



The Journal of PARK AND RECREATION ADMINISTRATION



American Academy
for Park & Recreation Administration

THE JOURNAL

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The Academy is a group of distinguished practitioners and educators who are leaders in the field of park and recreation. Members must have served for at least 15 years in a high level of administration in a park and recreation agency or as a recognized educator in parks and recreation administration; or they must manage a park and recreation department for an agency with a population of more than 500,000. They also must have demonstrated outstanding ability in administration, management or education in the profession; displayed broad interest with a direct service benefit to the advancement of public parks and recreation or assumed leadership with a keen desire to contribute to the advancement of the field. The Academy is limited to 125 active members.

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Introduction to the Special Issue

Sustainability and Outdoor Recreation Management on Public Lands: New Directions

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Why is managing outdoor recreation and tourism sustainably so important for public lands? And, how do we accommodate growing and diversifying uses of public lands, while enhancing natural and cultural resources?

Outdoor experiences are important for cultural, social, health, spiritual, ecological, and economic reasons, many of which are related to people's values, identity, well-being, and livelihoods (Selin et al., 2020). When managed well, recreation contributes economic benefits, bolsters rural communities, and supports local livelihoods and enduring cultures, heritage, and identities.

Sustainability is a hotly debated and oft-defined term and many have suggested that it has been watered down or lost its meaning. We argue that a continued focus on sustainable recreation and tourism remains relevant, particularly in the context of large-scale environmental and societal change where the need to assess the implications of human-nature interactions takes on greater significance. Debating about what sustainable recreation and tourism means or doesn't mean takes away from the efforts of public land managers working to encourage appropriate visitation to protected areas and reasonable use of natural resources while also enhancing physical, social, and cultural environments and economies. Agreement about what sustainable recreation and tourism means today (and tomorrow) will help us move down this pathway. For our purposes, sustainable recreation management "involves the provision of desirable outdoor opportunities for all people, in a way that supports ecosystems, contributes to healthy communities, promotes equitable economies, respects culture and traditions, and develops stewardship values now and for future generations" (Cerveny, Derrien et al., 2020, p. 10).

While sustainability has been variously conceptualized and operationalized, implementation of sustainable recreation policy and practice has not yet been fully realized in public lands management (Berno & Bricker, 2001; Butler, 2019; Ruhanen, 2008). Sustainable recreation management requires new tools, models, metrics, and planning approaches that integrate sustainability principles into management practices (Selin et al., 2017). It requires new paradigms and ways of thinking that breaks down compartmentalized 'silos' and that favors an integrated, social-ecological approach across disciplines and resource area specializations (Blahna, Cerveny et al., 2020). Promoting sustainability requires active collaboration, citizen participation, equity and inclu-

sion, shared stewardship, capacity building, and both efficient and effective governance (Cerveny, Selin et al., 2020; Selin et al., 2020). Sustainable recreation management can enhance shared leadership roles for agencies, communities, and partners in developing shared stewardship values.

Public land management agencies have been challenged, as never before, to manage outdoor recreation and tourism sustainably. Numerous forces have tested our ability to care for protected areas and meet public needs for resource access and recreation. In recent years, we have seen the effects of climate change, including large-scale wildfire events, invasive species, and drought. We have witnessed socioeconomic transformation in many resource-based regions and emerging concerns around food security, rural poverty, and human health (Winter et al., 2020). We have experienced a global pandemic that has altered the ways we interact with each other, tested our distribution systems, and prompted a wave of relaxation, recreation, and recuperation in the outdoors (Spenceley et al., 2021). Each of these large-scale events has changed the ways that humans respond to and rely on the natural environment and have implications for human resilience. Sustainable management of recreation and tourism requires developing programs and processes that can withstand these changes and build on existing capacities and networks (Selin et al., 2020).

Meanwhile, organizational challenges have spawned a new generation of sustainable recreation management “experiments” as agencies explore more creative ways to design, finance, manage, and monitor outdoor recreation use on public lands (Selin 2017). Many standard concepts and approaches for managing and monitoring recreation are based on outdated assumptions that focus singularly on human impacts, conflicts, constraints or benefits rather than understanding recreation as part of a dynamic social-ecological system (Blahna, Valenzuela et al., 2020; Morse, 2020). Public land agencies seek ways to understand and incorporate different cultural meanings and linkages to the land, foster diversity, equity and inclusion, co-manage lands with multiple partners, and consider community and ecological resilience.

This special issue is an outgrowth of a broader community of practice that has rallied to “Ignite the Science of Outdoor Recreation” (ISOR). In 2018, a group of outdoor recreation managers, practitioners, scholars, leaders, and policymakers met in Golden, Colorado (USA) to identify the most prominent and confounding management concerns around outdoor recreation and to begin to identify information needs and knowledge sources to address those problems. The group established eight critical focus areas that shape the development of new knowledge around outdoor recreation and tourism, and this led to the development of a strategic research agenda for outdoor recreation research in the United States (Cerveny, Derrien et al., 2020). In addition, the group presented and published 11 working papers that captured innovative ideas and tools, suggested new directions and investments, and identified critical gaps in our conceptualization and implementation of outdoor recreation management (Selin et al. 2020). An important goal of the ISOR movement was to create a community of practice around outdoor recreation and tourism on public lands and protected areas. This special issue is an outgrowth of these conversations initiated in Golden and that continue to expand in regional recreation workshops, such as the Basecamp 2021 (Tucson, Arizona), and international meetings in France and Brazil where sustainability of parks and protected areas is addressed.

This issue of the *Journal of Park and Recreation Administration* examines the growing significance of outdoor recreation on public lands and discusses strategies for man-

aging this use sustainably. We build on the journal's previous special issue on sustainability principles (2011) to take these ideals one step further through conversations around sustainable practices, policies and applications.

Seven key principles informed our desire to prepare this special issue. These principles suggest the need for an expanded view of sustainable recreation and tourism and a paradigm shift that moves outdoor recreation beyond the realm of "leisure" and toward the realm of "lifestyle" and "lifeway" (Blahna, Cerveny et al., 2020). First, to manage recreation sustainably, a social-ecological systems approach is needed that recognizes that people are part of the environment and not just a source of negative impacts on the environment (McCool & Kline, 2020; Miller et al., forthcoming, Morse, 2020). Second, we recognize the importance of recreation and tourism economies and their role in promoting community well-being and sustaining rural livelihoods (Cerveny, Sanchez et al., 2020). Third, we see indigenous leadership and engagement in planning efforts and a recognition of cultural heritage as both instrumental to sustainable recreation (Carr et al., 2016). Fourth, we emphasize the importance of looking critically at whether outdoor recreation experiences, programs, and policies are inclusive and welcoming to all, that they are being offered in a way that is equitable, fair, and just, and that access to resources is available to the poor and marginalized groups (Flores et al., 2018; Floyd & Johnson, 2002; Winter et al., 2020). Fifth, we acknowledge the growing evidence of the link between nature connections and human health and note the importance of managing public resources to enhance human health outcomes for people of all backgrounds (Derrien et al., 2019; Wolf et al., 2020). Sixth, we emphasize partnerships, collaboration, and shared stewardship as strategies for knowledge sharing and co-production, and collective capacity building (Selin et al., 2020). Finally, we acknowledge the need for new metrics and means to operationalize, measure, and monitor the outcomes and benefits of recreation.

We aim to contribute knowledge from leaders in recreation science toward this foundation of sustainability, while providing more clarity, conscientious thinking, and deeper conceptual development to enhance implementation in public lands management. Our intent is to showcase emerging theories, technologies, best practices, and analytic tools being used to assess, monitor, and support sustainable recreation programs and practices. Renewed recognition of recreation's links to health, well-being, cultural heritage, social identity, and sense of place suggest that recreation is not merely a "nice-to-have" activity, but rather an "essential" activity.

This issue includes 10 research articles, four research notes, and one commentary. The articles reflect a wide range of topics but fall within our mission to rethink how recreation is being conceptualized, planned, organized, and experienced on public lands with a focus on advancing the practice of sustainable recreation management.

Our research articles fall into three groupings: conceptual papers, case studies, and analytical tools. The first three conceptual papers deepen our understanding of foundational precepts of sustainable recreation and raise questions about the assumptions, values and beliefs that have guided public lands management for decades. In the lead article by Sene-Harper et al., "A People's Future of Leisure Studies: Political Cultural Black Outdoors Experiences," the authors offer a critique of many foundational outdoor recreation dogmas and offer suggestions for recalibration. They scrutinize the hegemonic white narrative about public lands and institutions of "Wilderness, as a place of refuge, the antidote to urban living." The authors contest that this dominate

view effectively suppresses the views that racialized peoples hold toward nature and advocate for the “co-existence of multiple cultural imageries of nature.”

In keeping with the need for multi-cultural interpretations of nature, the paper by Thomas et al., “A Review of Trends and Knowledge Gaps in Latinx Outdoor Recreation on Federal and State Public Lands,” provides a summary and update of the last 30 years of research (64 articles) that focus on the problem of Latinx underrepresentation in parks and outdoor recreation. They focus on discrimination and marginality barriers to participation, and research and management implications in light of new and emerging environmental and cultural sustainability issues like climate change, pandemics, reducing discrimination and others.

Rose contributes to this broader dialogue about justice and the colonial history of national parks, in a conceptual piece entitled, “Incorporating Movements for Racial Justice into Planning and Management of U.S. National Parks.” This article discusses how the history of national parks is infused with racial relations, episodes of material violence, and subtle practices of marginalization. Using the concept of whiteness as a lens of institutional critique, the authors explore how the National Park Service could more critically engage with racial justice approaches.

Next, we feature three case studies that provide examples of how sustainable recreation practices, conceptual frameworks, and approaches are being implemented across the public land management system. First, Selin et al. provide a test case for planning and implementation of sustainable recreation for the U.S. Forest Service in their paper “Developing a Capacity Building, Operational Model of a Sustainable Recreation Program.” Using agency staff interviews and a content analysis of 11 national forest sustainable recreation action plans, they provide a model with 15 specific components organized into three administrative “foundational areas”—Program, Agency, and Community—to develop and implement a sustainable recreation plan for large scale or regional set of outdoor recreation areas.

In “A Destination-level Assessment of the Impact of Concessioners on Sustainability: A Case Study of Grand Teton National Park,” Lackey and Bricker examine the role that national park concessioners provide in facilitating sustainable tourism development in parks and protected areas. Historically negative perceptions of the role of concessioners are given a more detailed and nuanced investigation. The article suggests in their case study that concessioners are working individually and collectively to promote environmental, socioeconomic, and cultural sustainability.

Pembrook et al. in “Applying Systems Thinking Approaches to Address Preventative Health Factors through Public Parks and Recreation Agencies,” used a three-stage Delphi panel study with park and recreation agency experts in the U.S. and Canada. The authors identify five primary preventative health factors, assess the effectiveness of different programs and strategies, and identify tools that can be used by agencies to promote public health. Management implications include the need to hasten the translation of research into practice on the ground.

The four articles in the analytical tool section focus on the design and application of methods and approaches being piloted to support the implementation of sustainable recreation planning and management. In “Influences of Engaging in a Participatory Monitoring and Evaluation Process on Stakeholder Perceptions of Key Performance Indicators for Trails,” Witkowski et al. test the efficacy of Participatory Monitoring and Evaluation as an emerging method for assessing stakeholder perceptions of key performance indicators for place-based trails management in Canada. Results show that this

approach can facilitate consensus among stakeholders regarding the overall aim and goals of trail management.

Another tool that can be used to evaluate a park or protected area management practices against sustainability criteria is the use of the Global Sustainable Tourism Council's Destination Criteria. In their paper "Sustainable Tourism Development in and around National Parks," Bricker et al. apply this interdisciplinary tool, which contains specific environmental, social, economic, cultural, and health and safety indicators to Teddy Roosevelt National Park and identify ways that park managers were meeting criteria, while offering specific recommendations for improving sustainability.

Sisneros-Kidd et al. advance the use of a StoryMap approach in combination with spatial data that incorporates recreation narratives told through video, photo, and audio segments. In their article, "Narratives of Place: Integrated Digital Storytelling and Story-mapping for Sustainable Recreation Management," the authors describe an exploratory case study implementing this novel approach that resulted in spatially generated, place-based digital stories that enhance understanding of recreation values to inform public lands management.

In "Coordinating and Standardizing the Outdoor Supply and Demand Databases to Facilitate Management and Promote Conservation, Health, and Accessibility," Morse et al, suggest the need for an integrated and standardized approach to collecting longitudinal recreation demand data nationwide. A more holistic, systems approach can help link local recreation supply and demand opportunities, address health and equity issues, as well as gauge supply and demand for a variety of ecosystem services on recreation lands.

The research notes in this issue provide literature synthesis and case studies that explore the current state of knowledge and management application of sustainable recreation principles and practices. These essays demonstrate new thinking about ways to make public lands more inclusive and to unpack the colonialist legacies they may embody. These articles also suggest new approaches to promote diversity, equity, inclusion, and recognize the link between sustainable recreation management and human health.

First, a group of Indigenous scholars (Jacobs et al.) co-authored the essay, "Reimagining U.S. Federal Land Management through Decolonization and Indigenous Value Systems" to consider federal land management areas from the standpoint of the lands' original stewards. The essay emphasizes the need for models of Tribal co-management and inclusionary practices to begin to rebuild relationships and encourage land managers to take steps to decolonize park management practices.

Next, the article, "Bold Moves for Visitor Use Management: Public Health, Public Engagement and Justice, Equity, Diversity, and Inclusion," draws attention to the need for a systems approach that integrates ecological, economic, and social values and focuses on public health, environmental justice, equity, diversity, and inclusion in planning for public lands visitation (Collins et al.). The authors describe the Visitor Use Management Framework that addresses visitor experiences and resource protection with an integrated planning approach.

In "Local Partnerships for Health on National Forests," Derrien et al. profile three pilot partnerships between national forests and health organizations. Insights from this paper can inform an expanding variety of public land health partnerships contributing to sustainable recreation management.

Finally, Stern and Powell's paper, "Interpretation and Environmental Education Research on Public Lands: Lessons Learned and New Directions," summarizes the state of knowledge of interpretation and environmental education on public lands and advocates for large-scale comparative future studies within a larger community of practice.

The special issue concludes with a Commentary by Blahna et al., entitled, "Implementing the Great America Outdoors Act in the Era of Sustainable Recreation: Time for a Mission 2030?" This essay discusses the new Great America Outdoors Act and suggests ways that the new funding and political support for parks and recreation can be used to help meet sustainability goals like improving our understanding of health benefits, meeting diversity, equity, and inclusion goals, and using systems multi-scale planning and management approaches to increase use and reduce environmental impacts simultaneously.

The editors hope that, through this special issue of JPRA, we can catalyze scientists, agencies, managers, and citizens coming together to advance the cause of sustainable recreation management. The sustainability sciences (Selin, 2017) is an action-oriented field of research involving research collaboration between scientists, industry, government, and civil society. It strives to integrate science, policy and action. To truly realize the promise of sustainable recreation management and to implement the goals imbedded in the Research Agenda for Sustainable Recreation and Tourism (Cerveny, Derrien et al., 2020), we encourage the formation of cross-sector working groups and the cultivation of co-production models to generate new tools and frameworks that support sustainable recreation and tourism management. We suggest that these collaborative groups extend their reach beyond traditional recreation and tourism partners to include Tribes, disability and access organizations, and outdoor affinity groups for people of color, LGBTQ persons, and others whose patterns and preferences for outdoor engagement are not represented in the dominant paradigm. Moreover, efforts to engage agencies in allied sectors, such as health, heritage, and technology will enrich these discussions and foster innovation. Finally, we encourage discussions about outdoor experiences to adopt a broader view of the activities and benefits that people are deriving from ecosystems and that looks beyond the outdated 'recreation as leisure' paradigm and that recognizes recreation a life-affirming activity. This special issue on sustainability and outdoor recreation management is an important step along this journey.

References

- Berno, T., & Bricker, K. (2001). Sustainable tourism development: The long road from theory to practice. *International Journal of Economic Development*, 3(3), 1–18.
- Blahna, D. J., Valenzuela, F., Selin, S., Cerveny, L. K., Schlafmann, M., McCool, S. F. (2020). The shifting outdoor recreation paradigm: Time for change. In S. Selin, Cerveny, L. K., Blahna, D. J., Miller, A. B. (Eds.), *Igniting research for outdoor recreation: Linking science, policy, and action*. Gen. Tech. Rep. PNW-GTR-987. Portland, OR: US Department of Agriculture, Forest Service, Pacific Northwest Research Station. pp. 9–22.
- Blahna, D. J., Cerveny, L. K., Williams, D. R., Kline, J. D., Helmer, M., McCool, S. F., & Valenzuela, F. (2020). Rethinking "outdoor recreation" to account for the diversity of human experiences and connections to public lands. In S. Selin, Cerveny, L. K., Blahna, D. J., Miller, A. B. (Eds.), *Igniting research for outdoor recreation: Linking science, policy, and action*. Gen. Tech. Rep. PNW-GTR-987. Portland, OR: US

- Department of Agriculture, Forest Service, Pacific Northwest Research Station. pp. 65–84.
- Bosak, K., & McCool, S. F. (2019). A research agenda for sustainable tourism: Some ideas worth pursuing. *International Journal of Tourism Policy*, 10(1), 97–99.
- Butler, R. (2018). Sustainable tourism in sensitive environments: A wolf in sheep's clothing? *Sustainability*, 10(6), 1789.
- Carr, A., Ruhanen, L., & Whitford, M. (2016). Indigenous peoples and tourism: The challenges and opportunities for sustainable tourism. *Journal of Sustainable Tourism*, 24(8-9), 1067–1079.
- Cervený, L. K., Derrien, M. M., & Miller, A. B. (2020). *Igniting the science of outdoor recreation: A research strategy for sustainable recreation and tourism on public lands*. Gen. Tech. Rep. PNW-GTR-991. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 152 pp. https://www.fs.fed.us/pnw/pubs/pnw_gtr991.pdf
- Cervený, L. K., Sánchez, J. J., Helmer, M., & Milnor, A. (2020). Public lands, tourism, and community connections. In S. Selin, L. K. Cervený, D. J. Blahna, & A. B. Miller (Eds.), *Igniting research for outdoor recreation: Linking science, policy, and action*. Gen. Tech. Rep. PNW-GTR-987. Portland, OR: US Department of Agriculture, Forest Service, Pacific Northwest Research Station. pp.155–131.
- Cervený, L. K., Selin, S., Blahna, D. J., Meier, N., Barborak, J. R., & McCool, S. F. (2020). Agency capacity for effective outdoor recreation and tourism management. In S. Selin, L. K. Cervený, D. J. Blahna, A. B. Miller (Eds.), *Igniting research for outdoor recreation: linking science, policy, and action*. Gen. Tech. Rep. PNW-GTR-987. Portland, OR: US Department of Agriculture, Forest Service, Pacific Northwest Research Station, pp. 23–40.
- Derrien, M. M., Cervený, L. K., & Wolf, K. L. (2019). The human health dimensions of sustainable tourism. In S. M. McCool & K. Bosak (Eds.), *A research agenda for sustainable tourism* (pp. 140–158). Edward Elgar Publishing.
- Flores, D., Falco, G., Roberts, N. S., & Valenzuela, F. P. (2018). Recreation equity: Is the Forest Service serving its diverse publics? *Journal of Forestry*, 116(3), 266–272.
- Floyd, M. F., & Johnson, C. Y. (2002). Coming to terms with environmental justice in outdoor recreation: A conceptual discussion with research implications. *Leisure Sciences*, 24(1), 59–77.
- Makopondo, R. O. (2006). Creating racially/ethnically inclusive partnerships in natural resource management and outdoor recreation: The challenges, issues, and strategies. *Journal of Park and Recreation Administration*, 24(1) 7–31.
- McCool, S. F., & Kline, J. D. (2020). A systems thinking approach for thinking and reflecting on sustainable recreation on public lands in an era of complexity, uncertainty, and change. In S. Selin, L. K. Cervený, D. J. Blahna, A. B. Miller (Eds.), *Igniting research for outdoor recreation: linking science, policy, and action*. Gen. Tech. Rep. PNW-GTR-987. Portland, OR: US Department of Agriculture, Forest Service, Pacific Northwest Research Station. pp.161–172.
- McCool, S. F., & Moisey, R. N. (Eds.). (2001). *Tourism, recreation, and sustainability: Linking culture and the environment*. Cabi.
- Miller, A. B., Blahna, D. J., Morse, W., Leung, Y., & Roland, M. M. Forthcoming. From recreation ecology to recreation ecosystem: A framework accounting for socio-ecological systems. *Journal of Outdoor Recreation and Tourism*.

- Miller, A. B., Cerveny, L. K., Derrien, M. M., Selin, S., & Blahna, D. J. (2020). A research strategy to ignite the science of outdoor recreation on public lands. *Journal of Park and Recreation Administration*, 38(2), 1–13.
- Morse, W. C. (2020). Recreation as a social-ecological complex adaptive system. *Sustainability*, 12(3), 753. <https://doi.org/10.3390/su12030753>
- Ruhanen, L., (2008). Progressing the sustainability debate: A knowledge management approach to sustainable tourism planning. *Current Issues in Tourism*, 11(5), 429–455.
- Selin, S. (2017). Operationalizing sustainable recreation across the National Forest System: A qualitative content analysis of six regional strategies. *Journal of Park and Recreation Administration*, 35(3), 34–44.
- Selin, S., Blahna, D. J., & Cerveny, L. K. (2020). How can collaboration contribute to sustainable recreation management? In S. Selin, Cerveny, L. K., Blahna, D. J., & Miller, A. B. (Eds.), *Igniting research for outdoor recreation: Linking science, policy, and action*. Gen. Tech. Rep. PNW-GTR-987. Portland, OR: US Department of Agriculture, Forest Service, Pacific Northwest Research Station. pp. 203–212.
- Selin, S., Cerveny, L. K., Blahna, D. J., & Miller, A. B. (Eds.). (2020). *Igniting research for outdoor recreation: linking science, policy, and action*. Gen. Tech. Rep. PNW-GTR-987. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. https://www.fs.fed.us/pnw/pubs/pnw_gtr987.pdf
- Spenceley, A., McCool, S., Newsome, D., Báez, A., Barborak, J. R., Blye, C. J., Bricker, K., Sigit Cahyadi, H., Corrigan, K., Halpenny, E., & Hvenegaard, G. (2021). Tourism in protected and conserved areas amid the COVID-19 pandemic. *Parks*, (27), 103–118.
- Winter, P. L., Crano, W.D., Basáñez, T. and Lamb, C.S., (2020). Equity in access to outdoor recreation—Informing a sustainable future. *Sustainability*, 12(1), 124. <https://doi.org/10.3390/su12010124>
- Winter, P. L., Selin, S., Cerveny, L., & Bricker, K., (2020). Outdoor recreation, nature-based tourism, and sustainability. *Sustainability*, 12(1), 81. <https://doi.org/10.3390/su12010081>
- Wolf, K. L., Derrien, M. M., Kruger, L.E., & Penbrooke, T. L. (2020). Nature, outdoor experiences, and human health. In S. Selin, L. K. Cerveny, D. J. Blahna, & A. B. Miller (Eds.), *Igniting research for outdoor recreation: linking science, policy, and action*. Gen. Tech. Rep. PNW-GTR-987. Portland, OR: US Department of Agriculture, Forest Service, Pacific Northwest Research Station. pp. 85–100.

Research Paper

A People's Future of Leisure Studies: Political Cultural Black Outdoors Experiences

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Executive Summary

Public lands and the outdoor opportunities they afford are imbued with a long history of cultural and political contestations between the White settler colonial regime and Black and Native peoples in North America. These contestations are grounded in starkly different values and belief systems pertaining to the landscape and human-nature relations. Despite these contestations, whiteness continues to dominate the narratives about public lands and their institutions. Furthermore, the ideology of wilderness—as a place of refuge, the antidote to urban living—remains the main frame of reference researchers use to explore outdoor experiences. Thus, as scholars continue to espouse this White settler colonial ideology of wilderness, they effectively suppress the experiences and values that racialized peoples hold towards nature and are historically shaped by their social and political realities. The history of slavery, post-slavery, and Black dispossession, have conjured up innovative Black diasporic cultural practices of resistance, survival and self-determination. Though hidden outdoor spaces they have forged a culture of resistance, built social structures centered on African traditional practices, and engaged in alternative modes of environmental stewardship. The Black outdoors culture today has roots in this robust legacy of resistance and political struggle for self-determination and should provide inspiration for outdoor recreation and environmental education programs that are culturally and politically relevant to Black people.

In this paper we engage in an historic and contemporary investigation on Black people's political outlook of the outdoors and their political cultural engagement with those spaces. In doing so, we first call attention to the need to critically examine diversity discourses and practices by public land and outdoor recreation agencies designed to accommodate a multi-cultural society and how they contribute to a cultural hegemony that uphold white supremacy. We also review the history of research on outdoor experiences putting into sharp relief the Euro-centric values that dominate the analysis and maintain the cultural power of White racial identities. Finally, pulling from Black literary works, we propose Black-centered

interpretations of nature rooted in their cultural worldviews and political resistance against hegemonic models of dispossession, abstraction and commodification. The aim here is to advocate for the co-existence of multiple cultural imaginaries of nature defined by the social and political realities of different racialized peoples, thus responding to the call for different paradigms of outdoor recreation highlighted in this special issue.

Keywords

Outdoors, recreation, nature-based, African American, social justice.

Introduction

“This folk culture became a source of cultural guerilla resistance to the plantation system [...] For we accept folk culture as a point outside the system where traditional values can give us a focus of criticism against the impossible reality in which we are enmeshed”

— Sylvia Wynter, 1971, p. 99

Public lands are often heralded as spaces of common ground in a multicultural society. But this notion belies the long history of political and cultural contestations imbued in those spaces. These conflicts between the White settler colonial regime, and Black and Native peoples are grounded in starkly different values and belief systems pertaining to the landscape and human-nature relations (Estes, 2016). The ideological foundations of U.S. national parks, forests, and related protected areas draw from eugenicist interests to save “the best” in nature for the White race considered the purest among humanity (Mowatt, 2020). Finney (2014) describes how White nationalistic ideologies have produced racialized landscapes on public lands that:

draw from the experiences, values, and nationalistic desires of a privileged few who are in a position to influence and establish legitimacy for their ideas institutionally and culturally. (Finney, 2014, p. 54).

As such, parks and public lands are not neutral spaces. The racist systems that historically permeated public land institutions have implications for the outdoor opportunities they afford today (Mowatt, 2020).

Despite the political nature of public lands, outdoor recreation scholarship on race and ethnicity remains insidiously apolitical and ahistorical. The field is principally preoccupied with the cultural preferences and social marginality of racialized minorities to inform diversity outreach programming for parks, public lands, and other outdoor recreation entities. What socioeconomic constraints and barriers influence the visitation patterns of people of color? What and how do cultural preponderances impact outdoor recreation preferences and behavior across different racialized groups? How do these differences compare to the outdoor leisure behaviors of Whites? These are some of the major questions that form the basis of outdoor leisure research on race and ethnicity (e.g., Washburne, 1978; Johnson, 1997; Scott & Lee, 2016; Xiao et al., 2017). The focus, thus, is predominantly on race as an explanatory factor for individual pref-

erences. However, these questions are asked within a white cultural imaginary of nature (Lipsitz, 2007; Floyd & Stodolska, 2019; Pinckney et al., 2019), thereby concealing the enduring political struggle of racialized peoples to reclaim and reconfigure natural spaces on their own terms and value systems.

Floyd (1998) provided a skillful critique of the marginality and ethnicity theoretical perspectives that has informed leisure studies and recreation delivery which the field has not been able to move beyond. A primary criticism was that studies focused almost exclusively on “black-white” comparisons. This comparative framework advances an implicit Anglo-conformity bias and assume that reducing socioeconomic barriers lead racialized minority populations to exhibit leisure preferences valued by the dominant group. Twenty years later, this criticism remains valid. This White frame of reference continues to dominate the literature. A fundamental issue of this analytic strategy is its underlying ideology of wilderness—as a place of refuge, the antidote to urban living—shaped by Whiteness. Thus, as researchers continue to espouse this ideology of wilderness, they effectively suppress the experiences and values that Blacks and other people of color hold toward nature and historically shaped by their social and political realities (Therault & Mowatt, 2020). This paper seeks to build upon Floyd’s (1998) analysis by proposing promising new directions for research on Black outdoor experiences centered on Black imaginaries of nature.

There exists, in fact, a rich Black literary body that captures counter-hegemonic cultural imaginaries of nature challenging and disrupting dominant and exclusionary representations (Opperman, 2020). According to Roane (2018), a “robust history and ongoing legacy of local communities’ efforts at self-creation and resistance” engendered a contemporary “Black outdoors culture” centered around alternative modes of land and water stewardship (p. 241). These imaginaries constitute radical subversive political acts to free Black people from the reigns of established power relations (Madera, 2015; Roane, 2018) and the “damaging and life-threatening ideologies and practices” that have been heaped upon racialized groups (Mowatt, 2020 p. 154). For Black liberationists, “survival and freedom require a profound transformation in relations with nature,” and those imaginaries provide inspiration for such an intellectual endeavor (Opperman, 2020). Felwin Sarr posits that imaginaries are different and broader than imaginations because they are reproduced by a collective of perceptions and social, cultural and political representations. A people’s imaginaries can materialize allowing them to command their own social and political realities (Sarr, 2019). Therefore, valuing and actualizing Black imaginaries of nature is critical for Black political struggle for self-determination. In this sense outdoor experiences for Blacks should be centered around how they have historically engaged in nature as cultural practices of resistance.

In this paper, we take a political cultural position to first call attention to the need to critically examine diversity practices designed to accommodate a multicultural society and how they contribute to a cultural hegemony. Second, we review the history of research on outdoor experiences putting into sharper relief the Eurocentric values that dominate the analysis and maintain the cultural power of white racial identities. Finally, pulling from Black scholarly writings, we propose Black-centered interpretations of nature stemming from cultural worldviews and political resistances against hegemonic models of dispossession, abstraction and commodification. Bates et al. (2018) call for a reconfiguration of spaces in ways that “counter, elide, and/or dismantle white and colonial spatial imaginaries” (p. 2). Similarly, our aim in this paper is to disrupt whiteness and white supremacy in outdoor spaces and institutions, by presenting counter-

hegemonic cultural imaginaries of nature defined by the social and political realities of peoples racialized as Black, thus responding to the call for different paradigms of outdoor recreation highlighted in this special issue.

Diversity and Cultural Hegemony

Cultural hegemony is never about pure victory or pure domination (that's not what the term means); it is never a zero-sum cultural game; it is always about shifting the balance of power in the relations of culture; it is always about changing the dispositions and the configurations of cultural power, not getting out of it.

—Stuart Hall, 1998, p. 471

Discussions about “equity and inclusion, active collaboration, and shared stewardship” of public lands (Cervený & Selin, 2020), which this special issue seeks to facilitate signal an ethical commitment to a multicultural society. Yet in this same vein, we must also question whose values and beliefs dominate those diversity discourses and practices, the powers they serve and how they might inhibit a radical transformation of oppressive social structures. Diversity discourses and practices represent a form of cultural politics that can result in an assault, direct or indirect, on multiculturalism to facilitate the assimilation into a national identity and culture as part of the ongoing colonial project. We contend that discussions about diversity in outdoor recreation enters into what Stuart Hall describes as a “space of homogenization,” where “control over narratives and representations passes into the hands of the established cultural bureaucracies” (Hall, 1998 p. 473). A critical understanding of those cultural bureaucracies and the ideologies underpinning the space of homogenization can shed light into how they serve a cultural hegemony around Whiteness while stifling the self-determination of Blacks in relations to the outdoors. While this analysis is beyond the scope of this paper, we briefly discuss some of the ideals constitutive of the space of homogenization, namely claims of universality and the ideologies of wilderness.

The urgency to increase Black people’s representations in the outdoors is anchored in different legitimizing narratives. One suggests that as the projected increase in minority populations will change the sociodemographic composition of the country where Whites are no longer the majority, diversifying public lands users is necessary to maintain their long-term relevance (Schultz et al., 2019; Sene-Harper et al., 2021). Another motivation is to redress the manufactured structural inequalities that have systematically excluded Blacks from outdoor recreation opportunities (NRPA, n.d.; The Wilderness Society, 2020). Whatever the justification, the messages all coalesce around the idea that public lands reflect the American democratic values and the universality of outdoor recreation (i.e., everyone should have the right to recreate safely in the outdoors).

Pegg and Crompton (2003) emphasize that universality in their message to “the global community” stating that “integral to create opportunities is the necessity of assuring access and inclusion of all persons to education, health care, employment, recreation, and leisure services” (p. 5). They further stress the importance of creating “conditions wherein one can be included in the mainstream or fabric of society” (p. 5). The National Recreation and Park Association policy on diversity and inclusion also derive from a claim of universality (NRPA, 2018). Drawing from Foucault’s theory of power

of discourses, Carpenter (2020) thoughtfully demonstrates that claims of universality while powerful, remain vacuous when seeking to forge connections between people with very different beliefs systems especially because universals tend to erase differences. Additionally, programming intended to increase racially diverse representations on public lands largely draw from what Mbembe (2018) describes as a “large reservoir of cultural imaginaries manufactured by the colonial regime” (p. 79). In fact, imaginaries of wilderness and the Romantic legacy dominate the institutions of public lands yielding an outdoor recreation field struggling to find relevance among non-White people, particularly Black people (Roberts, 2018). Thus, we argue that messages of diversity and inclusion can wield power while remaining meaningless to facilitate a transition from a cultural hegemony to a multicultural society with a plurality of singular modes of existence and relations to nature.

As such, while diversity and inclusion policies may result in more diverse racial representations in the outdoors this does not necessarily translate to a greater share of the social privilege to define for oneself how one can occupy that space. Drawing from White supremacist values, public land institutions, and other outdoor recreation delivery entities continue to determine the choices, the kind of options available for those choices, and which choice is acceptable or not (Mowatt & Schmalz, 2014). Therefore, beyond diversity, there is a critical need for a paradigm shift to disrupt white supremacy and materialize cultural imaginaries of nature for racialized peoples.

Research on Outdoor Recreation Experiences

Current understandings of the nature of recreation experiences in natural environments derives from the historical White supremacist institutional culture of land management agencies and an extensive body of leisure studies research. Several scholars describe how existing outdoor recreation management approaches come down to us from the earliest history of the U.S. conservation movement (e.g., Byrne & Wolch, 2009; Finney, 2016; Mowatt, 2020). Ideas of prominent individuals within the conservation movement such as George Perkins Marsh and Gifford Pinchot infuse management philosophies of the U.S. Forest Service and Bureau of Land Management reflecting an orientation toward scientific management and multiple use of natural resources. Romanticist and preservation ideals of individuals such as Thoreau and John Muir are associated with management of national parks and legally defined wilderness. These ideals project the archetypal nature experience where wilderness is pristine, empty, and protected from humans (Lynch, 1993). Perhaps this orientation (of Muir and the Transcendentalist) has been most influential in creating the image of the ideal outdoor experience—an image Martin (2004) defined as a “racialized outdoor identity” outdoor recreationists as young, rugged and adventurous...almost exclusively perceived as being White” (p. 514). As Finney contends, (2014) these views inform how outdoor recreation environments are “constructed and the institutions that maintain their constructions” (p. 4-5). Consequently, DEI research and discourses continue to be framed around this White supremacist dominant view of nature bearing the need for a paradigm shift in the outdoor leisure field.

The Recreation Opportunity Spectrum (ROS) framework has been the most widely applied system for recreation planning (Manning, 2011). The research program behind the ROS largely informs how recreation experiences are conceptualized and measured. In ROS planning, a combination of managerial practices, biophysical environment, and social conditions is used to create classes or zones (land and water) to provide a diverse range of opportunities for recreationists. Given a range of choices (opportunity

classes), recreationists are able to select opportunity aligning with their activity and experience preferences. Central to the ROS then is the idea that desired experiences are strongly linked to settings such that management practices, the biophysical environment and social conditions can be manipulated to produce experiences demanded by recreationists. Conceptual underpinnings of the ROS are found in Driver and Brown's (1978) 4-level recreation demand hierarchy. This conceptual model, also known as the behavioral approach, suggested outdoor recreation behavior represented demands for (1) activities and (2) specific settings for those activities in order to realize (3) desired psychological outcomes or experiences and specific (4) immediate or long-term benefits from participation. This framework is arguably one of the most influential ideas in leisure studies.

Beyond serving as the conceptual basis for management frameworks such as the ROS, it generated extensive research on identifying and quantifying experiences sought by recreationists. Taking direction from psychological theories of motivation, Driver and colleagues focused on identifying goals or reasons for participations and assessing their relative importance (Driver et al., 1991; Manfredo et al., 1996). By identifying experiences sought by recreationists, the thinking was that managers would have insights into how to allocate resources under their control to meet visitor preferences. Numerous studies during the 1960s and 1970s culminated in the widely applied "Recreation Experience Preference" scales. The REP scales have been used to measure experience preferences or motives across many different outdoor activities, types of settings, regions of the country, and internationally. The REP scales have dominated how the field thinks about outdoor recreation experiences over the last 40 years or more.

The ability to measure recreation experiences offered clear benefits for management, including better alignment with visitor needs and preferences to reduce the likelihood of inappropriate uses, reduced conflicts between groups, and the ability to incorporate experience data in managing existing and planning for future opportunities (Manning, 2011). In terms of research, the REP scales have helped define a range of common experiences (or motives) across a variety of activities and settings. They have also facilitated tests on hypothesized linkages between experience preferences and settings attributes. Notwithstanding its importance to the field of leisure studies, several limitations the behavioral approach to defining recreation experiences have been identified (Manning, 2011). Most prominent is the goal orientation assumption where recreationists as "rational actors" make choices without access to full or complex information. Furthermore, the behavioral approach does not capture the affective nature of leisure experiences and emotional bonds between people and the goal orientation to characterize outdoor recreation experiences. Studies have also suggested that the nature of recreation experiences can be "emergent experiences rather than predictable" (Patterson et al., 1998, 426). Another critique, of the REP scale specifically, notes that the scales were developed and tested for application for "highly natural [recreation] settings" (Manfredo et al., 1996, p. 209.)

This last critique raises further conceptual, methodological, and managerial concerns about efforts to characterize outdoor experiences. Because the research focuses over decades almost exclusively on "highly natural settings" including national forests, designated wilderness, and other remote settings the samples from these studies were overwhelmingly homogenous and White. The empirical basis of the behavioral approach to a significant degree does not include perspectives of Blacks and other people of color. This includes development of the REP item-pool, assessments of validity and

reliability in numerous studies, as well as examinations of relationships involving activities, experiences, settings, and benefits. Thus, from the standpoint of the leisure studies literature we have a poor understanding of Black outdoor experiences and lack full understanding of leisure experience in natural settings. To the extent management frameworks such as ROS continue to be used, there is a lack of empirical evidence to guide agency management practices for serving an increasingly racially and ethnically diverse public. In view of findings that suggest that experience preferences (or motivations) for specific activities vary by race (e.g., Toth & Brown, 1997; Hunt et al., 2007) and ethnicity (e.g., Gramann et al., 1993; Hunt & Ditton, 2001; Walker, 2009), many opportunities to more critically examine the nature of outdoor recreation experiences remain.

Black-Centered Interpretations of Nature

It is important to define or encapsulate what is meant by a Black-centered interpretation of nature and the outdoor experience. While we situate social relationships as the basis for identity (with whom we interact, and the value of the interactions), identity is fundamentally constructed by the world that has been constructed around you. People play some role as a co-constructor to some degree, the production of space and our social and materials relations within spaces have primacy to our modes of operation and our notions of the self. When we situate identity in the now, it remains the stuff of social relationships and dynamics. This was the fundamental basis for the criticism ethnicity as a conceptualization for leisure, recreation, and outdoor experiences by Floyd (1998). While this text is one of the most cited text in the leisure literature more broadly, we contest here that it is equally misunderstood, under-read, or improperly contextualized. Ethnicity, as an apolitical identification of a population, was and still continues to be an explanatory concept of behavior. What Blacks participate in has only transitioned to what African Americans participate in, (still) without much consideration of the forces that even brought Black people to the shores and occupied lands of what would become the United States much less the forces that dictate access and restriction up to the present-day.

The various ethnic groups that populate the continent of Africa were condensed into a single unit of property, the slave. Though legal and legislative abolition means the slave was transitioned to human citizens with fraught identifications of loose ethnic affiliation (“Afro-American,” “African American”), offensive ascriptions (“Coon,” “Sambo,” “Jezebel,” “Shine”), labels of warning (“Savage,” “Brute,” “Thug”), and racialized distinguishers (“Negro,” “Colored,” “Black”) that perpetuated this condensation into a single categorical unit for the ease of population management. The social construct of Race is not a social choice or social preference, it is socio-political construction by a State and society. As an act of defiance, “Black” as an unintelligent color ascription was taken up and modified as an identity since the 1910s to the present as a political identifier of a political schema and not a corporeal or epidermal schema. Black thought was broad-based philosophical guide for conduct and decision-making, whether it was (or still is) beneficial or problematic.

Thus, a Black-centered interpretation is solely that. Rather than investigating Black cookouts and fanfare in natural spaces, the investigation is on the political outlook of those spaces and/or the political outlook on our engagement with those spaces. What is presented here is to push back against the frame of the apolitical that is anathema to the very political, whether subtle or overt, that Black people are in fact Black people and thus push against restrictive forms of being and doing while also pulling from

within themselves to redefine their environment in their worldview. Thus, enslaved Black people were camping out in the woods before camping out in the woods was a thing, in order to escape from their enslavement or plan an insurrection (Brown, 1848; Theriault & Mowatt, 2020). But the woods were also a place to avoid, as

the woods were said to be full of soldiers who had deserted from the army, and I had been told that the first thing a deserter did to a Negro boy when he found him alone was to cut off his ears. (Washington, 2015, p. 11-12)

The “wilderness” of the West in the logics behind the United States settler colonial expansion presented tragically complicated histories of Black complicity in indigenous massacres. In 1833 Philadelphia, the Improvement of Free People of Color convened and called for an emigration of Black people to Mexican Texas,

To those who may be obliged to exchange a cultivated region for a howling wilderness...we recommend, to retire into the western wilds, and fell the native forest of America.... (Taylor, 1998, p. 81)

Decades later and post emancipation, with no property of their own after being property for so long, enlistment in the U.S. Army in the West presented an opportunity that was not readily available in the South and North. These now-heralded “Buffalo Soldiers” protected White settlers, hunted indigenous populations, and managed occupied lands that soon-to-become national parks. Their roles expanded and they served as a policing force in territories turned new-formed States. With their legacy and this overall history, the contemporary ongoing treatment of participation as an experiential newness amongst Black people is insulting at best and an infantilization of a population at worst.

The mire of urban race massacres and the terror of lynching have already been noted as an important factor and political reality for woodland, wilderness, and forest with trepidation (Mowatt, 2012). But this did not result in outright avoidance, for just as Henry David Thoreau had his moments of transcendence and realization of the need for civil disobedience in 1854, so did Zora Neale Hurston have her moments of spiritual illumination and objection of oppression that led to forsaking older, natural traditions (Stein, 1996). Traditions that supersede and pre-date enslavement and should foster our present-day understanding that engagement with nature and outdoor experiences are not defined from a White lens, but by the lenses of many and their respective cultural-political worldviews (Mowatt, 2018). Among the many community-based “survival programs” of the Black Panther Party for Self-Defense were encampments in nature as a refuge from the city and as a place for survivalism from state violence (Narayan, 2020).

While the notion of escape to nature holds true as a White experience as well as for a diverse privilege class experience, nature and the outdoor experience from a Black-centered political perspective, continues to be a site for self-determination and as space for planning for social change. In an era of heightened focus on racial justice, the apolitical explanatory preference of ethnic participation and interest needs to be put to rest in favor of a political situating of the circumstances that produce and maintain racialized ethnicities the socio-histories of a settler colonial regime that continues

to dispossess people from lands and extracts from nature and people for the sake of the accumulation of capital.

Black Counter-Geographies as Political Proxy

Just as none of us is outside or beyond geography, none of us is completely free from the struggle over geography. The struggle is complex and interesting because it is not only about soldiers and cannons but also about ideas, forms, about images and imaginings.

—(Said, 2012 p. 3)

The writings and paintings about the American wilderness by European explorers like Thomas Jefferson, George Catlin, and Thomas Cole were integral to the conservation movements that engendered public land within the broader nation-building agenda (Runte, 2010). They cemented narratives about “taming the wilderness” that were central to the populist “frontier ideology” and legitimized the genocidal settler conquest driven by white nationalist interests (Ortiz-Dunbar, 2018 p. 208). Black liberationists and abolitionists, however, have long rejected the “nationalists landscape mythos” enshrined on public lands and the idea of a unified nation imposed upon them by White settlers. Through their writings they instead advanced “counter-geographies” or landscape imaginaries to define spaces for themselves and de-stabilize dominant and exclusionary representations (Opperman, 2018). These reconfigurations embody spaces of dissensions and present contradictions to the dominant discourses of wilderness and white nationalism, and “are always in subtle negotiation with agendas of power” (Madera, 2015 p. 4).

The historical “discursive struggle” over the American landscape waged by Black writers reveals that natural spaces, and their associated geographies, are constitutive of their fight for self-determination. Therefore, the reconfigurations of geographies and imaginaries of nature have always been central to the consciousness of Black people (Madera, 2015; Roane, 2018; Opperman, 2020). We present in this section these imaginaries of nature as cultural and political acts of resistance, survival and self-determination. We also discuss their present-day manifestations and the alternative modes of environmental stewardship and outdoor experiences they represent.

Outdoors as a Place for Black Resistance and Self-Determination

The history of slavery, post-slavery, and Black dispossession have conjured up innovative Black diasporic cultural practices that “spatializes acts of survival” (McKittrick, 2013 p. 10). Hiding in the outdoors, both close or faraway from plantations, enslaved and run-away Africans cultivated not only a “guerilla resistance to the plantation systems” (Wynter, 1971 p. 99) but also became the progenitors of a “critical body of ecological knowledge” (Roane, 2018, p. 242). Prominent Black Historians and writers Sylvia Wynter and Sylviane Diouf both center these spatialized acts of survival and their African-centered human-nature relations in their work. In *Novel and History, Plot and Plantation*, Wynter (1971) describes the plot as a site of secretive and hidden history of the enslaved and the anathema of the plantation:

For African peasants transplanted to the plot all the structure of values that had been created by traditional societies of Africa, the land remained the Earth—and the Earth was a goddess. [...] Because of this traditional concept

the social order remained primary. Around the growing of yam, of food for survival, he created on the plot a folk culture—the basis of a social order—in three hundred years [...] This culture recreated traditional values. This folk culture became a source of cultural guerilla resistance to the plantation system. (p. 99)

Unlike the enslaved who created the plots in proximity to the plantation, those who escaped slavery made the Southern wilderness their home, hiding in the mountains of Virginia and the swamps of South Carolina for over two centuries (Diouf, 2014). In those spaces, Maroons cultivated autonomous leadership, social structures, institutions, and cultural practices. Diouf (2014) notes that within the larger narrative of slave resistance, Maroon communities offer a unique social and ecological experiment:

Autonomy was at the heart of their project and exile the means to realize it. The need for foolproof concealment, the exploitation of their natural environment, and their stealth raids on farms and plantations were at the very core of their lives. Secrecy and the particular ecology of their refuges forced them to devise ways to occupy the land and to hide within it. Negotiating and manipulating their landscape dictated the types of dwellings they could erect, when they could walk outside, or light a fire. They determined if, where and how much land they could cultivate, what kinds of animals they could keep, how they got weapons and clothes, and what types of interactions they could have with the world they had left behind. (p. 2)

Roane (2018) situates the contemporary manifestations of what he describes as the outdoors culture of the “Black commons” in the Black communities of Washington DC and Virginia located in proximity of the Anacostia River. In fact, these communities continue to self-fashion “as individuals and as collectives” through the practice of hybrid leisure cultures that incorporates elements of the rural south in an urban setting. The prevailing outdoors cultural practices of these communities include the sharing of “fish caught in the Anacostia and Potomac Rivers as currency of a local, small-scale community” (Roane, 2018 p. 241). These enduring practices are expressions of the Black outdoors and reciprocity through fish does not automatically register within the mainstream environmentalism principally preoccupied with saving species. Yet, it evokes an intimate knowledge of the waterways and the forests and emphasizes a human-nature relation “wherein fish and other resources from the local environment lubricate reciprocity between humans” (Roane, 2018 p. 241). As such, this engages a mode of environmental stewardship not detached from human to human connections and takes place within local ecologies that form the “base” of such economy. Re-centering those connections within the delicate ecologies can serve as an intellectual source to advance outdoor recreation and conservation programs rooted in Black culture and history.

Thus, the history of forging grounds in the outdoors for healing, kinship, resources, escape, refuge, and salvation has resonance among Black people today. Perhaps, it’s because throughout history, they had “no choice but to stress the practical side of conservation for the sake of their livelihoods” and survival (Glave, 2010 p. 103), that engaging in wilderness for the simple pleasure to enjoy its view or for recreation, is a value that fails to resonate with most Black people today, particularly those in the south.

But their embrace of the utilitarian value of conservation does not exclude their pursuit of outdoor recreations, as many Blacks blend both in the same spaces (Glave, 2010).

Outdoors as a Space to Summon Memories

Contrary to the dominant purist sort of wilderness preservation that emphasized places and not people (Glave, 2010), memory and place are deeply intertwined for Black people. It's the memories that the land and the outdoors hold that draw them closer to those spaces. Savoy (2015) draws intimate connections between her Black heritage and the landscape:

We live among countless landscapes of memory in this country. They convey both remembrance and omission, privileging particular arcs of story while neglecting so many others. Historical sites are contested story sites for the meanings. (p. 112)

Though their quest for representations into the broader society, “memories, remembrance are powerful systems of representations” from which they can draw to define their relationships with the landscape (Mbembe, p. 104). Finney (2014) adds that for Blacks, memory, both collective and individual, provides a way to name and create a place, which gives or reaffirms the power to re-create ourselves and the places we live in” (p. 66). Therefore, representations in the outdoors for Black people goes beyond the simple act of being present and recreating in those spaces. Representations constitutes the memories embedded in those spaces that they can summon to understand who they are collectively and individually in relation to the environment. Furthermore, the memories and stories of the Maroons communities and the plots provide Black people a focus of criticism against and liberate their consciousness from the oppressive social systems in which they are presently enmeshed (Hosbey & Roane, 2021; Opperman, 2020; Wynter, 1971).

Telling the stories and accommodating the Black outdoor experiences without bringing forth structural and programmatic changes pose challenges as it may not only require changes that no longer cater to the desires of the White majority but also oppose the values presented by the White ideology of wilderness. Lockhart (2006) elaborately provides one of the few accounts of this dilemma, in which he critically reflects on the invisibility of Black history in the wilderness designated area of Congaree National Park (CNP) in interpretive programs. In fact, archeological remains at CNP indicate the possible historical presence of Maroon settlements in the area (Davies, 2015; Lockhart, 2006). This has been a source of tension between the park and the local Black communities. As unmarked graves believed to belong to enslaved and freed Africans continue to be discovered on public lands (NPS, n.d.; Thomas, 2019), it is becoming increasingly clear that Africans Americans have lived on and shaped those spaces. Therefore, historical interpretation of Black history can serve as a modality to summon the memories of Black peoples. In this way, public lands have opportunities to truly become politically and culturally relevant to Black people.

Conclusions

Further study of Black outdoor experiences calls for more than just extending existing conceptual and measurement strategies. Going further, as Finney (2014) suggests, centering the Black experience in the environment opens the door to new narra-

tives about the meanings of outdoor recreation spaces and the types of experiences that people prefer. As others have called for greater attention to the influence of emotional and symbolic attachment to recreation settings in understanding recreation experiences, there is a need to consider Black people's historic and contemporary relationship to nature more fully to account for this broader context and its role shaping connection to nature and recreation behaviors (Theriault & Mowatt, 2020).

Throughout history, Black communities have negotiated the terrain of brutal exploitation and total social control from colonialism, capitalist systems and the contemporary State. Through hidden outdoor spaces they have cultivated a culture of resistance, built social structures centered on African traditional practices, and engaged in alternative modes of environmental stewardship. The Black outdoors culture today has roots in this legacy of self-creation and resistance. Including these stories in the interpretation of public lands is a critical step to create an outdoor experience that is culturally relevant for Black people while fostering the critical consciousness needed for their political struggle.

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References

- Bates, L. K., Towne, S. A., Jordan, C. P., & Lelliott, K. L. (2018). Race and spatial imaginary: Planning otherwise. *Planning Theory & Practice*, 19(2), 254–288. doi: <https://doi.org/10.1080/14649357.2018.1456816>
- Brown, W. W. (1848). *The anti-slavery harp: A collection of songs for anti-slavery meetings*. Bela Marsh.
- Byrne, J., & Wolch, J. (2009). Nature, race, and parks: Past research and future directions for geographic research. *Progress in Human Geography*, 33(6), 743–765. doi: 10.1177/0309132509103156.
- Carpenter, C. (2020). *Power in conservation: Environmental anthropology beyond political ecology*. Routledge.
- Chávez, K. (Feb. 28, 2021). National park wants to tell the stories of Black, enslaved people in the Great Smokies that are lost in history. *USA Today*. <https://www.usatoday.com/story/news/nation/2021/02/28/great-smokies-african-american-experience-project-black-history/6850266002/>
- Davis, J. (2015). *A tale of two landscapes: Examining alienation and non-visitation among local African American fishers at Congaree National Park*. (Master's thesis). <https://scholarcommons.sc.edu/etd/3135>
- Diouf, S. A. (2016). *Slavery's exiles: The story of the American Maroons*. New York.
- Driver, B., & Brown, P. (1978). The opportunity spectrum concept in outdoor recreation supply inventories: A rationale. *Proceedings of the Integrated Renewable Resources Inventories Workshop*. USDA Forest Service General Technical Report RM-55, 24-31.
- Driver, B. L., Tinsley, H. E. A., & Manfredi, M. J. (1991). The paragraphs about leisure and recreation experience scales: Results from the two inventories designed to assess the breadth of the perceived psychological benefits of leisure. In B. L. Driver, P. J. Brown, & G. L. Peterson (Eds.), *Benefits of leisure* (pp. 263–286). Venture Publishing.

- Estes, N. (2019). *Our history is the future: Standing Rock versus the Dakota Access Pipeline, and the long tradition of indigenous resistance*. Verso.
- Finney, C. (2014). *Black faces, White spaces: Reimagining the relationship of African Americans to the Great Outdoors*. University of North Carolina Press.
- Floyd, M. F. (1998). Getting beyond marginality and ethnicity: The challenge for Race and ethnic studies in leisure research. *Journal of Leisure Research*, 30(1), 3–22. doi:10.1080/00222216.1998.11949816
- Floyd, M. F., & Stodolska, M. (2020). Scholarship on race and ethnicity: Assessing contributions to leisure theory and practice. *Journal of Park and Recreation Administration*, 37(1), 80–94.
- Glave, D. D. (2010). *Rooted in the earth: Reclaiming the African American environmental heritage*. Chicago Review Press.
- Gramann, J. H., Floyd, M. F., & Saenz, R. (1993). Outdoor recreation and Mexican American ethnicity: A benefits perspective. In A. W. Ewert, D. J. Chavez, & A. W. Magill (Eds.), *Culture, conflict, and communication in the wildland-urban interface* (pp. 69–84). Westview Press.
- Hall, S. (1997). What is the 'black' in black popular culture? In S. Hall & D. Morley (Eds.), *Critical dialogues in cultural studies* (pp. 468–478). Routledge.
- Hosbey, J., & Roane, J. T. (2021). A totally different form of living: On the legacies of displacement and marronage as Black ecologies. *Southern Cultures*, 27(1), 68–73.
- Hunt, K. M., & Ditton, R. B. (2001). Perceived benefits of recreational fishing to Hispanic-American and Anglo anglers. *Human Dimensions of Wildlife*, 6(3), 153–172. doi:10.1080/108712001753461266.
- Hunt, K. M., Floyd, M. F., & Ditton, R. B. (2007). African-American and Anglo anglers' attitudes toward the catch-related aspects of fishing. *Human Dimensions of Wildlife*, 12(4), 227–239. doi:10.1080/10871200701442825
- Johnson, C. Y. (1998). A consideration of collective memory in African American attachment to wildland recreation places. *Human Ecology Review*, 5 (1), 5–15.
- Lipsitz, G. (2007). The racialization of space and the spatialization of race theorizing the hidden architecture of landscape. *Landscape Journal*, 26(1), 10–23.
- Lockhart, M. A. (2006). "The trouble with wilderness" wducation in the National Park Service: The case of the Lost Cattle Mounts of Congaree. *The Public Historian*, 28(2), 11–30.
- Lynch, B. D. (1993). The garden and the sea: U.S. Latino environmental discourses and mainstream environmentalism. *Social Problems*, 40 (1), 108–124.
- Madera, J. (2015). *Black atlas: Geography and flow in nineteenth-century African American Literature*. Duke University Press.
- Manfredo, M. J., Driver, B. L., & Tarrant, M. A. (1996). Measuring leisure motivation: A meta-analysis of the Recreation Experience Preference scales. *Journal of Leisure Research*, 28(3), 188–213.
- Manning, R. E. (2011). *Studies in outdoor recreation: Search and research for satisfaction*. Oregon State University Press.
- Mbembe, A. (2017). *Critique of black reason*. Duke University Press.
- McKittrick, K. (2013). Plantation futures. *Small Axe: A Caribbean journal of criticism*, 17(3), 1–15.
- Mowatt, R. A. (2009). Notes from a leisure son: Expanding an understanding of whiteness in leisure. *Journal of Leisure Research*, 41(4), 511–528.

- Mowatt, R. A. (2012). Lynching as leisure: Broadening notions of a fi ld. *American Behavioral Scientist*, 56(10), 1361–1387. <https://doi.org/10.1177/0002764212454429>
- Mowatt, R. A. (2018). Understanding Ifá: inserting knowledge of an African cosmology in leisure studies and nature-based research. *Leisure Studies*, 37(5), 515–532. 10.1080/02614367.2018.1486451
- Mowatt, R. A. (2020). A people's history of leisure studies: The Great Race and the national parks and U.S. forests. *Journal of Park & Recreation Administration*, 38(3), 152–172. <https://doi.org/10.18666/JPra-2019-9674>
- Mowatt, R. A., & Schmalz, D. L. (2014). The conspicuous nature of power: Conclusion to the special issue. *Journal of Leisure Research*, 46(3), 353–358.
- Narayan, J. (2020). Survival pending revolution: Self-determination in the age of proto-neo-liberal globalization. *Current Sociology*, 68(2), 187–203. <https://doi.org/10.1177/0011392119886870>
- National Park Service. (n.d.). *African American experience project*. <https://www.nps.gov/grsm/learn/historyculture/african-american-experience-project.htm>
- National Recreation and Parks Association. (n.d.). *Parks for inclusion: Guidelines for developing an inclusion policy*. <https://www.nrpa.org/siteassets/Inclusion-Guidelines-for-Developing-Policy.pdf>
- Roane, J. T. (2018). Plotting the black commons. *Souls*, 20(3), 239–266.
- Roberts, J. W. (2018). Re-placing outdoor education: diversity, inclusion, and the microadventures of the everyday. *Journal of Outdoor Recreation, Education, and Leadership*, 10(1), 20–32. <https://doi.org/10.18666/JOREL-2018-V10-I1-8152>
- Said, E. W. (2012). *Culture and imperialism*. Vintage.
- Sarr, F. (2019). *Afrotopia*. University of Minnesota Press.
- Savoy, L. (2015). *Trace: Memory, history, race, and the American landscape*. Catapult.
- Sène-Harper, A., Floyd, M., & Hicks, A. S. (2021). Black philanthropy and national parks: Giving green to give black. *Journal of Park and Recreation Administration* 39(4), 95–110. doi:10.18666/JPra-2021-10666.
- Opperman, R. (2020, August 03). *We need histories of radical black ecology now*. In *Black Perspectives*. African American Intellectual and History Society. <https://www.aaihs.org/we-need-histories-of-radical-black-ecology-now/>
- Patterson, M. E., Watson, A. E., Williams, D. R., & Roggenbuck, J. (1998). An hermeneutic approach to study the nature of wilderness experiences. *Journal of Leisure Research*, 30(4), 423–452.
- Pegg, S., & Compton, D. M. (2003). Creating opportunities and ensuring Access to leisure and recreation services though Inclusion in the Global Community. *Leisure/Loisir*, 28(1–2), 5–26.
- Pinckney, H. P., Brown, A., Sene-Harper, A., & Lee, K. J. (2019). A case for race scholarship: A research note. *Journal of Leisure Research*, 50(4), 350–358.
- Schultz, C. L., Bocarro, J. N., KangJae, J. L., Sene-Harper, A., Fearn, M., & Floyd, M. F. (2019). Whose National Park Service? An examination of relevancy, diversity, and inclusion programs from 2005–2016. *Journal of Park and Recreation Administration*, 37(4), 2–20.
- Scott, D., & Lee, K. J. J. (2018, January). People of color and their constraints to national parks visitation. In *The George Wright Forum* (Vol. 35, No. 1, pp. 73–82). George Wright Society.

- Stein, R. (1996). Remembering the sacred tree: Black women, nature and voodoo in Zora Neale Hurston's *Tell My Horse* and *Their Eyes Were Watching God*. *Women's Studies*, 25(5), 465–482. 10.1080/00497878.1996.9979131
- Taylor, Q. (1998). *In search of the racial frontier: African Americans in the American West 1528-1990*. Norton.
- The Wilderness Society. (2020). *Public lands in the United States: Examining the past to build a more equitable future*. https://www.wilderness.org/sites/default/files/media/file/curriculum_guide_2021_0.pdf
- Therault, D., & Mowatt, R. A. (2020). Both sides now: Transgression and oppression in African Americans' historical relationships with nature. *Leisure Sciences*, 42(1), 15–31. doi: 10.1080/01490400.2018.1448024
- Toth, J. R., Jr., & Brown, R. B. (1997). Racial and gender meanings of why people participate in recreational fishing. *Leisure Sciences*, 19(2), 129–146. doi/abs/10.1080/01490409709512244.
- Walker, G. J. (2009). Culture, self-construal, and leisure motivations. *Leisure Sciences*, 31(4), 347–363. <https://doi.org/10.1080/01490400902988291>
- Washburne, R. F. (1978). Black under-participation in wildland recreation: Alternative explanations. *Leisure Sciences*, 1(2), 175–189.
- Washington, B. T. (2015/1901). *Up from slavery*. Millennium Publications.
- Williams, D. R., Patterson, M. E., & Roggenbuck, J. W. (1992). Beyond the commodity metaphor: Examining emotional and symbolic attachment to place. *Leisure Sciences*, 14(1), 29–46.
- Wynter, S. (1971). Novel and history, plot and plantation. *Savacou*, 5, 95–103.
- Xiao, X., Perry, E., Manning, R., Krymkowski, D., Valliere, W., & Reigner, N. (2017). Effects of transportation on racial/ethnic diversity of national park visitors. *Leisure Sciences*, 39(2), 126–143.

Research Paper

A Review of Trends and Knowledge Gaps in Latinx Outdoor Recreation on Federal and State Public Lands

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Executive Summary

The Latinx population in the United States, estimated to compose 28% of the country's population by 2050, has a long history of public land use. Yet while research on Latinx outdoor recreation in urban green spaces has increased over the past 20 years, research on Latinx outdoor recreation on federal and state public lands has waned. A scoping review was conducted to identify the literature around Latinx recreation on federal and state public lands in the United States. We sought to synthesize our findings on four theories (marginality, ethnicity, discrimination, and assimilation and acculturation) to explain the lower participation of minorities in outdoor recreation; and to identify emerging areas of research related to Latinx public land use and outdoor recreation. We reviewed more than three decades of research of Latinx recreation on public lands and found a total of 64 publications on the subject. Our analysis reveals that although institutional barriers such as policies, practices, and procedures that favor some ethnic groups over others continue to exist, barriers to access (such as distance to sites, available free time, and knowledge about how to use public lands) may be shifting; offering clues that may help guide informed approaches to outdoor recreation management. Future research may need to focus on diversification in study sites, as most of the research on Latinx visitation to federal and state public lands has taken place in Southern California. Research in other areas with high Latinx populations could be useful in understanding the recreation behavior and preferences of a growing Latinx community.

Keywords

Latinx, public lands, recreation, race, ethnicity

Introduction

In 2016, outdoor recreation accounted for 2.2% of the United States' gross domestic product, and the outdoor recreation economy grew faster than the overall economy

between 2015 and 2016 (USDC BEA, 2018). In addition, recreation on public lands creates hundreds of thousands of jobs every year (Department of the Interior, 2020; USDA FS, 2021a). Furthermore, participating in outdoor recreation also has numerous physical (Frumkin et al., 2017; Thomsen et al. 2018) and mental health benefits (Gal-lotta et al., 2015; Mutz & Muller, 2016).

However, the benefits of outdoor recreation are not equitably shared; racial and ethnic minority groups in general are shown to be under-represented in outdoor recreation (e.g., Flores et al., 2018; Garnache et al., 2018; White et al., 2016). For example, recent research found that Latinx represented only 11% of outdoor participation (Outdoor Foundation, 2020) and 95% of visitors to national forests and grasslands identify as white (USDA FS, 2021a). A 2008-2009 National Park Service (NPS) survey (Taylor et al., 2011) found that Latinx made up only 9% of the visitors to their sites, while Whites accounted for 78%; and Le (2012) conducted a meta-analysis of 64 visitor surveys (from 1990-2011) at NPS sites and found that the average Latinx visitation was less than 4%.

Census projections suggest that by 2044, the United States will be a minority-majority nation (Colby & Ortman, 2015). Currently, Latinx make up 18% of the United States' population and are the largest-growing racial or ethnic group (Noe-Bustamante et al., 2020), expected to compose 28% of the population by 2050. Additionally, the percentage of foreign-born Latinx is declining. Therefore, the majority of the Latinx population in the United States are projected to be second, third, and fourth generation U.S. citizens with higher levels of education, and higher incomes (Flores, 2017). Yet despite these demographic shifts, and the long history of Latinx use of and appreciation for outdoor spaces, our knowledge of how Latinx groups think about and use outdoor space is largely limited to research about urban green spaces (Stodolska et al., 2020; Tandon et al., 2018). We know far less about Latinx use of large public lands administered by federal and state government agencies.

Attempts to explain the under-representation of minority ethnic/racial groups in outdoor recreation has been ongoing since the 1980s. However, much of the early research focused on recreation at city parks (Gobster & Delgado, 1993; West, 1989) or on general recreation/leisure (Dwyer, 1992; Edwards, 1981). Additionally, much of this research focused on differences between Whites and African Americans (Washburne, 1978; West, 1989). It was not until the 1990s that rigorous social science research about other races/ethnicities, such as Latinx, advanced.

Understanding the growing Latinx population and their outdoor recreation preferences is important for many reasons, not least of which is maintaining the economic and social sustainability of public lands. To examine visitor-use on public lands, researchers have offered four theories to explain the lower participation rates of racial/ethnic minorities in recreation: marginality, ethnicity, discrimination, and assimilation and acculturation. The marginality theory (Washburne, 1978) posits that there are socioeconomic barriers (often a result of historic discrimination) that racial/ethnic minorities face. The ethnicity theory (Floyd, 1998) hypothesizes that differences in recreational preferences and behaviors arise from cultural values that lead to the development of subcultural styles developed over multiple generations. The discrimination theory suggests that minority groups may experience personal or institutional forms of discrimination and/or face hostility from other users that inhibit their participation in outdoor recreation activities by making them avoid places with perceived or actual discrimination (Lee, 1972). Finally, the acculturation/assimilation theory (Floyd &

Gramann, 1993; Shaull & Gramann, 1998) posits that ethnic/racial minorities recreate differently because of their ethno-racial heritage and/or because they have not adjusted to or adopted the dominant values of mainstream society. These four theoretical frameworks intersect in Latinx recreation on public lands.

In this paper, we review more than three decades of research of Latinx recreation on public lands, including national forests, national park system sites, and state parks. We conducted a scoping review of research identifying and documenting Latinx preferences and behaviors; and identify their contributions using the four theories above. We conclude with a discussion of future research needs, and the implications of our findings for land management agencies.

Methods

The goal of this study was to locate and synthesize the peer-reviewed and gray-literature publications that discuss Latinx recreation on public lands, both federal and state. We aimed to answer four questions: 1) Where were the studies conducted, 2) What did the studies find regarding Latinx preferences and behaviors while recreating on public lands, 3) Which barriers do Latinx face to recreation on public lands, and 4) What are the implications for land management agencies of the findings around the four theories of under-participation by ethnic/racial minorities?

We conducted a Google Scholar search using keywords and phrases including “Latino outdoor recreation,” “Latino recreation,” “recreation and ethnicity,” “Hispanic recreation,” and “public lands recreation.” The USDA Forest Service’s Treearch database (www.fs.usda.gov/treearch), which contains publications by Forest Service researchers, was also searched using these phrases to ensure that technical reports were included. Additionally, the USDA Forest Service’s national library conducted a literature search for the topic “Latinx recreation on public lands.” Finally, references encountered while reading publications were located and reviewed for relevance. To be included, studies had to contain information on the type of Latinx recreation, or barriers to recreation, the year of study, and have involved one or more types of federal or state public lands. A total of 64 publications met these criteria: 38 journal articles, 18 reports, seven conference presentations, and one book chapter.

Results

Our review found that research on Latinx recreation on public lands was not evenly distributed, there were spatial and temporal trends. The largest number of studies took place on National Forests (Table 1), mostly in Southern California. Furthermore, the majority took place during the 1990s, and early 2000s. During the 2010s, most studies on Latinx outdoor recreation took place at NPS sites. Research on Latinx recreation in State Parks began in the 2010s and we found only one study on a Bureau of Land Management site, from the 1990s.

Inter-Group Differences

Our review found that research on Latinx within-group differences in recreation preferences took place in the 1990s. Early results showed that Latinx are not a monolithic group, and place of birth could influence their recreational behavior and preferences. For example, Simcox and Pfister (1990; as cited in Chavez, 2001) found that Latinx born outside the United States had greater concerns around law enforcement and communication issues. Heywood and Engelke (1995) found high support

Table 1
Number of Publications Referring to Types of Public Lands, by Time Period

| Public Land Type | 1990–99* | 2000–09 | 2010–17 | 2018–present | Total |
|---------------------------|----------|---------|---------|--------------|-------|
| Bureau of Land Management | 1 | 0 | 0 | 0 | 1 |
| National Forest | 12 | 5 | 2 | 2 | 21 |
| National Park Service | 4 | 2 | 6 | 4 | 16 |
| State Park | 0 | 0 | 4 | 1 | 5 |
| Other Public Lands | 0 | 2 | 0 | 1 | 3 |
| Review | 4 | 4 | 2 | 2 | 12 |
| Total | 21 | 13 | 14 | 10 | 62 |

* There are two studies from 1989 (Simcox et al., 1989; Snow, 1989) included in the 1990s literature review.

for many behaviors (e.g., putting trash in a trash can and recycling trash) among all respondents; although Mexico-born Latinx were more ambivalent about leashing large dogs compared with US-born Latinx. Mexico-born Latinx were also more likely to agree that it was acceptable to enter others' picnic sites. However, Baas et al. (1993) found few differences between U.S.-born Latinx, Mexico-born Latinx, and Whites.

Several studies (Carr & Williams, 1992; 1993; Chavez, 1993a) compared different Latinx groups. Latinx of Mexican ancestry were more acculturated to mainstream recreation norms, more likely to be with their immediate and extended families; and placed the most importance on having few rules and regulations. Latinx of Central American heritage were instead more likely to be with an organized group, or their “compadres/comadres”; and placed more importance on facilities (e.g., picnic areas, parking). Chavez (1993b) subdivided Latinx visitors into three groups: Hispanic American, Mexican American, and Other. Perceptions of crowdedness showed no statistically significant differences between Latinx groups, although both expected larger crowds than Whites.

Communication Preferences

Researchers have also studied best practices for communicating with the growing Latinx population about recreational needs and opportunities (Simcox et al., 1989; as cited in Chavez, 2001). Most of this research was published in the 1990s, with only two studies in the early 2000s. Snow (1989; as cited in Floyd, 1999) carried out a comprehensive study of Biscayne National Park in Florida and found that more than 60% of Latinx reported there was “not enough information on park rules and regulations.” Hospodarsky and Lee (1995) found that Latinx placed greater importance on learning about the forest from their family and friends.

Parker and Winter (1998) researched visitation to three wilderness areas in Southern California and communication preferences of the visitors. They found that twice as many White as Latinx reported contacting the Forest Service prior to or during the visit. Although both groups expressed a preference for printed information they could take with them (e.g., maps and brochures), Latinx were more likely to prefer television and radio; and also favored information on plants and animals, trails and landscape, tips on wilderness travel, and rules and regulations. Latinx visitors cited park signs, family and friends, and personal observations as the most important sources of infor-

mation; and were less likely to utilize guidebooks and maps (Byrne et al., 2009; Thapa, 2002).

Recreation Preferences

The majority of early Latinx recreation research on state and federal public lands focused on recreation preferences: group size and composition, and activity and site preferences. Multiple studies found that Latinx tend to recreate in larger groups than Whites (Gramann, 1991; as cited in Gramann, 1996; Larson et al., 2012; Le, 2012; Williams & Chavez, 1993a; Winter & Chavez, 1999). For example, Chavez (2001) found that Latinx recreated in larger groups than Whites (average group size of 11 vs. 6), and Simcox and Pfister (1990; as cited in Chavez, 2001) found an average group size of nine. This preference was also true in New Mexico (Irwin et al., 1990); where Latinx camped in larger (almost twice the size) groups than Whites. Another common finding was that Latinx were more likely to visit with family (both immediate and extended) or friends (Byrne et al., 2009; Chavez, 2008a; Le et al., 2013; Williams & Chavez, 1993a). Key findings from review publications (Chavez, 2001; 2005; 2008b; Roberts et al., 2009) reinforced Latinx recreating in larger groups and with family. However, Snow (1989; as cited in Floyd, 1999) found no significant differences. Chavez (1992; 1995) explored participation and interest by race and ethnicity in a range of recreational activities, but only two of the nine (natural history hikes and horseback riding) activities showed a statistically significant difference between racial/ethnic groups. The same data were used in another study (Chavez, 1994) to classify the activities into 'traditional' (at least 30% of the respondents) and 'non-traditional' (less than 30%). Current traditional activities for Latinx visitors were mountain biking and natural-history hikes, and future traditional activities for Latinx recreationists were horseback riding, camera safaris, and volunteer hosting. Gramann and Floyd (1991; as cited in Floyd, 1999) researched national park visitation among residents of Phoenix, Arizona. The authors found few statistically significant differences between the two groups regarding their participation in different activities. The largest differences were for sightseeing (greater White participation) and fishing (greater Latinx participation).

In further studies on recreational activity preferences, Floyd and Gramann (1993) conducted a telephone survey of two Arizona counties on their use of specific locations (water and land) on the Tonto National Forest. Latinx respondents were split into three groups based on their level of acculturation (as measured by preference for English over Spanish). The least acculturated group participated in fewer activities than Whites for four of the five activity types, while the most acculturated group differed from White visitors in only one category (water/snow-based recreation). For two activity clusters—water/snow-based recreation and travel-oriented recreation—as assimilation increased, the number of activities participated in became closer to Whites.

Several studies (Chavez et al., 1993a; Larson et al., 2014a) found that Latinx were more likely to participate in team sports such as volleyball and soccer. Picnicking was also a very common activity for Latinx (Chavez & Olson, 2008; 2009; Chavez et al., 1993a; Chavez et al., 1995; Larson et al., 2014a; Snow, 1989; as cited in Floyd, 1999). However, Chavez (2012) noted that "picnicking" for Latinx was often different than for other groups. Instead of enjoying a prepared meal, meals are often cooked onsite (even from scratch); and it is often an all-day activity. Water-based activities, such as swimming and playing in streams, have also been shown to be popular amongst Latinx (Chavez, 2008a; Chavez & Olson, 2008; 2009; Pawelsko et al., 1997; Snow, 1989; as cited in Floyd, 1999); and more popular than walking or hiking (Larson et al., 2012; Le,

2012). Finally, review publications from the early 2000s (Chavez, 2001; 2005; 2008b; Roberts et al., 2009) highlighted that Latinx are more likely to be day-use vs. overnight visitors. For example, Thapa et al. (2002) examined day-use visitation to the Angeles and San Bernardino National Forests (California) and found that Latinx respondents were twice as prevalent among day users than among overnight campers; and Larson et al. (2012) showed that White respondents were over-represented at campgrounds while Latinx users were over-represented at day-use sites.

Multiple studies have explored site preferences for Latinx recreation on public lands. Since 1989 (Snow, 1989; as cited in Floyd, 1999), research has shown that Latinx visitors are more likely to express a preference for expanded services and facilities (Hospodarsky & Lee, 1995). Moreover, Chavez and Olson (2008; 2009) surveyed day-use visitors at sites in four Southern California national forests and found that nine facilities and amenities (e.g., cooking grills, water faucets) were each rated as important or very important to at least 45% of the Latinx respondents, confirming previous studies that showed Latinx recreationists prefer more developed sites. More recently, Larson et al. (2014a) found that Latinx were 153% as likely as Whites to rate developed areas and facilities as important. Review publications (Chavez, 2001; 2005; 2008b; 2012; Roberts et al., 2009) have also highlighted that Latinx usually prefer more developed sites. However, Whiting et al. (2017) had different findings from their study on Georgia state parks; Latinx expressed a stronger preference for natural areas than other racial/ethnic groups, and there were no significant differences between ethnic/racial groups for developed sites.

