

**Land of Opportunity: Exploring Workforce Needs in Arkansas's Growing Outdoor
Recreation Industry**

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Abstract

The outdoor recreation industry represents a rapidly growing sector of the American economy, generating billions in economic output and supporting diverse employment opportunities. In Arkansas, this sector has emerged as a strategic economic priority, yet a critical gap exists between employer workforce needs and the current supply of trained workers. The Arkansas Office of Outdoor Recreation (AOOR), established in 2021, commissioned this study to assess the outdoor recreation workforce development landscape across the state and identify strategies to support its growth. Using a mixed-methods approach, this project surveyed 78 outdoor recreation employers in hiring roles and conducted two focus groups with manufacturing and tourism employers at the 2026 Governor's Conference on Tourism and Outdoor Recreation. We additionally compiled and analyzed existing education and training programs across Arkansas and reviewed best practices from six comparison states. Findings reveal strong and near-universal demand for soft skills, divergent technical skill needs across subsectors, a limited supply of aligned training programs, and persistent geographic disparities in program access. Promising workforce development models from Colorado, Maine, and Utah offer adaptable strategies for Arkansas. Based on these insights, we offer targeted recommendations for AOOR to build a more resilient, skilled, and inclusive outdoor recreation workforce.

Land of Opportunity: Exploring Workforce Needs in Arkansas's Growing Outdoor Recreation Industry

Outdoor recreation represents a rapidly growing sector in the United States, contributing significantly to economic development, public health, and community well-being. In Arkansas, this sector has become a strategic priority as state leaders seek to leverage abundant natural resources to support jobs, tourism, and rural prosperity (Arkansas Department of Parks, Heritage and Tourism [ADPHT], 2026; Outdoor Industry Association, 2017). The establishment of the Arkansas Office of Outdoor Recreation (AOOR) in 2021 under former Governor Asa Hutchinson and its subsequent expansion through Governor Sarah Huckabee Sanders's 2023 Natural State Initiative underscore a strong policy commitment to developing the outdoor recreation economy and its workforce (ADPHT, 2026).

Despite this momentum, there is limited systematic research on how well Arkansas's current education and training systems are aligned with the needs of employers in the outdoor recreation industry. National and sector reports highlight that outdoor recreation generates billions of dollars in economic output and supports a wide range of occupations, yet employers frequently report difficulty recruiting workers with appropriate technical skills, safety certifications, customer service competencies, and environmental literacy (Highfill & Franks, 2019; Outdoor Industry Association, 2017; Outdoor Recreation Roundtable, 2023). In Arkansas specifically, outdoor recreation has been estimated to generate over \$5 billion annually and supports thousands of jobs, illustrating both the scale of the sector and the importance of a robust talent pipeline (University of Arkansas, 2025). However, persistent workforce gaps threaten the sector's ability to meet demand and sustain high-quality safe recreational experiences.

Project Description

The Arkansas Office of Outdoor Recreation (AOOR), housed within the Arkansas Department of Parks, Heritage, and Tourism, is a state-level initiative established to strengthen the state's outdoor recreation economy while preserving the abundant natural resources and promoting public engagement with the outdoors. The AOOR serves as a central hub to support businesses, communities, and organizations that rely on outdoor recreation, while advancing environmental stewardship and education (Arkansas Department of Parks, Heritage and Tourism [ADPHT], n.d; Arkansas Outside, 2025). The overall objectives of the AOOR are threefold: to grow Arkansas's outdoor recreation economy, to expand workforce and educational opportunities in the sector, and to ensure that natural resources are managed responsibly to sustain long-term recreational use (ADPHT, 2026).

This project partners with the Arkansas Office of Outdoor Recreation to assess the current outdoor recreation workforce development landscape in Arkansas and identify strategies to improve education, training, and employment opportunities in this sector. It focuses on four core objectives: skills Arkansas outdoor recreation employers need; the range of existing programs that prepare workers; the alignment or mismatch between training and employer needs; and best practice models from other states that could inform Arkansas's approach. These objectives are situated within broader concerns about rural economic development, equity in access to education and quality jobs, and environmental stewardship, given that many of Arkansas's outdoor recreation opportunities are located in rural and nature-dependent communities (National Governors Association, 2021; Outdoor Recreation Roundtable, 2023).

The project addresses a critical need for a skilled workforce capable of supporting Arkansas's expanding outdoor recreation economy. Many communities in Arkansas depend on

outdoor recreation as a key economic driver. A trained workforce supports local business sustainability, promotes equitable access to education and career opportunities for young people and underrepresented populations, and ensures safe, responsible recreational activities (Outdoor Recreation Roundtable, 2023; National Governors Association, 2021).

Research Questions

This project seeks to answer the following questions:

1. What skills do Arkansas outdoor recreation employers need from their employees?
2. What programs exist in Arkansas that train the outdoor recreation workforce?
3. What are the gaps in what these programs are providing compared to what employers say they need?
4. What best practices (i.e. models from other states) could be implemented to ensure a robust well-trained outdoor recreation workforce in the future?

Literature Review

A literature review was completed in order to advance understanding of key project components and ensure it is properly tailored to fit our research questions. While much literature exists on the issues facing workforce development for other industries in other geographic locations, there is a dearth of academic research on workforce development done within outdoor recreation and within Arkansas as a location of interest. We discuss four key themes in outdoor recreation: Defining the workforce, education and training landscape, workforce development opportunities and challenges, and tested research methods.

Defining the Workforce

The word "outdoor recreation" covers a vast array of theoretical and practical domains (Mackenzie & Hodge, 2020; Manning, 2011). Manning (2011) points out that many disciplines,

including tourism, education, park administration, environmental stewardship, and guiding, are integral to outdoor recreation. Since 2016, the scope has broadened further into urban, rural, and wilderness environments, integrating aspects of education, science, wellbeing, and community economic development (Seaman et al., 2024).

This diversity underscores the need to articulate a clear, functional definition as the profession adapts to new societal challenges. Arkansas's outdoor recreation economy is a vital contributor to local employment and economic development, reflecting national trends documented by Highfill and Franks (2019), who emphasize the rapid growth and diversity of outdoor recreation jobs across the U.S. Evidence indicates that the outdoor recreation sector generates employment far beyond traditional roles such as guiding or park management, extending into fields like technical apparel manufacturing, tourism, finance, environmental planning, public health, and more (Outdoor Industry Association, 2017). For the purposes of our research, we adopt the broad definition of the outdoor workforce which is interdisciplinary and spans across multiple industries ranging from manufacturing to hospitality.

Education and Training Landscape

Since the 1970s, outdoor academic programs have emerged as career paths in higher education, driven by growing interest in outdoor recreation and education (Guthrie et al., 2012). However, Seaman et al. (2017) note that expansion of these programs is impeded by limited awareness among prospective students and their families, many of whom are uninformed about the programs and the career prospects in the outdoor industry.

Research highlights a complex training ecosystem that combines formal education, industry-specific certifications, and experiential learning, though evidence of effectiveness is mixed. The traditional four-year degree model faces scrutiny, as employers continue to report

persistent skills gaps despite graduates' theoretical preparation (Harrison et al., 2022). Outdoor academic programs provide foundational knowledge and professionalism (Taff et al., 2016), while experiential learning is widely recognized for its ability to develop job-ready skills (Yildiz, 2022). Employers, however, tend to prioritize formal credentials and professional preparation (Maningas & Simpson, 2003; Seaman et al., 2017), even though some scholars argue that such emphasis does not fully capture the complexity of the profession (Harrison et al., 2022).

There is evidence showing outdoor recreation will continue growing and present substantial options for jobseekers and graduates over the next decade (Seaman et al., 2017). Outdoor recreation participation is on the rise nationally with gateway activities like hiking, camping, and fishing gaining 2 million participants each in 2025 (Outdoor Industry Association, 2025). While some changes in higher education such as reduced funding, increasing online delivery, and larger classroom sizes could hurt outdoor recreation programs, existing programs are a prime setting to train the much needed workforce in this industry (Turner et al., 2022). A recent study shows that in states with both an outdoor academic program and a state office of outdoor recreation, economic output and employment are higher than in states which only have one or the other (Turner et al., 2025). Many programs are also turning to a mixture of academic and experiential learning to give students skills and expertise in areas like natural resources and wilderness (Taff et al., 2016).

Workforce Development Opportunities and Challenges

Opportunities. The literature points to numerous opportunities for developing the workforce in outdoor recreation including prioritizing the local context when creating training programs, providing financial incentives to workers, receiving community insight, creating strong partnerships, and building youth skills with hands-on experiential learning.

Local Context. The literature emphasizes a need for training programs that are specific to the local context, and which provide a pipeline straight into the career field upon completion. (Orrell, 2024; Pugsley, 2024; Redford, 2019; Sugarman, 2021). In particular, Pugsley (2024) indicates a need for training programs that also prepare the workforce for future trends and job market changes. While implementation recommendations vary between sources, each presents more comprehensive and accessible training programs as a primary component of effective workforce recruitment campaigns.

Financial Incentives. Redford (2019) stresses the importance of financial incentives for workers in rural areas. This is echoed and expanded upon by Weichelt et al. (2025), who recommend robust financial incentives such as expanding the USDA Rural Development Community Facilities Program to increase access to housing and childcare, providing tax incentives for the related organizations that are investing in infrastructure, housing, etc., and expanding subsidies for rural childcare programs, among other financially-focused recommendations. Niche areas of outdoor recreation that are more unique and suffer high turnover such as adventure education could be benefitted from higher pay and a more cohesive sense of community (Hall and Jostad, 2020).

Community Insight. Feedback from town hall meetings held across Arkansas in 2022 showed leaders thought there was a lack of a trained workforce in outdoor recreation and the state needed to focus on workforce recruitment, education, and training in the future (Arkansas Office of Outdoor Recreation, 2025). Harrison et al (2022) found that engaging the public and broader outdoor recreation community in the development of a state's SCORP could be a way to develop the workforce. Accumulating insights from outdoor recreation professionals who have

been in the industry for a while could provide valuable knowledge when designing programs that recruit and train the incoming workforce (Seaman et al., 2024).

