

Review

# Outdoor Recreation, Nature-Based Tourism, and Sustainability

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**Abstract:** This Special Issue addresses the intersections of outdoor recreation, nature-based tourism, and sustainability. Outdoor recreation and nature-based tourism provide essential benefits to individuals, communities, and society and thereby contribute to sustainability. Equitable provision of opportunities, cultural variations in desired experiences, barriers to outdoor recreation, and diverse perceptions of both nature and recreation add to the complexity in outdoor recreation and nature-based tourism service delivery. Outdoor recreation and nature-based tourism occur within a socioecological system with feedback loops to changing social, economic, technological, and ecological conditions. On a global scale, climate change and other disturbance factors are impacting ecosystems and opportunities, increasing the importance of adaptation strategies for longer-term planning. Population growth and regional shifts in demographics and distribution (e.g., urbanization), as well as socioeconomic trends, affect who engages in outdoor recreation and nature-based tourism, opportunities sought, nature access, and governance of outdoor services. Overall the complexity of sustainable outdoor recreation and tourism may suggest a need for different approaches to service delivery, culture change among service providers and managers of natural spaces, and novel approaches to inclusive governance and shared stewardship. Given the clear importance of outdoor recreation and nature-based tourism to society, we invite you to consider this initial introduction to our assembled collection, which is meant to advance our understanding of the intersections of outdoor recreation, nature-based tourism, and sustainability.

**Keywords:** outdoor recreation; nature-based tourism; sustainability; health; socioecological system; governance

## 1. Introduction

There is growing recognition of the positive benefits of outdoor recreation and nature-based tourism. Visiting natural settings and being outdoors are widely recognized as important for improving human health and well-being, enhancing social connections, connecting people with their natural and cultural heritage, generating revenues for use in conservation, contributing to local economies, fostering local or indigenous identity, and developing a conservation consciousness [1–3]. These identified benefits of outdoor recreation and nature-based tourism exemplify the contributions of nature-based experiences to individual, community, and societal resilience and sustainability. As awareness of these benefits has increased over time, the importance of an equitable delivery of benefits has continued to be a focus for communities of interest (defined by shared interests in a topic or set of topics, for

example, recreation access) and communities of place (defined by a shared geographic location), policy makers, and intended beneficiaries. Equity is paramount to contributions toward current and future sustainability. Having recognized the growing popularity of natural destinations, the tourism industry, municipal officials, and development organizations have taken steps to increase tourism within relevant localities and to turn natural sites into popular trip destinations. Nature-based tourism is one of the fastest growing tourism sectors, and many public lands and protected areas have become important tourist destinations. Collectively, protected areas receive 8 billion visits annually, resulting in \$600 billion in visitor spending [4]. Tourism provides an important economic engine for host nations and is a potential source of revenue for protected areas to meet conservation and biodiversity goals [5]. Furthermore, outdoor recreation and nature-based tourism may provide an opportunity to improve ecological conditions where visitors are engaged in stewardship experiences [6]. These contributions represent important aspects of sustainable recreation and tourism delivery [7].

However, rapid growth in nature-based visitation can lead to challenging changes in local communities, impact on local infrastructure and facilities, create competition for scarce resources, lead to unwelcome marketing of indigenous products and traditions, and lead to an influx of nonlocal workers, business owners, and amenity migrants [7–10]. Conflicts can arise when benefits do not transpire for local tourism investors or jobseekers [5,11]. While nature-based tourism can serve to expand the constituency of support for biodiversity and conservation efforts, increasing recreation and tourism visitation can bring lasting changes to the natural and social environment [12,13]. Resource managers seek to provide quality visitor experiences, while protecting natural and cultural resources and expanding economic opportunities [14,15]. While collaborative engagement with communities in the planning and delivery of these opportunities may improve outcomes, staffing and resource constraints remain a challenge to full and sustained engagement [7,16–18]

Sustainability science encourages tourism development that “takes full account of its current and future economic, social, and environmental impacts, addressing the needs of visitors, the industry, the environment, and host communities” [19]. The goal is to maintain essential ecological processes and conserve natural heritage and biodiversity, acknowledge the authenticity of host communities and cultural heritage, and encourage tourism activity that results in enduring economic opportunities and poverty reduction strategies [19]. Collaboration and creative governing strategies that involve multiple agencies, partners, and stakeholders are often required to achieve sustainability.