Irwin et al. (1990) found clear differences in campground preferences. White recreationists prioritized quiet surroundings and privacy, whereas Latinx most often mentioned infrastructure such as toilets, water, and fire rings. Latinx were also much less likely to use dispersed campsites and roadless areas; and intended to camp at highly developed areas in the future. Similarly, Heywood (1993) researched behavioral conventions at outdoor picnic areas on national forests, asking if it bothered visitors when others walked into or through their picnic site. Those completing Spanish language questionnaires reported that they were less likely to be bothered than respondents completing the English language questionnaire; reaffirming that Latinx were less concerned with privacy while recreating.

Larger and/or more picnic tables were important site attributes for Latinx recreationists, as there needs to be room to accommodate family groups, often multigenerational (Pawelsko et al., 1997). For example, one of the first studies of the early 2000s was that of Chavez (2002), who discussed adaptive management of the Applewhite Picnic Area on the San Bernardino National Forest, mainly used by Latinx. The key finding of a survey prior to renovation of the picnic area was that respondents wanted a high level of site development, for example many picnic tables in large groups. After reopening, more Latinx than Whites reported that they liked the site features (e.g., picnic tables and BBQ grills) and were also more likely to comment on the site having a “family feel.”

Motivations

Additionally, more recent studies have shown that Latinx respondents place a greater importance on being with family and friends (e.g., Chavez, 2012; Larson et al., 2014a). For example, Roberts and Chitewere (2011) summarized secondary data on minority visitation to national parks and non-visitors to the Golden Gate National Recreation Area. Results were not broken down by ethnicity/race; however, the au-

thors did note that Latinx park visitation was related to extended family. Additionally, Whiting et al. (2017) explored visitor motivations and site preferences at Georgia state parks. Race/ethnicity had a significant influence on three of the four motivations (social interactions, physical health and fitness, nature interaction), with Latinx reporting stronger motivations than at least one other racial/ethnic group.

Barriers

Barriers to Latinx recreation on public lands is another key area of research, especially in relation to the four theories previously described. Blahna and Black (1993) held focus groups with Chicago college students to investigate barriers to recreation at local, state, and national recreation areas. Results showed that racism-related barriers could be grouped into six themes: 1) on-site racism from other users, 2) on-site racism from professional staff, 3) differential upkeep and management of parks, 4) fear of expected or potential racism, 5) historical racism, and 6) social effects of past economic discrimination.

Williams and Chavez (1992) found that the level of acculturation (as measured by English language skills) varied, with respondents at the study site primarily used by Whites more likely to have a higher level of acculturation. Another study (Floyd et al., 1993) found only marginal support for the assimilation/acculturation theory; cultural distance was statistically significant for only three of the 13 models and had a negative correlation: respondents who primarily used Spanish were less likely to visit those three areas, and outdoor recreation participation was lower for respondents who used the Spanish language extensively in different social settings. Instead, there was greater support for the marginality theory, which was significant for seven of the models, in which a higher level of education corresponded to a higher likelihood of visitation.

In the early 2000s, more researchers began investigating barriers to outdoor recreation. Johnson et al. (2007) explored differences between racial and ethnic groups recreating on federal public lands. Their results showed that Latinx respondents were less likely to be aware of federal lands than White respondents. Both African Americans and Latinx had lower awareness of Forest Service mandates than Whites, although the percentage for Latinx was closer to that of Whites. Finally, respondents who were aware of federal lands were more likely to have previously visited. Roberts and Rodriguez (2008) researched participation and non-participation at Rocky Mountain National Park using focus groups. The top constraints identified were intrapersonal (e.g., lack of knowledge on benefits of visitation), interpersonal (e.g., discomfort and/or safety, “not part of my culture”), and structural (e.g., lack of minority staff, perceived discrimination). Respondents also commented on a lack of marketing geared toward ethnic/racial minorities. Furthermore, the lack of outdoor recreation as a child acted as a constraint to visitation as an adult. Xiao et al. (2018a) also found this result, that childhood visitation had a significant influence on national park visitation as an adult.

The findings of Byrne et al. (2009) support the marginality theory, as White visitors were significantly older than Latinx visitors and had higher incomes. Latinx visitors were less likely to visit the park on weekdays; and reported that ease of taking children would be a reason for visiting a local city park rather than a national recreation area. Tierney et al. (2001) also found that Latinx respondents were less likely to have visited an undeveloped natural area (national and state parks, forests, wildlife refuges, and open spaces outside cities) than either White or Asian respondents, and Latinx were the group least likely to have taken any leisure trip. Across all ethnicities, lower

household income also corresponded with a decreased probability of visitation to a natural area, although Latinx had significantly lower household incomes than Whites.

Results from Tierney et al. (2001) also support the discrimination theory. In terms of barriers, Latinx respondents were more likely to agree with the statements “I would travel more if more workers of my ethnicity were employed there” and “People of my ethnicity are discriminated against when traveling.” Review publications from the early 2000s (Chavez, 2001; 2005; 2008b; Roberts et al., 2009) highlighted discrimination as a barrier for Latinx recreation on national forests; noting that Latinx often felt unwelcome or discriminated against, and unable to find similar people visiting or working at the site. Only one study (Thapa, 2002) during this period was found that addressed the acculturation/assimilation theory, finding that Latinx respondents were the least likely to approach a ranger or employee for information, probably because of the language barrier.

The years 2010–2017 saw a substantial increase of research into barriers Latinx (and other ethnic/racial minorities) recreationists faced. Multiple studies (Metcalf et al., 2013; Parker & Green, 2016) found support for the marginality theory. Significant constraints faced by Latinx recreationists included weather, lack of knowledge of recreational opportunities, lack of adequate transportation, entrance and/or parking fee charged, and distance to the site. Furthermore, the top three strategies employed by nontraditional visitors to start/continue/increase recreation on the forest were all under the category of time management. Transportation was also found to be an important barrier for Latinx recreationists (Le et al., 2013; Perry et al., 2015) as was accessibility (Larson et al., 2014a; Le, 2012). Weber and Sultana (2013) found that for NPS site visitation, Whites had the highest accessibility, followed by African Americans, then Latinx. Results also showed a relatively large correlation (0.55) between Latinx accessibility and visitation; and when only national parks were analyzed, the correlation was even larger. A 2014 article (Larson et al., 2014b) concluded that Latinx were more dependent than Whites on local parks and state parks for physical activity. Whites were more likely to use their home and/or backyard; and gyms and recreation centers were mainly used by higher income groups.

In regard to acculturation/assimilation theory, several studies (Metcalf et al., 2013; Parker & Green, 2016) found cultural reasons and signs/information not in their native language were significant constraints for Latinx. Similarly, Le et al. (2013) reported that 52% of respondents who had not previously visited Saguaro National Park were non-English speaking, while 92% of those who had visited spoke English. Many studies also found support for the intersection of theoretical frameworks. For instance, Krymkowski et al. (2014) researched visitation of NPS sites and found a statistically significant difference between visitation of Whites and Latinx, with the latter having a lower level of visitation. Reasons for the difference included safety concerns, socioeconomic factors (e.g., income), and enjoyment of out-of-town nature trips. However, the extent of acculturation was the largest factor. Similarly, Chavez (2012) found that top constraints included being uncomfortable in the outdoors, discrimination, and travel and/or outdoor recreation being too difficult. Mott (2016) reviewed minority use of national parks and found that, although a lack of knowledge was the most cited reason for non-visitation, many of those that do visit believe public lands to be unpleasant and/or unsafe. Le et al. (2013) also reported a perception among respondents that public lands exist to serve non-Latinx interests.

Research on barriers has continued with several recent studies and review papers on the subject. Marginality theory was again showed to be applicable to Latinx recreation barriers, with time, money, and accessibility commonly noted (e.g., Scott & Lee, 2018). Xiao et al. (2017) found that Latinx had the highest agreement with three barriers: comfort and safety, expense, and accessibility. Xiao et al. (2018b) found that both African Americans and Latinx were more likely to visit urban NPS sites, while Whites were more likely to visit rural NPS sites. A recent study (Winter et al., 2020) explored visitation to national forests among metropolitan California residents. Across all respondents, the most common reason for having never visited a national forest was the distance and a lack of time.

Several recent studies also support the discrimination theory. In a Florida study (Ryan et al., 2020) focus group participants reported feelings of exclusion and/or discrimination; and noted a lack of Latinx staff at the nearby Castillo de San Marcos National Monument. Scott and Lee (2018) reviewed visitation to NPS sites and found barriers included boundary maintenance (actively constructing and highlighting ethnic and/or racial differences), which contributes to minorities not viewing public lands as suitable recreation destinations. Furthermore, discrimination and White racial frames also made minority visitors feel that public lands are “culturally irrelevant” to ethnic/racial minorities. However, Flores & Sánchez (2020) did not find racial discrimination to be a barrier, as respondents largely reported feeling welcomed at the sites.

Emerging Research Areas

As time passes, outdoor recreation preferences and behaviors change. Advances in technology will continue to affect both the quantity and quality of Latinx outdoor recreation experiences (Valenzuela, 2020; Warnick, 1995) and can create new opportunities (Valenzuela, 2020). Technology’s influence on recreation participation spans five categories—access and transportation, comfort, safety, communication, and information—all leading to increased recreation use (Ewert & Shultis, 1999). Improvements in access and transportation could help facilitate Latinx visitation to public lands as transportation is often a barrier (Parker & Green, 2016; Xiao et al., 2017). Technology, in particular social media, can increase interest in outdoor recreation locations (Martin, 2017) as well as non-traditional activities for Latinx.

Climate change is also expected to have extensive impacts on forest landscapes, and to change outdoor recreation behavior decisions (Richardson & Loomis, 2004). Water-based recreational activities, which are a strong preference for Latinx visitors, require sufficient water flows and levels, and suitably warm temperatures (Loomis & Crespi, 2004; Mendelsohn & Markowski, 2004). Visitors can also use water-based activities to counter extreme heat (Hand & Lawson, 2018). Participation in non-motorized water recreation is therefore expected to increase in some regions due to climate change (Perry et al., 2018; White et al., 2016).

Climate change will also affect outdoor recreation via site closures. Trails, roads, campgrounds, and other infrastructure are sometimes located in areas prone to flooding (Strauch et al., 2015). Site closures can also occur from insufficient precipitation for water-based activities (Chang & Bonnett, 2016; Martin, 2014). Given that Latinx already face barriers in outdoor recreation, site closures add further stress and increase inequalities in access (González, 2020). Lastly, climate change can lead to a diminished quality of the visitor experience. Lengthy trajectories for repair and recovery of recreation areas (closure from wildfires, floods, etc.) have a higher burden among Latinx

communities through loss of quality recreation experiences in proximate forested areas (Winter et al., 2021).

The COVID-19 pandemic caused dramatic increases in the use of public lands as people sought outdoor recreational opportunities. In the United States, national forests had record-breaking attendance (USDA FS, 2021b) and multiple national parks had at least one month of record visitation (National Park Service, 2021). However, multiple studies (e.g., Gibbons, 2021; Jay et al., 2020) have shown that marginalized communities decreased their recreational activities during the pandemic; but little is known about any changes to their visitation to federal and state public lands, and further research is needed to fully understand the impact on Latinx communities.

Management Implications

This review suggests that all four theoretical frameworks (marginality, ethnicity, discrimination, and acculturation/assimilation) intersect and can act as barriers to Latinx recreation on public lands. Therefore, land managers have multiple options. Developing proactive approaches can help reduce some of the barriers Latinx communities have experienced in the past and promote higher participation in the future.

Marginality Theory

Accessibility of national and state public lands is a strong barrier to greater Latinx participation; distance, transportation, time, and cost all contribute to the difficulties faced. Discounts, such as reduced entry fees or family passes at an affordable price, could be offered to help offset the financial costs (Whiting et al., 2021). Another option for sites requiring permits is setting aside a certain number of permits to be given to members of nearby underserved communities for free. Partnering with nonprofit organizations and local communities to remove barriers to visitation is an additional approach. For example, Sánchez et al. (2020) described how the Forest Service partnered with a local nongovernment organization to offer free transportation via shuttle buses to a local national forest. Furthermore, partnerships with nonprofit organizations, such as Latino Outdoors and Outward Bound Adventures, can help reduce barriers by introducing and connecting Latinx communities to the outdoors.

Ethnicity Theory

Much of the support for ethnicity theory comes from studies examining different recreational site and activity preferences. When changes to sites and management plans are undertaken, adequate consideration of Latinx (and other minority groups) needs and preferences is necessary. Additionally, lack of information on public lands recreation opportunities is a theme that emerged throughout this review. Land management agencies could re-evaluate their marketing approach to find new and/or more effective ways to reach underserved populations (Therault & Burke, 2020; Whiting et al., 2021). It will be important for this material to be in the native language(s) of the nearby communities; and utilize preferred communication modes to maximize outreach. Chavez (2000) noted that an effective way of reaching Latinx communities is through a trusted community member (Duyn et al., 2007; McChesney et al., 2005). It has also been suggested that involving local churches in outreach efforts could help boost participation (Clarke et al., 2015).

Discrimination Theory

To diminish perceived or real discrimination, public land management agencies may need to hire a more diverse workforce, provide employees with inclusivity and inclusion training, and be more engaged with local community members before making management decisions. Furthermore, implementing a method for reporting discrimination by staff and other recreationists may reduce future discrimination. Greater engagement with nearby communities can also help overcome discrimination barriers. However, strategies to effectively engage Latinx populations in outdoor recreation should incorporate the “I” triad: invite, involve, and include (Chavez, 2000). Clarke et al. (2015) have argued that traditional approaches using this technique must consider doing so in an authentic manner or with genuine *confianza* (trust) and *respeto* (respect).

Acculturation/Assimilation Theory

Effective outreach will necessitate paying attention to within-group differences such as place of birth, competency with the English language, and time living in the United States (Rodríguez et al., 2014; Whitt-Glover et al., 2009). Recreation preferences and behavior are changing due to demographic shifts (from first generation immigrants to second, third, and fourth generation), as well as the US becoming more racially and ethnically diverse. For example, Flores and Sánchez (2020) found that Latinx recreation is changing, with many recreationists now participating in activities beyond picnicking such as hiking, camping, backpacking, and tubing. However, it will be important to assess the relative levels of acculturation in nearby communities to ensure a greater focus on desired activities, while acknowledging that over time some of these preferences may shift, depending on other barriers.

Future Research

Although our review demonstrates an increased need for research on Latinx outdoor recreation on federal and state public lands, most research on Latinx outdoor recreation continues to focus on city parks and urban areas. Latinx visitation to national forests has been increasing, although slowly, from a five-year average of 6.1% (2013–17) to 6.9% (2016–20; USDA FS, 2021a). However, little is known about the sociodemographics of visitors to other federal or state lands. To fully understand how Latinx outdoor recreation preferences and behaviors are impacted by climate change, pandemics, generational shifts, discrimination, communication preferences, and other issues discussed in the paper, continued research is needed. In particular, future research may need to focus on diversification in study sites. To date, most of the research on Latinx visitation to national forests has taken place in Southern California. Research in other areas with high Latinx populations, such as Texas, Florida, and Arizona, could be useful.

Conclusion

Traditional management decisions are often outdated and need to be reevaluated to be more sensitive to, and inclusive of, Latinx and other racial/ethnic minority groups. Looking to the future of outdoor recreation, Blahna et al. (2020) argued that the concept of recreation must be expanded to include broader uses, experiences, and connections to public lands. They also noted that the historical emphasis on traditional recreation activities is not always appropriate given urbanization and increased ethnic/

racial diversity. Instead, a new paradigm is needed that better captures the diverse recreational uses, the human connections with the land, and the ecosystem and cultural services provided by the land.

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References

- Baas, J. M., Ewert, A., & Chavez, D. J. (1993). Influence of ethnicity on recreation and natural environment use patterns: Managing recreation sites for ethnic and racial diversity. *Environmental Management*, 17, 523–529.
- Blahna, D., & Black, K. (1993). Racism: A concern for recreation resource managers. In P. Gobster (Ed.), *Managing urban and high-use recreation settings* (pp. 111–118). General Technical Report NC-163, St. Paul, MN: US Department of Agriculture, Forest Service, North Central Forest Experiment Station.
- Blahna, D. J., Cervený, L. K., Williams, D. R., Kline, J. D., Helmer, M., McCool, S. F., & Valenzuela, F. (2020). Rethinking “outdoor recreation” to account for the diversity of human experiences and connections to public lands. In S. Selin, L. K. Cervený, D. J. Blahna, & A. B. Miller (Eds.), *Igniting research for outdoor recreation: Linking science, policy, and action* (pp. 65–84). General Technical Report PNW-GTR-987. Portland, OR: US Department of Agriculture, Forest Service, Pacific Northwest Research Station.
- Byrne, J., Wolch, J., & Zhang, J. (2009). Planning for environmental justice in an urban national park. *Journal of Environmental Planning and Management*, 52(3), 365–392.
- Carr, D. S., & Williams, D. R. (1992). Social structural characteristics of Hispanic recreationists on the Angeles and San Bernardino National Forests. In *Proceedings of the symposium on social aspects and recreation research*. February 19–22, 1992, Ontario, California: US Department of Agriculture, Forest Service, Pacific Southwest Research Station.
- Carr, D. S., & Williams, D. R. (1993). Understanding the role of ethnicity in outdoor recreation experiences. *Journal of Leisure Research*, 25(1), 22–38.
- Chang, H., & Bonnette, M. R. (2016). Climate change and water-related ecosystem services: Impacts of drought in California, USA. *Ecosystem Health and Sustainability*, 2(12), e01254.
- Chavez, D. J. (1992). Hispanic recreationists in the wildland-urban interface. *Trends*, 29(4), 23–25.
- Chavez, D. J. (1993a). The wildland-urban interface: Hispanics in the national forests. In P. Gobster (Ed.), *Managing urban and high-use recreation settings* (pp. 107–108). General Technical Report NC-163. St. Paul, MN: US Department of Agriculture, Forest Service, North Central Forest Experiment Station.

- Chavez, D. J. (1993b). *Visitor perceptions of crowding and discrimination at two national forests in Southern California* (Research Paper PSW-RP-216). U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station.
- Chavez, D. J. (1994). Travel and tourism trends. In G. A. Vander Stoep (Comp.), *Proceedings of the 1994 northeastern recreation research* (pp. 243–244). April 10–12, 1994, Saratoga Springs, New York. General Technical Report NE-198: US Department of Agriculture, Forest Service, Northeastern Forest Experiment Station.
- Chavez, D. J. (1995). Demographic shifts: Potential impacts for outdoor recreation management. In J. L. Thompson, D. W. Lime, B. Gartner, & W. M. Sames (Comps.), *Proceedings of the fourth international outdoor recreation and tourism trends symposium and the 1995 national resource planning conference* (pp. 252–255). May 14–17, 1995. St. Paul, MN: University of Minnesota College of Natural Resources and the Minnesota Extension Service.
- Chavez, D. J. (2000). Invite, include, and involve! Racial groups, ethnic groups and leisure. In M. Allison & I. Schneider (Eds.), *Diversity and the recreational profession: Organizational perspectives* (pp. 179–191). Venture Publishing.
- Chavez, D. J. (2001). *Managing outdoor recreation in California: Visitor contact studies 1989–1998*. General Technical Report PSW-GTR-180. U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station.
- Chavez, D. J. (2002). Adaptive management in outdoor recreation: Serving Hispanics in Southern California. *Western Journal of Applied Forestry*, 17(3), 129–133.
- Chavez, D. J. (2005). *Latinos and public lands in California*. California Parks and Recreation. <https://www.fs.usda.gov/treearch/pubs/24357>
- Chavez, D. J. (2008a). Connecting Latinos with nature. In D. J. Chavez, P. L. Winter, & J. D. Absher (Eds.), *Recreation visitor research: Studies of diversity* (pp. 157–162). General Technical Report PSW-GTR-210. U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station.
- Chavez, D. J. (2008b). Serving the needs of Latino recreation visitors to urban proximate natural resource recreation areas. In D. J. Chavez, P. L. Winter, & J. D. Absher (Eds.), *Recreation visitor research: Studies of diversity* (pp. 53–62). General Technical Report. PSW-GTR-210. U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station.
- Chavez, D. J., Larson, J., & Winter, P. L. (1995). To be or not to be a park: That is the question. In D. J. Chavez (Tech. Coord.), *Proceedings of the second symposium on social aspects and recreation research* (pp. 29–33). February 23–25, 1994, San Diego, California. General Technical Report PSW-GTR-156. U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station.
- Chavez, D. J., & Olson, D. D. (2008). Diverse users of four urban national forests: Participation, preferences and perception. In D. J. Chavez, P. L. Winter, & J. D. Absher (Eds.), *Recreation visitor research: Studies of diversity* (pp. 63–74). General Technical Report PSW-GTR-210. US Department of Agriculture, Forest Service, Pacific Southwest Research Station.
- Chavez, D. J., & Olson, D. D. (2009). Opinions of Latino outdoor recreation visitors at four urban national forests. *Environmental Practice*, 11(4), 263–269.
- Clarke, T., Rodriguez, D., & Alamillo, J. (2015). Engaging Latino/a communities in national park programs: Building trust and providing opportunities for voice. *Environmental Management and Sustainable Development*, 4(1), 136.

- Colby, S. L., & Ortman, J. M. (2015). *Projections of the size and composition of the U.S. population: 2014 to 2060 population estimates and projections*. U.S. Census. <https://www.census.gov/content/dam/Census/library/publications/2015/demo/p25-1143.pdf>
- Department of the Interior. (2020). *National park visitor spending generates economic impact of more than \$41 billion*. <https://www.doi.gov/pressreleases/national-park-visitor-spending-generates-economic-impact-more-41-billion#>:
- Duyn, M. A. S., McCrae, V. T., Grove, B. K., Henderson, K. M. Boyd, J. K. Kagawa-Singer, M. Ramirez, A. J., Scarinci-Searles, I., Wolk, L. S., Penalosa, T. L. & Maibach, E. (2007). Adapting evidence-based strategies to increase physical activity among African Americans, Hispanics, Hmong, and Native Hawaiians: A social marketing approach. *Preventing Chronic Disease: Public Health Research Practice and Policy*, 4(4), 1–11.
- Dwyer, J. (1992). Outdoor recreation participation: Blacks, Whites, Hispanics, and Asians in Illinois. In *Proceedings of the symposium on social aspects and recreation research* (pp. 80–82). General Technical Report PSW-132. Department of Agriculture, Forest Service, Pacific Northwest Research Station.
- Edwards, P. K. (1981). Race, residence, and leisure style: Some policy implications. *Leisure Sciences*, 4(2), 95–112.
- Ewert, A., & Shultis, J. (1999). Technology and backcountry recreation: Boon to recreation or bust for management? *Journal of Physical Education, Recreation & Dance*, 70(8), 23–28.
- Flores, A. (2017, September 18). *How the Hispanic population is changing*. PEW Research Center. <http://www.pewresearch.org/fact-tank/2017/09/18/how-the-u-s-hispanic-population-is-changing/>.
- Flores, D., Falco, G., Roberts, N. S., & Valenzuela III, F. P. (2018). Recreation equity: Is the Forest Service serving its diverse publics? *Journal of Forestry*, 116(3), 266–272.
- Flores, D., & Sánchez, J. J. (2020). The changing dynamic of Latinx outdoor recreation on national and state public lands. *Journal of Park and Recreation Administration*, 38(4), 58–74.
- Floyd, M. F. (1998). Getting beyond marginality and ethnicity: The challenge for race and ethnic studies in leisure research. *Journal of Leisure Research*, 30(1), 3–22.
- Floyd, M. F. (1999). Race, ethnicity and use of the national park system. *Social Science Research Review*, 1(2), 1–24.
- Floyd, M. F., & Gramann, J. H. (1993). Effects of acculturation and structural assimilation in resource-based recreation: The case of Mexican Americans. *Journal of Leisure Research*, 25(1), 6–21.
- Floyd, M. F., Gramann, J. H., & Saenz, R. (1993). Ethnic factors and the use of public outdoor recreation areas: The case of Mexican Americans. *Leisure Sciences*, 15(2), 83–98.
- Frumkin, H., Bratman, G. N., Breslow, S. J., Cochran, B., Kahn Jr, P. H., Lawler, J. J., Levin, P. S., Tandon, P. S., Varanasi, U., Wolf, K. L., & Wood, S. A. (2017). Nature contact and human health: A research agenda. *Environmental Health Perspectives*, 125(7), 075001.
- Gallotta, M. C., Emerenziani, G., Pietro, Monteiro, M. D., Lasevoli, L., Lazzoni, S., Baldari, C., & Guidetti, L. (2015). Psychophysical benefits of rock-climbing activity. *Perceptual and Motor Skills*, 121, 675–689.

- Garnache, C., Srivastava, L., Sánchez, J. J., & Lupi, F. (2018). Recreation ecosystem services from chaparral dominated landscapes: a baseline assessment from national forests in southern California. In *Valuing Chaparral* (pp. 271–294). Springer.
- Gibbons, J. (2021). Distancing the socially distanced: Racial/ethnic composition's association with physical distancing in response to COVID-19 in the U.S. *PLoS ONE*, *16*(5), e0251960.
- Gobster, P., & Delgado, A. (1993). Ethnicity and recreational use in Chicago's Lincoln Park: In-park user survey findings. In P. Gobster (Ed.), *Managing urban and high-use recreation settings* (pp. 75–81). General Technical Report NC-163. U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station.
- González, J. (2020, April 16). Park closures have unequal costs: As we limit outdoor access, consider the impact on underrepresented communities. *High Country News*. <https://www.hcn.org/articles/covid19-park-closures-have-unequal-costs>
- Gramann, J. H. (1991). *Visitors, alternative futures, and recreational displacement at Yosemite National Park*. Technical Report completed under cooperative agreement CA-7029-0-0005 with the Western Regional Office, National Park Service, Texas A&M University Department of Recreation, Park and Tourism Sciences, College Station, TX.
- Gramann, J. H. (1996). *Ethnicity, race, and outdoor recreation: A review of trends, policy, and research* (Miscellaneous Paper R-96-1). Army Corps of Engineers, Waterways Experiment Station.
- Gramann, J. H., & Floyd, M. F. (1991). *Ethnic assimilation and recreational use of the Tonto National Forest*. Report submitted to Pacific Southwest Research Station, Riverside, CA.
- Hand, M. S., & Lawson, M. (2018). Effects of climate change on recreation in the Northern Rockies Region. In J. E. Halofsky, D. L. Peterson, S. K. Dante-Wood, L. Hoang, J. J. Ho, & L. A. Joyce (Eds.), *Climate change vulnerability and adaptation in the Northern Rocky Mountains* [Part 2]. General Technical Report RMRS-GTR-374 (pp. 398–433). Fort Collins, CO: US Department of Agriculture, Forest Service, Rocky Mountain Research Station.
- Heywood, J. L. (1993). Behavioral conventions in higher density, day use wildland/urban recreation settings: A preliminary case study. *Journal of Leisure Research*, *25*(1), 39–52.
- Heywood, J. L., & Engelke, R. L. (1995). Differences in behavioral conventions: A comparison of United States-born and Mexico-born Hispanics, and Anglo Americans. In D. Chavez (Tech. Coord.), *Proceedings of the second symposium on social aspects and recreation research* (pp. 35–40). February 23–25, 1994, San Diego, California. General Technical Report PSW-GTR-156. Albany, CA: US Department of Agriculture, Forest Service, Pacific Southwest Research Station.
- Hospodarsky, D., & Lee, M. (1995). Ethnic use of the Tonto: Geographic extension of the recreation knowledge base. In D. J. Chavez (Tech. Coord.), *Proceedings of the second symposium on social aspects and recreation research* (pp. 45–47). February 23–25, 1994, San Diego, California. General Technical Report PSW-GTR-156. U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station.
- Irwin, P. N., Gartner, W. C., & Phelps, C. C. (1990). Mexican-American/Anglo cultural differences as recreation style determinants. *Leisure Sciences*, *12*(4), 335–348.
- Jay, J., Heykoop, F., Hwang, L., de Jong, J., & Kondo, M. (2021). *Effects of the COVID-19 pandemic on park use in U.S. Cities*. medRxiv.

- Johnson, C. Y., Bowker, J., Green, G., & Cordell, H. (2007). "Provide it. . . but will they come?": A look at African American and Hispanic visits to federal recreation areas. *Journal of Forestry*, 105(5), 257–265.
- Krymkowski, D. H., Manning, R. E., & Valliere, W. A. (2014). Race, ethnicity, and visitation to national parks in the United States: Tests of the marginality, discrimination, and subculture hypotheses with national-level survey data. *Journal of Outdoor Recreation and Tourism*, 7, 35–43.
- Larson, L. R., Whiting, J. W., & Green, G. T. (2012). *Diversity in state parks: A cross-cultural examination of outdoor recreation and park use in Georgia*. Report prepared for Georgia Department of Natural Resources' Parks, Recreation, and Historic Sites Division, Georgia Department of Natural Resources, Atlanta, GA.
- Larson, L., Whiting, J. W., Green, G. T., & Bowker, J. M. (2014a). Physical activity levels and preferences of ethnically diverse visitors to Georgia state parks. *Journal of Leisure Research*, 46(5), 540–562.
- Larson, L. R., Whiting, J. W., Green, G. T., & Bowker, J. M. (2014b). Physical activity locations in Georgia: Frequency of use by socio-demographic group. *Journal of Outdoor Recreation and Tourism*, 5, 68–72.
- Le, L. (2012). Hispanic and White visitors in us national parks: Meta-analysis of visitor use survey. *Journal of Park & Recreation Administration*, 30(4), 1–20.
- Le, Y., Holmes, N.C., & Kulesza, C. (2013). *Barriers to the wilderness next door: Recreational preferences and behaviors of Hispanics in Tucson, AZ - revised*. Natural Resource Report NPS/NRSS/EQD/NRR–2013/614. National Park Service.
- Lee, R. G. (1972). The social definition of outdoor recreation places. In W. R. Burch, N. Cheek, & L. Taylor (Eds.), *Social behavior, natural resources and environment* (pp. 68–84). Harper.
- Loomis, J., & Crespi, J. (2004). Estimated effects of climate change on selected outdoor recreation activities in the United States. In R. Mendelsohn & J. Neumann (Eds.), *The impact of climate change on the United States economy* (pp. 289–314). Cambridge University Press.
- Martin, H. (2014, June 17). Drought is a drain on California lake, reservoir tourism. *Los Angeles Times*. <https://www.latimes.com/business/la-fi-drought-tourism-20140617-story.html>
- Martin, S. (2017). Real and potential influences of information technology on outdoor recreation and wilderness experiences and management. *Journal of Park and Recreation Administration*, 35(1), 98–101.
- McChesney, J., Gerken, M., & McDonald, K. (2005). Reaching out to Hispanics in recreation. *Parks & Recreation*, 40(3), 75–78.
- Mendelsohn, R., & Markowski, M. (2004). The impact of climate change on outdoor recreation. In R. Mendelsohn, & J. E. Neumann (Eds.), *The impact of climate change on the United States economy* (pp. 267–288). Cambridge University Press.
- Metcalfe, E. C., Burns, R. C., & Graefe, A. R. (2013). Understanding non-traditional forest recreation: The role of constraints and negotiation strategies among racial and ethnic minorities. *Journal of Outdoor Recreation and Tourism*, 1, 29–39.
- Mott, E. (2016). Mind the gap: How to promote racial diversity among national park visitors. *Vermont Journal of Environmental Law*, 17(3), 443–469.
- Mutz, M., & Muller, J. (2016). Mental health benefits of outdoor adventures: Results from two pilot studies. *Journal of Adolescence*, 49, 105–114.

- National Park Service. (2019). *Annual Visitation Report by Years: 2009 to 2019*. [https://irma.nps.gov/STATS/SSRSReports/National%20Reports/Annual%20Visitation%20By%20Park%20\(1979%20-%20Last%20Calendar%20Year](https://irma.nps.gov/STATS/SSRSReports/National%20Reports/Annual%20Visitation%20By%20Park%20(1979%20-%20Last%20Calendar%20Year)
- National Park Service. (2021). *National parks hosted 237 million visitors in 2020*. <https://www.nps.gov/orgs/1207/02-25-21-national-parks-hosted-237-million-visitors-in-2020.htm>
- Noe-Bustamante, L., Lopez, M. H., & Krogstad, J. M. (2020, July 7). *U.S. Hispanic population surpassed 60 million in 2019, but growth has slowed*. <https://www.pewresearch.org/fact-tank/2020/07/07/u-s-hispanic-population-surpassed-60-million-in-2019-but-growth-has-slowed/>
- Outdoor Foundation, (2020). *2019 Outdoor participation report*. Outdoor Industry Association. <https://outdoorindustry.org/resource/2019-outdoor-participation-report/>
- Parker, J. D., & Winter, P. L. (1998). A case study of communication with Anglo and Hispanic wilderness visitors. *Journal of Interpretation Research*, 3(1), 55–56.
- Parker, S. E., & Green, G. T. (2016). A comparative study of recreation constraints to National Forest use by ethnic and minority groups in north Georgia. *Journal of Forestry*, 114(4), 449–457.
- Perry, E., Manning, R., Xiao, X., & Valliere, W. (2018). Multiple dimensions of adaptations to climate change by visitors to Vermont state parks. *Journal of Park and Recreation Administration*, 36(2), 13–30.
- Perry, E. E., Xiao, X., & Manning, R. E. (2015). Barrier or bridge? The role of transportation in national park visitation by racial and ethnic groups. *World Leisure Journal*, 57(3), 173–184.
- Richardson, R. B., & Loomis, J. B. (2004). Adaptive recreation planning and climate change: A contingent visitation approach. *Ecological Economics*, 50(1–2), 83–99.
- Roberts, N. S., Chavez, D. J., Lara, Benjamin M., Sheffield & Emilyn A. (2009). *Serving culturally diverse visitors to forests in California: A resource guide*. General Technical Report PSW-GTR-222. Albany, CA: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.
- Roberts, N. S., & Chitewere, T. (2011). Speaking of justice: Exploring ethnic minority perspectives of the Golden Gate National Recreation Area. *Environmental Practice*, 13(4), 354–369.
- Roberts, N. S., & Rodriguez, D. A. (2008). Use of multiple methods: An examination of constraints effecting ethnic minority visitor use of national parks and management implications. *Ethnic Studies Review*, 31(2), 35–70.
- Rodríguez, A., Ramirez, C., & Rodriguez, L. (2014). The City of Phoenix Latino Institute: Bridging the gap between community needs and services. *Journal of Park and Recreation Administration*, 32(2), 62–72.
- Ryan, M. M., Lawson, S. R., Larkin, A. M., Roberts, S. J., & Pettebone, D. (2020). Engaging minority communities in local national park units through culturally competent focus groups. *Journal of Park and Recreation Administration*, 38(1), 175–189.
- Sánchez, J. J., Cerveny, L. K., Blahna, D. J., Valenzuela, F., & Schlafmann, M. (2020). Recreation opportunities and human connections on public lands: constraints that limit recreation participation. In S. Selin, L. K. Cerveny, D. J. Blahna, & A. B. Miller (Eds.), *Igniting research for outdoor recreation: Linking science, policy, and action* (pp. 41–49). General Technical Report PNW-GTR-987. U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.

- Scott, D., & Lee, K. J. J. (2018). People of color and their constraints to national parks visitation. *The George Wright Forum*, 35(1), 73–82.
- Shaull, S. L., & Gramann, J. H. (1998). The effect of cultural assimilation on the importance of family-related and nature-related recreation among Hispanic Americans. *Journal of Leisure Research*, 30(1), 47–63.
- Simcox, D. E., & Pfister, R. E. (1990). Hispanic values and behaviors related to outdoor recreation and the forest environment. Unpublished draft applied by authors.
- Simcox, D. E., Pfister, R. E., & Hodgson, R. W. (1989). Communicating with users of the Angeles National Forest report no. 1. Unpublished draft applied by authors.
- Snow, R. E. (1989). *Recreation resource management and planning study for the Biscayne National Park*. Final Report to the National Park Service. Cooperative Park Studies Unit. Georgia State University.
- Stodolska, M., Shinew, K. J., & Camarillo, L. N. (2020). Constraints on recreation among people of color: Toward a new constraints model. *Leisure Sciences*, 42(5–6), 533–551.
- Strauch, R. L., Raymond, C. L., Rochefort, R. M., Hamlet, A. F., & Lauer, C. (2015). Adapting transportation to climate change on federal lands in Washington State, USA. *Climate Change*, 130(2), 185–199.
- Tandon, P. S., Kuehne, L. M., & Olden, J. D. (2018). Trends and knowledge gaps in the study of nature-based participation by Latinos in the United States. *International Journal of Environmental Research and Public Health*, 15(6), 1287.
- Taylor, P. A., Grandjean, B. D., & Gramann, J. H. (2011). *National Park Service comprehensive survey of the American public, 2008–2009: Racial and ethnic diversity of national park system visitors and non-visitors*. National Park Service.
- Thapa, B., Graefe, A. R., & Absher, J. D. (2002). Information needs and search behaviors: A comparative study of ethnic groups in the Angeles and San Bernardino National Forests, California. *Leisure Sciences*, 24(1), 89–107.
- Therriault, D., & Burke, B. (2020). Introduction to the special issue—building bridges instead of walls: Marketing with minoritized populations. *Journal of Park and Recreation Administration*, 38(1). <https://doi.org/10.18666/JPra-2019-10196>
- Thomsen, J. M., Powell, R. B., & Monz, C. (2018). A systematic review of the physical and mental health benefits of wildland recreation. *Journal of Park and Recreation Administration*, 36(1), 123–148.
- Tierney, P. T., Dahl, R., & Chavez, D. (2001). Cultural diversity in use of undeveloped natural areas by Los Angeles county residents. *Tourism Management*, 22(3), 271–277.
- U.S. Department of Agriculture, Forest Service [USDA FS]. (2021a). *USDA Forest Service national visitor use monitoring survey results: National Summary Report. Data collected FY 2016 through FY 2020*. <https://www.fs.usda.gov/sites/default/files/2020-National-Visitor-Use-Monitoring-Summary-Report.pdf>
- U.S. Department of Agriculture, Forest Service [USDA FS]. (2021b). *National forest visits surged in 2020*. <https://www.fs.usda.gov/features/national-forest-visits-surged-2020>
- U.S. Department of Commerce, Bureau of Economic Analysis [USDC BEA]. (2018). *Outdoor recreation satellite account: Updated statistics for 2012–2016*. BEA 18–48. <http://www.bea.gov>.
- Valenzuela, F. (2020). Technology and outdoor recreation in the dawning of the age of constant and instant digital connectivity. In S. Selin, L. K. Cervený, D. J. Blahna, &

- A. B. Miller (Eds.), *Igniting research for outdoor recreation: Linking science, policy, and action* (pp. 101–114). General Technical Report PNW-GTR-987. U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.
- Warnick, R. (1995). Trends in recreation and leisure equipment. In J. L. Thompson, D. W. Lime, B. Gartner, & W. M. Sames (Comps.), *Proceedings of the fourth international outdoor recreation and tourism symposium and the 1995 national recreation resource planning conference* (pp. 307–316). University of Minnesota, College of Natural Resources and Minnesota Extension Service.
- Washburne, R. F. (1978). Black under-participation in wildland recreation: Alternative explanations. *Leisure Sciences* 2, 201–210.
- Weber, J., & Sultana, S. (2013). Why do so few minority people visit national parks? Visitation and the accessibility of “America’s Best Idea.” *Annals of the Association of American Geographers*, 103(3), 437–464.
- West, P. C. (1989). Urban region parks and black minorities: Subculture, marginality, and interracial relations in park use in the Detroit metropolitan area. *Leisure Sciences*, 11(1), 11–28.
- White, E., Bowker, J. M., Askew, A. E., Langner, L. L., Arnold, J. R., & English, D. B. (2016). *Federal outdoor recreation trends: Effects on economic opportunities*. General Technical Report PNW-GTR-945. U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.
- Whiting, J. W., Larson, L. R., Greenwood, C., & Lankford, S. (2021). Public parks and sno-parks help diverse populations in California’s Central Valley negotiate constraints to winter recreation. *Journal of Park and Recreation Administration*, 39(4), 41–62.
- Whiting, J. W., Larson, L. R., Green, G. T., & Kralowec, C. (2017). Outdoor recreation motivation and site preferences across diverse racial/ethnic groups: A case study of Georgia state parks. *Journal of Outdoor Recreation and Tourism*, 18, 10–21.
- Whitt-Glover, M. C., Crespo, C. J., & Joe, J. (2009). Recommendations for advancing opportunities to increase physical activity in racial/ethnic minority communities. *Preventive Medicine*, 49(4), 292–293.
- Winter, P. L., & Chavez, D. J. (1999). Recreation in urban-proximate natural areas. In H. K. Cordell, C. J. Betz, J. M. Bowker, D.B. English, S. H. Mou, J. C. Bergstrom, R. J. Teasley, M. A. Tarrant & J. Loomis (Eds.), *Outdoor recreation in American life: A national assessment of demand and supply trends* (pp. 268–271). Sagamore Publishing.
- Winter, P. L., Crano, W. D., Basáñez, T., & Lamb, C. S. (2020). Equity in access to outdoor recreation—informing a sustainable future. *Sustainability*, 12(1), 124.
- Winter, P. L., Sánchez, J. J., & Olson, D. D. 2021. Effects of climate change on outdoor recreation in the Sierra Nevada. In J. E. Halofsky, D. L. Peterson, L. Buluç, & L. Ko (Eds.), *Climate change vulnerability and adaptation for infrastructure and recreation in the Sierra Nevada*. General Technical Report PSW-GTR-272. Albany, CA: U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station.
- Xiao, X., Perry, E., Manning, R., Krymkowski, D., Valliere, W., & Reigner, N. (2017). Effects of transportation on racial/ethnic diversity of National Park Visitors. *Leisure Sciences*, 39(2), 126–143.

- Xiao, X., Manning, R., Lawson, S., Valliere, W., & Krymkowski, D. (2018a). Indicators for a transportation recreation opportunity spectrum in national parks. *Journal of Park & Recreation Administration*, 36(1), 90–112.
- Xiao, X., Manning, R., Perry, E., & Valliere, W. (2018b). Public awareness of and visitation to national parks by racial/ethnic minorities. *Society & Natural Resources*, 31(8), 908–924.

Research Paper

Incorporating Movements for Racial Justice into Planning and Management of U.S. National Parks

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Executive Summary

The National Park Service (NPS) is the federal land management agency responsible for 423 units across the United States. Many of these parks are considered iconic cultural and environmental landscapes. However, scholarship from a number of disciplinary approaches has positioned the national parks and their management as problematic, particularly from Indigenous and racial justice concerns. National parks, like many cultural landscapes in the U.S., are infused with racial relations, with unpleasant histories and contemporary experiences that have both subtle instances of marginalization and explicit episodes of material violence. Recent developments in racial justice movements raise fundamental questions for the social and political maintenance, stewardship, and sustainability of the NPS. In a critical approach that centers whiteness as a lens of institutional critique, we consider the ways that the NPS could more critically engage with racial justice approaches in its planning and management.

After acknowledging that histories of U.S. national parks as spaces designed for White, upper class people led to the displacement and marginalization of Indigenous and people of color, we look to contemporary avenues for increased racial justice. Though both local, small-scale initiatives and agency-wide, national policies, we consider how racial justice movements are both expectant and galvanized in this moment, providing a setting for the NPS to redress and make amends for previous harms and missed opportunities. Specifically, we identify recent federal and institutional policy and legislation as promising mandates for progress. We identify specific place-based tactics used by individual NPS units, such as renaming parks and geographic features, or interpretation that is both more accurate and more inclusive of marginalized populations. Our research examines planning and management as potential strategic practices that can more fully highlight and progress racial justice. We offer a range of specific questions that might guide more inclusive planning and management work in the NPS. Finally, we encourage the NPS, as an institution, as well as individual park units, to support contemporary racial justice movements, while simultaneously adhering to the agency's historical dual mandate.

Keywords

Colonialism, justice, policy, racism, whiteness

Introduction: Situating the Concern

The year 2020 will likely be remembered as a tumultuous time for many people. The COVID-19 pandemic swept across the world, upending people's health, employment, education, and daily routines. There were fires, droughts, and record-breaking hurricanes, and it was the hottest calendar year ever recorded in the northern hemisphere (NOAA, 2021, January 14), and the United States faced a challenging presidential election. These factors alone made 2020 a traumatic year for many people. However, a lasting image of 2020 in the U.S. was the series of claims, pleas, and protests in the name of racial justice. Following the recorded and circulated May 25th police-caused death of George Floyd, in Minneapolis, Minnesota, the summer of 2020 saw widespread social unrest in response to police brutality made manifest in several highly visible episodes. Protests, marches, and episodes of disobedience engulfed many large and small cities, and sparked attention and involvement internationally. These protests were united against police brutality, and in their insistence that Black lives matter. Organizations, agencies, groups, individuals, and even corporations are reconsidering their commitments to racial justice (Roberson, 2020; Sobo et al., 2020), wondering how to consider, embrace, and advance racial justice in their own work.

We use this context of developing racial justice movements to consider how, in the name of its own sustainability, the U.S. National Park Service (NPS) might learn from, respond to, and potentially advance a critical agenda that affirms its stated commitments to a diverse, inclusive, and relevant national park experience for visitors, staff, and the public at large. What is relevant about contemporary movements for racial justice in the lack of diversity in national parks, outdoor recreation, and environmental movements (Finney, 2014; Mowatt, 2020; Taylor et al., 2019)? While popular attention tends to assume that conservation organizations are monolithically inattentive to many social issues, there are counternarratives where park and recreation service providers have historically been agents of change in addressing racial unrest in the U.S. (Dustin et al., 2021). We consider the potential for the NPS to engage with racial justice movements to both more accurately represent histories associated with the parks and to better plan and manage resources, personnel, and visitors to confront systemic whiteness. Ultimately, the purpose is for the NPS and perhaps other land management agencies to provide more inclusive cultural and environmental landscapes.

We engage in this review and critique from paradigms that both critically situate the sociopolitical moment, while also adhering to the pragmatics of planning and managing U.S. national parks within a large federal bureaucracy. Rather than a policy analysis or direct research, our goal in this essay is to raise questions and awareness, and also point to existing literature, practices, and resources that might critically orient future planning and management in the NPS and other land management agencies. We enter into these conversations not from a place of supposed value-neutrality, but by acknowledging the historical and contemporary problematic nature of whiteness in the management of parks and protected areas for nearly 150 years, if not since the earliest days of colonialist displacement (i.e., Burnham, 2000; Finney, 2014; Floyd, 1999; Krymkowski et al., 2014; O'Brien & Njambi, 2012; Poirier & Ostergren, 2002; Spence, 1999; Xiao et al., 2018). We use whiteness not as a surface-level critique of the bodies of the visitors, employees, and managers of the national parks, but as a critique of the historically and contemporarily racialized ways of knowing and ideological systems of managing national parks. Our perspective is that our own silence on these issues is ef-

fectively a tacit endorsement and perpetuation of problematic ideologies of whiteness (i.e., Arai & Kivel, 2009; Mowatt, 2009; 2021; Powell, 2021) in park and protected area management, epitomized by racialized exclusions that so often characterize experiences in national parks and other conservation areas. As White people, we need to be willing to speak firmly against systems of oppression, especially when we are both benefactors of systemic privilege and (perhaps unintentional) perpetrators of ongoing concern(s). Because of our various privileges, it is especially imperative for White people to participate in challenging a status quo steeped in racist and colonialist legacies. Just as men need to confront sexism and misogyny, wealthy people need to confront wealth inequality, and straight people confront heterosexism, White people need to confront racism (Bergerson, 2003; Rose & Paisley, 2012); the status quo is unlikely to change if groups in positions of privilege do not work to upend such systems. While “no group of people is monolithic, it is integral to this exercise to call “whiteness” out in order to understand how race matters in the development of environmental ideas and policies in the United States” (Finney, 2014, p. 49). There is a need to critique the whiteness of the national parks, and this critical perspective, with an applied focus, can provide support and solidarity with allied scholars, managers, readers, and participants.

Literature Review

The National Park Service is the federal land management agency responsible for what many consider some of the most iconic landscapes in the U.S., overseeing the management of 63 national parks, part of a total of 423 units that include national seashores, national historic trails, and similar conservation areas. Managers of U.S. national parks have long sought to balance their dual mandate of ecological and historical conservation while also supporting use and enjoyment by the public, goals that may seem at odds at times (e.g., Jones et al., 2017). National parks have substantial cultural importance, as the NPS plays a significant role in constructing a sense of place-based collective identity. Finney (2014) clarifies that the NPS is “an environmental institution that lays claim to representing an American identity” (p. 27), and that the U.S. system of national parks is “where cultural identity, environmental values, and American history intersect and are actively transmitted to the public” (p. 29). These grandiose statements necessitate the subsequent question, then, of what identities, what histories, and what values are imbued in these landscapes that are simultaneously cultural, political, and ecological.

U.S. national parks have been the subject of substantial literature interrogating the ways in which various privileges (racial, gendered, classed, able bodied, geography, education, etc.) are reflected in both national park visitation and engagement, as well as in messages, materials, and iconography. National parks have complicated interactions with race, where complex relationships between nature and race in the U.S. are both “profoundly entangled” and “bitterly divisive” (Outka, 2008, p. 2). These constructions echo back to deeply rooted notions of settler colonialism, dominionism, racial superiority, masculinity, and manifest destiny, among others (Glacken, 1967; White, 1967). These trenchant ideologies continue to express themselves in multiple ways, but both the historical instantiation and contemporary cultural prominence of national parks position them as notable material and symbolic landscapes where these ideological constructions are manifest. The cultural history of a supposed unpeopled, untrammled “wilderness” is very much aligned with the establishment of national parks; these spaces were conceptualized as places where White men could escape the

confines of civilization, and there was rarely mention of racially marginalized populations in such spaces (Taylor, 2000).

Parks and conservation areas are often associated with whiteness. Historically, Indigenous displacement from spaces now understood as wilderness or national parks was justified through dispossession associated with settler colonialism (Poirier & Ostergren, 2002; Spence, 1999). Some of the people most closely associated with not only the establishment of national parks, but also larger movements for conservation and preservation, had decidedly White supremacist perspectives on race relations. For instance, there is the problematic racial and ethnic history in the writings of John Muir, famous for advocating for the establishment of national parks in the early 1900s (cf., Robbins & Moore, 2019). The Sierra Club stated that Muir's perspectives:

continue to hurt and alienate Indigenous people and people of color... [T]he reality that the wild places we love are also the ancestral homelands of Native peoples, forced off their lands in the decades or centuries before they became national parks. (Brune, 2020, July 22)

These histories subsequently influence how racially minoritized communities come to know and understand parks and wilderness areas (Roberts & Spears, 2020).

Contemporarily, wilderness and national parks are associated with whiteness due to issues of racial discrimination, racial cultural factors, geographic accessibility, and disproportionate visitation rates, among others (Scott & Lee, 2018; Taylor et al., 2011; Weber & Sultana, 2013). These histories of whiteness manifest today not only in who participates in national parks, but in who feels included in the cultures that are constructed and perpetuated. For many racially marginalized populations, the term "environment" is imagined as either "something distant, outside their purview, and largely White, or as something local, close to home, and reflecting their own experience" (Finney, 2014, p. 91); to be more inclusive, remote national parks and wilderness areas need to invoke stories of places that represent a wide array of social and cultural experiences. "Outdoor recreation spaces and activities are both historically and currently branded as White, and when Black people participate, they are often viewed as a novelty or threat by their White counterparts" (Powell, 2021, p. 2). Although wilderness is commonly constructed as White (DeLuca & Demo, 2001), experiences of marginalized racial and ethnic groups in wilderness landscapes are actually quite diverse, and often move beyond restrictions of racialized stereotypes, narratives, and expectations (Theriault & Mowatt, 2020).

Experiences in national parks are often perceived as being economically and racially exclusive, and are subsequently mechanisms for reproducing whiteness and excluding racially and/or ethnically marginalized populations, including African Americans, Latinos, indigenous peoples, and others. In an examination of Rocky Mountain National Park, both historical factors (e.g., life history, economic situation, racism, nature-based language, and destination-minded travel patterns) and cultural factors (e.g., visiting national parks being perceived as exclusive to "White culture") were found to limit African-American engagement with national parks (Erickson, Johnson, & Kivel, 2009). Among other factors serving as barriers to engagement with national parks, "White racial frames," which includes stereotypes, ideologies, and narratives, are culturally and legally encoded through "White middle- and upper-class ideas" about national parks (Scott & Lee, 2018, p. 77). Because of these concerns, "national parks

and forests can unintentionally become sites where African Americans experience insecurity, exclusion, and fear born out of historical precedent, collective memory, and contemporary concerns” (Finney, 2014, p. 28).

While many of these critiques operate at a level of individual or collective experiences in national parks, or ideas about national parks, there is also concern that the NPS itself maintains and perpetuates many of these racialized realities. For instance, the organizational culture of the NPS appears resistant to diversity-related changes (Santucci et al., 2014), despite direct calls to define the cultural histories of the NPS, particularly the often racially problematic luminary figures who were influential in outlining its founding ideals (Mowatt, 2020). The NPS is not alone in these trends concerning its implicitly racialized history. In a study of more than 12,000 U.S. environmental nonprofits, the representatively surveyed organizations displayed an embarrassingly low rate (3.7%) of racial, gender, or sexual orientation diversity in the makeup of their CEOs, boards of directors, and employees (Taylor et al., 2019). These agencies and organizations may (inadvertently) reproduce many of the racially imbued discourses and management strategies that have historically failed to support inclusive experiences in parks, public lands, and environmental conservation initiatives.

With these histories and contemporary critiques in mind, we consider the ways in which the NPS might develop a more racially just focus. More than a hundred years after the inception of the NPS, it is difficult to position these landscapes and their institutional management as being “neutral” on issues of race. At their inception, for whose visitation were the parks intended? For what class of people were the parks designed? What activities were encouraged and discouraged? These historical questions then beget contemporary inquiry. In what ways has the NPS acknowledged histories of exclusion, displacement, racism, and White supremacy? In what ways can the NPS support the integration of underrepresented communities into existing institutional structures, and how are the institutional structures themselves changing to incorporate these communities, their values, and their ideas about what national parks mean? In the sections that follow, we outline pertinent policy directing NPS management, followed by explorations of NPS units and specific practices that advance practices aligned with racial justice. Finally, we unpack some of the planning and management implications of these practices.

NPS Policy and Legislation

As part of the federal bureaucracy, the NPS is directed by legal mandates, many of which come from executive orders, presidential memoranda, and existing laws. Recently, federal agencies have included a number of justice, equity, diversity, and inclusion initiatives. A majority of the activities have focused on “pipeline activities,” providing fellowships, college education, internships, and job opportunities. Two major initiatives the NPS has undertaken to improve justice, equity, diversity, and inclusion (JEDI) have been paid internships and full time work (Taylor, 2014). Existing executive orders address environmental justice, diversity, and inclusion (Roberts & Spears, 2020), including the 2011 Executive Order 13585, Establishing a Coordinated Government-Wide Initiative to Promote Diversity and Inclusion in the Federal Workforce, and the 2017 presidential memorandum, Promoting Diversity and Inclusion in Our National Parks, National Forests, and Other Public Lands and Waters. Most recently, Executive Order 13985 revokes Executive Order 13950, which restricted diversity and inclusion training by federal agencies and contractors. Executive Order 13985 also

explicitly commits the federal government to advance “equity, civil rights, racial justice, and equal opportunity.” Specific plans also support NPS engagement. In 2011, the Government-Wide Diversity and Inclusion Strategic Plan was released, in addition to the subsequent Guidance for Agency-Specific Diversity and Inclusion Strategic Plans. These plans support the 2011 Executive Order 13583, Establishing a Coordinated Government-wide Initiative to Promote Diversity and Inclusion in the Federal Workforce. Effectiveness evaluations of these initiatives are uncertain, and could be instituted with the intent to update the initiatives based on the results.

Other NPS policy changes are initiated at the agency level. For instance, NPS Director’s Order #75A, Civic Engagement and Public Involvement, guides system-wide changes away from institutionalized racism through the use of policy and guidance language. This order calls on the NPS to take a more expansive and inclusive approach to civic and public engagement requirements. Policy requirements in this order state that the NPS will accommodate diverse values and dissenting opinions, and encourage continuing collaboration in our decision-making processes, and will take steps to ensure that “diverse publics” can share their views, values, and concerns.

Despite these advances, there is room for progress. Recent updates to Director’s Order #2, Park Planning, provide additional guidance on the park planning portfolio (collection of planning documents that guide park management and decision making and satisfies law and policy). This recent guidance, released in January 2021, does not address the needs and mechanism for a park’s planning portfolio (e.g., foundation document to site-specific resource and visitor use management plans) to move toward equitable and inclusive access. Subsequent guidance developed through Reference Manuals may fill this gap, but planning frameworks continue to fall short if they do not explicitly declare equitable and inclusive access as intended outcomes of park planning. NPS strategic planning helps establish parks’ direction through goals and priorities, and could (but does not systematically) encourage parks to interrogate how to make a unit and its programming welcoming and inclusive. Such orders could (but do not) state that planning should integrate JEDI with diverse groups and perspectives. Finally, support for racial justice also comes from non-profits advancing JEDI initiatives working to create more inclusive approaches to public lands and to ensure diverse representation in park visitors, workforce, management, interpretation, and public engagement. Some services or actions these organizations have taken include evaluating demographics of environmental organizations and producing and distributing reports; providing training, workshops, and presentations; and providing best practices, definitions of key terms, and links to relevant resources. Some services to advance diversity can be conducted internally or contracted, including climate and culture audits.

Tactics for Addressing Racial Justice Concerns

While the NPS exemplifies a centralized federal bureaucracy, many individual park units address racial justice concerns. Here, we highlight recent experiences of some park units who have chosen to confront racism, settler colonialism, and ethnic-racial erasure, focusing on place names and acknowledging histories of exclusion and privileging dominant narratives. These park units were not chosen as a result of a comprehensive search for park unit responses, rather through the knowledge and experience of the authors.

NPS units have made changes that acknowledge the importance of language and the inclusion of non-dominant narratives. “Denali,” from “Deenaalee,” a toponym originating from the Koyukon language, officially replaced “Mt. McKinley” as the name of the highest peak in Denali National Park and Preserve. This change was made, in part, because of the park’s ongoing relationships with surrounding Native groups. As far back as 1930, Sheldon (2000) acknowledged the importance of Indigenous place names:

[Those] who have lived for countless generations in the presence of these colossal mountains have given them names that are both euphonious and appropriate... Can it be denied that the names they gave to the most imposing features of their country should be preserved? Can it be too late to make an exception to current geographic rules and restore these beautiful names—names so expressive of the mountains themselves, and so symbolic of [those] who bestowed them?” (p. 389)

Acknowledging that park management decisions are not neutral—that they often silently favor a particular worldview over others—can begin with language. Other national parks might reconsider whether Indigenous names might be more appropriate, acknowledging previous inhabitants’ presence and/or ongoing relationship in the area. Place-based names have meaning and can elevate particular histories of a place. Parks could choose to move away from colonial practices of deriving names from colonizers or European migrants, restoring Indigenous names to pay homage to the features or attributes of a place, as well as the Indigenous communities who call(ed) that place home. Allowing potentially inaccurate names to persist could discourage future generations from feeling connected to these places.

Some NPS units acknowledge histories of exclusion and White supremacy. In March 2019, World War II Valor in the Pacific National Monument was redesignated, part of which became Tule Lake National Monument. This newly created NPS unit tells stories of the unjust incarceration of U.S. citizens and residents of Japanese ancestry, as well as the Civilian Conservation Corp members and Prisoners of War who were incarcerated at Camp Tulelake, acknowledging the Japanese Americans who were forcibly removed across the U.S. west coast. At Wind Cave National Park in South Dakota, the Lakota origin story of the cave is interpreted prominently alongside scientific understandings of its geology. The park website includes information about the Associated Tribes of Wind Cave National Park, with links to the tribes’ websites, stating, “The Black Hills area holds deep significance to many indigenous nations,” linking to the Lakota Emergence Story. Tule Lake and Wind Cave provide examples of how NPS units can be inclusive of historically dominant narratives in their interpretation.

John Muir National Historic Site (NHS) preserves and protects the home and portions of the Alhambra Valley agricultural estate where John Muir and his family lived and worked. In 2015, staff from the park and planners from the NPS regional office drafted a Foundation Document for the site, identifying the site’s purpose, significance, fundamental resources and values, and interpretive themes. The document for John Muir NHS asserted that the site “is uniquely positioned to explore how societal biases were woven into the [National Park] system from its very origins in Muir’s time and why they continue today.” The document further articulated a fundamental value of the park as understanding how “...Muir belonged to an exclusive echelon of society that

benefited from the same social divisions and inequities that have historically shaped the development of the National Park Service...” The document also defined an Interpretive Theme emphasizing how:

Inequities of race, class, gender, and ethnicity from Muir’s time influenced the composition of the modern conservation movement as well as the development of the national park system; understanding this history and its ramifications is critical in helping the National Park Service to chart a just and egalitarian direction for the future. (NPS, 2015a)

The park recognized the unique role the site can play in advancing conversations on race, privilege, and U.S. conservation movements. Having this clearly articulated and identified in its Foundation Document compelled staff to actively engage in dialogue with the Sierra Club and others in July 2020. Park staff are now working with staff at Yosemite National Park and Muir Woods National Monument about how these historical legacies can be examined within parks, with Indigenous groups, and with the public; dialogues with outside organizations are planned in the future.

Planning and Management Implications

Planning and management are essential as processes that can elevate underrepresented or marginalized racial groups in park visitation, participation, management, and leadership. Visitor use management planning is a growing need in the NPS, but it falls to the agency to ensure that this planning is conducted in ways that result in more inclusivity, rather than in ways that perpetuate exclusive practices of the agency’s legacy. In this section, we evaluate various dimensions of the NPS planning process and their potential implications for racial justice: representation and engagement during decision-making, civic engagement, development of desired conditions, monitoring, visitor capacity, the roles of social science, and displacement.

Law, policy, and legislation related to the establishment of an NPS unit, and an evaluation of previous planning and management decisions, can provide insights into decision-making processes. Planners and managers might also evaluate General Management Plans and whether they reflect inclusive and equitable voices, to see if underrepresented voices engaged in special resource studies. In compliance with Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Population), park planners must ensure their actions do not have disproportionately high and adverse human health or environmental effects on marginalized and low-income populations. They must evaluate impacts of proposals on marginalized and low-income populations and communities, as well as the equitable distribution of the benefits and risks of decisions. Evaluating contributors lists helps understand participants, determining who was present or absent during key decision-making discussions. Further, planners and managers should ask key questions: From reviews of public comments and public comment strategies, was engagement representative, and when did it take place? Do demographics of the surrounding area look similar to 20, 30, or 50 years ago when a general management plan was likely written? Have NPS personnel, affiliated community groups, or scholarship provided more about the reason this park was established or other pieces of the cultural or political story that may affect the general management direction for this place? What would planning audits uncover about previous decisions and the effect on present-day man-

agement? A JEDI audit could highlight disparities or inequities in legislation, outreach, interpretation, and hiring practices, including the description of job duties or even job titles. Planners can ensure more inclusivity by conducting critical analyses of law, policy, legislation, and prior planning and guidance as foundations for equitable planning processes.

The NPS should engage with the public early, often, throughout, and after planning processes, aiming to be inclusive. Engagement should occur outside of the requirements of the National Environmental Policy Act of 1969 (NEPA), which prioritizes procedural requirements over relational realities. NEPA processes should be efficient and timely, but should also be authentically inclusive, engaging, and represent good professional decision making that aligns with a shared vision for the area. “Planning” and “NEPA” often have been synonyms for both professionals and the public, and NEPA requirements have been the primary motivator of community engagement. As noted in the NPS (2015b) NEPA Handbook, “If minority or low-income populations exist that could be affected by a proposed action, be sure to use suitable media, such as local newspapers and radio programs, to provide notification about the proposed action and the scoping process” (p. 46). These traditional outlets to advertise engagement efforts are losing their reach; outdated prohibitions, systems, and narrow interpretations of laws and systems have hampered the agency’s ability to connect with underrepresented individuals and communities. Planners can ensure that community engagement is an ongoing, iterative process that incorporates NEPA requirements, but also occurs outside of them.

NEPA processes have opportunities for systematic exclusion and subjective biases to flourish. Common impact topics for NPS sites provide places where decision makers might exclude use types differing from those traditionally associated with middle- and upper-class White males and their nuclear families. Contrarily, access to NPS units is not homogenous, even within groups. Where, then, can NPS planners engage in civic engagement opportunities that explicitly identify equitable, diverse, and inclusive access? How, when engaging experts on these topics, might we compensate for their time and perspectives? The NPS could transition to a model where the public from low-income and underrepresented communities are compensated for engagement. Compensation could be paired with training to facilitate engagement in often complex planning and compliance processes, supplemented with essential logistical support, such as food, accessible transportation, and child care. Planners can form lasting relationships that focus on what the NPS can provide when asking for public comments during public engagement efforts. Reciprocity can be difficult if underrepresented communities struggle to see the value or have little interest in shaping the future of a site which does not tell a story communities can relate to, where they are less than fully represented, or where they have been discouraged from visiting in the past. Engaging with tribal partners should be thorough and thoughtful and go beyond basic legal requirements. Acknowledgement of inappropriate land acquisition and regular consultation with tribes contributes to a shared vision for NPS and community landscapes. The NPS and planners could also identify opportunities to serve as an ally in assisting tribes to gain federal recognition. Planners can help ensure systematic inclusion throughout public engagement by incorporating these considerations in the development of communication strategies from the phases of engagement to the messages and tools used to ensure representation in the process.

During most planning processes, there is an evaluation of current use and consideration toward future use. The word “appropriate” is used, with varying definitions and interpretations. For the NPS, “appropriate” can be problematic due to the subjective and biased interpretations of activities and services for whom and in what locations. The enabling legislation for the NPS unit is one of multiple criteria that are considered when determining if a type of activity, opportunity, or service is appropriate. NPS managers and planners need to provide opportunities that consider social and environmental justice factors and changing preferences, motivations, and values. Planners and managers can seek to understand, identify, and be clear about biases that can support the evaluation of a service, opportunity, or facility to clarify if it is suitable for an area and for a diverse and inclusive range of visitors and visitor preferences, values and beliefs.

Visitor use management planning relies on an indicators-and-thresholds approach to monitoring desired conditions and to track changes in resource and experiential conditions over time (cf., IVUMC, 2019). When evaluating existing desired conditions, or articulating new desired conditions, there are opportunities to engage with diverse audiences to create shared visions. Feedback from community partners indicates that when it merely follows public engagement requirements (e.g., as required by NEPA), such processes may be insufficient. There are opportunities to collaboratively articulate shared visions which can be integrated into desired conditions. Further, the establishment of “partnership parks” provides new opportunities for collaborative management. Planners can seek to understand area demographics, motivations, preferences, and values could further support diverse perspectives and preferences represented in “minimally acceptable conditions” in identifying indicators and thresholds. Ensuring that monitoring reflects diverse user groups is imperative during visitor use management planning.

Visitor use management planning addresses the requirements of the National Parks and Recreation Act of 1978, which mandates that the NPS complete management plans that include “identification of and implementation commitments for visitor capacities for all areas of the System unit” (54 U.S.C. 100502). Visitor capacity should incorporate the perspectives of the visiting and not-yet visiting public, seeking a diversity of perspectives that support social and environmental justice. These processes are particularly relevant when identifying management strategies and actions to implement visitor capacity that may have multiple impacts, perhaps unintentionally giving preferences to certain recreation groups (cf., IVUMC, 2019). A balance must also be struck between the visiting public and surrounding park neighbors when developing visitor capacity and other management elements. Communities surrounding NPS units may exert disproportionate influence on park planning processes, and may lack the perspective of underrepresented groups. Maintaining positive relationships and partnerships with gateway and neighboring communities is integral to successful unit management, but cannot come at the price of exclusionary management practices. Planners can incorporate diverse perspectives into visitor capacity guidelines supporting equitable access and avoiding unintentional preferential access to certain user groups or publics.

Social science provides informed and legally defensible decision making for managing visitor use (Cahill et al., 2018). Diversity and inclusion are equally as important when selecting research and review teams. In order to encourage access, improve experiences, and protect resources, park planners must understand a diversity of perspectives. Park visitors have a wide array of interests and needs, interests in new types of

recreation activities, evolving expectations about the type and variety of visitor services provided in parks, and higher demand for quality services coupled with an increasing reliance on information technology (Cahill et al., 2018). Planners and social scientists can seek to work with more diverse and inclusive research teams, new universities and academics, and research teams using innovative methods that reach historically under-represented populations.

Lastly, displacement is typically considered to be an unintended effect of management strategies or actions (Manning, 2007). It is necessary to consider visitor displacement from an inclusion/exclusion perspective, where inequities among user groups can also contribute to positive and negative effects on visitor experience from displacement. Where research often examines displacement through the lens of crowding, the construct of crowding itself is a socially normative, dominant culture construct (Manning et al., 2000). Depending on sociocultural norms, some visitors may be attracted to areas that others perceive as “crowded” experiences. Some visitors might feel safer in crowds or enjoy the social aspects of being around a higher number of people. Planners can consider the unintended effects of management strategies or actions, such as (and not limited to) displacement, to include an evaluation of between user group inequities.

Bringing a Racial Justice Lens to Planning Work

Formal park planning processes and federal guidance may provide direction on equity. However, those structural tools rarely speak to all park planners, managers, or decision-making processes. A set of guiding principles and practices can provide a framework to build a consistent, responsive, and inclusive approach to planning and decision-making. The following guiding principles were developed by a diverse group of NPS employees who were asked to identify how the agency should build an inclusive commemoration of the 250th anniversary of the signing of the Declaration of Independence; the employees note that they developed principles that could guide all NPS management. When NPS planning or management questions arise, the following non-hierarchical, equity-based guiding principles and practices, derived from ongoing engagement with literature, trainings, and observed best practices within the NPS and beyond, provide direction for critical engagement:

- Indigenous relationships: Have we engaged our affiliated tribes? How are our relationships with our tribal partners?
- Access and accessibility: Does this decision include traditionally disenfranchised communities? Is there anything about this effort that is not fully accessible?
- Telling complete histories: Are we excluding or discounting the full complexity of the history of place?
- Relevance: Can people freely express their connection to this place? Have we built the foundations for this through our programs and operations?
- Employee and visitor well-being: Are employees equipped with support and skills needed to safely perform their job? Are employees able to and encouraged to bring the entirety of their selves to work, without necessarily conforming to a dominant culture? Have we established programs and practices that recognize the physical safety and psychological well-being of each person who engages with NPS?

- Diversity and inclusion: Does this decision increase the wellbeing and diversity of our workforce? Of our visitors? Does this decision help identify and overcome obstacles that have kept us from fully representing the citizenry of the nation?
- Accountability: To whom are we holding ourselves accountable by making these choices?

Discussion

The purpose of this paper was to document specific NPS and U.S. government policies and practices that either influence or have the potential to influence increased racial justice within the NPS. As the NPS is often considered as indicative of U.S. conservation, environmentalism, or some larger cultural identity, even subtle transitions can create substantial change toward justice. In this section, we identify both some of the larger themes from these findings, and integrate these perspectives with both existing literature and point to new directions for future national park management, community engagement, and research.

A wide range of critical historical and contemporary literature suggests that the U.S. and the NPS, broadly, have a cruel history of Indigenous displacement and both overt and covert racism (Burnham, 2000; DeLuca & Demo, 2001; Erickson et al., 2009; Finney, 2014; Floyd, 1999; O'Brien & Njambi, 2012; Poirier & Ostergren, 2002; Roberts & Spears, 2020; Scott & Lee, 2018; Spence, 1999; Theriault & Mowatt, 2020). These cultural and institutional legacies still reverberate through NPS management and through the very landscapes themselves. Some may see outdoor recreation, environmental engagement, or even conservation in general, as domains where politics might be left behind as we escape from heavy thoughts or divisive ideas, and head out for a hike or climb or a paddle or other leisure-based contemplative experience (Sax, 1980). However, such apolitical leisure experiences and/or leisure landscapes likely do not exist (Rose et al., 2018).

National parks, like so many cultural landscapes in the U.S., are infused with racial relations, with unpleasant histories and contemporary experiences that are defined by both subtle instances of marginalization and explicit episodes of material violence. It is incumbent to ask why the NPS has not been attuned to these injustices previously. In reality, the NPS and specific national park units have been aware, although partially, incompletely, and often inadequately. National park visitors, and often national park employees, are still predominantly White, comparably affluent, and seemingly prone to mythologizing national park landscapes and being intently reverential toward their place in U.S. culture. We, as researchers, employees, teachers, planners, and managers, are not immune and are embedded in the cultural romanticization of national parks and what they mean to us individually and collectively. We would also like to think that national parks are open, available, and accessible to anyone who wants to visit them, regardless of race, gender, class, ability, sexuality, or really any other social marker.

However, research on the inclusivity of national parks shows decidedly mixed results (i.e., Krymkowski et al., 2014; Santucci et al., 2014; Weber & Sultana, 2013; Xiao et al., 2018). National parks themselves, as well as the people who visit them, may not be as inclusive as many of us wish to imagine. However, a critical perspective that both seeks the democratized openness of public lands and also sees politicized racial and ethnic relations throughout U.S. society may unfortunately fold in on itself; a fully inclusive national park system will necessarily include some elements that reflect historical and contemporary racism. It is imperative that managers, researchers, and others

come to terms with the systemically racialized aspects of national park management, acknowledge these significant shortcomings, and work to build a more inclusive and democratically organized national park movement, one that neither escapes nor implicitly celebrates its own complicity with its racialized past and present. Under these auspices we ask what it is that the NPS could and should be doing to support racial justice moving forward.

Looking Ahead: Building a More Equitable and Inclusive NPS

The NPS can serve a number of roles: leader, platform, and elevator of voices, stories, and places from and for individual NPS units. The NPS is uniquely positioned to promote a variety of critical, non-dominant narratives. For instance, in 2013, the NPS created its own Office of Relevancy, Diversity, and Inclusion (RDI). However, the office has been understaffed, and may not have the institutional mandate (and subsequently, the funding) to fully support its own initiatives. RDI and JEDI initiatives are promising ideas, yet they risk being meaningless if organizations who establish these endeavors simply claim them as a verbal priority, but do not commit the structural resources necessary for success. With greater support and institutional authority, RDI could better elevate JEDI initiatives and culture throughout the NPS. Employee Resource Groups in the NPS currently support networking and employee engagement, and advance policies within the agency related to a range of topics to address inequities in the workforce. In the future, there are opportunities for dedicated positions that are focused on succession planning, to strategically increase representation within the NPS.

The examples presented in this paper were selected from the authors' knowledge and professional experience. Park staff contacted as part of this paper stated they did not want to serve as an exemplar, but rather in the process of auditing their programs, practices, and planning to advance racial justice. As the NPS seeks to move forward and include a variety of critical, non-dominant narratives, it is imperative to understand the work that is being done already by many units across the agency. To achieve this need, the NPS can conduct comprehensive and systematic agency-wide analyses of park unit responses to incorporating racial justice into planning and management.

Policy, where necessary, needs to be updated. "Systemic cultural change can only happen when people are willing to acknowledge the challenges, take individual responsibility for them, and hold others accountable" (Roberts & Spears, 2020, p. 185). In the 2021 Executive Order 13985, section 5 requires conducting equity assessments in federal agencies within 200 days and provide a report including "whether new policies, regulations, or guidance documents may be necessary to advance equity in agency actions and programs." While numerous executive orders, presidential memoranda, and director's orders advance change, existing policy, legislation, and other regulations need to be evaluated to explicitly address whether they advance equity. As noted above, federal guidance and acknowledgement on the importance of integrating JEDI perspectives and initiatives is helpful; however, there can be a lag between this guidance and actual incorporation into existing operations and processes (such as planning, training, hiring, and retention).

In this essay, we have tried to carefully only speak from our own perspectives, critically considering how whiteness (and colonialism) influence the institutionalized management of one federal land management agency's path to assess its own values. Our goal was to challenge policy makers to integrate contemporary movements for racial justice into how we frame and manage U.S. national parks. However, much of this work is built on the backs of scholars and activists who are racially and/or eth-

nically marginalized. While we approach these conversations with racial (and other) privilege, there is substantial research and activism from marginalized communities that point the NPS in promising directions. For instance, recent research shows that for many communities of color in outdoor recreation areas, organized groups provide key avenues for participation, and safety and appropriate information are primary concerns for potential participants (Derrien et al., 2020). Many communities are taking these steps without the support of institutions leading the way. Considering racialized violence in the outdoors, Graham, (2020, September 21) notes that individual outdoor users are claiming space and voice in this conversation: “We’re no longer waiting for outdoor companies to fi d the budget for diversity, equity, and inclusion initiatives. With the creation of a hashtag, a social media movement, suddenly we are hypervisible, proud, and unyielding.” National park units and other protected area managers should assertively seek out, learn from, and collaborate with these grassroots initiatives, as movements toward racial (and environmental) justice are often place-based, and require engagement and action across a variety of political and geographic scales (Perkins, 2021).

Conclusion

The NPS has an opportunity to consider how whiteness influences its management, and to address past concerns about its engagement with marginalized communities. Our research presented a critical approach, and identified that policy and legislation, planning and management processes, accurately acknowledging history, acknowledging histories of exclusion, appropriately using place-based language, and other applied tactics are institutional steps in confronting racism, colonialism, and systemic oppression. By taking these multifaceted approaches, the dominance of whiteness is confronted, destabilized, and diminished. Ongoing efforts will continue to be needed as environmental conservation agencies, operating at a variety of spatial and political scales, challenge the ways that race—in addition to other domains of social hierarchy—historically and contemporarily intersects with efforts toward sustainability.

