Some of the key brands represented were Bergara Rifles, CVA Muzzle-Loaders, Daisy BB Guns, Lew's Fishing Tackle, Outdoor Edge Knives, Remington Outdoor Company, and Under Armour Hunt-Fish. Each of these brands had a tremendous impact on the Arkansas economy and surrounding states. In addition to the Outdoor Industry, I spent eleven years as the Vice President of Business Development for First Security Bank in Conway, Arkansas.

My experience in the Outdoor industry solidified the importance of offering products/brands where needs were not being met. Academy Sports, Bass Pro Shops, Fort Thompson's Sporting Goods, Hunter's Refuge, Mack's Prairie Wings, and many other outdoor oriented stores met the needs demanded by consumers. At First Security Bank we always supported businesses that recognized where a need was lacking and we supported those businesses to fill gaps accordingly.

The aforementioned are indicators of the importance of fulfilling needs that are not being met. The same is true in education. There is a segment of our society in Arkansas, especially in urban areas, that is not being exposed to outdoor oriented education. Outdoor education is not limited to agriculture or farming. Outdoor education can positively impact a student in a multitude of areas including aviation, business, environmental awareness and sustainability, sales/service, and much more.

The Arkansas Outdoor Academy will provide a curriculum that motivates a student to expand their ability to reason and logic where the status quo education format has not.

I appreciate you,

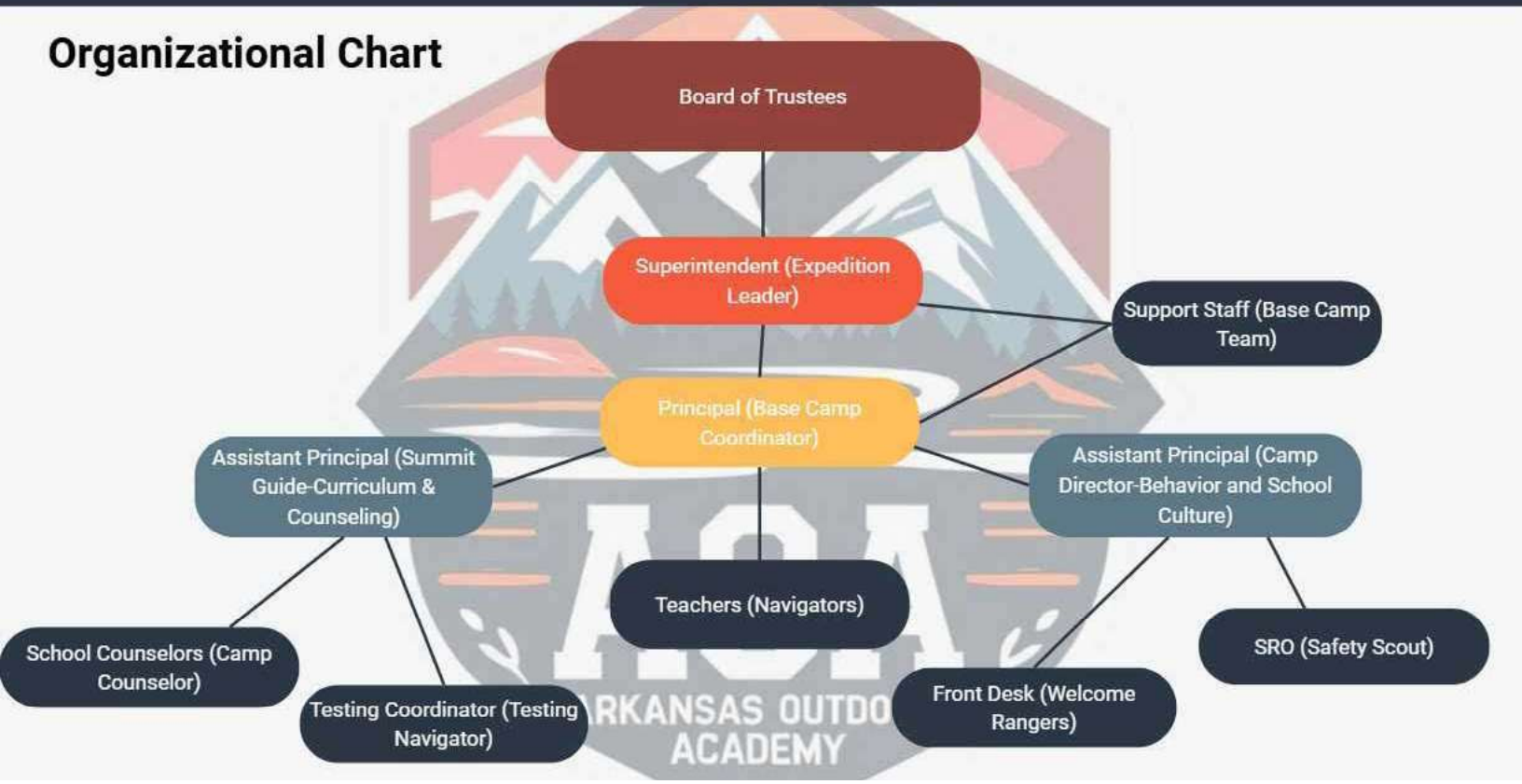
John Shawn Allen Rea
501-329-2559 Cell
shawnrea0808@gmail.com

As a current student at Hendrix College, I have seen the benefits of a diverse education paired with unique experiences. Arkansas Outdoor Academy provides these opportunities to its students while also preparing them for whatever comes next. By learning in tandem with nature, education becomes more engaging and motivates students to take care of themselves and the world around them.