Our lands, rivers, and seas are being impacted by dramatic changes which affect the management of resources and the development of tourism [20]. Sustainable tourism practices are more important than ever to encourage resilience in ecological systems, including human communities. The purpose of this volume is to explore the components of sustainable tourism and outdoor recreation and to critically evaluate these relationships in order to foster the effective management of parks and protected areas, as well as to enhance their contributions to broader socioecological resilience.

## 2. Literature Review

### 2.1. Benefits to Individuals, Communities, and Society

Outdoor recreation and nature-based tourism present essential benefits to individuals, communities, and society and thereby contribute to sustainability [21]. Being outdoors, engaging in active recreation, and visiting natural attractions provide opportunities for people to learn about natural systems and develop attachments to places that contribute to positive spillover effects [22,23]. Although these spillover effects appear to vary by type of outdoor recreation activity, prior experience, and individual differences, the positive outcomes are of considerable importance to inquiries regarding sustainability [22]. Nature-based experiences in childhood are related to environmental attitudes and behaviors in adulthood [24]. Other work [25] indicates, however, that the activities engaged in while being outdoors affect children’s engagement in proenvironmental behaviors. Specifically, children in rural areas may spend more time outdoors than children in urban areas, but if that time outside

is focused on agricultural-related work, the influence on proenvironmental behaviors is reported as negative [25]. Kil et al. [26] found significant relationships between environmental attitudes, recreation motivations and outdoor experiences, and environmentally responsible behaviors among adult trail hikers. They assert that nature-based recreation managers can focus on maintaining high-quality natural experiences and educational opportunities to support the development of proenvironmental attitudes and experiences. In addition, recreation activities have a unique potential to foster deeper connections to outdoor places that result in conservation engagements, such as restoration, stewardship, or volunteerism [27,28]. These studies suggest nuanced relationships between the time spent outdoors, the activities pursued while outdoors, and the outcomes desirable for promoting sustainability.

### Mental and Physical Health Benefits

Recent work has highlighted the numerous contributions of a connection with nature to mental and physical health [1,3,29–33]. Connectedness with nature has been found to mediate the relationship between exposure to nature and mental health benefits, such as improvements in positive affect [32]. In addition, contact with nature has been associated with cognitive benefits, such as greater attention, concentration, and impulse control, as well as improved working memory [29]. More broadly, outdoor recreation and nature-based tourism provide experiences that are known to have positive health outcomes [30,31,34,35]. Nature experiences can lead to an array of positive emotions, including awe, happiness, joy, and contentment [21], and have been associated with significant stress reduction [34]. Given the association between awe and prosocial behaviors, Ballew and Omoto [21] suggested that nature exposure contributed to social and mental well-being, even when that exposure involved a relatively mundane experience. Similarly, Pretty et al. [36] reported findings from 10 case studies showing a strong association between ‘green exercise’ and psychological well-being assessed as an increase in self-esteem and a reduction in mood disturbance. Hartig et al. [37] found that Norwegian adults responding to a cross-sectional survey valued nature for psychological restoration. Furthermore, it appeared that among this sample’s respondents, valuing nature for restoration, and more generally positive experiences in nature, served to promote ecologically responsible behaviors. The benefits to individuals and concurrently increased care for nature highlight the interconnected relationship between human and environmental sustainability.

Physical health benefits hold considerable interest as well [1,2]. Increased outdoor recreation opportunities may be associated with decreased health care expenditure [38]. For example, Cleland et al. [39] reported a significant relationship between the time spent outdoors, the level of moderate and vigorous physical activity, and the body mass index among elementary school children. Their findings suggest that children should be encouraged to spend more time outdoors in order to increase physical activity and reduce the incidence of being overweight or obese, representing direct contributions to physical health. Similarly, Hansmann et al. [34] reported greater benefits to well-being with vigorous levels of physical activity. In addition to promoting physical exercise, forest and natural area visits are believed to aid the immune system through the reduction of stress hormones, which has a potential benefit in cancer prevention [31,40]. A growing realization of nature’s myriad benefits to human health has sparked conversations among land managers about their role in maximizing health benefits, improving access to protected areas, and finding ways to consider the equitable distribution of health benefits to all members of society [41,42]. Increasingly, human health is being viewed as a critical component of sustainability [43].