Partnerships. A critical recommendation for workforce recruitment and retention is a strong partnership between industry, educational institutions, community organizations, and other stakeholders (Pugsley, 2024; Redford, 2019; Sugarman et al., 2021; Weichelt et al., 2025). Pugsley (2024) primarily recommends community partnerships in developing and implementing communication and outreach plans, but others focus on these partnerships in the sense of developing links that create more visible pathways to educational opportunities and further, into the field (Redford, 2019; Sugarman et al., 2021). Scott et al. (2017) demonstrate the possibility for increased “academic-community partnerships” in Kentucky where two universities worked in a rural community to connect research opportunities to increased economic development in the outdoor recreation sector.

Hands-On Youth Skill-Building. Hill (2022) shows the positive connection between universities and youth outdoor recreation camps. In this study, outdoor recreation students are involved in the design and facilitation of a day camp for children which provides skill building for new outdoor recreation professionals and positively impacts youth awareness of outdoor recreation (Hill, 2022). Promising efforts to connect youth to outdoor recreation are underway in Arkansas with the opening of the Arkansas Outdoor Academy, a first-of-its-kind public charter school in central Arkansas seeking to prioritize hands-on, experiential learning for students grades 6th-9th (Arkansas Outdoor Academy, 2026). Additionally, Whittington (2018) shows that programs with in-depth and hands-on instruction provide greater outcomes than conventional instruction when it comes to building skills and preparing students for a career in outdoor recreation.

Challenges. Various challenges persist in Arkansas's outdoor recreation industry regarding workforce development given the state's rurality. The literature highlights issues such as workforce retention, barriers to recruitment, long-term sustainability, and workforce skills.

Workforce Retention. As Redford (2019) notes, rural workforce retention often comes down to a lack of financial incentive. Rural jobs often come with lower wages and worse compensation packages, making it difficult to keep employees in the long-term (Redford, 2019; Weichelt et al., 2025). Weichelt et al. (2025) further observes that financial considerations such as spousal employment and the cost of housing can adversely affect potential workers in the outdoor recreation industry.

Barriers to Recruitment. Much of the literature noted that barriers to recruitment often center on lack of knowledge and awareness of opportunities and a general lack of access to resources where these opportunities may be made known (Pugsley, 2024; Redford, 2019; Weichelt et al., 2025). Weichelt et al. (2025) notes that a dissuading factor may be a lack of access to continuing education and post-secondary education opportunities. Pugsley (2024) noted a general lack of knowledge about career pathways and educational programs aimed at certain careers, pointing to lack of awareness being a contributing factor to workforce recruitment in Arkansas.

Long-Term Sustainability. Additional challenges persist, including the seasonality of jobs, limited opportunities for career progression, and the ongoing need for professional development (Mackenzie & Hodge, 2020; Seaman et al., 2024).

Tested Research Methods in Outdoor Recreation

To inform our research methodology, we looked into similar studies which have been conducted in outdoor recreation or workforce development. Regarding quantitative studies,

McCoy et al. (2024) examined the education and training programs offered in Wyoming's tourism, hospitality, and outdoor recreation industries by surveying a cross-sector group of employers to determine workforce needs. Other surveys of employers have been used and noted leadership skills, certification, experience, and a degree as the top needs for entry-level positions in a variety of outdoor recreation areas (Seaman et al., 2017). Sugarman et al. (2021) also details the use of surveys in methodology focusing on capturing employers' perceptions of skills, knowledge, and certification among workers.

Qualitative interviews were conducted by Al-Asfour and Zhao (2024) to analyze bridging the skills gap in Illinois' manufacturing industry which is an important component of the outdoor recreation economy in Arkansas. Additionally, Welter et al. (2021) details a data collection method using focus groups and key informant interviews.

Methodology

Data Collection

Objective

Our team employed an inductive mixed-methods research design to answer the four research questions. We collected both primary and secondary data through qualitative and quantitative methods. Primary data came from a statewide employer survey and two in-person focus groups. Secondary data came from a content analysis of outdoor recreation education and training programs in Arkansas and a comparative review of workforce development strategies in six other states. This study was approved by the Institutional Review Board (IRB) of the University of Arkansas. Participation was entirely voluntary, the identities of all participants remained confidential, and data were stored securely with access restricted to only the research team.

Survey

During the data collection process, we distributed a survey of skills needed in the outdoor recreation workforce by employers via Qualtrics. The survey included a likert scale of skills ranked from 1 to 5 with 1 being not important at all and 5 being very important. Survey distribution occurred through two channels: direct email outreach to employers on the AOOR's statewide business contact list and in-person at the 2026 Governor's Conference on Tourism and Outdoor Recreation, where printed QR codes were distributed to attendees. The survey link was also forwarded to leaders in economic development offices and chambers of commerce across the state to share with local outdoor recreation employers. Of 162 total survey responses collected, 78 respondents (48%) were in hiring roles at outdoor recreation employers and were included in the primary analysis. These 78 respondents constitute the analytical sample for survey results reported throughout this paper.

Focus Groups

Using a list of key outdoor recreation employers in manufacturing and tourism provided by AOOR, our team conducted two in-person focus groups at the Governor's Conference on Tourism and Outdoor Recreation. Participants were HR specialists and business executives from outdoor recreation employers with direct knowledge of employee skills and job requirements. Each focus group consisted of four to six participants and lasted approximately 60 minutes. One group was dedicated to professionals in the manufacturing sector and the other to professionals in tourism. Each session followed a semi-structured discussion guide focused on: Skills and training gaps in the outdoor recreation workforce, emerging opportunities or challenges in recruitment and retention, current training partnerships with schools or agencies, and emerging priorities in the state's outdoor recreation workforce (see Appendix B). Focus groups were audio recorded with participants' consent and subsequently transcribed for analysis.

Content Analysis

In addition to the primary data collection, we conducted a systematic content analysis of two secondary data sources. First, we reviewed academic articles, government reports, and online content to identify workforce development best practices and models from six comparison states: Maine, Colorado, and Utah (as recommended by AOOR) and Wyoming, North Carolina, and Maryland (identified as states with industry-leading offices of outdoor recreation). Second, we conducted a content analysis of all higher education institutions in Arkansas using a list of 66 institutions provided by the Arkansas Division of Workforce, including four-year colleges, two-year colleges, technical schools, and graduate programs.

Participant Recruitment

We used non-probability sampling methods, applying a mix of purposive and convenience techniques. For the survey, we used a list of contacts provided by AOOR and distributed via email prior to the Conference. Additionally, we used convenience sampling and made the survey available at the Governor's Conference on Tourism and Outdoor Recreation, collecting survey responses from various regions and sectors of the outdoor recreation industry, such as boating, fishing, hunting, retail, hospitality, and manufacturing. We used a drawing for free registration for next year's Conference, provided by the AOOR office, to further incentivize participants to complete our survey at the Conference.

For the in-person focus groups at the Governor's Conference on Tourism and Outdoor Recreation, we used purposive sampling, using a list compiled by AOOR and selecting participants based on their subsector. Initial recruitment emails were sent by AOOR staff as a warm introduction, followed by personalized follow-up emails from our team to confirm participation. As needed, we supplemented recruitment through snowball sampling, asking confirmed participants to recommend additional contacts in underrepresented areas.

Measures

We measured the skills and competencies that Arkansas outdoor recreation businesses need from their workforce in the survey by using soft skill and hard skill categories adapted from Al-Asfour & Zhao (2024) and the Maine Workforce Assessment Survey (Maine Outdoor Brands, 2021). Our survey included a ranking of skills and competencies to see where priorities lay within the outdoor recreation workforce (e.g., “Please indicate the importance of the following common operational skills for your workforce.”) - see appendix C. We measured the skills that outdoor businesses saw as important using an ordinal variable by having them rank them from “Not important” to “Very important”. Our demographic information collection included measuring company size using an ordinal variable, where response options ranged from 1-24 employees to 500+ employees; classifying outdoor recreation business sector areas using nominal variables of manufacturing, tourism, or other; and collecting location data using a nominal variable that prompted a typed response.

Some questions we asked in our focus groups, as seen in appendix B, included: “What key skills or competencies are most important for your employees to perform their jobs effectively?” and “Have you noticed any skill gaps among job applicants or current employees? If so, what types of skills are most often missing?”. Using this mixed methods approach, the questions in the survey and focus group guide served to target research questions 1 and 3.

To compile a list of the programs that existed in Arkansas to train the outdoor recreation workforce, we defined a program as having two components. One, the program had to be available at a two year, four year, technical, or graduate educational institution in Arkansas. Two, the program had to be available as a major, minor, or certificate. The program table is located in appendix F.

We measured the gaps in what programs provided compared to what employers said they needed by comparing themes from focus groups and survey results to education and training programs offerings. We defined gaps as any differences identified between the two, particularly where businesses said they needed a skill and education/training programs were not offering it.

To identify best practices or models from other states that could be implemented to ensure a robust, well-trained outdoor recreation workforce in the future, we defined best practices or models from other states as economic growth opportunities in workforce development or successful programs that have increased the outdoor recreation workforce.

Analysis

We used an inductive mixed method approach to analyze the data from our survey, focus groups, and content analysis. First, we analyzed the data from our workforce survey using STATA to identify important employer-identified skill needs. We used descriptive statistics, including frequencies, percentages, medians, means, and standard deviations, to summarize responses to key questions such as “Please indicate the importance of the following common technical skills for your workforce”. We also ran cross-tabulations to assess differences identified in skill priorities across the subsections of manufacturing and tourism. Next, we transcribed the focus groups and created a codebook, identifying recurring themes from the transcriptions and qualitative insights. We implemented dual coding for each focus group to ensure accuracy. Concurrently, we analyzed training and education programs across Arkansas by identifying offerings that include key outdoor-recreation related terms and also analyzed best practices across the six model states to develop four key themes related to successful workforce development initiatives. All data sources were triangulated to answer our research questions.