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References

- Arai, S., & Kivel, D. (2009). Critical race theory and social justice perspectives on whiteness, difference(s), and (anti)racism: A fourth wave of race research in leisure studies. *Journal of Leisure Research*, 41(4), 459–470.
- Bergerson, A. (2003). Critical race theory and white racism: Is there room for white scholars in fi hting racism in education? *International Journal of Qualitative Studies in Education*, 16(1), 51–63.
- Brune, M. (2020, July 22). *Pulling down our monuments*. The Sierra Club. <https://www.sierraclub.org/michael-brune/2020/07/john-muir-early-history-sierra-club>.

- Burnham, P. (2000). *Indian country, God's country: Native Americans and the national parks*. Island Press.
- Cahill, K., Collins R., McPartland, S., Pitt, A., & Verbos, R. (2018). Overview of the Interagency Visitor Use Management Framework and the uses of social science in its implementation in the National Park Service. *George Wright Society*, 35(1), 32–41.
- DeLuca, K., & Demo, A. (2001). Imagining nature and erasing class and race: Carlton Watkins, John Muir, and the construction of wilderness. *Environmental History*, 6(4), 541–560.
- Derrien, M., Cerveny, L., Baker, T., & Tripp, A. (2020). *Diversity, equity, and inclusion in public land recreation: Learning about desired settings, activities, and barriers to access*. Presentation at the International Symposium on Society and Resource Management Virtual Conference.
- Dustin, D., McDonald, C., Wright, B., Harper, J., Lamke, G., & Murphy, J. (2021, online first). An ounce of prevention. *Journal of Park and Recreation Administration*.
- Erickson, B., Johnson, C., & Kivel, D. (2009). Rocky Mountain National Park: History and culture as factors in African-American park visitation. *Journal of Leisure Research*, 41(4), 529–545.
- Finney, C. (2014). *Black faces, white spaces: Reimagining the relationship of African Americans to the great outdoors*. University of North Carolina Press.
- Floyd, M. (1999). Race, ethnicity and use of the National Park System. *Social Science Research Review*, 1(2), 1–24.
- Glacken, C. (1967). *Traces on the Rhodian Shore: Nature and culture in Western thought from ancient times to the end of the eighteenth century*. University of California Press.
- Graham, L. (2020, September 21). Out there, nobody can hear you scream. *Outside Magazine*. <https://www.outsideonline.com/2416929/out-there-nobody-can-hear-you-scream>
- IVUMC (Interagency Visitor Use Management Council). (2019). *Monitoring guidebook: Evaluating effectiveness of visitor use management*. <https://visitorusemanagement.nps.gov/VUM/Framework>.
- Jones, C., Shipley, N., & Ul-Hasan, S. (2017). Bringing parks back to the people: Revisiting the dual mandate and core values of the National Park Service. *The George Wright Forum*, 34(1), 45–52.
- Krymkowski, D., Manning, R., & Valliere, W. (2014). Race, ethnicity, and visitation to national parks in the United States: Tests of the marginality, discrimination, and subculture hypotheses with national-level survey data. *Journal of Outdoor Recreation and Tourism*, 7-8, 35–43.
- Manning, R. (2007). *Parks and carrying capacity: Commons without tragedy*. Island Press.
- Manning, R., Valliere, W., Minter, B., Wang, B., & Jacobi, C. (2000). Crowding in parks and outdoor recreation: A theoretical, empirical, and managerial analysis. *Journal of Park and Recreation Administration*, 18(4), 57–72.
- Mowatt, R. (2009). Notes from a leisure son: Expanding an understanding of whiteness in leisure. *Journal of Leisure Research*, 41(4), 511–528.
- Mowatt, R. (2020). A people's history of leisure studies: The great race and the national parks and U.S. forests. *Journal of Park and Recreation Administration*, 38(3), 152–172.

- Mowatt, R. (2021, online first). Revised notes from a leisure son: Expanding an understanding of white supremacy in leisure. *Annals of Leisure Research*.
- NOAA. (2021, January 14). *2020 was Earth's 2nd-hottest year, just behind 2016*. National Oceanic and Atmospheric Administration. <https://www.noaa.gov/news/2020-was-earth-s-2nd-hottest-year-just-behind-2016>.
- NPS. (2015a). *John Muir National Historic Site Foundation Document Overview*. <https://www.nps.gov/jomu/getinvolved/upload/John-Muir-NHS-Foundation-Document-Overview.pdf>
- NPS. (2015b). *National Park Service NEPA Handbook*. https://www.nps.gov/subjects/nepa/upload/NPS_NEPAHandbook_Final_508.pdf
- O'Brien, W., & Njambi, W. N. (2012). Marginal voices in "wild" America: Race, ethnicity, gender and "nature" in The National Parks. *Journal of American Culture*, 35(1), 15–25.
- Outka, P. (2008). *Race and nature: From transcendentalism to the Harlem Renaissance*. Palgrave.
- Perkins, T. (2021, online first). The multiple people of color origins of the U.S. environmental justice movement: Social movement spillover and regional racial projects in California. *Environmental Sociology*.
- Poirier, R., & Ostergren, D. (2002). Evicting people from nature: Indigenous land rights and national parks in Australia, Russia, and the United States. *Natural Resources Journal*, 42(2), 331–351.
- Powell, R. A. (2021, online first). Who is responsible for normalizing black bodies in white spaces? *Journal of Park and Recreation Administration*.
- Robbins, P., & Moore, S. (2019). Return of the repressed: Native presence and American memory in John Muir's Boyhood and Youth. *Annals of the American Association of Geographers*, 109(6), 1748–1757.
- Roberson, Q. (2020). Access to justice as a human right, organizational entitlement and precursor to diversity and inclusion. *Equality, Diversity and Inclusion*, 39(7), 787–791.
- Roberts, N., & Spears, A. (2020). Connecting the dots: Why does what and who came before us matter? *Parks Stewardship Forum*, 36(2), 173–187.
- Rose, J., Harmon, J., & Dunlap, R. (2018). Becoming political: An expanding role for critical leisure studies. *Leisure Sciences*, 40(7), 649–662.
- Rose, J., & Paisley, K. (2012). White privilege in experiential education: A critical reflection. *Leisure Sciences*, 34(2), 136–154.
- Santucci, D., Floyd, M., Bocarro, J., & Henderson, K. (2014). Visitor services staff perceptions of strategies to encourage diversity at two urban national parks. *Journal of Park and Recreation Administration*, 32(3), 15–28.
- Sax, J. (1980). *Mountains without handrails: Reflections on the national parks*. University of Michigan Press.
- Scott, D., & Lee, K. (2018). People of color and their constraints to national parks visitation. *The George Wright Forum*, 35(1), 73–82.
- Sheldon, C. (2000). *The wilderness of Denali*. Derrydale Press.
- Sobo, E. J., Lambert, H., & Heath, C. (2020). More than a teachable moment: Black lives matter. *Anthropology and Medicine*, 27(3), 243–248.
- Spence, M. (1999). *Dispossessing the wilderness: Indian removal and the making of the national parks*. Oxford University Press.

- Taylor, D. (2000). Meeting challenges of wild land recreation management: Demographic shifts and social inequality. *Journal of Leisure Research*, 32(1), 171–179.
- Taylor, D. (2014). *The state of diversity in environmental organizations*. FullReport_Green2.0_FINALReducedSize.pdf.
- Taylor, D., Paul, S., & McCoy, E. (2019). Diversity, equity, and inclusion and the salience of publicly disclosing demographic data in American environmental nonprofits. *Sustainability*, 11(19), 5491.
- Taylor, P., Grandjean, B., & Gramann, J. (2011). *National Park Service comprehensive survey of the American public, 2008-2009: Racial and ethnic diversity of National Park System visitors and non-visitors*. U.S. Department of the Interior National Park Service.
- Theriault, D., & Mowatt, R. (2020). Both sides now: Transgression and oppression in African Americans' historical relationships with nature. *Leisure Sciences*, 42(1), 15–31.
- Weber, J., & Sultana, S. (2013). Why do so few minority people visit national parks? Visitation and the accessibility of “America’s best idea.” *Annals of the Association of American Geographers*, 103(3), 437–464.
- White, L. (1967). The historical roots of our ecologic crisis. *Science*, 155, 1203–1207.
- Xiao, X., Manning, R., Perry, E., & Valliere, W. (2018). Public awareness of and visitation to national parks by racial/ethnic minorities. *Society & Natural Resources*, 31(8), 908–924.

Research Paper

Developing a Capacity-Building, Operational Model of a Sustainable Recreation Program

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Executive Summary

Integrating sustainability concepts, tools, and best practices across the outdoor recreation and park profession has gained momentum over the past three decades. However, missing from the professional and scientific literature have been action-oriented and evaluative research focused on “how” sustainability is being operationalized in the field. Through a qualitative research design focused on the 11 national forests of the Southwestern Region of the USDA Forest Service, we developed an operational model for how sustainable recreation is being implemented at the Forest level through the Sustainable Recreation Strategy. Data collection included document analysis, stakeholder interviews, and personal observation. Document analysis included a content analysis methodology of 11 forest-level sustainable recreation action plans, the principal planning process used to implement the vision and goals set forth by the Regional Sustainable Recreation Strategy. Evidence from the study was used to develop a grounded operational model with three foundational areas of Program, Agency, and Community. Foundational areas were further elaborated into component areas—Program into workforce, communications, outdoor recreation management, financial management, and information management systems—Agency into leadership support, administrative support, and integrated resource management—and Community into partnerships, volunteer program, and conservation education. Operational models such as this can help recreation managers, agency leaders, and policymakers adjust systems, structures, and roles to build program capacity and accelerate program transition towards sustainability. Using this operational model, recreation managers can “diagnose” the strengths and weaknesses of their recreation program and identify areas that need improvement. The model can also serve as a benchmark for program evaluation as well as promote peer learning between unit-level recreation programs. This operational model also gives recreation program managers a concrete mechanism to communicate program and capacity needs with agency leaders and line officers that are less familiar with the terminology and best practices of the recreation profession.

Keywords

Sustainable recreation, operational model, sustainability, Forest Service, implementation, capacity building

Introduction

Integrating sustainability concepts, tools, and best practices across the outdoor recreation and park profession has gained momentum over the past three decades (Manning et al., 2011; McCool & Moisey, 2001; Selin, 2017). This is also true in the forest recreation area where the concept of “sustainable recreation” has gained prominence as an integrative framework (Selin, 2017). For example, for the past 10 years, the Forest Service has worked to operationalize their Framework for Sustainable Recreation (USDA Forest Service, 2010) which emphasizes “reconnecting” the American public with their national forests and inspiring citizen responsibility to take care of it. However, missing from the professional and scientific literature have been action-oriented and evaluative research focused on “how” sustainable recreation is being operationalized in the field. Knight et al. describe an “implementation crisis” within the conservation field and the need for more studies that translate sustainable science theory and indicators into “on the ground” change (Knight et al., 2006). Through a grounded, qualitative research design focused on the 11 national forests of the Southwestern Region of the USDA Forest Service, we developed an operational and capacity-building model for how sustainable recreation is being implemented at the forest level. While this study focused on sustainable recreation, study results have implications for how other conservation and social service disciplines and professions are integrating sustainability practices in their planning and management systems.

Sustainable Recreation and the Forest Service

Sustainable recreation has emerged as an integrative concern for parks and recreation agencies striving to balance managing for quality recreation experiences or opportunities with protecting ecological and cultural resources (Selin, 2017). This is certainly true in the Forest Service, where their national-level Framework for Sustainable Recreation was adopted in 2010 (USDA Forest Service, 2010). The Framework communicated the broad challenges and opportunities facing the Forest Service’s managed recreation program, a vision and guiding principles, and goals and focus areas for the managed recreation program. While not exhaustive, these focus areas include typical sustainability programs such as: restoring and adapting recreation settings, implementing “green” operations, forging strategic partnerships, promoting citizen stewardship, developing a stable financial foundation, and developing their recreation workforce. Over the past seven years, the National Office has developed an implementation guide that provides guidance, tools, and lessons learned to Forest Service regions and individual national forests to apply. Over the past five years, Forest Service regions have now developed their own sustainable recreation strategies tiered to the national Framework for Sustainable Recreation and individual forests have been implementing their own sustainable recreation action plans.

This research study took place on the 11 national forests of the Southwestern Region of the USDA Forest Service (see Figure 1), with six national forests located in Arizona and five national forests located in New Mexico.

Regional headquarters of the Southwestern Region is located in Albuquerque, New Mexico. In 2014, the Region adopted a Sustainable Recreation Strategy (USDA Forest Service, 2014) which has the stated goal to, “achieve a sustainable recreation program, essential to advancing the mission of the Forest Service, with a diverse and engaged public that enjoys and actively cares for the national forests of the Southwest (p. 2).”

Figure 1
The Southwestern Region of the National Forest System

National Forests and Grasslands



The Sustainable Recreation Strategy identified a set of critical success factors necessary to achieve the Strategy's stated goal. Central to these success factors were the development and implementation of action plans by each of the 11 national forests as well as leadership support from the regional office so that financial allocations, performance measures, and workforce assignments were aligned with the goals of the Sustainable Recreation Strategy. To catalyze the development of the forest-level action plans, a series of workshops were led by the Southwestern Region recreation staff for recreation staff of the 11 national forests during 2014 and 2015.

Capacity Building

The concept of capacity building lies at the heart of professional and scholarly deliberation about sustainability and recreation (Crisp et al., 2000; Wing, 2004). Wing defines capacity-building simply as, "increasing the ability of an organization or program to fulfill its mission" (Wing, 2004, p. 155). Within the context of sustainable development, the literature on capacity building focuses especially on the developmental needs of at risk or marginalized sectors or populations—developing countries, AIDS programs, health concerns in rural communities, and nonprofit organizations (Potter & Brough, 2004). This focus on marginalized sectors fits well with applying capacity-building concepts and best practices to the topic of developing sustainable recreation on the national forest system in the United States. The purpose of national and regional development programs like the Framework for Sustainable Recreation and the Sustainable Recreation Strategy has been to expressly strengthen the capacity of the managed recreation program within the Forest Service (Selin 2017)—a program that has been underfunded and underutilized compared to other Forest Service programs like timber harvesting and ecological restoration programs.

Several authors have developed approaches or frameworks to describe the implementation of capacity-building programs relevant to sustainable recreation (Crisp et al., 2000; Potter & Brough, 2004). Crisp et al. (2000) describes four approaches to building capacity: bottom-up organizational approach, top-down organizational approach, partnerships, and a community organizing approach. In a similar vein, Potter and Brough (2004) outlined a four-tier hierarchy of capacity-building needs: structures, systems, and roles; staff and facilities; skills; and tools. Again, these capacity-building approaches are relevant to the challenge of operationalizing sustainable rec-

recreation within the Forest Service. Both the Framework for Sustainable Recreation and the Sustainable Recreation Strategy contain elements of these approaches but would become more effective by fully operationalizing them.

Operational Models

Operational models are used across societal sectors—civil, business, engineering, software—to create a visual depiction of how some process should operate on-the-ground or at a field level (De Vries et al., 2011; Margules & Pressey, 2000). Within the conservation field, Knight et al. (2006) has written a seminal literature synthesis on the efficacy of operational models. The authors describe an operational model as a simplified conceptualization of how a conservation planning process functions and is implemented. An operational model should not just generate information but should aim to deliver on-the-ground conservation action and promote adaptive planning and management responses.

Several authors describe a conservation planning field mired in what they term as an “implementation crisis” as planners and scholars develop ever more sophisticated conservation assessment tools and principles while the application of these tools to practical conservation management settings goes unreported (Margules & Pressey, 2000; Sanderson et al., 2003; Whitten et al., 2001). Therefore, the value of developing and testing operational models in the crucible of day-to-day conservation and recreation management is that the model can inform professional action and collaborative learning at multiple scales.

While many planning frameworks have been developed to support sustainable recreation planning and management (McCool et al., 2007), few have been institutionally adopted due to perceived complexity and lack of relevance to “real-world settings.” Needed are frameworks and operational models that are developed collaboratively between managers and scientists and then tested and refined in the messy, political world of recreation resource management.

Therefore, the objective of this research study was to build a grounded, capacity-building model of how the 11 national forests of the Southwestern Region of the USDA Forest Service are operationalizing sustainable recreation at a forest level. To develop a functioning operational model, the following phases of model development first articulated by Knight et al. (2006) will be followed:

- Phase 1-Identify Operational Model Goals
- Phase 2-Identify Operational Model Foundations
- Phase 3-Identify Operational Model Components
- Phase 4-Synthesize Comprehensive Operational Model

These phases of model development are further articulated and developed in the methods and results sections.

Methods

This research utilized an embedded case study research design (Dredge et al., 2013) to develop an operational and capacity-building model of a sustainable recreation program. The researchers were familiar with the implementation of the Sustainable Recreation Strategy having served in supervisory or advisory roles in the implementation of the Strategy over a five-year period. Dredge et al. (2013) note the strengths of this

embedded research design, “Reflexive engagement in wicked problems closes the gap between research and practice, increasing the potential for knowledge sharing,” p. 31).

This case study research used a multiple-methods approach to address the research objectives. Data collection methods included document analysis and stakeholder interviews. Document analysis included a directed qualitative content analysis methodology (Hsiu-Fang & Shannon, 2005) of 11 forest-level sustainable recreation action plans, the principal planning process used by the 11 national forests to implement the vision and goals set forth by the Sustainable Recreation Strategy. Directed content analysis is used when the goal of data analysis is to validate or conceptually apply a theoretical framework or theory. In this case, the researchers hoped to apply the operational model developed by Knight et al. (2006) for implementing conservation action to the implementation of sustainable recreation across 11 national forests. Content analysis of the action plans included an analysis of both existing and desired conditions in achieving sustainable recreation.

In addition to the document analysis phase of data analysis, the researchers also conducted in-person interviews with the 11 forest-level Recreation Staff Offices most directly responsible for implementing sustainable recreation action plans at a forest-level. The semi-structured, open-ended interviews were completed during the summer of 2016. Interviews averaged 45 minutes in length. The interview guide included several questions relevant to how sustainable recreation was being operationalized on each national forest:

- What is one issue your recreation program is facing where a sustainable recreation principle could lead to a possible solution?
- What is one performance measure that would indicate progress towards implementing a sustainable recreation program?
- Please describe one internal and external condition which are necessary to implement your sustainable recreation action plan?
- And, can you describe one internal constraint that is preventing you from planning for recreation use on your forest using sustainable recreation principles?

Interviews were audio-recorded and professionally transcribed verbatim. Using both inductive and deductive reasoning, the data was hand-coded and sorted into analytic units using NVIVO 10 (QSR International, Doncaster, Australia). To strengthen the content validity of the data coding process, a system of insider peer debriefing (Spillet, 2003) was used to negotiate a shared understanding of each phase of the conceptual model development. In this case, peer debriefing involved three research peers co-examining transcripts, notes, and recorded interviews to develop a shared understanding.

The results section of this paper describes how operational model goals, foundations, and components emerged organically by analyzing all study data sources including documents and stakeholder interviews. The analytic goal of this study was to develop a grounded and operational model, adapted from Knight (2006), of how sustainable recreation is being implemented at a forest level.

Results

Operational Model Goals

At the center of the development of an effective operational model lies the “goal” of all this deliberate effort. For Knight et al. (2006) this goal was “Effective Conservation Action.” In this research study and for the Sustainable Recreation Strategy, the goal was a “sustainable recreation program.” Results from the analysis of forest-level sustainable recreation action plans and Recreation Staff Office interviews assess how a “sustainable recreation program” was being defined across the 11 national forests of the Southwestern Region. Table 1 summarizes the themes that emerged from this analysis.

Table 1
Sustainable Recreation Program Themes

| Sustainable Recreation Program Themes | Percent of Respondents (11) |
|--|-----------------------------|
| Program Resilience into Future | 72.7% |
| Be Ecologically, Socially, Economically Sustainable | 54.5% |
| Program Relevance to Public | 54.5% |
| Collaboration; Shared Responsibility; Work with Partners | 54.5% |
| Business Model | 27.3% |
| Sustainable Facilities; Materials | 18.2% |

Program Resilience

Program resilience into the future was the most frequently mentioned attribute of a sustainable recreation program (72.7%). As one Recreation Staff Office aptly put it, “It’s recreation opportunities and experiences that last into perpetuity that we can continue to offer. You can’t have things falling down around you.”

Triple Bottom Line

Another often mentioned theme (54.5%) included balancing the triple bottom line of being ecologically, socially, and economically sustainable. To one respondent, “sustainable recreation is an approach that improves recreation opportunities and benefits and at the same time protects environmental quality and community well-being.”

Program Relevance

Another frequently mentioned attribute of a sustainable recreation program (54.5%) was that the program was relevant to the public. Terms like “responsive,” “public input,” “engagement,” and “public participation” were used to describe this sustainable recreation program attribute. As one respondent framed it, “I think in the old days, a forest would come up with a facility and then say, Hey, here it is. Come use it, without necessarily getting any input from the public.”

Working Collaboratively

Working collaboratively with community partners through a shared-responsibility model was also a commonly mentioned theme of a sustainable recreation program (54.5%). One Recreation Staff Office put it this way, “One of the motivations of work-

ing collaboratively and working in partnerships is that we can bring our limited resources to the table. When you bring those resources together in an organized way, you can accomplish something you couldn't have accomplished individually."

Other sustainable recreation program attributes mentioned identified in Table 1 included adopting more of a business model approach to recreation management (27.3%) and using sustainable materials in recreation facility design and operations (18.2%).

Operational Model Foundations

The next phase in developing a functioning operational model was to identify those essential foundational areas emerging from the data that described how the Agency (Forest Service in this case) is operationalizing sustainable recreation. In this case, these foundational elements included the recreation program, the Forest Service Agency, and the Community of external partners.

Recreation Program

For the purposes of this research study, the "recreation program" was defined as the USDA Forest Service financial and human resources allocated to manage recreation on each of the 11 national forests in the Southwestern Region in support of a wide range of federal policies that require that national forests be managed for recreation use. These resources are typically deployed at a forest level as professional recreation staff, recreation infrastructure such as at campgrounds and developed recreation facilities, other designated recreation areas such as recreation trails, and a diverse set of planning and management systems that are used by Recreation Staff to manage for recreation use. In this research study, when respondents spoke about their "recreation program", these are the resources they are referring to.

Forest Service Agency

The "Forest Service Agency" emerged as another key foundational area in a sustainable recreation program operational model. The 11 forest-level recreation programs analyzed in this research study are but one Program being managed within a large federal bureaucracy with over 35,000 employees charged with managing 154 National Forests encompassing 780,000 sq. km. major divisions of the agency include the national forest system, state and private forestry, business operations, and the research & development branch. The Forest Service is organized into a Washington DC national office, 11 Regional Office with the Albuquerque, New Mexico office serving as the regional headquarters of the Southwestern region. Decision-making within the Forest Service follows a typical command-and-control hierarchical structure where line offices include the Chief of the Forest Service headquartered in Washington, DC, 11 Regional Foresters, and 154 Forest Supervisors. Each national forest is organized into Districts that each have a District Ranger assigned as a line office. All other Forest Service employees are staff members providing decision support to the line offices. So, for the purposes of this research study, the forest-level "recreation program" is supported by professional staff that provide decision support to line offices at a district, forest, regional, and national office level. When asked about one "internal condition" necessary to implement their sustainable recreation action plan, 100 percent of respondents identified having agency and line office support as a critical element in implementing sustainable recreation. The convergence of responses here emphasizes the importance of the "Agency" as a foundational element in a sustainable recreation operational plan.

Community

Finally, a “Community” of external partners emerged as the third foundational area in a sustainable recreation program operational model. Recreation Staff interviews revealed that recreation partnerships with external organizations and interests have become a critical element in developing a sustainable recreation program. So, the “Community” referenced in this sustainable recreation operational plan can be defined as that population of communities of place and/or interest that either are currently partnering with the 11 national forests of the Southwestern Region or might have an interest in partnering with these 11 national forests. As one respondent put it, “An important aspect of sustainable recreation are collaborative efforts across jurisdictions and organizations.”

Operational Model Components

The final stage in developing a grounded operational model was to identify model components for each of the foundational areas (Knight et al., 2006) to emerge from the data. These would be components of each of the Recreation Program, Agency, and Community foundational areas. The objective here was identifying those components that managers identified as critical to operationalizing the operational model goal, achieving a sustainable recreation program.

Recreation Program Components

The components identified for the Recreation Program foundational area are identified in Table 2.

Table 2

Components Identified for “Recreation Program” Foundation Area

| Operational Model Components | Percent of National Forests (11) |
|-------------------------------------|---|
| Workforce | 100% |
| Outdoor Recreation Management | 90.9% |
| Financial Management | 81.8% |
| Communications | 72.7% |
| Information Management Systems | 72.7% |

Workforce. Predictably, 100% of the sustainable recreation action plans revealed “Workforce” as an important component to achieving a sustainable recreation program. Hiring a capable workforce, exhibiting the professional skill and knowledge and motivation to address complex outdoor recreation management challenges, emerged from all data sources. From action plan desired conditions, “The recreation program will have a workforce that meets the complex needs of the program across the forest.” However, from the existing conditions data, workforce capacity issues were a high priority among study respondents. “The current workforce doesn’t meet the needs to adequately administer the complex recreation program.” Or, from another forest, “The recreation team could be a more efficient and effective functioning team.”

To realize a sustainable recreation program, the desired conditions section of the action plans envisioned a recreation program workforce that has been “right-sized” to meet the complex needs of recreation use across the forest. “The recreation program

has the full support of forest leadership in pursuing “right-sizing” for sustainability. By “right-sizing” the recreation program, we are better able to meet the current and future needs of the recreating public while meeting our mission of sustaining and restoring forests, grasslands, and watersheds for current and future generations.” Right-sizing the recreation program, according to the data, will require strengthening the capacity of the recreation “team” with leadership support, key hires, professional training opportunities, and robust community partnerships and volunteer programs.

Providing relevant training opportunities for recreation program staff also emerged as an important consideration in achieving a sustainable recreation program. From one action plan, “Leadership will support employee career development through training and mentoring. Employee training should include traditional work-related skill training as well as an emphasis on soft skills including teamwork, communication, critical thinking, resiliency, emotional intelligence, capacity building, and professionalism.”

Outdoor Recreation Management. Another Recreation Program Component to emerge from the data analysis were the day-to-day and site-level functional tasks performed by Recreation Program staff (90.9% of forests). Collectively termed “Outdoor Recreation Management,” this component included a diverse set of core tasks related to managing trails, special use permits, developed recreation sites like campgrounds, dispersed recreation, heritage sites, recreation grants and agreements, and recreation in designated Wilderness areas. Evidence from the action plans and respondent interviews revealed existing conditions where the recreation program lacks capacity due to declining budgets, a lack of leadership support, and competition from other pressing forest priorities. According to one Recreation Staff Office , “Staffing shortages and various forest priorities often lead to a decreased focus being placed on the recreation program which leads to a lack of recreation planning documents, facility operational and maintenance plans, trail maintenance plans, wilderness management plans, and sign plans.”

The desired conditions section of the action plans revealed opportunities to move this Outdoor Recreation Management component toward sustainability. Study respondents spoke of this in the language of managing sites to national standards and surpassing the public’s expectations for outdoor recreation experiences across our national forest system. Trails management serves as a representative example of this Outdoor Recreation Management component. For example, one Recreation Staff Office , when asked what performance measure would indicate a sustainable recreation program responded, “I would say for us it would be trail maintained to standard. That’s a very easy example where we’re very deficient. We are only able to maintain a small portion of our overall trail miles.” And another, “Trails that are maintained to standard and trails that provide a variety of quality recreation experiences will lead to satisfied visitors and continued/increasing visitation to the forest.” The data revealed that this sentiment was consistent across the core Outdoor Recreation Management tasks that recreation program staff are charged with. One Recreation Staff Office summarized, “The recreation program is reactionary versus adaptable. The recreation staff is focused on “putting out fires” and has limited to no time to look at future vision and goals.

Financial Management. “Financial Management” also emerged as a significant operational model component across all data sources (81.8% of forests). Achieving financial sustainability was a desired condition for all respondents. To one Recreation Staff Office , “Sustainable funding means there is adequate financial resources to promote and manage recreation on the forest.” To another, “The recreation program

will move toward economic sustainability by taking measures to increase visitation, increase revenue, and share sustainable project planning and implementation costs.” Most respondents advocated for a “shared” funding allocation model, utilizing a mix of traditional and nontraditional funding sources. “To be responsive we would like to utilize the full range of resources that are available; this includes volunteer and partners, existing recreation employees, and other forest employees.” And “A collective/regional effort promotes shared funding between businesses, municipalities, users, and agencies.” Other respondents promoted this shared funding allocation model through an expansion of fee-based programs and sites. “The existing fee structure is woefully inadequate to respond to the stressors on the forest by current usage, especially to cover areas where operational costs far outweigh the price to use facilities.”

From the existing conditions section of the action plans, respondents emphasized that, presently, the recreation program has seen declining budgets and doesn’t have the financial resources to adequately maintain its current recreation infrastructure and meet public demands for recreation. “I would say it is making us look really hard at our (recreation) program and determine what we can sustain and what we are just going to have to say, it is just not sustainable and move on from it.” Other respondents described this dynamic as a balance between, “Meeting the needs and the desires of the community and our own recreation capacity.”

Communication. Strengthening both internal and external “Communication” was also identified as an important Recreation Program Component to achieving sustainability (72.7% of forests). Internally, the recreation program needs to do a better job communicating its relevance and priority to leadership at all levels. One Recreation Staff Office noted, “Internally we have to be better communicators to share what a priority program of work we are and what sustainable recreation is.” Another desired condition section of an action plan stated, “We want to foster a collaborative environment internally and externally and build a proactive, coordinated communication strategy to increase awareness and understanding about the essence of the national forest.”

Externally, desired conditions related to communications emphasized using a range of new technologies to become more relevant to recreation users of the 21st century. This included the use of social media, QR codes, and phone apps to enhance the visitor experience and communicate more interactively and continuously with forest visitors and stakeholders. “Technology will be used and promoted to highlight opportunities on the forest for easier access by the public. Brochures, kiosks, and the internet will be used to communicate forest and natural resource messages to diverse audiences.”

Information Management Systems. Finally, “Information Management Systems” was mentioned by a majority of forests (72.7%) as one other Recreation Program Component contributing to sustainability. Forest Service recreation program staff are often directed by the Agency to update and maintain numerous databases pertaining to outdoor recreation management. These include the INFRA land management system, the RFA Recreation Facility Analysis system, and GIS spatial mapping databases. Often, lack of program capacity leads to a situation where information databases are not maintained to a minimum standard. As noted by one respondent, “Although there is a general consensus that existing developed recreational facilities and heritage interpretive facilities are not meeting the needs of the recreating public, we don’t have baseline data necessary to make sound decisions regarding what facilities should be decommissioned, re-purposed or developed.”

To move toward a sustainable recreation program, each forest depends on accurate and timely data being generated from the recreation program. From the desired conditions section of an action plan, “The quality of decisions is oftentimes directly linked to the quality of data. In this same regard, budget allocations are also made based on available data. Therefore, to be sustainable, the forest’s recreation program must provide high quality, accurate data that supports appropriate decision making and shows accurate budgetary needs.”

Agency Components

The components identified for the Forest Service Agency foundational area are described in Table 3.

Table 3

Components Identified for “Agency” Foundation Area

| Operational Model Components | Percent of National Forests (11) |
|-------------------------------------|---|
| Leadership Support | 100% |
| Administrative Support | 91.9% |
| Integrated Resource Management | 63.6% |

All data analyzed in this study suggested that alignment between the Agency and the Recreation Program is essential to developing a sustainable recreation program. For example, alignment of a forest-level recreation program is important with other resource management units on a forest and region and key line offices serving on both the forest and regional leadership teams. Forest-level recreation programs are part of a complex organizational structure. Agency support of the forest-level recreation program emerged from the data as a critical component of developing a sustainable recreation program.

Leadership Support

Given the hierarchical nature of the Forest Service, it is not surprising that “Leadership Support” emerged as one of the most cited components of a sustainable recreation program (100% of forests). From the existing conditions data, it was apparent that, in several cases, the forest-level recreation program was not viewed as a strategic priority of the Forest by leadership. As one Recreation Staff Office put it, “I’m not sure we have the full leadership buy-in for the time and energy it would really take to successfully implement our action plan.” There was a shared perception among recreation staff that, despite the verbal support articulated in the Sustainable Recreation Strategy, forest and regional line offices still prioritized other forest management objectives above the recreation program.

From the desired conditions and interview data, it is critical that there is unified leadership support for building the capacity of the forest-level recreation programs. “Leadership will commit to organizational structure transformation at all levels of the agency and support a borderless approach to accomplishing work. In addition, leadership is proactive in assessing and planning for the needs of the recreation program, which are determined in conjunction with our partner organizations and interested

stakeholders.” One Recreation Staff Office captured the component well, “There has to be the emphasis. The recognition that recreation is an important contributor to the forest, that it brings people to the forest. You don’t come out to watch trees getting cut. Recreation is the first encounter people have with the Forest Service. If you don’t have leadership that recognizes that recreation isn’t just something for the night shift, that it is super important and needs support, then it is an uphill battle.”

Administrative Support

“Administrative Support” was also identified as another significant Agency component (91.9% of forests) contributing to a sustainable recreation program. Administrative Support in this context included a wide range of Agency administrative functions including the budget allocation system, procurement services, grants and agreements, travel management, and National Environmental Policy Act (NEPA) support. As stated in one forest action plan, “this Forest’s managerial capacity has decreased to the point where the administrative work associated with managing a program cannot be accomplished.” There was a shared sense across the 11 national forests that Forest Service administrative systems were not performing in a way that maximized efficiencies at a forest level. For example, on one forest, “Budget allocations are frequently not known until midway through the fiscal year and coupled with earlier contracting deadlines creates a challenging climate for project planning and implementation.” The same inefficiencies were reported related to NEPA support at a forest level. “Many projects are dependent on National Environmental Policy Act (NEPA) regulation and some specialists are in high demand and short supply. Forest priorities and larger projects can overshadow smaller recreation projects and they may get postponed year after year.” Clearly, administrative support systems could be improved in ways that encourage success and innovation in forest-level recreation programs.

Integrated Resource Management

One other Agency component identified as important (63.6% of forests) to a sustainable recreation program was “Integrated Resource Management.” There was a common perception across the 11 national forests that the recreation program was not integrated well with other resource management areas. This is expressed well in the existing conditions section of the action plans, “The recreation program is in constant competition internally with other resource functions that need to complete priority planning and implementation projects. There is competition for limited resources between districts and zones, and the program is not cohesive across the Forest.” Or, “Everyone has very busy programs, and there is often a lack of understanding of each other’s issues, challenges, and workload. This can cause resentment between districts because of the allocation of funds, which continues to fuel the limited cooperation, coordination, lack of transparency, and unresponsiveness for forest-wide cooperation.”

However, the desired conditions section of the action plans communicated a desirable integration goal. “Recreation program projects are fully integrated with other Forest restoration projects (e.g., forestry, range, wildlife, and watershed) to provide for complete consideration of all aspects of sustainability and efficiencies in funding, design, planning and implementation phases.” Or, on another forest, “This national forest functions as one unit across district boundaries and program areas. A program of work is developed prior to the next fiscal year based on community interests and Forest needs.” Clearly, while Forests have articulated a vision of what organizational changes are needed to achieve integration, much work remains to implement that vision.

Community Components

Table 4 illustrates the component areas identified for the Community foundational area.

Table 4
Components Identified for “Community” Foundation Area

| Operational Model Components | Percent of National Forests (11) |
|------------------------------|----------------------------------|
| Partnerships | 100% |
| Volunteer Program | 100% |
| Conservation Education | 54.4% |

Partnerships

“Partnerships” emerged as a central component across all 11 national forests. The Forest Service, at all levels, has embraced the All Lands, All Hands policy (Selin, 2017) of working in collaboration with willing community partners to strengthen natural resource management across the national forest system. As one Recreation Staff Office expressed it in a desired conditions section, “This national forest’s recreation program will become more socially sustainable by developing strong long-term partnerships with neighboring communities and organizations that foster stewardship and service on our public lands.” Or, on another forest, “Partnerships and collaboration can lead to increased public support and improved morale by empowering citizen stewardship of public lands and resources.” Desired conditions reports revealed detailed plans to expand partnership programs through the hiring of partnership coordinators and expanding regional “recreation collaboratives” and “coalitions.”

The promise of community partnerships was offset by existing condition concerns expressed by Recreation Staff that limited program capacity has not allowed the Forest Service to take advantage of partnership opportunities. “The Forest has nonprofit groups and volunteers willing to partner on projects. However, the districts do not have the internal capacity to utilize all available partner groups and volunteers.” Or, from another Recreation Staff Office, “All types of partnerships, to include communities and volunteers, require a commitment of resources, often beyond the capabilities and time constraints of any given District or Forest.”

Volunteer Program

Managing a robust “Volunteer Program” also emerged as one other key Community component to strengthening a sustainable recreation program (100% of forests). Evidence from all data sources suggest that the Forest Service views volunteers as an importance supplemental workforce as well as a vehicle to encourage citizen science and stewardship. From a desired conditions report, “Employees view volunteers as team members that are valued and respected to achieve mutual goals and provide safe, educational, and enjoyable experiences.” Or from another Recreation Staff Office, “Without volunteers we are not going to successfully implement our sustainable recreation action plan, because it is built on the premise that we have a decrease in budget and fewer staff to be out in the field, so we are going to rely more on volunteers and communities taking ownership of the public lands.”

However, as with other sustainable recreation components, limited program capacity can often constrain dynamic volunteer programs. “Our forest has not effectively used volunteers and partners in the recreation program due to lack of capacity resulting in inconsistent ability to take care of partnerships.” Not surprising, one forest expressed in their desired conditions, “The forest will make investments in new trail-based opportunities and in the developed recreation program only with full support and commitment from volunteers and partners for the long-term operation and maintenance.” Acting on these desired conditions, several forests committed to hire Volunteer Coordinators to supervise their growing volunteer programs.

Conservation Education

The recreation program’s role in “Conservation Education” also emerged as a component of the Community foundational area (54.4% of forests). Desired conditions narratives revealed the potential benefits of Conservation Education programs. “It’s this huge educational effort we need to make in helping people understand our resource and that if we don’t protect it, you know they’re not going to have the opportunities and experiences out here.” Or, on another forest, “A successful conservation education program supports responsible users who are informed on the impacts of their use and understand how to protect resources.”

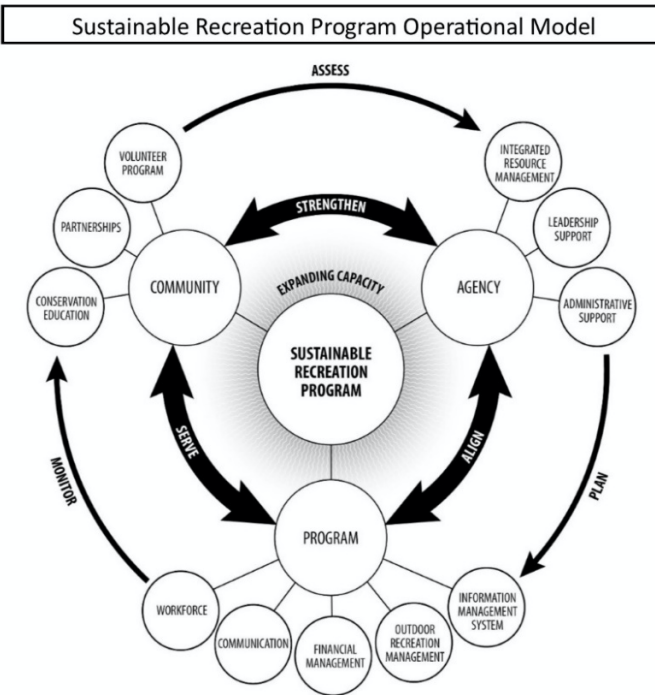
However, existing condition reports illustrated current limitations to engaging in Conservation Education. “Conservation education is currently left to fire prevention at the districts and the partnership coordinator at the Supervisor’s office. There is no forest-wide strategy to ensure a successful integrated conservation education program. Conservation education is not a priority, and there is no program in place.” However, in the desired conditions section of the action plans, concrete plans were made to expand Conservation Education programming. On one forest, Recreation Staff planned to, “Engage partners, volunteers, interpretive associations and agencies to collaboratively develop a one-stop shop for conservation education.” Or, on another forest, “development of a formal conservation education program through staff and volunteers that serve multiple resource needs, engages youth and adults, grows volunteers, and creates strong partnerships with local agencies, communities, and private groups.” Evidence from all data sources suggests that the Recreation Program has an important role to play in leading Agency Conservation Education efforts.

Discussion

From the sustainable recreation foundations and components identified in the results section, a grounded operational model for a sustainable recreation program can be synthesized from the study data (see Figure 2).

According to Knight et al. (2006), an operational model should serve as an essential tool for implementing conservation action. The model is, therefore, a graphical representation of the Operational Model Goal of a sustainable recreation program, the three foundational areas of Program, Agency, and Community, and the central components that characterize each foundational area. The operational model is presented within an Adaptive Management planning framework (Stankey et al., 2005) to emphasize the systems-level, iterative, social learning, and uncertain nature of decision-making within large institutions. Reciprocal arrows between foundational areas reflect the iterative and dynamic nature of sustainable recreation program development within the Forest Service agency. Labels of “serve,” “strengthen,” and “align” are assigned to

Figure 2
Sustainable Recreation Program Operational Model



each of these foundational relationships to reflect important agency goals to expand recreation program capacity. Finally, the waves radiating out from the sustainable recreation program center represent the expanding capacity of the recreation program as more model components are implemented and strengthened.

Knight et al. (2006) have described an implementation crisis as conservation agencies have struggled to translate sustainability action plans and assessments into field-level action and impact. An effective operational model visually depicts, under optimal conditions, how a conservation program can function, within the social-ecological context where it resides. Figure 2 illustrates the key components of a Sustainable Recreation Program operating under optimal conditions. Clearly, evidence from this study suggests that, presently, the Southwestern Region Recreation Program is a “work in progress.” Recreation staff and agency leaders would likely agree much work remains to fully realize the optimal conditions depicted in Figure 2. The value of operational models like Figure 2 are that they provide managers and scholars alike with a simplified picture of the key components of a recreation program functioning under optimal conditions. Embracing an adaptive management orientation, managers and agency leaders can adjust systems, structures, and roles to build program capacity and accelerate program transition towards sustainability (Potter & Brough, 2004).

It is, therefore, instructive to remember that sustainability programs like the Southwestern Region Sustainable Recreation Strategy are essentially agency change or transformation programs that work to reform agency systems and structures and roles established in a different era under different societal conditions. If achieving a sustainable recreation program is an innovation as Rogers (2003) and McCool et al.

(2007) suggest, then successful agency transformation will depend heavily on other members of the social system. And while large institutions and bureaucracies are predictably slow to adopt systemic change and innovation, it is imperative that agency change programs and the frameworks and operational models that inform them be fully integrated into the “messy” political trenches where conservation action happens. In the short run, we hope this operational model and the adaptive management process that led to it will inform Forest Service efforts to accelerate agency transitioning toward a more sustainably managed recreation program.

Knight et al. (2006) note that conservation solutions are rarely unique. While the operational plan developed through this engaged research project was designed to portray the context of the Sustainable Recreation Program across the 11 forests of the Southwestern Region of the Forest Service National Forest System, the results are relevant to other conservation and recreation programs working in the public domain. It will be instructive to test and refine this model across different spatial, governance, and temporal scales. Needed are more action-oriented partnerships between managers and scientists to monitor and assess how different sustainability frameworks are being operationalized at a field level. These management-science partnerships will promote collaborative learning at all levels.

Kates et al. (2011) describes the sustainability sciences as being solution-oriented, transdisciplinary, community-based, participatory, and linking science, policy, and action. The engaged research reported here was designed to reflect many of these desired attributes. While the generalizability of study findings are somewhat limited due to the qualitative nature of the data collection, we feel strongly that the operational model developed here is relevant to many other conservation and recreation programs and settings. We must emphasize that the model organically developed here remains a first step in the research process. Future research and application will be needed to further refine and test the proposed model in real world settings.

Management Implications

Operational models such as the one developed here can serve as a diagnostic tool for recreation program managers and agency leaders and policymakers working to build the capacity of agency recreation programs. An effective operational model graphically illustrates the key components of a recreation program functioning under optimal conditions. Using this operational model, recreation managers can “diagnose” the strengths and weaknesses of their recreation program and identify areas that need improvement. The model can also serve as a benchmark for program evaluation as well as promote peer learning between unit-level recreation programs. This operational model also gives recreation program managers a concrete mechanism to communicate program and capacity needs with agency leaders and line officials that are less familiar with the terminology and best practices of the recreation profession.

In the messy and complex and political world of day-to-day recreation resource management, there is often a gap between the setting of broad agency goals for sustainable recreation and the implementation of those goals at a unit level. We believe that the operational model developed here can illustrate graphically how managers and agency leaders and scientists can work together to close this gap between aspiration and realization and move recreation resource programs towards more sustainable outcomes.

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References

- Crisp, B., Swerissen, H., & Duckett, S. (2000). Four approaches to capacity-building in health: Consequences for measurement and accountability. *Health Promotion International, 15*(2), 99–107.
- De Vries, M., Van Der Merwe, A., Kotze, P., & Gerber, A. (2011). A method for identifying process reuse opportunities to enhance the operating model. In *Industrial Engineering and Engineering Management, IEEE International Conference* (pp. 1005-1009). IEEE.
- Dredge, D., Hales, R., & Jamal, T. (2013). Community case study research: Researcher operacy, embeddedness, and making research better. *Tourism Analysis, 18*, 29–43.
- Hsiu-Fang, H., & Shannon, S. (2005). The approaches to qualitative content analysis. *Qualitative Health Research, 15*(9), 1277–1288.
- Kates, R., Clark, W., Corell, R., Hall, M., Jaeger, C., Lowe, I., & Svedin, U. (2011). Sustainability science. *Science, 292*, 641–642.
- Knight, A., Cowling, R., & Campbell, B. (2006). An operational model for implementing conservation action. *Conservation Biology, 20*(2), 408–419.
- Manning, R., Valliere, W., Anderson, L., McCown, R., Pettengill, P., Reigner, N., Lawson, S., Newman, P., Budruk, M., Laven, D., Hallo, J., Park, L., Bacon, J., Abbe, D., Van Riper, C. & Goonan, K. (2011). Defining, measuring, monitoring, and managing the sustainability of parks for outdoor recreation. *Journal of Park and Recreation Administration, 29*(3), 24–37.
- Margules, C., & Pressey, R. (2000). Systematic conservation planning. *Nature, 405*, 37–47.
- McCool, S., Butler, P., Buckley, R., Weaver, D., & Wheeler, B. (2007). *An assessment of frameworks useful for public land planning*. General Technical Report (PNW-GTR-705), Pacific Northwest Research Station, USDA Forest Service, Seattle, WA, USA.
- McCool, S., & Moisey, N. (2001). *Tourism, recreation, and sustainability: Linking culture and the environment*. CABI Publishing.
- Potter, C., & Brough, R. (2004). Systematic capacity building: A hierarchy of needs. *Health Policy and Planning, 19*(5), 336–345.
- Rogers, E. (2003). *Diffusion of Innovation* (5th ed.). Simon & Schuster.
- Sanderson, J., Alger, G., Galindo-Leal, C., Chausty, V., & Morrison, K. (2003). *Biodiversity conservation corridors: planning, implementing, and monitoring sustainable landscapes*. Conservation International.
- Selin, S. (2017). Operationalizing sustainable recreation across the National Forest System: A qualitative content analysis of six regional strategies. *Journal of Park and Recreation Administration, 35*(3), 35–47.
- Spillet, M. (2003). Peer debriefing: Who, what, when, why, how. *Academic Exchange Quarterly, 7*(3), 2529–2532.
- Stankey, G., Clark, R., & Bormann, B. (2005). *Adaptive management of natural resources: Theory, concepts, and management institutions*. General Technical Report

(PNW-GTR-654), Pacific Northwest Research Station, USDA Forest Service, Seattle, WA, USA.

USDA Forest Service. (2010). *Connecting people with America's great outdoors: A framework for sustainable recreation*. Available online at https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5346549.pdf

Whitten, T., Holmes, D., & MacKinnon, K. (2001). Conservation biology: a displacement behavior for academia? *Conservation Biology*, 15, 1–3.

USDA Forest Service. (2014). Southwestern Region sustainable recreation strategy, https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd495959.pdf

Wing, K. (2004). Assessing the effectiveness of capacity-building initiatives: Seven issues for the field. *Nonprofit and Voluntary Sector Quarterly*, 33(1), 153–160.

Research Paper

The Impact of Concessioners on Sustainability in and around U.S. National Parks: A Case Study of Grand Teton National Park Concessioners

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Executive Summary

Concessioners play an important role in park and protected area management by providing visitor services. Historically, concessioners were criticized for their negative impacts on environmental sustainability. However, due to policy changes, technological advances, and shifting market demands, there is a need to reevaluate the role of concessioners in sustainable destination management in and around parks and protected areas. The purpose of this qualitative case study situated in Grand Teton National Park (GTNP), which was guided by social exchange theory, was to explore U.S. national park concessioners' influence on sustainable development at the destination level from the perspective of National Park Service (NPS) staff, concessioners, and local community members. Sustainability was examined holistically as a multifaceted construct with integrated socioeconomic, cultural, and environmental dimensions. Twenty-three participants completed semi-structured interviews. Researchers identified four thematic categories describing concessioners' influence on sustainability; motivations and barriers to pursuing sustainability initiatives; and situational factors that facilitated concessioners' sustainability actions. While participants commented on the negative environmental impacts of concessioners and their operations, these data suggest that concessioners were working individually and collaboratively to promote environmental, socioeconomic, and cultural sustainability in and around GTNP. Some concessioners were even described as leaders, testing and driving the development of innovative sustainability policies and practices. These actions were motivated, in part, by contractual obligations and profit generation. However, concessioners also had strong intangible motivators, such as intrinsic values and a strong sense of community, that drove their positive contributions to sustainability. Based on these data, we recommend that those involved in future theoretical and practical work with concessioners acknowledge the importance of both tangible and intangible motivators when attempting to promote higher levels of sustainability achievement and collaboration. This will become increasingly important as land management agencies continue to embrace strategies beyond the traditional

“parks as islands” approach to management. Additionally, future work should explore more specifically the role of policy, conceptualizations of sustainability, and private industry sponsorship in promoting concessioners’ contributions to sustainability, especially in collaborative settings. This work is needed to understand if and how these observations generalize to other contexts.

Keywords

Concessions, sustainability, park management, community development, collaboration

Introduction

The service demands on parks and protected areas (PPAs) are increasing (Dinica, 2018). Each year, approximately eight billion people visit PPAs (Balmford et al., 2015), and, generally, visitation is expected to increase (Jenkins, 2019). Furthermore, the significance of PPAs within society has diversified over the last half a century (Dinica, 2018; Eagles & McCool, 2002; Keiter, 2013). These increasing and broadening demands fueled concerns about, and demands for, sustainable development in and around these spaces (e.g., Dinica, 2018; Slocum, 2017). Today, we are reevaluating the roles of different stakeholders in PPA management and exploring how partnerships can be leveraged to manage these demands.

One stakeholder group receiving limited scholarly attention is concessioners. While concessioners have played a role in some PPAs for over 100 years (Mantell, 1979; GAO, 2017), concessioners now have a heightened role in PPA management globally (Slocum, 2017). We explored the role of concessioners at Grand Teton National Park (GTNP) to increase understanding of how concessioners influence PPA sustainable development.

Literature Review

Park and Protected Area Concessioners

Concessioners are an integral part of the PPA management framework (e.g., Dinica, 2017; Mantell, 1979; Quinn, 2002). In the U.S. national park context, concessioners are private entities that provide visitor services—such as lodging, restaurants, and guiding services—under a contractual agreement (Keiter, 2013; Slocum, 2017; Wyman et al., 2011). Concessioners also play a role in funding PPA management, as most concessioners pay fees to do business on public lands (GAO, 2017; Slocum, 2017). These fees have become increasingly important in financing PPA management as agencies, like the U.S. National Park Service (NPS), continue to experience meager increases or stagnation in government appropriations (Slocum, 2017).

In U.S. national parks, concessions contracts are divided into three categories. Category I concessioners operate within a national park unit on land assigned to them and are responsible for making capital improvements, including construction and renovation (GAO, 2017). Category II concessioners operate on assigned park lands, but they do not construct capital improvements (GAO, 2017). Category III concessioners,

which are most common, operate in parks but are not assigned park land or buildings (Bricker, 2009; GAO, 2017). Additionally, small businesses grossing less than \$25,000 annually and nonprofit organizations (NGOs) can operate commercial services in parks under Commercial Use Authorizations (CUAs).

Concessioners and Sustainability

The well-documented history of U.S. national park concessioners is predominantly a story of conflicting priorities on profit and preservation (e.g., Keiter, 2013; Quinn, 2002). Multiple reports describe unsustainable concessioner-driven development and resource damage that demonstrate the degradative potential of concessioners (e.g., Frome, 1982; Keiter, 2013; Quinn, 2002). However, while the contemporary literature on this topic remains underdeveloped (Dinica, 2017), evidence suggests that the relationship between concessioners and sustainability shifted. Whether this shift is due to NPS policy changes (NPS, 2006) or evolving market forces (Bricker, 2009; Carlsen & Edwards, 2008; Vaughn & Cortner, 2013), some concessioners may have positive sustainability impacts in and around PPAs.

Understanding whether, how, and why the relationship between concessioners and sustainability in and around national parks changed requires additional investigation. Therefore, the purpose of this study was to explore U.S. national park concessioners' influence on sustainable development at the destination level from the perspective of NPS staff, concessions, and stakeholders working in or near GTNP. Specifically, we explored three questions. At the destination level:

- RQ1:** How do GTNP concessioners promote and/or hinder sustainability?
- RQ2:** What motivates GTNP concessioners' positive contributions to sustainability?
- RQ3:** What deters GTNP concessioners' positive contributions to sustainability?

Methods

We performed a qualitative case study situated in GTNP (Creswell & Poth, 2016; Schwandt & Gates, 2017). During this study, 27 active concessioners provided a variety of visitor services at GTNP, including lodging, food and beverage, and guiding services. Additionally, we knew some concessioners were partnering with the NPS and others on sustainability initiatives. Together, these factors increased the likelihood that our exploration would yield relevant information.

Our scope reflects a holistic definition of sustainability. Here, sustainability was conceptualized as a multifaceted construct with integrated socioeconomic, cultural, and environmental dimensions (University of Utah, n.d.). A related concept was sustainable development, which is the long-term net balance of impacts to all dimensions of sustainability (United Nations, 1987). Likewise, we acknowledged that parks are part of larger systems and recognized that actions taken within parks can have consequences beyond park borders. Therefore, we adopted a destination-level lens, examining concessioners' sustainability impacts within the park and nearby communities.

The Application of Social Exchange Theory

Andersen and Kragh (2010) discussed an *in vivo* approach for using existing theory in qualitative research. Utilizing this approach, researchers use existing theory as a

point of departure. We employed social exchange theory (SET)—a widely used theory that conceptualizes and explains relationships between individuals and groups as a series of tangible and intangible resource exchanges (e.g., Cropanzano & Mitchell, 2005; Pachmayer et al., 2015)—as our guiding framework. Because we sought to understand the nature of and motivation for concessioners' sustainability-related behaviors and relationships, this theory was a valuable tool for organizing our exploration. Specifically, we used the major propositions of SET to design our interview guide and initial codebook to ensure we captured participants' perceived tangible and intangible costs and rewards from engaging in sustainability alone and in collaboration with others.

Data Collection

Semi-structured interviews were conducted with concessions staff, NPS staff, and community members in and around GTNP. Semi-structured interviews allowed us to use existing literature and theory to create questions that drove interviews in a relevant direction, but they provided the flexibility needed to gather data each participant considered important (Brinkmann, 2017). Questions were relevant to participants' perceptions of how concessioners influenced sustainability and what motivated concessioners' sustainability-related actions or inactions.

Once this study was approved by the University of Utah's Institutional Review Board and Grand Teton National Park, participants were recruited using purposeful sampling techniques. All 27 authorized concessioners were sent an invitation via email to participate. Additionally, to ensure we captured a balanced description of how concessioners were impacting GTNP and surrounding communities, an NPS staff, concession staff, and community member identified during a previous sustainability-related academic project were selected as key informants. These informants, and all others who completed interviews, were asked to recommend others in the park or community who could speak about concessioners' local sustainability impacts. Participants were recruited until saturation was reached (Creswell & Poth, 2016). Interviews were conducted by phone or in-person and recorded with participants' permission. Interviews were deidentified and transcribed verbatim with the assistance of Dragon NaturallySpeaking software (Home edition, version 15.3).

Data Analysis

Analysis was completed in two phases. First, the primary researcher developed an initial codebook through an inductive coding process guided by SET (Andersen & Kragh, 2010; Creswell & Poth, 2016). Next, two additional coders were included, and we began an iterative process where we each independently coded the data using the initial codebook, met to compare the results, and worked collaboratively to refine the codes. Codes were then reduced into a set of emergent categories, themes, and subthemes (Miles et al., 2014), and definitions were refined and confirmed by all team members. Interview excerpts representing each subtheme were selected individually by each member and confirmed by the whole team.

Trustworthiness

We addressed trustworthiness using well-established criteria: credibility, transferability, dependability and confirmability, and reflexivity (Korstjens & Moser, 2018; Lincoln & Guba, 1985). Credibility was ensured using prolonged engagement with the data, investigator triangulation, and member checking (Rose & Johnson, 2020). We facilitated transferability by providing thick description. Dependability and confirmability

ity were achieved by including multiple coders and maintaining an audit trail, which recorded notes on interviews, team meetings, and the coding process. Lastly, reflexivity was achieved by documenting and discussing reflexivity notes as a team to understand how our individual and collective subjectivities influenced our analysis.

Results

Twenty-three of the 43 individuals invited to participate in the study completed interviews (see Table 1). Twelve participants worked at or owned a concession operation, with concessions-related work experiences ranging from two to 25 years. Two concessions staff had prior experience working as a CUA operator, and one was born in Jackson Hole. Seven participants were community members living in the town of Jackson or Teton County. Five community members had lived in the area for 20 or more years (including two participants who were born in Jackson Hole), one for more than ten years, and one for fewer than 10 years. Six community members lived in the area full-time and were affiliated with local or county governments or NGOs, and one was a seasonal resident working for a tourism business. Four participants worked for the NPS and held positions in business resources, public relations, or planning and had between four and 16 years of experience working in GTNP. Four categories of themes captured participants' perceptions (see Tables 1-5).

The Sustainability Influence of Concessioners

Positive Influences Theme

When asked how concessioners influenced sustainability, overwhelmingly, participants described concessioners' environmental sustainability impacts. Examples included sourcing local and environmentally friendly products, carpooling, and following *Leave No Trace* principles, idle-free policies, and safe chemical storage and handling procedures. Likewise, all 11 concessioners referenced by participants were reportedly working to reduce waste by recycling, composting, or avoiding disposable products or products with excess packaging. Some waste reduction efforts were novel, such as the collaborative Zero Landfill Initiative (ZLI) partnerships that involved Subaru of America, the National Parks Conservation Association, GTNP, and many concessioners and local community members. Others were creative, such as using food waste to feed concessioner-owned chickens or partnering with local farms to compost food waste and grow vegetables that were sold back to concessioners. Concessioners also improved environmental sustainability by providing staff training, pursuing certifications, and volunteering (within and beyond park borders) in the areas of environmental health and safety, waste reduction, and human-wildlife interactions.

Reportedly, the size of the concessioner was proportional to their impact on environmental sustainability. Category I concessioners pursued larger programs and building improvements to increase efficiency and reduce waste. Those operating Category II and III concessions, on the other hand, initiated smaller programs, such as bike share or equipment resell programs. Regardless of size or scope, some believed or hoped that the positive impacts of these efforts transcended park boundaries.

I think there's an outsized effect honestly because you get so many people from so many places coming here seeing the things we're doing and then hopefully putting it into a broader sphere or in another place. We definitely had an effect on the town.—Category I Concession Staff

Table 1
Emergent Categories, Themes, and Subthemes by Participant Categories

| Category | Theme | Subtheme | Concessions Staff | | | | NPS Staff (n = 4) | Community Member (n = 7) |
|---|---------------------------------|------------------------------------|--------------------|---------------------|----------------------|-------------|-------------------|--------------------------|
| | | | Category I (n = 7) | Category II (n = 1) | Category III (n = 3) | CUA (n = 1) | | |
| Sustainability Influence of Concessioners | Positive influences | Environmental | 7 | 1 | 3 | 1 | 4 | 6 |
| | | Socioeconomic | 7 | 1 | 3 | 1 | 4 | 4 |
| | | Cultural | 7 | 0 | 3 | 1 | 4 | 4 |
| | | Management | 4 | 1 | 3 | 1 | 3 | 2 |
| | Negative influences | Education and role modeling | 7 | 1 | 3 | 1 | 4 | 5 |
| | | Environmental | 3 | 1 | 1 | 1 | 3 | 4 |
| | | Greenwashing | 1 | 0 | 0 | 1 | 0 | 0 |
| | Sustainability Leaders | Improvement opportunities | 4 | 1 | 3 | 1 | 1 | 5 |
| Above & beyond | | 6 | 1 | 3 | 1 | 4 | 4 | |
| | Leaders in sustainability | 7 | 0 | 1 | 1 | 2 | 2 | |
| Motivations | Tangible motivators | Contract acquisition & maintenance | 7 | 1 | 3 | 1 | 4 | 7 |
| | | Profit | 4 | 1 | 2 | 1 | 2 | 4 |
| | | Quality employees | 4 | 1 | 3 | 0 | 1 | 0 |
| | | Recognition | 5 | 0 | 2 | 1 | 1 | 3 |
| | Intangible motivators | Intrinsic values | 7 | 1 | 3 | 1 | 4 | 5 |
| | | Collaboration | 7 | 1 | 3 | 1 | 4 | 4 |
| Champions | | 3 | 0 | 1 | 0 | 1 | 0 | |
| Barriers | Resource barriers | Time | 2 | 0 | 1 | 1 | 1 | 1 |
| | | Money | 7 | 1 | 1 | 0 | 3 | 5 |
| | | Access | 4 | 0 | 2 | 0 | 2 | 3 |
| | Structural barriers | Bureaucracy | 5 | 1 | 3 | 0 | 2 | 4 |
| | | Turnover | 4 | 0 | 1 | 0 | 0 | 1 |
| | | Siloed approach | 2 | 1 | 2 | 0 | 0 | 4 |
| Competing goals | | 1 | 0 | 0 | 0 | 1 | 1 | |
| Situational Factors | Local community characteristics | Advanced community | 1 | 1 | 1 | 1 | 1 | 2 |
| | | Wealthy community | 3 | 0 | 0 | 0 | 1 | 1 |
| | Relationship dynamics | Strong community | 2 | 0 | 1 | 1 | 3 | 1 |
| | | Diversity of concessions | 2 | 0 | 0 | 0 | 1 | 0 |
| | External factors | Corporate sponsorship | 5 | 0 | 0 | 0 | 2 | 4 |
| | | Cultural shift | 2 | 1 | 1 | 0 | 0 | 1 |
| Green technology | | 2 | 0 | 0 | 0 | 1 | 0 | |

Participants also commented on socioeconomic sustainability impacts. Examples included providing local employment opportunities, generating lodging tax, funding scholarships, and supporting or hosting fundraisers for local NGOs. Concessioners supported local businesses by purchasing products from Jackson or the region when possible. Category III concessions staff were more likely to report that their operation was locally owned and employed a higher percentage of locals within their workforce. Some concessioners also implemented affordable housing and mentorship programs to support employees from underrepresented groups. Likewise, some believed that con-

The Sustainability Influence of Concessioners

Table 2

Results Describing the Sustainability Influence of Concessioner

| Category | Theme | Subtheme | Description |
|---|------------------------|------------------------------|---|
| Sustainability Influence of Concessioners | Positive influences | Environmental | Environmentally responsible practices, building improvements, and volunteerism |
| | | Socioeconomic | Employment opportunities, tax revenue, fundraising, and affordable housing programs |
| | | Cultural | Promotion of park access, diversity and inclusion, and community building |
| | | Management | Sustainable destination management and planning |
| | | Education and role modelling | Environmental education, interpretation, and role modelling |
| | Negative influences | Environmental | Negative natural resource impacts and user conflict |
| | | Greenwashing | Practices that do not have a meaningful positive impact as “green” |
| | | Improvement opportunities | Sustainability as a process with continual opportunity for improvement |
| | Sustainability leaders | Above and beyond | Exceeding sustainability requirements |
| | | Leaders in sustainability | Driving initiatives, testing novel practices, and having greater impact than other groups, including the NPS. |

cessioners attracted more visitors, who patronized other local businesses, by providing high-quality.

Concessioners positively impacted cultural sustainability in two ways. First, concessioners improved access to the national park for locals and for individuals from socioeconomic and cultural backgrounds typically underrepresented in national park spaces.

We worked with the national park to identify a school, and we funded a trip for...a Title I school, which means it's a relatively impoverished area.... While I don't think it's the classic environmental sustainability effort, it's really about education and giving these kids an understanding of what the national parks are and why they are important.—Category I Concession Staff

Second, concessioners played a role in community building. Sometimes, these initiatives were internal, as individuals in all participant categories commented on concessioners' efforts to create a positive work environment and culture. Other times, concessioners contributed to community building within the gateway communities by participating in local community events and meetings or by attracting new residents.

Furthermore, concessioners played a role in sustainable destination management. Within GTNP, concessioners established and maintained environmental and/or risk management plans. Concessioners also promoted off- season marketing and dispersed visitation GTNP. Some also assisted with GTNP's law enforcement and emergency services. Beyond park borders, concessioners served on or interacted with local or state boards and associations. Some concessioners also collaborated with partners to develop guide training programs or to certify Jackson as a sustainable tourism destination.

As required by the NPS, all concessioners provided a variety of educational opportunities for visitors and employees. Participants believed these efforts improved the visitor experience and minimized their environmental impact in GTNP and beyond.

The work of the concessioners on zero waste has really helped elevate community understanding, and also, they have done a tremendous job educating park visitors because the park's ability to reach visitors has really diminished as seasonal rangers have been cut. ... [Concessioners] played just an impressive role in helping to educate people, and people then will go to their homes and hopefully incorporate that in their communities, so I think they've been really a model example.—Community Member A

Some educational efforts were done in collaboration with the Park Service or with organizations beyond park borders. For example, some concessioners collaborated with GTNP or the Teton Country Travel and Tourism Board to improve and standardize waste reduction messaging and signage throughout GTNP or the county. Concessioners also role modeled environmentally sustainable practices, setting an example for visitors, other concessioners, businesses, and the NPS.

Negative Influences Theme

Participants did comment on the negative sustainability impacts of concession operations and the visitors they attract. These included air pollution and greenhouse gas emissions, habitat degradation, injured wildlife, and perceived overuse of rivers and trails. A small number of concessions staff and community members suggested that these impacts caused conflict between concessioners and community members. For example, two participants described recreation conflicts, and two participants commented on a concessioner's contentious proposal to develop facilities outside GTNP's border to support their operations inside GTNP, which was denied by the Teton County Board of Commissioners. Additionally, some claimed that concessioners are guilty of greenwashing, but these reports were directed at concessioners in other parks.

[Some concessioners] work within the Park Service's rules to look a lot greener than they are, and I've noticed this a lot traveling around and going to other parks. They'll offer a certain amount of organics and a certain amount of sustainable products...but when you look at how they're dealing with their waste stream or you look at what they're actually providing, they're really doing the bare minimum and just smacking a label on it that says sustainable because that's what they think the Park Service wants or the Park Service has told them that's what they want.—Category I Concession Staff

Overall, participants agreed concessioners could do more. Improvements suggested by community members included increased use of alternative fuels and elec-

tric vehicle charging infrastructure, programs to reduce traffic and wildlife collisions, visitor education, and collaboration on issues like affordable housing and long-term destination planning. Some community members also suggested that concessioners could be more cognizant of gateway community values. Opportunities identified by concessioners included increased use of solar panels, use of local and regional products, participation in more local boards and collaborative sustainability projects, diversity and inclusion, volunteerism, waste reduction, sustainability marking, and industry development and organization.

Sustainability Leaders Theme

Across all categories, participants believed most concessioners exceeded their sustainability requirements. Common examples were the Category I concessioners' involvement in the ZLI and all concessioners' charitable endeavors and community engagement efforts, all of which were not required by the NPS. Even when concessioners were required to pursue sustainability initiatives, most exceeded those requirements.

I don't know historically, but I would guess the tables are probably turned and that it's now the concessioners that are leading the way in the park. Again, back to the minimum standard. I think most concessioners are taking that as the minimum, and they are definitely going beyond.—Category I Concession Staff D

Concessioners were sometimes described as leaders that drove sustainability initiatives and tested novel practices. These efforts have increased access to and expectations around sustainability for other concessioners and businesses in the gateway community.

And I think a lot of what the concessioners are doing is putting a little bit of pressure on the Park Service too to follow suit. In the community, I see them as a role model leading by example. I see other entities and businesses in the community looking to the [large lodging concessioners] for their sustainability efforts, and my hope is that that translates to the desire for other businesses in the community to do the same.—Community Member B

Many participants commented on how concessioners are often able to do more for sustainability than the NPS because concessioners are nimbler, have access to more resources, and experience less pressure from political administrations.

[Concessioners] are looked at as sustainability leaders. Not the Park Service, the concessioners themselves and specifically [the large lodging concessioners]. The community looks to them as leaders.—NPS Staff

The Sustainability-Related Motivations of Concessioners

Tangible Motivators Theme

When asked why concessioners pursued sustainability initiatives, many responded that concessioners were motivated by the competitive NPS concessions contracting and management process. Once a contract is acquired, concessioners must follow through with their commitments and terms of the contract. This is monitored periodically by the NPS and formally evaluated annually.

Table 3
Results Describing the Sustainability-Related Motivations of Concessioners

| Category | Theme | Subtheme | Definition |
|-------------|-----------------------|--------------------------------------|--|
| Motivations | Tangible motivators | Contract acquisition and maintenance | Winning, maintaining, and renewing contracts |
| | | Profit | Attracting visitors or saving money on energy, water, and waste fees |
| | | Quality employees | Attracting and retaining employees |
| | | Recognition | Recognition and awards from the NPS and community partners |
| | Intangible motivators | Intrinsic values | Intrinsic motivators, including personal values or beliefs |
| | | Collaboration | Collaboration with others to meet shared or respective goals |
| | | Champions | Commitment and actions of individual concessions staff members or partners |

...concessioners are going way beyond what they are required to do. Way beyond. And there's a very good reason for that, and economic reason for that. There is a philosophical alignment of the concessioners with the environmental and cultural philosophies of the Park Service, but by and large, these contracts are 10-year contracts worth over \$100 million. If they meet the minimum requirements, someone is going to be able and come in and be able to go beyond them, saying we will do even more and they will win the contract from the incumbent, so it's incumbent on the incumbents to go way beyond what the Park Service is requiring in terms of waste management, energy reduction, you name it, across all these different areas that have to do with sustainability.—Community Member C

Many also believed profit motivated concessioners, as some improvements led to cost savings and competitive advantages.

Not only is it efficient and saved money on the operational side, it's attractive to customers, and the customers who are interested in sustainability tend to be educated. They tend to be sophisticated. They tend to be of a little bit higher [economic class], and by pursuing those things to begin with, it attracts a customer to us. Even at the destination-level, the idea of the entire community operating as efficiently and as environmentally and socially responsible as possible will attract that better guest, and that guest is actually lighter on the landscape, lower touch, lower impact, higher spending. So, it's like a win-win across-the-board for both the business and the destination.—CUA Holder A

Sustainability practices also helped concessioners attract and retained high-quality employees, who often expected their employers to be sustainable. Furthermore, sustainability certifications allowed concessioners to distance themselves from green-washing competitors or promote professionalism. Concessions staff also suggested that rewards and informal praise from the NPS, local, and national organizations encouraged them to continue exceeding expectations.

Intangible Motivators Theme

All participant groups recognized that intrinsic values also motivated concessioners. Most believed concessioners exceeded the minimum requirements because sustainability principles aligned with the personal values of managers and staff.

Many of the people who work for the concessioners...care so much about this place and about the environment and our natural resources.... Many of the people who are driving so much of this are the people who are on the ground doing the work because they care.—Community Member B

Some concessioners worked with the NPS, other concessioners, and community partners to meet shared goals. This was a motivating factor in itself, as all parties could share ideas and resources and hold each other accountable. Several NPS and concessions staff participants commented on the importance of having a “champion” on sustainability projects. A consensus emerged; without the dedication of a passionate and capable individual, most sustainability initiatives would fail.

For sustainability to work, you need a champion, and so I think that it has worked so well in this park because we have a few champions in the Park Service and then we've got champions [at the large lodging concessions]. [They] are the champions of those entities, and they are all about it, and that gets them working together.—NPS Staff

The Sustainability-Related Barriers

Resource Barriers Theme

The most prominent barriers were time and money. Some initiatives had high or unattainable upfront costs that may never result in economic savings. Time is a closely related barrier, and many initiatives—especially collaborative initiatives—were too time consuming to pursue or sustain. This was especially prominent when it was not financially practical to hire more staff and when sustainability was treated as a collateral duty. Access to technology and infrastructure was another barrier. For example, the region did not produce enough goods or maintain the programs needed to support initiatives like buying more local products and expanding recycling. Access to knowledge-based resources was also an issue. Some also expressed a desire to pursue socioeconomic sustainability, including diversity and inclusion, but did not know how to advance these goals.

Structural Barriers Theme

While benefits were acknowledged, the rules, regulations, and reporting requirements enforced by the NPS and third-party certifications were perceived to slow or prevent

Table 4
Results Describing the Sustainability-Related Barriers

| Category | Theme | Subtheme | Definition |
|-----------------|---------------------|---|---|
| Barriers | Resource barriers | Time | Lack of time need |
| | | Money | Lack of financial resources |
| | | Access | Lack of access to necessary technology, infrastructure, or expertise |
| | Structural barriers | Bureaucracy | Institutional barriers often associated with the NPS and third-party certifiers |
| | | Turnover | Staffing turnover at local and federal levels |
| | | Siloed approach | A focus within one's own organization or agency |
| Competing goals | | Progress in one area that hinders progress in another | |

concessioners from improving their sustainability programs. Some reported that these bureaucratic barriers were more burdensome for smaller concessioners.

The NPS is an arm of the government, and they have bureaucracy just like other government organizations. Sometimes the practical gets lost when you're dealing with the Park Service.—Concessions Staff

Turnover was also a challenge. Staff turnover within concessions operations, the federal government, and GTNP made long-term progress on initiatives difficult. Transitions between political administrations caused priorities around and resources available for sustainability to shift. Transitions within GTNP created similar challenges, especially when turnover occurred within the business resources division.

We probably had half a dozen different [concession specialists] during [the last 25 years]. When we get a new concession specialist, we sit down with them, and we have to earn their trust all over again. It can be a tedious process for us because the National Park Service works in a different way. If you want to move up, you don't necessarily move up within a specific park. You may go to another park, so you are bringing your talents to another park. So, if somebody we worked with may want to enhance their career, they may have to move to another park to enhance their career, so we start fresh. We go back a little bit to go forward, and we have to re-earn the person's trust.—Category I Concession Staff

Concessioners and potential partners also tended to work within silos on projects, which prevented groups from pooling resources and achieving greater impact.

Competing Goals Theme

Concessioners had to balance competing priorities. For example, affordable housing developments could have negative environmental impacts, and installing energy-

efficient windows or solar panels could degrade a structure’s historic character. Likewise, sourcing local and environmentally friendly products may make it difficult to achieve financial sustainability and provide access to all.

We have an array of visitors from different socioeconomic backgrounds. Not all of them are going to want to pay a premium for locally sourced chicken or local products or what have you. So, concessioners are still offering and are still probably going to offer products and goods that are maybe not the best but sustainable choices because we still have this diversity of visitor micro-markets within the park that they need to address.—NPS Staff

The Situational Factors Promoting Sustainability

Local Community Characteristics Theme

Participants from all categories stated that the relationships between GTNP, its concessioners, and gateway communities was unique within the Park Service. Teton

Table 5
Results Describing the Situational Factors Promoting Sustainability

| Category | Theme | Subtheme | Definition |
|---------------------|---------------------------------|--------------------------|---|
| Situational Factors | Local community characteristics | Advanced community | Community members are, on average, highly educated, experienced, and progressive |
| | | Wealthy community | Local communities are relatively wealthy |
| | Relationship dynamics | Strong community | Concessioners, NPS staff, and community members are part of one close-knit community |
| | | Diversity of concessions | High number and diversity of concessions operating in the park |
| | External factors | Corporate sponsorship | Corporate attention and sponsorship increased availability of tangible and intangible resources |
| | | Cultural shift | Broad cultural shift made sustainability mainstream |
| | | Green technology | Green technology and resources are readily available |

County and Jackson were frequently described as advanced and wealthy communities with residents that were, on average, progressive, highly educated, and professionally successful with a strong affinity for conservation. They believed this combination made community members more open and able to support sustainability-related initiatives and collaboration. Additionally, a minority of participants suggested that the staff at GTNP were unique because they were more engaged than their counterparts in other parks.

Relationship Dynamics Theme

While differences and hierarchies existed, all participants from all categories believed they were part of one community, stating that they were neighbors and friends on professional and personal levels. This strong sense of community unified individuals in the destination, building trust and mutual respect, which made collaboration more common and effective than in other NPS contexts.

In my 25 years here, we've always had strong relationships with [NPS staff]. We live within the same boundaries of the national park.... We become socially engaged with them through different small communities.... We've had people here that have worked for us that now work for the national park [and vice versa]. We are integrated on several different levels, so it is a fantastic relationship. Symbiotic. We help them, they help us, and it really is a community.
—Category I Concession Staff

This sense of community was promoted by individuals who embraced a collaborative attitude and approach. Individuals in all three groups assumed good intentions and chose to see each other as team members. This approach allowed individuals to overcome differences and work together effectively on sustainability-related projects.