Central Arkansas needs an outdoor-centered college-prep school because not all students thrive in a traditional classroom. Arkansas Outdoor Academy (AOA) will pair rigorous academics with hands-on, nature-based learning that builds problem-solving, teamwork, and adaptability—skills essential for college, careers, and life. Outdoor education develops resilience, leadership, and critical thinking in ways textbooks cannot. I know this from experience; through activities like rock climbing, I've learned perseverance and problem-solving skills that have shaped my approach to challenges. Now is the perfect time for AOA, as students need grounding, real-world experiences in an increasingly digital world. AOA will graduate students who are not only academically prepared, but equipped with the confidence and life skills to thrive in any path they choose.

My name is Mia Hanley and as an upcoming sophomore at Hendrix college I believe that Arkansas Outdoor Academy would have perfectly overprepared me for my life after high school. By understanding how to live and flourish in the natural environment and the professional environment, students at AOA will have a unique education and experience compared to their peers. After graduating from a college prep school, I believe that the only thing that could've bettered my education would have been a foundation of outdoor and environmental knowledge and experience.

Organizational Chart



Saturday, November 1, 2025 at 10 AM – 3 PM

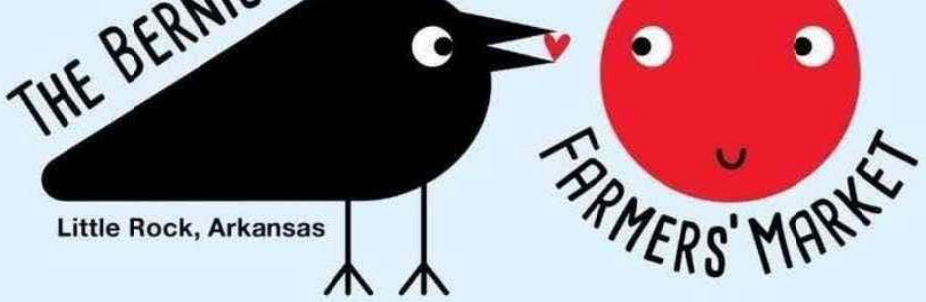
Fall Harvest Celebration

Public · Event by **St. Joseph Farm Stand**

Interested | Going | ···

6800 Camp Robinson Rd, North Little Rock, AR, United States, Arkansas 72118

6800 Camp Robinson Rd, North Little Rock, AR 72118-2515, United States · 10 mi



Every Sunday 9:00 AM - 1:00 PM
1401 Main St., Little Rock, AR 72202
thebernicegarden.org

Tomorrow at 9 AM – 2 PM

The Bernice Garden Farmers' Market

Public · Event by **Nature's Soul by Aley**

Interested | Going | ···

SUN, AUG 3	SUN, AUG 10	SUN, AUG 17
9:00 AM	9:00 AM	9:00 AM

SoMa Little Rock
Little Rock, AR 72202 · 9 mi

Saturday, October 4, 2025 at 11 AM

HIIIcrest Harvest

Public · Event by **Hillcrest Harvestfest**

Interested | Going | ···

2700 Kavanaugh Blvd, Little Rock, AR 72205-3862, United States

700 Ash St, Little Rock, AR 72205-2050, United States · 6 mi

185 going · 4.2K interested

August 7, 2025

Arkansas Department of Education:

Please accept this letter in support of charter approval for Arkansas Outdoor Academy (AOA). As the Vice President for Academic Affairs at National Park College in Hot Springs, we also see the tremendous need for outdoor education for young people in this state, and are currently seeking our own approval for credit programs in outdoor recreation through ADHE.

One of the common complaints we hear from employers is that this generation of student comes woefully unprepared in the necessary 'soft skills' required to excel in the workplace. New graduates lack the discipline, socialization, and work ethic employers are looking for, and these skills can be difficult to teach in a traditional classroom setting. Our experience at NPC is the same—incoming freshman may have all of the academic credentials needed to be successful, but find navigating college very difficult. Whether it's 'soft skills,' maturity, or that undefinable 'grit' that's needed, this generation has proven to be the most difficult to get college-ready and then job-ready, that we've ever seen.

The benefits of an outdoor-focused curriculum may well provide a solution this problem, and is why NPC is on a similar mission to develop this curriculum. What AOA can do is this: teach children the value of teamwork, collaboration, problem-solving, and critical thinking, all while learning to socialize with one another and work towards a common goal. These are the students that will not only do well in high school, but come to us prepared for college, or prepared to enter the workforce.

This is the type of training that builds these 'soft skills' in a way that we currently find difficult to do. All while developing skills in one of the most important and growing economic sectors of the state. But this is not merely about enjoying the outdoors, or working in this industry: these students will leave AOA prepared for whatever field they choose, armed with far more confidence and maturity than had they completed a 'traditional' school experience.

This generation requires new solutions. Our current educational model is slow to adapt; this is exactly the type of pedagogy that may do wonders for these kids and their futures. And that, in turn, will make our state that much better in the long-run.

It is my wholehearted recommendation that Arkansas Outdoor Academy be given the opportunity to bring this unique educational model to students of central Arkansas. I have no doubt it will be successful.

Best,

Dr. Chuck Argo
Vice President for Academic Affairs
Nationals Park College