Results

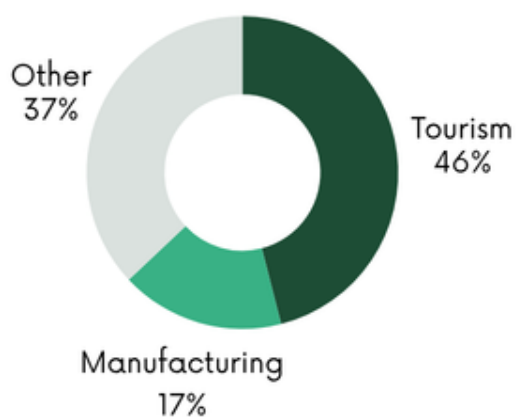
The team collected data from a survey of outdoor recreation employers, two focus groups of outdoor recreation employers, and content analysis of education and training programs and best practices from other states. We begin by describing the survey and focus group participants before discussing findings organized by research questions.

Sample Description

The outdoor recreation workforce survey collected 162 total responses with 78 of those responses being from those in hiring roles at outdoor recreation employers (48%). As shown in Figure 1, tourism (46.2%) and manufacturing (16.7%) combined for a majority of respondents while 37.2% reported being in other areas such as local government, economic development, conservation, education/non-profit, and media/technology/design.

Figure 1

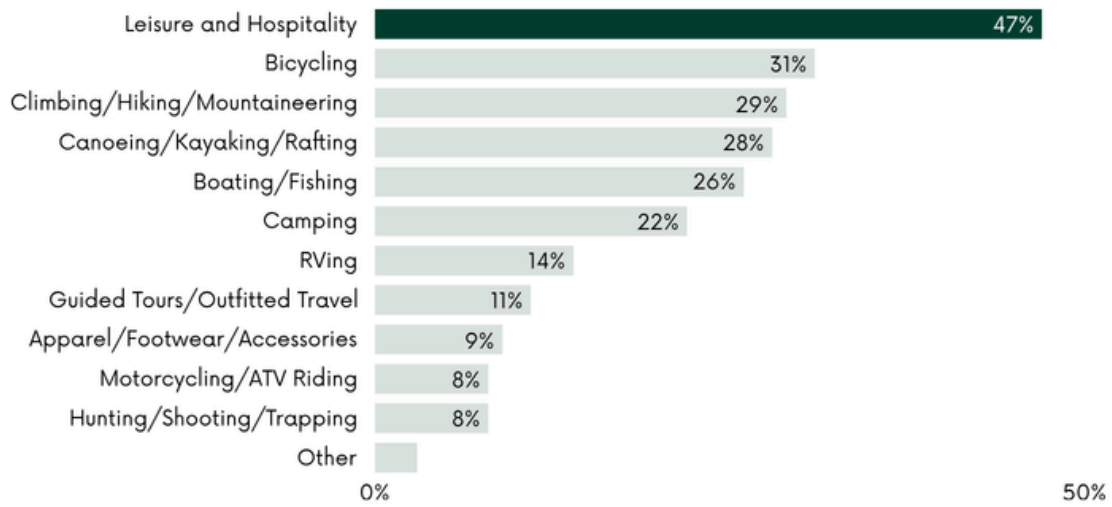
Breakdown of the Outdoor Recreation Sections



Respondents reported focusing on a wide variety of outdoor activities, with leisure and hospitality (n = 47) significantly larger than any other activity category (see Figure 2).

Figure 2

Outdoor Activity Breakdown by Employer Focus

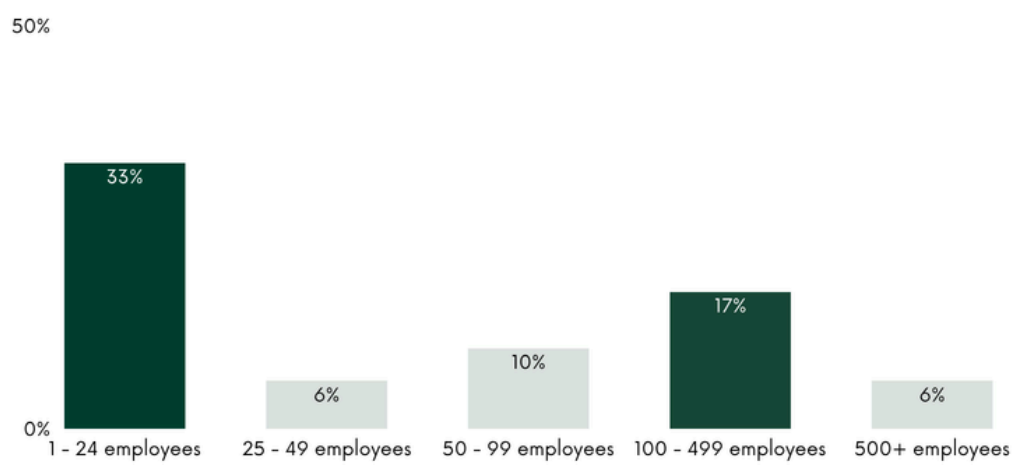


Note. Respondents could identify multiple activity areas; totals exceed sample size.

Regarding employer size, nearly all respondents fell under the category of small business according to the U.S. Small Business Administration (2025) size standards. The most common employer size category was 1 to 24 employees (n = 33), followed by 100 to 499 employees (n = 17; see Figure 3).

Figure 3

Employer Size Breakdown

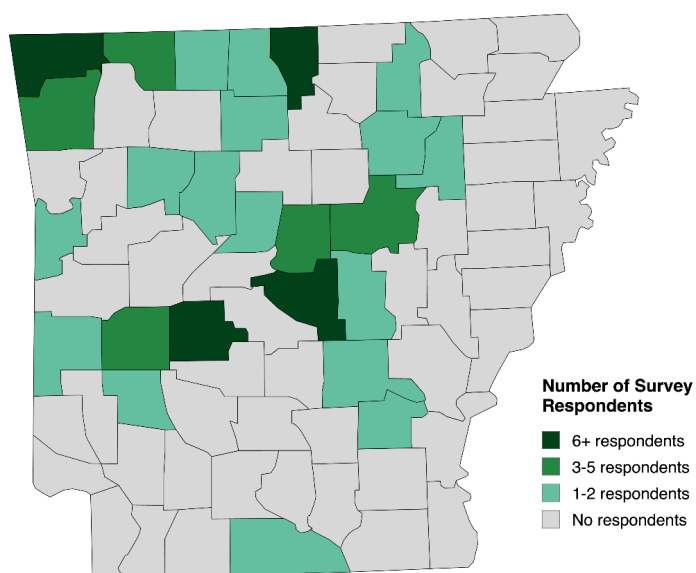


Geographically, survey respondents represented 25 of Arkansas's 75 counties. Most respondents were located in the central, northwest, north, and southwest regions of the state.

Respondents were notably underrepresented in the Delta region of eastern Arkansas, a finding that suggests potential regional disparities in both workforce development access and industry presence (see Figure 4).

Figure 4

Geographic Spread of Survey Respondents by County



In addition to the survey, we conducted two focus groups with outdoor recreation employers. There were ten total participants - six employers for the tourism focus group and four employers for the manufacturing focus group. All participants represented businesses directly engaged in the outdoor recreation economy and all participants were Arkansas-based employers.

Research Question 1: What skills do Arkansas outdoor recreation employers need from their employees?

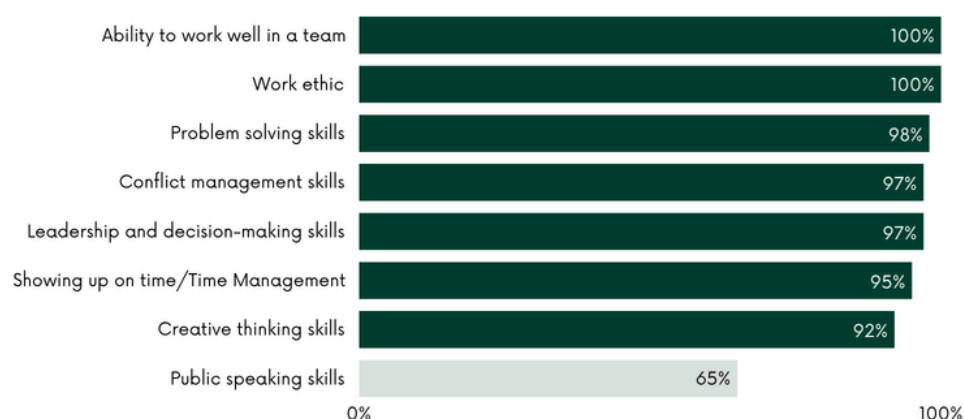
Soft Skills

Across both survey and focus group data, soft skills emerged as the most critical type of skills needed for outdoor recreation employers in Arkansas. As shown in Figure 5, respondents overwhelmingly identified the following as very or somewhat important: Ability to work well in

a team (100%), work ethic (100%), problem solving skills (98%), conflicting management skills (97%), leadership and decision-making skills (97%), showing up on time and time management (95%), and creative thinking skills (92%). The consistency of these responses indicates a strong consensus among employers that soft skills are essential across all sectors of the outdoor recreation industry. Notably, teamwork and work ethic were universally prioritized, regardless of the employer being in manufacturing or tourism, suggesting that these skills are considered baseline requirements for roles.

Figure 5

Percentage of respondents reporting specific soft skills as very or somewhat important



Focus group discussions reinforced these findings and provided additional context. Employers emphasized that soft skills are often harder to instill in employees, but those who have them are valuable additions. One way businesses identify individuals with these skills are through outdoor recreation sports. As one focus group participant explained:

If you fish competitively, you're up at 4 a.m., you got your business taken care of, all your equipment ... you understand deadlines, and you understand competition. And it's hard to teach those things. And those kids, you know, they got it. They show up for work early, they stay late, and they're competitive.