When we go to park meetings, we go in wanting to learn and meet people and say “hi,” and it is very positive. [Meetings I attended in another park] were just total [gripe] sessions where the guides would air their grievances, and the park staff would roll their eyes and go, “yeah, whatever.” It was very adversarial for sure. In Grand Teton, too, there was a little bit of that, and that has healed [in the years] I've been here. ... Both their team and ours [have worked] to really make sure [the relationship is positive], and that really came from the superintendent. [The former superintendent] was very vocal to say, “Look. You guys are doing what we do, and we need you to do it.”—Category III Concession Staff

Another characteristic mentioned was the diversity and relatively high number of concessions. Many parks have few to no concessions, but GTNP has many. Some thought this may play a role in facilitating or shaping collaboration around sustainability projects.

External Factors That

Nearly everyone discussed Subaru's corporate sponsorship of the ZLI. Most were adamant that this collaborative project would not have succeeded or even been possible without Subaru's funding and support. This project was expected to support infrastructure and relationship development needed to continue waste reduction initiatives and new collaborative projects even after the sponsorship ceased.

Participants also described a broad cultural shift that has taken place within society over the last couple of decades. This shift encouraged entities to prioritize sustainability initiatives and work to achieve shared sustainability goals, as these are now considered mainstream and expected by consumers.

I can say, just in my own experience with GTNP, is that it's almost just a new generation of people that are working together between the concessioners and the parks. There's a different dynamic. I think it is better than it was before. It's hopeful.—Community Member C

Lastly, concessioners recognized that they could access green technology more easily than in the past due to advancements in energy-saving technology, like LED

light bulbs, and accessibility to organic food products. Likewise, concessioners do have access to resources that concessioners in other parks do not, including local beef and green power. Together, these advances and opportunities made sustainability achievements more attainable.

Discussion and Management Implications

Our primary aim was to explore how GTNP concessioners influence sustainability at the destination level. Most of concessioners' sustainability efforts were focused on environmental sustainability; however, many contributed to sustainability in the holistic sense of the concept. Likewise, most efforts were focused on operational aspects within park borders, but some had a perceived impact that transcended boundaries, promoting sustainability in the gateway community, county, and region.

Previous reports on concessioners' sustainability impact conflicted. Some suggested concessioners faced competing priorities on profit and preservation, leading them to operate in a way that damaged park resources (e.g., Frome, 1982; Quinn, 2002). Yet more recently, others suggested concessioners were exacting a positive influence (e.g., Bricker, 2009, 2017; Carlsen & Edwards, 2008; Vaughn & Cortner, 2013). This study merges these perspectives. Indeed, concessioners struggled with competing priorities and faced barriers that led to negative sustainability impacts; yet, participants had more to say about concessioners' positive influence and commitment to progress in this area.

Others noted that concessioners are uniquely positioned to provide visitor services, as they generally have more access to resources, expertise, and flexibility than the NPS (Dinica, 2017; Keiter, 2013; Wyman et al., 2011). Similarly, here, concessioners were well suited to test and drive innovative sustainability initiatives and programs. Many were considered sustainability leaders, which is a marked change in early reports on concessioners' relationship to sustainability. Furthermore, GTNP concessioners often partnered with NPS staff and NGOs on projects. This was prominent in the area of waste reduction but also occurred in sustainable management and socioeconomic areas. This suggests that concessioners can play a role not only in sustainable park management but in sustainable destination management regionally. This may become increasingly relevant as agencies shift away from the traditional "parks as islands" approach to management.

The second and third aims of this study were to explore concessioners' motivations and barriers. Previously, some suggested concessioners would not voluntarily contribute to sustainability without contractual obligations, while others found that concessioners often exceed their sustainability-related contractual obligations (Dangi & Gribb, 2018; Dinica, 2017). In this case, contractual obligations and profit were important motivators, but some GTNP concessioners exceeded their obligations or implemented sustainability initiatives before the NPS instituted requirements. Likewise, most pursued cultural and socioeconomic sustainability initiatives, which are not required or rewarded by the NPS. Hence, we concluded that concessioners' motivations were more nuanced than what is often reported and can include strong intangible motivators. While policy and sustainability requirements yielded benefits, other motivators, such as intrinsic values and sense of community, should not be overlooked when trying to promote higher levels of sustainability achievement and collaboration.

In particular, the sense of community among groups was a noteworthy motivator. Previously published descriptions portray concessioners as distinct from park staff and gateway communities. Here, however, the lines between groups blurred, especially in

the area of sustainability. Concession owners and staff were viewed as part of the community, unified by professional obligations, personal relationships, and shared goals. It was important for many concessioners and NPS participants that concessioners were recognized and treated as team members. This was particularly important for creating an atmosphere that promoted collaboration around shared sustainability goals.

Though this case highlights examples of sustainability innovation and collaboration, this progress largely depended on individuals, or “sustainability champions,” and was hindered, in part, by bureaucracy and turnover, which were common within the NPS due to its hiring and promotion practices. These barriers were overcome to a degree because GTNP and the surrounding communities reportedly had a disproportionate number of sustainability-minded individuals. However, reliance on the passion of individuals and the treatment of sustainability as a collateral duty threatened the longevity and generalizability of these projects. Changes in policy may be necessary to see similar levels of success and collaboration in other NPS contexts.

Likewise, many barriers were overcome because groups had access to a disproportionate amount of resources, including support and funding from relatively wealthy gateway communities and the ZLI. The ZLI encouraged and enabled those involved to achieve high levels of collaboration and success, which was expected to persist after Subaru’s sponsorship ended. While participants largely viewed this scenario as a success story, there is a need to discuss whether and how the NPS and their partners should rely on private industry funding to support sustainability initiatives.

Limitations and Future Research

These findings should be evaluated and considered with care. Only individuals living and working in or near GTNP participated, and many acknowledged that GTNP had a unique relationship with concessioners and communities. Thus, these findings may not generalize to other parks. Additionally, not all GTNP concessioners chose to participate, and representatives who did owned or held management roles. Similarly, all community members and NPS staff who participated had some degree of interaction with concessioners. Thus, these findings may not represent the views of all.

Furthermore, the relationship between concessioners, NPS, and communities is complex and dynamic. We focused on aspects explicitly relevant to sustainability. More research is needed to understand other parts of this relationship.

In addition, many commented on the role of policy, including those stemming from the Concessions Management Improvement Act of 1998. Future research should examine the interplay between policy and other motivators in greater detail. Likewise, participants held many different views of “sustainability,” and not all were positive. A shared understanding of sustainability may be critical to developing shared goals, which were identified as important motivators. Therefore, examining perceptions and the utility of that term are worthwhile. Furthermore, the concept of sustainability is shifting, and many participants were engaged in socioeconomic and cultural sustainability initiatives that impacted the destination. To support theoretical and practical work, researchers should continue to adopt a holistic definition and examine sustainability within and beyond park borders.

Conclusion

Historically, the role of concessioners in sustainable development was contentious and less understood. This study explored concessioners' contemporary role in more detail. While traditional assumptions regarding concessioners' motivations and concerns for concessioners' negative impacts persist, a more nuanced and evolving story emerged. Concessioners were also portrayed as leaders with a multitude of motivations and situational factors driving them to pursue individual and collaborative sustainability initiatives in and around GTNP. To close, we leave you with a quote we believe captures the essence of our study:

I think [concessioners] have an impact both in the park and outside of the park. I think a lot of the attitudes towards concessioners of the National Parks sometimes tend to be skewed. National parks are almost like religious places for people, right? They are the very best of us. They are the stories that we tell. They are important to so many peoples in so many ways. I think people just get naturally very nervous when you see somebody coming in and making a profit off of that or inside of it at least. But I think the more people could know about a lot of the concessioners, I think that there are a lot of surprising ways in which concessioners are incorporating sustainability into their practices into the parks.... I think a lot of ways, big and small, there are a lot of positive impacts happening in sustainability. Is it perfect? No. Are there negative impacts? Yes. They are not the most sustainable business practices out there but I think the trajectory is good and with that comes positive impacts.—NPS Staff C

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References

- Andersen, P. H., & Kragh, H. (2010). Sense and sensibility: Two approaches for using existing theory in theory-building qualitative research. *Industrial Marketing Management*, 39(1), 49–55.
- Balmford, A., Green, J. M., Anderson, M., Beresford, J., Huang, C., Naidoo, R., Walpole, M., & Manica, A. (2015). Walk on the wild side: Estimating the global magnitude of visits to protected areas. *PLoS Biology*, 13(2), e1002074.
- Bricker, K. S. (2009). Sustainable tourism development in the United States of America: An intricate balance from policy to practice. In D. Leslie (Ed.), *Tourism enterprises and sustainable development: International perspectives on the responses to the sustainability agenda: Advances in tourism research series* (pp. 64–89). Routledge.

- Brinkmann, S. (2017). The interview. In N. K. Denzin, & Y. S. Lincoln (Eds.), *The SAGE handbook of qualitative research* (pp. 576–599). SAGE.
- Carlsen, J., & Edwards, D. (2008). BEST EN case studies: Innovation for sustainable tourism. *Tourism and Hospitality Research*, 8(1), 44–55.
- Creswell, J. W., & Poth, C. N. (2016). *Qualitative inquiry and research design: Choosing among five approaches*. SAGE.
- Cropanzano, R., & Mitchell, M. S. (2005). Social exchange theory: An interdisciplinary review. *Journal of Management*, 31(6), 874–900.
- Dangi, T. B., & Gribb, W. J. (2018). Sustainable ecotourism management and visitor experiences: Managing conflicting perspectives in Rocky Mountain National Park, USA. *Journal of Ecotourism*, 17(3), 338–358.
- Dinica, V. (2017). Tourism concessions in national parks: Neo-liberal governance experiments for a conservation economy in New Zealand. *Journal of Sustainable Tourism*, 25(12), 1811–1829.
- Dinica, V. (2018). The environmental sustainability of protected area tourism: Towards a concession-related theory of regulation. *Journal of Sustainable Tourism*, 26(1), 146–164.
- Eagles, P. F., & McCool, S. F. (2002). *Tourism in national parks and protected areas: Planning and management*. CABI.
- Frome, M. (1982). The un-greening of our national parks. In E. Connally (Ed.), *National parks in crisis* (pp. 286–293). National Parks Conservation Association.
- Keiter, R. B. (2013). *To conserve unimpaired: The evolution of the national park idea*. Island.
- Korstjens, I., & Moser, A. (2018). Series: Practical guidance to qualitative research. Part 4: Trustworthiness and publishing. *European Journal of General Practice*, 24(1), 120–124.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. SAGE.
- Mantell, M. (1979). Preservations and use: Concessions in the national parks. *Ecology*, 8(1), 1–51.
- Miles, M. B., & Huberman, A. M., & Saldana, J. (2014). *Qualitative data analysis: A methods sourcebook* (3rd ed.). SAGE.
- Pachmayer, A., Zhao, S., & Andereck, K. (2015). Theoretical perspectives in the study of community residents and tourism. In K. S. Bricker & H. Donohoe (Eds.), *Demystifying theories in tourism research* (pp. 118–127). CABI.
- Quinn, T. (2002). *Public lands and private recreation enterprise: Policy issues from a historical perspective*. Gen. Tech. Rep. PNW-GTR-556. U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.
- Rose, J., & Johnson, C. W. (2020). Contextualizing reliability and validity in qualitative research: Toward more rigorous and trustworthy qualitative social science in leisure research. *Journal of Leisure Research*, 51(4), 1–20.
- Schwandt, T. A., & Gates, E. F. (2017). Official science methodology is the study of how a particular kind of investigation should. In N. K. Denzin & Y. S. Lincoln (Eds.), *The SAGE handbook of qualitative research* (pp. 341–358). SAGE.
- Slocum, S. L. (2017). Operationalising both sustainability and neo-liberalism in protected areas: Implications from the USA's National Park Service's evolving experiences and challenges. *Journal of Sustainable Tourism*, 25(12), 1848–1864.

- United Nations. (1987). *Our common future: Report of the world commission on environment and development*. <https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf>
- U.S. Government Accountability Office. (2017). *National Park Service, concessions program has made changes in several areas, but challenges remain: Report to congressional requesters*. <https://www.gao.gov/assets/690/682899.pdf>
- U.S. National Park Service. (2006). *Greening contracts with NPS business partners: Nomination for the 2006 White House Closing the Circle award*. Concession Environmental Management Program. <https://www.yumpu.com/en/document/read/30330717/national-park-service-concession-environmental-management>
- University of Utah. (n.d.). *Sustainability learning outcomes*. Sustainability. <https://sustainability.utah.edu/education/faculty-resources/learning-outcomes/>
- Vaughn, J., & Cortner, H. (2013). *Philanthropy and the national park service*. Springer.
- Wyman, M., Barborak, J. R., Inamdar, N., & Stein, T. (2011). Best practices for tourism concessions in protected areas: A review of the field. *Forests*, 2(4), 913–928.

Research Paper

Applying Systems Thinking Approaches to Address Preventive Health Factors through Public Parks and Recreation Agencies

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Executive Summary

Within the United States, public parks and recreation agencies (P&R) manage facilities, lands, and recreation programs. Public health (PH) evidence points to local public P&R agencies as critical for promoting preventive health. Programs and strategies are available, but most P&R agencies have limited resources and local knowledge on which to base actions. However, the research base is growing. The global research question has shifted from asking IF P&R agencies can positively affect preventive PH factors, to HOW they can best do so with limited resources.

A literature review indicated that due to the complex system of various factors that affect health, there is a need to use a systems-oriented approach to address them. Methods included an iterative exploration through a three-stage Delphi panel study with 17 P&R agency Expert Panelists in the U.S and Canada. The study explored which preventive factors appear to be most potentially modifiable by P&R. Results indicated increased physical activity, improved nutrition, enhanced safety or perception of safety, increased social and parental engagement, improved transportation and access to locations (especially nature), and reduced overconsumption of tobacco and alcohol. However, the priority of factors varies by community, and it is important to determine the priority of the factors to address.

Results indicated that community-specific data on the factors are not typically readily available to P&R agencies. Thirty-one related national initiatives (programs) were identified and ranked by the panelists and key common strategies identified. Results indicated a need to focus strategies on leadership and adequate funding to create a strong organizational culture of systematic assessment to allocate staff and financial resources, address inclusion and equity, equitable access to assets and programs, collaboration with partners, crime prevention and environmental design strategies, increased health promotions and education, and centralized tracking and evaluation of feasible measures. Implications for research are needs for additional validation and dissemination of research, evidence-based tools, and proven methods, along with a need to help address gaps in knowledge transfer between research and practice realms. Management implications suggest methods for practice to enhance systems-thinking approaches for better preventive health outcomes through P&R in communities.

Keywords

Delphi, physical activity, nutrition, management, planning

Introduction

On a national and global level, the U.S. Centers for Disease Control and Prevention (CDC, 2020a) and the World Health Organization (WHO, 2009) are just two organizations that believe communities should address preventive health factors, such as behaviors and environmental variables. However, global and national agencies often fall short on specific recommendations for how a local community should achieve this. Public Health (PH) agencies often point to community-level parks and recreation agencies (P&R) as key agencies for operationalizing improvements in health. For purposes of this study, a community is defined as a city, county, district, or other local geographic jurisdiction. In the U.S. P&R are typically the front-line governmental organizations that provide programs, facilities, and land management services within these communities.

This study began with a thematic literature review, along with an iterative exploration with a three-stage Delphi panel study with 17 P&R agency Expert Panelists in the U.S and Canada to examine how P&R can help improve preventive health using a community systems planning approach. This study also included identification and peer validation of the potentially modifiable health factors, programs that are being used, along with analysis of suggested management strategies and implications for both research and practice.

Literature Review

A thematic literature review of relevant articles published since 1980 was conducted. Over 1,100 potentially relevant sources were identified, and 357 reference sources were included in a broad review. The focus was not on evaluating the validity, credibility, or reliability of the individual studies or articles themselves, but instead on identifying common emerging themes relative to theories used as a basis for the potentially modifiable PH factors and strategies used to address these factors by P&R. The literature indicated that standardized effective strategies for improving community preventive health have long been elusive as a major public health issue (Golden & Earp, 2012; Huang et al., 2009).

Actions by local governing decision makers to increase facilities, locations, access, and attractiveness, especially to underserved populations, may be effective ways to promote health (Powers et al., 2020). Indeed, the most recent COVID-19 pandemic has highlighted the importance of safe, accessible, outdoor spaces that are critical for mental and physical health (Slater et al., 2020). Addressing these issues is becoming a growing focus for P&R agencies. However, most agencies do not have access to an available applicable evidence base, tools, or proven methodologies to ensure they are addressing relevant issues or with correct approaches (Compton et al., 2013; Mowen et al., 2017). Given the large number of potential programs and interventions from which to choose, and the constant limits on available financial resources, local P&R administrators have been challenged to identify the most appropriate interventions for their

specific community. They need not only the evidence base for what to address and why (now available from the research realm) but also an understanding of how to address these issues within their specific type of community system.

Addressing desired PH outcomes and health equity issues among diverse populations has become a growing focus for P&R agencies (Merriam et al., 2017; Schultz et al., 2015). Local P&R agencies typically offer a wide variety of facilities, outdoor components, trails, activities, events, and programs in their communities. Research has repeatedly shown that these amenities, places, and programs, specifically those providing places and education related to social gathering, movement, and access to nature, can help increase health promoting activities (Gardsjord et al., 2014; Kaczynski & Henderson, 2007).

This study adapted a systems theory-based approach to examine how local public P&R agencies are addressing community health issues on a community system-wide basis. A primary goal was to improve the knowledge base around addressing identified factors within this context. While P&R agencies often conduct system-wide master and strategic plans, a key challenge for many P&R agencies is that they often lack practical, strategic, and systematic approaches to address complex health-oriented aspects. Resource limitations, exacerbated by the recent pandemic, limit the effectiveness of P&R agencies to effectively determine priorities, resulting in reactive rather than proactive actions (Compton et al., 2012). Much research has been focused on site-specific analysis (e.g., of a single park, geography, or program). However, because of the complex system of individual, intrapersonal, community, and societal factors that affect health, the literature indicates a potential need for a systems-oriented approach to address the multiple factors and levels of factors related to health (Compton & Kim, 2013; Huang et al., 2009; Jennings et al., 2016). Systems thinking concepts and theoretical basis guided the methods and creation of the questions for exploration throughout the study, from initial research question through analysis and discussion.

Methodology

Along with a thematic literature review, the research used an iterative three-stage Delphi Panel process with 17 P&R agency expert panelists. The Delphi technique is a method that has emerged for how researchers can discern information through obtaining group consensus from (expert panelists) when exact knowledge is unavailable (Barth & Carr, 2014). Typical focus group facilitation and questionnaire methodologies for inquiry were utilized at each stage of the Delphi process as a data collection method (Cyr, 2016). Contact points were made from July 2016 to January 2017 through online meetings, email distributions of material, PowerPoints of findings, and online questionnaires at key points. Goals for the Delphi Process were to identify the primary health factors and potential strategic interventions that can be addressed by public P&R agencies, along with exploring if and how agencies are using systems approaches to address them.

The Delphi Panel Composition and General Findings

To identify expert panelists for this research, P&R practitioners were identified from a list of interested conference session attendees for topics related to P&R healthy communities from 2010-2016. In addition, an online national search was conducted from P&R agency websites which included keywords of both “parks and recreation” and “healthy communities.” Further recommendations were gathered from a repre-

sentative of the Health and Wellness Division of the National Recreation and Park Association (NRPA).

Eighty-eight potential panelists representing local P&R agencies around the U.S. and Canada were initially invited. The Final Delphi Panel consisted of those who accepted, including 15 agencies geographically dispersed around the U.S. along with two agencies in Canada (total $N=17$). Populations of the agencies represented (in 2015) ranged from small towns (12,646) to a full province in Canada (12,651,795). Nine of the agencies served more than 100,000 residents. Eight of the agencies were NRPA Gold Medal Award Winners, and eight were CAPRA accredited, with five of the agencies holding both credentials. Those five agencies all identified that they felt these credentials were helpful for being able to assign resources to healthy communities' aspects. The majority of the panelists were Directors or Senior Managers (44%), with others identified as Supervisors (33%), Assistant Directors (11%), and three (17%) with titles specific to work related around programming specifically related to the health factors. These three were all from larger agencies serving populations of greater than 2 million.

Focus group protocols were developed to correspond with exploring the theoretical concept of systems thinking (i.e., how the agencies did or did not use systems thinking concepts in their planning and management). Transcripts of each focus group were recorded verbatim, coded, and analyzed using NVivo™ V10 qualitative software analysis. Questionnaires were administered using Qualtrics™, and analyzed in Microsoft Excel™ and SPSS™. All methods for focus groups and questionnaires were summarized. Details are available from the authors.

Delphi Panel Round #1

The first round of panel inquiry included a focus group with an overview of literature and Delphi questionnaires, using www.anymeeting.com. Semi-structured questions were included identifying agency strengths and known constraints relative to addressing potentially modifiable health factors. A PowerPoint presentation provided panelists with a summary of the literature review on the initial theoretical basis, research questions, and potentially modifiable health factors. The meeting was recorded and transcribed verbatim for analysis and a questionnaire administered. Each preliminary health factor was rated by the panel, denoting choices of perceived priority and/or importance when applied to P&R process and practice. Round 1 inquiry focused on:

- Confirming knowledge and perceived applicability for modification of health factors from the literature that P&R agencies may be addressing
- Practices for how agencies were addressing factors
- Agencies' approaches to prioritizing factors within a local setting
- Agency strengths for approaches in terms of success
- Perceptions for how P&R can best build capacity to address health factors and if they are or are not using systems thinking approaches in their work

Questionnaire #1 explored knowledge and perceived priority of modifiable health factors related to P&R services, with primary factors identified from the literature as physical activity, nutrition, safety, social engagement, and transportation. Questions also helped determine which types of data have been collected by agencies relative to the primary factors, perceived measurable outcomes, and gaps identified, or to identify

if they did not have this information, could not collect it, or were using other methods for analysis.

Delphi Panel Round #2

After summary responses and analysis from Round 1 were compiled into a presentation, another focus group was conducted online. This focus group protocol encouraged reflection, more in-depth comments, and suggestions. The focus group was also recorded and transcribed verbatim for thematic analysis. A second questionnaire was introduced to deepen responses on key preventive health factors and to further identify and refine the list of factors and process criteria, as well as to develop consensus from the Delphi panel, prioritize their perception of process, and identify and prioritize relevant national initiatives and potential outcomes.

The questionnaires included sections for open-ended responses to help identify any systems approaches or process in use, missing strategies, interventions, data collection techniques, and outcomes that expert panelists reported related to the health factors.

Delphi Panel Round #3

Results from Round #2 were compiled into a presentation for third Delphi Focus Group and provided back to the expert panelists for review. For Round #3, panelists were asked to contribute their perception of validation of compiled findings, and to submit any new potential strategies. All panelists reviewed draft results which generated conversations to further explore and uncover individual opinions regarding these issues.

National Basecamp Repository of Relevant Resources

In addition to the panel discussions and questionnaires, an online repository of sample related program materials, policies, guidelines, and assessment materials related to the factors and strategies was created using www.Basecamp.com, with over 50 contributions from panelists.

Panelists made suggestions based on positive or negative feedback from within their professional experiences. The submission of aggregated methods, tools, and draft key conclusions were reviewed and prioritized by panelists through the iterative points of contact to arrive at consensus on accuracy of the results.

As organizational culture was indicated as a potential element for agency success in the literature review (Farland, 2010), national recognition status was noted as to whether each agency was accredited by the Commission for Accreditation of Park and Recreation Agencies (CAPRA) and/or a National Recreation and Parks Association (NRPA) Gold Medal Award winner.

Results

The results were divided into primary thematic categories for analysis, including perceived gaps related to systems approaches, identifying potentially modifiable health factors, perceived effectiveness of current strategies, and programs in use (in 2017).

Outcomes Assessment

The panelists were first asked if they currently measure outcomes related to the primary health factors. Panelists indicated that 13% said yes or maybe, and 69% said

no. Of those who said yes, 67% measured outcomes for PA, and 33% measure outcomes for nutrition. Consensus indicated that better tools and strategies are needed in practice for evaluation for all factors.

Identified Gaps Related to Potential Systems Approaches

The Delphi Panel research revealed group consensus on identification of gaps in current practice related to systems approaches for how P&R agencies can address and modify preventive health factors through their specific type of organizational and community system. Programs used by representative agencies in practice to address the health factors were summarized. The following results summarize the identified consensus on identified potentially modifiable health factors for P&R, relevant programmatic approaches, along with perceived gaps and adaptations for how these factors can better be addressed using systems approaches. Panelists also identified suggestions for potential systems-thinking type approaches for how agencies may better address preventive health factors going forward.

Potentially Modifiable Health Factors

Common themes emerged from the literature and Delphi Panel results relative to which health factors are potentially modifiable by P&R agencies. The Expert Panelists were asked to rank identified health factors from the literature on a 1 to 5 scale, with 1 as most important for their agency to address (their perceived priority for their agency). Results are shown in Table 1. The list is not exhaustive, and some agencies addressed other preventive health factors. A key conclusion from all methods is that priority order for attention to the factors is community-specific, differing from agency to agency, and depending on needs, situational climate, and resources available within a given community.

Table 1
Relative Priority of Health Factors by Expert Panelists

| Priority of Factors | 1st | 2nd | 3rd | 4th | 5th | 6th | 7th | 8th |
|--------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Physical Activity | 71% | 18% | 12% | 0% | 0% | 0% | 0% | 0% |
| Safety or Perception of Safety | 20% | 20% | 7% | 20% | 0% | 13% | 13% | 7% |
| Nutrition / Food Availability | 6% | 6% | 25% | 31% | 13% | 6% | 6% | 6% |
| Transportation / Access | 0% | 7% | 13% | 0% | 7% | 60% | 7% | 7% |
| Social/Peer Engagement | 0% | 38% | 13% | 19% | 25% | 0% | 6% | 0% |
| Parental Engage. / Education | 0% | 7% | 27% | 7% | 33% | 20% | 7% | 0% |
| Other Factors | 0% | 20% | 0% | 20% | 60% | 0% | 0% | 0% |

When data were aggregated from all panelists, five primary preventive health factors were identified that can be potentially modified by parks and recreation agencies in practice, along with some additional factors. The primary identified modifiable factors are physical activity, safety, nutrition, transportation and access to spaces and nature, social/peer engagement, parental engagement, and then some additional minor factors. The factors are further discussed in the following sections.

Physical Activity

Physical activity (PA) is the primary preventive health factor overall that can be addressed on a systems basis (71% ranked it 1st priority) for all 17 agencies overall, and

all panelists had some type of PA program in place. However, the order of factors varies in specific communities. Historically, related to preventive health, much available research in the P&R realm is related to physical activity (PA). PA a contributing factor with effects on overall health, including beneficial effects on physical, mental, and cognitive functions (Kumanyika et al., 2008; Sallis et al., 2016). Public parks and recreation centers facilitate PA on a community level primarily through two distinctive characteristics—low-cost access and widespread availability (e.g., Kaczynski et al., 2008; Mowen et al., 2008). Many national level programs and campaigns address contributing factors for increasing PA and the resultant benefits of doing so (CDC, 2020b; NRPA, 2020; Sallis et al., 2015; Young et al., 2013). These national-level organizations typically look at local systems for potential interventions, and recommend a variety of programs, site enhancements, and individual methods for increasing PA. However, community-specific youth data on measurements such as levels of obesity and participation in PA are not readily available to P&R practitioners (Mowen et al., 2017). P&R agencies can have strong preventive health impact on their communities by using systems thinking approaches for offering equitable places and programs for increasing PA.

Safety and Perceptions of Safety

The second highest relative priority factor was safety and perception of safety (20% ranked it 1st Priority). The perception of a community systems environment as unsafe may hinder or lead to a reduction in participation in activities over time. This effect can be through perceptions or realities of crime or other unsanctioned behaviors or related to physical safety concerns such as unsafe traffic and transportation. One common barrier to activity participation is the safety or perception of safety around how youth get to an activity location (Rees-Punia et al., 2018). Unsupervised time for youth is associated with various negative outcomes and non-sanctioned destructive behaviors, especially between 3 and 6 p.m., just after students are released from school (Kremer et al., 2014). Although actual crime rates have not been strongly correlated with PA, fear of crime or perception of safety has been shown to be related to lower PA and outdoor recreation use (Shinew et al., 2013). Community-based programs, such as those often offered by P&R and other providers, provide alternative positive activities that can help improve safety and health (Kremer et al., 2014; NRPA, 2020b). To be most effective, P&R actors need to work well with police and other public safety actors in the community, and may need to implement Crime Prevention through Environmental Design (CPTED) principles (Armitage, 2014). Using a systems-thinking approach to addressing actual and perception of safety can greatly enhance participation in programs and use of spaces, and positively activate spaces to help reduce crime.

Social, Peer, and Parental Engagement

Evidence suggests that efforts to improve health factors may be affected by increasing or decreasing peer-to-peer and parental engagement of others in participation and policies (Christensen et al., 2021; Rodrigues et al., 2018). For youth, parental engagement and modeling are more important than simple statements such as telling youth to be healthier. If parents are not themselves modeling healthy actions, youth may not either (Rodrigues et al., 2018). However, when peers adopt healthy practices, others tend to do so. For all ages and actors within the community system, teambuilding and creation of social engagement and bonds through sports, events, and other programs can work to improve health. From a systems-thinking approach, it is important to focus not only on the individual and personal levels of education and change, but also on the intrapersonal, familial, community, and societal levels for P&R strategies.

Nutrition and Food Availability

Nutrition has long been a key preventive health factor (Papas et al., 2007). The role of P&R agencies in community nutrition availability and education appears to be important but has not yet been clearly defined (Hardison-Moody et al., 2020). The evidence highlighting the effectiveness of such policies in altering the food and beverage environment in community P&R settings is minimal at this point (Narain et al., 2016). Nationally accepted guidelines have been adopted for recommendation by NRPA as suggested practices for P&R related to healthy eating (NAA HEPA Standards, n.d.). New approaches for addressing food equity, food deserts, and education around nutrition can be addressed by P&R agencies, usually in conjunction with creating new partner relationships with other community organizations. Typical programmatic elements reported as successful by informant agencies include hosting sites for farmers markets, providing community gardens, along with inclusion, modeling, and education through programmatic food policies.

Transportation and Access to Parks, Facilities, and Nature

Most neighborhoods are not appropriately connected to parks, greenspaces, and facilities via pedestrian paths (McGrath et al., 2015; NRPA-SRTP, 2021). This presents equity challenges for how people without motorized transportation, such as youth, older adults, and under-resourced populations can easily access the benefits of P&R. Using systems approaches to identify gaps and access opportunities can improve preventive health. People are more likely to walk to parks if their communities are better connected to parks by active transit routes (NRPA-SRTP, 2020).

Local P&R systems can address the physical layout, walkability, cultural education, and the policy issues related to alternative transportation by improving access to safe trails and sidewalks, along with working with local transportation departments to enhance availability, timeliness, and cleanliness of public transportation, and removing barriers to access. This may also have important benefits for pollution control, climate change concerns and increasing community expended PA (Ng & Poplin, 2012; Sallis et al., 2006).

There is a growing body of work examining the restorative effects of access to nature on humans, especially in terms of stress reduction, reduced attention deficit disorder, and other forms of psycho-emotional restoration (Frumkin et al., 2017). Preventive health elements have been shown to be correlated with access to nature and greenspace, such as those found in parks and other natural areas (Jennings et al., 2016; Larson et al., 2016; Wolf et al., 2020). These reviews confirm that living near green areas, having a view of vegetation, and spending time in natural settings provide benefits. Green spaces, such as parks and natural areas, including those in the most built-up cities, provide restorative settings that offer people respite and recovery from daily and chronic stressors (Kuo, 2013). Various related language and phrases are becoming more common, such as treating nature-deficit disorder (Kuo, 2013), forest bathing, *shinrin yoku*, and nature therapy (Kotera et al., 2020), and healing through eco-therapy (Shanahan, 2015).

As P&R agencies manage public parks, forests, and other types of greenspaces on a local level, this evidence related to the role they play is increasing in importance at a systems level. Studies are aligning with newer body of research related to physicians or other medical professionals prescribing parks and natural areas for health. Seltenrich (2015) provided a concise summary of some of this burgeoning research, including the collaborative work on the *Healthy Parks Healthy People* initiative of the National Park

Service (NPS) and the National Recreation and Park Association (NRPA). Researchers have continued the call to action for encouraging physical activity, including prescribing access to places and activities on public parks, natural areas, facilities, and trails, as a standard of care by physicians (Mowen et al., 2017; Zarr et al., 2017).

Additional Modifiable Health Factors

Additional factors not initially identified in the literature emerged. These included public policies around addressing how people can learn coping strategies from P&R for managing stress (especially now prevalent in communities during the pandemic), and minimize negative health behaviors such as tobacco cessation and alcohol overconsumption. Furthermore, findings from the Delphi panel suggest that P&R agencies may be able to play a positive role in addressing addictions, such as smoking prevention and alcohol overconsumption, especially among youth. In the United States, more than 1,200 municipalities now have smoke-free parks, and more than 100 have smoke-free beaches (NRPA–Tobacco, n.d.). The consensus from panelists was that since addressing tobacco is typically a community-wide policy for public facilities, they may not need a specific separate policy for P&R, unless the community does not have one in place.

Alcohol and drug reduction in communities was also a suggested factor. The literature indicates that on a societal scale, reduction of alcohol and other addictive drug consumption in communities is warranted as a preventive public health goal (Dawson et al., 2015). P&R agencies may offer alcohol education to the public through programs and special events. By using systems approaches and working with other actors within the community system, agencies may be able to play an important front-line role in education and social connections that are vital in preventing and treating substance addictions.

Perceived Effectiveness of Programs and Strategies to Address Health Factors

The study explored the expert panelists' perception of effectiveness of a variety of tools, strategies, methods, and initiative steps identified from the literature used to address the primary health factors. Results from panelists indicated that creating programs and community coalitions specifically to address the health factors are deemed the most effective methods. Hiring specific staff and pursuing grant funding were also effective, but a substantial number of agencies have not used these methods. When asked during subsequent focus groups as to why they have not used these methods, a typical answer was that resources are generally not available, especially in smaller communities. Table 2 provides a summary of panelist-perceived effectiveness of the aggregated methods that were presented in literature and by the panelists.

Identified Tools, Analysis, and Strategies for a Systems Approach for P&R Agencies

In line with analysis of a systems-thinking approach to management and planning for preventive health factors, Delphi Panelists reviewed and discussed strategies and tools that were suggested for potential application on a system-wide approach. As a key overriding concept, panelists indicated that unless the agency is large and can afford to hire specialty staff, attention for policies, planning, and partnerships addressing the health factors needs to come primarily from upper-level leadership staff. Key identified systems analysis tools and strategies identified for P&R agencies include:

Table 2
Percent Rating of Perceived Effectiveness of Methods to Address Factors

| Potential Methods | Extremely effective | Moderately effective | Not effective at all | Never used | Don't Know | Total |
|--|---------------------|----------------------|----------------------|------------|------------|-------|
| Creating specific programs | 41% | 41% | 0% | 12% | 6% | 17 |
| Creation of a community coalition | 41% | 18% | 0% | 35% | 6% | 17 |
| Hiring specific staff to address | 35% | 12% | 0% | 47% | 6% | 17 |
| Pursuing grant funding | 31% | 25% | 6% | 38% | 0% | 16 |
| Analyzing partners and alternative providers | 29% | 41% | 0% | 24% | 6% | 17 |
| Youth Programs | 25% | 56% | 0% | 19% | 0% | 16 |
| System Inventory of Assets | 19% | 38% | 13% | 25% | 6% | 16 |
| Systematic Program Analysis | 19% | 50% | 6% | 19% | 6% | 16 |
| Creating Positive Policy focus | 19% | 44% | 0% | 31% | 6% | 16 |
| Centralized web/social media | 18% | 24% | 0% | 47% | 12% | 17 |
| General community surveying | 18% | 47% | 6% | 18% | 12% | 17 |
| Other special assessments | 18% | 41% | 0% | 18% | 24% | 17 |
| Evaluation of crime / safety | 13% | 31% | 0% | 25% | 31% | 16 |
| Creation of Youth Group | 12% | 41% | 0% | 41% | 6% | 17 |
| Parental education | 12% | 53% | 0% | 24% | 12% | 17 |
| Financial analysis of impact | 6% | 13% | 0% | 75% | 6% | 16 |
| Surveying of youth | 6% | 75% | 0% | 13% | 6% | 16 |
| Correlation of health metrics to site planning | 6% | 19% | 0% | 38% | 38% | 16 |
| Physical Evaluation (like BMI) | 0% | 29% | 12% | 47% | 12% | 17 |
| Other | 0% | 33% | 0% | 33% | 33% | 3 |

- Implementing department-wide master and strategic plans that identify the needs and plans for addressing the health factors as part of overall agency planning.
- Using community-wide needs assessments that include questions related to the health factors designed to gather qualitative input from demographically representative groups and key stakeholders for validation and prioritization. These should include in person or online focus groups, public meetings, individual interviews, staff input, user and/or intercept surveys, youth-specific surveying tools, online engagement tools, and input from randomized surveys of residents.
- Using component-based methods (CBM) for geo-spatial inventory and level of service (LOS) analyses that include not only capacity, parcel-basis, and asset locations, but also component-based location, quality, and access analysis, along with sub-area demographics and density for equity analysis within quantitative datasets. Research is now available that can help integrate evidence-based PA energy expenditures into P&R component-based analysis (Floyd et al., 2015). New tools such as GRASP® Active are available and being effectively used in the practice and consulting realms to help address these aspects on a systems level.

- Using site-specific analysis and observational tools, which have potential to help evaluate outcomes, especially in pre and post-evaluation of sites or projects. These can include site-specific land/asset surveying, observational behavior and activity analysis tools (e.g., SOPARC, C-PAT and eC-PAT, Behavior Mapping, webcam sourcing), direct measured analysis tools (e.g., wearable trackers, doubly labeled water, BMI measurements, participation tracking), and self-reported data.
- Creating policy and practice guidelines related to practices, programs, and educational campaigns. Analysis of resources (funding, capital, and staffing) dedicated to preventive health efforts appear to be correlated with effective modification of health factors. The most common policies and guidelines include vending/food provision policies and physical activity specific program plans. However, policies related to smoking cessation and moderation of alcohol, partnerships, and asset planning/design are also deemed helpful.
- Ensuring that adequate funding and needs for additional resources are available. This emerged as the primary constraint to system effectiveness. Funding is in short supply for P&R agencies. While public demand remains high, even agencies who have more staff reported needing more funding to implement the programs or more spaces for activity and programs to occur. While focus on preventive health as a goal has been at least anecdotally known by most P&R professionals since the field emerged, the quantification of return on investment (ROI) for these types of allocations has been minimal. However, there are now peer-reviewed methods available to undertake ROI calculations.

Discussion

The results section identified the primary gaps, summary modifiable health factors, and potential strategies suggested for more effective integration of preventive health into P&R systems approaches.

Gaps and Adaptations of Systems Theory for Parks and Recreation

There are relationships and processes that can be addressed within and around the context of P&R systems (e.g., how levels are connected, how research informs programs, connections of the actors within the systems). These dimensions of the system do not exist in isolation but are connected at different levels and different times. Because of the complex system of the various levels of individual, intrapersonal, community, and societal factors that affect health, the literature indicated the need to use a systems-oriented approach and related theory to address the multiple factors (Compton & Kim, 2013; Huang et al., 2009; Jennings et al., 2016). Greater understanding of complex adaptive systems and organizational elements add to understanding of both causes and solutions of public health problems (WHO, 2009). For issues as complex as trying to position P&R agencies as preventive PH providers, a systems approach and activation within communities may help organize and prioritize interventions for those specific agencies.

Applying systems theory provides a basis for how P&R agencies can address preventive PH factors in their specific communities through both research and practice. Analysis of the standard deviations and additional resources provided from Delphi panelists who have used community-specific prioritization processes, such as a Multi-Attribute Utilities Technique (Compton et al., 2012; Young et al., 2013) to address prioritizing health factors, indicated that the priority order of factors varies by commu-

nity. Using systems approaches to assess, evaluate, address, and improve outcomes for these factors can improve health in a community.

A summary system model is provided in Figure 1, indicating the key factors and actors within the typical community system. P&R can be a leading (but not the only) actor within this system, and through strategic leadership, can strongly influence how all factors and actors are connected for the overall desired systems outcome of improving preventive community health factors (Penbrooke, 2017). A key element is that P&R can take a leadership role and facilitate working with the other partners, such as the local community medical, schools, public works, transportation, and public safety agencies, to address other strategies that may be implemented to address the factors.

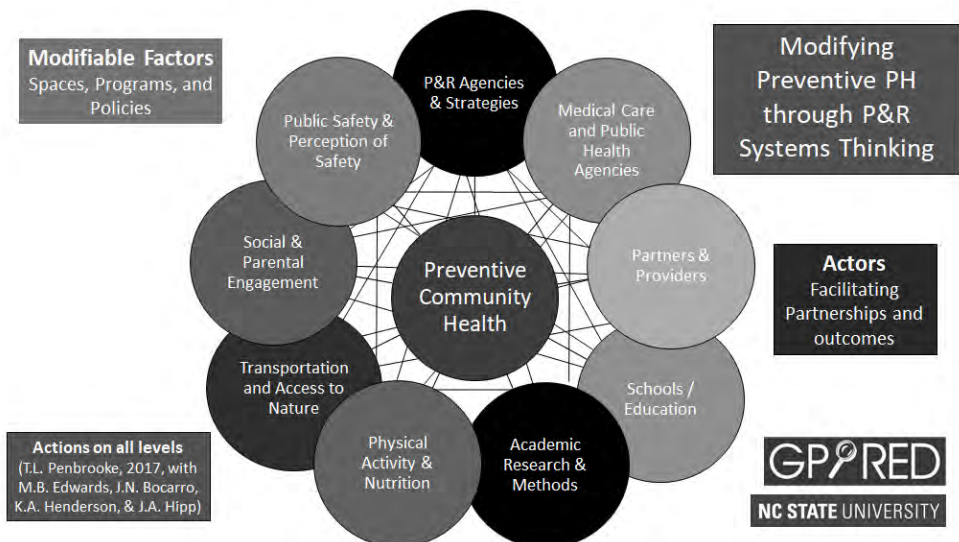
A potential limitation was that Delphi Panelists were identified through a waterfall method. This allowed for expanding the qualified group of panelists with content knowledge, but there is no way to be certain that the “right” experts were part of the process. The potential in this research is to take that next step that goes beyond just saying there is and should be “action at all levels.” Next steps can include using valid methods for analysis to identify where breakdowns in the systems occur (e.g., in the data and research realm) and in the management of local P&R agencies. These next steps can more naturally support the heavily research focused practice implications presented in the current literature. There also needs to be a strong focus on translation of current research knowledge to practice, so that public agency managers are more aware of the research methods and resources available to them.

Management Implications

The mechanisms for how a specific agency can use systems approaches to address the factors in their community appears to be ingrained in establishing emphasis on

Figure 1

System Model for P&R Agencies as a Partner in Preventive Community PH (Penbrooke, 2017)



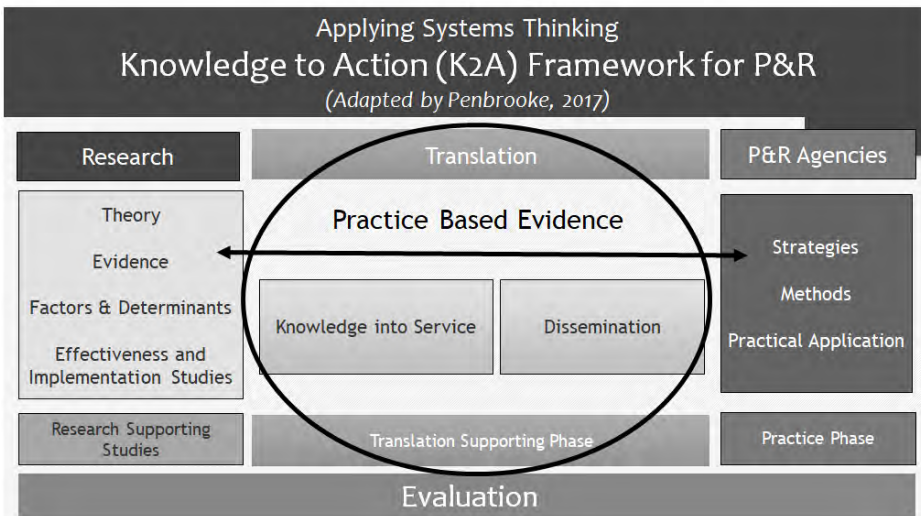
equitable, integrated, and adopted system-wide needs assessments and phased action plans that identify priorities for factors and specific strategies for a specific agency and related actors in the community.

P&R agencies can now quantify benefits and impacts for goals. System-wide analysis of components can help address equity. Site-specific goals can be quantified through pre- and post-studies to indicate contribution to the overall system, allowing agencies or researchers to project how changes may occur for specific capital investments. Integration with the medical realm promotes health improvements through tools utilized in P&R prescriptions programs.

Addressing the Gaps using a Knowledge to Action Framework Application

The research indicated that even though much of the research evidence is available in the academic and PH realms, it is unfortunately slow in translation and dissemination to the practice realm. As one panelist indicated, “There’s at least a 10-year lapse in theory and the updates to trends and research for practice.” There was agreement that P&R practice does not yet include strong focus on evaluation, and that researchers are slow to accept and validate the emerging tools that come from the practice realm. In response to this gap, Figure 2 was created to highlight the interaction that can happen between the two realms within an improved knowledge exchange system that can be applied to community systems planning for health.

Figure 2
Systems Thinking-Knowledge to Action Framework for P & R



This research has highlighted the key modifiable health factors that can be addressed by P&R, along with potential strategies to use for better community systems planning for health. As research and communication is improved to allow for better integration and analysis, P&R agencies will be better able to track, evaluate, and convey the return on investments for their systems to decision makers, thus improving outcomes for community preventive health overall.

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References

- Armitage, R. (2014). Crime prevention through environmental design. In G. Bruinisma & D. Weisburd (Eds.), *Encyclopedia of criminology and criminal justice* (pp. 720–731). Springer.
- Barth, D., & Carr, M. (2014). Using a Delphi method to develop criteria for high performance public spaces that contribute to community sustainability. *Landscape Research Record*, 2, 132–137.
- Centers for Disease Control and Prevention (CDC). (2020a). *CDC Global Health Strategy 2019 -2021*. <https://www.cdc.gov/globalhealth/strategy/default.htm>
- Centers for Disease Control and Prevention (CDC). (2020b). *Overweight and obesity*. <https://www.cdc.gov/obesity/resources/index.html>
- Christensen, J. H., Elsborg, P., Melby, P. S., Nielsen, G., & Bentsen, P. (2021). A scoping review of peer-led physical activity interventions involving young people: Theoretical approaches, intervention rationales, and effects. *Youth & Society*, 53(5), 811–840.
- Compton, D. M., & Kim, K. (2013). Getting kids off the couch and into healthy communities: modeling recreation programs with STELLA, The Connector: ISEE Systems, Fall.
- Compton, D. M., Kim, K., & Damask, D. (2012). *MAUT analysis of factors and indicators, Appendix A*. South Bend, Indiana Parks and Recreation Department, Healthy Communities Research Group Surveillance and Management Toolkit, Year Two Report, GP RED, 2012. <http://www.gpred.org/initiatives/healthy-communities-research-group/>.
- Cyr, J. (2016). The pitfalls and promise of focus groups as a data collection method. *Sociological Methods & Research*, 45(2), 231–259. <http://doi.org/10.1177/0049124115570065>
- Dawson, D. A., Goldstein, R. B., Saha, T. D., & Grant, B. F. (2015). Changes in alcohol consumption: United States, 2001–2002 to 2012–2013. *Drug and Alcohol Dependence*, 148, 56–61. <https://doi.org/10.1016/j.drugalcdep.2014.12.016>
- Farland, J. E. (2010). *A comparative study of the organizational culture of CAPRA Accredited and non-accredited municipal parks and recreation agencies*. (Doctoral dissertation). ProQuest Dissertations and Theses, ProQuest, LLC, UMI #3442093.
- Floyd, M., Suau, L. J., Layton, R., Maddock, J. E., & Bitsura-Meszaros, K. (2015). *Cost analysis for improving park facilities to promote park-based physical activity*. North Carolina Cooperative Extension.
- Frumkin, H., Bratman, G. N., Breslow, S. J., Cochran, B., Kahn, P. H., Lawler, J. J., Levin, P. S., Tandon, P. S., Varanasi, U., Wolf, K. L., & Wood, S. A. (2017). Nature contact and human health: A research agenda. *Environmental Health Perspectives*, 125(7), 075001.
- Gardsjord, H. S., Tveit, M. S., & Nordh, H. (2014). Promoting youth's physical activity through park design: Linking theory and practice in a public health perspective. *Landscape Research*, 39(1), 70–81. <http://doi.org/10.1080/01426397.2013.793764>

- Golden, S. A., & Earp, J. L. (2012). Social ecological approaches to individuals and their contexts: Twenty years of health education & behavior health promotion interventions. *Health Education & Behavior, 39*(3), 364–372.
- Hardison-Moody, A., Haynes-Maslow, L., Bocarro, J., Kuhlberg, J., Schulman, M., Bowen, S., Anderson, A., Morris, L., & Murphy, Y. (2020). Partners at play: Engaging parks and recreation departments in extension's health promotion work. *Journal of Human Sciences and Extension, 8*(3), 177–188.
- Huang, T. T., Drownowski, A., Kumanyika S. K., & Glass, T. A. (2009). A systems-oriented multilevel framework for addressing obesity in the 21st century. *Preventing Chronic Disease, 6*(3), A82.
- Jennings, V., Larson, L., & Yun, J. (2016). Advancing sustainability through urban green space: Cultural ecosystem services, equity, and social determinants of health. *International Journal of Environmental Research and Public Health, 13*(2), 196. <https://doi.org/10.3390/ijerph13020196>.
- Kaczynski, A. T., & Henderson, K. A. (2007). Environmental correlates of physical activity: A review of evidence about parks and recreation. *Leisure Sciences, 29*, 315–354.
- Kaczynski, A., Potwarka, L., & Saelens, B. (2008). Association of park size, distance, and features with physical activity in neighborhood parks. *American Journal of Public Health, 98*(8), 1451–1456. doi: 10.2105/AJPH.2007.129064.
- Kotera, Y., Richardson, M., & Sheffield, D. (2020). Effects of Shinrin-Yoku (forest bathing) and nature therapy on mental health: A systematic review and meta-analysis. *International Journal of Mental Health and Addiction, 1*–25.
- Kremer, K. P., Maynard, B. R., Polanin, J. R., Vaughn, M. G., & Sarteschi, C. M. (2014). Effects of after-school programs with at-risk youth on attendance and externalizing behaviors: A systematic review and meta-analysis. *Journal of Youth and Adolescence, 44*(3), 616–636. <http://doi.org/10.1007/s10964-014-0226-4>
- Kumanyika, S. K., Obarzanek, E., Stettler, N., Bell, R., Field, A. E., Fortmann, S. P., Franklin, B. A., Gillman, M. W., Lewis, C. E., Poston, W. C., Stevens, J., & Hong, Y. (2008). Population-based prevention of obesity: The need for comprehensive promotion of healthful eating, physical activity, and energy balance: A scientific statement from American Heart Association Council on Epidemiology and Prevention, Interdisciplinary Committee for Prevention (Formerly the Expert Panel on Population and Prevention Science). *Circulation, 118*(4), 428–464.
- Kuo, F. E. (2013). Nature-deficit disorder: Evidence, dosage, and treatment. *Journal of Policy Research in Tourism, Leisure and Events, 5*(2), 172–186.
- Larson, L. R., Jennings, V., & Cloutier, S. A. (2016). Public Parks and Well-being in Urban Areas of the United States. *PLoS ONE, 11*(4): e0153211. doi:10.1371/journal.pone.0153211
- McGrath, L. J., Hopkins, W. G., & Hinckson, E. A. (2015). Associations of objectively measured built-environment attributes with youth moderate-vigorous physical activity: a systematic review and meta-analysis. *Sports Medicine, 45*(6), 841–865.
- Merriam, D., Bality, A. Stein, J., & Boehmer, T. (2017). *Improving public health through public parks and trails: Eight common measures*. Summary report. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and US Department of the Interior, National Park Service. http://go.nps.gov/improving_public_health

- Mowen, A. J., Barrett, A. G., Graefe, A. R., Kraschnewski, J. L., & Sciamanna, C. N. (2017). "Take in two parks and call me in the morning": Perception of parks as an essential component of our healthcare system. *Preventive Medicine Reports*, 6, 63–65.
- Mowen, A., Kaczynski, A., & Cohen, D. (2008). The potential of parks and recreation in addressing physical activity and fitness. *President's Council on Physical Fitness and Sports*, 9(1), 1.
- Narain, K., Mata, A., & Flores, J. (2016). Nutrition policy decreases sugar-sweetened beverages in municipal parks: Lessons learned from Carson, California. *Journal of Public Health Management and Practice*, 22(4), 392–394.
- National Afterschool Association (NAA). (n.d.). *Healthy eating physical activity standards* (HEPA). <http://naaweb.org/resources>
- Ng, S. W., & Popkin, B. M. (2012). Time use and physical activity: A shift away from movement across the globe. *Obesity Reviews*, 13(8), 659–680, doi: 10.1111/j.1467-789X.2011.00982.x.
- National Recreation and Park Association. (n.d.). *Tobacco position statement*. http://www.nrpa.org/our-work/three-pillars/tobacco-consumption-in-parks/#.WFlrkNN-x_k.email
- National Recreation and Park Association. (2020a). *Role of parks and recreation in health and wellness*. <https://www.nrpa.org/our-work/Three-Pillars/role-of-parks-and-recreation-on-health-and-wellness/>
- National Recreation and Park Association. (2020b). *Creating safe park environments to enhance community wellness*. <https://www.nrpa.org/contentassets/f768428a39aa4035ae55b2aaff372617/ark-safety.pdf>
- National Recreation and Park Association. (2021). *Safe routes to parks: Improving access to parks through walkability*. NRPA Publications. <https://www.nrpa.org/our-work/partnerships/initiatives/safe-routes-to-parks/>
- Papas, M. A., Alberg, A. J., Ewing, R., Helzlouer, K. J., Gary, T. L., & Klassen, A. C. (2007). The built environment and obesity. *Epidemiologic Reviews*, 29(1), 129–143.
- Penbrooke, T. L. (2017). *Local parks and recreation agencies use of systems thinking to address preventative public health factors*. (Doctoral Dissertation). North Carolina State University, Raleigh, NC. <https://repository.lib.ncsu.edu/handle/1840.20/34758>.
- Powers, S. L., Lee, K. J., Pitas, N. A., Graefe, A. R., & Mowen, A. J. (2020). Understanding access and use of municipal parks and recreation through an intersectionality perspective. *Journal of Leisure Research*, 51(4), 377–396.
- Rees-Punia, E., Hathaway, E. D., & Gay, J. L. (2018). Crime, perceived safety, and physical activity: A meta-analysis. *Preventive Medicine*, 111, 307–313.
- Rodrigues, D., Padez, C., & Machado-Rodrigues, A. M. (2018). Active parents, active children: The importance of parental organized physical activity in children's extracurricular sport participation. *Journal of Child Health Care*, 22(1), 159–170.
- Sallis, J. F., Cervero, R. B., Ascher, W., Henderson, K. A., Kraft, M. K., & Kerr, J. (2006). An ecological approach to creating active living communities. *Annual Review of Public Health*, 27, 297–322.
- Sallis, R. E., Matuszak, J. M., Baggish, A. L., Franklin, B., Chodzko-Zajko, W., Fletcher, B., Gregory, A., Joy, E., Matheson, G., McBride, P., Puffer, J., Trilk, J., & Williams, J. (2016). Call to action on making physical activity assessment and prescription a medical standard of care. *Current Sports Medicine Reports*, 15(3), pp. 207–214.

- Sallis, J. F., Spoon, C., Cavill, N., Engelberg, J., Gebel, K., Lou, D., Parker, M., Thornton, C. M., Wilson, A., Cutter, C. L., & Ding, D. (2015). *Making the case for designing active cities*. Active Living Research.
- Schultz, C. L., Layton, R., Edwards, M. B., Bocarro, J. N., Moore, R. L., Tepperberg, S. Bality, A., & Floyd, M. F. (2016). Potential measures for linking park and trail systems to public health. *Journal of Park and Recreation Administration*, 34(1), 4–23.
- Seltenrich, N. (2015). Just what the doctor ordered: Using parks to improve children's health. *Environmental Health Perspectives*, 123(10), A254–A259.
- Shanahan, D. F., Fuller, R. A., Bush, R., Lin, B. B., & Gaston, K. J. (2015). The health benefits of urban nature: How much do we need? *BioScience Advance Access*. April. 1–10.
- Shinew, K. J., Stodolska, M., Roman, C. G., & Yahner, J. (2013). Crime, physical activity and outdoor recreation among Latino adolescents in Chicago. *Preventive Medicine*, 57(5), 541–544. <http://doi.org/10.1016/j.ypmed.2013.07.008>.
- Slater, S. J., Christiana, R. W., & Gustat, J. (2020). Recommendations for keeping parks and green space accessible for mental and physical health during COVID-19 and other pandemics. *Preventing Chronic Disease*, 17, E59.
- Wolf, K., Derrien, M. M., Kruger, L. E., Penbrooke, T. L. (2020). Nature, outdoor experiences, and human health. In S. Selin, S., L. K. Cervený, L. D. J. Blahna, & A. B. Miller (Eds.), *Igniting research for outdoor recreation: Linking science, policy, and action* (pp. 65-83). Gen. Tech. Rep. PNW-GTR-987. U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.
- World Health Organization. (2009). *Systems thinking for health systems strengthening*. World Health Organization Publishing. <http://www.who.int/alliance-hpsr/resources/9789241563895/en/>.
- Young, S. J., Ross, C. M., Kim, K., & Sturts, J. R. (2013). Engaging youth in physical activity: Indicators of a physically active friendly community. *Child Indicators Research*, 7(1), 41–55. <http://doi.org/10.1007/s12187-013-9199-1>
- Zarr, R., Cottrell, L., & Merrill, C. (2017). Park prescription (DC Park Rx): A new strategy to combat chronic disease in children. *Journal of Physical Activity and Health*, 14(1), 1–2.

Research Paper

Influences of Engaging in a Participatory Monitoring and Evaluation Process on Stakeholder Perceptions of Key Performance Indicators for Trails

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Executive Summary

Trail use is growing globally. Managers confront the classic dilemma of protecting ecological integrity and providing enriching experiences. They concomitantly face the imperative for sustainability—contemporarily characterized by complexity, uncertainty, conflict, and change. Heightened levels of visitation are cause for immense concerns due to adverse impacts to the environment as well as visitor experiences. COVID-19 exacerbates these challenges as heightened levels of visitation are occurring, while managers simultaneously face decreases in conservation funding, and restrictions on protected area operations. Participatory monitoring and evaluation (PM&E) is an emerging innovation to collaboratively address social-ecological challenges, such as issues associated with trail use. This research is concerned with exploring the influences of engaging in a PM&E process on stakeholder perceptions of key performance indicators (KPIs) for trails. This study compares stakeholder perceptions of KPIs for trails before and after a PM&E workshop at the Niagara Glen Nature Reserve in Ontario, Canada. Results show that PM&E can facilitate consensus among stakeholders regarding the overall goals of management and associated KPIs for environmental management planning. Stakeholders were shown to experience a real change in their perceptions of KPIs. The PM&E process studied show that participants became more conscious of the wider social realities as well as their perceptions of trail management. The study has important implications for managers concerned with trails and sustainability, including building consensus among key stakeholders to reach management goals, enhancing localized decision making, and building capacity for management towards sustainability. Trails, as well as the wider community can ultimately benefit from participatory approaches to environmental management. Consensus-building through PM&E works to enhance decisions that account for a diversity of perspectives. Stakeholder participation in trail management increases the likelihood that local needs and priorities are met, while allowing stakeholders to build capacity and learn to effectively manage their environments. Furthermore, positive perceptions from being meaningfully involved in PM&E can ensure the support of constituents, which is imperative for the long-term success of management planning.

Keywords

Stakeholder perceptions, participation, monitoring and evaluation, key performance indicators, trails

Introduction

Managing visitor impacts for sustainability is an increasingly challenging endeavour. Demand for outdoor recreation spaces is growing, intensifying, and diversifying globally, which has been amplified by the COVID-19 pandemic (Geng et al., 2021). Heightened levels of visitation are cause for immense concerns regarding adverse impacts to the environment and visitor experiences (Amerson et al., 2020). Exacerbating this management challenge is the propensity for visitors to concentrate around particular features (Kling et al., 2017).

Trails are prime examples of concentrating features within outdoor recreation and nature-based tourism. Trails are defined as travel ways, established either through construction or use, that are accessible by one or more modes of transportation (NPS, 2020). Whereas trails historically were of great functional importance, today they are imperative for both recreation and tourism. Significant increases in trail use during the COVID-19 pandemic have been documented around the world (Geng et al., 2021). Trail use intensification creates management challenges for maintaining the balance of conservation efforts with the use of outdoor recreation resources.

High visitation rates and intensive trail-related activities contribute to negative environmental and social impacts (Amerson et al., 2020). At the same time, trails provide a multitude of benefits, including improved mental and physical health, connecting people to culture, and alternative transportation (Kling et al., 2017). Finally, trails provide environmental benefits such as connective landscape corridors, preservation of cultural and historic sites, increased biodiversity, and environmental stewardship (Sayan & Atik, 2011). The importance of these benefits to society has been underscored by the COVID-19 pandemic (Kleinschroth & Kowarik, 2020).

In addition to confronting the classic dilemma of providing enriching experiences to visitors, while simultaneously protecting the integrity of ecosystems (Manning, 2007), managers are faced with the contemporary need to navigate sustainability in the 21st century—an era of complexity, conflicts, uncertainty, and change (Chaffin et al., 2014). COVID-19 exacerbates these challenges as managers additionally face decreases in conservation funding, restrictions on protected area operations, and an increase of human threats to natural areas (Evans et al., 2020). To address contemporary management challenges and progress towards sustainable social-ecological systems, it is necessary to rethink the approaches used in managing trails.

Participatory monitoring and evaluation (PM&E) is an emerging and innovative approach that aims to collaboratively address complex and contested social-ecological challenges. In this study, we examine PM&E as a strategy to address issues relating to trails, with a specific focus on understanding how engagement in the process influences the perceptions of stakeholders. The study was conducted in Niagara Parks, Canada. Results are collated from multiple sources of data collection and presented in three parts, reflecting the experimental and participatory research design. As this research

is an initial examination of PM&E and trail management, the findings are discussed in relation to monitoring and evaluation aspects of environmental management, outdoor recreation, and parks.

Background Literature

Effective environmental management is inextricably linked to well-designed systems of monitoring and evaluation (M&E; Bennett et al., 2018). External experts gathering ecological information has been the favoured means of evaluation as a way to ensure objectivity (Bennett, 2016). However, the limitations of this approach are increasingly recognized as it relies predominantly on obtaining ecological measures (Bennett, 2016; Trimble & Plummer, 2018); does not consider the dynamism of socio-ecological systems, and therefore cannot provide comprehensive insights (Reed, 2008); and alienates stakeholders who hold local knowledge and should be involved in resource governance (Thao et al., 2019). Consequently, a shift “away from externally controlled data-seeking programs, towards the recognition of locally-relevant processes for gathering, analyzing, and using information” (Abbot & Guijt, 1997, p. 9) is occurring (see also Thao et al., 2019).

Participatory approaches are an innovation with the potential to address the aforementioned limitations as well as realize novel benefits by leveraging the relationship between managers and stakeholders (Reed, 2008; Thao et al., 2019). PM&E is a process whereby different stakeholders collectively engage in the monitoring and evaluation of a management strategy and/or intervention over time (Jackson & Kassam, 1998). Although specific methods vary, a typical PM&E process includes nine phases: 1) needs assessment and appraisal, 2) planning and project design, 3) baseline indicator development, 4) baseline data collection, 5) designing the M&E plan, 6) implementation, 7) monitoring and review, 8) evaluation, and 9) feedback and decision making (Shah et al., 2006). As PM&E involves stakeholders at every stage, it is recommended that it occurs sequentially (Shah et al., 2006). A cyclical process ultimately affords stakeholders the opportunity to learn from the experience and each other, and build the adaptive capacity required to navigate sustainability challenges (Anja et al., 2018; Estrella et al., 2000).

This research focuses on the developmental portion of PM&E. During this formative phase relevant stakeholders assess and appraise the current needs of the site; discuss and develop a project plan; and develop a suite of baseline Key Performance Indicators (KPIs). Our concerted focus on the formative phase of PM&E stems from scholarship at the nexus of trail management, environmental management and sustainability, which underscores the attendant importance of and knowledge voids within PM&E practices.

The selection of KPIs are crucial to systematically monitor ecosystem conditions and social experiences associated with trails. They convey important information indicative of current circumstances, are integral to defining standards and ensuring compliance, and enable appraisal of achievement of a desired state (Estrella & Gaventa, 1998; Stem et al., 2005; Trimble & Plummer, 2018). KPIs enable measurement of ecological and social properties in relation to an intervention or approach, ultimately signalling if progress is being made towards a more desirable state (Estrella & Gaventa, 1998). While it is unlikely that impacts will cause a complete loss of trail systems, the level of impact acceptability is an open and often contested question. Effective management requires some level of consensus amongst stakeholders (Toor & Ongunlana, 2009). As

Hammitt and Cole (1998, p. 10) observe “impacts become good or bad, important or significant, only when humans make value judgements about them.” More specifically, selecting KPIs is a multiple criteria decision-making problem (Toor & Ongunlana, 2010) in which stakeholders have different perceptions of indicators as well as success (Cruz Villazón et al., 2020). Arriving at a shared understanding of the most meaningful indicators is a major management challenge (Manning, 2007; Reed, 2008; Trimble & Plummer, 2018). Collaboration is highlighted as an important and necessary governance innovation here under conditions of complexity, uncertainty and value conflicts (Anja et al., 2018; Bennett et al., 2018). Moreover, developing a shared understanding of indicators and learning from action is paramount to adaptive approaches for navigating social-ecological systems (Bennett et al., 2018).

While PM&E is garnering concerted attention, several important questions are unresolved. In practice, the most important KPIs for effective trail management strategies are unclear (Kohlhardt et al., 2017; Manning, 2007). One of the main and distinct goals of PM&E is consensus (Estrella et al., 2000) and thereby incorporating the perspectives of stakeholders (Reed, 2008). However, it remains unclear how this process affects stakeholder perceptions generally, and of KPIs specifically (Kananura et al., 2017). It cannot be assumed that stakeholders’ change their perceptions through PM&E (Njuki et al., 2006).

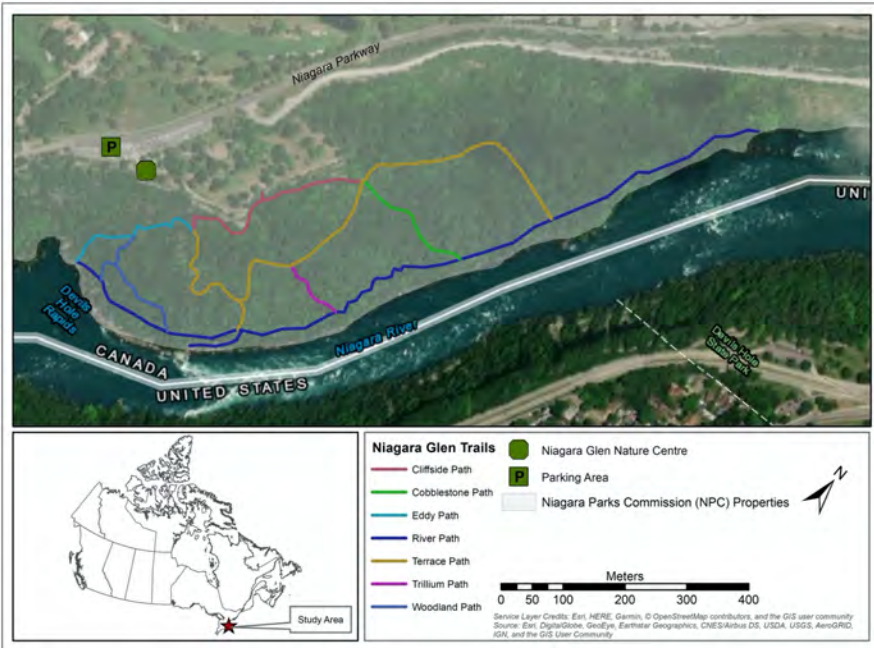
Methods

Study Site

Niagara Parks, Canada—home of the world-famous Niagara Falls—was selected as the study site. Within Niagara Parks, the study focused on the nature trails within the Niagara Glen (Figure 1). The Niagara Glen covers an area of approximately 0.219km²

Figure 1

A Map of the Niagara Glen Nature Reserve Trail Network and Nature



or 2.19ha of the Niagara Escarpment, a UNESCO World Biosphere Reserve. The site is managed by the Niagara Parks Commission (NPC), who has the dual mandates of visitor enjoyment and environmental stewardship (Niagara Parks Commission, 2019). It is one of the most ecologically and geologically significant areas on the Niagara Peninsula, due to Carolinian forests, unique escarpment cliffs, and important flora and fauna (Varga & Kor, 1993). The proximity of the Niagara Glen to Niagara Falls results in the site receiving well over a hundred thousand visitors a season (C. Burant, personal communication, August 2019). A variety of stakeholders interact with the NPC regarding trails, including rock climbers, nature enthusiasts, anglers, local residents and visitors from around the world.

Research Design and Methods

An experimental research design involving a pre and post-test design was used. This pre-post administration was designed to capture the stakeholders' initial thinking about KPIs for trail management and how, if at all, it changed over the course of the workshop. A concurrent mixed-method approach to data collection was used to achieve the objectives of this study, in which there were three data collection points. The first data collection point (T1) involved an in-person Q-method sorting activity (herein referred to as Q-sort) and qualitative questionnaire. The second data collection point involved participant observations during a PM&E workshop (the intervention) as a way to capture the benefits, challenges, and other characteristics about the process. The third data collection point (T2) involved a second Q-sort and qualitative questionnaire via online format.

Q methodology was introduced to study views on a specific topic by using factor analysis to show distinct perspectives (Watts & Stenner, 2005). Whereas Likert measures use a linear scale, Q-sort is comprised of statements that participants rank on a normal distribution curve. The use of "forced choice" is advantageous over Likert type questions as it illuminates personal values and experiences through the ranking process (Watts & Stenner, 2012) and removes some of the bias of self-reporting (Robbins & Krueger, 2000). In this research, participants engaging in the formative stages of a PM&E process for trail management rank ordered "statements" pertaining to KPIs for trail management at T1 and T2.

Questionnaires were used to deepen understanding of participant perceptions of the KPIs. The first questionnaire was administered at T1 and consisted of two parts: the first queried demographics using fixed choice questions and the second asked participants to reflect upon KPI placement in the Q-sort. The second questionnaire was given to participants one week after they participated in the PM&E workshop. This questionnaire asked participants to reflect upon their perceptions of KPIs and the PM&E process. Specifically, the rationale for their placement of KPIs in the second Q-sort, those KPIs that were difficult to place, and whether they had experienced any changes in their perceptions of KPIs during the PM&E workshop.

Participant observations of the PM&E workshop were used to capture interactions in the formative stages of a PM&E process (the intervention). In following the guides for participatory observations set out by Bailey (2007), both structured and unstructured formats were used. A table of the four PM&E principles (participation, negotiation, flexibility, and learning) was created in a field notebook. Demonstration or discussion of these principles, relevant direct quotations, and other observations emerging with importance to PM&E were recorded.

Data Collection Procedures

Data was collected through the following steps.

Step One: Designing the Q-Sort

The sample of statements used in the Q-sort are drawn from as many ideas as possible around a research topic, and is known as the *concourse* (Brown, 1980). In this study the *concourse* was represented by the range of KPIs for the management of trails at the Niagara Glen and developed using secondary sources external to the study, including literature related to trail KPIs, previous ecological research at the site (Mallette, 2019), and key informant interviews with site-specific environmental managers. Twenty-eight statements covering social and ecological dimensions of trail management were chosen, giving participants a variety of options to rank while still being short enough for them to complete in a reasonable time.

Step Two: Research Ethics and Participant Recruitment

The study was approved by the Research Ethics Board at Brock University (Ref 19-005), and all participants provided written consent prior to participating. Participants were recruited to reflect the stakeholder groups with a vested interest in Niagara Glen trails (per Estrella & Gaventa, 1998). All participants were required to have familiarity with the site. Individuals were identified in consultation with key informants from the NPC and thus non-probability purposive sampling (Riddick & Russell, 2015). Twenty potential participants from five different stakeholder groups were invited to participate in the study by the researchers. These included a one-day in-person PM&E workshop and a follow-up questionnaire. A total of seven individuals ($n=7$) comprising three different stakeholder groups (NPC staff, naturalists, resident users) participated in the study. Two additional participants who originally agreed to attend the workshop did not show up the day of. It is important to note that the workshop was scheduled to occur in March 2020 and the researchers acknowledge that COVID-19 was emerging in Ontario at this time. While more participants would have been ideal, the decision was made to proceed because of the unknown circumstances of the pandemic and the capacity of Q methodology to yield significant results for the purpose of identifying and interpreting perspectives with this number of participants (Brown, 1980; McKeown & Thomas, 2013; Zabala et al., 2018).

Step Three: T1

Immediately upon arrival at the Niagara Glen, all participants went on a brief (20 minute) guided trail walk. The initial Q-sort and questionnaire was administered at the outset of the PM&E workshop. Each participant was given a set of 28 index cards. Each card had one *concourse* statement. They were first asked to do an initial sort where they placed the cards into three piles of “more important” (11 cards), “least important” (11 cards), and “neutral” (6 cards). Next, they were given a worksheet on which to rank the different statements on a 28-item forced distribution ranging from +4 (most important) to -4 (least important). As part of this activity, participants were then asked to complete the first questionnaire.

Step Four: The Intervention

The participants engaged in a one-day workshop in which they were led through the formative stages of a PM&E process. Workshop-based techniques are often used

in PM&E, as they create a learning atmosphere and safe environment for participants (Jackson & Kassam, 1998). The workshop was developed using the guiding framework of PM&E phases by Shah et al. (2006). The group activities were designed and undertaken to specifically address participatory appraisal, planning and project design, and development of baseline indicators. In concert, the PM&E workshop progressively created group consensus surrounding KPIs for the Niagara Glen trail system. Participant observations were made by one of the researchers throughout the workshop and transcribed immediately thereafter.

Step Five: T2

Participants were contacted one week after the PM&E workshop via email to complete the second Q-sort and questionnaire. The timing of T2 was chosen to allow the participants time to reflect on the workshop experience and fully consider their perceptions of the KPIs. The online platform Qualtrics was used for the convenience of the participants. A follow-up reminder email was sent as necessary.

Analysis

KADE (Banasick, 2019), a statistical software program developed specifically to analyze Q-sort data was used. Initial analysis sought to illuminate the perspectives the participants before and after the PM&E workshop and thereby determine convergence or divergence in their perceptions of KPIs. T1 and T2 Q-sort data for the participants was input into the KADE software separately, such that a total of seven entries constitute the P set. Each participant was given a number identifier (P1, P2, etc.) to protect the identities of the participants and organize the pre and post data by individual for later analyses. Each participant's numerical data was intercorrelated to identify which participants sorted the statements into similar ones (McKeown & Thomas, 1998). The resulting correlation matrix represents the level of agreement or disagreement between the individual Q-sorts (van Exel & de Graaf, 2005), by showing the extent to which each Q-sort is correlated or uncorrelated in terms of significant or insignificant loadings. To determine similar rankings of the KPI items, a factor analysis using the principal components method was employed. Factors were extracted based on the eigenvalue criteria $EV > 1.0$. Varimax rotation was used to reduce the number of confounded sorts. T1 and T2 were then compared to determine if there was an overall change in the convergence of perceptions after the PM&E workshop.

The factors created from the group KADE analysis (above) are not exactly the same and therefore the movement of individuals between the sorts cannot fully explain statistically significant change in an individual's perception. T1 and T2 data was therefore also entered into KADE separately for each individual, and analyzed using the principal components method. This produced orthogonal factors for each individual representing the Q-sort before and after the workshop. Statistically significant differences were determined using the test and re-test criteria established in Frank (1956), and Brown (1980; see also Emary et al., 2020; McKeown & Thomas, 2013). Next, correlation coefficients among factors and factor loadings were examined to assess the convergence or divergence in perspectives before and after the workshop. Reliability coefficients of a person with themselves normally range from .80 upward (Brown, 1980; Frank, 1956; Emary et al., 2020). Therefore, if the correlation score between a person's T1 and T2 Q-sorts is less than .80, a statistically significant change can be said to have occurred.

Frequency counts were used to analyze closed response questions in the questionnaire and open-ended questions were thematically analyzed using an iterative process of coding (cf. Gibbs, 2007; Saldaña, 2013). All data was transcribed and read thoroughly prior to coding. During the first cycle of coding, short excerpts from participant responses were assigned a unique code to capture descriptive meaning. In the second cycle of coding, themes from participant responses were reduced and extracted to reveal patterns.

Analysis of participant observations followed the protocol set out by Bailey (2007). The structured and unstructured observations recorded in the researcher's field notebook were transcribed. The structured format (above) provided pre-organized "codes" that represent the underlying principles of PM&E. All data was thematically analyzed using the above process.