### 2.2. Cultural Diversity and Opportunities

Equitable provision of opportunities, cultural variations in desired experiences, barriers to outdoor recreation, and diverse perceptions of both nature and recreation add to the complexity in outdoor recreation and nature-based tourism service delivery [44–46]. Studies in the US show that participation in outdoor recreation on national forest lands is not parsimonious to the proportionate distribution of ethnic and racial minorities in the dominant population [47]. Similar patterns have been observed in

studies conducted with ethnic minorities in Europe [48]. Communities of color have revealed variations in preferences for degrees of development and types of activities that are distinct from Caucasian visitors [46]. Whether these preferences continue to shift over time as a reflection of cultural changes, such as seeing activities as part of one's ingroup or culture remains to be seen [49]. Acculturation over the course of several generations may also affect outdoor recreation trends and preferences, as well as socioeconomic status, residential status, and other factors. A comparison between two surveys of national recreation use in the US that were conducted ten years apart suggests, however, that members of marginalized groups, including ethnic minorities, females, older adults, and rural dwellers, identified increased perceptions of constraints to outdoor participation [44,45]. Studies in access to outdoor recreation and leisure opportunities show differences by ethnicity, suggesting the need for additional focus on identifying barriers [41,44,50].

### 2.3. Outdoor Recreation and Nature-Based Tourism in Socioecological System

Outdoor recreation and nature-based tourism occur within a socioecological system with feedback loops to changing social, economic, technological, and ecological conditions [51–53]. Shifts in global and regional economies and transnational regulations affect trade, business development, infrastructure and utilities development, investment resources, and access to workers. Visitor preferences for outdoor activities are often shaped by media images and consumer trends that constantly shift the flow of visitation, the outdoor activities pursued, and the social patterns of travel [54]. For example, when certain destinations catch on with social media, site managers may be unprepared for the onslaught of visitors. Societal trends in work and leisure patterns and practices also shape how much time visitors have available to explore the outdoors. In the US, for example, there has been a shift toward more day visitation and accessible destinations [55]. In many settings, guided nature-based tours have replaced independent travelers, changing the way visitors experience natural settings.

#### 2.3.1. Innovations in Technology and Equipment

Changes in technology (e.g., eco-innovation) and equipment have added to experiential choices for the participant and increased complexity for the service provider [53,56–58]. Ewert and Shultis [57] introduced a model of technological impacts specific to backcountry recreation, with a broader application to outdoor recreation in general. Their model pointed to five areas of technology's influence, including access and transportation (e.g., all terrain vehicles and mountain bikes), comfort (e.g., thinner- and lighter-weight materials for products), safety (e.g., stronger materials and aids, devices, or gear to support activities), communication (e.g., smartphones and GPS), and information (e.g., the Internet). Each of these was viewed as increasing participation in backcountry recreation, with both positive (e.g., greater awareness of opportunities and job creation in the industry) and negative (e.g., increased environmental impacts or increased crowding) aspects noted. The opportunity to move into new terrain and take part in unfamiliar and novel uses of that terrain can be both exciting and risk enhancing for the participant and the service provider, and at the same time may provide a doorway to increasing awareness of and support for wild areas, such as the wilderness [56–58]. Chavez [59] reported that the youth involved in an outdoor activity day preferred the technology-dependent activities offered (e.g., camera safaris and geocaching) to nontechnology-based activities (e.g., etchings and a nature scavenger hunt). Crawford et al. [60] assessed the use of mobile technology in engaging children with nature and found the approach equally effective to a more traditional environmental education approach; however, the technology was rated as more fun. Mackenzie et al. [61] examined social media and web-based platforms as another route to connect the youth, this time diverse urban youth from under-represented groups. Findings point to novel opportunities to engage diverse youth who might not otherwise be interested in nature-based opportunities. Among adults, Schneider et al. [62] found that geocaching, an outdoor recreation activity dependent on a handheld Global Positioning System (GPS), fostered physical activity, nature learning, relaxation, socialization, and autonomy. Additional study is needed on the benefits and drawbacks of integrating technology into outdoor

recreation; for example, its possible interference with the processes that lead to developing connections with nature has been posited [1,63].

The transition to virtual relationships with places, perhaps offered through virtual reality experiences in nature, characterizes the digital age [64]. Recent work has shown different outcomes when comparing virtual and in situ nature exposure, with in situ experiences having a greater impact on connectedness to nature and improved affect [32]. These differences aside, virtual nature experiences may provide opportunities to those who cannot participate more directly in outdoor recreation or nature-based tourism. New research is needed to explore the role of virtual nature experiences in motivating outdoor visitation, shaping visitor expectations of nature and the outdoor experience, and the potential association with proenvironmental behaviors or support for conservation efforts.