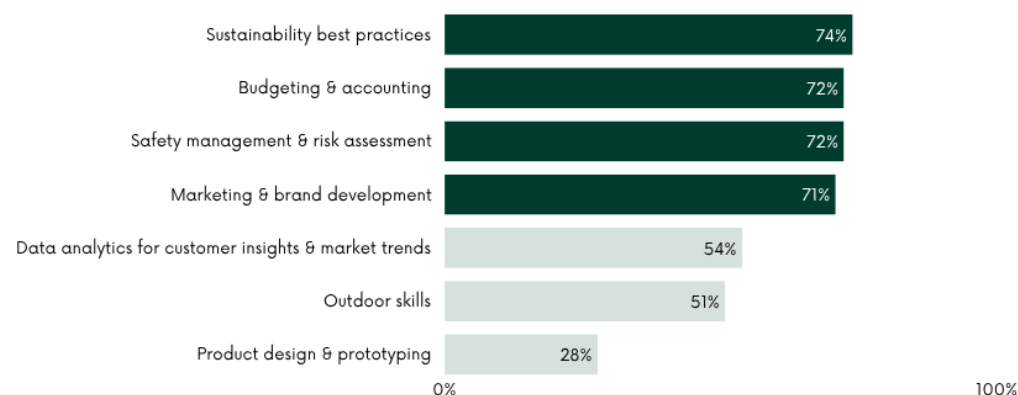
Additionally, several focus group and survey respondents highlighted the importance of what could be described as a “service mindset”, particularly with tourism-related roles. One survey respondent emphasized the need for a “heart of service attitude” including personal warmth and attentiveness to guests. A focus group participant highlighted this point from a different perspective saying “having the right people on our floor is as important as it's ever been, because one of the things we can do, that the internet can't do, is the human connection.” This reflects the customer-facing nature of much of Arkansas's outdoor recreation workforce needs. And how soft skills are critical in the industry to elevate the experience for customers.

Technical Skills

While soft skills were prioritized most highly, employers also identified a range of common technical, operational, digital, and technological competencies as important. Among technical skills, sustainability best practice skills (74%), budgeting and accounting (72%), safety management and risk assessment (72%), and marketing and brand development skills (71%) were most frequently important (Figure 6).

Figure 6

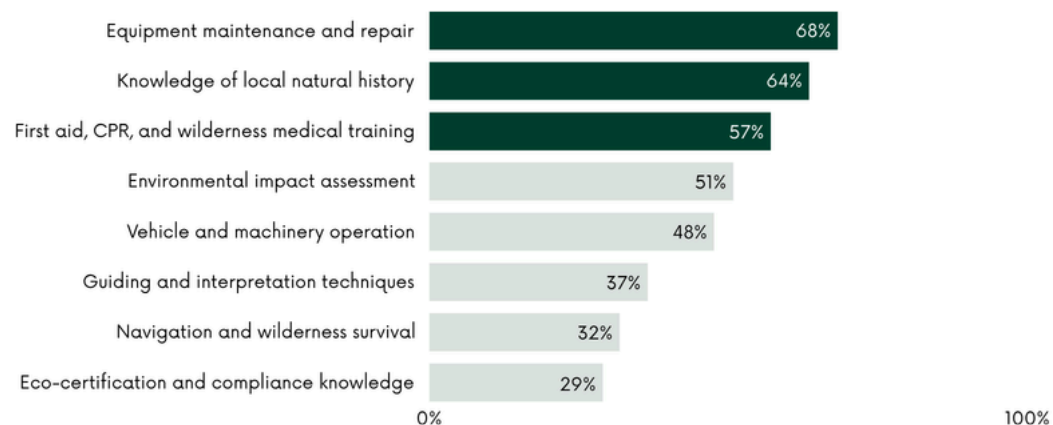
Percentage of respondents reporting specific technical skills as very or somewhat important



For common operational skills, survey respondents reported equipment maintenance and repair skills (68%), knowledge of local natural history (63%), and first aid, CPR, and wilderness medical training (57%) as very or somewhat important as shown in Figure 7.

Figure 7

Percentage of respondents reporting specific operational skills as very or somewhat important



For digital and technological skills, survey respondents reported social media marketing and digital storytelling (74%) as very or somewhat important as shown in Figure 8. These findings suggest that outdoor recreation employees are often expected to operate across multiple functional areas, particularly in smaller organizations where roles may not be highly specialized.

Figure 8

Percentage of respondents reporting specific digital & tech skills as very or somewhat important



One focus group participant described their marketing needs “we're probably about to hire for a head of sales and marketing, I'm not going to be able to train that person. I need that person to be way better at it than I could ever train them to be.”

Breaking these findings down by industry subsector revealed meaningful differences. Manufacturing employers reported technical and digital skills at a higher percentage of importance as shown in Figure 9. They especially prioritized social media marketing and digital storytelling (100%), budgeting and accounting (92%), marketing and brand development (92%), sustainability best practices (83%), and product design and prototyping (75%). This result is backed up by our focus group participants who prioritized business and operational skills. One manufacturing focus group participant said:

And then usually in marketing we're always hiring social media positions. We have four full-time positions. They're great jobs. Those guys and girls, all they have to do is have a digital device and they go fishing every day. And they take pictures of it and they've got to write a little story about it. We have almost 8 million followers on our 18 branded social media sites. So, those people want to consume information.

Figure 9

Top Technical Skills Needed by Manufacturing Employers

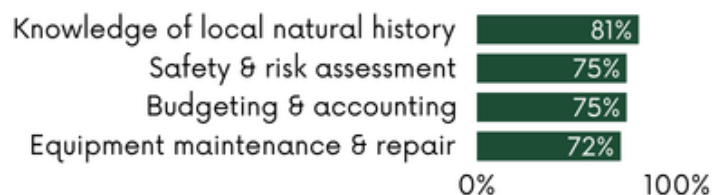


As shown in Figure 10, tourism employers reported operational and some technical skills at a higher percentage of importance. They prioritized knowledge of local natural history (81%), budgeting and accounting (75%), safety management and risk assessment (75%), and equipment

maintenance and repair (72%). This result is echoed by survey respondents who when asked an open-ended question about the top three to five skills needed for their workforce noted “safety” or “safety-first”, and used terms such as “technical skills”, “accounting”, and “operations”.

Figure 10

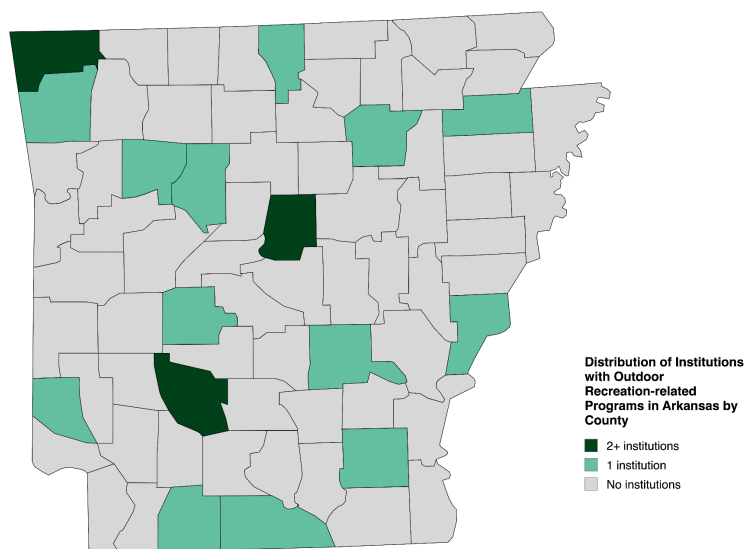
Top Technical Skills Needed by Tourism Employers



Notable results from the ‘Other’ sections of the industry include geographic information systems (GIS) and mapping tools (81%), social media marketing and digital storytelling (76%), and sustainability best practices (76%). These results match the types of skills local government, economic development, and conservation employers would specifically need in outdoor recreation employees which made up a large portion of the ‘Other’ section.

Research Question 2: What programs exist in Arkansas that train the outdoor recreation workforce?

Arkansas offers a range of higher education programs and certifications aimed at preparing individuals for careers in outdoor recreation and related fields. These programs provide foundational knowledge in areas such as environmental science, tourism management, and conservation. We identified 14 higher education institutions in Arkansas that offer 4-year degrees and three institutions that offer 2-year degrees directly related to outdoor recreation. There is a relatively even distribution of program offerings across the entire state of Arkansas - see Figure 11 below.

Figure 11*Institutional Distribution by County*

There are also several institutions with specialized programs and certifications, like NWACC, which offers trail technician and bicycle technician programs. A comprehensive list of programs, degree types, and institutional locations are included in Appendix F.

However, focus group findings indicate that much of the industry continues to rely heavily on informal, on-the-job training instead of academic programs to build employee skills. Employers reported that new hires frequently develop necessary competencies and product knowledge through hands-on experience rather than formal education or certification programs. This approach allows businesses to tailor training to their specific operational needs, but may also lead to inconsistencies in skill development across the workforce. One focus group participant described their variability in on-the-job training, “that can be two weeks. It can be six months. So, it just, you know, again, depends on the role”. Tailoring training for role-specific and individual needs allows businesses to maintain flexibility, but also shoulder much of the burden and investment in their workforce.

Research Question 3: What are the gaps in what these programs are providing compared to what employers say they need?

Our analysis of survey and focus group data reveals several key gaps between employers needs and existing programs. First, soft skill gaps persist despite their recognized importance. Employers noted that many applicants lack professionalism, reliability, and interpersonal skills, suggesting that current education and training systems may not adequately emphasize these competencies. While some formal programs addressed these topics, employers indicated that graduates are not fully prepared to apply these skills in real world settings. One focus group participant described this gap as “And a lot...that came to us went through some type of outdoor recreation or a science class. But we had quite a few of them coming in that were actually afraid to walk through the woods.”

Second, technical skill gaps were identified in areas such as tool handling, business operations, marketing, and safety management. One manufacturing focus group participant described the difficulty in filling open technical jobs:

We've got to find people that are getting trained in trades. And you don't do that in college. You know, you do that by learning the skill as an apprentice in another shop or you go to some type of trade or technical school. And right now, that's our struggle is finding those two sets, tool room and maintenance.