Results

Results from the study are presented in three parts. The first documents pre-workshop results (T1), including the outcomes from the initial Q-sort and first questionnaire. The second details the PM&E workshop activities and results based on participant observations. The last section communicates the post-works (T2) results, including the second Q-sort questionnaire.

T1: Pre-workshop

Three factors emerged from the first Q-sort, indicating the existence of three groups of perceptions among the participants regarding trail KPIs. Table 1 presents the results of the factor analysis and Table 2 detailing the respective distinguishing statements (mean ranking for each statement was different from the rankings of other factors). Three participants (1, 2, and 3) loaded onto the first factor (Factor 1), such that six distinguishing statements were significant ($p < .01$). Two participants (4 and 5) loaded into the second factor (Factor 2). This perspective had six distinguishing statements that were significant ($p < .01$). Finally, two participants (6 and 7) loaded onto the third factor. This perspective had four significant statements ($p < .01$).

Table 1
Factor Analysis of Pre-Workshop Q-Sorts of Participants

| Participant | Factor 1 | Factor 2 | Factor 3 |
|---------------------------------|----------|----------|----------|
| P1 NPC staff | 0.8421 | -0.3146 | -0.0821 |
| P2 NPC staff | 0.6367 | 0.3574 | 0.1858 |
| P3 Naturalist | 0.55 | 0.2049 | 0.1507 |
| P4 Resident | 0.161 | 0.8687 | 0.1657 |
| P5 Naturalist | 0.0073 | 0.7203 | 0.0021 |
| P6 Resident | 0.0201 | -0.0086 | 0.8408 |
| P7 NPC Staff | 0.1839 | 0.1776 | 0.833 |
| Eigenvalue | 2.1823 | 1.2681 | 1.0927 |
| % Explained Variance | 31 | 18 | 16 |
| Cumulative % Explained Variance | 31 | 49 | 65 |

Table 2
Significant ($p < .01$) Distinguishing Statements for Each Factor

| Distinguishing Statement | Mean Ranking Factor 1 | Mean Ranking Factor 2 | Mean Ranking Factor 3 |
|---|-----------------------|-----------------------|-----------------------|
| Factor 1 | | | |
| Accessibility | 4 | -3 | -4 |
| Th eats to visitor safety | 3 | -1 | 1 |
| Vegetation trampling | 0 | 4 | 2 |
| Soil compaction | -2 | 0 | 0 |
| Trail/soil erosion | -3 | 1 | 3 |
| Excessive trail widening | -3 | 1 | 0 |
| Factor 2 | | | |
| Vegetation trampling | 0 | 4 | 2 |
| Cultural resource deterioration | -2 | 3 | -3 |
| Non-native species cover | -1 | 2 | 0 |
| Th eats to visitor safety | 3 | -1 | 1 |
| Signage | 1 | -1 | 2 |
| Limited access due to physical barriers | 3 | -1 | 4 |
| Factor 3 | | | |
| Scenic views | 0 | -2 | -3 |
| Trail muddiness | -2 | -3 | 2 |
| Vegetation trampling | 0 | 4 | 2 |
| Th eats to visitor safety | 3 | -1 | 1 |

Results from the fi st questionnaire regarding KPI items placed in the “most important” categories (specifi ally +4 and +3) revealed a wide variety of responses, with no clear themes. In explaining why participants placed certain KPI items in the “most important” category, four themes emerged: visitor safety, protecting nature, visitor access, and related to other KPIs. In terms of KPIs placed in the “least important” categories (-4 and -3), analysis revealed two distinct themes: visitor/user type and user expectations. Participants explained that these particular KPI items were not as important as others because users should expect certain things to be present along the trails (e.g., noise pollution). The third line of inquiry probed KPI statements that participants found difficult to place. Overall, 12 different KPI items were listed across the participants, with little overlap in their responses. However, two distinct themes emerged when analyzing reasons given for difficulty in placing KPI items: the type of visitor/user type and the amount of knowledge (education) a user possessed about the site. For example, Participant 2 expressed that “vandalism and litter will appear on all trails due to the non-respectful trail user, which we can only try to curb through continued education and time...”. Similarly, Participant 7 stated the “visitor impact on the site will diminish if direct efforts in the site’s management are made clear and known. If people see/understand that this is a sensitive habitat that requires intensive care, they may

be less inclined to abuse their privileges here.” The final question asked participants to reflect upon their Q-sort and describe any other thoughts or ideas about the KPI items. Two themes emerged from the analysis. The first theme, expressed by four of the participants, concerned balancing the interests of humans and nature. The interconnectedness of KPIs was a second theme to emerge in which participants expressed how the items were closely related and not mutually exclusive.

The PM&E Workshop

The PM&E workshop started with a “go-round” where each participant was asked to consider the condition of the trails and reflect/share their observations. This information comprised the needs assessment and appraisal of the Niagara Glen, which was then used in a group discussion. Participants noted that updated signage, presence of on-site staff members, NPC partnerships focused on stewardship, and the unique vegetation of the site were positive aspects of the trails and their current management. Participants also identified a variety of needs such as increasing users’ knowledge about the site and level of difficulty of trails, and understanding the trail’s carrying capacity/user capacity. As multiple needs were identified, the participants negotiated to identify their relative priority. The NPC dual mandate was arrived at as an appropriate overarching aim for managing trails in the Glen. Three goals were developed by the participants: 1) define, establish, and implement a carrying capacity; 2) increase education about trail safety and behaviour; and 3) focus on trail maintenance to limit and/or divert users to appropriate trails. These goals were considered a priority for achieving balance between protecting and maintaining the natural area and beauty, while offering visitors access to the site.

Next, participants were divided into three groups. Each group compiled a priority list of KPI criteria in relation to the three overall aim and goals described above. Smaller groups used in the activity were observed to enable participants to communicate their views and modify them. For example, Participant 1 referred to their Q-sort throughout the discussion, noting that the trail conditions, and specifically trail erosion, should be a focal priority for trail management. However, by the end of the second group activity, Participant 1 appeared to modify their perspective noting that “trail conditions are largely impacted by the number of visitors to the site... like with more people there will be more litter or more vegetation being trampled.” Once the three groups compiled their priority list, they were brought together to collectively discuss their choices and further streamline their list of KPI criteria. This activity helped participants progressively narrow the broad list of KPI criteria and move toward consensus about which to prioritize for each goal. Participants selected and established the following KPI criteria: carrying capacity (goal 1); vandalism, litter, signage, educational resources, unsanctioned trails/social trails, safety (goal 2); and 3) infrastructure (physical boundaries), measure of diversion (goal 3).

The last activity was designed to address the third stage of the PM&E process, which required the participants to develop appropriate and measurable KPIs for each criteria. Each of the KPI criteria was highlighted on a flip chart and participants were asked to brainstorm and discuss ideas of how to measure each. Participants had difficulty staying on task and were ultimately unable to develop measurable KPIs for the criteria. Participants expressed multiple reasons as to why they felt unable to proceed including a lack of expertise, authority, and sufficient information to move forward or make decisions. For example, while all participants agreed that establishing carrying capacity was required, they did not know how to define or use scientific data to estab-

lish a standard for Niagara Glen trails. Measures of KPIs were vaguely explored and discussed, such as having a trail counter to record the number of people on the trail yearly, and combining this with “ecological data” to determine how the environment changes based on relative visitor numbers. A noteworthy disconnect was observed during this activity between the perceived capacity of participants to develop measurable KPIs and their need for input from upper-level management which would influence the PM&E design. As such, the conversation largely consisted of general ideas on how to improve the site and trail management plan, rather than specific and measurable KPIs. Due to this lack of progress, qualities of negotiation and flexibility were difficult to observe among the participants.

Individual attendees demonstrated a high level of participation throughout the workshop, but challenges associated with stakeholder participation in PM&E were also observed. The limited timeframe of the workshop made it difficult to observe qualities of learning. However, participants spoke about learning facts, acquiring new knowledge, and increasing awareness of processes and procedures related to trail management. Through sharing personal experiences and perceptions, each participant had the opportunity to learn from others and to consider factors about the trails. Analysis revealed this as an express reason for experiencing a change in their perceptions after the workshop. For example, P6 stated “it’s just an eye opener to try and determine what is important to me, others, and the environmental side of the trail.”

T2: Post-workshop

One week following the PM&E workshop individuals completed a second Q-sort and questionnaire. Table 3 presents the results of the factor analysis and Table 4 details the respective distinguishing statements. Four participants (1, 2, 4, and 7) loaded onto the first factor. This perspective had thirteen distinguishing statements that were significant ($p < .01$). The other participants (3, 5, and 6) loaded on the second factor. This perspective also had thirteen significant distinguishing statements ($p < .01$).

Table 3
Factor Analysis of Post-Workshop Q-Sorts of Participants

| Participant | Factor 1 | Factor 2 |
|---------------------------------|----------|----------|
| P1 NPC staff | 0.7965 | -0.0512 |
| P2 NPC staff | 0.8812 | 0.268 |
| P3 Naturalist | 0.0063 | 0.8488 |
| P4 Resident | 0.7481 | 0.1894 |
| P5 Naturalist | 0.2414 | 0.7466 |
| P6 Resident | 0.2233 | 0.8197 |
| P7 NPC staff | 0.4564 | 0.3126 |
| Eigenvalue | 3.0731 | 1.3717 |
| % Explained Variance | 44 | 20 |
| Cumulative % Explained Variance | 44 | 64 |

The individual participants’ pre and post Q-sort data was input into the KADE software separately to determine if individuals experienced a change in a factor iden-

Table 4
Distinguishing Statements for Each Factor

| Distinguishing Statement | Mean Rating Factor 1 | Mean Rating Factor 2 |
|--|-------------------------|-------------------------|
| Factor 1 | | |
| Soil compaction | 2 | -4 |
| Tree health | 1 | -1 |
| Vandalism | 1 | 3 |
| Bare soil | 0 | -2 |
| Trail muddiness | 0 | -2 |
| Canopy cover | 0 | -3 |
| Visitor conflict due to crowding | -1 | -3 |
| Accessibility | -1 | 2 |
| Cultural resource deterioration | -1 | 1 |
| Soil stability | -2 | 0 |
| Visitor conflict due to incompatible use | -3 | 1 |
| Presence of structures | -3 | -1 |
| Noise pollution | -4 | 0 |
| Factor 2 | | |
| Vandalism | 1 | 3 |
| Accessibility | -1 | 2 |
| Visitor conflict due to incompatible use | -3 | 1 |
| Cultural resource deterioration | -1 | 1 |
| Soil stability | -2 | 0 |
| Noise pollution | -4 | 0 |
| Presence of structures | -3 | -1 |
| Tree health | 1 | -1 |
| Bare soil | 0 | -2 |
| Trail muddiness | 0 | -2 |
| Canopy cover | 0 | -3 |
| Visitor conflict due to crowding | -1 | -3 |
| Soil compaction | 2 | -4 |

tity. Table 5 presents the correlation between sorts for each participant, as well as the distinguishing statements ($p < .01$). Six of the seven participants showed statistically significant correlations ($r < .80$), indicating their perspective changed from T1 to T2.

Inquiries in the second questionnaire largely mirrored the first, starting with asking participants to identify KPI items they placed in their “most important” categories and why. Analysis of the responses revealed carrying capacity as an important criteria for trail management (six out of seven participants), followed by threats to visitor safety (three out of seven participants). The two distinct themes emerged as to the rationale for KPI importance: protecting nature, ensuring visitor safety, and interconnected KPIs. Next, participants were asked about the KPI items they placed in their “least important” categories. Analysis of the responses revealed relatively little thematic coinci-

Table 5

Comparison of Individual Participants' Pre and Post Q-Sorts and Self-Reported Change from Questionnaire

| | Correlation Between Sorts | Distinguishing Statements | Statistical Change $r < 0.80$ | Self-reported Change (see below) |
|---|--------------------------------------|--------------------------------------|--|---|
| P1 Pre P1 Post % expl. Variance | 0.68 | 1, 8, 16, 25 | Yes | No |
| P2 Pre P2 Post % expl. Variance | 0.76 | None | Yes | Did not provide answer |
| P3 Pre P3 Post % expl. Variance | 0.39 | 3, 11, 13, 18 | Yes | Yes |
| P4 Pre P4 Post % expl. Variance | 0.48 | 6, 18, 21, 23 | Yes | Yes |
| P5 Pre P5 Post % expl. Variance | 0.42 | 1, 18 | Yes | No |
| P6 Pre P6 Post % expl. Variance | 0.72 | None | Yes | No |
| P7 Pre P7 Post % expl. Variance | 0.90 | None | No | Yes |

dence, with noise pollution and trail muddiness being the only responses identified by multiple participants. Conversely, one distinct theme emerged as to the reason(s) for this placement of KPI items: user expectations. The theme of balancing the interests of humans and nature emerged as the single theme as to why KPI items were difficult to place. Participants expressed difficulty with the idea of limiting or diverting access to trails in the Niagara Glen as a way to protect nature. For example, Participant 7 explained that “visitor displacement is challenging because one of the ultimate goals of sustaining the Glen habitat is to divert visitors, as the current visitor volume greatly exceeds the carrying capacity of the Glen.”

The second questionnaire additionally inquired into changes in perceptions towards the KPI criteria for the Niagara Glen trails established during the workshop. Half of the respondents indicated they had experienced a change in perception. Par-

Participants answering in the affirmative were asked to describe in detail changes between the T1 Q-sort and T2 Q-sort as well as whether a specific activity in the PM&E workshop triggered the change. Analysis to the first open-ended question revealed no common themes. Two distinct themes emerged from analysis of responses to the second open-ended question: discussion/communication and learning. The responses richly described how the discussions that took place throughout the workshop contributed to their perception changing as well as increased awareness and knowledge about trail management and KPIs more generally. For example, Participant 4 noted that perception change came from a greater “understanding of how many people go there [Niagara Glen trails] ... on what is needed to be changed or is being affected by the amount of traffic ”

Discussion

Overall, the results show a shift in perspectives—three distinct perspectives were evident at T1 and two distinct perspectives at T2. Interactive discussions among participants led to an increase in knowledge and greater understanding of differing perspectives, and were revealed to be particularly influential aspects of the workshop. A greater shared understanding of the focal system (trails in the Niagara Glen), as imperative for collaboration as well as social learning (Bennett et al., 2018), is thus confirmed. The PM&E process studied shows that participants became more conscious of the wider social realities as well as perceptions of trail management, which can translate into a collective acceptance of accountability and responsibility that is authentic and accurate (Abbot & Guijt, 1997). Positive perceptions from being meaningfully involved in PM&E were revealed to ensure the support of constituents which is imperative for the long-term success of management planning, as also observed by Bennett (2016).

Three participants reported a change in perceptions due to their participation in the PM&E workshop; however, analysis reveals a statistically significant change in perception occurred in six of seven participants. Participant 7 reported a change in perception, but this was not supported by statistical analysis of the Q-sorts. Interestingly, these results suggest that stakeholders may be unconscious of changes in their perceptions and/or the influences of the PM&E process. While this observation has not been explored in PM&E scholarship, it is supported by psychology scholars who propose that a person may be unconscious or lack awareness of the influences or effects of a triggering stimulus or incremental changes in their beliefs (Bargh & Ferguson, 2000).

Another noteworthy finding from the Q-sort concerns the overall perceptions of KPIs by stakeholders. The PM&E workshop established a high level of congruence between perceptions of the “most important” KPI criteria for trail management (i.e., carrying capacity) as well as unclarity about the “least important” KPIs. Not all KPIs need to be assessed during an evaluation (Wells & Mangubhai, 2005) and priority indicators should be selected which make sense to participants and their understanding of the project (Jackson & Kassam, 1998).

Explanation of the results also relate to the mutual exclusivity of KPI items, as KPIs are often logically interconnected (Toor & Ogunlana, 2009). Individuals in the study came to agreement about the most important KPIs for trail management at the Niagara Glen, with the idea that all other KPIs of importance will follow to significantly improve the present situation. A similar phenomenon was observed by Manning (1999) when defining appropriate management for recreation settings.

Understanding impacts from users and determining acceptable limits is imperative and challenging (Manning, 2007). As results from studying formative PM&E of trails in the Niagara Glen confi m, this is neither a straightforward nor easy undertaking. Incorporating knowledge of stakeholder perceptions is increasingly important (Bennett, 2016) as it leads to a more holistic understanding of the system (Stem et al., 2005) as well as respective ideas of what constitutes success (Yates et al., 2019). Perhaps most importantly, the results support assertions regarding PM&E as an effective strategy for collaboration and social learning, imperatives to navigate issues characterized by complexity and uncertainty (Bennett et al., 2018).

Management Implications

The study has important implications for managers concerned with trails and sustainability. Engaging stakeholders in a PM&E process may build consensus regarding trail management objectives, KPIs, and associated standards. Such consensus is especially important for reaching environmental management goals (Estrella & Gaventa, 1998; Reed, 2008). Consensus-building, the driving force behind PM&E processes, works to enhance decisions which are fair and just by accounting for a diversity of values and needs (Estrella et al., 2000; Reed, 2008). The PM&E process may also be effective in preventing or resolving confi ts, an often experienced and noteworthy challenge concerning shared resources (Estrella et al., 2000). Finally, public lands such as trails, as well as the wider community ultimately benefit from participatory approaches to environmental management. Stakeholder participation in environmental management increases the likelihood that local needs and priorities are met, while allowing stakeholders to build capacity and learn to effectively manage their environments, which fosters community and ecological resilience (Abbot & Guijt, 1998).

The COVID-19 pandemic created a unique set of management conditions, which further highlights the usefulness of the PM&E approach. For example, as stay-at-home orders fluctuated globally, the public responded with shifts in the ways they accessed green space and trails (Kleinschroth & Kowarik, 2020). As the PM&E approach stresses the need to address emerging issues during implementation, it is well suited to be employed as a flex ble management tool as conditions change. In the context of a global crisis such as the COVID-19 pandemic, the PM&E approach may be useful in developing flex ble sustainability and human-health focused interventions for a dynamic and pressing situation.

An area deserving further consideration by managers for PM&E in the context of COVID-19 is how to best engage new visitors. Trail use and green space intensifi ation during the COVID-19 pandemic was largely the result of new visitors utilizing local natural assets such as trails, as other recreation opportunities were not possible due to restrictions. PM&E could be leveraged to understand the locally relevant evaluation lenses of new visitors and how they differ from more established user groups. For example, in consideration of the fi dings from our study, it would be useful for managers to know how KPIs for trails might be looked at differently if new visitors were engaged. In the context of the COVID-19 pandemic, this type of engagement is important not only to understand how new visitors perceive KPIs for trails and their relationship to the quality of the new visitor experience, but also as an opportunity to build capacity within new visitors through collaborative learning about trail pressures as well as techniques to minimize impacts to trail environments.

Conclusion

Trail use is intensifying as demand for outdoor recreation spaces is growing and diversifying globally. Managers confront the classic dilemma of protecting ecological integrity and providing enriching experiences as well as contemporary considerations framing sustainability - complexity, uncertainty, value-disputes, and change. PM&E is being advanced in this context to overcome shortcomings of past approaches as well as realize additional benefits from collaboration and learning (Reed, 2008). The PM&E process in our study was found to markedly influence stakeholders' perceptions of KPIs for trails in the Niagara Glen. Specifically, after engaging in the PM&E process participants showed greater congruence for certain KPIs. Although only half the participants self-reported a change in their perceptions, analysis revealed a statistically significant change of almost all perceptions. Through collaborative discussions and consensus-building activities, participants demonstrated qualities of the PM&E principles negotiation, flexibility, and learning, which ultimately led to increased knowledge and understanding of other participants' views and KPIs more generally.

The results from this study are encouraging and raise avenues for future research. More evidence is needed to understand the influences of the entire PM&E process on the perceptions of stakeholders. PM&E is contextual and KPIs are highly specific. Extending similar research in a variety of PM&E contexts is an exciting opportunity. Such research may focus on alternative features (e.g., campsite, parking lots, etc.), occur in different settings, and involve governance arrangements. Revelations about stakeholders being unconscious of changing perceptions is fodder for further in-depth investigation in PM&E as well as principally participatory approaches in sustainability.

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References

- Abbot, S., & Guijt, I. (1997). *Changing views on change: Participatory approaches to monitoring the environment*. SARL Discussion Paper 2, London: IIED. <http://pubs.iied.org/pdfs/6140IIED.pdf>
- Amerson, K., Rose, J., Lepp, A., & Dustin, D. (2020). Time on the trail, smartphone use, and place attachment among the Pacific Crest Trail thru-hikers. *Journal of Leisure Research*, 51(3), 308–324. doi: 10.1080/00222216.2019.1680264
- Anja, C., & Kaufmann, B. (2018). Facilitating change: Methodologies for collaborative learning with stakeholders. In M. Padmanabhan (Ed.), *Transdisciplinary research and sustainability: Collaboration, innovation, and transformation* (pp. 171–190). Routledge.
- Bailey, C. A. (2007). *A guide to qualitative field research*. Pine Forge Press.
- Banasick, S. (2019). KADE: A desktop application for Q methodology. *The Journal of Open Source Software*, 4(36), 1360. <https://doi.org/10.21105/joss.01360>

- Bargh, J. A., & Ferguson, M. J. (2000). Beyond behaviorism: On the automaticity of higher mental processes. *Psychological Bulletin*, 126(6), 925–945. doi: 10.1037/0033-2909.126.6.925
- Bennett, N. J. (2016). Using perceptions as evidence to improve conservation and environmental management. *Conservation Biology*, 30(3), 582–592. <https://doi.org/10.1111/cobi.12681>
- Bennet, N. J., Whitty, T. S., Finkbeiner, E., Pittman, J., Basset, H., Gelcich, S. & Allison, E. H. (2018). Environmental stewardship: A conceptual review and analytical framework. *Environmental Management*, 61(4), 597–614. <https://doi.org/10.1007/s00267-017-0993-2>
- Brown, S. R. (1980). *Political subjectivity: Applications of Q methodology in political science*. Yale University Press.
- Chaffin, J. C., Gosnell, H., & Cosens, B. A. (2014). A decade of adaptive governance scholarship: Synthesis and future directions. *Ecology and Society*, 19(3), 56.
- Cruz Villazón, C., Sastowue Pinilla, L., Otegi Olaso, J. R., Toledo Gandarias, N., & López de Lacalle, N. (2020). Identification of key performance indicators in project-based organisations through the Lean Approach. *Sustainability*, 12, 5977. <https://doi.org/10.3390/su12155977>
- Emary, P. C., Oremus, M., Houweling, T. A. W., Wangler, M., & Akhtar-Danesh, D. (2020). Attitudes, beliefs, and practices regarding medication prescribing for musculoskeletal conditions: a protocol for a national Q-methodology study of Swiss chiropractors. *The Journal of the Canadian Chiropractic Association*, 64(2), 119–130.
- Estrella, M., Blauert, J., Campilan, D., Gaventa, J., Gonsalves, J., Guijt, I., Johnson, D., & Ricafort, R. (Eds.). (2000). *Learning from change: Issues and experiences in participatory monitoring and evaluation*. Cromwell Press.
- Estrella, M., & Gaventa, J. (1998). *Who counts reality? Participatory monitoring and evaluation: A literature review*. IDS Working Paper 70, Brighton: IDS. <https://www.ids.ac.uk/files/Wp70.pdf>
- Evans, K. L., Ewen, J. G., Guillera-Aroita, G., Johnson, J. A., Penteriani, V., Ryan, S. J., Sollmann, R., & Gordon, I. J. (2020). Conservation in the maelstrom of Covid-19—a call to action to solve the challenges, exploit opportunities and prepare for the next pandemic. *Animal Conservation*, 23, 235–238. <https://doi.org/10.1111/acv.12601>
- Frank, G. H. (1956). Note on the reliability of Q-sort data. *Psychological Reports*, 2, 182. <https://doi.org/10.2466/pr0.1956.2.3.182>
- Geng, D., Innes, J., Wu, W., & Wang, G. (2021). Impacts of COVID-19 on urban park visitation: A global analysis. *Journal of Forestry Research*, 32, 553–567. <https://doi.org/10.1007/s11676-020-01249-w>
- Gibbs, G. R. (2007). *Analyzing qualitative data*. Sage.
- Hammit, W. E., & Cole, D. N. (1998). *Wildland recreation: Ecology and management* (2nd ed.). John Wiley and Sons.
- Jackson, E. T., & Kassam, Y. (Eds.). (1998). *Knowledge shared: Participatory evaluation in development cooperation*. International Development Research Centre.
- Kananura, R. M., Ekirapa-Kiracho, E., Paina, L., Bumba, A., Mulekwa, G., Nakiganda-Busiku, D., Oo, H. N. L., Kiwanuka, S. N., George, A., & Peters, D. H. (2017). Participatory monitoring and evaluation approaches that influence decision-making:

- lessons from a maternal and newborn study in Eastern Uganda. *Health Research Policy and Systems*, 15(2), 56–73. <https://doi.org/10.1186/s12961-017-0274-9>
- Kleinschroth, F., & Kowarik, I. (2020). COVID-19 crisis demonstrates the urgent need for urban greenspaces. *Frontiers in Ecology and the Environment*, 18(6), 318–319. <https://doi.org/10.1002/fee.2230>
- Kling, K. G., Fredman, P., & Wall-Reinius, A. (2017). Trails for tourism and outdoor recreation: A systematic literature review. *Tourism*, 65(4), 488–508.
- Kohlhardt, R., Honey-Roses, J., Lozada, S. F., Haider, W., & Stevens, M. (2017). Is this trail too crowded? A choice experiment to evaluate tradeoffs and preferences of park visitors in Garibaldi Park, British Columbia. *Journal of Environmental Planning and Management*, 61, 1–24. <https://doi.org/10.1080/09640568.2017.1284047>
- Mallette, A. (2019). *Understanding perceptions of the state of the environment in relation to ecological measures: Intergroup differences and the influences of an interpretive program* [Masters thesis, Brock University]. <https://dr.library.brocku.ca/handle/10464/14521>
- Manning, R. E. (1999). *Studies in outdoor recreation*. Oregon State University Press.
- Manning, R. E. (2007). *Parks and carrying capacity: Commons without tragedy*. Island Press.
- McKeown, B. F., & Thomas, D. B. (1998). *Q methodology*. Quantitative Applications in the Social Sciences series, Volume 66. Sage.
- McKeown, B., & Thomas, D. B. (2013). *Q Methodology*. Sage.
- National Park Service. (2020). *National scenic and historic trails FAQs*. <https://www.nps.gov/subjects/nationaltrailssystem/faqs.htm>
- Niagara Parks Commission. (2019). *Vision & values*. <https://www.niagaraparks.com/corporate/about-us/vision-values/>
- Njuki, J., Kaaria, S., Chitsike, C., & Sanginga, P. (2006). *Participatory monitoring and evaluation for stakeholder engagement, assessment of project impacts, and for institutional and community learning and change*. https://cgspace.cgiar.org/bitstream/handle/10568/69039/IPRA_Annual_Report_2005.pdf?sequence=8&isAllowed=y#page=142
- Reed, M. S. (2008). Stakeholder participation for environmental management: A literature review. *Biological Conservation*, 141, 2417–2431. <https://doi.org/10.1016/j.biocon.2008.07.014>
- Riddick, C. C., & Russell, R. V. (2015). *Research methods: How to conduct research in recreation, parks, sport and tourism* (3rd ed.). Sagamore Publishing.
- Robbins, P., & Krueger, R. (2000). Beyond bias? The promise and limits of Q method in human geography. *Professional Geographer*, 52(4), 636–648. doi: 10.1111/0033-0124.00252
- Saldaña, J. (2013). *The coding manual for qualitative researchers*. Sage Publications Limited.
- Sayan, M. S., & Atik, M. (2011). Recreation carrying capacity estimates for protected areas: A study of Termessos National Park. *Ekoloji*, 20(78), 66–74. doi: 10.5056/ekoloji.2011.7811
- Shah, M. K., Mahlalela, X. M. V., Kambou, S. D., & Adams, M. K. (2006). *Participatory monitoring and evaluation of community-and faith-based programs*. https://www.participatorymethods.org/sites/participatorymethods.org/files/participatory%20monitoring%20and%20evaluation_shah.pdf

- Stem, C., Margoluis, R., Salafsky, N., & Brown, M. (2005). Monitoring and evaluation in conservation: A review of trends and approaches. *Conservation Biology*, 19(2), 295–309.
- Thao, D., Westlund, L., Sambe, B., Diadhiou, H. D., Dème, M., Mbenga, A., & Diop, M. (2019). A perception-based participatory monitoring and evaluation approach to foster effective co-management of the marine protected areas in North-west Africa. *Ocean and Coastal Management*, 175, 1–16. <https://doi.org/10.1016/j.ocecoaman.2019.03.026>
- Toor, S. U. R., & Ongunlana, S. (2010). Beyond the ‘iron triangle’: Stakeholder perceptions of key performance indicators (KPIs) for large-scale public sector development projects. *International Journal of Project Management*, 28(3), 228–236. doi: 10.1016/j.ijproman.2009.05.005
- Trimble, M. & Plummer, R. (2018). Participatory evaluation in times of governance transition: The case of small-scale fisheries in Uruguay. *Ocean and Coastal Management*, 161, 74–83. <https://doi.org/10.1016/j.ocecoaman.2018.04.027>
- van Exel, J., & de Graaf, G. (2005). *Q methodology: A sneak preview*. <https://www.qmethodology.net/PDF/Q-methodology>
- Varga, S., & Kor, P. (1993). *Reconnaissance Survey of the Niagara Gorge Area of Natural and Scientific Interest*. Niagra Peninsula Conservation Authority.
- Wang, B., & Lawson, S. R. (2002). Estimating day use social carrying capacity on Yosemite national park. *Leisure/Loisir*, 27(1-2), 77–102.
- Watts, S., & Stenner, P. (2005). Doing Q methodology: Theory, method and interpretation. *Qualitative Research in Psychology*, 2, 67–91. <https://doi.org/10.1191/1478088705qp022oa>
- Watts, S., & Stenner, P. (2012). *Doing Q methodological research: Theory, method and interpretation*. Sage.
- Wells, S., & Mangubhai, S. (2005). *A workbook for assessing management effectiveness of marine protected areas in the Western Indian Ocean*. IUCN Eastern Africa Regional Programme.
- Yates, K. L., Clarke, B., & Thurstan, R. H. (2019). Purpose vs performance: what does marine protected area success look like? *Environmental Science and Policy*, 92, 76–89. <https://doi.org/10.1016/j.envsci.2018.11.012>
- Zabala, A., Sandbrook, C., & Mukherjee, N. (2018). When and how to use Q methodology to understand perspectives in conservation research. *Conservation Biology*, 32(5), 1195–1194. <https://doi.org/10.1111/cobi.13123>

Research Paper

A Framework for Sustainable Tourism Development in and around National Parks

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Executive Summary

The proliferation of tourism in U.S. national parks yields increasing demands for service and conservation programs that are consistent with a broad view of sustainability management. As such, there is a critical need for research regarding holistic perspectives on planning and monitoring sustainable development. The Global Sustainable Tourism Council (GSTC) is a nonprofit, independent organization that develops and manages global baseline standards for sustainable travel and tourism, known as the GSTC Criteria. The GSTC Destination Criteria have yet to be widely applied to parks and protected areas (PPAs), yet these criteria may offer a useful guiding framework for sustainable tourism development in PPAs. Given the proliferation of visitation in some park areas, and that parks are operated as destinations, we sought to explore the applicability of the GSTC Destination Criteria to parks. Specifically, this study explores the utility of the GSTC Destination Criteria as a tool for assisting managers at Theodore Roosevelt National Park (TRNP) in developing and improving a destination-level sustainability plan. In August 2018, we conducted a sustainability evaluation using the GSTC Destination Criteria. Specific areas of success and improvement were identified and park managers are using this information to improve the park's strategic plan. We also discovered benefits of utilizing this framework, as well as barriers to its full implementation. For example, as a benefit, the GSTC Destination Criteria can be applied to evaluate sustainability performance without requiring managers or agencies to expend valuable resources in developing their own framework. And, by evaluating the sustainability performance using the GSTC Destination Criteria, park planners and managers were able to identify and prioritize future sustainability initiatives. Barriers or challenges included language disparities between National Parks and destination indicators, suggesting universal language and meanings for more applicability. We also noted a need for indicators to be compatible with U.S. national park policies and functions. Yet, these challenges were not necessarily insurmountable and we conclude there are more benefits than challenges for Theodore Roosevelt National Park. Our results of this evaluation are reviewed and critiqued within our broader assessment of the utility of the GSTC Destination Criteria in national park planning.

Keywords

National parks, destination management, sustainability evaluation, criteria, indicators

Introduction

The Global Sustainable Tourism Council defines a sustainable tourism destination as, “a process by which local communities; governmental agencies, NGOs, and the tourism industry take a multi-stakeholder approach to maintaining the cultural, environmental, economic, and esthetic integrity of their country, region, or town. In other words, to ensure that the destination retains and enhances the distinctive attributes that make it attractive to beneficial tourism” (Global Sustainable Tourism Council, 2021a, p. 1).

Several national parks are under threat of losing the very qualities that make them distinctive in the first place. “Overtourism” is just one of the terms utilized to describe crowding in national parks. Between 2010 and 2020, recreation visits to national park units have increased by 16.4%, representing an average increase more than 5 million recreation visits each year (National Park Service [NPS], 2021a). Furthermore, despite the COVID-19 pandemic, some NPS units actually experienced increases in visitation in 2020 (NPS, 2021b). In many regards, increased visitation is positive. Outdoor recreation in spaces like parks and protected areas (PPAs) is associated with a variety of physical and mental health benefits (e.g., Lackey et al., 2019). Increases in visitation may indicate that more people are enjoying the benefits of recreating in national parks.

Yet, increasing visitation also presents complex sustainability challenges for national park managers. Despite the passing of the Great American Outdoors Act in 2020, which will, in part, increase funding for national parks (NPS, 2021c), the NPS budget has not increased at the same rate as visitation, which is a barrier to conservation and service program development. Between 2010 and 2019, after adjusting for inflation, the NPS discretionary budget has only increased 4.4%, and the number of full-time equivalent NPS staff has trended downward over the last decade (Congressional Research Service, 2019). Furthermore, the total budget allocated the NPS has decreased annually since 2018. As a result, the NPS has been forced to postpone projects, including vital infrastructure projects estimated to cost nearly \$12 billion (NPS, 2021d). Therefore, the ability of the NPS to manage parks in a way that sustains park resources and the quality of recreation experiences is compromised.

An understanding of sustainability in national parks is evolving. Historically, U.S. national park management has emphasized environmental resource protection and preservation within park boundaries. However, views of park sustainability are now beginning to include socio-economic and cultural dimensions (Bushell et al., 2007; Keiter, 2013; Slocum, 2017). Evidence of this shift includes increased engagement in initiatives such as the “Every Kid in a Park” program first implemented by the Obama Administration in 2015 (NPS, 2019a). The purpose of the project was to increase national park accessibility for children and their families, which is a socioeconomic and cultural sustainability concern relevant to national parks. Another example was the “Urban Agenda,” through concerted NPS-focused efforts which levered resources to

provide quality national park experiences in or near urban areas (NPS, 2019b). Likewise, the NPS now manages many recently established national monuments that honor and interpret important moments in U.S. history and U.S. civil rights movements. Each of these initiatives demonstrate how the agency is taking a more holistic approach to sustainability than it has in previous decades.

Together, the increasing demand on park resources and the evolving conceptualization and practice of sustainable park management present a challenge and an opportunity for the NPS. Formal NPS programs, policies, rating systems, government directives, and standards relevant to sustainability primarily provide guidance on environmental sustainability (NPS, 2020a). While managers are recognizing the importance of socio-economic and cultural sustainability, they may not have the institutional knowledge and support to pursue such sustainability initiatives. Therefore, more research is needed regarding holistic perspectives on planning and monitoring sustainable development.

The Global Sustainable Tourism Council

Sustainable tourism certification standards can help tourism managers reduce the negative impacts and enhance benefits of tourism (e.g., Dragomir et al., 2018; Font et al., 2003; Jarvis et al., 2010). Sustainable tourism certification may also provide some marketing advantages (e.g., Jarvis et al., 2010; Karlsson & Dolnicar, 2016). Yet, around the turn of the century, a proliferation occurred and hundreds of sustainable tourism standards and ecolabels became available (Font et al., 2003; Sanabria et al., 2003; Self et al., 2010). An abundance of certifications combined with a lack of standardization and accountability led to confusion for managers and tourists alike and increased concern regarding greenwashing (Font et al., 2003; Self et al., 2010).

GSTC Sustainability Criteria Formation

In response to these concerns, a global partnership of scholars and practitioners partnered to form the Global Sustainable Tourism Council (GSTC) in 2007. The GSTC is an independent and neutral organization, and its purpose is to develop a universal understanding of sustainable tourism principles. In the years following the formation of the GSTC, members of the organization reviewed more than 60 existing tourism certifications, 4,500 existing sustainable tourism criteria, and 2,000 comments from tourism stakeholders working around the world to develop two sets of sustainable tourism criteria. The first set of criteria, the GSTC Industry Criteria, was developed for individual hotel and tour operators and released in 2008, and revised then published in 2017.

The GSTC Destination Criteria (GSTC-D), those utilized in this study, were developed through a stakeholder consultation process leading to their initial publication (Version 1.0) on November 1, 2013. During the process of development of the GSTC-D, they were widely consulted globally, in both developed and developing countries, and in several languages. They reflect certification standards, indicators, criteria, and best practices from different cultural and geo-political contexts around the world in tourism. Potential indicators were screened for relevance and practicality, as well as their applicability to a broad range of destination types. The process of developing both the Industry and GSTC-D was designed to adhere to the International Organization for Standardization (ISO) environmental codes of conduct and the standards-setting code of the ISEAL Alliance (see <https://www.isealalliance.org/> for more about this

organization), the international body providing guidance for the development and management of sustainability standards for all sectors. The GSTC-D were field-tested around the world through an “Early Adopter Program”, and subsequently revised in 2019 (GSTC, 2021). GSTC Destination Criteria. The GSTC-D v2 include performance indicators designed to provide guidance in measuring compliance with the Criteria.

The GSTC Destination Criteria was developed as a framework that could be used by tourism managers and policy makers to guide sustainable tourism destination management. The GSTC-D v1 included performance standards, including 41 criteria and 104 indicators, in four areas of sustainability: (A) sustainable destination management, (B) economic benefits to host communities, (C) benefits to communities, visitors, and culture, and (D) benefits to the environment. These criteria represented the minimum standards that a tourism destination must attain to be considered sustainable, and they can be used by tourism professionals and their collaborators to guide tourism development and achieve increasingly higher levels of sustainability within their destination. The GSTC-D have many applications, including but not limited to the following:

- Serve as a basis for certification for sustainability, basic guidelines for destinations that wish to become more sustainable, a common denominator for information media to recognize destinations and inform the public regarding their sustainability, and as basic guidelines for education and training bodies, such as tourism schools and universities;
- Help consumers identify sound sustainable tourism destinations, certification and other voluntary destination level programs ensure that their standards meet a broadly accepted baseline;
- Offer governmental, non-governmental, and private sector programs a starting point for developing sustainable tourism requirements;
- Demonstrate leadership that inspires others to act (GSTC, 2021b).

The Criteria indicate what should be done, not how to do it or whether the goal has been achieved. This role is fulfilled by performance indicators, associated educational materials, and access to tools for implementation, all of which are an indispensable complement to the GSTC Criteria. While the GSTC Criteria provide a framework for assessing sustainable tourism, destinations may discover additional indicators that need to be included based on the nature of the destination. As of July, 2021, the GSTC had conducted 35 destination assessments which have included a variety of geographic locations, such as towns, islands, national parks, cities, states and small countries. Within the United States, it has been primarily towns and the organization has come from local entities such as Destination Management Organizations, or committees formed from town councils, for example (GSTCb, 2021).

Sustainable tourism certification programs use the GSTC Destination Criteria to certify tourism destinations around the world. However, while some parks and protected areas have been certified using the GSTC Destination Criteria, these criteria have never been applied to evaluate sustainable destination management in a U.S. national park. Conceptually, national parks can be considered tourism destinations in their own right. PPA managers face unique challenges related to visitor use and concessioner management while preserving the values for which the park was established in the first place. The GSTC Destination Criteria may offer a useful guiding framework for

sustainable tourism development in PPAs. Therefore, the aim of our project was to test the utility of the GSTC Destination Criteria in assisting managers at a U.S. national park, specifically Theodore Roosevelt National Park (TRNP), in developing a park-level sustainability plan.

Methods

In 2016, managers at TRNP partnered with social scientists from three universities to collect data needed to develop a visitor use management plan. During this larger project, a need for a sustainability evaluation was identified. We, the research team members from the University of Utah, recognized an opportunity to pilot the Destination Criteria to fulfill the practical needs of park managers and inform our understanding of sustainable tourism indicators for national parks. Theodore Roosevelt National Park managers agreed to participate, and we initiated the sustainability evaluation using the Destination Criteria in August 2018. Specifically, we sought to explore the following research questions:

- How sustainable was TRNP as a tourism destination based on the GSTC Destination Criteria?
- What are the benefits of using the GSTC Destination Criteria to evaluate sustainability achievement in a U.S. national park?
- What are the barriers to using the GSTC Destination Criteria to evaluate sustainability achievement in a U.S. national park?

Study Site

Theodore Roosevelt National Park is a three-unit national park located in western North Dakota. The park is situated on the ancestral lands of what is now known as the MHA Nation, which includes the Mandan, Hidatsa, and Arikara Nations. The park was founded as a U.S. national park in 1947 primarily to commemorate President Theodore Roosevelt and his time in the Dakota Territory in the 1880s (NPS, 2015). The park is also home to variety of important plant and animal species, including iconic species like bison, feral horses, elk, pronghorn, and prairie dogs, and is known for its unique North Dakota badland geology and scenic views.

Data Collection

The evaluation was framed using the GSTC Destination Criteria (version 1.0). Each of the 41 criteria and associated 104 indicators were assessed during the study. The indicators communicate how the Criteria should be implemented at a minimum. We collected data from multiple sources to evaluate whether and to what extent TRNP met each criterion and indicator. Online and print documents prepared by TRNP were reviewed and an in-person park site visit was completed in August 2018 to record observations of park infrastructure, informational and educational material, and interpretive programs. Additionally, interviews designed to understand how park programs and facilities perform against the criteria were completed in-person or on the phone with seven fulltime park managers and staff as well as with one representative from the Theodore Roosevelt Nature and History Association (TRNHA).

Data Analysis

Notes from all data collection efforts, including interviews, review of records, and park management documents, were compiled and reviewed by members of the research team. Collectively, we evaluated the evidence corresponding to each criteria

and indicator and determined the status of each based on fulfillment of individual indicators and thus overall criteria. In doing so, we assigned a value of “complete,” “in progress,” “needs improvement,” or “not applicable” to each indicator. For indicators that were determined to be “in progress” or “need improvement,” we developed recommendations based on relevant literature or existing examples from other U.S. national parks to provide TRNP managers with resources for improving performance in these areas. We also provided additional resources and contact information for relevant individuals to assist in the implementation of recommendations where applicable.

Results

During this evaluation, specific areas of success and improvement were identified in each of the four sections of sustainability included in the Destination Criteria. In general, TRNP had addressed or was making progress on most indicators; however, several areas not addressed were also identified. Specific results from each of the four sections are summarized in the following sections.

Sustainable Destination Management

Sustainable Management, or Section A of the GSTC Criteria for Destinations outlines 14 criteria and 43 associated indicators to demonstrate effective sustainable management. Our evaluation indicated that at the time of this study TRNP clearly addressed 27 (66%) and was making progress on 12 (29%) of the indicators for Section A (see Table 1). These results demonstrate that TRNP staff and administration were engaged on multiple levels of sustainable destination management. Examples of TRNP actions included the development and maintenance of multi-year planning documents, on-going resource monitoring programs, basic channels for public communication and input on park management decisions, and the establishment of policies regarding accessibility, safety and security and the protection of TRNP’s natural and cultural resources. All these actions were mandated by NPS policy or U.S. federal regulations, which align well with many of the criteria and associated indicators in Section A of the Criteria.

The indicators evaluated as “in progress” represented a need for additional action related sustainability initiatives, off-season planning, climate change, and funding. For example, TRNP employs one fulltime staff member designated as the sustainability coordinator. However, the sustainability-related duties of the coordinator—such as green purchasing, recycling, and waste reporting—were collateral duties. Thus sustainability-related duties were often forgone unless this individual’s primary and required responsibilities were complete, which reduced TRNP’s capacity to fully embrace sustainable management Criteria. Additionally, though seasonal visitation was beyond TRNP’s control, there were opportunities to improve off-season planning by creating a strategy to redistribute recreation and increase educational outreach and visitation programming during the winter season. Furthermore, while the NPS provides information on the agency’s position and policies on climate change (NPS, 2020b) and TRNP actively monitors resources that were likely to be impacted by climate change, TRNP did not have a system for adapting to climate change risks on a local level. Lastly, several indicators were not addressed due to inadequate human and financial resources allocated to tourism development, planning, and education.

For example, two indicators relevant to industry-supported sustainable tourism certification or environmental management systems, which TRNP had not addressed. Other U.S. national parks, such as Zion National Park and Glacier National Park, have

Table 1
Results from Section A: Sustainable Destination Management

| Section A: Sustainable Destination Management | | | | |
|---|-------------------------|-----------------|-------------------|----------------|
| 14 Criteria, 43 Indicators | | | | |
| GSTC Criteria | Indicator Status | | | |
| | Complete | In Progress | Needs Improvement | Not Applicable |
| <p>A1: Sustainable destination strategy (4 indicators) Destination has established and is implementing a multi-year destination strategy that is publicly available, is suited to its scale; that considers environmental, economic, social, cultural, quality, health, and safety, and aesthetic issues; and was developed with public participation.</p> | 100% (n=4) | | | |
| <p>A2: Destination management organization (5 indicators) Destination has an effective organization, department, group, or committee responsible for a coordinated approach to sustainable tourism, with involvement by the private sector and public sector. This group is suited to the size and scale of the destination, and has defined responsibilities, oversight, and implementation capability for the management of environmental, economic, social, and cultural issues. This group's activities are appropriately funded.</p> | 40% (n = 2) | 60% (n = 3) | | |
| <p>A3: Monitoring (3 indicators) Destination has a system to monitor, publicly report, and respond to environmental, economic, social, cultural, tourism, and human rights issues. The monitoring system is reviewed and evaluated periodically.</p> | 67% (n = 2) | 33% (n = 1) | | |
| <p>A4: Monitoring (1 indicator) Destination has a system to monitor, publicly report, and respond to environmental, economic, social, cultural, tourism, and human rights issues. The monitoring system is reviewed and evaluated periodically.</p> | | 100% (n = 1) | | |

Table 1 (cont.)

| | | | | |
|---|-----------------|-----------------|--|--|
| <p>A5: Climate change adaptation (3 indicators) Destination has a system to identify risks and opportunities associated with climate change. This system encourages climate change adaptation strategies for development, siting, design, and management of facilities. The system contributes to the sustainability and resilience of the destination and to public education on climate for both residents and tourists.</p> | | 100% (n = 3) | | |
| <p>A6: Inventory of tourism assets and attractions (1 indicator) Destination has an up-to-date, publicly available inventory and assessment of its tourism assets and attractions, including natural and cultural sites.</p> | 100% (n = 1) | | | |
| <p>A7: Planning Regulations (4 indicators) Destination has planning guidelines, regulations and/or policies that require environmental, economic, and social impact assessment and integrate sustainable land use, design, construction, and demolition. The guidelines, regulations and/or policies are designed to protect natural and cultural resources, were created with local inputs from the public and a thorough review process, are publicly communicated, and are enforced.</p> | 75% (n = 3) | 25% (n = 1) | | |
| <p>A8: Access for all (2 indicators) Where appropriate, sites and facilities, including those of natural and cultural importance, are accessible to all, including persons with disabilities and others who have specific access requirements. Where such sites and facilities are not immediately accessible, access is afforded through the design and implementation of solutions that take in to account both the integrity of the site and such reasonable accommodations for persons with access requirements as can be achieved.</p> | 100% (n = 2) | | | |

Table 1 (cont.)

| | | | | |
|--|-----------------|----------------|----------------|--------------|
| <p>A9: Property acquisitions (2 indicators) Laws and regulations regarding property acquisitions exist, are enforced, comply with communal and indigenous rights, ensure public consultation, and do not authorize resettlement without prior informed consent and/or reasonable compensation.</p> | 100% (n = 2) | | | |
| <p>A10: Visitor satisfaction (2 indicators) Destination has a system to monitor and publicly report visitor satisfaction, and, if necessary, to take action to improve visitor satisfaction.</p> | 100% (n = 2) | | | |
| <p>A11: Sustainability standards (4 indicators) Destination has a system to promote sustainability standards for enterprises consistent with the GSTC Criteria. The destination makes publicly available a list of sustainability certified or verified enterprises.</p> | 25% (n = 1) | | 50% (n = 2) | 25% (n=1) |
| <p>A12: Safety and security (5 indicators) Destination has a system to monitor, prevent, publicly report, and respond to crime, safety, and health hazards.</p> | 80% (n = 4) | | | 20% (n=1) |
| <p>A13: Crisis and emergency management (5 indicators) Destination has a crisis and emergency response plan that is appropriate to the destination. Key elements are communicated to residents, visitors, and enterprises. The plan establishes procedures and provides resources and training for staff, visitors, and residents, and is updated on a regular basis.</p> | 60% (n = 3) | 40% (n = 2) | | |
| <p>A14: Promotion (2 indicators) Promotion is accurate with regard to the destination and its products, services, and sustainability claims. The promotional messages treat local communities and tourists authentically and respectfully.</p> | 50% (n = 1) | 50% (n = 1) | | |

implemented environmental management systems (NPS, 2016, 2012). However, it has not been typical for U.S. national parks to pursue sustainable tourism certification, although many national park concessioners have done so (e.g., Grand Teton Lodge Company, 2020; Signal Mountain Lodge, 2020; Xanterra, 2020), and parks and protected areas outside of the United States have earned sustainable tourism certifications predicated on the GSTC Destination Criteria (GSTC, 2020b).

Table 2
Results from Section B: Economic Benefits to Host Communities

| Section B - Maximize economic benefits to the host community and minimize negative impacts: | | | | |
|---|-------------------------|-----------------|-------------------|----------------|
| 9 Criteria, 21 Indicators | | | | |
| GSTC Criteria | Indicator Status | | | |
| | Complete | In Progress | Needs Improvement | Not Applicable |
| B1: Economic monitoring (3 indicators) Direct and indirect economic contribution of tourism to the destination’s economy is monitored and publicly reported at least annually. To the extent feasible, this should include visitor expenditure, revenue per available room, employment and investment data. | 67% (n = 2) | 33% (n = 1) | | |
| B2: Local career opportunities (4 indicators) Destination’s enterprises provide equal employment, training opportunities, occupational safety, and fair wages for all. | 100% (n = 4) | | | |
| B3: Public participation (2 indicators) Destination has a system that encourages public participation in destination planning and decision making on an ongoing basis. | 100% (n = 2) | | | |
| B4: Local community opinion (3 indicators) Local communities’ aspirations, concerns, and satisfaction with destination management are regularly monitored, recorded and publicly reported in a timely manner. | | 100% (n = 2) | | |
| B5: Local access (2 indicators) Destination monitors, protects, and when necessary, rehabilitates or restores local community access to natural and cultural sites. | 50% (n = 1) | 50% (n = 1) | | |
| B6: Tourism awareness and education (1 indicator) Destination provides regular programs to affected communities to enhance their understanding of the opportunities and challenges of tourism, and the importance of sustainability. | | 100% (n = 1) | | |
| B7: Preventing exploitation (2 indicators) | | | | |

Table 2 (cont.)

| | | | | |
|--|-----------------|----------------|--|--|
| Destination has laws and established practices to prevent commercial, sexual, or any other form of exploitation and harassment of anyone, particularly of children, adolescents, women, and minorities. The laws and established practices are publicly communicated. | 100% (n = 2) | | | |
| B8: Support for community (1 indicator) Destination has a system to enable and encourage enterprises, visitors, and the public to contribute to community and sustainability initiatives. | 100% (n = 1) | | | |
| B9: Supporting local entrepreneurs and fair trade (4 indicators) Destination has a system that supports local and small-and medium-sized enterprises and promotes and develops local sustainable products and fair-trade principles that are based on the area’s nature and culture. These may include food and beverages, crafts, performance arts, agricultural products, etc. | 25% (n = 1) | 75% (n = 3) | | |

Importantly, Section A included some indicators not particularly relevant to national parks, and specifically TRNP. One indicator (indicator A.11.c), suggested a destination monitor tourism business participation in tourism certification. Another, identified taxi licensing and organization systems. Because TRNP, like most U.S. national parks, do not have tourism businesses or taxis to manage or monitor, these indicators are not applicable to parks as destinations.

Economic Benefits to Host Communities

Socio-Economic Sustainability, or Section B of the GSTC Criteria for Destinations, includes nine criteria and 20 example indicators to evaluate whether a destination maximizes economic benefits and minimized negative impacts to host communities. Theodore Roosevelt National Park performed well in this section, meeting 12 (59%) of Section B and was making progress on the remaining eight (40%; see Table 2).

Similar to Section A, many of the indicators aligned well with NPS policy and regulations. For instance, indicators pertaining to economic monitoring and reporting were addressed due to the NPS Social Science Program, whereby the NPS conducts research and annually reports visitor spending effects and economic contributions of national parks at national, state, and local levels. The NPS also outlines minimum requirements all parks follow to ensure there are mechanisms allowing for the collection of donations and community input on park management decisions. The park complies with and frequently goes beyond these requirements and, therefore, comprehensively addressed the corresponding Criteria in Section B.

Similarly, TRNP was making progress on several indicators due to the community engagement initiatives ongoing at the time of this evaluation. As part of the larger visitor use study, a University of Utah research team facilitated a community engagement

study to identify the needs and priorities of three TRNP gateway communities using an appreciate inquiry process (Joyner et al., 2019). This type of community engagement study was not required by NPS policy, yet represented a step toward regularly monitoring visitor and local community aspirations, concerns, and satisfaction (see indicator B1.c and B4.a).

Several other indicators, such as ones relevant to host community education and support for small or local business, were identified by researchers as “in progress.” The park facilitates numerous educational experiences, and TRNP personnel desired to expand these educational opportunities into communities by partnering with nearby schools and universities. However, these educational initiatives have not typically included information on the benefits of tourism/visitation, which was referenced by one indicator. In addition, the lack of human resources prevented TRNP from fully expanding their educational programs. The TRNHA, which operates the TRNP gift

Table 3

Results from Section C: Benefits to Communities, Visitors, and Culture

| Section C - Maximize economic benefits to communities, visitors, and culture; minimize negative impacts | | | | |
|--|-------------------------|----------------|-------------------|----------------|
| 6 Criteria, 13 Indicators | | | | |
| GSTC Criteria | Indicator Status | | | |
| | Complete | In Progress | Needs Improvement | Not Applicable |
| C1: Attraction protection (2 indicators) Destination has a policy and system to evaluate, rehabilitate, and conserve natural and cultural sites, including built heritage (historic and archaeological) and rural and urban scenic views. | 100% (n = 2) | | | |
| C2: Visitor Management (1 indicator) Management system to protect natural and cultural sites, including built heritage and rural and urban scenic views. | 100% (n = 1) | | | |
| C3: Visitor Behavior (2 indicators) Destination has published and provided guidelines for proper visitor behavior at sensitive sites. Such guidelines are designed to minimize adverse impacts on sensitive sites and strengthen positive visitor behaviors. | 100% (n = 2) | | | |
| C4: Cultural heritage protection (2 indicators) Destination has laws governing the proper sale, trade, display, or gifting of historical and archaeological artifacts. | 50% (n = 1) | 50% (n = 1) | | |
| C5: Site interpretation (5 indicators) Accurate interpretive information is provided at natural and cultural sites. The information is culturally appropriate, developed with community collaboration, and communicated in languages pertinent to visitors. | 40% (n = 2) | 20% (n = 1) | 40% (n = 2) | |
| C6: Intellectual property (1 indicator) Destination has a system to contribute to the protection and preservation of intellectual property rights of communities and individuals. | 100% (n = 1) | | | |

and bookstores, do source products from some small and local vendors. As likely with many small rural communities adjacent to PPAs, products were not available locally or in the quantities needed by TRNP or TRNHA.

Benefits to Communities, Visitors, and Culture

Cultural Sustainability, or Section C of the GSTC Criteria included six criteria and 13 indicators to assist destinations determination in maximizing benefits to communities, visitors, and culture while minimizing negative impacts. The park addressed nine (75%) of the 13 indicators (see Table 3). In particular, TRNP excelled in the area of visitor management and interpretive staff training. The park complies with NPS policies requiring TRNP managers to implement systems to manage and monitor visitation and protect natural and cultural resources from the impacts of tourism. The park also offers a variety of interpretive materials and programs. In addition, the park maintains a staff of trained interpreters, which is also required by the NPS.

Four indicators (i.e., indicators C4.b, C5.b, and C5.c, C5.d) were not fully addressed. First, most interpretive materials were developed without the input of local communities, most notably Indigenous communities and specifically the MHA Nation. Park staff and managers however did communicate that efforts were being made to develop a relationship with the MHA Nation. Yet additional work was needed to improve benefits to Indigenous communities through increased access and accurate interpretation. The development of interpretative materials through the lens of MHA community driven representation of Native American culture, history, displacement, and contemporary survivance was an area identified for improvement. Second, all interpretive materials were available in the English language. The park has the opportunity to broaden its reach to diverse audiences by offering materials in multiple languages.

Maximizing Benefits to the Environment and Minimizing Negative Impacts

And, lastly, Environmental Sustainability or Section D of the GSTC Criteria for Destinations has 12 criteria and 28 recommended indicators for maximizing environmental benefits and minimizing negative impacts (Table 4). Theodore Roosevelt National Park is addressing 18 (64%) of the indicators by complying with NPS policies related to monitoring the environmental impacts of activities within and beyond park boundaries. Managers at TRNP demonstrated they maintain up-to-date inventories of environmental resources in the park and regularly monitor environmental risks to sensitive species and ecosystems, including but not limited to air pollution, wildlife disease, and light pollution. The park also maintains a working partnership with the Northern Great Plains Inventory and Monitoring Network to monitor and manage the presence of invasive species in the park. Additionally, TRNP addressed indicators relevant to monitoring and reporting water usage, water quality, wastewater, and solid waste generation. Each of these sets of indicators aligned with NPS policy or federal law.

The park was making progress on eight (29%) indicators in Section D. Based on interviews with park management staff, responses to most environmental risks were reactive rather than proactive. Management staff responded to environmental threats—such as invasive species—as those threats became apparent. The exceptions included the fire management program; elk, bison, and feral horse management programs; and the limited educational initiatives to minimize visitors' environmental impacts. Park personnel have made efforts to respond to external development threats proactively,

Table 4**Results from Section D: Maximizing Benefits to the Environment and Minimizing Negative Impacts**

| Section D: Maximize benefits to the environment and minimize negative impacts 12 criteria, 28 indicators | | | | |
|--|-------------------------|-----------------|-------------------|----------------|
| GSTC Criteria | Indicator Status | | | |
| | Complete | In Progress | Needs Improvement | Not Applicable |
| D1: Environmental risks (2 indicators) Destination has identified environmental risks and has a system in place to address them. | 50% (n=1) | 50% (n=1) | | |
| D2: Protection of sensitive environments (3 indicators) Destination has a system to monitor the environmental impact of tourism, conserve habitats, species, and ecosystems, and prevent the introduction of invasive species. | 100% (n = 3) | | | |
| D3: Wildlife protection (2 indicators) Destination has a system to ensure compliance with local, national, and international laws and standards for the harvest or capture, display, and sale of wildlife (including plants and animals). | 100% (n = 2) | | | |
| D4: Greenhouse gas emissions (2 indicators) Destination has a system to encourage enterprises to measure, monitor, minimize, publicly report, and mitigate their greenhouse gas emissions from all aspects of their operation (including emissions from service providers). | | 50% (n=1) | 50% (n=1) | |
| D5: Energy conservation (2 indicators) Destination has a system to encourage enterprises to measure, monitor, reduce, and publicly report energy consumption, and reduce reliance on fossil fuels. | | 100% (n = 2) | | |
| D6: Water Management (1 indicator) Destination has a system to encourage enterprises to measure, monitor, reduce, and publicly report water usage. | | 100% (n = 1) | | |
| D7: Water security (1 indicator) Destination has a system to monitor its water resources to ensure that use by enterprises is compatible with the water requirements of the destination community. | 100% (n = 1) | | | |
| D8: Water quality (3 indicators) Destination has a system to monitor drinking and recreational water quality using quality standards. The monitoring results are publicly available, and the destination has a system to respond in a timely manner to water quality issues. | 100% (n = 3) | | | |

Table 4 (cont.)

| | | | | |
|---|-----------------|----------------|----------------|--|
| D9: Wastewater (4 indicators) Destination has clear and enforced guidelines in place for the siting, maintenance and testing of discharge from septic tanks and wastewater treatment systems, and ensures wastes are properly treated and reused or released safely with minimal adverse effects to the local population and the environment. | 100% (n = 4) | | | |
| D10: Solid waste reduction (4 indicators) Destination has a system to encourage enterprises to reduce, reuse, and recycle solid waste. Any residual solid waste that is not reused or recycled is disposed of safely and sustainably. | 75% (n = 3) | 25% (n = 1) | | |
| D11: Light and noise pollution (2 indicators) Destination has guidelines and regulations to minimize light and noise pollution. The destination encourages enterprises to follow these guidelines and regulations. | 50% (n = 1) | 50% (n = 1) | | |
| D12: Low-impact transportation (2 indicators) Destination has a system to increase the use of low-impact transportation, including public transportation and active transportation (e.g., walking and cycling). | | 50% (n = 1) | 50% (n = 1) | |

communicating on proposed projects or approaching developers with mitigation requests as soon as park personnel were aware of these. Each of these programs are designed to prevent rather than repair environmental degradation. However, due to the passive or reactive nature of many environmental management actions, many of the indicators in Section D were evaluated as “in progress” rather than “complete.”

Similarly, while TRNP was working to reduce environmental impacts, many of these actions were not part of a formal plan with measurable goals and objectives. For example, TRNP provides water bottle filling stations in all visitor center, providing visitors an opportunity to lower their environmental impact while visiting the park. However, there was no formal plan to promote or educate visitors about these opportunities and the importance of reducing single-use plastics. TRNP was however, taking steps to reduce the use of water, energy, and fossil fuels within park management operations. Yet, these actions were not outlined in a formal plan. This reduces the likelihood of sustained progress on these particular efforts to reduce environmental impacts.

TRNP did not address two (7%) of the representative indicators of Section D. The park was not measuring, monitoring, or reporting greenhouse gas emissions. Many U.S. national parks are involved in the NPS Climate Friendly Parks Program, which offers comprehensive support to park units for measuring emissions and implementing

educational initiatives and strategies to reduce emissions. The park was not a member of that program. Yet, the park provided ample hiking, horseback riding, and cycling opportunities, all of which were examples of low-carbon forms of transportation. However, TRNP did not have a program to promote these opportunities, as outlined by one of the indicators.

Discussion

Based on this evaluation, TRNP met many of the indicators representing the GSTC Destination Criteria and, therefore, reached a high level of destination sustainability. While this information was useful to park planning and management at TRNP, we also sought to understand the applicability of the GSTC Destination Criteria in the context of U.S. national parks broadly. To this end, we identified several benefits, barriers, and recommendations based on our experiences during this study.

Benefits of Using the GSTC Destination Criteria in U.S. National Parks

This evaluation provided TRNP managers with a credible sustainability standard for identifying potential shortfalls with respect to sustainable destination development. Park managers are experts in their own right concerning biophysical, social, and operational functions of the park. However, most individuals who work for the NPS have not had formal training in sustainability, especially a conceptualization of sustainability that includes environmental, socio-economic and cultural components. Historically, when there is a deficit of expertise, park managers will rely on accepted industry standards to evaluate park performance in a variety of areas. Through this work, we confirmed that Destination Criteria can be applied to evaluate sustainability performance without requiring managers or agencies to expend valuable resources in developing their own framework.

By evaluating the sustainability performance using the GSTC Destination Criteria, park planners and managers were able to identify and prioritize future sustainability initiatives. Park-level strategic planning processes are standard throughout the agency. However, sustainability evaluations have not been typical processes used to develop strategic plans in the NPS. Thus, many goals and objectives relative to completing sustainability initiatives, especially socio-economic and culturally based initiatives, do not appear in planning documents. Completing this evaluation in conjunction with more traditional data collection processes gave TRNP managers opportunities to prioritize sustainability goals as part of the planning process. Furthermore, the detailed nature of the indicators in combination with the recommendations we provided assisted TRNP managers in prioritizing specific areas of improvement and target solutions that were most realistic for their specific context.

As discussed, U.S. national park managers have limited access to financial resources. Due to these limitations, managers must justify their decisions for allocating and requesting funding for projects, including sustainability-related projects. Evaluations, such as the present evaluation, provide evidence to make these justifications. The globally recognized and detailed nature of the Destination Criteria are particularly useful for justifying aspects of sustainability in park planning. The leadership planning and management team of TRNP envisioned the use of these results to support future proposals for sustainability-related initiatives.

Barriers to Using the GSTC Destination Criteria in U.S. National Parks

While there was value in applying the GSTC Destination Criteria Indicators in a U.S. national park context, we also identified challenges. One minor yet notable challenge was the consistent use of the word “tourism” throughout the Destination Criteria. Generally, the NPS uses the term “visitation,” and while providing quality recreation experiences is part of the NPS mandate, they may or may not equate visitation to tourism destination management. Therefore, this consistent use of the term “tourism” may make it more difficult for some national park managers to see how the Destination Criteria are relevant to their work.

Another minor challenge was navigating the incompatibility between some of the language in the Destination Criteria and NPS policy. For example, Criteria A14 requires “promotion” for the destination to be accurate. In the United States, NPS policy prohibits managers from promoting a national park unit. The presence of the word “promotion” in the Destination Criteria created difficulties for researchers and confusion for TRNP managers. Furthermore, two indicators were stated in such a way that they would not be relevant to any NPS unit. While these issues were not substantial, they highlighted the need for indicators to be compatible with U.S. national park policies and functions.

These observations support the importance of mechanisms for reviewing and revising sustainable tourism indicators and contexts to which they are applied. As per the ISEAL Code of Good Practice: Setting Social and Environmental Standards, Version 6.0 – December 2014, the Destination Criteria are evaluated on a regular basis. In 2019, the International Standards Working Group, of which one of the researchers is a member, conducted the review process of the Destination Criteria, required by ISEAL. This process resulted in a second revised version, Destination Criteria Version 2.0. This is a multi-stakeholder consultation process (see Bricker et al., 2020), and the revised language and organization of the Criteria resolved several issues encountered within the context of this study. For example, instead of using the word “promotion,” the Criteria were updated to reflect the range of types of communication processes various destinations may use, and hence included “visitor education,” which U.S. national parks do embrace. Moving forward, the development of indicators should be an ongoing process in order to relate to the varied contexts and nuances associated with destinations, including PPAs, removing language that may not be universal culturally, or limit access for some.

Furthermore, making progress on indicators may be more challenging for U.S. national park managers than managers of other tourism destinations. In general, the funding mechanisms, policies, and regulations that guide the majority of U.S. national park management reflect a rigid, top-down structure. Therefore, managers struggle to make progress on indicators that require substantial changes in policy, staffing, or funding, all of which managers have little to no control over at the park level. For example, as noted when evaluating indicator A2.e: “The tourism organization is appropriately funded,” sustainability-related duties at TRNP were often incomplete because these duties were assigned as collateral duties. Unlike other tourism managers, TRNP managers cannot increase the price goods and services or make significant budgetary changes to fund a sustainability office position without violating NPS policies or regulations. In these instances, evaluations using the GSTC Criteria may have limited value.

¹Indicators include indicators A7.a., A7.b, A8.a, A9.a, A9.b, B2.a, B2.b, B3.c, B3.d, B7.a., B7.b, C4.a, C6.a, D3.a, D3.b., D9.a., D9.b., and D11.a.

Recommendations for Applying the GSTC Destination Criteria in U.S. National Parks

The Destination Criteria represent the minimum baseline standards for sustainable tourism destinations, and TRNP met the majority of these minimum standards because the indicators aligned well with existing U.S. federal regulations and NPS policies or programs. More specifically, because of regulations, policies, or programs that supersede TRNP management, TRNP met or made progress on 31 of 41 (76%) applicable indicators in section A, 13 of 20 (65%) indicators in section B, 9 of 13 (69%) indicators in section C, and 15 of 28 (54%) indicators in section D. Of these 68 indicators (67% of the total applicable indicators) 18¹ would be satisfied identically in any national park unit because they simply require regulations or policies that already exist across the system. For example, the four indicators for “Criteria B2: Local career opportunities” required a destination to have legislation or policies that provide equal or fair employment, training, occupational safety, and wages for all. Because relevant policies already exist at the federal level, any national park would meet these indicators to the same degree.

Likewise, the overall evaluation of the other 50 indicators² would yield similar results in any U.S. national park unit, but there would be nuance. Any park unit that complies with federal regulations and NPS policies would meet the minimum standard for completing or making progress on these indicators; however, how and the degree to which these indicators are met would likely vary substantially. For example, Criteria “A5: Climate Change Adaption” include three indicators that requires a destination to have a system, policies, and education program for climate change adaption and mitigation. The NPS instituted each of these, and TRNP complies. However, TRNP had no site-specific system, policies, or programs to address climate change in the park at the time of this evaluation. Therefore, TRNP was making progress on this indicator just like every NPS unit, but they were not making as much progress as other NPS units that had taken additional action to address climate change within their respective park units.

When applying the Destination Criteria to U.S. national parks, evaluating the nuance is critical to produce meaningful results. These criteria should not be applied as a simple checklist but rather an evaluation of how and to what extent a park is meeting each indicator within and near its boundaries. This provides a chance to examine opportunities to exceed the minimum standard and make continual progress at a specific national park.

Future Application and Testing

In summary, the Destination Criteria provide guidance for sustainable tourism destinations. In many cases across the globe, PPAs are destinations for tourists, and, as we demonstrated through this study, PPAs, such as the U.S. national parks, could benefit from a universally accepted criteria for sustainable management such as the GSTC Destination Criteria 2.0. To ensure the indicators for the Destination Criteria remain applicable to PPA contexts, they must be regularly revised and remain flexible to have widespread meaning and relevance. In addition, there is an opportunity

¹Indicators include A1.a, A1.b, A1.c, A1.d, A2.a, A3.a, A3.b, A3.c, A5.a, A5.b, A5.c, A6.a, A7.c, A7.d, A8.b, A10.a, A10.b, A11.d, A12.a, A12.b, A12.c, A12.e, A13.a, A13.b, A13.c, A13.e, B1.a, B1.b, B1.c, B3.a, B5.a, B9.a, B9.c, C1.a, C1.b, C2.a, C3.a, C3.b, C5.a, C5.e, D2.a, D2.b, D2.c, D5.a, D5.b, D6.a, D9.c, D9.d, D10.a, and D10.b.

to apply the Destination Criteria (Version 2.0) to other U.S. national parks and other PPAs across the globe. Application across varied PPAs may provide an opportunity for further refinement of the Destination Criteria and lead to best practices for applying the practices to help PPAs achieve high levels of environmental, socio-economic, and cultural sustainability as visitation on PPAs continue to increase.

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References

- Bricker, K., Denman, R., & Denman, J. (2020). The elaborate process of revising GSTC's Destination Criteria. In J. Tourtellot (Ed.), *Destination Stewardship Report* (July–Sept. 2020), <https://destinationcenter.org/2020/06/a-new-e-mail-quarterly-launches/>
- Bushell, R., & Eagles, P. F. (Eds.). (2006). *Tourism and protected areas: benefits beyond boundaries: The Vth IUCN World Parks Congress*. Cabi.
- Congressional Research Service. (July 2, 2019). *National Park Service appropriations: Ten-year trends*. <https://fas.org/sgp/crs/misc/R42757.pdf>
- Dragomir, L., Mazilu, M., & Marinescu, R. (2018, December). The connection between sustainable tourism and certification systems. *Forum Geografic*, 17(2), 145–150.
- Font, X., Sanabria, R., & Skinner, E. (2003). Sustainable tourism and ecotourism certification: Raising standards and benefits. *Journal of Ecotourism*, 2(3), 213–218.
- Global Sustainable Tourism Council. (2021a). *Certified sustainable destinations*. <https://www.gstcouncil.org/certified-sustainable-destinations/>
- Global Sustainable Tourism Council. (2021b). *Sustainable destinations*. <https://www.gstcouncil.org/about/gstc-impact/>
- Grand Teton Lodge Company. (2020). *Our environmental initiatives*. <https://www.gtlc.com/the-park/epic-promise/environmental>
- Jarvis, N., Weeden, C., & Simcock, N. (2010). The benefits and challenges of sustainable tourism certification: A case study of the Green Tourism Business Scheme in the West of England. *Journal of Hospitality and Tourism Management*, 17(1), 83–93.
- Joyner, L., Lackey, N. Q., & Bricker, K. S. (2019). Community engagement: An appreciative inquiry case study with Theodore Roosevelt National Park gateway communities. *Sustainability*, 11(24), 7147.
- Karlsson, L., & Dolnicar, S. (2016). Does eco certification sell tourism services? Evidence from a quasi-experimental observation study in Iceland. *Journal of Sustainable Tourism*, 24(5), 694–714.
- Keiter, R. B. (2013). *To conserve unimpaired: The evolution of the national park idea*. Island.
- Sanabria, R., Skinner, E., Font, X., Maccarrone-Eaglen, A., Sallows, M., & Fredericksen, M. (2003). *Sustainable Tourism Stewardship Council: Raising the standards and benefits of sustainable tourism and ecotourism certification*. Rainforest Alliance. <http://usir.salford.ac.uk/id/eprint/44065/1/STSC%202002%20-final-report.pdf>

- Self, R. M., Self, D. R., & Bell-Haynes, J. (2010). Marketing tourism in the Galapagos Islands: Ecotourism or greenwashing? *International Business & Economics Research Journal*, 9(6), 111–126.
- Slocum, S. L. (2016). Operationalising both sustainability and neo-liberalism in protected areas: Implications from the USA's National Park Service's evolving experiences and challenges. *Journal of Sustainable Tourism*, 25(12), 1848–1864.
- Signal Mountain Lodge. (2020). *Environmental program history*. <https://www.gtlc.com/the-park/epic-promise/environmental>
- U.S. National Park Service. (2012). *Glacier National Park: Environmental management system procedures*. <https://www.nps.gov/subjects/climatechange/upload/GLAC-CFP-Action-Plan-508Compliant.pdf>
- U.S. National Park Service. (2015). *Theodore Roosevelt: People*. <https://www.nps.gov/thro/learn/historyculture/people.htm>
- U.S. National Park Service. (2016). *State of the park report: Zion National Park, Utah*. https://www.nps.gov/zion/learn/management/upload/ZION_StateOfThePark.pdf
- U.S. National Park Service. (2019a). *Pearl Harbor National Memorial: Every kid in a park*. <https://www.nps.gov/valr/learn/kidsyouth/every-kid-in-a-park.htm>
- U.S. National Park Service. (2019b). *Urban parks and programs: The urban agenda*. <https://www.nps.gov/subjects/urban/index.htm>
- U.S. National Park Service. (2020a). *Denver service center workflows: Sustainability standards*. <https://www.nps.gov/dscw/ds-sustainability.htm>
- U.S. National Park Service. (2020b). *Climate change: Climate change and your national parks*. <https://www.nps.gov/subjects/climatechange/index.htm>
- U.S. National Park Service. (2021a). *NPS stats: National Park Service visitor use statistics*. <https://irma.nps.gov/STATS/Reports/National>
- U.S. National Park Service. (2021b). *Social science: Annual visitation highlights*. <https://www.nps.gov/subjects/socialscience/annual-visitation-highlights.htm>
- U.S. National Park Service. (2021c). *Legislative and congressional affairs: Great American Outdoors Act*. <https://www.nps.gov/subjects/legal/great-american-outdoors-act.htm#:~:text=The%20Great%20American%20Outdoors%20Act%20will%20enable%20national%20parks%20and,increased%20access%20for%20all%20visitors>.
- U.S. National Park Service. (2021d). *Infrastructure: What is deferred maintenance*. <https://www.nps.gov/subjects/infrastructure/deferred-maintenance.htm>
- Xanterra. (2020). *Sustainability awards*. <https://www.xanterra.com/sustainability/sustainability-awards/>

Research Paper

Narratives of Place: Integrated Digital Storytelling and Story-Mapping for Sustainable Recreation Management

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Executive Summary

Spatial data applications frequently examine behavior and values across recreation landscapes. While narratives are atypical in these analyses, ArcGIS StoryMap supports integrating spatial and narrative data. Digital storytelling, which various publicly engaged fields employ, entails first-person narratives told in short montages of video, images, sound, and voiceover that engage both storyteller and audience. This case study research explores digital storytelling and story-mapping as a novel methodology to understand, communicate, and inform recreation values and management. Specifically, it examines whether and how these methods contributed to the collaborative, non-motorized trails planning Pole Mountain Gateways project with the USDA Forest Service. Using purposive sampling, we supported stakeholders to create digital stories ($N = 9$) about their experiences and values in the Medicine Bow National Forest Pole Mountain Unit near Laramie, Wyoming, USA. Stakeholders' stories were topically diverse and spatially distributed across the recreation landscape. Stories reflected aspects of the USDA Forest Service framework on sustainable recreation, including ecosystems, healthy communities, equitable economies, culture and traditions, stewardship values, present and future generations, place-based recreation, social-ecological systems, and collaborative community engagement. Pole Mountain Gateways land manager interviews ($N = 4$) assessed the utility of this integrated approach. Managers discussed place-based digital stories as a complimentary tool for representing and communicating diverse stakeholder values; engaging the public and supporting partner relationships; and aiding in broad, collaborative decisions and projects. This case systematically describes a process for integrated digital storytelling and story-mapping for sustainable recreation and collaborative public lands management. We identify opportunities for further developing and exploring this novel, narrative approach.