### 2.3.2. Climate Change and Other Disturbance Factors

On a global scale, climate change and other disturbance factors are impacting ecosystems and recreation opportunities that warrant consideration, where adaptation strategies are of particular interest for longer-term planning [65,66] and are essential to sustainable tourism [67]. Changes in climate are associated with flooding, drought, wildfire, higher temperatures, movement and introduction of invasive species, and other risks [13,68]. Climate change has been noted for myriad adverse impacts on the benefits derived from outdoor recreation and nature-based tourism [67,69], and continuing environmental changes are likely to elevate risks in already vulnerable communities [70]. Where overall outdoor recreation and nature-based tourism may increase [71] under climate change effects, opportunities in some geographic locations may shift in terms of activity type or predominant season of use [65]. Where biodiversity underpins nature-based tourism, shifts in abundance or locations of species may have considerable effects on destinations [72]. Even within a larger geographic region, variations in impact may be seen by elevation and ecosystem type. For example, a climate change vulnerability assessment for outdoor recreation in the forest management units of the Sierra Nevada reports varying impacts from climate change for the northern, central, and southern Sierra zones [73]. Shifts in seasonality of use, such as an extended warm season or a decreased cold-weather season, have mixed effects that are complex but ultimately impact recreation opportunities and experiences in important ways. For example, while an increased warm-weather season of use in some regions may provide increased opportunities for extended recreation use, the types of opportunities, quality of experience, safety, and connections to place may all be impacted [73]. On a global scale, increases and decreases in demand that represent the redistribution of tourism are central to sustainable tourism planning [72]. Climate change may interact with fire regimes with mixed results on recreation and tourism access and experiences in both the short and long term [74]. A loss of assets may mean an extended loss of opportunities, and these impacts may be intensified for communities of interest and place that are already most vulnerable [72,73].

### 2.3.3. Population Growth, Regional Shifts, and Socioeconomic Trends

Population growth and regional shifts in demographics and distribution (e.g., urbanization), as well as socioeconomic trends, such as changes in culture and consumption patterns, affect who engages in outdoor recreation and nature-based tourism, the opportunities sought, nature access, and the governance of outdoor services [53,56,65]. Increased population is associated with increased levels of recreation use, particularly adjacent to large urban centers [56]. The overall increase in use elevates challenges for service providers working to deliver quality recreation opportunities, protect the habitat, and ensure visitor safety [56]. When not properly managed, heavy visitor use can lead to biodiversity loss and alter ecosystem functioning [75]. Increased use also creates pressure on recreation resources, potentially leading to perceptions of crowding, which for some visitors is associated with reduced enjoyment [35,76]. Perceived crowding combines the encounter level experienced by the individual with a negative evaluation of that encounter level [77]. Conflicts can occur when the presence of or behavior of one set of visitors interferes with the goals of another set [78,79]. Conflicts may occur among

different types of recreation visitors (e.g., hikers, mountain bikers, and equestrians), among motorized and nonmotorized users, and among visitors with different social norms and arrangements (e.g., group sizes and commercially guided groups) and ethics (e.g., noise levels and littering). High visitation levels may reduce the quality of the visitor experience for those seeking solitude or whose use of the nature area conflicts with that of others [35]. For some visitors, crowding or user conflict can lead to the inhibition, displacement, or dispersion of visitor use [80].

#### *2.4. Ensuring Sustainability under Dynamic Conditions*

Given dynamic ecological and socioeconomic conditions, what constitutes sustainable recreation and tourism? Overall the complexity of sustainable outdoor recreation and tourism may suggest a need for different approaches to service delivery, culture change among service providers and managers of natural spaces, and novel approaches to inclusive governance and shared stewardship of our natural and cultural heritage [16]. Benefit sharing is increasingly important for those living in and around protected areas as pressures on protected area borders increase due to visitation [5]. Benefit sharing supports tangible and intangible outcomes. For example, tangible aspects of outdoor recreation and tourism activities in communities surrounding protected areas have demonstrated increased support for improved infrastructure (e.g., health facilities, water, roads, and sewage) and increased diversity of employment opportunities [5]. However, intangible benefits such as capacity building, skills development, and increased community-level decision-making have demonstrated significant social and human capital with positive, long-term impacts [81–84]. Snyman and Bricker [5] found that ultimately “benefit sharing then becomes part of the give and take of a complex socioecological system, whereby strategies and implementation goals must be adapted to address ever-changing cultural [85], social [86], and ecological [85,87] systems” [5] (p. 713).