Third, geographic access and visibility of workforce pipelines emerged as a structural challenge. Limited access to training programs in rural and underserved regions restricts the development of a geographically diverse workforce and may contribute to regional labor shortages. One tourism focus group participant expressed how hard it is to recruit in their region of the state:

You mentioned the NWACC bike program. I mean, the thing's fantastic. I've heard from everybody that I know that's been around it. But, you know, I don't get a whole lot of those guys trickling over to the other side of the state.

Workforce availability itself is a critical issue: employers, particularly in the manufacturing sector, reported difficulty finding qualified candidates and noted a lack of individuals entering the workforce pipeline or even seeing it as a viable pathway. A manufacturing focus group participant said:

So, we're trying to do more to make it, this could be a career and not just \$15 an hour and then you take the next best thing that comes along. But we're having to do some of these things on our own because we're recognizing if we don't, we're going to lose people.

This suggests that beyond training gaps, there is a broader need to increase awareness of and interest in outdoor recreation careers.

Research Question 4: What best practices (i.e. models from other states) could be implemented to ensure a robust well-trained outdoor recreation workforce in the future?

A comparative content analysis was conducted examining workforce development strategies across six states. The goal of this analysis was to identify best practices that could be adapted to Arkansas to strengthen its outdoor recreation workforce. The study focuses on three primary states (Maine, Colorado, and Utah) along with states containing industry-first offices of outdoor recreation (Wyoming, North Carolina, and Maryland). This research identifies four best practices: State and regional collaboration; creating a statewide strategic plan; expanding credentialing, certifications, and education programs; and prioritizing rural access.

State and Regional Collaboration

State-Level Collaboration. Colorado stood out among states for its state-level collaboration focused on the outdoor recreation workforce. Colorado's Outdoor Recreation Industry Office (OREC) provides centralized coordination across state agencies, educational institutions, and private sector partners. The office regularly convenes industry advisory councils and facilitates collaboration among stakeholders to reduce duplication, identify gaps, and create unified strategies that address workforce challenges (Colorado Office of Economic Development and International Trade, 2023; Colorado Fiscal Institute, 2023). In 2025, leaders from multiple state agencies launched the Colorado Outdoors Strategy to collaborate on workforce development strategies including expanding education and training programs related to conservation, outdoor recreation, and climate resiliency (Colorado Department of Natural Resources, 2025).

Regional Collaboration. North Carolina and Wyoming have implemented successful regional collaborations for workforce development. North Carolina's Outdoor Economy Office is located within its Department of Commerce, a notably different structure than Arkansas's location in the Department of Parks, Heritage, and Tourism. One advantage of this structure is the office's proximity to the state's workforce development initiative, NCWorks. NCWorks utilizes regional sector-specific partnerships that operate as employer-led collaboratives where the private sector takes the lead on workforce development and public agencies direct their resources to assist with what local stakeholders identify as needed (North Carolina Department of Commerce, 2026). Major examples exist primarily in the manufacturing sector, such as AdvanceNC, Foothills Manufacturing Alliance, and Cape Fear Manufacturing Partnership, which engage in outreach with educational institutions, help fill talent pipelines regionally, and create tours and events to showcase industry in the region.

Wyoming's Office of Outdoor Recreation established nine regional outdoor recreation collaboratives across the state, which bring together local community members, federal and state agencies, and other relevant stakeholders to support outdoor recreation growth (Wyoming Office of Outdoor Recreation, 2026). Many of these regional collaboratives have outdoor recreation employers serving on their steering committees with direct knowledge of the workforce gaps in their region.

Creating a Statewide Strategic Plan

Maine, Colorado, and Utah have all created statewide strategic plans outside of their SCORP focused on the outdoor recreation economy and addressing workforce development in the industry.

Maine's 10 Year Roadmap. The State of Maine created a 10-Year Outdoor Recreation Economy Roadmap in 2023-24 led by a multidisciplinary core team of leaders in key state agencies, the business community, and higher education. Within this roadmap, Goal 4 specifically outlines seven strategies to “establish Maine as a premier state for outdoor recreation businesses, education, training and career opportunities” (Trailblazers Road Map, 2026). These strategies are outlined in the table below.

Table 1

Excerpt from Maine's Outdoor Recreation Economy Roadmap (Trailblazers Road Map, 2026)

Strategy	Details
Strategy 4A	Engage and equip Maine's youth for careers in the outdoor industry
Strategy 4B	Attract talent through post-secondary education and training

Strategy 4C	Strengthen professional development and employer collaboration
Strategy 4D	Strengthen support for starting and scaling outdoor recreation companies
Strategy 4E	Drive innovation and R&D for outdoor recreation companies
Strategy 4F	Promote development of the outdoor recreation entrepreneurial ecosystem
Strategy 4G	Bolster climate resilience for Maine’s outdoor recreation industry

Colorado’s Strategic Plan. Colorado's Outdoor Recreation Industry Office (OREC) currently operates under a 2024-2029 strategic plan, which contains tangible objectives regarding workforce development. These objectives include hosting a public database of career education and training opportunities across the state, providing educational institutions with insights on industry needs and workforce demand to inform program evolution, and cultivating connections between outdoor employers and educational institutions (Colorado Parks and Wildlife, 2026).

Utah’s Strategic Plan. The Utah Outdoor Adventure Commission and Division of Outdoor Recreation have implemented the Utah Outdoor Recreation Strategic Plan, which identifies workforce training and research as an area of opportunity, especially regarding management of conflict between stakeholders. Utah's plan seeks to increase the state's workforce training and research spending, which currently amounts to only 0.1% of all state investment into outdoor recreation and tourism. The goal is to increase capacity for managing outdoor recreation assets and developing opportunities in the field as Utah's growing outdoor recreation activity could cause potential conflict among individuals, businesses, and organizations (Utah Outdoor Adventure Commission, 2023).

Expanding Credentialing, Certification, and Education Programs

Credentialing and Certifications. Maine operates one of the nation's oldest and most comprehensive guide licensing systems, first established in 1897 and later modernized through standardized testing and regulatory updates (Maine Department of Inland Fisheries & Wildlife, 2017). The Registered Maine Guide license now requires applicants to complete formal training, pass written and practical examinations, and meet defined competency standards before certification, with ongoing requirements for renewal (Maine Department of Inland Fisheries & Wildlife, 2017). The system covers multiple license types, including recreational guiding, hunting, sea kayaking, and whitewater guiding, allowing guides to specialize while maintaining professional standards (Maine Department of Inland Fisheries & Wildlife, 2017). This licensing framework helps create a clear professional identity and career progression pathway for guides.

Colorado has developed a comprehensive credentialing framework aligning industry-recognized certifications with educational pathways (Serve Colorado, 2026). The Colorado Outdoor Recreation Workforce Initiative, launched in 2019, standardizes credentials across the state while recognizing diverse specializations (Serve Colorado, 2026). Key certifications include Wilderness First Responder (WFR), Professional Ski Instructors of America (PSIA), American Mountain Guides Association (AMGA) credentials, and Leave No Trace Master Educator certification, all widely recognized by outdoor employers (Colorado Office of Economic Development and International Trade, 2023). The Colorado Youth Corps Association provides structured training and certification for conservation corps members, creating a pipeline from youth service programs to professional outdoor recreation careers (The Corps Network, 2025). Registered apprenticeship programs in ski area operations and guiding services offer earn-while-you-learn pathways that reduce economic barriers to entry (Serve Colorado, 2026).

Education Programs. Maine has developed outdoor recreation educational pathways primarily through its community college and university systems. Unity Environmental University offers specialized and emerging programs in adventure and tourism-related fields, including Adventure Therapy and sustainable tourism and hospitality degrees that prepare graduates for management-level roles in recreation and tourism (Unity Environmental University, 2025a; Unity Environmental University, 2025b). The University of Maine system integrates outdoor recreation content into recreation management and tourism programs across multiple campuses, while community colleges provide accessible entry points through outdoor leadership certificates and related credentials (Maine Outdoor Brands, 2025; Maine Public, 2025). Several high schools, particularly in rural regions like Moosehead and Katahdin, are developing Career and Technical Education (CTE) pathways linked to outdoor and tourism careers, supported by recent workforce development grants that connect students to local outdoor businesses (Maine Public, 2025; Northern Forest Center, 2024). This multi-tiered approach allows individuals to begin with short-term credentials and advance to degree programs as career goals develop.

Colorado has developed the most extensive educational infrastructure among states studied, with multiple institutions offering outdoor recreation-related programs. Colorado Mountain College serves as a national leader in outdoor recreation education, offering associate and bachelor's degrees in Outdoor Recreation and Sustainability Studies across multiple campus locations (Colorado Mountain College, 2026). The college's Ski Area Operations Management program directly addresses industry needs with a curriculum co-designed by employers (Colorado Mountain College, 2024). University programs across the state provide specialized pathways: Colorado State University offers Recreation and Tourism Management, Western

Colorado University focuses on Recreation and Outdoor Education, and Metropolitan State University provides Hospitality, Tourism and Events programs (Colorado State University, 2026; Western Colorado University, 2026; Metropolitan State University of Denver, 2026). Several community colleges offer certificate programs providing entry-level credentials, while high school integration brings outdoor recreation career awareness to 23 school districts through Career Pathway programs (Front Range Community College, 2026; Red Rocks Community College, 2026; Pueblo Community College, 2024; Poudre School District, 2026).

Two Utah State University (USU) programs emerge as particularly noteworthy from content analysis and focus group conversations. USU established the Institute of Outdoor Recreation and Tourism in the 1960s to pursue research, policy, and applied solutions for outdoor recreation and tourism issues such as workforce development and training (Utah State University, 2026). Additionally, during one focus group, a Northwest Arkansas business owner mentioned USU's Outdoor Product Design and Development program as an example of a degree program that could be beneficial for his business stating,

And there are certain universities, I want to look at the University of Utah, a few other ones that have outdoor product management schools, that they come out of that school knowing what tech pack is, how to design, how to do the full production management, all the way to marketing that product.