Keywords

Digital storytelling, narrative, StoryMap, sustainable recreation management, place-based, collaboration

Introduction

Recently, visitation to parks and protected areas has increased worldwide (Balmford et al., 2015). In 2018, U.S., National Forests alone experienced over 150 million visits (U.S. Department of Agriculture, 2018). The pandemic has resulted in new recreation patterns as more visitors seek increased local public lands use (Rice et al., 2020). This increased recreation and inadequate federal and state funding have resulted in degradation of recreation sites, all of which necessitate a sustainable recreation framework for U.S. Forest Service lands (USDA Forest Service, 2010).

Sustainable development “meets the needs of the present without compromising the ability of future generations to meet their own needs” (Brundtland, 1987, p. 5; Lew et al., 2016). Reflecting this concept, the United States Department of Agriculture (USDA) Forest Service mission is “to *sustain* [emphasis added] the health, diversity, and productivity of the Nation’s forests and grasslands to meet the needs of present and future generations” (United States Department of Agriculture, n.d.a). The USDA Forest Service defines sustainable recreation management as “the provision of desirable outdoor opportunities for all people, in a way that supports ecosystems, contributes to healthy communities, promotes equitable economies, respects culture and traditions, and develops stewardship values now and for future generations” (Cervený et al., 2020, p. 10). Sustainable recreation management views recreationists as *part* of nature within complex social-ecological systems (Cervený et al., 2020; Morse, 2020). This perspective differs from typical recreation management frameworks, which frequently monitor and manage within thresholds of ecosystem indicators and visitor experience (Hammit et al., 2015; Interagency Visitor Use Management Council, 2021; Manning, 2011). Recreation booms in the 1960s and 1970s led to these frameworks, which center humans as actors on rather than integrated *within* recreation landscapes. Today, managers must balance diversifying recreation spaces and experiences with shared stewardship. Additionally, existing sustainable recreation strategies tend to focus on economic aspects of sustainability rather than social and environmental aspects (Selin, 2017). An insufficient focus on all sustainability pillars and hard distinction between humans and nature suggests traditional approaches may lack alignment with sustainable recreation management goals.

As such, sustainable recreation warrants novel methods to understand and sustainably manage humans’ place within multi-faceted, integrated, complex social-ecological systems (Cervený et al., 2020). Furthermore, sustainable recreation management aims to collaboratively engage the community (USDA Forest Service, 2010). Methods that engage communities, connecting people to place, can help managers operationalize sustainable recreation management practices. Existing tools, including community-driven spatial data and collaboration have informed community-engaged recreation management (e.g., Engen et al., 2018). However, digital storytelling with first-person narratives reflecting stakeholders’ connection to place through recreation is little studied in sustainable recreation management.

Study Purpose

This research explores combined spatial data and place-based narrative approaches for sustainable recreation management. Specifically, we examine integrated digital storytelling and story-mapping for non-motorized trails planning in the Medicine Bow National Forest near Laramie, Wyoming, USA. Through the Pole Mountain Gateways collaborative project, stakeholders created digital stories about their experiences and

values in the Pole Mountain Unit, which we integrated into an ArcGIS StoryMap. We systematically describe this approach and its potential to support collaborative decision-making for sustainable recreation management on public lands.

Research Questions

Our overarching questions are:

- RQ1:** In what ways does digital storytelling illustrate stakeholder values and experiences surrounding non-motorized recreation on the Pole Mountain Unit?
- RQ2:** Does digital storytelling inform a spatially meaningful understanding of non-motorized trails recreation through its integration with story-mapping, and if so, how?
- RQ3:** What are the benefits and limitations of integrated digital storytelling and story-mapping for Pole Mountain Gateways collaborative management specifically, and sustainable recreation management generally?

Background

Below, we briefly review narrative and digital storytelling; key spatial, place-based and story-mapping methods; and collaboration, in relation to recreation.

Narrative and Digital Storytelling

Storytelling allows people to better understand themselves, share information with communities and social groups (including meaningful places), and connect with cultural and historical narratives. As “a fundamental way of giving meaning to experience,” narrative provides individual and shared understandings of people, perspectives, and contexts, including those that vastly differ from the storyteller’s or audience’s own (Maggio, 2014; Mattingly & Garro, 2000, p. 1; Miller & Solin, 2015).

Digital storytelling typically entails first-person narratives told in brief montages of video, image, music, sound, and voiceover. These can occur within a facilitated group workshop supporting storytelling, script-writing, and basic video-editing techniques (Dunford & Jenkins, 2017). Alternatively, trained facilitators may prompt participants to verbally share and record a story in an interview context, later editing it into a digital story with a mix of participant-provided and stock media (i.e., this study’s approach) (StoryCenter, n.d.a). Participants provide feedback and final story approval to maintain first-person perspective despite facilitator assistance. While adaptable to current virtual contexts, digital stories apply classic storytelling techniques to “inform, educate, move, inspire, motivate, persuade and represent powerful tools making embodied experiences explicit and accessible for reflection” (Gurholt, 2020, p. 167). Publicly engaged fields use digital storytelling for research and practice, including social work (e.g., Lenette et al., 2015), place-based education (e.g., Wake, 2018), and public health (e.g., Gubrium, 2009).

Narrative approaches also occur in recreation in natural and cultural resource “hot interpretation,” which elicits an affective, emotional experience (Hvenegaard et al., 2016). Floch and Jiang (2015) used mobile, participatory storytelling to engage Norwegian youth in cultural heritage landscapes. Students in a European outdoor studies graduate program created digital stories of human-nature connections and landscape perceptions in their field research (Gurholt, 2020). In the U.S., the National

Park Service employed digital storytelling for historical and cultural interpretation of civil rights history through the National Underground Railroad Network to Freedom program (National Park Service, 2021; StoryCenter, n.d.b). During the pandemic, the 'Public Landemic' project collected participants' written recreation stories and digital media through an online form (Colorado State University, 2021). Otherwise, to our knowledge, digital storytelling methods are uncommon in recreation studies and public lands management.

Spatial Data, Story-Mapping, and Place in Recreation Management

Spatial data are more ubiquitous in general and sustainable recreation management. For park and protected area research, these include mapping recreation impacts (D'Antonio et al., 2013; Hammitt et al., 2015), GPS-based visitor tracking using data loggers (D'Antonio et al., 2010; Hallo et al., 2012), smartphones and applications (Rice et al., 2019), and related spatial analyses (Riungu et al., 2019). Spatial methods include public participation geographic information systems (PPGIS) and volunteered geographic information applications, whereby recreationists identify relevant phenomena via map (Engen et al., 2018; Muñoz et al., 2019; Riungu et al., 2019; Wolf et al., 2017). Researchers commonly pair visitor survey and spatial data to understand how experience-use history, activity type, motivations, etc. influence spatial behavior patterns (Beeco & Hallo, 2014; Frey et al., 2018; Newton, 2016; Sisneros-Kidd et al., 2021). Recent research coupled visitor-generated videography with spatial data (Zajchowski et al., 2020).

The ArcGIS StoryMap (ESRI, n.d.) can potentially engage and empower the public in planning processes (Mychjliw & Hadly, 2016; Scott et al., 2016). StoryMap supports georeferenced spatial data combined with media, including video, photographs, text, and audio to illustrate topics or timelines of events as an "interactive narrative" for non-technical audiences (ESRI, n.d.; Scott et al., 2016). Despite StoryMap's potential as a powerful storytelling and participatory planning tool (Scott et al., 2016), it typically displays visually appealing spatial information rather than facilitates direct community or stakeholder engagement (e.g., Crocker et al., 2015).

Concepts of "place" are also relevant to recreation studies and management. Casey (1996, pp. 26–27) describes places not just as locations that "are," but events that "happen," dissolving distinctions between nature and culture. Place encompasses the dynamic relationships between social and ecological dimensions of landscapes whereby humans, nature, and material environments coalesce somewhere, specifically (Cannavó, 2007). Places are often subjective, with specific lived rhythms allowing people to conceptualize complex environments over time (Adams, 1998; Lefebvre, 2004).

Recreation research in the 1980s investigated place through symbolic and emotional meanings generated in recreation settings, including sense of place, place bonding, and place attachment. Quantitative scales often examine two place attachment dimensions: place dependence and place identity (Manning, 2011). Qualitative methods, including semi-structured interviews (e.g., Hawkins & Backman, 1998) and visitor-employed photography (e.g., Stedman et al., 2004) have explored place in recreation experiences. Place also features in sustainable recreation management, which emphasizes "a place-based recreation planning model using collaborative processes" (USDA Forest Service, 2010, p. 5).

Collaborative Management

Resource managers operate amidst multiple and conflicting objectives, increasing demands for access, and uncertain ecological responses to management decisions. Moreover, people's trust in government agencies to incorporate their needs and concerns into management decisions has steadily eroded since the 1960s (Lee & Schachter, 2019). Managing in such a complex environment with changing expectations about citizens' roles in policymaking has led to collaborative management (Koontz & Thomas, 2006). Collaboration, broadly defined, constructively engages people to explore their differences and solutions beyond their own limited vision of possibilities (Gray, 1989). In collaborative management, agencies partner with the public throughout their decision-making process, including developing alternatives and preferred solutions (Ross, et al., 2016). "Principled engagement," undergirds collaborative process with tenets of fair, civil discourse and open, inclusive communication informed by all participants' perspectives and knowledge (Emerson & Nabatchi, 2015; Fisher et al., 2011).

Collaboration specifically, and community engagement generally, aim to educate the public; incorporate public values into decision-making; improve the substantive quality of decisions; increase trust in institutions; and reduce conflict (Beierle & Cayford, 2002). By initiating and sustaining collaboration, managers can produce operational decisions with a strong, broad base of support and reduce subsequent disagreements or legal challenges (Stoellinger et al., 2018). The Forest Service has used collaborative processes since the 1990s to engage stakeholders in management decisions by integrating scientific information, local knowledge, and administrative policies and procedures (McCool & Guthrie, 2001; Wondelleck & Yaffee, 2000). Collaboration directly engages people and communities in management decision-making, which is key to sustainable recreation (USDA Forest Service, 2010).

The gap in digital storytelling related to story-mapping, collaboration, and sustainable recreation, despite its use in other publicly engaged fields, drove us to explore this method through the collaborative Pole Mountain Gateways project.

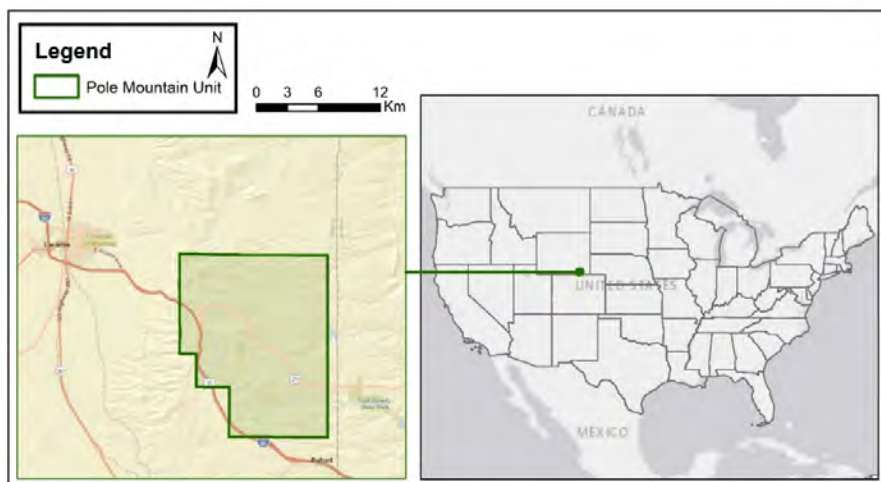
Methods

We employ an exploratory case study design wherein the data, context, place, and process are inextricable. This design supports exploration of 'how' phenomena occur for future full-scale implementation (Yin, 2009). Moreover, case studies support sharing recommendations and lessons with environmental managers (Burns, 2017). Digital stories elicited through interviews, their spatial integration into ArcGIS StoryMap, and land manager interviews inform this case.

Study Area

The Medicine Bow-Routt National Forest Pole Mountain Unit is immediately north of Interstate 80 between Laramie and Cheyenne in southeastern Wyoming, USA (Figure 1). The 55,000 acre (22,258 ha) unit is popular due to its proximity to these Wyoming cities and Fort Collins, Colorado. It receives heavy recreational use, including mountain biking, rock climbing, hiking, camping, OHV, equestrian use, and cross-country skiing, snowshoeing, and fat biking on over 15km of networked, groomed winter trails (Medicine Bow Nordic Association, 2020; United States Department of Agriculture, n.d.b). The area also actively hosts livestock grazing (United States Department of Agriculture, n.d.b).

Figure 1
Study Area Reference Map



Pole Mountain Gateways

In January 2020, Pole Mountain Unit land managers joined the Ruckelshaus Institute at the University of Wyoming (UW) in the collaborative Pole Mountain Gateways project. The name references the area's designation as a Wyoming Forest Gateway Community Priority Area. The project obtained public input on desired recreation amenities and values to inform the unit's non-motorized travel plan (Pole Mountain Gateways, n.d.).

Community members and stakeholders reported feedback on recreation amenities, impacts to natural resources and recreation infrastructure, and suggestions for future development via a Pole Mountain Gateways StoryMap interactive website (<https://pole-mountain-gateways.wygisc.org/pages/storymap>; see Figure 2). In fall 2020 through summer 2021, we collected and integrated stakeholders' digital stories into the StoryMap.

Digital Storytelling

Beyond the specific digital storytelling method, we drew inspiration from narrative inquiry, a methodological approach viewing storytelling as both medium and research method, and narratives as whole objects of study. Avoiding a narrow focus on individual experiences, narrative inquiry connects individual stories to broader social and cultural narratives that shape them (Clandinin & Rosiek, 2007; Pinnegar & Daynes, 2007). Similarly, we elicited participants' stories with person-centered interviewing, wherein individual experiences shed light on greater community context (Levy & Hollan, 2015).

Using purposive sampling (Guest, 2015), a Forest Service partner helped us identify potential stakeholders across a range of user groups. These include conservation; equestrian; winter recreation; grazing; recreation management; local recreation business; mountain biking; rock climbing; and two "practice" digital stories with UW Pole

Mountain Gateways team members, resulting in $N = 9$ stories. The latter two stories inform process and spatial distribution, but we exclude them from direct analysis given those storytellers' engagement with this research.

We invited participants by email to interview and create a short digital story about their experiences with and values surrounding the Pole Mountain area and non-motorized trails via online video conferencing. We explained stories as brief first-person, audio-visual narratives with all technical support provided by our team, including review and revision opportunities.

We emailed participants scheduling configurations and session links. We asked them to tell a brief (2-3 minute) story about a personal experience or something they value about the Pole Mountain area. Using digital storytelling best practices (Lambert, 2010), we encouraged participants to consider their story and prepare in advance by:

- Watching sample digital stories (i.e., the aforementioned Pole Mountain Gateways partner stories).
- Identifying a specific trail or place (to support spatial integration into the Story-Map).
- Focusing on a character, adventure, accomplishment, place, job/career, relationship, recovery, or discovery experience.
- Gathering pictures, videos, music, and other media, especially personal Pole Mountain area pictures.
- Preparing for recording by putting relevant recreation objects or pictures in their background.
- Using headphones or another high-quality microphone for the storytelling session.
- Practicing their story with friends, family, colleagues, etc.

Participants provided informed consent, including to publicly release their final digital stories to Pole Mountain Gateways in compliance with the UW Institutional Review Board. During interviews, we asked participants to introduce themselves and discuss their professional, personal, and recreational experiences and connection with the Pole Mountain area; the specific trails and areas they use, including what they value and activities they engage in; and their needs, concerns, and/or hopes for trails management in the Pole Mountain area. Finally, we asked them to tell their brief story about a Pole Mountain area experience.

Using weVideo software, we edited participants' interviews and their narrative with any personal media they provided and stock sound and Pole Mountain unit photos to create digital stories. Co-authors and participants reviewed draft digital stories for editing, and participants provided final approval when stories ultimately captured their first-person narrative. Following narrative inquiry, stories provided holistic data objects; we did not transcribe full participant interviews in this study. Instead of deeply analyzing story content, we provide descriptive information and deductive analysis of key sustainable recreation aspects in participants' stories, following our research questions (see Bernard, 2006).

Spatial Integration of Digital Stories

We spatially integrated place-based digital stories into the StoryMap. A separate tab hosts stories (see Figure 2), which each have a unique link compiled in a Ruckelshaus Institute Vimeo collection (see <https://vimeo.com/channels/1670940>).

Participants provided explicit story locations, which we inputted into a spreadsheet and pinned in a Google Earth project with story titles (Figure 2a). We exported location and title data from Google Earth to ArcGIS using the 'KML to Layer' tool and saved the layer as a shapefile to integrate into StoryMap. We added each unique Vimeo link and a brief story description with the appropriate spatial data point (Figure 2b).

Manager Interviews

We conducted semi-structured interviews (Bernard, 2006) with Pole Mountain Gateways Forest Service managers ($N = 4$ participants) about the integrated digital storytelling and story-mapping process. These allowed us to learn from and pivot our approach during the project and informed this research. We invited participants via email and collected informed consent prior to the interviews, all of which took place via video conference. We asked participants to discuss: a) themselves, their Forest Service and particular Pole Mountain Gateways roles; b) feedback about integrated digital storytelling and story-mapping for Pole Mountain Gateways, prompting on stakeholder engagement, public outreach and communication, understanding public values, and informing non-motorized trails planning and management decisions; c) general feedback about the potential for this approach to support collaborative and other public lands management; d) interest in using the approach in other projects; and e) anything they would change about the current process.

We generated verbatim interview transcripts using tools embedded in the video conferencing software, which we manually corrected. We inductively analyzed interviews, allowing themes to emerge irrespective of deductively informed research questions (Glaser & Strauss, 1967; Strauss & Corbin, 1990). After first reviewing transcripts to generate codebook themes, we applied them to transcript excerpts using Dedoose coding software (Dedoose, n.d.).

Results

Digital Stories and Spatial Distribution

Digital story distribution across the Pole Mountain recreation landscape reveals participants' narratives were spatially diverse (Figure 2).

Our story analytic approach provides two-fold results categories: the range of participants' perspectives and story types; and whether and how narratives convey aspects of sustainable recreation (see Table 1). Descriptive results include participant descriptions and user group associations, story locations, and story descriptions, the latter of which appear verbatim from the Pole Mountain Gateways StoryMap. Sustainable recreation aspects emerge from the definition and related concepts, including ecosystems, healthy communities, equitable economies, culture and traditions, stewardship values, present and future generations, place-based recreation, social-ecological systems, and collaborative community engagement (Cervený et al., 2020; Morse, 2020; USDA Forest Service, 2010). We identify these aspects and paraphrase their manifestation in participants' stories.

Figure 2**Digital Stories Google Earth Project (A) and StoryMap Integration (B)****Manager Feedback**

Five themes emerged in manager interview analysis: representation of diverse stakeholder values; engagement and relationships; manager acceptance of digital storytelling as a complimentary tool; broad, collaborative decisions; and place and landscape. However, all overlap to some extent. Below, we summarize each theme and present exemplary manager quotes.

Representation of Diverse Stakeholder Values

Managers discussed digital stories as an accessible, virtual platform for communicating multiple uses and values surrounding Pole Mountain non-motorized trails and recreation. For storytellers, they “give people an opportunity to voice their opinion in a safe environment.” For viewers, they are “a valuable tool for people to understand how complex the unit is and how many different valid perspectives are out there about how public lands should be used.” Managers said stories did not simply narrate varied uses, they could potentially break through narrow perspectives that one user group is more important than others. Digital stories are an intimate, conversational medium

Table 1
Descriptive and Sustainable Recreation Deductive Digital Story Results

| Participant Description/ User Group | Story Location | Story Description | Sustainable Recreation Aspects |
|---|---|--|--|
| <ul style="list-style-type: none"> • Conservation (Former Cheyenne Board of Public Utilities member) | Middle Crow Creek; Headwater by Hidden Valley | History of Pole Mountain area as a watershed for the city of Cheyenne | <ul style="list-style-type: none"> • Ecosystems—water provides connection to environment • Healthy communities/equitable economies—watershed as diverse economic provision to Cheyenne/region • Culture and traditions—historical story connecting past water system development to today • Stewardship value—watershed quality and quantity protection • Social-ecological system—water as ‘system’ connecting land, animals, plants, and humans |
| <ul style="list-style-type: none"> • Equestrian | Laramie Enduro route; Death Crotch Trail | Sweeping (for injured recreators) for the Laramie Enduro bike race in the Pole Mountain Unit | <ul style="list-style-type: none"> • Desirable outdoor opportunities for all—appreciation for multiple uses; running, biking, mule riding • Healthy communities—community rescue support through personal recreation activity • Current and future generations—increased visitation to keep public lands into the future |
| <ul style="list-style-type: none"> • Climbing (Outdoor recreation educator) | Vedauwoo | Reflects on Vedauwoo as unique teaching environment and lessons the area has taught him | <ul style="list-style-type: none"> • Desirable outdoor opportunities for all—balance of uses; hiking, birdwatching, equestrian users, climbing • Place-based—emotional connection to the place, sense of place • Current and future generations—teaching students to appreciate unique place, introducing young daughter to rock climbing |
| <ul style="list-style-type: none"> • Winter recreation | The City Trailhead | Recreating/cross-country skiing in the Pole Mountain area and volunteering to | <ul style="list-style-type: none"> • Stewardship values—loving our land to death, leave no trace, volunteering and rehabilitation, giving back to land we love to use |

Table 1 (cont.)

| | | | |
|---|--|---|--|
| <ul style="list-style-type: none"> • Trail maintenance volunteer • Former recreation business owner | | <p>preserve the forest for future generations</p> | <ul style="list-style-type: none"> • Current and future generations—responsibility to use public lands well, for own and future use |
| <ul style="list-style-type: none"> • Grazing permittee • Family ranch | <p>Crow Creek Grazing Allotment (East of Hwy 210, south past Happy Jack Trailhead)</p> | <p>Continues family's work running cattle on the Crow Creek Allotment</p> | <ul style="list-style-type: none"> • Culture and traditions—50 years of cattle grazing, family grazing since 1940s • Stewardship values—avoid summer pasture overgrazing; special area; tread lightly; love gently; protect fiercely; use wisely |
| <ul style="list-style-type: none"> • Mountain biking • Local recreation business owner | <p>Headquarters Trail</p> | <p>Mountain biking in Pole Mountain area and reasons to come back for more</p> | <ul style="list-style-type: none"> • Place-based—Special connection to tree and yearly photos; “my place”; trail system always feels new each time, like falling in love with mountain biking and Happy Jack all over again |
| <ul style="list-style-type: none"> • Local federal agency recreation manager | <p>Haunted Forest Trail; general Pole Mountain Unit</p> | <p>Working with non-profit organizations to collaboratively rehabilitate Pole Mountain trails</p> | <ul style="list-style-type: none"> • Ecosystems—Pole Mountain recreationists are not myopic and think about resources and wildlife • Desirable outdoor opportunities for all—recreationists are not single-minded and dabble in multiple recreation pursuits • Stewardship values—naturalizing and rehabilitating trails • Collaborative community engagement—empowering and supporting community non-profit organizations; building camaraderie and sense of accomplishment |

reminding viewers other users “are just real people in their community.” Stories may prompt viewers to realize theirs is not the only use or story, and perhaps they may even share similar stories—and a love for this place—with other stakeholders. One manager hoped that perspective would extend beyond the collaborative process and into the official NEPA public comment period.

Beyond illuminating multiple values, managers discussed stories as supporting members of specific user groups to feel represented in the planning process. One said digital stories demonstrate:

Viewers from the same user group, they have a voice at the table, because their voice has been elevated in this way...I think that they have a real role to play in terms of you get to visually see yourself, even though it's not yourself, on the map and as a part of the discussion.

From a collaboration perspective, as one manager put it, stories “communicate the interest over a position” instead of simply stating a position.

Despite representing various uses, managers suggested stories should include more user groups to avoid the impression that decision makers are only interested in the currently portrayed uses. One manager offered stories should avoid portraying only well-known local recreation community members, because “according to our model and our aspirational goals, everyone gets one voice, and we want to hear everybody's voice.” Some managers suggested digital stories should also represent greater race, ethnic, ability, class, etc. diversity.

Engagement and Relationships

Interviewees said digital stories could engage the public and community and build relationships both outside and within the agency. The stories provide a new, unique way for the public to engage with Pole Mountain Gateways and for the agency to engage with recreation forms and uses that typically receive little management attention. Similarly, stories could communicate the range of possible activities and encourage visitation from people who less frequently visit the unit. One manager said digital stories could help maintain engagement between virtual public meetings, particularly during the pandemic. Several spoke to the ongoing public perception that decisions are always predetermined and public agencies are “brick walls.” The open, personal character of digital stories provides another way for managers to signal, “we are listening.” Managers indicated they wanted to learn about the public's perception of digital stories in the future.

Some managers spoke to digital stories' potential to support collaboration and deepen relationships with other partners, including state agencies. Digital stories could support shared stewardship and envisioning for joint landscape management. Additionally, managers discussed sharing stories within the agency. Particularly as “the Forest Service is infamous for change,” digital stories could provide historical information for incoming managers to make better decisions. Managers thought the method could “catch on,” and some conveyed a sense of pride in piloting this approach in Wyoming and Pole Mountain, given its relatively low profile compared to other regional units. They were eager to “show off” and share the final product in regional and national forums with colleagues and leadership. Technical capacity and cost, however, were barriers for implementing digital storytelling on a larger, longer-term scale.

Manager Acceptance of Digital Storytelling as a Complimentary Tool

Despite familiarity with videos, managers noted the novelty and contemporary nature of digital storytelling with one saying, “this is not something that we typically do as an agency. And it is not something that was on our radar to even ask you all about, so this is completely new.” Some conveyed an early skepticism toward stories’ ability to add to the quantity of “hard” data they perceived as necessary for decision-making. One stated:

I think the verdict is still out as far as what type of value these videos are going to add overall to the project. If we just look at 10 videos, it’s a pretty small subset of all the different users out there.

Another thought digital stories may not concretely support the non-motorized trails planning process. While they may “open people’s eyes,” they are “heavy on the feels,” evoking emotion, rather than specific project information.

However, all agreed integrated digital storytelling and story-mapping provided a complimentary approach within a suite of tools for Pole Mountain Gateways collaborative planning, management, and communication. One understood digital stories as facilitating another way of listening:

Sometimes as a land manager, I get so focused on “what do I need to do?” And I try to take my blinders off and look around...to get a different perspective.... This is a new way of getting some feedback, some suggestions. It’s a snapshot from an individual’s perspective, and I’m really hoping that stimulates other people to comment or to provide their ideas, their stories.

Another described stories as a tool for capturing a collaborative project in progress and not simply selectively documenting and demonstrating retroactive success to the public. The interviewee stated, “I think they’re useful in that way, because down the road, maybe we decommissioned some trail and someone we interviewed is really frustrated with us as an agency. But, they also participated in this process, and that’s the win.” All managers said stories had potential for future use in other Pole Mountain projects. One explained issues like grazing arise repeatedly in public meetings, so the grazing digital story may help set the tone and focus discussion. They also suggested stories could live on the webpage and even communicate the “oral history” and legacy of Pole Mountain Gateways decision-making.

Broad, Collaborative Decisions

Managers said digital stories are most appropriate for broad, collaborative projects and decisions, particularly those with multiple audiences, options, and potential outcomes, like Pole Mountain Gateways. They would prove less useful in prescribed processes or constrained timelines, such as NEPA, or internal management decisions around a limited set of options, such as seasonal road closures or timber cutting with predominately for/against-oriented stakeholders. Some managers suggested avoiding digital storytelling for highly contentious issues, but others reasoned stories communicating personal values and “why you love Pole Mountain” may allow stakeholders to focus on something other than anger and differences. Digital storytelling could help to navigate decision complexity around “ongoing issue[s] you really want the public to be

aware of and find a way to resolve,” including emotionally charged topics. Instead of focusing on contention around a specific trail or issue, stories could illuminate stakeholders’ broad value in the area and other collaborative projects.

Place and Landscape

While appearing less frequently than other themes, digital storytelling’s ability to communicate both specific place-based values and broad landscape-level sense of place emerged in every interview. Some saw stories as focused on the Pole Mountain landscape, conveying “people’s land ethic, the problems they see, what they value, and the history of the unit.” Others highlighted the importance of integrating and spatially pinpointing narratives within the StoryMap, for example:

You see a trail report, you’ll see people’s uploaded GPS tracks, but it’s kind of putting a face to the experiences out there...It makes it more than a map, in terms of embedding into the StoryMap. I love that they’re place-based stories...I mean, it’s a StoryMap. You have stories on it now. It didn’t tell a story before. Now, it tells a story.

Discussion

We outlined a procedure for eliciting, creating, and spatially integrating recreation digital stories into a StoryMap, which others may replicate and adapt. This approach fostered and publicly shared unique, first-person narratives about values in non-motorized trails and various recreation uses spatially distributed across the Pole Mountain Unit.

Following foundational story perspectives and narrative methods (Clandinin & Rosiek, 2007; Maggio, 2014; Mattingly & Garro, 2000; Miller & Solin, 2015; Pinnegar & Daynes, 2007), participants’ narratives revealed shared stories about sustainable recreation. Each story conveyed at least one sustainable recreation aspect (Cervený et al., 2020; Morse, 2020; USDA Forest Service, 2010). This suggests users share values about the unit despite their varying recreation interests. The shared values elicited through narrative provide a foundation on which to build in non-motorized trails planning and management, which is essential for collaboration and its key role in sustainable recreation (Gray, 1989; Stoellinger et al., 2018; USDA Forest Service, 2010).

Place-based digital narratives provide another tool to collect and convey multiple stakeholders’ values and engage the community for sustainable recreation and broad, collaborative decisions. Stories demonstrate the richness of stakeholders’ desires and provide managers with added flexibility for management actions that meet agency objectives and standards while satisfying stakeholder interests. As noted in a cultural mapping project, community-engaged “stories of place” involve:

codifying the uncodifiable [in] contexts that are “messy,” non-linear, contested (even within the community), and ongoing. In other words, they are part of a cultural ecosystem that is every bit as complex as the natural ecosystem in which it is embedded. (Jeanotte, 2016, p. 41)

While digital stories involve “messy” emotion instead of “hard” data, place-based narratives provide a tool for managing within complex social-ecological systems integral to sustainable recreation (Cervený et al., 2020; Morse, 2020).

Moreover, spatially integrating narratives moves beyond simply disseminating information to viewers. As managers shared, digital stories help fulfill the often unrealized potential of StoryMap to truly tell a story and directly engage stakeholders (Crocker et al., 2015). Managers initially envisioned the StoryMap as an opportunity for stakeholders to provide straightforward report data on recreation amenities, infrastructure, and natural resource impacts. They ultimately recognized, however, the value added by integrating digital stories into the StoryMap.

Storytellers spoke to both specific places and landscape-level Pole Mountain connection. As a singular method, digital stories illustrated various values in, uses of, and place connection to the Pole Mountain unit. However, integrating stories into the StoryMap further anchored stories to place by allowing viewers and managers to “see” stories on the landscape, thereby spatially demonstrating multiple place-based recreation and use values. Managers emphasized StoryMap’s ability to visualize users’ connection to ‘place and landscape’. Furthermore, spatially integrated narratives—unlike typical user-sourced spatial methods (e.g., PPGIS)—provide both those sharing and viewing stories the opportunity to deeply reflect on and connect with places they value. As managers noted, integrated digital storytelling and story-mapping allows stakeholders to empathize with others’ values in a shared recreation landscape and potentially facilitate shared stewardship for sustainable management. Spatially depicted stories may inspire users to not only care about, but also care for the spaces and places they value (Bacher et al., 2007).

As an exploratory case study, limitations point toward future research needs. While not atypical or inappropriate for qualitative research, our sample of both stories and manager interviews is small. We have continued to create digital stories with state and other federal agency managers, student athletes, and anglers to add use diversity to the initial stories. As managers noted, however, recruitment should further diversify participants, including lesser-known local recreation community members. Similarly, we focused mainly on diverse uses and activities rather than other measures of equity and inclusivity. This feedback is valuable both for future digital storytelling and sustainable recreation, given its goal to provide “desirable outdoor opportunities for *all* [emphasis added] people” (Cervený et al., 2020, p. 10).

Additionally, we relied on Forest Service partners to purposively sample stakeholders, which may reflect a tendency toward positive, less critical storytellers. Future research may explore how to engage more critical voices while still finding common ground on which to collaborate, such as a participant self-selection and screening process. As managers indicated, digital storytelling may be particularly useful for diffusing heated and critical perspectives given stories’ focus on shared love for a place. At the time of this writing, we have added a mechanism for submitting written mini-digital stories with pictures for spatial integration into the Pole Mountain Gateways StoryMap, which may engage more diverse voices.

Future research may quantify digital story views and whether views enhance engagement with standard StoryMap reporting tools. Managers also requested exploring public perception of digital stories. Seeking storytellers’ feedback would illuminate their experience with the digital storytelling process. Interviews with other managers would provide an external perspective on integrated digital storytelling and story-mapping. Finally, future research should explore this approach in geographically and culturally diverse recreation and management contexts. Comparing digital stories

would allow for describing, quantifying, assessing, and *communicating* recreation values across landscapes.

Management Implications

Given this study's application in Pole Mountain Gateways and inclusion of stakeholders as storytellers and managers' feedback, our findings are relevant for current and future management. We outlined a process for researchers and managers to elicit and create digital stories. Again, spatially integrated emotional, value-laden digital stories provide a complimentary tool for collaborative, sustainable recreation management in complex social-ecological systems by representing and conveying multiple uses and values; engaging the public; and aiding in broad, collaborative decisions. However, digital storytelling requires an investment of time, funds, and/or a facilitator trained in interviewing and video-editing. Digital storytelling may be most feasible when agencies engage external partners, such as the Ruckelshaus Institute. To further support managers, we are creating an analogous technical report.

Conclusions

This study piloted and systematically described integrated digital storytelling and story-mapping for sustainable recreation and collaborative public lands management. Digital stories illustrated a range of stakeholder values and experiences surrounding Pole Mountain Unit non-motorized recreation. Stories demonstrated shared place-based values in all sustainable recreation aspects despite user group, suggesting there is ground to build on in the trails planning process, future Pole Mountain Unit projects, and other collaborative contexts. Room remains to diversify the stories told about this place. We found place-based narratives spatially range across the recreation landscape, which their integration into the StoryMap uniquely conveys. We conclude this integrated, novel approach provides another tool for Pole Mountain Gateways managers, who indicated it would likely prove useful for sustainable recreation management in other collaborative contexts. We hope this exploratory case study spurs additional research on spatially integrated digital storytelling and narratives of place within sustainable recreation management.

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References

- Adams, B. (1998). *Timescapes of modernity: The environment and invisible hazards*. Routledge.
- Bacher, K., Baltrus, A., Barrie, B., Bliss, K., Cardea, D., Chandler, L., Dahlen, D., Friesen, J., Kohen, R., & Lacome, B. (2007). *Foundations of interpretation curriculum*

- content narrative*. NPS Interpretive Development Program: Professional Standards for Learning and Performance. U.S. Department of Interior, National Park Service. <https://www.nps.gov/idp/interp/101/foundationscurriculum.pdf>
- Balmford, A., Green, J. M. H., Anderson, M., Beresford, J., Huang, C., Naidoo, R., Walpole, M., & Manica, A. (2015). Walk on the wild side: Estimating the global magnitude of visits to protected areas. *PLoS Biol*, *13*(2), e1002074. doi:10.1371/journal.pbio.1002074
- Beeco, J. A., & Hallo, J. C. (2014). GPS tracking of visitor use: Factors influencing visitor spatial behavior on a complex trail system. *Journal of Park and Recreation Administration*, *32*, 43–61. <https://js.sagamorepub.com/jpra/article/view/5725>
- Beierle, T., & Cayford, J. (2002). *Democracy in practice: Public participation in environmental decisions*. Resources for the Future.
- Bernard, H. R. (2006). *Research methods in anthropology: Qualitative and quantitative approaches* (4th ed.). AltaMira Press.
- Brundtland, G. H. (1987). *Report of the world commission on environment and development: Our common future*. United Nations. <http://www.un-documents.net/ourcommon-future.pdf>
- Burns, W. (2017). The case for case studies in confronting environmental issues. *Case Studies in the Environment*, *1*(1), 1–4. <https://doi.org/10.1525/cse.2017.sc.burns01>
- Cannavó, P. F. (2007). *The working landscape: Founding, preservation, and the politics of place*. The MIT Press.
- Casey, E. S. (1996). How to get from space to place in a fairly short stretch of time: Phenomenological prolegomena. In S. Feld & K. H. Basso (Eds.), *Senses of place* (pp. 13–52). School of American Research Press.
- Cervený, L. K., Derrien, M. M., & Miller, A. B. (2020). *Igniting the science of outdoor recreation: A research strategy for sustainable recreation and tourism on public lands*. Gen. Tech. Rep. PNW-GTR-991. U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.
- Clandinin, D. J., & Rosiek, J. (2007). Mapping a Landscape of Narrative Inquiry: Borderland Spaces and Tensions. In D. J. Clandinin (Ed.), *Handbook of Narrative Inquiry: Mapping a Methodology* (pp. 35–76). <https://doi.org/10.4135/9781452226552.n2>
- Colorado State University. (2021). *PLHS launches 'Public Landemic' project*. Public Lands History Center. <https://publiclands.colostate.edu/2020/04/public-landemic/>
- Crocker, S. J., Walters, B. F., & Morin, R. S. (2015, December 8-10). Visual analysis of forest health using Story Maps: A tale of two forest insect pests. In *Pushing boundaries: New directions in inventory techniques and applications: Forest Inventory and Analysis (FIA) symposium 2015*. Portland, Oregon, United States. Gen. Tech. Rep. PNW-GTR-931. U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.
- D'Antonio, A., Monz, C., Lawson, S., Newman, P., Pettebone, D., & Courtemanch, A. (2010). GPS-based measurements of backcountry visitors in parks and protected areas: Examples of methods and applications from three case studies. *Journal of Parks and Recreation Administration*, *28*(3), 42–60.
- D'Antonio, A., Monz, C., Newman, P., Lawson, S., & Taff, D. (2013). Enhancing the utility of visitor impact assessment in parks and protected areas: A combined social-ecological approach. *Journal of Environmental Management*, *124*, 72–81. <http://dx.doi.org/10.1016/j.jenvman.2013.03.036>

- Dedoose. (n.d.). Dedoose [Online software]. <https://www.dedoose.com/>
- Dunford, M., & Jenkins, T. (2017). Form and content in digital storytelling. In M. Dunford & T. Jenkins (Eds.), *Digital storytelling: Form and content* (pp. 1–17). Palgrave Macmillan.
- Emerson, K., & Nabatchi, T. (2015). *Collaborative governance regimes*. Georgetown University Press.
- Engen, D., Runge, C., Brown, G., Fauchald, P., Nilsen, L., & Hausner, V. (2018). Assessing local acceptance of protected area management using public participation GIS (PPGIS). *Journal for Nature Conservation*, 43, 27–34. <https://doi.org/10.1016/j.jnc.2017.12.002>
- ESRI. (n.d.). *ArcGIS StoryMaps*. <https://www.esri.com/en-us/arcgis/products/arcgis-storymaps/overview>
- Fisher, R., Ury, W., & Patton, B. (2011). *Getting to yes*. Penguin Books.
- Floch, J., & Jiang, S. (2015). *One place, many stories: Digital storytelling for cultural heritage discovery in the landscape*. 2015 Digital Heritage International Congress, Digital Heritage, 503–510. <https://doi.org/10.1109/DigitalHeritage.2015.7419566>.
- Frey, E., Demps, K., Pauli, B., & Heath, J. A. (2018). Group characteristics influence distribution patterns of off-road vehicle recreation within a complex trail system in Southwest Idaho. *Leisure Sciences*, 40(3), 131–150. doi: 10.1080/01490400.2017.1408510
- Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Aldine.
- Gray, B. (1989). *Collaborating: Finding common ground for multiparty problems*. Jossey-Bass.
- Gubrium, A. (2009). Digital storytelling: An emergent method for health promotion research and practice. *Health Promotion Practice*, 10(2), 186–191. doi: 10.1177/1524839909332600
- Guest, G. (2015). Sampling and selecting participants in field research. In H. R. Bernard & C. C. Gravlee (Eds.), *Handbook of methods in cultural anthropology* (2nd ed., pp. 215–249). Rowman & Littlefield.
- Gurholt, K. P. (2020). Digital narrative methodology and multisensory outdoor ethnography. In B. Humberstone & H. Prince (Eds.), *Research methods in outdoor studies* (pp. 164–174). Routledge.
- Hallo, J. C., Beeco, A., Goetcheus, C., McGee, J., McGehee, N. G., & Norman, W. C. (2012). GPS as a method for assessing spatial and temporal use distributions of nature-based tourists. *Journal of Travel Research*. doi: 10.1177/0047287511431325
- Hammitt, W. E., Cole, D. N., Monz, C. A. (2015). *Wildland recreation: Ecology and management* (3rd ed.). John Wiley & Sons.
- Hawkins, G., & Backman, K. (1998). An exploration of sense of place as a possible explanatory concept in nature-based traveler conflict. *Tourism Analysis*, 3, 89–102.
- Hvenegaard, G. T., Marshall, H. J., & Lemelin, R. (2016). Hot interpretation of controversial topics at Batoche National Historic Site, Saskatchewan, Canada. *Journal of Interpretation Research*, 21(2), 45–62.
- Interagency Visitor Use Management Council. (2021). *Framework & guidebooks*. Interagency Visitor Use Management Council. <https://visitorusemanagement.nps.gov/VUM/Framework>
- Jeannotte, M. S. (2016). Story-telling about place: Engaging citizens in cultural mapping. *City, Culture and Society*, 7(1), 35–41. <https://doi.org/10.1016/j.ccs.2015.07.004>

- Koontz, T. M., & Thomas, C. W. (2006). What do we know and need to know about the environmental outcomes of collaborative management? *Public Administration Review*, 66, 111–121.
- Lambert, J. (2010). *Digital storytelling cookbook*. Digital Diner Press.
- Lee, Y., & Schachter, H. L. (2019). Exploring the relationship between trust in government and citizen participation. *International Journal of Public Administration*, 42(5), 405–416.
- Lefebvre, H. (2004). *Rhythmanalysis: Space, time and everyday life*. Continuum.
- Lenette, C., Cox, L., & Brough, M. (2015). Digital storytelling as a social work tool: Learning from ethnographic research with women from refugee backgrounds. *British Journal of Social Work*, 45, 988–1005. doi: 10.1093/bjsw/bct184
- Levy, R. I., & Hollan, D. W. (2015). Person-centered interviewing and observation. In H. R. Bernard & C. C. Gravlee (Eds.), *Handbook of methods in cultural anthropology* (2nd ed., pp. 313–342). Rowman & Liffle Id.
- Lew, A. A., Ng, P. T., Ni, C. C., & Wu, T. C. (2016). Community sustainability and resilience: Similarities, differences and indicators. *Tourism Geographies*, 18(1), 18–27.
- Maggio, R. (2014). The anthropology of storytelling and the storytelling of anthropology. *Journal of Comparative Research in Anthropology and Sociology*, 5(2), 89–106.
- Manning, R. E. (2011). *Studies in outdoor recreation: Search and research for satisfaction* (3rd ed.). Oregon State University Press.
- Mattingly, C., & Garro, L. C. (Eds.). (2000). *Narrative and the cultural construction of illness and healing*. University of California Press.
- McCool, S. F., & Guthrie, K. (2001). Mapping the dimensions of successful public participation in messy natural resources management situations. *Society & Natural Resources*, 14(4), 309–323.
- Medicine Bow Nordic Association. (2020). *Trail maps*. Medicine Bow Nordic Association. <https://www.medicinebownordic.org/trail-maps.html>
- Miller, M., & Solin, J. (2015). The power of story for motivating adaptive response-marshaling individual and collective initiative to create more resilient and sustainable food systems. *Journal of Environmental Studies and Sciences*, 5(4), 671–684. <https://doi.org/10.1007/s13412-015-0332-y>
- Morse, W. C. (2020). Recreation as a social-ecological complex adaptive system. *Sustainability*, 12(3), 753.
- Muñoz, L., Hausner, V. H., & Monz, C. A. (2019). Advantages and limitations of using mobile apps for protected area monitoring and management. *Society & Natural Resources*. doi: 10.1080/08941920.2018.1544680
- Mychajliw, A., & Hadly, E. A. (2016). Telling anthropocene tales: Localizing the impacts of global change using data-driven story maps. *American Geophysical Union*, 2016, PA43A-2158.
- National Park Service. (2021). *Underground railroad*. <https://www.nps.gov/subjects/undergroundrailroad/multimedia.htm>
- Newton, J. N. (2016). *Spatial temporal dynamics of the visitor experience in Grand Teton National Park* (Doctoral dissertation). Available in Penn State Electronic Theses and Dissertations for Graduate School.
- Pinnegar, S., & Daynes, J. G. (2007). Locating narrative inquiry historically: Thematics in the turn to narrative. In D. J. Clandinin (Ed.), *Handbook of narrative inquiry: Mapping a methodology* (pp. 3–34). SAGE Publications, Inc.

- Pole Mountain Gateways. (n.d.). *Pole Mountain Gateways*. <https://pole-mountain-gateways.wygisc.org/>
- Rice, W. L., Meyer, C., Lawhon, B., Taff, B. D., Mateer, T., Reigner, N., & Newman, P. (2020, April 18). *The COVID-19 pandemic is changing the way people recreate outdoors: Preliminary report on a national survey of outdoor enthusiasts amid the COVID-19 pandemic*. <https://doi.org/10.31235/osf.io/prnz9>
- Rice, W. L., Mueller, J. T., Graefe, A. R., & Taff, B. D. (2019). Detailing an approach for cost-effective visitor-use monitoring using crowdsourced activity data. *Journal of Park and Recreation Administration*, 37(2), 144–154. <https://doi.org/10.18666/JPra-2019-8998>
- Riungu, G. K., Peterson, B. A., Beeco, J. A., & Brown, G. (2019). Understanding visitors' spatial behavior: A review of spatial applications in parks. *Tourism Geographies*. doi: 10.1080/14616688.2018.1519720
- Ross, H., Baldwin, C., & Carter, R. W. (2016). Subtle implications: Public participation versus community engagement in environmental decision-making. *Australasian Journal of Environmental Management*, 23(2), 123–129. <https://doi.org/10.1080/14486563.2016.1194588>
- Scott, M., Edwards, S., Rahall, N. J. I., Nguyen, T., & Cragle, J. (2016). *GIS Story Maps: A tool to empower and engage stakeholders in planning sustainable places*. <https://rosap.nrl.bts.gov/view/dot/34788>
- Selin, S. (2017). Operationalizing sustainable recreation across the National Forest System: A qualitative content analysis of six regional strategies. *Journal of Park and Recreation Administration*, 35(3), 34–44.
- Sisneros-Kidd, A. M., D'Antonio, A., Monz, C., Mitrovich, M. (2021). Improving understanding and management of the complex relationship between visitor motivations and spatial behaviors in parks and protected areas. *Journal of Environmental Management*, 280, 111841. <https://doi.org/10.1016/j.jenvman.2020.111841>
- Stedman, R., Beckley, T., Wallace, S., & Ambard, M. (2004). A picture and 1000 words: Using resident-employed photography to understand attachment to high amenity places. *Journal of Leisure Research*, 36(4), 580–606.
- Stoellinger, T., Smutko, L. S., & Western, J. (2018). Collaborating through NEPA: Achieving a social license to operate on federal public lands. *Public Land & Resources Law Review*, 39(1). <https://scholarship.law.umt.edu/plrlr/vol39/iss1/6>
- StoryCenter. (n.d.a). *Listening station*. <https://www.storycenter.org/listening-station>
- StoryCenter. (n.d.b). *National Park Service: Digital storytelling ambassadors program*. <https://www.storycenter.org/case-studies/nps>
- Strauss, A., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. SAGE.
- United States Department of Agriculture. (n.d.a). *About the agency*. U.S. Forest Service. <https://www.fs.usda.gov/about-agency>
- United States Department of Agriculture. (n.d.b). *Pole Mountain area*. U.S. Forest Service. <https://www.fs.usda.gov/recarea/mbr/recreation/bicycling/recarea/?recid=81613&actid=24>
- USDA Forest Service. (2010). *Connecting people with America's great outdoors: A framework for sustainable recreation*. U.S. Department of Agriculture, Forest Service, Recreation, Heritage, and Volunteer Resources. 9p. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5346549.pdf

- U.S. Department of Agriculture. (2018). *U.S. Forest Service National Visitor Use Monitoring Survey Results National Summary Report*. https://www.fs.usda.gov/sites/default/files/2019-09/5082018_national_summary_report_070219.pdf
- Wake, D. G. (2018). Exploring rural contexts with digital storytelling. *The Rural Educator*, 33(3), 23–36. doi: 10.35608/ruraled.v33i3.409
- Wolf, I. D., Brown, G. & Wohlfart, T. (2017). Applying public participation GIS (PP-GIS) to inform and manage visitor conflict along multi-use trails. *Journal of Sustainable Tourism*. doi: 10.1080/09669582.2017.1360315
- Wondolleck, J. M., & Yaffee, S. L. (2000). *Making collaboration work: Lessons from innovation in natural resource management*. Island Press.
- Yin, R. K. (2009). *Case study research: Design and methods*. Sage Publications.
- Zajchowski, C., Fefer, J. P., Henry, C., & Kane, B. (2020). Participant-driven videography in park and protected area research. *Journal of Park and Recreation Administration*. doi:10.18666/JPra-2020-10582

Research Paper

Coordinating and Standardizing Outdoor Recreation Supply and Demand Databases to Facilitate Management and Promote Conservation, Health, and Accessibility

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Executive Summary

Recreation opportunities exist as a system at multiple scales. They are offered by a variety of public and private recreation providers sometimes with different objectives. Incremental and disparate planning across providers can lead to mismatched supply and demand, inefficient use of resources, and difficulty responding to emerging trends. Furthermore, traditional recreation supply and demand studies haven't systematically integrated many recreation land management benefits including biodiversity and wildlife conservation, ecosystem services, human health, and environmental justice.

Historically, the supply of outdoor recreation and conservation lands was assembled by different governmental and tribal agencies, non-governmental organizations, or private organizations with little systematic coordination. The USGS Protected Area Database (PAD-US) has emerged as a model for coordinated inventories of public lands. This program has developed a standardized data set with consistent protocols and methodologies for data collection to ensure consistency of inputs and future updates.

Demand assessments are currently conducted by federal and state governmental agencies, industry associations, and universities. These studies are independently conducted, rarely comparable, and largely inconsistent across scales and locations. Initiated in 1960, what became the National Survey of Recreation and the Environment (NSRE) collected consistent public recreation demand data for state and national level analysis. Many recreation planners used these data until it was discontinued in 2014. While there has been coordination and standardization of recreation supply data collection, no similar actions have occurred for demand.

Following the PAD-US supply-side model, we identify opportunities to coordinate and standardize the collection of recreation demand data to be useful for all agencies, across ownerships, and scales. A publicly available national recreation demand database with standardized protocols and methodologies could serve as a comprehensive and authoritative inventory of recreation demand. A new inte-

grated and holistic NSRE and new standardized baseline demand portion of all Statewide Comprehensive Outdoor Recreation Plans could recurrently contribute to the national database. A holistic systems approach could help to link local recreation supply and demand opportunities, frame recreation access and participation with health and equity data, and gauge supply and demand for wildlife and biodiversity conservation and other ecosystem services on recreation lands.

Keywords

Recreation, demand, supply, SCORP, protected areas

Introduction

Outdoor recreation is one of the primary ways we connect with our public lands and with nature more generally (Blahna, Valenzuela et al., 2020). To effectively and efficiently manage public lands, an understanding of both the available supply of lands providing recreation opportunities and the public demand for those opportunities is critical (Garber-Yonts, 2005). A multitude of public and private entities supplies a system of diverse recreation opportunities within a geographic region (McCool & Cole, 2001). This variety of recreation opportunity settings can facilitate different types of experiences (Driver & Brown, 1978). Assessments of the supply of outdoor recreation and conservation lands have been independently assembled and mapped by different governmental agencies (state, federal, county, municipal, tribal), non-governmental organizations, and private organizations for the lands they directly managed. Historically, there has been little integration or systematic coordination of mapping protocol or standards about what is mapped across the levels or groups (GreenInfo Network, 2016).

The assessment of public demand for these recreation opportunities has traditionally been conducted at the site level with visitor use data; this is often done by the land manager or conducted by the various agencies across their land holdings. In addition, recreation activity participation studies have been conducted at the national and state levels, but not linked to specific recreation lands. Like the supply assessments, there has been little integration or systematic coordination in the type of recreation demand data collected or data collection methods across levels or management entities. Reliable and consistent recreation supply and demand information is necessary to forecast future use, plan for appropriate supplies, ensure equitable access and use for all people, provide optimal health benefits, defend decision-making, anticipate problems, secure economic benefits, and justify funding (Hall et al., 2009; Selin et al., 2020).

A systems approach to outdoor recreation (McCool & Kline, 2020; Morse, 2020) is required for planning and managing sustainable recreation opportunities that provide: “desirable outdoor opportunities for all people, in a way that supports ecosystems, contributes to healthy communities, promotes equitable economies, respects culture and traditions, and develops stewardship values now and for future generations.” (Cerveney et al., 2020, p. 10). A systems focus shifts the paradigm from managing recreation of visitors to the management of social-ecological relationships (McCool et al., 2020, p. 155) and more broadly to the management of recreation lands for human well-being.

However, this requires more detailed, relevant, and consistent outdoor recreation lands demand data than is currently available.

This paper provides an overview of major recreation supply and demand data collection programs and identifies opportunities to provide the missing information required to address sustainable recreation planning and management goals. Our ability to systematically collect rigorous and consistent supply and demand data will require collaboration across scales and among public agencies and private enterprises (Cervený et al., 2020; GreenInfo Network, 2016; McCool & Cole, 2001). The systematic consolidation of consistent recreation supply data is currently being done by the United States Geological Survey (USGS) with the Protected Area Databased (PAD-US) (GreenInfo Network, 2016). However, no similar actions have occurred for demand data. The PAD-US supply consolidation effort provides an instructive example for how a publicly available national recreation demand database could be designed with standardized protocols and methodologies recurrently collected at multiple scales, to provide a comprehensive and authoritative inventory of recreation demand data essential for sustainable recreation planning.

A Renewed Focus on Outdoor Recreation Research and Collaboration

Over the last decade there have been numerous calls to improve data collection methods, expand the scope, standardize approaches, and coordinate outdoor recreation research initiatives. The America's Great Outdoors initiative proposed a 21st-century conservation and recreation agenda where health benefits and access equity were overriding themes along with developing collaborations across all levels of government to promote conservation and recreation (AGO, 2011). The National Association of Recreation Resource Planners (NARRP) echoed those suggestions and specifically recommended that federal agencies directly collaborate with states on their Statewide Comprehensive Outdoor Recreation Plans (SCORP) (NARRP, 2011). The NARRP report (2011) also recommend integrating other compatible planning efforts such as habitat for wildlife, watershed conservation, transportation, tourism, and with planning for public health and access for minority and disadvantaged populations. More recently, multiple federal land agencies established the Interagency Visitor Use Management Council (IVUMC) to develop a professional, standardized, and consistent approach for visitor use management with similarly expanded guidance to meet the needs of a more diversified public, address environmental justice issues, and maintain the natural resource base (IVUMC, 2019).

Two recent reports developed through an initiative led by the USFS that included researchers, managers, and policymakers were designed to “ignite the science of outdoor recreation” (Miller et al., 2020; Selin et al., 2020). The first is a collection of 17 working papers focused on high priority issues, research needs, and information requirements and why an investment in new knowledge is necessary (Selin et al., 2020). The papers highlight the issues of diversity and equity in access (Sanchez et al., 2020), connections to human health (Wolf et al., 2020), ecosystem services and the diversity of human-nature connections (Blahna, Cervený et al., 2020), and the need for a systems approach to recreation management (McCool & Kline 2020). As these papers note, the growth and diversification of U.S. population elevates the issues of equity, access, and environmental justice (Sanchez et al., 2020; Wolf et al., 2020). Consideration of equitable access is linked to human health with correlations of physical activity, poverty, obesity and lack of recreation opportunities in the wildland-urban interface (Wolf

et al., 2020). A focus on health and wellness benefits can help to establish new partnerships with public and private health agencies.

The second USFS-led effort was a research strategy that outlines the future direction of recreation and tourism research on public lands (Cervený et al., 2020; Miller et al., 2020). The strategy calls for coordination across agencies, managers, NGOs and industry to respond to changing demographics and visitor patterns and confront equity considerations. The document presents and outlines eight research focus areas, each of which have implications for a new national recreation demand database (Table 1). The strategy utilizes a systems approach that transcends agency boundaries. Focus areas highlight health, diversity, equity and inclusion, and ecosystem services. The authors call for, “A nationwide interagency visitation monitoring protocol and database” that can be used by managers across scales and agencies for visitor use monitoring, planning, and forecasting (Cervený et al., 2020, p. 45).

Table 1
Research Focus Areas (Cervený et al., 2020)

| | |
|--------|---|
| RFA 1: | Integrating outdoor recreation planning into a social-ecological planning framework |
| RFA 2: | Examining recreation-ecosystem interactions at multiple scales |
| RFA3: | Assessing new drivers and characteristics of demand for outdoor experiences |
| RFA4: | Measuring, monitoring, and forecasting visitor use |
| RFA 5: | Exploring connections among people, nature, and public lands |
| RFA6: | Integrating culture and place into land management and outdoor recreation experiences |
| RFA7: | Investigating the health and well-being benefits of outdoor experiences |
| RFA8: | Understanding tourism economics and systems for public lands planning |

Furthermore, the 2012 Forest Service planning rule requires planning teams to identify key ecosystem services that are important to people in the region and likely to be impacted by the forest plan under consideration (Jaworski et al., 2018). Ecosystem services are the benefits that people receive from ecosystems and include supporting (soil formation, nutrient cycling), regulating (erosion control, carbon sequestration, pollination), production (timber, grazing), and cultural services (recreation, aesthetics, cultural heritage) (Millennium Ecosystem Assessment, 2003). Biodiversity and wildlife (the variety of plants, animals, and microorganisms) can be positioned within each benefits category as they provide direct benefits and influence and support ecosystem functioning. As part of a broader movement to assess the impacts on and benefits of ecosystem services, many public agencies are using the concept as an integrated approach to planning (Jaworski et al., 2018; Kline et al., 2013).

Collectively, these assessments have identified the need for coordinated and systematic collection of recreation data across scales and agencies that includes information on the supply of recreation opportunities, access to those settings, and demand for participation. Furthermore, they call for a more holistic understanding of the benefits of recreation lands to include wildlife and biodiversity conservation and ecosystem services. Finally, they indicate that issues of human health and environmental justice should be central elements of recreation analysis.

Sources of Information on Recreation Supply

Historically, federal, state, and local government agencies have independently developed recreation supply information for lands they manage.

Supply at the Federal Level

Even prior to the heavy use of GIS, the federal agencies have used maps of land boundaries, roads, facilities (e.g., offices entrance gates, bathrooms), vegetative cover, and recreation infrastructure such as hiking and biking trails, campsites, boat docks, and fishing piers, and recreation amenities such as accessibility, viewsheds, natural quality, and landscape diversity. Most of these agencies also provide information about allowable activities at these settings. At the federal level, individual agencies such as the National Park Service, the US Forest Service (USFS), Bureau of Land Management (BLM), Army Corps of Engineers, US Fish and Wildlife Service (USFWS), and others have mapped recreation infrastructure and amenities. The USFS and BLM also define areas based on the Recreation Opportunity Spectrum (ROS), which is applied to demarcate experiential use zones across a spectrum of recreation opportunity settings from primitive to urban (Driver & Brown, 1978).

Supply at the State Level

At the state level, agencies that manage state parks, state forests, and other lands frequently provide similar recreation attribute and location information. Depending on the mission of the land management agency, they often have maps of types of natural land cover and for major natural provisioning resources such as forestry, mining, and grazing. At the local level, counties and municipalities often have boundary information for parks, lists of facilities, and activities that they support or allow. Historically, the collection, reporting, and management of the federal, state, and municipal recreation information was seldom systematic, coordinated, or compiled across levels or agencies that could facilitate analysis or planning across sites or ownerships.

One report where recreation information has historically been collected across federal and state agencies is for a Statewide Comprehensive Outdoor Recreation Plan (SCORP). The 1965 Land and Water Conservation Fund (LWCF) was created to assist states in acquiring and developing outdoor recreation resources and facilities (National Park Service, 2021a). To be eligible for these funds, a state must complete a SCORP every five years. SCORP reports are required to involve public participation, provide information on the statewide supply of facilities and resources, identify recreation issues, priority needs, and evaluate demand and activity participation (National Park Service, 2021a). The LWCF was enacted to “assist in preserving, developing, and assuring *accessibility to all citizens* ...such quality and quantity of outdoor recreation resources as may be available and are necessary and desirable for individual active participation in such recreation and to strengthen the *health and vitality* of the citizens of the United States” (National Park Service, 2008) (emphasis added). States’ must develop an Open Project Selection Process for targeting LWCF funds based on objective criteria and priority needs identified in their SCORP. The goals for the SCORP program are considerable and multifaceted and as a result, the implementation across states is highly variable in practice.

The supply inventories of recreation lands in SCORPs include park and protected areas facilities and resources on all public and private lands with public access statewide. In some states, the recreation inventories developed for the SCORP are spatially

mapped using GIS, providing an extensive digital database of recreation opportunities across ownerships while in other states little mapping occurred. Historically, supply inventory methodologies have not been consistent across state SCORPs and there is no explicit requirement to create a digital database. This makes comparisons across states and with federal inventories difficult.

Supply at Multiple Levels (PAD-US)

The collection of recreation supply data has been changing due to development of the national level Protected Area Databased (PAD-US) by the U.S. Geological Survey (USGS) (GreenInfo Network, 2016). Begun in 2008 as part of the National Gap Analysis Project (GAP), the PAD-US is a consolidation and systemization of the national and state recreation supply inventories outlined above (USGS, 2021a). PAD-US is designed to be a single, publicly available, authoritative, and comprehensive database of all protected lands with exact boundaries and core attributes from small municipal parks to national parks and marine reserves. This project has coordinated and organized federal agency data through the Federal Geographic Data Committee Federal Lands Working group. They are currently synchronizing with state data stewards to design SCORPs following consistent protocols for decentralized and recurrent data gathering. Inter-agency and state-level coordination was intended to ensure a comprehensive data set and to limit the time, effort, and financial waste from developing multiple independent and inconsistent data sets (GreenInfo Network, 2016).

The original focus of the Gap Analysis Program was to provide information about the conservation status of vertebrate species. To understand how much of a species habitat was conserved, the analysis consisted of mapping three layers; land cover, predicted distributions of species, and a stewardship layer of protected areas (USGS, 2021a). Because species habitat was not constrained by administrative boundaries, they needed to identify and include all protected areas managed by federal, state, and local agencies, non-profits, and private lands under conservation easements. In developing the stewardship layer, they recognized many reasons for protected areas beyond species habitat conservation including; recreation, resource production, economic contributions, cultural heritage, natural resource conservation, hazard mitigation, and human well-being (GreenInfo Network, 2016). Data from the national Recreational Information Database has already been integrated with the PAD-US and attributes such as entry points, facilities/amenities, activities, trail type and miles, and campsites can be independently added (GreenInfo Network, 2016). With standardized data sets and protocols the database is designed to be a living document that is updated by state stewards, national agencies, and other partners as conditions change (GreenInfo Network, 2016).

Sources of Information on Recreation Demand

Systematic methods for collection of recreation demand information from government institutions include; the USFS National Visitor Use Monitoring (NVUM) protocol and National Survey of Recreation and the Environment (NSRE), the USFWS's National Survey of Fishing, Hunting, and Wildlife Associated Recreation (NSF-HWAR), the NPS Visitor Services Project (VSP), Socioeconomic Monitoring Program (SEM), Comprehensive Survey of the American Public (CSAP), Statewide Comprehensive Outdoor Recreation Plans (SCORP), and the private Outdoor Industry Association's Outdoor Participation Report. Other important demand information sources are state agency initiatives and local site-specific studies. Each of these collect data on

Table 2
Sources of Recreation Demand

| Survey (Agency) | Land studied | Population sampled | Method | Level of generalizability | Social science data | Data availability/ Reports | Approximate frequency |
|--|--------------------------------|-----------------------------|--|---|--|--|--|
| National Visitor Use Monitoring (NVUM-USFS) | USFS | Visitors | Exit interviews | National system Regional Individual unit | Activities Satisfaction Economics Settings visited Demographics | National system Regional Multiple units Individual unit | National & regional results every year Unit results every 5 years |
| National Survey of Recreation and the Environment (NSRE-USFS & multiple agencies) | None | General public | Phone Survey | National State Regions | Activities Attitudes Policy Demographics | National State | 1960 - 2014 Annual rotation |
| National Survey of Fishing, Hunting, and Wildlife Associated Recreation (NSFHWAR-USF&WS) | FWS | General public | Phone Survey | National State | Activities Economics Public/private land Demographics | National | Every 5 years State level analysis ended in 2011 |
| Visitor Survey Project (YSP-NPS) | NPS | Visitors | Hand-out mail back survey | Individual unit | Trip Characteristics Experience Evaluations Visitor Characteristics & Demographics | Unit | 1982 - 2014 |
| Socioeconomic Monitoring Program (SEM-NPS) | Individual NPS units | Visitors | Tablet-based front end questions with mail back survey | Individual unit Regional & national-level aggregate results | Trip Characteristics Experience Evaluations Visitor Characteristics & Demographics | Unit | Begins 2022 Annual rotation by park strata at 24 parks/year |
| Comprehensive Survey of the American Public (CSAP-NPS) | NPS lands Local communities | Visitors General public | Telephone survey | National Parks | Visitation Activities & leisure pursuits Attitudes on policies Demographics | Unit Policy | 2002, 2008-9, & 2018 |
| Statewide Comprehensive Outdoor Recreation Plan (SCORP-NPS/LWCFE) | All recreation lands in state | Variable | Variable | State | Supply Participation Needs & issues | State | 5 years |
| OIA (Industry) | None | General Public | On-line panel survey | National State | Participation Economic Distance Demographics | National State activity | Annual |
| State agencies | State lands | Visitors Activity groups | Surveys Variable | Site Agency/lands | Participation Economic Variable | State Unit | Variable |
| Site | Specific unit | Visitors | Surveys Cards | Site | Participation Economic Variable | Site | Variable |

participation in and demand for a variety of activities, but with different emphases, methods, samples, and protocols (Table 2).

Each survey has many strengths and provides useful information based on their intended goals. However, the data sets are largely incompatible and not designed to integrate supply and demand information across opportunity settings. These data collection tools are outlined to demonstrate that a new data collection approach may help to fill data gaps critical for planning and management. We are not suggesting that these surveys be discontinued.

U.S. Forest Service (NVUM and NSRE)

The National Visitor Use Monitoring (NVUM) program is a systematic study of recreation demand initiated in 2000 to assess recreation activities and use patterns on national forests and grasslands managed by the USFS. It was designed to be more systematic, generalizable, cost effective and reliable than the previous inventory system, while gathering data on use levels, length of stay, travel distance, activity participation, satisfaction, expenditures, crowding and demographics (English et al., 2002). The NVUM uses on-site intercept surveys of current visitors. A number of studies have used those data to estimate demand for USFS recreation, often for individual activities (e.g. biking or water activities) or specific land use types (e.g., Wilderness) (English et al., 2019). Sampling and estimates are stratified by land use types (wilderness, general forest, developed day use sites, developed overnight sites) that allow for nationally consistent estimates to be made at the forest, region, and national levels. However, the NVUM only collects data from visitors to USFS lands and was not intended as an indicator of demand for recreation on other lands or by the general public.

Until 2014, the National Survey of Recreation and the Environment (NSRE) was the primary recreation data collection tool for the USFS at the national level. It evolved from an earlier National Recreation Survey that began in 1960, with the first NSRE being conducted in 1994-95. The NSRE used telephone interviews to gather information from a representative national sample about participation in outdoor recreation activities over a year (81,000 phone interviews for the 2000-2004 assessment). Sampling intensity was sufficient to allow for national, state, and regional analysis (and 150 sub-state local areas) (Cordell, 2004). A long list of activities was investigated (80+) to gather overall participation rates, number of days of participation, general type of setting and trail use, and participation in different states. State-by-state comparisons were presented along with demographic and regional comparisons, providing some of the best data on long-term trends in recreation activity participation at these levels (Cordell, 2004; Cordell et al., 1999).

The NSRE's primary focus on recreation activity participation provided information on recreation trends, but the absence of links to specific forests, parks, or other protected areas limited applicability at the site level. Additional intermittent modules included attitudes and beliefs about forest management, environmental concern, and management preferences regarding recreation, wilderness, and natural resources use. Some individual questions pertained to production ecosystem services such as timber, grazing, and mining while others matched functional ecosystem services such as protecting streams and other sources of clean water and protecting ecosystems and wildlife habitat (USDA Forest Service, 2021). Data from this survey were frequently used for the demand analysis for state level SCORPs. The NSRE was discontinued in 2014 due to the retirement of the director and lack of future budget allocations (Personal

Communication with Gary Green, UGA, June 2021) and the Agency's decision to not pursue renewal of the OMB collection approval.

U.S. Fish and Wildlife Service

Another national systematic source of recreation demand data collection, the National Survey of Fishing, Hunting, and Wildlife-Associated Recreation (FHWAR), is conducted by the U.S. Fish and Wildlife Service (USF & WS, 2017). Beginning in 1955, this national survey has been administered approximately every five years and gathers information on participation in fishing, hunting and wildlife viewing on public and private lands. It also gathers detailed information about expenditures on equipment, trips, and time commitments for these activities. The data set has been an excellent source of long-term participation and expenditures in wildlife-related recreation. The 2006 survey consisted of telephone (or follow-up in-person) interviews with over 22,000 sportspersons and more than 11,000 wildlife viewers (USF&WS, 2007). A large sample and spatially distributed stratification methodologies allowed for rigorous state by state and regional comparisons and partitioning into multiple user and activity sub-groups for comparison (USF&WS, 2007). However, while differentiation of participation rates, activities and expenditures is made for the two general categories of public and private lands, the survey is not conducted in a way that could be applied to management of specific settings. Furthermore, the survey focuses only on wildlife related recreation and provides no information on other activities. Finally, sampling was greatly reduced for the 2016 report (no explanation given) allowing for analysis of national trends, but not sufficient for state reports and those have ceased to be developed (USF&WS, 2017).

National Park Service

The NPS Social Science Program has had multiple participation and demand collection programs. In addition to collecting regular in-park visitor counts, economic impact, and park performance information, major research efforts include the Visitor Services Project (VSP), a new in-park Socioeconomic Monitoring program (SEM), and the SCORP through the LWCF.

The Visitor Services Project was primarily a collaboration between the NPS and the University of Idaho Park Studies Unit. The data collection effort gathered information via survey methods on visitor trip characteristics, experience evaluations, and visitor characteristics (including demographics) tailored to inform specific management considerations at individual park units. The surveys were run at hundreds of park units from 1982-2014 but were ended due to changes in funding and program structure with the NPS Social Science Program.

The in-park Socioeconomic Monitoring program is designed to build on visitor use data and was pilot tested from 2014-2017 and will be initiated in 2022. A questionnaire was "designed to gather system-wide information at NPS units about visitor and trip characteristics, visitor spending in gateway communities, visitor perceptions of park experiences, visitor attitudes toward park management, and visitor satisfaction with park services and facilities" (Resource Systems Group, 2019, p. 2). Their goal is a single, system-wide program, with standardized instruments and protocols, that can be used to collect, consolidate, and distribute quality visitor trend data for NPS managers and gateway communities (Pettebone & Meldrum, 2018).

The Comprehensive Survey of the American Public (CSAP) is a regionally stratified nation-wide general-public (visitors and non-visitors) telephone survey conduct-

ed in 2000, 2008-9, and 2018. This survey gathers information on National Park visitation, activities, factors inhibiting visitation, perceptions of parks, and public attitudes toward policies and programs (Resource Systems Group (RSG) and Wyoming Survey and Analysis Center (WYSAC), 2019). These surveys are primarily focused on NPS lands and related policies.

Statewide Comprehensive Outdoor Recreation Plan

Another source of recreation demand information is the state SCORPs. The background of the SCORP, legislation, and requirements were discussed earlier under supply information. Some states collect their own recreation participation/demand data, while others have used a variety of sources including the state data from the NSRE and FHWR. While many SCORPs are of high quality, state comparisons are not possible due to differences in methods of data collection, participant selection, time frame of analysis, classification of activities and other methodological and reporting issues (Hall et al., 2009). There is the potential for SCORP studies to link supply and demand spatially at the state level; however, there is nothing systematic in the legislation or observed in a number of state reports that would indicate that this is taking place (Garber-Yonts, 2005). Furthermore, while there is language in the LWCF legislation to ensure accessibility to all citizens and provide recreation opportunities to address health and vitality of the public, there is no indication that these issues are addressed consistently or systematically across state demand studies.

Outdoor Industry Association

Another source of outdoor recreation data has been developed by the Outdoor Industry Association (OIA), a group of recreation companies representing outdoor gear, recreational vehicles, campground concessionaires, and others (Outdoor Industry Association, 2018). The OIA conducts research, works to further pro-recreation policies and promote sustainable businesses, provides recreation industry consumer information, and advocates for outdoor recreation and sports. The OIA uses panel samples representative of the U.S. population and conducts online surveys to gather their data. In 2018, they sampled 20,069 individuals across the US on outdoor participation rates, frequency of visitation, and travel distance. The OIA also reports a variety of economic information including expenditures, employment, and taxes generated through outdoor recreation. Reports feature data at the national and state level with trend data dating back to 2007 for a number of activities. They also work with a variety of recreation industry organizations and associations to develop specific interest reports (Outdoor Foundation, 2019). Data are presented at the state, regional, and national level, but local level (county) participation information are not presented. While reports can be contracted, the methods and data are not available publicly and methodological details are proprietary.

State Agency Studies

State-level demand studies are often conducted by state natural resource agencies (i.e., parks, forests, or wildlife refuges), mirroring those at the national level. Studies often focus on land ownership/units. State studies for individual recreation activities such as hunting, fishing, birding, or by species are frequently conducted wildlife management purposes. Surveys are often conducted of on-site visitors or of hunting and

fishing license holders. Participation, economic expenditures, setting, and management preferences are frequently examined. State level studies are also conducted by the land management or recreation agencies, tourism bureaus, local academics, consultants, or industry groups using a variety of methods. These are often ad hoc studies and are seldom longitudinal and unlikely to use consistent methods or protocols.

Site-Specific Studies

Finally, recreation demand can also come from individual site-level studies; these are for any individual unit whether it is run by a federal or state land agency, non-profit, or private industry. Many of these studies address both supply and demand for different recreation activities and settings specific to their site. This is a primary method used by managers to understand visitor use, demand, travel, costs, economic impact, and setting and management preferences for specific management units. These studies are opportunistic and may be conducted by research teams at neighboring universities and often represent the synergistic interests of a particular land manager and researchers. However, these studies are rarely coordinated across regions, states, or nationally, and they are generally not longitudinal. Additionally, many of these studies only survey current visitors and miss public demand and displaced recreationists. Therefore, regional-scale information and long-term trends matching recreation opportunity setting supplies to demand is not available through these sources.

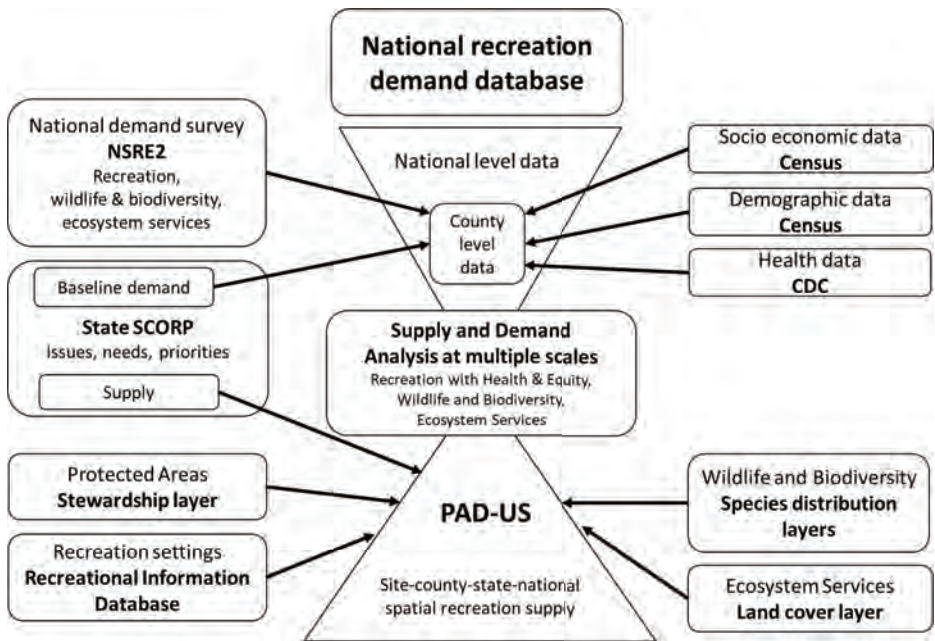
Linking Recreation Supply and Demand for Improved Recreation Lands Planning

We have presented a review of the many efforts to collect demand information for outdoor recreation conducted by the various agencies. The data sets are largely incompatible, conducted with different metrics and methodologies, spatially incongruent, and do not address the demand for the full system of lands and waters that provide recreation opportunities. With the exception of the NSRE and CSAP, the remaining state and federal studies are of current users (on-site visitor studies) and do not capture the interests of the general public. None of these studies systematically address equity in access, public health, or demand for wildlife and biodiversity conservation and the provision of ecosystem services identified as critical for the future of sustainable recreation planning and management. None of these studies provides publicly available data.