Due to the numerous and diverse stakeholders engaged in tourism and outdoor recreation (e.g., government, local residents and the private sector), those living in and around protected areas can be directly impacted, both positively and negatively, by visitation, as mentioned earlier in this paper [5,10,88]. Brooks and Champ [56] cited the importance of inclusive processes that actively seek diverse viewpoints and engagement in addressing recreation challenges. These include consideration of co-management models, inclusive institutional frameworks [89], well-structured partnerships, and capacity building, especially of marginalized groups, in the provision of services and direct and indirect visitor support [90–94]. Incorporating the youth into the inclusive processes not only gains insights across age cohorts but aids building the confidence, engagement, and empowerment of the next generation of leaders [95], further extending the longer-term contributions to sustainability.

#### *2.5. Sustainable Recreation and Tourism and Capacity Challenges*

When planning for sustainability, many uphold the ‘quadruple bottom line’, which refers to environment, society, economy, and governance [96]. When considering whether outdoor recreation is sustainable, it is important to address the structures, processes, and institutions that support it and how these are funded. Many nature-based destinations have experienced increases in visitor demand, owing to population growth, increasing affordability of travel, ease of global travel restrictions, and efficiencies in transportation and communication networks. Meanwhile, public agencies that manage tourist destinations may face constraints to budgetary and human resource capacities. Staffing and funding constraints make it difficult to (a) keep up with the maintenance and improvement of recreation facilities and infrastructure, (b) provide quality interpretation programs and signage for visitors, (c) hire, train, and retain enough skilled workers with professional training in recreation and tourism, and (d) equip that workforce with science-based decision tools for recreation and tourism planning and management [17,18]. Although the value of outdoor recreation and nature-based tourism is increasingly being recognized, this output has not yet translated into increased agency support for recreation and tourism management. Innovative financial tools and funding mechanisms are needed to support protected areas and nature-based destinations. Public agencies can augment their

adaptive capacity to increase organizational performance through collaboration and working with partners [6,97]. Agencies working together to achieve common goals can leverage resources and talent. Capacity-building strategies can be employed to focus agency efforts on critical programs, settings, and services and to build resources from the top down and the ground up [98].

### 3. Conclusions

Clearly, a growing body of empirical evidence is convincing scholars, managers, and policymakers that outdoor recreation and nature-based tourism has the potential to contribute to sustainable lives, families, communities, economies, and conservation. Tourism has been noted as a path to improving the resilience capacity of a community through education, skill development, and co-creation, as well as through economic diversification [52]. Connecting researchers and practitioners using a transdisciplinary approach will improve environmental sustainability in the long term [99]. More scholarship is needed from a global to local scale to build an even stronger empirical case for investing in transformational outdoor recreation and nature-based tourism experiences, facilities, organizations, and policies. However, as emphasized in this introductory article, the transition to sustainable outdoor recreation and tourism systems will be difficult [17,18]. Governance and institutional change will be necessary on all scales to align the promise and reality of sustainable outdoor recreation and tourism systems [100].

In this introductory article, we have also made the case that, to transition successfully to sustainability, outdoor recreation and nature-based tourism scholars and managers should work collectively to incorporate the theory, methods, and analytic tools of the Sustainability Sciences [101,102]. The Sustainability Sciences discipline is a problem-based, action-oriented field of research that employs a wide range of transdisciplinary, community-based, and participatory research designs. The Sustainability Sciences discipline also strives to integrate science, policy, and action. We need more science-management partnerships in the outdoor recreation and nature-based tourism arena to enhance the probability of policy implementation, organizational learning, and agency adoption.

Furthermore, to fully realize the promise of sustainable outdoor recreation and nature-based tourism, scientists, policymakers, and managers will need to solve the implementation crisis of translating sustainability science and assessments into management innovations that deliver sustainability on the ground [103]. While the number of peer-reviewed sustainability articles continues to grow, a significant gap exists between the publication of ever more sophisticated analyses for prioritizing different sustainability indicators and translation projects that contribute to on the ground change. Recent assessments of the impact of climate change on outdoor recreation promise movement toward an improved model linking science and practice, where adaptation strategies and tactics are co-developed by scientists, managers, recreation and tourism managers, opportunity providers, and relevant stakeholders (see for example [104]), though time will reveal the full scope and influence of these efforts in advancing sustainability.

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