Prioritizing Inclusion and Access

Rural Accessibility. Given Maine's dispersed population and recreation assets across rural areas, the state has prioritized accessible training delivery (Maine Community College System, 2024). The Maine Outdoor Brands Coalition, an industry-led initiative, connects employers with local workforce and facilitates regional training opportunities (Maine Outdoor

Brands, 2025). Mobile training units bring certification courses to remote communities, eliminating transportation barriers for rural residents (Maine Community College System, 2024). Microcredential programs offer short-term, stackable credentials accessible to rural workers who cannot commit to extended educational programs (University of Maine System, 2021; UMaine Extension, 2024).

Addressing Seasonality. Maine has implemented strategies to extend employment seasons and support workers during transitions (Maine Department of Labor, 2026). This year-round diversification approach trains workers to operate across multiple seasons to reduce unemployment periods and improves worker retention (Maine Outdoor Brands, 2025; University of Maine System, 2021; Maine Department of Labor, 2026). The state has modified unemployment insurance policies to better accommodate seasonal workers, allowing benefits during transitions between seasonal positions without penalties (Maine Department of Labor, 2026). In high-cost recreation areas such as the Acadia region and Rangeley Lakes, employers and local governments have collaborated on seasonal worker housing developments, reducing cost barriers that prevent workers from accepting seasonal positions (Friends of Acadia, 2024; Acadia on My Mind, 2025).

Access for Underrepresented Groups. Colorado has increased access to the outdoor recreation workforce by implementing initiatives to recruit workers from underrepresented communities and offering Spanish-language resources for Spanish-speaking applicants (Colorado Parks and Wildlife, 2025; Outdoor Recreation Roundtable, 2024). Maryland's Office of Outdoor Recreation administers outdoor grants which strive to close the gap between historically underserved communities and outdoor recreation by funding projects focused on building a foundation for future outdoor recreation professionals through mentoring and

leadership (Maryland Office of Outdoor Recreation, 2026). They also increase public accessibility to outdoor recreation businesses and employment opportunities through an online directory.

Discussion

The findings from this study largely align with existing literature on outdoor recreation workforce development, particularly regarding the importance of soft skills and the persistence of skills gaps between employers and education systems. Consistent with prior research (Seaman et al., 2017; Sugarman et al., 2021), employers in Arkansas emphasized teamwork, work ethic, communication, and problem solving as essential competencies. However, the degree to which soft skills dominated employer priorities was more pronounced than expected. This suggests that these competencies serve as foundational requirements across the outdoor recreation workforce regardless of specific occupation or subsector.

One important consideration when interpreting these findings is the breadth and diversity of what constitutes the outdoor recreation industry. As highlighted by Manning (2011) and Highfill and Franks (2019), outdoor recreation spans tourism, manufacturing, conservation, education, and public administration. This diversity helps explain why certain workforce needs, particularly soft skills, are universally valued, as they are transferable across roles that vary significantly in function, environment, and required expertise. At the same time, this broad scope introduces complexity in workforce development, as training must account for shared foundational skills and highly specialized competencies.

This complexity is particularly evident when examining differences between subsectors, especially manufacturing and tourism. While both sectors emphasized soft skills, technical skill needs diverged more. Manufacturing employers placed greater emphasis on technical and

operational skills, reflecting the production-oriented nature of manufacturing within outdoor recreation. In contrast, tourism and hospitality employers prioritized operational and safety-related skills, including knowledge of local national history, risk management, and accounting, which aligns more closely with customer-facing and experiential roles.

These differences suggest a one-size-fits-all approach to workforce development is unlikely to be effective in outdoor recreation. Instead, education and training programs must balance broad, transferable skill development with targeted sector-specific training opportunities. The current reliance on on-the-job training further reinforces this point, as employers also tailor skill development to their specific operational contexts when formal programs fall short.

There are several limitations to this study. The sample of 78 employer-respondents, while sufficient for exploratory analysis, represents only a portion of Arkansas's outdoor recreation industry, and the use of convenience and purposive sampling limits the generalizability of findings. The sample skewed toward tourism-related employers (46.2%) relative to manufacturing (16.7%), which may have influenced the relative emphasis placed on customer-facing and experiential competencies in the results. Additionally, focus group participants were recruited primarily from the Governor's Conference attendee list, which may have overrepresented more engaged and formally organized employers. Despite these limitations, the mixed-methods approach strengthens the validity of the findings by triangulating survey, focus group, and secondary data across multiple sources.

Recommendations

Based on the findings from our survey, focus groups, literature review, and best practice analysis, our team is making several recommendations to the Arkansas Office of Outdoor

Recreation. These recommendations are organized by implementation timeline and emphasize scalability, coordination, and long-term sustainability.

Short-Term Recommendations (1-2 years)

1. Develop an Outdoor Recreation Business Directory

Our results revealed employers across Arkansas struggle with geographic access and workforce pipeline awareness. AOOR should create a centralized, publicly accessible directory of outdoor recreation businesses on its website. This low cost initiative would increase visibility of employers, improve job seeker awareness, and serve as a foundational tool for workforce coordination. The directory could also include job postings, internship opportunities, and filters by region and subsector to improve usability. Maryland's model of a public directory has been shown to increase accessibility to employment opportunities (Maryland Office of Outdoor Recreation, 2026), and a similar tool would directly address the geographic awareness gaps identified.

2. Strengthen Partnerships for Workforce Training

Based on best practices for regional and state-level collaboration, AOOR should partner with the Arkansas Division of Workforce Services, the Arkansas Department of Education, and community colleges to expand technical assistance for employers. This includes promoting apprenticeships and internships, supporting employer-led soft skill training resources, and developing shared training materials. Modeling after North Carolina's NCWorks employer-led regional collaboratives (North Carolina Department of Commerce, 2026) could accelerate this coordination. Shared training resources should include soft skill development resources that are universally prioritized by employers. And special attention should be given to small businesses that may lack the capacity to design formal training programs independently.

3. Expand Awareness and Marketing of Outdoor Recreation Careers

Findings from research question 3 indicate that low awareness of career pathways is a barrier to workforce pipeline development. AOOR should lead a coordinated outreach campaign targeting high school students, postsecondary learners, and career changers. This campaign should highlight the diversity of roles available (e.g. business operations, manufacturing, conservation, and tourism) and include career profiles of individuals working across sectors, published on the AOOR website. Partnerships with programs such as Arkansas Outdoor Academy or Arkansas Game and Fish Commission's Education Outreach, local workforce boards, and social media platforms can amplify reach and increase exposure to hands-on, experiential learning opportunities. Participation in career and job fairs at high schools and university campuses would directly connect AOOR with a diverse pool of potential candidates.

4. Develop and Implement a Statewide Strategic Plan

The absence of a comprehensive outdoor recreation workforce strategic plan in Arkansas identified as a gap in research question 4 represents a critical structural deficit. AOOR should collaborate with state agencies, educational institutions, and industry stakeholders to create a comprehensive outdoor recreation strategic plan. Modeled after states such as Colorado, Maine, and Utah, this plan should establish clear workforce development goals, identify priority sectors, and include measurable benchmarks. Incorporating employer input throughout the planning process will ensure alignment with real workforce needs.

5. Conduct Additional Targeted Research

Additional research should be conducted on underrepresented regions and subsectors, particularly rural areas and manufacturing. The technical skills and training required for the manufacturing sector can be highly specialized and would benefit from more focused research.

Future studies should also examine wage levels, career progression opportunities, and barriers to entry in greater depth. This will provide a more comprehensive understanding of workforce dynamics and inform more targeted interventions. Additionally, future research could focus on how to best engage youth to build outdoor skills and introduce them to career pathways. One example would be to evaluate short and long-term outcomes of the Arkansas Outdoor Academy.

Intermediate Recommendation (3-5 years)

1. Develop and Promote Outdoor Recreation Education Pathways

AOOR should work with educational institutions to create structured and clearly defined pathways into outdoor recreation careers. Curricula should deliberately integrate the soft skills universally prioritized by employers, embed experiential learning opportunities, and develop stackable credentials allowing individuals to enter and advance within the field without a large time or financial commitment. Partnerships with high schools and career and technical education programs can help build early awareness and engagement.

2. Establish Regional Workforce Collaboratives and Access to Training

AOOR should support the creation of regional collaboratives that bring together employers, educators, workforce boards, and community organizations. These collaboratives can identify region-specific workforce needs, coordinate training efforts, and improve communication between stakeholders. Regional models are particularly important in addressing geographic disparities and ensuring that rural areas are included in workforce development efforts. Building on identified gaps, AOOR should work with partners to expand access to training in underserved regions. This could include mobile training programs, hybrid or online learning options, and satellite partnerships with community colleges. Reducing geographic barriers will be essential for developing a more inclusive and statewide workforce pipeline.

Long-Term Recommendations (6-10 years)

1. Expand Higher Education Program Capacity

The state should invest in expanding outdoor recreation-related degree programs at colleges and universities. This includes increasing funding and encouraging interdisciplinary programs that integrate business, environmental science, and recreation management. Expanding program availability across regions will also improve access.

2. Expand Credentialing and Certification Opportunities

Drawing on best practices, AOOR and its partners should support the development and standardization of industry-recognized certifications. Creating clear credentialing pathways, particularly in areas such as safety, guiding, and technical operations, will enhance workforce quality, provide defined career progression opportunities, and build professional identity within the sector.

Conclusion

Using a mixed-methods approach combining employer surveys, focus groups, content analysis of existing programs, and a comparative review of best practices from six other states, this research produces a detailed and actionable picture of Arkansas's outdoor recreation workforce landscape. Our study had three key findings: 1) surveyed Arkansas outdoor recreation employers universally prioritize soft skills; 2) technical skill needs diverge between manufacturing and tourism subsectors so training must be sector-specific; and 3) despite institutions offering relevant four-year programs, widespread employer reliance on informal on-the-job training signals a persistent gap between program offerings and industry demand.

The recommendations offered in this report organized across short-term, intermediate, and long-term implementation are grounded directly in the evidence gathered from Arkansas

employers and validated against models proven effective in comparable states. By taking targeted steps to align training with industry needs, increase collaboration among stakeholders, and expand access to education and credentials, Arkansas can build a more resilient and competitive outdoor recreation workforce. A stronger workforce will not only support continued industry growth but will also advance broader goals of economic development, community vitality, and environmental stewardship across the state.