Outdoor recreation land management would benefit from a more systemic and holistic outlook on the benefits of recreation and recreation lands. Following lessons learned in the development of the PAD-US, we identify opportunities to coordinate, standardize, and systematize the collection of recreation supply and demand data to be useful for all agencies, across ownerships, and scales. A national, publicly available recreation demand database that mirrors the PAD-US model could be developed to provide a standardized data set with consistent protocols and data collection methodologies. Such a demand database could serve as a comprehensive and authoritative inventory of demand for recreation lands and waters across all jurisdictions that land managers and industry could rely on (Figure 1).

As most recreation occurs near the home (Outdoor Foundation, 2019), it is important to understand the socio-spatial context of where recreation opportunities are located. Collecting county-level data (in contrast to state-level) allows for analysis at the more variable local-level and the ability to hierarchically aggregate the data within or across state lines and up to the national-level. A collaboration between the US Census and the CDC for information on county-level socioeconomic, demographic, and

Figure 1
Components of a National Recreation Demand Database



health data would allow analysis of equity, access, and human health. The gaps identified above suggest the need for a new, more holistic national recreation survey, referred to here as “NSRE2,” to collect information on recreation demand as well as demand for wildlife and biodiversity conservation and ecosystem services. The PAD-US model features state-level collaboration on supply data. Similarly, by standardizing a baseline demand portion of all states’ SCORPs with the NSRE2 and collaborating with state partners to provide consistent and updatable data to a national recreation database, the integration of supply and demand data can be achieved (Figure 1).

Coordination among Agencies, State, and Private Partners

Coordination among federal agencies and other partners for recreation demand information could be designed parallel to the Federal Geographic Data Committee Federal Lands Working Group for the PAD-US (GreenInfo Network, 2016) and consistent with other interagency standardization initiatives such as the Interagency Visitor Use Management Council (IVUMC, 2019) and the Federal Recreation Council (whose goals are to improve visitor information and enhance the visibility of the benefits of outdoor recreation). Collaboration on the demand data collection strategy would ensure that the needs of multiple agencies and partners are being considered and would facilitate the development of consistent and commensurable datasets. Specific coordination for developing SCORP would ensure consistency of state demand datasets. Again, the PAD-US system that emphasizes direct collaboration with states and the use of state-wide partners, suggests a potential implementation system that could be emulated. Partnering with the Centers for Disease Control and Prevention and the US

Census would ensure access to current health and demographic information. Similar to PAD-US, other partners would include NGOs, industry, and professional organizations.

A National Recreation Demand Database Research Unit

The NSRE was historically funded by multiple federal agencies, led by the USFS Southern Research Station, and housed and in collaboration with the University of Georgia. The NSRE was part of the USFS renewable resource assessments (for analysis of use, demand, and supply of renewable resources) that is required under the Forest and Rangeland Renewable Resources Planning Act of 1974 and as amended in 1976 (RPA) (Cordell, 2004). This collaborative approach proved successful for the NSRE and led to widespread distribution of data. A similar collaborative research unit could be established with a federal land management agency and a university partner and designed to; build and maintain a publicly available national database, administer a national survey (NSRE2), incorporate state SCORP demand data, prepare demand reports, and coordinate with federal, state, nonprofit, and industry partners. Universal supply and demand data collection strategies can be hampered by funding restrictions on agencies that must demonstrate that research efforts are focused solely within their specific agency purview. The 2012 Forest Service Planning Rule on ecosystem services could further justify the expanded scope of a research unit. Given the broad utility of this more comprehensive database and public availability, collaborative financial support by agencies and partners (federal land agencies, health agencies, conservation organizations, and private industry) could help to ensure that development and maintenance costs remain manageable and issues of equity and health can be addressed.

Spatial Context Information Needs

Sociodemographic and Health Data

Strategic partnerships with the U.S. Census, the CDC, and other health and social service agencies could ensure rigorous data to address equity of access and health and vitality for all citizens as specifically mentioned in the LWCF legislation. County-level socio-demographic data can be acquired from the U.S. Census. Similarly, county level health data from the CDC could be collected on indicators most relevant to outdoor recreation such as rates of physical activity, obesity, type 2 diabetes, heart disease, and mental health (CDC, 2010; Larson et al., 2016). Some state SCORPs, such as Oregon, have collected county-level data and have developed new health metrics in association with recreation participation (Rosenberger & Dunn, 2018). To address racial and socioeconomic equity concerns, California developed a spatial tool to examine park availability down to the neighborhood level for their 2015 and 2021 SCORPs (California Department of Parks and Recreation: Office of Grants and Local Services, 2021; GreenInfo Network, 2021). Both sociodemographic and health data sets would enhance the value and utility of a national recreation demand database providing the information to directly analyze recreation opportunities in a nuanced local context for health and equity.

Providing the Direct Link to Local Recreation Opportunity Settings

The PAD-US system can be used to assess all available protected area recreation opportunities within a county, state, or any hierarchical aggregation from the national database. As the PAD-US completes its municipal park portion of the database, analy-

sis of access to recreation opportunities will be more comprehensive and localized. The updated PAD-US 2.1 released this year has already included many of these (USGS, 2021b). The PAD-US has already incorporated the Recreational Information Database to provide detailed setting information on recreation facilities and amenities that drives Recreation.gov, the national outdoor recreation and cultural site trip planning and reservations system (GreenInfo Network, 2016). These data can be used to understand how our current system of recreation opportunities serves the public and to identify both gaps and new opportunities.

Wildlife, Biodiversity, and Ecosystem Services

The spatial supply of wildlife and biodiversity conservation and the provision of ecosystems services can be developed from the PAD-US. Wildlife habitat and biodiversity conservation was the central focus of the original GAP program. The 2012 Forest Service Planning Rule requires ecosystem services be addressed in planning documents (Jaworski et al., 2018) and the land cover data layer from the PAD-US can be used to assess a variety of ecosystem services from protected areas. Therefore, the supply of wildlife and biodiversity habitat conservation and other ecosystem services can be evaluated regarding equity in access and health benefits from of a system of recreation lands (Figure 1).

Demand information needs

While we have seen coordination and systemization of data collection and a consolidation of supply information in the PAD-US, we have seen no similar actions for demand data. A new, holistic NSRE2 that includes health and social justice data, along with a baseline demand section of state SCORPs could provide the initial contributions to a consistent and authoritative national recreation demand database.

A New National Survey of Recreation and the Environment (NSRE2)

We suggest that the former NSRE provides a solid foundation for developing the demand assessment tool because it 1) was the only longitudinal data collection program covering a wide variety (80+) of recreation activities, 2) provided data at the state and national levels, 3) was used in some SCORP, and 4) had questions regarding biodiversity and wildlife and ecosystem services. A new national survey (NSRE2) founded on the NSRE will allow comparisons to earlier data sets, while creating new questions to meet current needs. Moreover, demand data collected at the county level would allow for comparison to local socio-demographic and health information.

Demand for Wildlife and Biodiversity Conservation and Ecosystem Services

Systems perspectives on outdoor recreation help us to recognize other ways that recreation lands contribute to human well-being such as wildlife and biodiversity conservation and the provision of ecosystem services (Blahna, Cervený, et al., 2020; Morse, 2020). Wildlife Value Orientation scales (measuring groups of values and basic beliefs about wildlife) are well established and have been used to identify and predict a person's policy, issue, and protected area management preferences (Manfredo et al., 2018). Surveys on ecosystem services have been developed with multiple indicator items for biodiversity, regulating, production, and cultural services (Asah & Blahna, 2020) and specifically for addressing the USFS 2012 planning rule regarding ecosystem services (Jaworski et al., 2018). Assessing demand for ecosystem services is consistent with fed-

eral mandates that agencies have adopted for planning (Kline et al., 2013) and currently there are no systematic demand studies on these issues. These surveys and scales and others identifying public attitudes and connections with nature such as the Nature of Americans report (Kellert et al., 2017) are key sources for developing measures of demand for wildlife and biodiversity conservation and ecosystem services for a new NSRE2.

Standardized National Demand Survey with a Baseline State-Level SCORP

Similar to the PAD-US working with state partners to develop consistent supply datasets on SCORP, a new national demand survey (NSRE2) that is standardized with state SCORPs could provide consistent and updatable demand data (Figure 1). A baseline demand section of the SCORP could be developed commensurate with a national demand survey and applied by all states in their planning process. The baseline demand section could be designed to systematically assess recreation demand without replacing or imposing on other aspects of individual state SCORPs. State-level SCORPs would retain the flexibility to address individual state needs, through demand data or otherwise. This would need to be developed in collaboration with the Federal Recreation Council, National Park Service, and LWCF administrators.

Timing of Surveys

SCORP are legislated to be conducted every 5 years. Previously, the NSRE was collected at approximately five-year intervals and provided demand data used by some state's SCORPs. The NARRP report (2011) recommended that federal agencies directly collaborate with states on SCORPs and that they be conducted every 10 years, but with a more rigorous planning effort (NARRP, 2011). Coordination of the surveys on 5- or 10-year cycles with consistent data collection tools, methodologies and protocols would ensure rigorous, consistent, and reliable information for an updatable multi-level (county-state-national) database. This directly parallels the PAD-US model leveraging state partners to collect consistent supply data that is updated regularly (GreenInfo Network, 2016).

Data Analysis and Utility

A complete national recreation demand database would include the social context data (demographic, socioeconomic, and health), and demand data (for recreation activities, wildlife and biodiversity conservation, and ecosystem services) at the county level. This data could be linked with the PAD-US supply data that can be assessed at any aggregation. In this way, analyses can explore recreation supply and demand and can examine issues of equity and health with a higher level of precision (county instead of state). Similarly, supply and demand for wildlife and biodiversity conservation and ecosystem services can be assessed together with equity, social justice, and health (Figure 1). With consistent county-level data nationally, any hierarchical aggregation at or above the county level could be conducted (county, multiple counties within or across state lines, state, etc.). Data maintained in the national recreation demand database could be made publicly available on-line for transparency and for ease of access and use by managers, researchers, and industry to address issues most important to them.

Conclusion

In August of 2020, Great American Outdoors Act (GAOA) was passed that established permanent funding for the Land and Water Conservation Fund (LWCF) and established the National Parks and Public Land Legacy Restoration Fund (NPPLRF) that provides the funding for many future recreation projects and backlogged maintenance (National Park Service, 2021a). This legislation provides an opportunity to consider ways to explore how we might consolidate, integrate, and coordinate efforts to gather outdoor recreation data across agencies and levels for greater understanding of the benefits of recreation lands to all people (Blahna et al. this issue, Commentary). The Resource Planning Act (1976) and the USFS 2012 Planning Rule requires analysis of use, demand, and supply of renewable resources now including consideration of key ecosystem services. Directly integrating health, equity, and conservation as critical element of recreation research should broaden the constituencies interested and involved in supporting and using the data outlined in this paper.

We believe a holistic systems approach would better link local recreation supply and demand opportunities, assess recreation supply and demand with health and equity data, and gauge supply and demand for wildlife and biodiversity conservation and ecosystem services on recreation lands. Our assessment of national and state level surveys suggest that a national recreation demand database could move beyond the many visitor use studies to fill an important gap in information of value across government agencies and partners. The PAD-US spatial database provides a useful model for considering how this program could be designed and implemented. A new holistic national survey could collect data on demand for recreation, demand for wildlife and biodiversity conservation, and demand for ecosystem services. The inclusion of county level data could more directly link supply and demand and better address equity in access and contributions to human health at the local level. A baseline demand portion of state SCORP could contribute to a consistent and standardized national recreation database for a living document. A national recreation demand database could be the official standardized demand data set with consistent protocols for data collection. The data collection strategy we have outlined could provide all recreation land managers consistent, comprehensive, and authoritative data on local and regional recreation demand. It could facilitate recreation management, promote conservation, health, and accessibility, and provide a more holistic understanding of the many ways recreation lands contribute to our well-being.

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References

- AGO. (2011). *America's great outdoors: A promise to future generations*. file:///C:/Users/wcm0005/Downloads/America%E2%80%99s%20Great%20Outdoors%20Report.pdf
- Asah, S. T., & Blahna, D. J. (2020). Involving stakeholder's knowledge in co-designing social valuations of biodiversity and ecosystem services: Implications for decision-making. *Ecosystems*, 23, 324–337.

- Blahna, D. J., Cerveny, L. K., Williams, D. R., Kline, J. D., Helmer, M., McCool, S. F., & Valenzuela, F. (2020). Rethinking "outdoor recreation" to account for the diversity of human experiences and connections to public lands. In S. Selin, L. K. Cerveny, D. J. Blahna, & A. B. Miller (Eds.), *Igniting research for outdoor recreation: Linking science, policy, and action*. Gen. Tech. Rep. PNW-GTR-987. Portland, OR: US Department of Agriculture, Forest Service, Pacific Northwest Research Station. pp. 65–84. https://www.fs.fed.us/pnw/pubs/pnw_gtr987_Selin_Chap05.pdf
- Blahna, D. J., Valenzuela, F., Selin, S., Cerveny, L. K., Schlafmann, M., McCool, S. F. (2020). The shifting outdoor recreation paradigm: Time for change. In S. Selin, L. K. Cerveny, D. J. Blahna, & A. B. Miller (Eds.), *Igniting research for outdoor recreation: Linking science, policy, and action*. Gen. Tech. Rep. PNW-GTR-987. Portland, OR: US Department of Agriculture, Forest Service, Pacific Northwest Research Station. pp. 9–22. https://www.fs.fed.us/pnw/pubs/pnw_gtr987_Selin_Chap01.pdf
- California Department of Parks and Recreation: Office of Grants and Local Services. (2021). *California's 2021-2025 Statewide Comprehensive Outdoor Recreation Plan (SCORP): A five year plan for increasing park access, community-based planning, and health partnerships through grants*. <https://www.parksforcalifornia.org/scorp/2021>
- Centers for Disease Control and Prevention (CDC). (2010). *Behavioral risk factor surveillance system*. Survey Data.
- Cerveny, L. K., Derrien, M. M., & Miller, A. B. (2020). *Igniting the science of outdoor recreation: A research strategy for sustainable recreation and tourism on public lands*. Gen. Tech. Rep. PNW-GTR-991. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 152 pp. https://www.fs.fed.us/pnw/pubs/pnw_gtr991.pdf
- Cordell, H. K. (2004). *Outdoor recreation for 21st century America*. Venture Publishing, Inc.
- Cordell, H. K., Betz, C., Bowker, J. M., English, D. B. K., Mou, S. H., Bergstrom, J. C., Teasley, R. J., Tarrant, M. A., & Loomis, J. B. (1999). *Outdoor recreation in American life: A national assessment of demand and supply trends*. Sagamore.
- Driver, B. L., & Brown, P. J. (1978). *The opportunity spectrum concept and behavioral information in outdoor recreation resource supply inventories: A rationale*. GTR-RM-55. Fort Collins, CO: US Department of Agriculture, Forest Service, Rocky Mountain Research Station.
- English, D. B. K., Kocis, S. M., Zarnoch, S. J., & Arnold, J. R. (2002). *Forest Service national visitor use monitoring process: research method documentation*. GTR-SRS-057. Asheville, NC: US Department of Agriculture, Forest Service, Southern Research Station. https://www.srs.fs.usda.gov/pubs/gtr/gtr_srs057.pdf
- English, D. B. K., White, E. M., Bowker, J. M., & Winter, S. A. (2019). A review of the Forest Service's national visitor use monitoring (NVUM) program. *Agricultural and Resources Economics Review*, 49(1), 64–90.
- Garber-Yonts, B. E. (2005). *Conceptualizing and measuring demand for recreation on national forests: A review and synthesis*. PNW-GTR-645. Portland OR: US Department of Agriculture, Forest Service, Pacific Northwest Research Station. https://www.fs.fed.us/pnw/pubs/pnw_gtr645.pdf
- GreenInfo Network. (2016). *Completing America's inventory of public parks and protected areas: An action plan for 2016-2020*. http://www.protectedlands.net/wp-content/uploads/2014/09/ParksOpenSpace_PolicyPaperNov2016Final.pdf

- GreenInfo Network. (2021). *2021 Statewide comprehensive outdoor recreation plan*. California Department of Parks and Recreation. <https://www.greeninfo.org/work/project/2021-scorp>
- Hall, T. E., Farnum, J., Slider, T. C., & Ludlow, K. (2009). *New planning approaches to forest planning: inventorying and mapping place values in the Pacific Northwest Region*. PNW-RN-562. Portland OR: US Department of Agriculture, Forest Service, Pacific Northwest Research Station. https://www.fs.fed.us/pnw/pubs/pnw_rn562.pdf
- IVUMC. (2019). *Visitor capacity guidebook: Managing the amounts and types of visitor use to achieve desired conditions*. <https://visitorusemanagement.nps.gov/VUM/Framework>
- Jaworski, D., Kline, J. D., Miller, C., Ng, K., Retzlaff, M., Eichman, H., & Smith, D. (2018). *Evaluating ecosystem services as management outcomes in National Forest and Grassland Planning assessments*. PNW-GTR-968. Portland OR: US Department of Agriculture, Forest Service, Pacific Northwest Research Station. https://www.fs.fed.us/pnw/pubs/pnw_gtr968.pdf
- Kellert, S. R., Case, D. J., Escher, D., Witter, D. J., Mikels-Carrasco, J., & Seng, P. T. (2017). *The Nature of Americans: Disconnection and recommendations for reconnection*. <https://natureofamericans.org/>
- Kline, J. D., Mazzotta, M. J., Spies, T. A., & Harmon, M. E. (2013). Applying the ecosystem services concept to public land management. *Agricultural and Resources Economics Review*, 42(1), 139–158.
- Larson, L. R., Jennings, V., & Cloutier, S. A. (2016). Public parks and wellbeing in urban areas of the United States. *PLoS One*, 11(4), e0153211.
- Manfredo, M., Sullivan, P., Don Carlos, A. W., Dietsch, A. M., Teel, T. L., Bright, A. D., & Bruskotter, J. (2018). *America's wildlife values: The social context of wildlife management in the U.S.* <https://sites.warnercnr.colostate.edu/wildlifevalues/wp-content/uploads/sites/124/2019/01/AWV-National-Final-Report.pdf>
- McCool, S. F., & Cole, D. N. (2001). Thinking and acting regionally: Toward better decisions about appropriate conditions, standards, and restrictions on recreation use. *The George Wright Forum*, 18(3), 85–98.
- McCool, S. F., & Kline, J. D. (2020). A systems thinking approach for thinking and reflecting on sustainable recreation on public lands in an era of complexity, uncertainty, and change. In S. Selin, Cervený, L. K., Blahna, D. J., Miller, A. B. (Eds.), *Igniting research for outdoor recreation: Linking science, policy, and action*. Gen. Tech. Rep. PNW-GTR-987. Portland, OR: US Department of Agriculture, Forest Service, Pacific Northwest Research Station. pp. 161-172. https://www.fs.fed.us/pnw/pubs/pnw_gtr987_Selin_Chap11.pdf
- McCool, S. F., Selin, S., & Valenzuela, F. (2020). Laying the Foundation. In S. Selin, Cervený, L. K., Blahna, D. J., Miller, A. B. (Eds.), *Igniting research for outdoor recreation: Linking science, policy, and action*. Gen. Tech. Rep. PNW-GTR-987. Portland, OR: US Department of Agriculture, Forest Service, Pacific Northwest Research Station. pp. 151-160. https://www.fs.fed.us/pnw/pubs/pnw_gtr987_Selin_Chap10.pdf
- Millennium Ecosystem Assessment. (2003). *Ecosystems and human well being: A framework for assessment*. Island Press.
- Miller, A. B., Cervený, L. K., Derrien, M. K., Selin, S., & Blahna, D. J. (2020). A research strategy to ignite the science of outdoor recreation on public lands. *Journal of Park and Recreation Administration*, 38(2), 1–13.

- Morse, W. C. (2020). Recreation as a social-ecological complex adaptive system. *Sustainability*, 12(3), 753. file:///C:/Users/wcm0005/Downloads/sustainability-12-00753-v3%20(3).pdf
- NARRP. (2011). *Reframing the role and relevancy of statewide comprehensive outdoor recreation plans for the next 50 years*. National Association of Recreation Resource Planners. https://www.recpro.org/assets/SORP_Reports/2011_narrp_reframing_scorp_fi_alv2.pdf
- National Park Service. (2008). *Land and water conservation fund state assistance program: Federal financial assistance manual*. U.S. Department of Interior.
- National Park Service. (2021a, January 8, 2020). *Land and water conservation fund*. <https://www.nps.gov/subjects/lwcf/index.htm>
- National Park Service. (2021b, 10/24/2019). *Social science*. <https://www.nps.gov/subjects/socialscience/index.htm>
- Outdoor Industry Association. (2018). *2018 annual report*. <https://outdoorindustry.org/what-we-do/annual-reports/>
- Outdoor Foundation. (2019). *2019 Outdoor participation report*. Outdoor Industry Association. <https://outdoorindustry.org/resource/2019-outdoor-participation-report/>
- Pettebone, D., & Meldrum, B. (2018). The need for a comprehensive socioeconomic research program for the National Park Service. *The George Wright Forum*, 35, 22–31.
- Resource Systems Group. (2019). *Implementation plan for a socioeconomic monitoring program in the national park system*. https://www.nps.gov/subjects/socialscience/upload/SEM_Pilot_Final_508accessible.pdf
- Resource Systems Group (RSG) and Wyoming Survey and Analysis Center (WYSAC). (2019). *National Park Service comprehensive survey of the American public: 2018 national technical report*. <https://irma.nps.gov/DataStore/Reference/Profile/2267743>
- Rosenberger, R. S., & Dunn, T. (2018). Part A: Health benefits estimates for Oregonians from their outdoor recreation participation in Oregon. https://recvaluation.forestry.oregonstate.edu/sites/default/files/Health_benefits_OR.pdf
- Sanchez, J. J., Cervený, L. K., Blahna, D. J., Valenzuela, F., & Schlafmann, M. (2020). Recreation opportunities and human connections on public lands: Constraints that limit recreation participation. In S. Selin, L. K. Cervený, D. J. Blahna, & Miller, A. B. (Eds.), *Igniting research for outdoor recreation: Linking science, policy, and action*. Gen. Tech. Rep. PNW-GTR-987. Portland, OR: US Department of Agriculture, Forest Service, Pacific Northwest Research Station. pp. 41-50. https://www.fs.fed.us/pnw/pubs/pnw_gtr987_Selin_Chap03.pdf
- Selin, S., Cervený, L. K., Blahna, D. J., & Miller, A. B. (2020). *Igniting Research for Outdoor recreation: Linking science, policy, and action*. Gen. Tech. Rep. PNW-GTR-987. Portland, OR: US Department of Agriculture, Forest Service, Pacific Northwest Research Station. pp. 257. https://www.fs.fed.us/pnw/pubs/pnw_gtr987.pdf
- USDA Forest Service. (2021, 2014). *National Survey on Recreation and the Environment: NSRE survey questions*. <https://www.srs.fs.usda.gov/trends/nsre-directory/questions.html>
- USF&WS. (2007, July). *2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation*. <http://federalasst.fws.gov/surveys/surveys.html>

- USF&WS. (2017). *2016 National survey of fishing, hunting, and wildlife-associated recreation*. USF&WS, US Dept. of Interior, US Dept. of Commerce, US Census Bureau. https://www.fws.gov/wsfrprograms/subpages/nationalsurvey/nat_survey2016.pdf
- USGS. (2021a, February 13, 2019). *Gap analysis project*. <https://www.usgs.gov/core-science-systems/science-analytics-and-synthesis/gap/science/protected-areas>
- USGS. (2021b). *USGS Gap Analysis Project: Protected areas*. <https://www.usgs.gov/core-science-systems/science-analytics-and-synthesis/gap/science/protected-areas>
- Wolf, K. L., Derrien, M. K., Kruger, L. E., & Penbrooke, T. L. (2020). Nature, outdoor experiences, and human health. . In S. Selin, L. K. Cervený, D. J. Blahna, D. J., & Miller, A. B. (Eds.), *Igniting research for outdoor recreation: Linking science, policy, and action*. Gen. Tech. Rep. PNW-GTR-987. Portland, OR: US Department of Agriculture, Forest Service, Pacific Northwest Research Station. pp. 85-89. https://www.fs.fed.us/pnw/pubs/pnw_gtr987_Selin_Chap06.pdf

Research Note

Reimagining U.S. Federal Land Management through Decolonization and Indigenous Value Systems

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Abstract

U.S. Federal Land Management Areas (FLMAs) are grounded in settler colonialism, including Indigenous land dispossessions and violations of Tribal treaties. This critical thought-piece is written by Indigenous scholars to reimagine FLMAs (especially recreation areas) through decolonization and the Indigenous value systems embedded within the “four Rs”: relationship, responsibility, reciprocity, and redistribution. We reweave conceptions about parks and protected areas, reimagine park management, and reconfigure management foci to reflect Indigenous value systems shared by Indigenous peoples. We emphasize a need for Tribal co-management of FLMAs, the inclusion of Tribal land management practices across ecosystems, and the restoration of Indigenous land use and management rights. Land and recreation managers can use this paper to 1) decolonize park management practices, 2) understand how Indigenous value systems can inform park management foci, and 3) build a decolonized and reciprocal relationship with Tribes and their ancestral landscapes.

Keywords

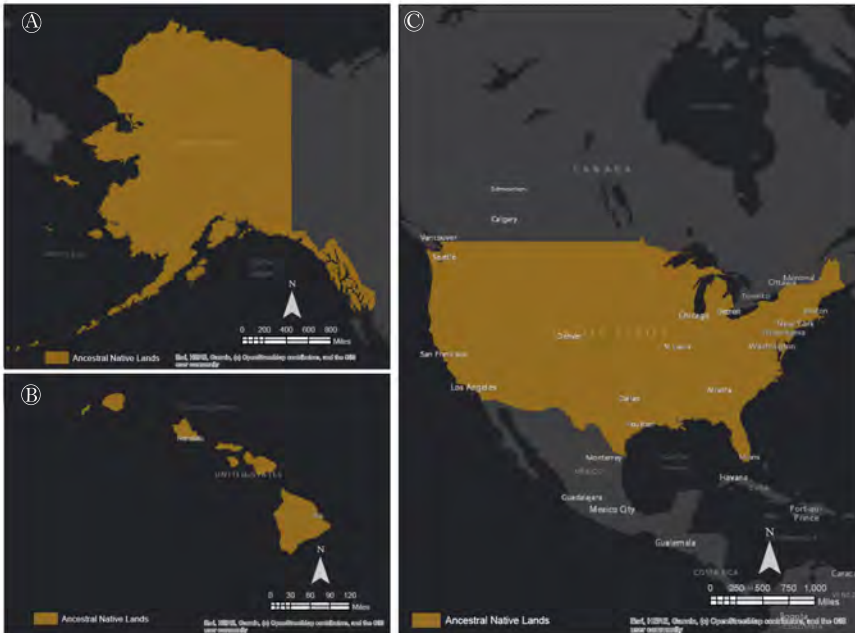
Decolonizing, Indigenous value systems, parks and protected areas, recreation, federal land management

Introduction

Before the United States was established, Indigenous peoples stewarded these lands for millennia (Figure 1). The history of the U.S. as an occupying entity contains a violent narrative of settler colonialism, involving a state founded on white supremacy, slavery, theft of Indigenous lands, and policies leading to the largest genocide in global history (Dunbar-Ortiz, 2014; Koch et al., 2019). After generations of violence, in 1872, Yellowstone National Park became the first National Park (Cronon, 1995, p. 9). Subsequently, hundreds of protected areas and several Federal Land Management Agencies (FLMAs) were established (e.g., the Bureau of Land Management (BLM), U.S. Forest

Figure 1

Indigenous Ancestral Homelands in the United States. A) Alaska; B) Hawaii; C) Continental U.S.



Service (USFS), the National Park Service, etc.; Figure 2). Today, the federal government manages 640 million land acres, whereas Tribes hold rights to 326 land areas; however, the U.S. holds the titles to these lands in trust (BIA, 2020; Vincent et al., 2020; Figure 3).

Many people consider the establishment of FLMAs and the creation of Parks and Protected Areas (PPAs) as gains for conservation and outdoor recreation. Some Indigenous peoples denounce FLMAs and PPAs as products of colonialism that threaten their welfare, contribute to human rights violations, and increase the social exclusion and marginalization of their people (Colchester, 2004; Stevens, 2014). The creation of PPAs opened large recreational areas but simultaneously proffered negative impacts to Tribes, including the direct expropriation and losses of land custodianship, natural and cultural resources, jurisdiction, and sovereignty (King, 2007). The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) addresses these issues: "Indigenous peoples have the right to the lands, territories, and resources which they have traditionally owned, occupied or otherwise used or acquired" (United Nations, 2007). However, the United States has yet to adopt UNDRIP; thus, a pressing need for addressing Indigenous sovereignty exists at the land and recreation management levels.

Indigenous sovereignty issues have not been fully or satisfactorily addressed by FLMAs (Doshi, 2021); however, federal management plans (e.g., the Northwest Forest Plan) that include cooperative Tribal partnerships may accommodate Tribal needs and support government-to-government relationships (Stuart & Martine, 2005). To expand the positive outcomes of cooperative arrangements, we employ decolonization methodology—which is accountable to Indigenous sovereignty and futurity—to

Figure 2

Current U.S. Federal Land Management Agency Map. A) Alaska; B) Hawaii; C) Continental U.S.

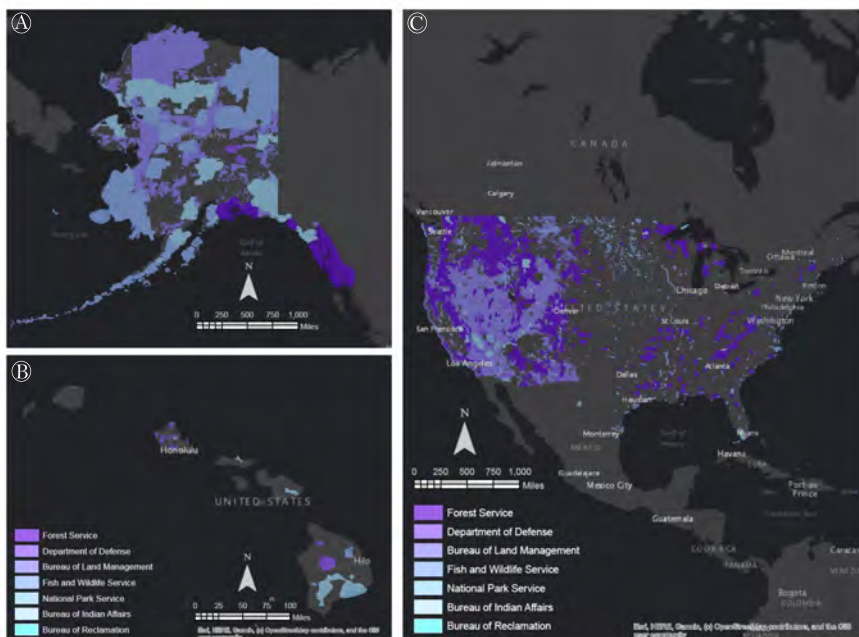
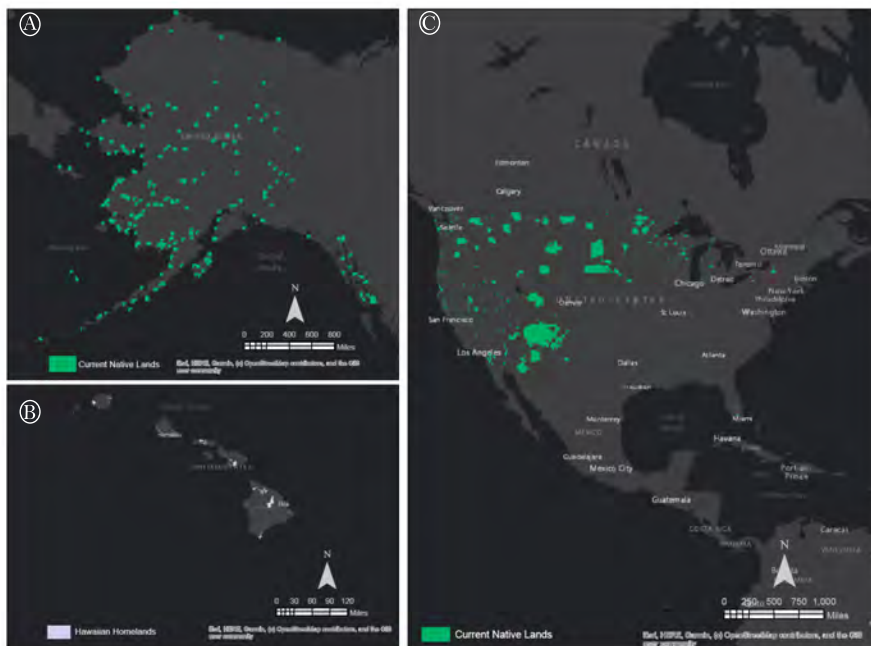


Figure 3

Current Indigenous Lands. A) Alaska; B) Hawaii; C) Continental U.S. Please note that these areas represent trust lands and not fee lands, as designated by the Federal government (this is why Native lands in Oklahoma, which are in fee status, are not included).



begin unsettling and decolonizing FLMAs (Tuck & Yang, 2012). Fully decolonizing FLMAs requires the dismantling of institutions into non-operational capacities and restoring Tribal land rights and governance. To initiate decolonization processes, we suggest ways for FLMAs to equitably incorporate Indigenous perspectives and underline mainstays of settler colonialism, including the dispossession of land, resources, peoples, and Indigenous Knowledges (Doshi, 2021; Wolfe, 2006). Because decolonization processes require Indigenous leadership, we place Indigenous people's interests, Knowledges, and leadership at the forefront of this paper (Smith, 2013).

As four Indigenous scholars, we reflect on the processes of decolonizing, unsettling, and interweaving Indigenous value systems and create suggestions for how FLMAs can reconstruct management practices. This critical thought-piece focuses on who should manage FLMAs; whose interests are served; who benefits from this unsettling; and who should implement the recommended changes (Smith, 2013). We employ our Indigenous Knowledges to reflect on how to operationalize Indigenous value systems contained within the four Rs: relationship (i.e., kinship obligations, the interrelationships of all things, and the inclusion of others), responsibility (i.e., community obligations to care for relatives—plants, animals, humans, etc.), reciprocity (i.e., cyclical obligations that reflect lifecycles and dynamics ingrained within relationships), and redistribution (i.e., sharing responsibilities to balance and rebalance relationships; Harris & Wasilewski, 2004). Using the four R's, we reweave park conceptions, reimagine park management, and reconfigure management foci. This process recognizes the significance of Indigenous peoples as keepers of biodiversity and thus may support conservation objectives for future generations.

Reweaving Park Conceptions

Reweaving park conceptions requires an understanding of the harmful vernacular encoded within FLMAs' governing concepts. Many FLMAs oversee designated Wilderness areas, which include lands wherein "...the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain" (Wilderness Act, 1964). This definition guides Wilderness outdoor recreation management which often focuses on mitigating the environmental impacts of recreation; however, it removes the reality that Native Americans tended these lands for millennia. It also paints an unrealistic image of lands as untouched spaces where nature remains separate from human interactions (e.g., outdoor recreation), which contributes to the hostile continuation of Indigenous land dispossession and the cultural erasure of Tribal peoples.

Previous research outlined the problematic aspects related to constructions of Wilderness and how PPAs were created to dispossess Indigenous peoples' rights (Dunbar-Ortiz, 2014; Spence, 1999; Stevens, 2014). Ideas of Wilderness extend beyond the physical characteristics of lands vacant from human interaction. Constructions of Wilderness inform perceptions and policies for managing 'wild' spaces for human activities (e.g., recreation; Manning, 1989). We reweave park conceptions to form a more realistic and Indigenous value-centric FLMA management framework.

Relationship

Many Indigenous cultures share relational aspects including strong relationships between ecosystem elements; Indigenous kinship obligations; and a system of interrelationships necessary to sustain all lifeways. Before colonization, Indigenous peoples

played essential roles as integrated species in their ecosystems. They were not visitors (e.g., recreationists) but mainstays of landscapes who relied on ecosystem health to fulfill their material, social, and cultural needs.

Indigenous peoples hold kincentric ecological responsibilities in which they view all life (e.g., animals and plants) as kin or relatives (Salmón, 2000). This worldview supports human interactions to maintain ecosystem health (e.g., providing nutrients to plants and food for other animals) and feeds back the nutrients that Indigenous peoples require (e.g., maintaining ecosystems in good balance to keep Indigenous peoples healthy; Salmon, 2000). This relationship aspect proves distinct to other ways of knowing that encapsulate humans and nature into dualistic domains (e.g., recreationists as land visitors), which inform policies (Rudy & White, 2014).

Reweaving park conceptions about human-land relationships requires a pairing of epistemologies (ways of knowing) and a blending of ontologies (ways of being; Inoue & Moreira, 2017). Indigenous relationship values are not embedded in the current functions of FLMA management nor FLMA relationships with Tribes. Therefore, FLMA should strengthen relationships with Tribes by inactivating problematic languages (e.g., Wilderness) and including authentic Indigenous narratives that describe the genealogies of human relationships with lands.

Responsibility

Indigenous communities enact responsibility for relatives, including human and nonhuman kin. These care obligations maintain a balance where humans work within ecosystems as invested partners. Many Indigenous lifeways incorporate communal investments in the health of ecosystem elements that contribute to global conservation: Indigenous peoples protect 80% of the world's biodiversity (Garnett et al., 2018). Therefore, Indigenous ecosystem responsibility obligations may contribute to global functions and FLMA conservation and recreation objectives. However, land dispossessions and federal management of lands make it difficult for Indigenous people to enact their responsibility values within their ancestral homelands.

Reciprocity

Indigenous values also incorporate reciprocity which links directly to relationships and responsibility because Tribal peoples care for animals and plants and receive direct and indirect benefits from their kinship systems. For example, the Karuk and Yurok Tribes have reciprocity-based co-management agreements with regional entities (e.g., USFS, Department of Interior, etc.) to restore culturally appropriate fire management practices (Marks-Block et al., 2019). The Tribes provide prescribed fire training to regional entities and implement traditional fire management practices to protect culturally important species (e.g., California hazelnut shrubs; Marks-Block et al., 2019). Because of these fire management practices, California hazelnut shrubs reinvest in Tribal communities by increasing the production of materials used for Tribal basketry traditions (Marks-Block et al., 2019). A dramatic distinction is thus created when contrasting this reciprocal kinship relationship with how FLMA manages PPAs for outdoor recreationists who can never fully connect with ecosystems or receive tangible reciprocal benefits from public lands. However, this could change if FLMA reweaves their focus to how humans and nonhumans benefit one another through systems of reciprocity.

Redistribution

Redistribution is central to reweaving park conceptions. FLMAs' usage of terms like "wild," "wilderness," and "nature" maintain a dichotomous understanding of humans as separate from environmental systems, which contrasts Indigenous Knowledges. By redistributing power dynamics and integrating Indigenous epistemologies, FLMAs can reweave the problematic aspects of park conceptualizations and create more accurate depictions of humans' historic roles in ecosystems. By pairing epistemological understandings and blending ontologies that inform land and recreation management directions, Indigenous worldviews may elevate into more equitable terms with standard science (Inoue & Moreira, 2017). Therefore, FLMAs should partner with Tribes through a system of co-equal management that incorporates Indigenous epistemologies into PPA conceptualizations and human responsibilities in ecosystems. This new system could result in co-management frameworks that merge epistemologies and lead to a broader FLMA ontological management philosophy. Ultimately, reweaving worldviews may create new conceptions and a more sustainable FLMA land and recreation management framework, which could reconfigure American perceptions about human responsibilities to maintain healthy ecosystems.

Reimagining Park Management

Under Executive Order 13175 (Tribal Consultation Policy) and Management Policies 2006 (4.1.4), the federal government recognizes the benefits of cooperative conservation with Tribal governments and follows Tribal Consultation Policies (Exec. Order No. 13175, 2000). The Department of Interior also has Tribal consultation policies (USDOI, 2009). However, each order and policy delegates Tribes to stakeholders but stakeholder and consultation approaches do not equal Tribal consent of managerial practices. Managerial authorities have no responsibility to enact Tribal input, which denigrates these processes to, at times, merely sounding boards for Tribes. Furthermore, Tribal consultation processes often occur after FLMAs have already made management-related decisions (Doshi, 2021). Therefore, we suggest a better structure.

Relationship

FLMA Tribal consultation policies do not integrate relationship aspects of the four Rs when Tribes are positioned as stakeholders who provide feedback but ultimately have no decision-making powers. In contrast, Indigenous value systems include non-hierarchical relationships that necessitate a co-equal management approach between FLMAs and Tribes. Ideal co-management approaches would situate Tribes at the same tables and office and with the same powers as FLMA managers for all decision-making.

Co-management between Tribes and FLMAs has been supported through legal and scientific measures (Doshi, 2021). Approaches that share characteristics with co-management ideas are employed in the Kasha-Katuwe Tent Rocks National Monument (which includes a National Recreation Trail) between the Cochiti Pueblo and BLM for recreation purposes (Nie, 2008). The BLM and Cochiti Pueblo cooperatively co-manage the area through a fee demonstration program, a visitor information center, and Tribal managerial responsibilities for trail maintenance, visitor services, and coordination efforts with law enforcement (Nie, 2008). Additionally, the agreement offers financial support for the Pueblo to fund managerial and monitoring staff (Nie, 2008). The USDA and the USFS also provide good case studies on co-management regimes

with Tribal entities that integrate Indigenous Knowledges and Indigenous-based ecosystem management objectives (Bussey et al., 2015; Carroll et al., 2010; Journey et al., 2017; Long & Lake, 2018; Marks-Block et al., 2019).

However, a need exists to integrate Tribal management of outdoor recreation activities and other forms of land management in all FLMAs. This power shift would ensure that legal oversight originates from Tribal communities who historically managed these lands for millennia. Therefore, we suggest that FLMAs decolonize current management practices by 1) creating co-management roles for Tribes and 2) working with Tribal Nations as family stewards of the land.

Responsibility

Indigenous tenets grounded in responsibility also support co-management frameworks. Current federal consultation frameworks prove challenging for many Tribes to navigate because their Traditional Knowledges cannot be piecemealed into distinct elements (e.g., the separation of lands, waters, and animals does not match nonlinear and systematic Indigenous epistemologies). Furthermore, FLMAs historically participated in land grabs of Indigenous homelands and dispossessed Indigenous peoples from their community obligations to care for relatives. A co-equal management approach would invest in the responsibility standards between Indigenous peoples and their kin and integrate new perspectives into all facets of PPA management.

Reciprocity

Nonlinear thinking and kinship systems integrate with reciprocity. Co-management frameworks could circulate responsibility between Tribes and FLMAs and create space for Indigenous ceremonial aspects of management that tie together with social systems (Sangha et al., 2015). Co-management frameworks could also create non-hierarchical relationships between Tribes and FLMA officials; thus, allowing Indigenous Knowledges to inform management policies. Such frameworks may prioritize Tribal research and conservation efforts and ensure that PPA use (e.g., outdoor recreation) does not create issues for Tribal ceremonial practices or generate harmful impacts to Tribal sacred areas.

Redistribution

The redistribution aspect of co-management includes sharing resources, time, knowledge, and labor responsibilities between Tribes and FLMAs. Redistribution could result in greater investments in cultural resources, increased FLMA capacity (e.g., hiring Indigenous managers), expanded ecological understandings, and the investment of financial resources into PPA cultural centers. Transitioning management responsibilities back to Tribes could help heal some of the trauma that continues to result from over 500 years of colonization and land dispossession.

The Biden Administration took one step in this direction by confirming Deb Haaland as the first Native American Secretary of the Interior. Haaland now oversees federal lands, waters, natural resources, and federal and Tribal relationships. Haaland's confirmation is a step toward decolonizing FLMAs and integrating Native leadership at the forefront of the management process; however, more work is needed to maintain this trajectory. Secretary Haaland and President Biden's goals to protect 30% of U.S. land and waters by 2030 include Indigenous-led conservation and a focus on Tribal sovereignty. However, centering Tribal sovereignty requires Tribal leadership of land and recreation management, especially at the decision-making levels (Doshi, 2021).

Reconfiguring Land Use Management Foci

FLMAs manage how humans interact with ecosystems, including outdoor recreation permitting systems, entrance fees, monitoring systems, restrictions, and closures. These management techniques lead to barriers in outdoor recreation relating to socioeconomic status, educational attainment, geographical constraints, cultural factors, discrimination, and white-centered framing (Scott & Lee, 2018; Ostergren, et al., 2005; Weber & Sultana, 2013). The idea that FLMAs were created for the American public is not translated by the disparities found in recreation and visitation reports.

Indigenous communities face cultural barriers when accessing their ancestral homelands. Tedious permitting processes require Tribes to surrender sacred data about ceremonial uses and significance of plants and traditional sites to obtain permits to gather culturally specific species (NPS Rule, 2016). Through these permitting processes, if Tribes want access to their traditional medicines, then governmental officials can inventory, monitor, and research information related to their Traditional Knowledges (NPS Rule, 2016). This breaches international guidelines for Tribal data sovereignty (e.g., UNDRIP) and could lead to the exploitation of Tribal Knowledges. Furthermore, Tribal access restrictions ideologically embody settler colonialism and white supremacy. Therefore, we suggest ways to reconfigure land access and outdoor recreation constraints to overcome these systemic barriers.

Relationship

FLMA use restrictions maintain barriers that fragment the possibilities of relationships between humans and ecosystems. The relationship between Indigenous peoples and lands spans millennia and includes most facets of Tribal cultures (e.g., creation stories, cosmology, traditions, subsistence, medicines, and spiritual beliefs lay the foundation of interconnections between human and nonhuman kin; Deloria, 2001). These circular relationships prove essential to the holistic wellness of ecosystems and humans. The linear relationship between FLMAs, Indigenous Peoples, and kin does not consider the familial and circular aspects of Indigenous relations (Simpson, 2004). Recreation and land use restrictions sever the circular aspects of Indigenous relations with landscapes and create linear relationships between park visitors and ecosystems (Simpson, 2004). Thus, FLMAs control the possible relationships between outdoor recreationists and ecosystems and permitting/fee systems maintain this control. Indigenous value systems do not support capitalistic penalties for relationship building between humans and nonhuman entities. Therefore, to reconfigure these relationship issues, we suggest that FLMAs remove or minimize (to the fullest extent possible) all barriers of access between humans and ecosystems, including permitting/fee systems and the requirements for Tribes to submit sacred information in exchange for access.

Responsibility

Indigenous value systems underline the responsibility for humans to care for non-human ecosystem functions that embody the relational aspects between kinship systems. Kinship approaches to land and recreation management are not ingrained into FLMA permitting/fee systems. Therefore, we suggest disrupting the power imbalances embedded within use restrictions, permitting, and fee systems. We also recommend that FLMAs develop an equity-based access framework that integrates public education about human relationships and responsibilities for ecosystem functions. When recreationists see themselves as functioning parts of the ecosystem instead of as visitors, it may generate more meaningful patterns of public environmental stewardship.

Releasing use restrictions for Indigenous peoples to access traditional sites and harvest medicines would support Tribal sovereignty.

Reciprocity

Fees, permits, and use restrictions do not support reciprocal Indigenous value systems. Cyclical obligations to all-relations can be honored through financial support for Indigenous governments to provide public education about human-land relations. Providing Indigenous peoples with a way to monitor their sacred areas could also mitigate the general public's misuse of these spaces. Creating co-management roles that center Indigenous leadership could place a stronger focus on ecosystem reciprocity without compromising Indigenous data sovereignty.

Redistribution

Shifting managerial responsibilities supports Indigenous redistribution values. Redistributing FLMA powers to a circular structure shared with Tribes would help dismantle the problematic aspects embedded within colonial and institutional power systems, and thus support equity-based recreation and land management practices without access barriers.

Management Implications

FLMAs should incorporate Indigenous perspectives into land and recreation management decision-making processes. Based on the four Rs and decolonizing methodologies, we suggest that FLMAs focus their efforts on 1) inactivating problematic languages and including authentic Indigenous land histories into environmental education programs; 2) creating equity-based co-management opportunities for Tribal Nations to oversee PPAs; 3) integrating Indigenous epistemologies and Tribal research priorities into management foci by placing Indigenous experts into managerial roles; 4) disrupting power imbalances at all levels; 5) removing recreation and land use fee structures and other barriers that prevent public access; 5) pairing Indigenous epistemologies and ontologies with current FLMA philosophies; 6) establishing and supporting Indigenous-based environmental education programs that focus on ecosystem functions, reciprocal relationships, and human responsibilities in PPAs (especially in terms of outdoor recreation); and 7) sharing resources, lands, time, knowledges, and managerial responsibilities with Tribes.

If put into action, this list of objectives would transform the functions of FLMAs and create a more equitable and Indigenous-centric framework to guide recreation and land management. Such shifting of functions would ultimately elevate Tribal Nations as land stewards of the same homelands they tended for millennia.

Conclusion

Decolonizing FLMAs cannot occur from within the federal government but must be considered through Indigenous perspectives. However, decolonizing federal institutions requires the complete restructuring of governmental processes, managerial frameworks, blending of epistemologies and ontologies, and shifting managerial foci. The suggestions we provide for how to begin decolonizing FLMAs equate to more Indigenous oversight of PPAs (via equity-based co-management) and the necessity of partnering with Tribes in every facet of management. State and local land managers may adapt these ideas into similar frameworks to restructure their capacity and foci

but Indigenous leadership is essential during these processes. This manuscript provides one of the first ruminations on how FLMAs can be decolonized. We strongly encourage more Indigenous scholars and Tribal peoples to continue reflecting on how FLMAs and the American public would benefit from such shifts in land and recreation governance. These shifts will help dismantle the status quo, minimize the continued oppression of Tribal peoples, honor and uphold Tribal sovereignty, and support the Tribal execution of land and recreation management objectives that use the same evidence-based Indigenous Knowledges that protect a majority of the world's biodiversity (Doshi, 2021).

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References

- Bureau of Indian Affairs. (2020). *Frequently asked questions*. U.S. Department of the Interior. <https://www.bia.gov/frequently-asked-questions>
- Bussey, J., Davenport, M. A., Emery, M. R., & Carroll, C. (2015). "A lot of it comes from the heart": The nature and integration of ecological knowledge in Tribal and nontribal forest management. *Journal of Forestry*, 114(2), 97–107. <https://doi.org/10.5849/jof.14-130>
- Colchester, M. (2004). Conservation policy and Indigenous peoples. *Environmental Science & Policy*, 7(3), 145–153. <https://doi.org/10.1016/j.envsci.2004.02.004>
- Carroll, M. S., Cohn, P. J., Paveglio, T. B., Drader, D. R., & Jakes, P. J. (2010). Fire burners to firefighters: The Nez Perce and fire. *Journal of Forestry*, 108(2), 71–76. <https://doi.org/10.1093/jof/108.2.71>
- Cronon, W. (1995). The trouble with wilderness: Or, getting back to the wrong nature. *Environmental History*, 1(1), 7–28. <https://doi.org/10.2307/3985059>
- Deloria, V. (2001). Traditional technology. In V. Deloria Jr. & D. Wildcat (Eds.), *Power and place: Indian education in America* (pp. 57–65). Fulcrum Publishing. <https://nycstandswithstandingrock.files.wordpress.com/2016/10/vine-deloria-jr-daniel-r-wildcat-power-and-place-indian-education-in-america.pdf>
- Doshi, S. (2021). *Biden Administrations Conservation Plan must prioritize Indigenous leadership*. American Progress. <https://www.americanprogress.org/issues/green/reports/2021/01/26/495054/biden-administrations-conservation-plan-must-prioritize-indigenous-leadership/>
- Dunbar-Ortiz, R. (2014). *An Indigenous peoples' history of the United States*. Beacon Press.

- Exec. Order No. 13175, 65 F.R. 67249-67252. (2000). <https://www.federalregister.gov/documents/2000/11/09/00-29003/consultation-and-coordination-with-indian-tribal-governments>
- Garnett, S. T., Burgess, N. D., Fa, J. E., Fernández-Llamazares, A., Molnár, Z., Robinson, C. J., Watson, J. E. M., Zander, K. K., Austin, B., Brondizio, E. S., Collier, N. F., Duncan, T., Ellis, E., Geyle, H., Jackson, M. V., Jonas, H., Malmer, P., McGowan, B., Sivongxay, A., & Leiper, I. (2018). A spatial overview of the global importance of Indigenous lands for conservation. *Nature Sustainability*, 1(7), 369–374. <https://doi.org/10.1038/s41893-018-0100-6>
- Harris, L. D., & Wasilewski, J. (2004). Indigeneity, an alternative worldview: Four Rs (relationship, responsibility, reciprocity, redistribution) vs. two Ps (power and profit). Sharing the journey toward conscious evolution. *Systems Research and Behavioral Science: The Official Journal of the International Federation for Systems Research*, 21(5), 489–503. <https://doi.org/10.1002/sres.631>
- Inoue, C. Y. A., & Moreira, P. F. (2016). Many worlds, many nature(s), one planet: Indigenous Knowledge in the Anthropocene. *Revista Brasileira de Política Internacional*, 59(2). <https://doi.org/10.1590/0034-7329201600209>
- Jurney, D. H., Bragg, D. C., Coleman, R. E., & Gonzalez, B. (2017). Lessons from a programmatic agreement and heritage-based consultations between Tribes and the National Forests of Arkansas and Oklahoma. *Journal of Forestry*, 115(5), 458–467. <https://doi.org/10.5849/jof.16-040>
- King, M. A. (2007). Co-management or contracting-agreements between Native American Tribes and the U.S. National Park Service pursuant to the 1994 Tribal Self-Governance Act. *Harvard Environmental Law Review*, 31, 475.
- Koch, A., Brierley, C., Maslin, M. M., & Lewis, S. L. (2019). Earth system impacts of the European arrival and great dying in the Americas after 1492. *Quaternary Science Reviews*, 207, 13–36.
- Long, J. W., & Lake, F. K. (2018). Escaping social-ecological traps through Tribal stewardship on National Forest lands in the Pacific Northwest, United States of America. *Ecology and Society*, 23(2). <https://doi.org/10.5751/ES-10041-230210>
- Manning, R. E. (1989). The nature of America: visions and revisions of wilderness. *Natural Resources Journal*, 29(25), pp. 25–40. <https://doi.org/10.1016/j.quasci-rev.2018.12.004>
- Marks-Block, T., Lake, F. K., & Curran, L. M. (2019). Effects of understory fire management treatments on California Hazelnut, an ecocultural resource of the Karuk and Yurok Indians in the Pacific Northwest. *Forest Ecology and Management*, 450, 117517. <https://doi.org/10.1016/j.foreco.2019.117517>
- National Park Service Rule No. 2016-16434, 81 F.R. 45024-45039. (2016). <https://www.federalregister.gov/documents/2016/07/12/2016-16434/gathering-of-certain-plants-or-plant-parts-by-federally-recognized-indian-tribes-for-traditional>
- Nie, M. (2008). The use of co-management and protected land-use designations to protect Tribal cultural resources and reserved treaty rights on federal lands. *Natural Resources Journal*, 48(3), 585–647.
- Ostergren, D., Solop, F. I., & Hagen, K. K. (2005). National park service fees: Value for the money or a barrier to visitation?. *Journal of Park & Recreation Administration*, 23(1), 18–36.
- Rudy, A. P., & White, D. (2014). Hybridity. In C. Death (Ed.), *Critical environmental politics—Interventions* (pp. 121–133). Routledge.

- Salmón, E. (2000). Kincentric ecology: Indigenous perceptions of the human-nature relationship. *Ecological Applications*, 10(5), 1327–1332. [https://doi.org/10.1890/1051-0761\(2000\)010\[1327:KEIPOT\]2.0.CO;2](https://doi.org/10.1890/1051-0761(2000)010[1327:KEIPOT]2.0.CO;2)
- Sangha, K. K., Le Brocq, A., Costanza, R., & Cadet-James, Y. (2015). Ecosystems and indigenous well-being: An integrated framework. *Global Ecology and Conservation*, 4, 197–206.
- Scott, D., & Lee, K. J. J. (2018). People of color and their constraints to National Parks visitation. *George Wright Forum*, 35(1), 73–82.
- Simpson, L. B. (2014). Land as pedagogy: Nishnaabeg intelligence and rebellious transformation. *Decolonization: Indigeneity, Education & Society*, 3(3), 1–25.
- Smith, L. T. (2013). *Decolonizing methodologies: Research and Indigenous peoples*. Zed Books Ltd.
- Spence, M. D. (1999). *Dispossessing the wilderness: Indian removal and the making of the national parks*. Oxford University Press.
- Stevens, S. (Ed.). (2014). *Indigenous peoples, national parks, and protected areas: A new paradigm linking conservation, culture, and rights*. University of Arizona Press.
- Stuart, C., & Martine, K. (Eds.). (2005). *Northwest Forest Plan—The first 10 years (1994–2003): Effectiveness of the Federal-Tribal relationship*. Tech. Paper. (R6-RPM-TP-02-2006).
- Tuck, E., & Yang, K. W. (2012). Decolonization is not a metaphor. *Decolonization: Indigeneity, Education & Society*, 1(1), 1–40.
- United Nations. (2007). *United Nations declaration on the rights of Indigenous peoples*. <https://undocs.org/A/RES/61/295>
- U.S. Department of Agriculture, Forest Service, Pacific Northwest Region. (2006). *Northwest forest plan: The first 10 years (1994–2003): Effectiveness of the federal-tribal relationship*. <https://www.fs.fed.us/r6/reo/monitoring/downloads/tribal/Nwfp10yrMonitoringReportTribal.pdf>
- U.S. Department of Interior. (2009). *Tribal consultation policy*. Secretary of the Interior. <https://www.doi.gov/sites/doi.gov/files/migrated/tribes/upload/SO-3317-Tribal-Consultation-Policy.pdf>
- Vincent, C. H., Bermejo, L. F., & Hanson, L. A. (2020). *Federal land ownership: Overview and data*. Congressional Research Service. <https://fas.org/sgp/crs/misc/R42346.pdf>
- Weber, J., & Sultana, S. (2013). Why do so few minority people visit National Parks? Visitation and the accessibility of “America’s Best Idea.” *Annals of the Association of American Geographers*, 103(3), 437–464.
- Wilderness Act, U.S.C. §2 (1964).
- Wolfe, P. (2006). Settler colonialism and the elimination of the Native. *Journal of Genocide Research*, 8(4), 387–409.

Research Note

Bold Moves for Visitor Use Management: Public Health, Public Engagement and Justice, Equity, Diversity, and Inclusion

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Abstract

Public land management is inherently complex and requires a systems approach that integrates ecological, economic, and social values. Currently, there are few tools and examples available for federal land management planning that use a systems approach. Issues are often approached from a disciplinary perspective, and outdoor recreation problems, assumptions, and solutions often focus too narrowly on how to mitigate recreation impacts as opposed to understanding the broader role of visitor use and access, public engagement, and public health in sustainable land management. The Visitor Use Management Framework (the Framework), developed by the Interagency Visitor Use Management Council (IVUMC, 2016) provides interagency guidance for managing public use on federal lands and waters. The Framework uses a process that can be incorporated into existing agency planning and decision making. It follows all of the Council agencies' (NPS, BLM, USFS, USFWS, ACoE, NOAA) planning principles and illustrates how to specifically address visitor experiences and resource protection with an integrated planning approach. This research note explores the evolving role of the Framework in sustainable recreation management and how public health, public engagement, and representation, inclusion, and access can be incorporated throughout the Framework to ensure planning decisions meet the needs, values, and preferences of diverse user groups. Further, this paper invites a broader discussion around next steps for boldly moving to integrate public health, public engagement, and representation, inclusion, and access more fully into all aspects of visitor use management, including the Framework. Collective effort and ongoing innovation is needed to ensure that the Framework is thoughtfully implemented in ways that provide opportunities to enhance outdoor recreation access and inclusion for a broader range of people.

Keywords

Visitor use management, sustainable recreation, public health, public engagement, representation, inclusion, access

Introduction

In 2020, the COVID-19 pandemic highlighted what recreation managers have known for years: outdoor recreation is essential to people's well-being. The dramatic changes in recreation on public lands and waters left managers and visitors scrambling to figure out how to keep recreation areas safely open and respond to visitor needs and resource impacts. Federal land and water management agencies (along with those at the state and local levels) used multiple strategies to manage the overwhelming demand for outdoor recreation opportunities. At the same time, the term sustainable recreation became common across the U.S., and organizations that had traditionally focused on tourism and economic development (e.g., destination marketing organizations, state tourism offices etc.) started addressing the need to manage visitor use more explicitly (e.g., Recreate Responsibly, Utah Small But Mighty). The pandemic also further exposed systemic social inequities with respect to accessing recreation amenities and the design of those amenities.

This idea of sustainable recreation is not new to federal land and water managers. Several federal agencies (BLM, NPS, USFS) incorporate sustainable recreation or related concepts into their policies (BLM, 2014; NPS, 2016; USFS, 2010). Yet, many managers struggle with how to balance changing recreation use with resource protection and recreation management is often narrowly focused on mitigating impacts to water, wildlife, plants, archeological sites, etc. Public engagement, social science, traditional ecological knowledge, place-based connections, and community perspectives are not included in the early stages of planning to the extent needed, if at all. Many recreation management approaches and tools were developed in the 1970s and 1980s (Clark & Stankey, 1979; Stankey et al., 1984) and reflect a narrow focus on specific problems such as crowding, user conflicts, and resource damage (Cervený et al., 2020). This approach often does not consider the root causes for changing visitation and subsequent impacts, and instead focuses on solutions that may or may not meet visitors' needs. Recreation management has often been over-simplified to an equation of more people = more impacts where people are viewed as a management problem in pristine ecosystems (Cervený et al., 2020). This perspective fails to recognize the full spectrum of recreation settings and opportunities and the role of serving the public in land and water management, as well as the broader role of visitor use, partnerships, public engagement, and stewardship in sustainable land management.

Visitors to public lands and waters are less diverse (race, ethnicity, age, socioeconomic status, etc.) than the U.S. population (Outdoor Foundation, 2019; Pettebone & Meldrum, 2018; USFS, 2019). Historic and contemporary barriers to outdoor recreation participation include a lack of time, racial discrimination, being uncomfortable in the outdoors, distances required to travel to recreation sites and natural areas, and lack of information (Finney, 2014; Flores et al., 2018). These barriers are an indicator of the larger systemic inequities that are perpetuated by problem focused recreation management. Recreation management may inadvertently reduce visitor diversity by increasing existing barriers or introducing new barriers. The same disparities in visitation to public lands are equally prevalent in terms of health outcomes. An abundance of evidence indicates that disparities in health between Black, Indigenous, and people of color (BIPOC) and whites have not improved over time, are getting worse, and are linked to the social determinants of health (physical and social environments) such as housing, transportation, streetscapes, and access to natural spaces (Bashir, 2002; Byrd

& Clayton, 2001; Cummins & Jackson, 2001; Frumkin, 2016; Fullilove, 1998; Kawachi, 1999; Nelson, 2002; Williams, 2016, as cited in Coburn, 2004). Improving equitable access to public land and water could also have a positive impact on improving health outcomes and reducing health disparities.

Recent publications (Cervený et al., 2020; Selin et al., 2020) have identified the need for new research, tools, case studies, and approaches that shift from a problem-focused orientation to recreation management to a systems approach based on the multifaceted relationships people have with the outdoors. A systems approach to outdoor recreation considers multiple variables of the human and ecological environments and how they interact with each other instead of focusing on individual users or linear cause and effect relationships. This, in turn, allows resource managers, visitors, and others to adapt to recreation management challenges as they emerge (McCool and Kline, 2020).

In *A Research Strategy for Enhancing Sustainable Recreation and Tourism on Public Lands* (Cervený et al., 2020, p. 10), sustainable recreation management is defined as “the provision of desirable outdoor opportunities for all people, in a way that supports ecosystems, contributes to healthy communities, promotes equitable economies, respects culture and traditions, and develops stewardship values now and for future generations.” One approach to planning for sustainable recreation management is application of the Visitor Use Management Framework (the Framework) published by the Interagency Visitor Use Management Council (IVUMC) in 2016. Proactive visitor use management is fundamental for maximizing benefits for visitors while achieving and maintaining desired resource conditions and visitor experiences on federally managed lands and waters. The Framework encourages collaborative development of long-term strategies for providing access, connecting visitors to key recreation opportunities, protecting resources, and managing visitor use.

Since the Framework was first published, the IVUMC has gathered examples, case studies, and feedback on its implementation. While the Framework takes a multi-disciplinary approach to identifying and defining desired conditions for both resources and visitor experiences, there is a recognition that the Framework needs to bolster guidance and best practices in key areas that would truly promote a systems approach. This research note explores the evolving role of the Framework in sustainable recreation management and how public health, public engagement, and representation, inclusion, and access can be incorporated throughout the Framework to ensure planning decisions meet the needs, values, and preferences of diverse user groups. Further, this paper invites broader discussion around next steps for boldly moving to integrate public health, public engagement, and representation, inclusion, and access into all aspects of visitor use management, including more directly into the Framework.

Literature Review

Decades of recreation and visitor management have taught us that more attention needs to be placed on (1) working collaboratively to articulate desired resource conditions and experiences (McCown et al., 2011; McIver et al., 2021; National Recreation and Parks Association, 2019); (2) thoroughly understanding the link between aspects of visitor use and achievement of desired conditions (IVUMC, 2016); and (3) commitment to active management, monitoring, and adaptation over time (Pettebone and Meldrum, 2018; Selin et al., 2020). The fundamentals of the Framework are rooted in

rational, evidence-based planning models that conform to agency legal requirements (IVUMC, 2016). However, the content of various plan components can be developed in a manner that reflects emerging opportunities to connect public lands with public health and ensure opportunities incorporate the needs and desires of more diverse stakeholders and community members.

While public involvement is one of four concepts that are universal to the Framework, VUM-specific guidance for public engagement has been limited. The Framework references the Council on Environmental Quality's *Collaboration in NEPA (National Environmental Policy Act): A Handbook for NEPA Practitioners* (CEQ, 2007). Though agencies have followed applicable laws, regulations, and policies for public involvement in VUM planning (most often related to adhering to NEPA), planning efforts generally do not go beyond basic requirements. However, the theory and practice of strengthening public engagement in management of public lands and waters has advanced considerably in recent years, leading to substantial outcome improvements. For example, empirical studies have shown that multi-stakeholder collaborative governance has enhanced planning efficiency and increased the pace and scale of forest restoration (McIver & Becker, 2021). There is increasing recognition that VUM would likely be more successful in reaching or exceeding goals for improving visitor experiences, satisfaction, and safety, as well as resource protection, if agencies invested in broader, deeper, and more inclusive public engagement (Build the Field, 2015; Flores et al., 2018; McCown et al., 2011; NRPA, 2019; Taylor, 2014). Such efforts would mean earlier and more deliberative outreach, including with stakeholders and communities that have not traditionally been represented in agency planning, as well as allocating more time towards building relationships, sharing information, and supporting collaborative discussions.

Mounting evidence also demonstrates the connection between health and time spent outdoors. Time spent in natural spaces has benefits ranging from reduced mortality and chronic disease related to inactivity; reduced stress, anxiety, and depression; improved respiratory health and immune function; social connection; child development; and reduced vitamin D deficiency (Hartig et al., 2014). Public health and city planning evolved together in the late-19th century in order to reduce the negative impacts of rapid industrialization, urbanization, and spread of infectious diseases (Corburn, 2004). Planning and public health have become more disconnected in years since, with public health focusing on biomedical factors and land use decisions seldom considering health. However, growing awareness around the relationship between the built environment and health, such as pollution, lack of physical activity, and environmental justice concerns, is returning a focus to the critical connection between public health and outdoor recreation (Corburn, 2004). Recommendations have emerged from the literature to make the case for public health goals related to outdoor recreation planning, to make sure health is considered in these efforts, and to support conservation and recreation. This includes specific measures for future monitoring and advocacy and survey tools to quantify health impacts of outdoor recreation (Cohn et al., 2016; Schultz et al., 2016).

Emerging research on diversity, inclusion, and access in outdoor recreation management indicates an opportunity to more deliberately incorporate these concepts into VUM planning. There is a need to address systemic inequities around who has traditionally been welcomed as visitors to public lands (i.e., representation) and waters as well as differences in desired recreation experiences based on cultural practices and

physical and psychological safety (Cervený et al., 2020). Multiple affinity groups (e.g., Latino Outdoors, Outdoor Afro, Diversify Outdoors) are organizing outings and other ways for BIPOC communities to connect to the outdoors (Flores & Kuhn, 2018), but there is limited research on how to address diversity and inclusion in VUM planning to achieve more equitable visitor use on public lands and waters.

Discussion

There is an opportunity to take bold steps to accelerate progress integrating public health, public engagement, and representation, inclusion, and access more deliberately in all aspects of visitor use management. This starts at the structural level with considerations of how VUM could inadvertently reduce visitor diversity by increasing existing barriers or introducing new barriers. For example, management strategies that focus on permits or timed entry may disproportionately affect those without reliable internet access or people from working class communities who have limited leisure time. As a result, VUM projects should incorporate and articulate specific goals related to enhancing access and inclusion for all people. And while there are health benefits related to time spent outdoors on public lands and waters, an active and intentional integration of public health concepts in VUM planning processes would enhance these benefits.

The IVUMC has identified initial suggestions for integrating these concepts into the Framework, beginning with a focus on existing and potential relationships between agencies and stakeholders, including indigenous people, non-users (e.g., people who do not currently visit public lands and waters to recreate), and those previously displaced (e.g., people who no longer visit a place) from these areas. Keeping symbiotic relationships at the center of the process is critical for understanding and incorporating diverse perspectives. These relationships will also help identify what language and terms may be most appropriate for the project area and the implicit and explicit barriers to visitor use. For example, understanding the different names used to refer to people, places, and resources associated with the project is important, as is identifying specific terms that should or should not be used.

Some additional questions include: What definitions should the visitor use management community use for key terms such as equity, representation, access, and inclusion? How do terms such as outdoor recreation, visitor, and user or non-user create initial barriers preventing entry, representation, or engagement in the planning process? What key concepts, terminology, cultural competencies, knowledge, skills, and public engagement methods are important to focus on? What learning and self-education should managers be doing?

Asking questions about how these topics intersect in specific VUM projects may also help advance additional discussions around what success looks like and how to anticipate and address challenges. More specifically, there are opportunities to integrate these concepts throughout the Framework to fully embrace a systems approach. The Framework is organized by four elements including Element 1, Build the Foundation; Element 2, Define Visitor Use Management Direction; Element 3, Identify Management Strategies; and Element 4, Implement, Monitor, Evaluate, and Adjust. Suggestions for integrating public health, public engagement, and representation, inclusion, and access in each of the four elements are presented below.

Element 1: Build the Foundation

Identify requirements for including diversity and equity (or lack thereof) within law, regulation, and policy and the effect on representation, inclusion, and access in the project area, (e.g., do legal requirements perpetuate systemic inequities and if so, how can the inequities be reduced?). As part of determining information needs, evaluate gaps in previously collected data (e.g., what questions weren't asked, who was not included?). For example, what are the demographics of the surrounding area and how does that compare to the demographics within the project area? How thorough was public engagement in previous planning efforts that set the general management direction for the project area and how were BIPOC represented? What roles have BIPOC played in the history of the project area and how have those histories been memorialized, revised, obscured, or erased? Explore whether the community or neighboring communities proximate to the project area have established community health goals. Many tax-exempt hospitals create community health needs assessments and community health improvement plans that outline issues, goals, and strategies. As existing information and current conditions are compiled, evaluate community health conditions in addition to resource and visitor use data. Finally, consider ways to broaden the project team to ensure representation and expertise. Explore ways to use techniques such as storytelling in addition to facts and figures to share why the project is needed and to engage the broadest possible representation of stakeholders.

Element 2: Define Visitor Use Management Direction

The preparation of desired condition statements is one of the most impactful opportunities in the VUM Framework to fully understand and articulate diverse perspectives about the area's importance. Look for opportunities to state desired conditions related to public health and representation, inclusion, and access directly. It is important to consider diverse backgrounds, perspectives, motivations, and preferences, as well as fully evaluate how defining appropriate visitor activities, facilities, and services may prevent or hinder access for some people. Identify activities, facilities, and services that are conducive for healthy behaviors and promote representation, inclusion, and access. Identify indicators and thresholds that monitor change in desired conditions related to health and representation, inclusion, and access. Before moving to the next element, assess whether the visitor use direction for the area truly reflects a vision shared by diverse range of stakeholders.

Element 3: Identify Management Strategies

Explore where and how visitor use management strategies can provide opportunities to enhance representation, inclusion, and access and public health for a broader range of people. Historically, federally managed lands and waters have been places where people with specialized equipment or knowledge about the area predominate (Rose & Paisley, 2012; Rosen 2010). Strategies such as establishing a system to issue permits to entities dedicated to offering hands-on programs that introduce underserved populations to public lands or serve identified community health needs can help break down barriers. As the visiting public better reflects population demographics, federal land and water managers should strive to provide high-quality and diverse visitor experiences considering social and environmental justice factors, such as race, class, gender, and age (IVUMC, 2019).

Element 4: Implement, Monitor, Evaluate, and Adjust

When evaluating existing monitoring efforts, look for ways to include questions that traditionally haven't been asked such as: Have visitors been displaced? How have VUM actions affected land and water use in nearby areas? What are the users and non-users saying about the project area? Who feels included and who feels excluded or unwelcome? How can relationships established as part of this process be maintained and enhanced in the future? For public health, compare monitoring information to desired conditions and available community health goals and be sure to communicate this information with health partners. In consultation with community partners, evaluate the need to adjust management strategies to achieve desired diversity and health outcomes.

Conclusion and Management Implications

Lessons learned from early applications of the Framework across federal lands and waters confirm the need to integrate public engagement, public health, and representation, inclusion, and access into visitor use management planning. For example, one of the keys to the success of the USFS's Maroon Bells-Snowmass Wilderness Overnight Permit System was ongoing public engagement with active stakeholders and communities who supported the need for the project (Hopkins, 2018). Another example comes from Castillo de San Marcos National Monument where National Park Service staff used culturally competent focus groups within the Hispanic community members to understand why they did not use the site (Ryan et al., 2020). This led to a visitor use management plan that better met the needs of a diverse range of stakeholders.

As the Framework continues to be integrated into federal agency planning processes, it should be accompanied by new and innovative approaches to visitor use management planning. Much of this work can and should happen prior to formal environmental analysis. As with all visitor use management efforts, the time spent should be commensurate with where the project falls on the sliding scale of analysis (IVUMC, 2016). The suggestions in this research note represent a further shift toward the need and commitment for a more integrated and collaborative approach for visitor use management planning. The management implications include better public understanding of a project's purpose and need, more inclusive and equitable public engagement that results in improved access for and representation of diverse visitors, improved individual and community health outcomes from explicitly incorporating public health goals into visitor use management planning, and long-term support and stewardship for land and water management. Ultimately, the thoughtful implementation of the Framework can provide opportunities to enhance access and inclusion for a broader range of people including ensuring diverse perspectives and stakeholders (e.g., non-visitors, youth, underserved, etc.) are fully engaged and using a public health lens to help guide VUM efforts toward strategies that are equitable and inclusive.

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References

- Bashir, S. A. (2002). Home is where the harm is: inadequate housing as a public health crisis. *American Journal of Public Health*, 92(5), 733–738.
- Build the Field. (2015). *Community engagement assessment tool*. Build the Field of Community Engagement Partners.
- Bureau of Land Management [USDA BLM]. (2014). *Planning for recreation and visitor services*. H-8320-1
- Byrd, W. M., & Clayton, L. A. (2001). *An American health dilemma: Race, medicine, and health care in the United States 1900-2000* (Vol. 2). Routledge.
- Cerveney, L., Derrien, M. & Miller, A. (Eds.). (2020). *A research strategy for enhancing sustainable recreation and tourism on public lands*. USDA Forest Service, Pacific Northwest Research Station, General Technical Report 991.
- Clark, R., & Stankey, G. (1979). *The recreation opportunity spectrum: A framework for planning, management, and research*. USDA Forest Service, Pacific Northwest Research Station, General Technical Report 98.
- Cohn, J., Loh, T. H., & Götschi, T. (2016). Development of a survey tool to quantify health impacts of trail use. *Journal of Park and Recreation Administration*, 34(3), 36–51.
- Corburn, J. (2004). Confronting the challenges in reconnecting urban planning and public health. *American Journal of Public Health*, 94(4), 541–546.
- Council on Environmental Quality (CEQ). (2007). *Collaboration in NEPA: A handbook for NEPA practitioners*.
- Cummins, S. K., & Jackson, R. J. (2001). The built environment and children's health. *Pediatric Clinics of North America*, 48(5), 1241–1252.
- Finney, C. (2014). *Black faces, White spaces: Reimagining the relationship of African Americans to the great outdoors*. The University of North Carolina Press.
- Flores, D., & Kuhn, K. (2018). Latino outdoors: Using storytelling and social media to increase diversity on public lands. *Journal of Park & Recreation Administration*, 36(3), 47–62.
- Frumkin, H. (2016). *Urban sprawl and public health*. Public health reports.
- Fullilove, M. T. (1998). Promoting social cohesion to improve health. *Journal of the American Medical Women's Association* (1972), 53(2), 72–76.
- Hartig, T., Mitchell, R., De Vries, S., & Frumkin, H. (2014). Nature and health. *Annual Review of Public Health*, 35, 207–228.
- Hopkins, K. (2018, March 7). *Maroon Bells-Snowmass wilderness overnight visitor use management plan*. Presented at Rocky Mountain Land Use Institute Conference, Denver, CO.
- Kawachi, I. (1999). Social capital and community effects on population and individual health. *Annals of the New York Academy of Sciences*, 896(1), 120–130.
- Outdoor Foundation. (2020, December 31). *2020 Outdoor Participation Report*. <https://outdoorindustry.org/resource/2020-outdoor-participation-report/>
- McCool, S. F., & Kline, J. D. (2020). Chapter 11: A systems thinking approach for thinking and reflecting on sustainable recreation on public lands in an era of complexity, uncertainty, and change. In *Igniting research for outdoor recreation: Linking science, policy, and action*. USDA Forest Service, Pacific Northwest Research Station, General Technical Report 987.