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Appendix A

Indicators Table

Evaluation Question	Indicators/Performance Measure	Potential Data Source
<p>What outdoor recreation related education and training programs exist in Arkansas now?</p>	<p># of programs</p> <p>Program names were searched for any of the following six terms: adventure, challenge, expedition, experiential, outdoor, and wilderness. Any program major, specialization within a major, minor, or certificate program with any of these six terms was recorded.</p>	<p>Content analysis of university websites and course catalogs</p>
<p>What skills do Arkansas outdoor recreation businesses need from their employees?</p>	<p>Themes in skills identified from focus groups</p> <p>Skills listed on survey</p>	<p>Virtual focus groups and survey</p>
<p>What are the gaps in what these programs are providing compared to what businesses say they need?</p>	<p>Comparing themes from focus groups to education and training programs to see gaps/differences?</p>	<p>Virtual focus groups and survey</p>
<p>What best practices (i.e. models from other states) could be implemented to ensure a robust well-trained outdoor recreation workforce in the future?</p>	<p>Education programs</p> <p>Workforce development programs</p> <p>Collaborations between education programs and employers</p>	<p>Content Analysis</p>

Gaps in the outdoor recreation workforce	<p>From your perspective, how well do current training and education programs align with the skills your business needs?</p> <p>Where do you see the biggest gaps or mismatches between what's taught in these programs and what's required in the workplace?</p> <p>What could training providers or educators do differently to better prepare individuals for jobs in outdoor recreation?</p>	What, if any, outdoor recreation education degrees, certificates, or training do your current employees have?	
Priorities in the outdoor recreation workforce among businesses	What are your top priorities for workforce training and development in the next 1-3 years?	If you could change one thing about your current workforce, what would it be?	
Wrap-up	Is there anything else you'd like to add that we haven't discussed, but you think is important for the future of the industry?		

Appendix C

Arkansas Outdoor Recreation Workforce Skills Survey

Q1. Please answer the following question.

This question prompts human verification through CAPTCHA.

Q2. Informed Consent

Thank you for participating in our study! Researchers at the Clinton School of Public Service have been asked by the Arkansas Office of Outdoor Recreation (AOOR) to find out what skills and competencies businesses are looking for in the Outdoor Recreation industry. This project will develop a gap analysis of skills/competencies in the workforce and help AOOR develop a roadmap for the future of the outdoor recreation workforce.

Completing this survey will take 5-10 minutes. We will ask about your perceptions of skills/competencies required for the outdoor recreation workforce. Your participation in the research is completely voluntary and may be stopped at any time. Your answers will be kept confidential to the extent allowable by law and university policy. Participants must be at least 18 years old.

There are no risks anticipated with this project, other than those associated with daily life. The potential benefits include contributing to the knowledge of the skills and competencies in the outdoor recreation workforce in the state. Participants will be eligible for a chance to win a free registration for the 2027 Governor's Conference on Tourism and Outdoor Recreation through a raffle conducted after the survey closes. Your name will not be included anywhere in our final report.

If you have questions or concerns about this study, you may contact the principal investigator Dr. Nichola Driver at 501-683-5215 or nddriver@clintonschool.uasys.edu. For questions or concerns about your rights as a research participant, please contact Ro Windwalker, the University's IRB Coordinator, at (479) 575-2208 or by e-mail at irb@uark.edu.

1. I understand that participation in this study is voluntary and refusing to participate will not adversely affect my relationship or reputation with any organization.
2. I understand that all data collected will be kept confidential to the extent allowed by law and the University of Arkansas' policy.
3. By checking "Yes, I consent" below, I am giving my consent for my responses to be used in this research as described.

Yes, I consent

- No, I do not consent

Skip To: End of Survey If Thank you for participating in our study! Researchers at the Clinton School of Public Service hav... = No, I do not consent

Q3. Please provide your job title or position in the field below.

Q4. Are you in a management position or in charge of hiring positions in your company?

- Yes
- No

Skip To: End of Survey If Are you in a management position or in charge of hiring positions in your company? = No

Q5. What section of the outdoor recreation industry do you work in?

- Manufacturing (including boating, fishing, hunting/shooting, cycling/biking, etc.)
- Tourism (including retail, hospitality, state parks, etc.)
- Other _____

Q6. In which outdoor recreation activities does your organization focus? Select all that apply.

- Apparel/Footwear/Accessories
- Bicycling
- Boating (motorized craft)
- Camping
- Canoeing/Kayaking/Rafting (non-motorized craft) Fishing
- Climbing/hiking/mountaineering
- Equestrian Hunting/shooting/trapping
- Guided tours/Outfitted travel
- Leisure and hospitality
- Motorcycling/ATV riding
- RV-ing
- Other (please describe) _____

Q7. How large is your company?

- 1 - 24 employees
- 25 - 49 employees
- 50 - 99 employees
- 100 - 499 employees
- 500+ employees

Q8. In what city or town is your company located?

Q9 Please indicate the importance of the following common technical skills for your workforce.

	Not Important	2	3	4	Very Important
Budgeting and accounting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Data analytics for customer insights and market trends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Marketing & brand development	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Outdoor skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Product design and prototyping (CAD, 3D modeling, materials engineering)	0	0	0	0	0
Safety management & risk assessment	0	0	0	0	0
Sustainability best practices	0	0	0	0	0

Q10. Please indicate the importance of the following digital & technological skills for your workforce.

	Not Important	2	3	4	Very Important
Drone operation and photography	0	0	0	0	0
E-commerce and digital sales management	0	0	0	0	0

Geographic Information Systems (GIS) and mapping tools	0	0	0	0	0
Inventory and supply chain management software	0	0	0	0	0
Social media marketing and digital storytelling	0	0	0	0	0

Q11. Please indicate the importance of the following common operational skills for your workforce.

	Not Important	2	3	4	Very Important
Eco-certification and compliance knowledge	0	0	0	0	0
Environmental impact assessment	0	0	0	0	0

Equipment maintenance and repair	0	0	0	0	0
First aid, CPR, and wilderness medical training	0	0	0	0	0
Guiding and interpretation techniques	0	0	0	0	0
Knowledge of local natural history	0	0	0	0	0
Navigation and wilderness survival	0	0	0	0	0
Vehicle and machinery operation (boats, off-road, etc.)	0	0	0	0	0

Q12. Please indicate the importance of these common soft skills for your workforce.

	Not Important	2	3	4	Very Important
<hr/>					

Ability to work well in a team	0	0	0	0	0
Conflict management skills	0	0	0	0	0
Creative thinking skills	0	0	0	0	0
Leadership and decision-making skills	0	0	0	0	0
Problem solving skills	0	0	0	0	0
Public speaking skills	0	0	0	0	0
Showing up on time/Time Management	0	0	0	0	0
Work ethic	0	0	0	0	0

Q13. Are there any other skills not previously mentioned that are important for workers in the outdoor recreation industry? Please describe.

T1. This next section includes questions about your organization's employee hiring and training needs along with the skillsets necessary for specific job levels.

Q14. Approximately how many new employees, in each of the following categories, does your organization plan to hire in the next 12 months?

	0	1-5	6-10	11-25	26-50	>50	Don't Know
Entry-level (requires minimal experience)	0	0	0	0	0	0	0
Skilled professional (requires some professional experience)	0	0	0	0	0	0	0
Mid-Level management (requires significant professional experience)	0	0	0	0	0	0	0
Executive Management (head of unit, etc)	0	0	0	0	0	0	0

Q15. Approximately how many of these new hires in the next 12 months will be permanent positions? (exclude seasonal, contractor, or freelance positions)

- All positions
- Most positions
- Some positions
- No positions

Q16. Would you like to enter the raffle for a free registration to the 2027 Governor's Conference on Tourism and Outdoor Recreation? (Selecting yes will redirect you to a new survey to fill out contact information.)

- Yes
- No

Appendix D

Codebook for Focus Groups

Theme	Code	Definition	Example from Transcript
1. Skills Businesses Need What skills do Arkansas outdoor recreation businesses need from their employees? (RQ1)	Soft Skills: Teamwork and Relationship Building	Interpersonal skills including relationship building, maintaining, and the ability to work on a team	<i>"They need to be able to communicate with each other as a team. We always look for someone that has some team development that works well with others."</i>
	Soft Skills: Work Ethic and Professionalism	Reliability, motivation, and responsibility toward work commitments and professional standards	<i>"And so we tell people from the get go, if you can't give us a year commitment, we probably don't have a space for you. And it's going to take you about that long to actually be able to wrap your head around your full job."</i>

	Soft Skills: Passion for Outdoors	Interest or enthusiasm for outdoor recreation activities and lifestyle	<i>"And loving the outdoor industry, you know, love to be outside, love to be in the terrain. You know, what I look for a lot of employees is employees that on their days off, they're outside doing those things that, you know, that we're already, you know, selling."</i>
	Technical Skills: Manufacturing	Hands-on or trade-related abilities including welding, fiberglass, and tooling skills	<i>"So the hardest thing to find right now is maintenance and tooling people. Most people we need are hands-on. Training in the fiberglass business is very difficult. It's not a talent most people have."</i>

	Technical Skills: Outdoor Safety and Survival	Skills related to safety, rescue, or survival in outdoor environments including wilderness medicine and swift water rescue	<i>"Another thing is, um, wilderness sand medicine, um, uh, swift water, you know, rescue, you know, survival training, uh, you know, courses. Just for guides or, or people that are working on the national park, help work in the river, you know, et cetera. And there are, you know, a decent amount of incidents or accidents, you know, out there. And so having that skill set to be able to respond if you're the closest one."</i>
	Technical Skills: Business and Operational	Skills related to business functions within outdoor recreation companies including sales, marketing, and supply chain management	<i>"Jobs in sales and marketing, general manager roles, consignment operations, and supply chain positions require specific business operational knowledge beyond outdoor skills."</i>
2. Existing Training Programs What programs exist in Arkansas that train the outdoor recreation workforce? (RQ2)	Continuous Training Programs	Structured programs or certifications for workers in outdoor recreation jobs such as specialized bike programs and cave rescuing programs	<i>"Specialized bike program, cave rescuing program, training program hospitality - training program increases hireability."</i>

	On-the-Job Training	Training conducted internally by companies after hiring, requiring significant time investment	<i>"And so we tell people from the get go, if you can't give us a year commitment, we probably don't have a space for you. And it's going to take you about that long to actually be able to wrap your head around your full job."</i>
	Education Pathways	Educational routes into the outdoor recreation workforce through formal degree or certificate programs	<i>"There are certain universities...they come out of that school knowing what tech pack is, how to design, how to do the full production management, all the way to marketing that product." [Reference to programs like Utah State's Outdoor Product Design]</i>
3. Workforce Gaps What are the gaps in what these programs are providing compared to what businesses say they need? (RQ3)	Soft Skill Deficiencies	Lack of interpersonal or professional skills among applicants including reliability, communication, and work ethic	<i>"And finding reliable people, like Bruce said, it may be harder to find someone who is reliable, can get there, you know they're going to be there, they're going to be a good person, than it is because a lot of this can be taught."</i>

	Technical Skill Shortages	Lack of required technical or trade skills in the workforce, particularly hands-on manufacturing abilities	<i>"Most people we need are hands-on. Training in the fiberglass business is very difficult. It's not a talent most people have. And that is that kids today don't even know how to hold a drill. And so, fundamentally, that when they get out of high school, we've lost all of the agri tech programs, all the industrial arts programs in high school."</i>
	Workforce Availability	Difficulty finding enough workers for available positions in the outdoor recreation sector	<i>"Like, if we get an applicant, we're driving to their house immediately. I mean, before they take another job."</i>
	Geographic Barriers	Workforce challenges related to rural or regional location requiring recruitment from outside the immediate area	<i>"To combat that, we work outside the county. We bring them in from Missouri."</i>
4. Future Workforce Development What best practices (i.e. models from other states) could be implemented to ensure a	Career Pathways and Advancement	Opportunities for workers to progress from entry-level roles into leadership positions	<i>"We rarely hire, almost never anyone for, like, a management-type role or anything. You have to work your way up because we're too protective of the culture we have."</i>

robust well-trained outdoor recreation workforce in the future? (RQ4)		through internal development	
	Workforce Development Strategies	Ideas or models to improve workforce training and sustainability drawing from best practices in other states	<i>"Streamlining processes, remaining competitive in the future through improved training programs and education pathways similar to specialized programs in Colorado, Maine, and Utah."</i>
	Technology and Innovation	Emerging technologies affecting workforce needs and business operations in outdoor recreation	<i>"AI can pop it together in 30 seconds and you got something you can use at a sales meeting." [Discussion of AI as marketing and efficiency tool]</i>

Appendix E

Codebook for Survey

Quantitative (Outdoor Workforce Survey) Analysis Codebook

For each skill, you should collapse Very important, Somewhat important together and present % of respondents who felt that way

Q9 Please indicate the importance of the following common technical skills for your workforce.

Q10. Please indicate the importance of the following digital & technological skills for your workforce

Q11. Please indicate the importance of the following common operational skills for your workforce.

Q12. Please indicate the importance of these common soft skills for your workforce.

Q13. Are there any other skills not previously mentioned that are important for workers in the outdoor recreation industry? Please describe.

T1. This next section includes questions about your organization's employee hiring and training needs along with the skillsets necessary for specific job levels.

Q14. Approximately how many new employees, in each of the following categories, does your organization plan to hire in the next 12 months?

Q15. Approximately how many of these new hires in the next 12 months will be permanent positions? (exclude seasonal, contractor, or freelance positions)

Appendix F

Comprehensive List of Programs, Degree Types, and Institutional Locations

4 Year Degrees			
School Name	Location	Program	Link
Arkansas State University	Jonesboro, Arkansas	B.S. in Wildlife, Fisheries, and Conservation / B.S. M.S. Ph.D. in Environmental Sciences / BS in Hospitality and Event Tourism Management	
Arkansas Tech University	Russellville, Arkansas	B.S. in Fisheries and Wildlife Science; Minor in Recreation Services; B.S. in Tourism - Natural Resource Management Emphasis	
Henderson State University	Arkadelphia, Arkansas	Degree in Recreation - Natural Resource Management	Degree type unspecified; additional focus in Leisure Services Management https://www.hsu.edu/academics/teachers-college/recreation/
Southern Arkansas University	Magnolia, Arkansas	B.S. in Biology (Wildlife and Conservation); Minor in Horticulture	
University of Arkansas	Fayetteville, Arkansas	B.S. in Human Environmental Sciences - Hospitality Management; B.S. in Agriculture - Horticulture, Landscape and Turf Sciences / Environmental, Soil, and Water Science (ESWS); B.S. in Education - Recreation and Sport Management	https://www.uark.edu/academics/degree-programs.php
		M.S. in Human Environmental Science With an Apparel Merchandising and Product Development Concentration /	

		Hospitality Management Concentration; M.Ed. in Recreation and Sport Management	
University of Arkansas at Monticello	Monticello, Arkansas	BS in Natural Resource Management	https://www.uamont.edu/academics/CFANR/degrees.html
University of Arkansas at Pine Bluff	Pine Bluff, Arkansas	Master of Science in Aquaculture Fisheries, B.S. in Aquaculture and Fisheries Science, Ph.D. in Aquaculture Fisheries.	https://uapb.edu/academics/safhs/uapb-master-of-science-in-aquaculture-fisheries/
University of Central Arkansas	Conway, Arkansas	B.S. in Environmental Science; B.S. in Geography	https://sites.google.com/uca.edu/uca-environmental-science/home?authuser=0
Hendrix College	Conway, Arkansas	BA in Environmental Science	
John Brown University	Siloam Springs, Arkansas	BS in Outdoor Leadership, MS in Outdoor Program Management	https://www.jbu.edu/majors/outdoor-leadership/
Lyon College	Batesville, Arkansas	Outdoor Leadership Concentration offered	https://www.lyon.edu/outdoor-leadership
Ouachita Baptist University	Arkadelphia, Arkansas	BA in Environmental Science	https://obu.edu/env-studies.php
University of the Ozarks	Clarksville, Arkansas	BS in Environmental Science	https://ozarks.edu/academics/degrees-and-programs/environmental-studies-major-2/

2- Year Programs

School Name	Location	Program(s)	Link
Phillips Community College of the University of Arkansas	Helena, Arkansas	Associate of Arts in Forestry/Wildlife Management	https://catalog.pccua.edu/agriculture-food-and-life-sciences/associate-of-arts/forestry-wildlife-management-aa

University of Arkansas Cossatot	De Queen, Arkansas	Associate of Science in Natural Resource Management	
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Technical Certificates			
School Name	Location	Program	Link
NorthWest Arkansas Community College	Bentonville, Arkansas	Trail Technician Program	https://www.nwacc.edu/academicdivisions/trailstrades/trailtechnician/index.html
NorthWest Arkansas Community College	Bentonville, Arkansas	Bicycle Technician Program	https://www.nwacc.edu/academicdivisions/trailstrades/bicycletechnician/
South Arkansas College	El Dorado, Arkansas	Forestry Technician Program	https://www.southark.edu/page/forestry-technology
Arkansas State University	Jonesboro, Arkansas	Applied Leadership and Soft Skills Certificate	https://www.astate.edu/programs/certificate-in-applied-leadership-and-soft-skills.html
National Park College	Hot Springs, Arkansas	Outdoor Recreation Technical Certificate	https://np.edu/news/2025/press-release/outdoor-recreation
National Park College	Hot Springs, Arkansas	Foundations in Outdoor Recreation - Certificate of Proficiency	
National Park College	Hot Springs, Arkansas	Mountain Biking and Trail Maintenance - Certificate of Proficiency	
National Park College	Hot Springs, Arkansas	Outdoor Maintenance - Certificate of Proficiency	
National Park College	Hot Springs, Arkansas	Outdoor Recreation Activities - Certificate of Proficiency	
National Park College	Hot Springs, Arkansas	Outdoor Recreation Management - Certificate of Proficiency	
National Park	Hot Springs,	Tourism & Hospitality - Certificate of	

College	Arkansas	Proficiency	
National Park College	Hot Springs, Arkansas	Wilderness Safety - Certificate of Proficiency	

Appendix G

Future Hiring and Training Needs Survey Results

Q15: Approximately how many new employees, in each of the following categories, does your organization plan to hire in the next 12 months?

Entry-level (requires minimal experience)

	Freq.	Percent	Cum.
1-5	22	37.93	37.93
11-25	13	22.41	60.34
0	11	18.97	79.31
6-10	5	8.62	87.93
>50	4	6.90	94.83
Don't Know	2	3.45	98.28
26-50	1	1.72	100.00
Total	58	100.00	

Skilled professional (requires some professional experience)

	Freq.	Percent	Cum.
1-5	28	48.28	48.28
0	13	22.41	70.69
6-10	11	18.97	89.66
11-25	3	5.17	94.83
Don't Know	2	3.45	98.28
26-50	1	1.72	100.00
Total	58	100.00	

Mid-Level management (requires significant professional experience)

	Freq.	Percent	Cum.
1-5	27	46.55	46.55
0	20	34.48	81.03
6-10	5	8.62	89.66
Don't Know	3	5.17	94.83
11-25	2	3.45	98.28
>50	1	1.72	100.00
Total	58	100.00	

Executive Management (head of unit, etc)

	Freq.	Percent	Cum.
0	40	68.97	68.97
1-5	14	24.14	93.10
Don't Know	3	5.17	98.28
6-10	1	1.72	100.00
Total	58	100.00	

Q16. Approximately how many of these new hires in the next 12 months will be permanent positions? (exclude seasonal, contractor, or freelance positions)

	Freq.	Percent	Cum.
All positions	22	38.60	38.60
Most positions	14	24.56	63.16
Some positions	10	17.54	80.70
No positions	11	19.30	100.00
Total	57	100.00	