- McCown, R. S., Tuxill, J. L., Layen, D. N., Mitchell, N. J., Manning, R. E., & Jewiss, J. L. (2011). *Beyond outreach handbook: A guide to designing effective programs to engage diverse communities*. National Park Service Conservation Study Institute.
- McIver, C. P., & Becker, D. R. (2021). An empirical evaluation of the impact of collaboration on the pace and scale of National Forest Management in Idaho. *Forest Science*, 67(1), 49–59.
- Morris, N. (2003). *Health, well-being and open space*. Edinburgh College of Art and Heriot-Watt University.
- National Park Service [USDI NPS]. (2016). *Green parks plan: Advancing our mission through sustainable operations*. Washington, DC. <https://www.nps.gov/subjects/sustainability/upload/NPS-Green-Parks-Plan-2016.pdf>.
- National Recreation and Parks Association. (2019). *Community engagement resource guide for creating equitable access to high performing parks*. <https://www.nrpa.org/contentassets/19b3cbe05a634d5e8d3b712dbc8aa9d0/community-engagement-guide-nrpa.pdf>
- Nelson, A. (2002). Unequal treatment: confronting racial and ethnic disparities in health care. *Journal of the National Medical Association*, 94(8), 666.
- Pettebone, D., & Meldrum, B. (2018). The Need for a Comprehensive Socioeconomic Research Program for the National Park Service. *The George Wright Forum*, 35(1), 22–31. doi:10.2307/26452988
- Ryan, M., Lawson, S., Larkin, A., Roberts, S., & Pettebone, D. (2020). Engaging minority communities in local national park units through culturally competent focus groups. *Journal of Park and Recreation Administration*, 38(1), 46–56.
- Rutt, C. D., Pratt, M., Dannenberg, A. L., & Cole, B. L. (2005). Connecting public health and planning professionals: Health impact assessment [To Rally Discussion]. *Places*, 17(1).
- Selin, S., Cerveny, L., Blahna, D., Miller, A. (Eds.). (2020). *Igniting research for outdoor recreation: Linking science, policy, and action*. USDA Forest Service, Pacific Northwest Research Station, General Technical Report 987.
- Schultz, C. L., Layton, R., Edwards, M. B., Bocarro, J. N., Moore, R. L., Tepperberg, S., & Floyd, M. F. (2016). Potential measures for linking park and trail systems to public health. *Journal of Park and Recreation Administration*, 34(1), p?.
- Stankey, G., McCool, S., & Stokes, G. (1984). Limits of acceptable change: A new framework for managing the Bob Marshall Wilderness Complex. *Western Wildlands*, 10(3), 33–37.
- Taylor, D. (2014). *The state of diversity in environmental organizations*. Green 2.0. http://orgs.law.harvard.edu/els/files/2014/02/FullReport_Green2.0_FINALReducedSize.pdf
- United States Forest Service [USDA USFS] (2010). *Connecting people with America's great outdoors: a framework for sustainable recreation*. Recreation, Heritage and Volunteer Resources. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprd5346549.pdf.
- Williams, D. R., & Collins, C. (2016). *Racial residential segregation: A fundamental cause of racial disparities in health*. Public health reports.

Research Note

Local Partnerships for Health on National Forests

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Abstract

The USDA Forest Service has recently piloted health partnerships that facilitate therapeutic outdoor experiences on national forests, building on the growing evidence of the multiple health benefits of activities and time spent in nature. This article presents brief case studies of three pilot partnerships between national forests and health organizations in California, Indiana, and Georgia (USA). These partnerships deliver nature-based programming for the general public as well as those who are in recovery from major surgeries, have been diagnosed with cancer, and face chronic health challenges. To help recreation managers and policy makers understand the potential for such local health partnerships in a federal context, we describe the programs' enabling conditions, their incorporation of service and stewardship activities, and the challenges and successes they have faced. Insights inform an expanding variety of health partnership models that advance the interconnectedness of human and ecosystem health on public lands as a fundamental dimension of sustainable recreation management.

Keywords

Public health, public land, partnerships, recreation, stewardship, USDA Forest Service

Introduction and Background

Many have suggested that public lands management has entered a new era in its evolution, focused on the mutual and interconnected health of people and ecosystems (Dustin et al., 2018; Hendricks et al., 2019; Rice et al., 2020; Romagosa et al., 2015). While the previous era treated outdoor recreation amenities as non-essential, "nice to have" resources, this new era channels evidence and momentum for recreation's central role serving fundamental human health needs. In some ways, this returns to foundational thinking in the creation of parks in the early 20th century as "breathing places" for an urbanizing population (Hendricks et al., 2019). This new era is inspired in part by Western society's contemporary human health challenges (e.g., sedentary

lifestyles, stress, chronic diseases), that are shaped by everyday patterns of life that have rescripted people's relationships with natural environments.

Research has shown the importance of nature—in all its forms—for maintaining people's health, as well as promoting recovery after stressful events (Frumkin et al., 2017; Thomsen et al., 2018). This growing body of work has evaluated multiple mental and physical health outcomes from engagements with different natural environments, considering pathways through stress reduction, attention restoration, increased physical activity, social connectivity and cohesion, and improved immune function (Frumkin et al., 2017; Thomsen et al., 2018). These studies have examined different kinds of nature, different social environments, and different activities, and have begun to examine the effects of various doses of nature exposures and activities, and the duration of those effects.

The scientific evidence on nature and human health has prompted a variety of programs on public lands, with nature being seen as “an under-utilized public resource in terms of human health and well-being, with the use of parks and natural areas offering a potential gold mine for population health promotion” (Maller et al., 2006, p. 52). In 2013, the American Public Health Association formally recommended that health professionals partner with public land agencies (American Public Health Association, 2013). Nature-health programs facilitate outdoor experiences in “public nature,” often relying on partnerships among private and public entities, engaging staff from hospitals, universities, non-profit organizations, and land management agencies to develop, implement, and evaluate programs (Mowen et al., 2009; Thomsen et al., 2013). By building on the skills and networks of health organizations and land managers, these partnerships have fostered new alliances at the interface of public lands and public health. They also require institutional learning around organizational cultures, competencies, and processes that often present bureaucratic and logistical challenges.

Some land management agencies have adopted national-scale implementation of health programming. The US National Park Service, for example, began its “Healthy Parks, Healthy People” program in 2010, and similar national programs have been initiated in park systems in Australia, Canada, Spain, and elsewhere (Rice et al., 2020; Romagosa et al., 2015). U.S. nonprofit organizations such as Parks Rx America connect individual health care providers with tools (such as prescriptions) to encourage their patients to visit nearby parks and other natural areas (Seltenrich, 2015). Some programs focus on building individual habits around physical activity and nature connections, and others on building community around shared activities in shared spaces.

While human health is increasingly seen as an important objective of sustainable recreation in land management agencies (Cervený et al., 2020), operationalizing sustainable recreation has varied in practice (Selin, 2017). Sustainable recreation management draws on multi-dimensional concepts of sustainability, defined as “the provision of desirable outdoor opportunities for all people, in a way that supports ecosystems, contributes to healthy communities, promotes equitable economies, respects culture and traditions, and develops stewardship values now and for future generations” (Cervený et al., 2020, p. 10). This definition, explicitly mentioning healthy communities, considers sustainability more broadly than agencies' more typical focus areas, which include sustainable operations, budgetary limits, conservation of natural resources, and other operational and ecological factors (Ma et al., 2020; Selin, 2017).

Recreation partnerships have become an established way of accomplishing work in land management agencies (Seekamp & Cervený, 2010), and sustainable recreation strategies position such partnerships in central roles (Selin, 2017). Unified or coordinated approaches to health partnerships, however, have yet to be adopted by many agencies, and questions persist around implementation and standards of practice. Research has explored these partnerships and programs in the context of county and municipal parks, and national-scale efforts (Liechty et al., 2014; Mowen et al., 2009; Razani et al., 2016; Rice et al., 2020; Romagosa et al., 2015), but there has been little focus on how local health partnerships have been operationalized in federal land management contexts. To fill this gap, the aim of this research note is to help land managers and policy makers understand the local context and potential for such health partnerships, focusing on brief case studies of grassroots pilot partnerships on national forests in California, Indiana, and Georgia (USA).

Case Studies

The three case studies presented are a set of local partnerships that were awarded competitive funds (about \$6,000 each) through the Forest Service's national office in 2018, the first health partnerships in the agency to receive such dedicated funding. We used published reports, public presentations, and internal program documents to understand the key elements of each partnership. These were supplemented by unstructured phone and email conversations with key staff from the national forests and partner organizations to better understand contextual factors, such as the conditions that have enabled partnerships, institutional and funding supports, challenges and successes, the development of evaluation components, and potential future directions. Key elements of the three case studies are summarized in Table 1.

Table 1
Health Partnership Case Studies: Program Details

| Program | Land Management Partner | Health Partner | Primary Activities | Supplementary Activities |
|--|---------------------------------------|---------------------------|--|--|
| Community Wellness Outings (CA) | Lake Tahoe Basin Management Unit | Barton Health | Walking, snowshoeing, skiing, interpretation | Accessibility evaluations, staff wellness/safety clinics |
| Healthy Hoosier Hikes (IN) | Hoosier National Forest | Indiana University Health | Hiking | Staff wellness sessions, service day |
| Casting for Recovery-Georgia Retreats (GA) | Chattahoochee-Oconee National Forests | Casting for Recovery | Fly fishing | Hiking, mindfulness activities |

Health Partnership 1: Community Wellness Outings (California)

In 2016, a physician with Barton Health, a nonprofit health provider in South Lake Tahoe, California, proposed an idea to the forest supervisor and public services staff on the Lake Tahoe Basin Management Unit (LTBMU). The idea—to jointly host wellness outings on local trails—was prompted by concerns that community members were not getting sufficient physical activity, and that a common barrier was a lack of confidence in pursuing outdoor activities. Managers on the LTBMU, who oversee most lands in the Lake Tahoe Basin, saw an opening to better serve local communities. The partnership that emerged—and which has become a model for other national forests—was motivated by a desire to “unite health providers and public land managers to deliver health benefits for at-risk populations,” propelling health care toward a proactive promotion of wellness through community resources (e.g., parks and forests), rather than just treating illness (Bannar et al., 2017). The budget for program delivery per year is about \$10,000, and is facilitated through a “Challenge Cost Share Agreement,” a Forest Service agreement that allows both entities to contribute funds and other resources to pursue mutual partnership goals. For the first years of the partnership, this has been done entirely through non-cash and in-kind contributions from both partners to staff outings and manage programming.

The partnership’s primary activity is to provide vulnerable and at-risk populations with no-cost, hour-long guided and interpretive outings on the LTBMU, promoting the therapeutic experience of nature and movement, with the reassuring presence of health care professionals (see Figure 1). The LTBMU supports logistics and identifies appropriate locations for outings, and Barton Health recruits participants, manages liability, and provides the medical support for the outings. For some specialized outings, registration is necessary, while others are geared toward drop-ins. Between 2016 and 2019, 25 outings were attended by hundreds of participants, held at popular sites such as Camp Richardson Resort, Taylor Creek Visitor Center, and Tallac Historic Site. In addition to outings for the general public, outings are designed for several distinct populations, including (a) “end of life healing” outings for people in the end-of-life phase, (b) “getting back into the groove” outings for patients recovering from orthopedic surgeries, (c) “finding comfortability with nature” outings for at-risk youth, and (d) “freedom to explore the outdoors” outings for emotionally and behaviorally challenged youth. Tailored activities for the outings include sensory-focused interpretation, ski and snow-shoe walks, and unstructured play. Barton Health has led the program’s research and evaluation component, including participant surveys for studying health outcomes.

Additional partnership activities have included engaging wellness outing participants in a program to provide feedback on accessibility challenges at developed recreation sites, to inform improved site designs. Barton staff have hosted clinics and trainings for LTBMU staff to teach best practices for reducing exposure to environmental hazards and avoiding occupational injuries, as well as guiding forest-based practices for reducing stress and aiding relaxation. Outdoor healing spaces are currently being planned in facility designs on the Barton campus and the LTBMU.

While the first years of the partnership have received accolades, it recently has faced challenges related to changes in leadership and staffing from both partner organizations. This has led to institutional gaps in knowledge, and the need to rebuild the team for program delivery. Coupled with the cancelation of all programs in 2020 because of COVID-19, the partnership has lost some momentum while waiting to

Figure 1

Forest Service Staff and Barton Health Patients at the first Community Wellness Outing on the Lake Tahoe Basin Management Unit



safely reinitiate programming. An ongoing and related institutional focus for Barton has been managing program risks, which are highly scrutinized in health care contexts, especially when many participants are elderly or recovering from surgeries, and may be venturing into outdoor environments they haven't experienced in many years. Partners have remained committed to managing risk while trying to ensure the beneficial challenges of real-life environments remain, staffing activities with experienced health care providers, selecting sites with appropriate access and facilities, and ensuring emergency contingencies are in place (Proctor, 2020).

Health Partnership 2: Healthy Hoosier Hikes (Indiana)

Inspired by the early successes of the Barton-LTBMU partnership model, a recreation staff member on the Hoosier National Forest (HNF) proposed a partnership to the Community Health Department at Indiana University Health-Bloomington in 2018, hoping to serve nearby communities faced with chronic health issues. The ensuing partnership—Healthy Hoosier Hikes—has taken advantage of the reach of Indiana University Health's network and has also connected with the School of Public Health at Indiana University-Bloomington. This situates the partnership well for an integrated promotion of health through public lands recreation, taking advantage of the School of Public Health's uncommon disciplinary structure, in which the School of Public Health houses the Parks and Recreation Management program. This partnership was also facilitated through a Challenge Cost Share Agreement; the start-up year was seeded by \$6,500 in Forest Service funds, supported by in-kind contributions by Indiana University Health.

In 2019, the partners began offering free community wellness outings at the Pate Hollow Trail and the Hardin Ridge Recreation Area on the HNF, about 15 miles from Bloomington. The hikes, hosted in the fall and spring, typically last 1-2 hours and are facilitated by HNF staff, Indiana University interns (paid through partnership funds), and an Indiana University Health physician or staff member. Each outing has a physical or mental health theme, such as the benefits of exercise, mindfulness, and connection to nature. Participants are recruited from pre-existing programs within and outside the Indiana University Health system, including Walk with a Doc, Getting Onboard Active Living, and the Center for Rural Engagement (see Figure 2 for sample promotional materials). Participants register in advance online. The School of Public Health is designing a research component to assess the mental and physical outcomes of participation in the wellness outings, including a pre- and post-outing survey.

Figure 2
Sample Outreach Materials for Healthy Hoosier Hikes

Let's take a hike
Being outdoors is good for the body and the mind.

Discover the health benefits of nature on a community hike.

All Health, Hoosier National Forest and Indiana University offer these free events to promote hiking, increase awareness of the numerous outdoor opportunities within the Hoosier National Forest, increase awareness of the positive impact of physical activity in nature on our physical and mental health, positively impact the health of our community, and provide education and awareness of important health topics.

Participants should wear comfortable hiking shoes and bring a small backpack with water and any other essential items needed for up to two hours in the woods. Participants may pack a snack lunch and eat at a shelter house after the hike.

Participants will receive a giveaway related to their hike's theme. Use [#HealthyHoosierHikes](#) to share your experience on Twitter.

Fall Hikes

| | | |
|--|---|---|
| Time: 12:30 - 3:30 pm | Date: Saturday, Sept. 28 | Date: Saturday, Oct. 12 |
| Register and learn more: https://wellnessoutingshikes.eventbrite.com | Place: Grubb Ridge Trail (5 miles) | Place: Pioneer Mothers Memorial Forest Trailhead (2 miles) |
| Contact Jay Miller at 812.983.9500 for more information. | Theme: Hydration | Theme: Walking |
| | Date: Saturday, Oct. 5 | Date: Saturday, Oct. 26 |
| | Place: Hardin Ridge Trail (3 miles) / Ted T. Trumble Trail (1.2 miles) | Place: Pate Hollow Trail Trailhead (6 miles) |
| | Theme: Hiking preparation | Theme: Mindfulness/mental health |

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In addition to the public component to the partnership, stewardship and wellness opportunities have also been hosted for staff at the partnering institutions. The HNF hosted a service day in 2019, engaging over 50 Indiana University Health and 20 HNF staff members in stewardship activities at an HNF campground (supported by \$5,500 in funding from Indiana University Health). Additional staff opportunities have in-

cluded wellness sessions provided by Indiana University Health staff for HNF staff, geared toward integrated considerations of the needs of individuals working outdoors.

The main challenges for Healthy Hoosier Hikes have been program funding, a lack of HNF staff capacity to support community partnership development, and the recruitment of medical professionals to attend outings. COVID-19 meant partners had to re-envision service delivery to find new ways to engage with participants in 2020, since group outings were canceled. Alternative engagement methods included sending hardcopy mailings to former and prospective participants describing the benefits of outdoor activities and opportunities individuals could pursue independently. The program is also increasing its social media presence, creating new opportunities for virtual public engagement. In the future, the partners plan to seek opportunities to connect with park prescription programs and reduce transportation-related barriers to programming. They hope to focus outings on targeted groups and expand their outreach/recruitment network, including veterans who are engaged in Wounded Warrior, elders experiencing isolation, and individuals with autism.

Health Partnership 3: Casting for Recovery-Georgia (Georgia)

The Chattahoochee-Oconee National Forests' (C-ONF) partnership with Casting for Recovery-Georgia supports fly-fishing retreats for women who have been diagnosed with breast cancer. The local program is nested in a national structure of retreats that are held at no cost to participants around the country, with the goal of providing "opportunities for women to find inspiration, discover renewed energy for life, and experience healing connections with other women and nature" (Casting for Recovery, 2018). Casting for Recovery-Georgia began hosting its 2.5-day annual spring retreat in 2012, using lodging facilities at Smithgall Woods State Park, in Helen, Georgia. At the suggestion of a volunteer in the retreat's first year, program organizers introduced themselves to the public affairs staff from the adjacent C-ONF, which prompted the ongoing partnership.

Retreat activities rotate across the state park, national forest, and river frontage owned by a local outfitter, introducing women to fly fishing skills and ethics, and empowering them to explore the outdoors. The program also includes a mindfulness hike at the Dukes Creek Falls Recreation Area on the C-ONF. Fourteen women are served each year through the spring retreat, and since 2017, a second fall retreat has served 10 women who have been diagnosed with stage IV (metastatic) breast cancer. Program organizers conduct outreach to prospective participants across Georgia through hospitals, doctors' offices breast cancer support groups and other organizations; many participants are referred by prior participants. Between 2012 and 2019, 141 women attended the retreats, with most attendees driving from within a 2- to 3-hour radius.

Each retreat costs an estimated \$10,000, fundraised locally through grants, corporate sponsorships, and individual donations. These costs cover lodging and meals for participants and volunteers. An all-volunteer staff includes licensed medical social workers, medical oncologists and oncology nurses, fly-fishing instructors, and other facilitators. Casting for Recovery provides training for all volunteers and holds liability insurance for volunteers and participants. C-ONF public affairs staff provide photography services, and other C-ONF staff volunteer as river helpers, helping participants navigate the river channel (see Figure 3). In 2018, the C-ONF used an agreement to authorize the purchase and transfer of 12 fly rods for the program, providing stability for the program, which had previously used loaned equipment. An important component of the partnership has been the co-development of a safety protocol, addressing

concerns about the health and safety of program participants, whose immune systems may be reduced due to ongoing treatments, as well as specialized concerns for guides and assistants.

Figure 3
Participants and Volunteers with Casting for Recovery



Photo by U.S. Forest Service/Steven Bekkerus

Casting for Recovery's national office provides program materials for the retreats, including evaluations for participants and staff. These ask about the quality of programming and perspectives on mindfulness activities, nature, and connections with other breast cancer survivors. The program continues to follow up with participants at regular intervals following the retreat. In 2017, in national surveys conducted six months following their retreat, 100% of participants reported that they continued to feel a healing connection with nature and/or positive feelings toward outdoor experiences (Casting for Recovery, 2017). In 2020, a survey of all participants from the prior three years found that 78% of participants reported that they had continued to spend more time in nature following the retreat (Casting for Recovery, 2020).

Casting for Recovery-Georgia has faced capacity challenges related to equipment and volunteers, and is at its organizational capacity providing its two annual retreats, despite routinely having more applicants than it can serve. In future years, the C-ONF intends to expand its role engaging staff as river helpers. As with the first two case studies, no retreats could be held in 2020 due to COVID-19, and programming in 2021 will likely be modified. A future priority is to host a stewardship service day on the C-ONF for volunteers who are eager to give back to the special places that are central to the retreat.

Discussion

The partnerships in these case studies share some baseline commonalities: they all take place outside on public lands and waters, and all provide participants with a support network for learning new activities. They are relatively inexpensive, especially compared to other health care costs, and take advantage of the trusted and influential roles that physicians and nurses offer, as well as the local place-based knowledge held by land managers. The convergence of people and place outside of health care's traditional clinical settings builds on the notion of healing or therapeutic landscapes. It reframes public lands as an “upstream” or preventative medicine public health resource (Maller et al., 2006), and elevates them as therapeutic landscapes that host restorative outdoor experiences (Havlick et al., 2021). Furthermore, these programs increase access and inclusivity on public lands, reaching people who may not be physically able, emotionally prepared, or technically skilled to participate in outdoor activities independently. Since programs engage local populations, many participants can return to program sites on their own, equipped with the confidence for independent experiences. Future program evaluation and research opportunities exist to understand the new behaviors successfully fostered by programs.

The case studies also highlight the variation in how health partnerships have been initiated. Each was proposed by a different institutional champion—a physician from Barton Health, a recreation manager from the HNE, a program organizer from Casting for Recovery. Each proposal led to a successful partnership connection, the first of several enabling conditions for the partnership. This initial connection is a common stumbling block for many partnerships (Liechty et al., 2014); this suggests it would also be valuable to study attempted partnerships that have not succeeded. While general approaches have been suggested for public health agencies for partnering with land managers (Razani et al., 2016), the need for more guidance has been identified, especially for the “exploring” phase of partnership initiation (Liechty et al., 2014). Land managers have many potential partners in this phase—at all levels, agencies tasked with managing recreation have sibling public health agencies (federal, state, local) in addition to local medical institutions with which to spark potential synergies. The Forest Service is currently developing a toolkit (modeled after the present case studies) that will help fill needs for guidance, and recently the National Environmental Education Foundation published a guide for initiating community health and wellness events (NEEF, 2020). As more programs are developed, there are important opportunities to engage credentialed recreational therapy professionals in program design and implementation. High-quality, scalable program evaluations will be needed to understand the types of engagements that result in meaningful and enduring outcomes for participants. Research-management partnerships are critical to measuring local outcomes in a way that helps understand parallels and divergences to other programs nationally and internationally.

Another enabling condition in the case studies was that Forest Service staff were able to step outside of their typical roles to advance a new idea; none of the health partnership roles staff played were “duties as assigned.” While having the latitude to take on new “extra-curricular” roles allowed for these partnerships to be piloted, appropriately staffing partnerships will be important to program sustainability. The support of institutional leadership allows for partnership goals to be pursued in the first place, but responsibilities often rest on mid-level staff and volunteers to convene a team and

drive the program. Ensuring continuity with the partnerships has been challenging, as staff turnover and transitions result in losses in institutional knowledge. This highlights the need identified by Seekamp and Cerveny (2010) for mechanisms for sharing institutional knowledge within and across partnerships; such collaborative learning has the potential to advance the vision for sustainable recreation management on multiple scales (Selin, 2017). Partnerships require committed staff time from all partners, not just for staffing events, but also for nurturing the partnership. Since these are not generally formally assigned duties, gaps appear at times of staff transitions that can lead to partnerships being overlooked. How positions are designed, funded, and function to meet community needs may need to be reimagined, and might benefit from creative financing and position-sharing models. In addition, at higher levels of administration, there are opportunities to emphasize human health in strategic plans and account for the value of societal and institutional outcomes of health partnerships when grading the “performance” of land management units; this could help elevate their importance in agency cultures and practices. It is especially relevant for these outcomes to be measured in multiple use agencies such as the Forest Service, so that they can be visible alongside other metrics such as timber production and fuels treatments that are so often central to agency decisions (Schultz et al., 2019).

The holistic and reciprocal approach to human and ecosystem health in these partnerships supports human healing while cultivating environmental and stewardship ethics. These connections promote an understanding that the health of people and the health of the environment are deeply intertwined in social-ecological systems (Dustin et al., 2018; Hendricks et al., 2019; Maller et al., 2006). These partnerships extend care-taking ethics, in terms of people taking care of people, people taking care of public lands, and in turn, public lands taking care of people’s mental and physical needs. These practices and benefits have many layers; for example, the volunteerism component of these programs is itself related to health benefits (Wilson, 2012). Benefits extend to partner organizations as well, including investments in the wellbeing and expertise of staff members. These multiple benefits from the interconnected caretaking for people and place warrant explicit examination in future programming, evaluation, and research.

In conclusion, this article’s case studies demonstrate how national forests have offered an important setting and context for community-building, health-promoting, stewardship-supporting partnerships. A new era of interconnected human and ecosystem health offers promising opportunities to realize the potential of public land systems for promoting health, and recognize their embeddedness in the sustainability of local communities. The case studies show how local actors are experimenting to align missions and resources to develop program models that meet this potential. They also show, however, that the “local champion” role can be a precarious one, where staff members work outside of their usual duties to catalyze needed partnerships. If land managers—whether part of a national organization or an entity with a smaller geographic scope—are committed to advancing sustainable recreation goals through health partnerships, they will need to empower partnerships with appropriate staffing, funding, and guidance. Such institutional commitments to support and recognize the value of such partnerships could help put aside the trappings of the “nice-to-have” recreation era, and equip local land management units as they pursue partnerships for better health.

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References

- American Public Health Association. (2013). *Improving health and wellness through access to nature*. (APHA Policy Number 20137).
- Cerveney, L. K., Derrien, M. M., & Miller, A. B. (Eds.). (2020). *A research strategy for enhancing sustainable recreation and tourism on public lands*. Gen. Tech. Rep. PNW-GTR-991. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 102 p. https://www.fs.fed.us/pnw/pubs/pnw_gtr991.pdf
- Bannar, S., Flower, J., & Gavigan, K. (2017, June). *The natural alliance of public lands and community health*. Partners Outdoors. <https://www.youtube.com/watch?app=desktop&v=TqTDEVh14yg&t>
- Casting for Recovery. (2017). *Casting for Recovery 6-month follow up alumnae survey*. Internal report (unpublished).
- Casting for Recovery. (2018). *About Casting for Recovery*. <https://castingforrecovery.org/about-casting-for-recovery/>
- Casting for Recovery. (2020). *Casting for Recovery alumnae survey summary*. Internal report (unpublished).
- Dustin, D., Zajchowski, C., Gatti, E., Bricker, K., Brownlee, M. T. J., & Schwab, K. (2018). Greening health: The role of parks, recreation, and tourism in health promotion. *Journal of Park and Recreation Administration*, 36(1), 113–123. <https://doi.org/10.18666/JPRA-2018-V36-I1-8172>
- Frumkin, H., Bratman, G. N., Breslow, S. J., Cochran, B., Kahn Jr, P. H., Lawler, J. J., Levin, P. S., Tandon, P. S., Varanasi, U., Wolf, K. L., & Wood, S. A. (2017). Nature contact and human health: A research agenda. *Environmental Health Perspectives*, 125(7), 075001. <https://doi.org/10.1289/EHP1663>
- Havlick, D. G., Cerveney, L. K., & Derrien, M. M. (2021). Therapeutic landscapes, outdoor programs for veterans, and public lands. *Social Science & Medicine*, 268, 113540. <https://doi.org/10.1016/j.socscimed.2020.113540>
- Hendricks, W. W., Schwab, K., Bricker, K., Zajchowski, C. A. B., & Dustin, D. (2019). The future of parks and recreation: One health. *Journal Park and Recreation Administration*, 37(1), 141–145.
- Liechty, T., Mowen, A. J., Payne, L. L., Henderson, K. A., Bocarro, J., Bruton, C., & Godbey, G. C. (2014). Public park and recreation managers' experiences with health partnerships. *Journal Park and Recreation Administration*, 32(2), 11–24.
- Ma, Z., Steele, D., Cutler, A., & Newcomb, K. (2020). Promoting sustainability in public natural-resource agencies: Insights from the USDA Forest Service. *Journal of Forestry*, 118(2), 105–123. <https://doi.org/10.1093/jofore/fvz067>
- Maller, C., Townsend, M., Pryor, A., Brown, P., & St Leger, L. (2006). Healthy nature healthy people: 'Contact with nature' as an upstream health promotion interven-

- tion for populations. *Health Promotion International*, 21(1), 45–54. <https://doi.org/10.1093/heapro/dai032>
- Mowen, A. J., Payne, L. L., Orsega-Smith, E., & Godbey, G. C. (2009). Assessing the health partnership practices of park and recreation agencies: Findings and implications from a national survey. *Journal Park and Recreation Administration*, 27(3), 116–131.
- National Environmental Education Foundation [NEEF]. (2020). *Public lands engagement: Health & wellness in nature*. https://www.nps.gov/subjects/healthandsafety/upload/NPS_NEEF_PublicLandsEngagementGuide_Health_WellnessInNature-compressed.pdf
- Proctor, C. (2020, September 24). *Connecting with nature: Rural implications for health and land use* [panelist]. <https://www.youtube.com/watch?v=BKswfkdS-4w&feature=youtu.be>
- Razani, N., Stookey, J., Brainin-Rodriguez, L., Roberts, N. S., Rutherford, G. W., & Chan, C. (2016). Surmounting barriers to public health/park agency partnerships: Insights from a county public health department. *Journal of Park and Recreation Administration*, 34(1). <https://doi.org/10.18666/JPRA-2016-V34-I1-7065>
- Rice, W. L., Lacey, G., Peel, V., Pan, B., Miller, Z. D., Newman, P., Hutchins, B., & Taff, B. D. (2020). Examining health promotion in parks: A cross-national inquiry of Healthy Parks Healthy People programs. *Recreation, Parks, and Tourism in Public Health*, 4, 5. <https://doi.org/10.2979/rptph.4.1.02>
- Romagosa, F., Eagles, P. F. J., & Lemieux, C. J. (2015). From the inside out to the outside in: Exploring the role of parks and protected areas as providers of human health and well-being. *Journal of Outdoor Recreation and Tourism*, 10, 70–77. <https://doi.org/10.1016/j.jort.2015.06.009>
- Schultz, C. A., Thompson, M. P., & McCaffrey, S. M. (2019). Forest Service fire management and the elusiveness of change. *Fire Ecology*, 15(1), 13, s42408-019-0028-x. <https://doi.org/10.1186/s42408-019-0028-x>
- Seekamp, E., & Cerveny, L. K. (2010). Examining USDA Forest Service recreation partnerships: Institutional and relational interactions. *Journal Park and Recreation Administration*, 28(2), 1–20.
- Selin, S. (2017). Operationalizing sustainable recreation across the National Forest System: A qualitative content analysis of six regional strategies. *Journal Park and Recreation Administration*, 35(3), 35–47. <https://doi.org/10.18666/JPRA-2017-V35-I3-8020>
- Seltenrich, N. (2015). Just what the doctor ordered: Using parks to improve children's health. *Environmental Health Perspectives*, 123(10). <https://doi.org/10.1289/ehp.123-A254>
- Thomsen, J., Powell, R. B., & Allen, D. (2013). Designing parks for human health and development. *Park Science*, 30(2), 8.
- Thomsen, J., Powell, R. B., & Monz, C. (2018). A systematic review of the physical and mental health benefits of wildland recreation. *Journal of Park and Recreation Administration*, 36(1), 123–148. <https://doi.org/10.18666/JPRA-2018-V36-I1-8095>
- Wilson, J. (2012). Volunteerism research: A review essay. *Nonprofit and Voluntary Sector Quarterly*, 41(2), 176–212. <https://doi.org/10.1177/0899764011434558>

Research Note

Education and Interpretation on Public Lands: Lessons from Research and New Directions

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Abstract

Decades of research confirm that interpretation and environmental education on public lands can accomplish a wide variety of positive outcomes for participants, ranging from personal learning and growth to stewardship behaviors both on- and off-site. This research note offers a brief summary of the state-of-the-field of interpretation and environmental education research as applied to public lands. It highlights the general state of knowledge and identifies opportunities for researchers to further enhance our understanding about education on public lands to maximize benefits for visitors and managers alike. In particular, we emphasize the value of large-scale comparative studies as well as collaborative approaches to adaptive management, in which researchers support active experimentation through iterative data collection and analysis within a learning network of multiple program providers. This latter approach promotes evidenced-based learning within a larger community practice in which participants can benefit from the diverse knowledge, experiences, and data that each brings into the network.

Keywords

Communities of practice, environmental education, evaluation, evidence-based learning, interpretation

Decades of research confirm that interpretation and environmental education (EE) on public lands can accomplish a wide variety of positive outcomes for participants, ranging from personal learning and growth to stewardship behaviors both on- and off-site (e.g., Storksdieck & Falk, 2020; Thompson & Houseal, 2020). This research note draws upon the empirical literature as well as our own experiences over the past two decades-plus of studying interpretation and EE on public lands in the United States and abroad. We address two critical questions: (1) What can interpretive and educational programs achieve for public lands?; (2) What are the emerging and innovative research approaches that will help researchers expand our knowledge in this arena?

Interpretation is “a mission-based communication process that forges emotional and intellectual connections between the interests of the audience and the meanings inherent in the resource” (NAI, 2021). Interpretive communications can include live programs, exhibits, films, and other media intended for non-captive audiences who visit an interpretive site. The North American Association for Environmental Education defines EE as “a learning process that increases people’s knowledge and awareness about the environment and its associated challenges, develops the necessary skills and expertise to address the challenges, and fosters attitudes, motivations, and commitments to make informed decisions and take responsible action” (NAAEE, 2021).

What Can Interpretive and Educational Programs Achieve for Public Lands?

Common goals of EE and interpretation include: enhancing the visitor experience, increasing visitors’ knowledge, promoting appreciation and other positive attitudes toward park resources, building or strengthening positive perceptions of the management agency, helping visitors to develop new skills, and influencing visitors’ behavioral intentions and behaviors both on- and off-site (Ardoin et al., 2018; Powell et al., 2019; Stern & Powell, 2021; Stern et al., 2014). Within public lands management agencies, EE programs are often geared toward younger audiences. As such, EE outcomes often also include addressing school-based curricula or enhancing the academic achievement of visiting school groups. Evidence suggests that each of these outcomes can be attained through high quality educational and interpretive efforts.

Systematic reviews and empirical studies reveal that high-quality EE can positively affect participants’ knowledge, awareness, motivations, self-confidence, skills development, attitudes, socioemotional learning, behavioral intentions, and behaviors (Ardoin et al., 2018; Marion & Reid, 2007; Stern et al., 2014). These programs commonly take the form of school field trips (Dale et al., 2020) or overnight experiences (Ardoin et al., 2015), though more recently, the COVID-19 pandemic has motivated many program providers to shift their modes of delivery to online offerings. A recent review suggests that online EE programs can also achieve positive outcomes for participants, including enhanced knowledge, awareness, interest in learning, critical thinking and other skills development, attitudes, self-efficacy, behavioral intentions, and behaviors (Merritt et al., in review).

Reviews and empirical studies also demonstrate that interpretive communications can provide meaningful outcomes for participants: including increased knowledge, attitude change, enjoyment, self-efficacy, behavioral intentions, and behaviors (Skibins, et. al., 2012; Stern & Powell, 2021). The most powerful positive results are typically associated with live (face-to-face) programs, though non-personal (not live) interpretation, including exhibits, podcasts, videos, and other recordings, have also been linked to positive outcomes, including enhanced knowledge, awareness, and behavioral intentions (Stern & Powell, 2021).

High-quality interpretive and educational programming also provide other benefits to parks and protected areas. Ranger-led programs have been shown to enhance public opinions of national parks and the National Park Service in the United States (Stern et al., 2011). The quality of interpretation in some national parks has been directly linked with local residents’ attitudes and behaviors of support (e.g., volunteering, donating) and opposition (e.g., violating park rules, public protests) toward neighbor-

ing national parks as well. For example, at Virgin Islands National Park, local residents often cited inadequate interpretation of relevant cultural histories as a primary source of negative attitudes and responses to the National Park (Stern, 2008). Similarly, at Great Smoky Mountains National Park, perceptions of inadequate cultural heritage preservation and interpretation were strongly linked to local distrust for park managers, which in turn was the strongest predictor of local opposition to the park (Stern, 2010). In each park, perceptions of consistency and quality of the work of park rangers contributed to more positive attitudes and responses on behalf of local residents. Perceptions of the quality of interpretive services represented a major component of these overall assessments (Stern, 2006). In each of three national parks included in the study, feelings of trust for park managers were better predictors of support, compliance with park rules, and avoiding other forms of opposition than fear of enforcement.

What Is the State of the Art and Where is the Cutting Edge of Research in These Areas?

While the range of studies of educational and interpretive efforts can include a diverse array of research questions, ranging from how to appropriately plan programs (e.g., Healy et al., 2016; White et al., 2005) to organizational influences on instructor motivation (e.g., Pratson et al., 2021), we focus on two key areas that characterize a significant portion of the published research: summative evaluation and explanatory research. Summative evaluation focuses primarily on measuring the outcomes of distinct programs to gauge their effectiveness. Explanatory research, as we conceptualize it here, focuses on what programmatic or other elements appear to be more or less responsible for varying degrees of outcomes achievement. Some refer to these latter types of studies as formative or adaptive evaluation, as they also provide evaluative information that can help to improve programming.

Summative Evaluation: Measuring Effectiveness for Program Participants

Researchers have employed a range of research designs to investigate the effectiveness of educational and interpretive efforts. The predominant methods include measuring participant outcomes using retrospective surveys (e.g., Miller et al., 2018; Miller et al., 2019; Powell et al., 2016; Taff et al., 2014) and quasi-experimental designs, which most commonly involve measuring participants' knowledge, awareness, attitudes, intentions, behaviors, and other desired end-states both before and after an educational or interpretive experiences (e.g., Beaumont, 2001; Powell & Ham, 2008; Powell et al., 2009; Stern et al. 2008; Tubb, 2003). For example, many researchers use pre/post/follow-up designs, which involve administering participant surveys before, immediately after, and again some time later following educational experiences (ranging from less than a month to over two years) to determine both the short and long-term effects of the programs (Ardoin et al., 2018).

Specific techniques for measuring outcomes vary across studies. Although participant surveys are the most commonly reported methods in much of the peer-reviewed literature (Ardoin et al., 2018; Stern et al., 2014; Stern & Powell, 2021), observational techniques are also used (e.g., Serrel, 1997). In particular, researchers have evaluated signage (e.g., Hall et al., 2010) and exhibits (e.g., Benton & Sinha, 2011) in protected areas and other sites by observing the duration and level of engagement with these educational resources. In other cases, researchers have used observational methods to observe whether specific interpretive or educational strategies can influence behaviors to minimize impacts to protected area resources (e.g., Ward & Roggenbuck, 2003).

In some cases, researchers have measured behavioral traces and resource conditions, rather than behaviors themselves as outcomes—for example, the extent of campground damage (e.g., Oliver et al., 1985) or other depreciative behaviors (e.g., Settina et al., 2020) following interpretive or educational interventions. Some researchers have also combined observational techniques with questionnaires to examine the consistency between observed and self-reported behaviors (e.g., Hockett et al., 2017).

Each of the techniques described above make use of both qualitative and quantitative data. Additional qualitative techniques include the qualitative coding of open-ended questionnaire items or other artifacts, such as video or nature journals; unstructured or semi-structured interviews; and analyzing participant drawings or photos (Ardoin et al., 2018). In some cases, methods may be co-created between researchers and subjects, enhancing the cultural responsiveness of local contextualization of any research findings (Askew et al., 2011). Each can reveal the participants' and others' perspectives of the overall influences of the evaluated programs.

Explanatory Research

Explanatory research examines how or why interpretive and educational interventions attain whatever outcomes they achieve. Explanatory research techniques also run the full spectrum from qualitative to quantitative methods. Qualitative studies often examine the nuances of a particular program or approach, commonly relying on interviews, journals, or other forms of self-report of participants, instructors or observers to provide explanations of how programs influenced participants (e.g., Ardoin et al., 2014; Britt, 2017; Macklin et al., 2010; Powell et al., 2016). In some cases, qualitative interviews have been used to solicit explanations for quantitative findings (e.g., Ward & Roggenbuck, 2003). Quasi-experimental designs have also been used to compare different programs, approaches, and techniques to identify specific interpretive or educational approaches associated with better outcomes in a particular context (e.g., Ballantyne & Packer, 2009; Littlefair & Buckley, 2008; Powell et al., 2009; Ward & Roggenbuck, 2003). For example, Ballantyne and Packer (2009) paired in-depth interviews with observational data to identify the strategies that best facilitated learning across 12 EE programs in Queensland, Australia. In both single case and comparative case study designs, such as these, the generalizability of these findings can be somewhat difficult to determine, based on the particular contexts in which the studies took place.

Large-Scale Comparative Studies

Large-scale comparative studies, which aim to identify what works best in education and interpretation across contexts (or within specific contexts), are far rarer. We conducted one such study focused on interpretive programs in national parks in the United States, designed to isolate which programmatic elements, including characteristics of the interpreter, educational practices, and contextual characteristics, were most strongly associated with three cross-cutting visitor outcomes—visitor satisfaction, enhancing visitors' experience and appreciation, and visitors' intentions to change behaviors (Powell & Stern, 2013a; Stern & Powell, 2013). To accomplish this goal, teams of researchers observed 376 live-interpretive programs in 24 units of the U.S. National Park Service, tracked the extent and quality of 56 different programmatic elements, and surveyed over 5,000 visitors immediately following interpretive programs. The results revealed a list of 15 programmatic elements with statistically significant relationships with these outcomes. These elements reflected commonly pro-

moted interpretive techniques, such as employing thematic communication, adhering to Tilden's (1957) principles, developing a holistic story arc through effective sequencing and organization, and avoiding fact-based lecturing (Powell & Stern, 2013a; Stern & Powell, 2013). The results also revealed that the behaviors and characteristics of interpreters, including their apparent degrees of confidence, passion, sincerity, charisma, and responsiveness to audiences, were also important for driving positive outcomes (Powell & Stern, 2013a; Stern & Powell, 2013). Furthermore, preliminary explorations of the data suggest that certain practices might be more or less effective in different contexts or with different audiences (Powell & Stern, 2013b).

More recently, we again used a comparative design that employed observational techniques paired with participants surveys to investigate what leads to better outcomes in EE field trip programs for adolescent youth (grades 5-8) across the U.S. (Dale et al., 2020; Lee et al., 2020; O'Hare et al., 2020). Teams of researchers observed 334 EE field trip programs provided by 90 different organizations across the U.S. to examine the linkages between positive learning outcomes, including measures of environmental literacy, place attachment, 21st century skills, social/emotional learning, and positive youth development (see Powell et al., 2019 for full description of outcome measures) and over 70 pedagogical approaches, educator attributes, and contextual characteristics. While analyses of these data are ongoing, preliminary findings suggest the importance of the quality of the relationship built between the educator/interpreter and the audience (O'Hare et al., 2020), the degree of visitors' active engagement with the content, the novelty and naturalness of the educational site (Dale et al., 2020), and the overall organization and sequencing of the program. Current and future efforts are addressing how findings might vary across different socioeconomic, curricular, ecological, political, racial, and geographic contexts (e.g., Stern et al., 2021).

There are many reasons why large-scale comparative designs with direction observations of programs are rarely replicated. These types of studies face many methodological challenges, including developing reliable and valid observational measures that are consistent among researchers; ensuring that the shared outcome measure is relevant for all programs under consideration and sensitive enough to distinguish differences between high and low quality programs (Powell et al., 2019); and logistical and resources challenges associated with recruiting, scheduling, and funding such a large effort. However, without undertaking studies of this nature, the findings of interpretation and EE largely rely on individual case studies, singular evaluations, and small-scale quasi-experimental efforts to develop their research base in support of best practices (Skibins et al., 2012; Stern et al., 2014). Such methodologies are more limited in their generalizability.

Evidence-Based Learning Networks as Communities of Practice

Building on our recent large-scale comparative studies, we are currently engaging in what we consider to be a new frontier in EE and interpretive research. Our team is currently engaged in developing communities of practice as an opportunity for iterative quasi-experimental research that can further our understanding of what works in EE and interpretation. Communities of practice are groups of people who share knowledge and expertise through ongoing interaction for the purpose of continual learning and improvement of their work associated with common goals (Wenger, 1998). We are merging this concept with the practice of adaptive management to build evidence-based learning networks of EE providers. This approach combines experimental and

comparative case study designs and is based on iterative evaluation, systematic reflection, and active experimentation.

Within these networks, organizations use a consistent outcome measure, in this case a retrospective participant survey (Powell et al., 2019), to gauge the performance of their programs. Following data collection and analysis by the research team, each organization receives a confidential summative evaluation report depicting the extent to which their organization is achieving outcomes. Organizations then come together to discuss their programs and collaboratively develop hypotheses about what programmatic elements they feel are more or less responsible for the outcomes they have achieved. These conversations are bolstered by regular (monthly) learning sessions in which research results and program examples are shared within the network. We, as the research team, have an opportunity to compare outcomes across programs of different design to formulate similar hypotheses. Following facilitated exchanges between participants in the network, each organization commits to adapting their programs in ways they believe will enhance their participants' outcomes. After these innovations are implemented, organizations undertake a second cycle of data collection. This cycle reflects a quasi-experimental design, providing empirical data about the relative effectiveness of these innovations; this is equivalent to dozens of intra-organizational experiments (30 to 40 organizations are currently participating in each of two such learning networks). These experiments provide empirical evidence about whether certain practices appear to enhance, constrain, or otherwise influence participant outcomes. As a result, new knowledge is co-created as the research team analyzes the collected data and shares which adaptations exhibited statistically significant relationships with improved outcomes measures. This approach accomplishes multiple goals simultaneously: (1) it builds capacity in program-providing organizations in data collection, the interpretation of research findings, and adaptive management; (2) it builds community between diverse organizations, enabling the wider and more rapid sharing of ideas and innovation; (3) it provides empirical data on what works in educational programming; and (4) it provides a forum for rapid dissemination of research findings to practitioners and their own networks.

Management Implications

The literature reveals that EE and interpretive services can yield a wide array of positive results for people and parks, including enhancing visitors' experiences; influencing their knowledge, awareness, attitudes, skills, feelings of self-efficacy, behavioral intentions and behaviors; and both increasing support for and limiting opposition to public lands management. Research has predominantly and traditionally focused on summative evaluations of single interpretive or education efforts that measure the efficacy of those programs on intended outcomes. We share examples of, and advocate for, more explanatory research approaches that investigate which factors (e.g., components of educational or interpretive design, characteristics of the educator/interpreter, contextual factors, audience characteristics) most powerfully influence desired outcomes. These approaches include quasi-experimental and comparative studies, particularly those that engage program providers and their audiences in the co-creation of relevant research questions, adaptive management (making revisions to programs based on research evidence and measuring their impacts) and co-learning (sharing findings and brainstorming improvements together).

Of particular interest to educational providers and researchers is the proposed use of communities of practice combined with adaptive management and participatory

evaluation approaches. This approach requires partnerships between program providers and researchers. The providers, typically park managers or educational/interpretive staff on public lands, share in engaging their stakeholders, developing research questions, collecting data from participants, interpreting findings, and revising their programs based on results. Researchers help to guide the process, design representative sampling procedures, analyze data, share and interpret results, and facilitate learning exchanges between organizations. The use of consistent measurement techniques across a network of providers allows for comparative case studies and for quasi-experimental designs to test the efficacy of different programmatic approaches. This networked approach not only enables the continual evidence-based improvement of programs by identifying what factors are related to more desired outcomes, but also enhances the capacity of program providers in evaluation research and adaptive management.

Conclusion

It has been well established that high-quality educational and interpretive efforts on public lands and elsewhere can yield positive results for people and parks. Traditional research has commonly focused on summative evaluations of individual programs that support this claim. Quasi-experimental and other forms of research examine proposed causal linkages between different approaches and visitor outcomes. Each of these approaches has yielded meaningful results in terms of both what can be accomplished and how those outcomes have been achieved in specific contexts. Only recently have large-scale comparative studies and collaborative evidence-based adaptive management approaches been attempted to examine these questions across a wide variety of contexts and program types. We urge researchers to continue to push the envelope on these fronts to ensure the continual development and improvement of interpretive and educational efforts on public lands. As efforts multiply to reach broader and more diverse audiences in meaningful ways, collaborative efforts, engaging not only researchers, but also practitioners and their intended partners and audiences, in developing meaningful research questions, may yield new frontiers and breakthroughs across the years to come.

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References

- Ardoin, N. M., Biedenweg, K., & O'Connor, K. (2015). Evaluation in residential environmental education: An applied literature review of intermediary outcomes. *Applied Environmental Education & Communication, 14*(1), 43–56.
- Ardoin, N. M., Bowers, A. W., Roth, N. W., & Holthuis, N. (2018). Environmental education and K-12 student outcomes: A review and analysis of research. *The Journal of Environmental Education, 49*(1), 1–17.

- Ardoin, N. M., DiGiano, M., Bundy, J., Chang, S., Holthuis, N., & O'Connor, K. (2014). Using digital photography and journaling in evaluation of field-based environmental education programs. *Studies in Educational Evaluation, 41*, 68–76.
- Askew, K., Beverly, M. G., & Jay, M. L. (2012). Aligning collaborative and culturally responsive evaluation approaches. *Evaluation and Program Planning, 35*(4), 552–557.
- Ballantyne, R., & Packer, J. (2009). Introducing a field pedagogy: Experience-based strategies for facilitating learning in natural environments. *Environmental Education Research, 15*(2), 243–262.
- Benton, G. M., & Sinha, B. C. (2011). Interpretive effectiveness at Kanha Tiger Reserve, India. *Journal of Interpretation Research, 16*(1), 73–81.
- Beaumont, N. (2001). Ecotourism and the conservation ethic: Recruiting the uninitiated or preaching to the converted? *Journal of Sustainable Tourism, 9*(4), 317–341.
- Britt, R. K. (2017). A brief evaluation of an interpretive self-guided mobile tour. *Journal of Interpretation Research, 22*(2), 65–69.
- Dale, R. G., Powell, R. B., Stern, M. J., & Garst, B. A. (2020). Influence of the natural setting on environmental education outcomes. *Environmental Education Research, 26*(5), 613–631.
- Hall, T. E., Ham, S. H., & Lackey, B. K. (2010). Comparative evaluation of the attention capture and holding power of novel signs aimed at park visitors. *Journal of Interpretation Research, 15*(1), 15–36.
- Healy, N., van Riper, C. J., & Boyd, S. W. (2016). Low versus high intensity approaches to interpretive tourism planning: The case of the Cliffs of Moher, Ireland. *Tourism Management, 52*, 574–583.
- Hockett, K. S., Marion, J. L., & Leung, Y. F. (2017). The efficacy of combined educational and site management actions in reducing off-rail hiking in an urban-proximate protected area. *Journal of Environmental Management, 203*, 17–28.
- Lee, H., Stern, M. J., & Powell, R. B. (2020). Do pre-visit preparation and post-visit activities improve student outcomes on field trips? *Environmental Education Research, 26*(7), 989–1007.
- Littlefair, C., & Buckley, R. (2008). Interpretation reduces ecological impacts of visitors to world heritage site. *Ambio, 37*, 338–341.
- Macklin, E. K., Hvenegaard, G. T., & Johnson, P. E. (2010). Improvisational theater games for children in park interpretation. *Journal of Interpretation Research, 15*(1), 7–13.
- Marion, J. L., & Reid, S. E. (2007). Minimising visitor impacts to protected areas: The efficacy of low impact education programmes. *Journal of Sustainable Tourism, 15*(1), 5–27.
- Merritt, E., Stern, M. J., Powell, R. B., & Frensley, T. (In review). A systematic literature review to identify evidence-based principles to improve online environmental education. *Environmental Education Research*.
- Miller, Z. D., Freimund, W., & Blackford, T. (2018). Communication perspectives about bison safety in Yellowstone National Park: A Comparison of international and North American Visitors. *Journal of Park and Recreation Administration, 36*(1), 176–186. <https://doi.org/10.18666/JPRA-2018-V36-I1-8503>
- Miller, Z. D., Freimund, W., Metcalf, E. C., Nickerson, N. P., & Powell, R. B. (2019). Merging elaboration and the theory of planned behavior to understand bear spray

behavior of day hikers in Yellowstone National Park. *Environmental Management*, 63(3), 366–378. <https://doi.org/10.1007/s00267-019-01139-w>

- North American Association for Environmental Education (NAAEE). (2021). *About EE and why it matters*. <https://naaee.org/about-us/about-ee-and-why-it-matters>
- O'Hare, A., Powell, R. B., Stern, M. J., & Bowers, E. P. (2020). Influence of educator's emotional support behaviors on environmental education student outcomes. *Environmental Education Research*, 26(11), 1556–1577.
- Oliver, S. S., Roggenbuck, J. W., & Watson, A. E. (1985). Education to reduce impacts in forest campgrounds. *Journal of Forestry*, 83(4), 234–236.
- Powell, R. B. & Ham, S. H. (2008). Can ecotourism interpretation really lead to pro-conservation knowledge, attitudes, and behavior? Evidence from the Galapagos Islands. *Journal of Sustainable Tourism*, 16(4), 467–489. doi:10.1080/09669580802154223
- Powell, R. B., Kellert, S. R., & Ham, S. H. (2009). Interactional theory and the sustainable nature-based tourism experience. *Society and Natural Resources*, 22(8), 761–776.
- Powell, R. B., Ramshaw, G. P., Ogletree, S. S., & Krafte, K. (2016). Can heritage resources highlight changes to the natural environment caused by climate change? Evidence from the Antarctic tourism experience. *Journal of Heritage Tourism*, 11(1) 71–87. doi:10.1080/1743873X.2015.1082571
- Powell, R. B., Stern, M. J., Frenslley, B. T., & Moore, D. (2019). Identifying and developing crosscutting environmental education outcomes for adolescents in the twenty-first century (EE21). *Environmental Education Research*, 25(9), 1281–1299.
- Powell, R. B., & Stern, M. J. (2013). Is it the program or the interpreter? Modeling the influence of program characteristics and interpreter attributes on visitor outcomes. *Journal of Interpretation Research*, 18(2), 45–60.
- Powell, R. B., & Stern, M. J. (2013b). Speculating on the role of context in the outcomes of interpretive programs. *Journal of Interpretation Research*, 18(2), 61–78.
- Pratson, D. Stern, M. J., & Powell, R. B. (2021). What organizational factors motivate environmental educators to perform their best? *Journal of Environmental Education*. <https://doi.org/10.1080/00958964.2021.1924104>
- Serrell, B. (1997). Paying attention: The duration and allocation of visitors' time in museum exhibitions. *Curator*, 40(2), 108–125.
- Settina, N., Marion, J. L., & Schwartz, F. (2020). Leave No Trace communication: Effectiveness based on assessments of resource conditions. *Journal of Interpretation Research*, 25(1), 5–25.
- Skibins, J. C., Powell, R. B., & Stern, M. J. (2012). Exploring empirical support for interpretation's best practices. *Journal of Interpretation Research*, 17(1), 25–44.
- Stern, M. J. (2006). *Understanding local reactions to national parks: The nature and consequences of local interpretations of park policies, management, and outreach*. PhD. Dissertation, Yale University.
- Stern, M. J. (2008). Coercion, voluntary compliance and protest: The role of trust and legitimacy in combating local opposition to protected areas. *Environmental Conservation*, 200–210.
- Stern, M. J. (2010). Payoffs versus process: Expanding the paradigm for park/people studies beyond economic rationality. *Journal of Sustainable Forestry*, 29(2–4), 174–201.
- Stern, M. J., & Powell, R. B. (2013). What leads to better visitor outcomes in live interpretation? *Journal of Interpretation Research*, 18(2), 9–43.

- Stern, M. J., & Powell, R. B. (2021). Taking stock of interpretation research: Where have we been and where are we heading? *Journal of Interpretation Research* 25(2), pp. 65–87.
- Stern, M. J., Powell, R. B., & Ardoin, N. (2008). What difference does it make? Assessing student outcomes of participation in a residential environmental education program. *Journal of Environmental Education*, 39(4), 31–43.
- Stern, M. J., Powell, R. B., & Cook, C. (2011). The benefits of live interpretive programs to Great Smoky Mountains National Park. *Park Science*, 27(3), 56–60.
- Stern, M. J., Powell, R. B., & Hill, D. (2014). Environmental education program evaluation in the new millennium: What do we measure and what have we learned? *Environmental Education Research*, 20(5), 581–611.
- Stern, M. J., Powell, R. B., & Hockett, K. S. (2011). Why do they come? Motivations and barriers to interpretive program attendance at Great Smoky Mountains National Park. *Journal of Interpretation Research*, 16(2), 35–52.
- Stern, M. J., Powell, R. B., & Frensey, B. T. (2021). Environmental education, age, race, and socioeconomic class: An exploration of differential impacts of field trips on adolescent youth in the United States. *Environmental Education Research*. <https://doi.org/10.1080/13504622.2021.1990865>
- Storksdiack, M., & Falk, J.H. (2020). Valuing free-choice learning in national parks. *Parks Stewardship Forum* 36(2), 271–280.
- Taff, D., Newman, P., Lawson, S. R., Bright, A., Marin, L., Gibson, A., & Archie, T. (2014). The role of messaging on acceptability of military aircraft sounds in Sequoia National Park. *Applied Acoustics*, 84, 122–128. <https://doi.org/10.1016/j.apacoust.2013.09.012>
- Thompson, J. L., & Houseal, A. K. (Eds). (2020). *America's largest classroom: What we learn from our national parks*. University of California Press.
- Tubb, K. N. (2003). An evaluation of the effectiveness of interpretation within Dartmoor National Park in reaching the goals of sustainable tourism development. *Journal of Sustainable Tourism*, 11(6), 476–498.
- Ward, C. W., & Roggenbuck, J. (2003). Understanding park visitors' response to interventions to reduce petrified wood theft. *Journal of Interpretation Research*, 8(1), 67–82.
- Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity*. Cambridge: Cambridge University Press.
- White, D. D., Virden, R. J., & Cahill, K. L. (2005). Visitor experiences in National Park Service cultural sites in Arizona: Implications for interpretive planning and management. *Journal of Park & Recreation Administration*, 23(3), 63–81.

Commentary

Implementing the Great American Outdoors Act in the Era of Sustainable Recreation: Time for a Mission 2030?

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Abstract

The Great American Outdoors Act (GAOA) fully and permanently funds the Land and Water Conservation Fund for the first time since it was created in 1964. This is a boon for purchasing conservation lands, but equally important, the act provides funding to address massive federal agency recreation infrastructure backlogs. The last major overhaul of the U.S. parks and outdoor recreation system was over 50 years ago, during the era of Mission 66 and related programs. Since that time, a host of environmental and societal changes necessitates new approaches for updating conservation and recreation opportunities. In addition to acquiring critical park and conservation lands, and developing and updating facilities, new park and recreation goals include increasing public use and visitor diversity and advancing environmental justice, public health, and large-scale conservation goals. Integrated systems analyses are needed to address these diverse concerns across landscapes, regions, and jurisdictions, and new interagency and interdisciplinary approaches will be needed. This is a bureaucratic crossroads: for the first time in decades we can truly advance public access, human health, and social equity values of public lands; the GAOA is a critical process step toward, but not the culmination of, this goal.

Keywords

Funding, future directions, systems planning, equity and inclusion, public health, conservation, administration

Background

Passage of the Great American Outdoors Act (GAOA) of 2020 was a major bipartisan victory for public land conservation and outdoor recreation advocates. However,

implementation of these lofty legislative goals will require a renewed emphasis and collective passion and action to see that the policy goals are translated into transformative change and capacity-building at an institutional and field-level. To meet these goals, we need a Mission 2030 federal initiative echoing the Mission 66 initiative of the last century.

The GAOA has two major elements: provide “full and permanent” funding for the Land and Water Conservation Fund (LWCF) and establish the National Parks and Public Land Legacy Restoration Fund (NPPLRRF). State-level competition for funding will be intense as the opportunity to address park and recreation lands and public access shortfalls is unprecedented in the current political and economic climate.

The LWCF was first established in 1964. It was approved for funding up to \$900M per year, but it has rarely been funded at that level. Contrary to the fund’s title, the primary purpose of the LWCF is not conserving land and water resources, but rather buying, developing, and conserving land- and water-based recreation resources. According to the Congressional Research Service (2020: 1), the main goal of LWCF is to “increase participation in recreation and strengthen the ‘health and vitality’ of U.S. citizens.” The LWCF has three mechanisms for doing this: federal land acquisition for outdoor recreation; providing financial assistance to states to assist recreation planning, land acquisition, and facility development; and, beginning in 1998, the fund has been used to help support other natural resource programs such as the Forest Legacy Program and the Cooperative Endangered Species Conservation Fund.

The purpose of the NPPLRRF is even grander and even more specifically focused on outdoor recreation than the LWCF. It provides \$1.9B annually (\$9.5B over five years) to address the massive deferred maintenance needs accrued by the federal land management agencies. Past agency budget cuts and the redirection of funding away from recreation management by federal agencies has resulted in billions of dollars in infrastructure backlog, crumbling road systems, and recreation facilities and cultural resources in disrepair (Cervený et al., 2020a).

The last major overhaul of the federal parks and outdoor recreation system was in the middle of the last century. In the 1950s and 1960s, a multitude of federal initiatives addressed crumbling national parks and outdoor recreation infrastructure in unprecedented ways. Mission 66 and Operation Outdoors, for example, led to new and updated facilities and creation of roads and trails for the National Park Service and U.S. Forest Service. In 1962, the President’s Recreation Advisory Council was established and included the Secretaries of Interior; Agriculture; Defense; Commerce; Health, Education & Welfare; and other federal agencies. That political horsepower led to the establishment of the Bureau of Outdoor Recreation (1963), passage of the LWCF (1964), and a plethora of legislation that combined recreation and conservation values including the Wilderness Act (1964), Wild and Scenic Rivers Act (1968), and National Trails System Act (1968). In the last half-century, however, the U.S. has seen countless demographic, cultural, economic, and environment changes that current state and federal park and recreation systems do not address. Today’s needs are different from the land designation and recreation development needs of the past, but the mission is just as important.

The Opportunity for Parks and Recreation

The primary focus of the GAOA is on providing outdoor recreation opportunities and public access with resource conservation and environmental protection second-

ary but complementary goals. While many natural resource agency professionals and scientists consider public use and environmental protection to be contradictory goals, we believe this view is unnecessarily restrictive and based on an outdated philosophy of nature and human interactions (Blahna et al., 2020; Collins & Brown, 2007). Park and recreation professionals can help assure implementation of this lofty ‘dual mandate’ goal through strategic submissions of GAOA project and funding requests that integrate public use and environmental protection goals simultaneously.

The GAOA also provides a golden opportunity to meet other critical park and recreation needs that have been identified in the literature by park and recreation professionals and in official statements by agency leaders over the last two decades. These goals include:

1. **Enhance contributions to U.S. public health infrastructure.** While “health and vitality” of U.S. citizens has been an integral part of the LWCF since its inception, federal park and recreation plans rarely explicitly identify where, how, and under what conditions recreation infrastructure and management plans contribute to, or detract from, public health goals. There is a burgeoning field of research linking nature contacts and public health, but there is a disconnect between that literature and park and recreation planning and management (Collins & Brown, 2007; Wolf et al., 2020).
2. **Increase visitor diversity and inclusivity.** The GAOA was first introduced to the House of Representatives by iconic civil rights leader John Lewis (D-GA), who was adamant about using parks and public lands to help address economic, racial, and ethnic inequities in society. Unfortunately, the lack of visitor diversity is an ongoing problem for federal agencies. There are many systemic reasons for this throughout the larger field of parks and recreation management such as hiring staff, narrow focus of university research and training, lack of cultural sensitivity, and interpersonal and institutional racism (Flores et al., 2018; Taylor, 2015). Most research and management tools focus on understanding *existing* visitors and looking at recreational use levels as a problem to be solved rather than an opportunity to address social equity and justice concerns (Blahna et al., 2020). This reflects the resource management paradigm of the mid-20th Century that viewed land management agency goals as simply providing and protecting the resource, and partiality for natural conditions, rather than proactively meeting access and equity goals for underserved populations.
3. **Utilize multi-disciplinary sustainability expertise.** Promoting and sustaining recreation use and infrastructure must be linked to conservation of land and water resources that recreation opportunities depend on. This directly reflects the multi-disciplinary character of sustainability. The definition of sustainable development introduced by The World Commission on Environment and Development (1987, p. 43)—“development that meets the needs of the present without compromising the ability of future generations to meet their own needs”—was later revised to illustrate that sustainability depends on the three pillars of economic, environmental, and social sustainability. This was used by Cervený et al. (2020b, p. 10) who defined sustainable recreation management as “. . . the provision of desirable outdoor opportunities for all people, in a way that supports ecosystems, contrib-

utes to healthy communities, promotes equitable economies, respects culture and traditions, and develops stewardship values now and for future generations.”

4. **Conduct multi-scale spatial analyses.** Funding decisions related to use of the LWCF and the NPPLRF that are based on site-specific or piecemeal considerations will fall short of the broader goals. U.S. Forest Service guidelines for ranking LWCF proposals, for example, identify a “regional ranking” as being as important as “recreational access” for prioritizing land purchases (USFS, NFS 2020, pp. 6-7). Traditionally, however, outdoor recreation problems are addressed at the site- or activity-specific level of analysis and there are few planning guidelines to integrate and address regional needs or predict multi-scale social and environmental effects of management decisions. This limits the ability to address larger-scale environmental concerns and specific needs of urban and rural communities, special interest and tribal partners, and especially marginalized and underrepresented groups.

Incorporating these factors into park and recreation planning and decision-making will require the use of systems analysis methods and models that specifically address land and water conservation and public use/access needs *simultaneously* (Blahna, 2020). A systems-thinking approach will require the development of new, innovative analysis and decision support tools, cross-disciplinary and cross-agency initiatives, and collaborative approaches with communities, interest groups and tribal partners (McCool & Kline, 2020; Morse, 2020; Morse et al., this issue).

Conclusion

The GAOA passed by a voice vote in the House and by a 73-25 vote in the Senate. This strong, bipartisan support for GAOA is exceptional in the current economic and rancorous political climate. Clearly there is widespread social and political support for simultaneously expanding recreation use and conservation practices on public lands. Further erosion of recreation capacity within public agencies will be detrimental to this goal. The political message is that these two new funding sources should supplement, not replace or offset, existing recreation funding. The GAOA provides the political and economic impetus to revisit and revise the system, not simply to stanch the bleeding from past bureaucratic neglect.

Are our agency leaders up to the task of a Mission 2030 mirroring the success of Mission 66 but meeting 21st Century goals? A Mission 2030 could be strategically linked to the international 30 by 30 Initiative, which seeks to provide protection for 30% of lands by 2030. While 30 by 30 focuses on climate change and species diversity goals, success of a such a wide-ranging effort will ultimately need to meet social equity, diversity, and inclusion goals to secure broad political support (Cooper, 2021). 30 by 30 is also inspiring some U.S. politicians to call for reinstating the Bureau of Outdoor Recreation, which was eliminated in 1981, one of many casualties of the national de-emphasis on nature based outdoor recreation at the end of the 20th Century.

References

- Blahna, D. J., Valenzuela, F., Selin, S., Cervený, L. K., Schlafmann, M., & McCool, S. (2020). The shifting outdoor recreation paradigm: Time for change. In Selin et al. (Eds.), *Igniting research for outdoor recreation: Linking science, policy, and action*. Gen. Tech. Rep. PNW-GTR-987. Portland, OR: USDA Forest Service (pp. 9–22).

- Cervený, L. K., Meier, N., Selin, S., Blahna, D. J., Barborak, J., & McCool, S. (2020a). Agency capacity for effective outdoor recreation and tourism management. In Selin et al. (Eds.), *Igniting research for outdoor recreation: Linking science, policy, and action*. Gen. Tech. Rep. PNW-GTR-987. Portland, OR: USDA Forest Service (pp. 23–39).
- Cervený, L. K., Derrien, M. M., & Miller, A. B. (Eds.). (2020b). *A research strategy for enhancing sustainable recreation and tourism on public lands*. Gen. Tech. Rep. PNW-GTR-991. Portland, OR: USDA Forest Service.
- Collins, S., & H. Brown. (2007). The growing challenge of managing outdoor recreation. *Journal of Forestry* 105(7), 371–375.
- Congressional Research Service. (2019). *Land and Water Conservation Fund: Overview, funding history, and issues*. CRS Report RL33531. <https://crsreports.congress.gov>.
- Cooper, C. (2021). *Outdoor recreation: What is the next big policy?* Signal Group. <https://signaldc.com/outdoor-recreation-what-is-the-next-big-policy/>
- Flores, D., Falco, G., Roberts, N. S., & Valenzuela, F. P., III. (2018). Recreation equity. Is the Forest Service serving its diverse publics? *Journal of Forestry* 116(3), 266–272.
- McCool, S. F., & Kline, J. D. (2020). A systems thinking approach for thinking and reflecting on sustainable recreation on public lands in an era of complexity, uncertainty, and change. In Selin et al. (Eds.), *Igniting research for outdoor recreation: Linking science, policy, and action*. Gen. Tech. Rep. PNW-GTR-987. Portland, OR: USDA Forest Service (pp. 161-170).
- Morse, W. C. (2020). Recreation as a social-ecological complex adaptive system. *Sustainability*, 12(3), 1–16.
- Morse, W. C., Cervený, L. K., & Blahna, D. J. (this issue). Coordinating and standardizing outdoor recreation supply and demand databases to facilitate management and promote conservation, health, and accessibility.
- Taylor, D. E. (2015). *The rise of the American conservation movement: Power, privilege, and environmental protection*. Duke University Press.
- The World Commission on Environment and Development. (1987). *Our common future*. Oxford University Press.
- Wolf, K. L., Derrien, M. M., Kruger, L. E., & Penbrooke, T. L. (2020). Nature, outdoor experiences, and human health. In Selin et al. (Eds.), *Igniting research for outdoor recreation: Linking science, policy, and action*. Gen. Tech. Rep. PNW-GTR-987. Portland, OR: USDA Forest Service (pp. 85-99).
- U.S. Forest Service, National Forest System. (2020). *FY2022 Land and Water Conservation Fund: Criteria and guidance for evaluation and scoring proposals for land purchase*. https://www.fs.fed.us/land/staff/WCF/Documents/2020Encl1_2020_LWCF_Criteria_and_Guidance.pdf

LEGENDS IN PARKS AND RECREATION

The American Academy for Park and Recreation Administration (<https://aapra.org>), in keeping with one of its purposes—“to advance knowledge related to the administration of recreation and parks”—initiated a project to develop a library of interviews with top professionals in the field (<https://aapra.org/legends>). The interviews, in addition to being of great historic value, contain many ideas on agency administration, working with board members, staff relations, organizational development, and creative management. The interviews record personal background, professional insights, advice and philosophical beliefs. Each video is approximately 45 minutes in length and is available in DVD format. Interviews are available online for viewing at no charge, as they are posted [indicated with a “v” in the listing below], and for purchase for \$10 each with a \$5 shipping/handling fee.

Interviews are available for purchase for \$15 each with a \$5 shipping/handling fee. For more information, please contact the Academy Office at (224) 858-7212 or info@aapra.org. Projects are in the works now to (1) post the remainder of the original interviews online; and (2) “mine” the individual Legend interviews to create a series of themed videos to focus on specific topics. The following videos have been completed and are available at no charge by clicking on the title either for viewing online or to download:

Lessons from the Legends 2016

(<https://www.youtube.com/watch?v=hh0hQtzb-hw&t=82s>)

National Park Service Legends

(<https://www.youtube.com/watch?v=jQgcodEZn74&t=48s>)

America’s Expanding Liberal Democratic Tradition

(<https://www.youtube.com/watch?v=ErySsvdj1Qg>)

Shattering Stereotypes and Glass Ceilings

(<https://www.youtube.com/watch?v=CcEtqUEeiUk>)

Jane Adams (v)
Horace Albright
Lawrence Allen
Joseph Bannon
Marvin Billups
William Bird
Roger K. Brown
Theresa Brungardt
Mary Burns
Frances Cannon
Reynold Carlson
Joseph Caverly
Don Cochran
James Colley
Alice Conkey
John Crompton
Ralph S. Cryde
Joseph E. Curtis
Pete Dangermond
Lori Daniel
John H. Davis
Patricia Delaney
Theodore Deppe
Pauline des Granges
Russell Dickenson
Ronald H. Dodd
Charles E. Doell
Terry Dopson
Joe Doud
Newton Drury

Christopher Edginton
Garrett Eppley
Robert D. Espeseth
Harvey Faust
David Fisher
Ted Flickinger
Robert Frazer
Bill Frederickson
Ray Freeman
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Thomas I. Hines
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Donald Jolley
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O-Joong Kim
Ray L. Kisiah
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David O. Laidlaw
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Darrell Lewis
Janet MacLean
Olga Madar
Fran Mainella
John McGovern
Joel Meier
Tony A. Mobley
William Penn Mott, Jr.
Ernest Nance
Charles H. Odegaard
Rhodell Owens
Pat O’Brien
Joseph O’Neill
Ellen O’Sullivan
James A. Peterson
Michael S. “Mick” Pope
John C. Potts
Joseph Prendergast
Max Ramsey
Phil Rea
Bob Robertson
J. Robert Rossman (v)
James Ruth
Bill Scalzo
H. Douglas Sessoms
Carol Severin
Graham Skea

Recreation for All

(<https://www.youtube.com/watch?v=ODzRuHgIpVY&t=6s>)

Seven Characteristics

(https://www.youtube.com/watch?v=oespxKm_aB8&t=127s)

The Life of the Mind

(<https://www.youtube.com/watch?v=Thy-26exijo&t=88s>)

Kenneth J. Smithee
Robert Stanton
James S. Stevens, Jr.
Willard C. Sutherland
R. Dean Tice
Robert F. Toalson
Richard Trudeau
James J. Truncer
Joseph J. Truncer
Louis F. Twardzik
Stewart Udall
Betty van der Smissen
Frank Vaydik
Nathaniel Washington
John Weber
Sandra Whitmore
Ken Winslade
Conrad Wirth
Joseph Wynns
Leon Younger

Other

Fran Mainella, Chris Jarvi, and Bill Walters on the National Park Service

Charles Hartsoe, Robert Toalson, and Douglas Sessoms on the merger of organizations to form the NRPA

GUIDELINES FOR CONTRIBUTORS TO THE JOURNAL OF PARK AND RECREATION ADMINISTRATION

JPra Sections

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Executive Summary: Each manuscript should be summarized in a 350-400 words executive summary (in lieu of an abstract). The executive summary will preface the paper and should enable the reader to get an overview of the entire paper, with particular attention to the need for the paper and the managerial and professional implication of the findings. Five to eight key words that describe the content of the articles and can be used for computer retrieval should be under the abstract. Manuscripts will be returned to the author if no executive summary is included.

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This provides a forum for sharing information about innovative approaches to recreation and park issues and programs that have been developed around the country, especially where the programs have implications for managers in other communities. The maximum length for this section is 5,000 words (includes references, tables and figures). Each issue of the journal features one example of innovative practice. Depending on the program or innovation to be described, each article will contain some of the following information:

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This section is intended to provide a forum for recreation, park, and leisure educators, scholars, and professionals to share their perspectives and opinions on pressing issues facing park and recreation management and administration. Commentary authors should have in-depth knowledge of the topic and be eager to present a viewpoint on existing challenges, concepts, and prevalent notions related to research and practice. Submitted commentaries will undergo a peer-review process coordinated by the section editor, and acceptance criteria includes clarity and coherence of the author(s) position, the soundness of the argument, and reviewer judgment with regards to the contribution to the field. Commentary articles do not follow a strict structure but should have an introduction, a few body paragraphs, and a conclusion. Commentary articles should be no longer than 1,500 words (includes cited sources) and should not contain any figures or tables. Prior to submission, authors are requested to initially submit a brief outline of the key points proposed for the commentary to the Section Editor.

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Notes and References: Include only reference to books, articles, and bulletins cited in the text. All reference should follow the *Publications Manual of the American Psychological Association* (6th ed.) Reference in the text should cite the author's last name, year of publication, and page (where appropriate)–(Ferguson et al., p. 54) or (Thapa, 2013). All references should appear as shown below or in the APA manual and at the end of the typescript, not at the foot of the page. Typical journal entries would appear as follows:

- Larson, L. R., Whiting, J. A., Green, G. T., & Bowker, J. M. (2015). Contributions of non-urban state parks to youth physical activity: A case study in northern Georgia. *Journal of Park and Recreation Administration, 33*(2), 20–36.
- Hammit, W. E., Cole, D. N., & Monz, C. A. (2015). *Wildland recreation: Ecology and management*. Hoboken, NJ: John Wiley & Sons.

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