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# TEN PRINCIPLES OF OUTDOOR RECREATION

an excerpt from  
*Studies in Outdoor Recreation:  
Search and Research for Satisfaction (fourth edition)*

**ROBERT E. MANNING, et al.**



MATTIAS HELGE / UNSPLASH

## LEAD AUTHOR'S INTRODUCTION

I wrote the first edition of *Studies in Outdoor Recreation* while on sabbatical leave at Grand Canyon National Park in 1983–1984. My objective was to read all the social science studies in the field of parks and outdoor recreation and synthesize them into a body of knowledge. Since the scientific literature on the topic was limited at that time, I probably came pretty close to finding and reading it all, and the book was published by Oregon State University Press in 1986. The second and third editions were also written on sabbatical leaves with the National Park Service—at Yosemite National Park and Golden Gate National Recreation Area—and published in 1999 and 2011, respectively. National parks are suitably inspirational places to read and write about outdoor recreation, and I deeply appreciate park staff for all their kindnesses and what they taught me about the real world of park and outdoor recreation management.

In 2021 I decided the book needed revising again. Because I was now retired (the ultimate sabbatical?), I called on a group of my former graduate students and postdocs—now professors, practitioners, and consultants across the US and around the world—and they responded, working with me to review the latest research and update the book. It was a pleasure to work with them again, this time as colleagues and co-authors; their names are listed on the title page of the book and at the end of the following excerpt.

The book is a study of the social science research on outdoor recreation—the use of parks and related

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areas; the characteristics, attitudes, and behavior of the people who visit them (and those who don't); issues encountered in managing parks and outdoor recreation; and how best to manage these places and the people who use them. A large number of theoretical and empirical studies on outdoor recreation have been conducted over the past several decades (the book now includes more than 2,000 references), but these studies are highly diverse in the topics addressed, disciplinary approach, and research methods, and are widely dispersed over space and time. With the exception of normally cursory reviews at the beginning of most published papers, relatively little effort has been devoted to integrating this expanding scientific and professional literature. The book reviews and synthesizes this diverse literature and develops and presents a body of knowledge on important outdoor recreation research and management issues. The fourth edition of *Studies in Outdoor Recreation* is designed for students, scholars, and managers of parks and related outdoor recreation areas. It concludes with nearly 70 "principles of outdoor recreation" that address a wide array of research and management issues and that are drawn from findings throughout the book. The following are representative examples.

**Principle 1. Outdoor recreation research has given rise to a number of useful conceptual frameworks and related empirical methods.**

Findings from multiple studies suggest conceptual and empirical frameworks that can be used to organize higher-level thinking about outdoor recreation and help guide further research and management. Examples of these conceptual and empirical frameworks include the three-fold framework of outdoor recreation (environment, experience, and management), carrying capacity/limits of acceptable change/sustainability (the balance between recreation and preservation), management-by-objectives frameworks/indicators and standards/thresholds of quality (an adaptive program of defining, monitoring, and managing the quality of outdoor recreation), the recreation opportunity spectrum (the need for a variety of outdoor recreation opportunities), personal and social norms (individual and aggregate societal judgements of the acceptability of outdoor recreation conditions), and motivations for and benefits of outdoor recreation (why people participate in outdoor recreation and the benefits derived). These and other conceptual and empirical frameworks are discussed and illustrated throughout the book.

Of course, high levels of visitor satisfaction are desirable, but satisfaction should be measured and considered within the context of the management objectives for a recreation opportunity.

**Principle 2. Quality in outdoor recreation is most appropriately defined and measured at three levels: visitors, managers, and society at large.**

Many studies in outdoor recreation have been designed to measure the quality of outdoor recreation, and quality is often measured in terms of visitor satisfaction. But quality in outdoor recreation can be more broadly and effectively defined as it applies to three levels or contexts. For visitors, quality is the degree to which recreation opportunities meet their needs. For managers, quality is the degree to which recreation opportunities meet the objectives for which they are designed and managed. For society more broadly, quality is provision of a wide system of recreation opportunities that meets the diverse needs of society. Corollaries to this principle are that quality and visitor satisfaction can be distinct concepts, and that visitor satisfaction may be a useful but insufficient measure of quality. Of course, high levels of visitor satisfaction are desirable, but satisfaction should be measured and considered within the context of the management objectives for a recreation opportunity. A related corollary is that measures of visitor satisfaction may be misleading. For example, some visitors may be "displaced" from recreation areas or opportunities due to their sensitivity to crowding, conflicting recreation activities, environmental degradation, and management practices. Visitors who are sensitive to these issues and have been displaced and are no longer present to register their dissatisfaction.

**Principle 3. Outdoor recreation management should be guided by a management-by-objectives framework that includes (1) formulation of management objectives/desired conditions and associated indicators and standards/thresholds, (2) a long-term program of monitoring, and (3) a program of adaptive management.**

Management objectives/desired conditions are needed to guide analysis and management of outdoor recreation, including decisions about how

much and what types of outdoor recreation can be accommodated. Without the guidance of management objectives/desired conditions, decisions about outdoor recreation management may be arbitrary and uninformed. Management objectives/desired conditions are often initially expressed in a broadly conceptual form (e.g., “maintain natural environments,” “provide opportunities for solitude”). These types of objectives provide essential direction for management of outdoor recreation, but they must ultimately be stated in empirical terms that can be used to measure management success (or failure). Indicators of quality are measurable, manageable variables that are used as proxies for management objectives/desired conditions (e.g., number of other groups seen per day by visitors along trails), and standards/thresholds of quality define the minimum acceptable condition of indicator variables (e.g., no more than five other groups seen per day by 90 percent of visitors). Indicators must be monitored and an adaptive program of management applied to help ensure that standards/thresholds for indicators are maintained. This management-by-objectives approach is illustrated in Figure 4-3 [not included here], and the Visitor Use Management Framework developed by the Interagency Visitor Use Management Council is a good example of an outdoor recreation planning and management framework that incorporates this approach (Interagency Visitor Use Management Council 2016).

**Principle 4. Many potential options can be used to manage outdoor recreation.** Options for managing outdoor recreation can be categorized in terms of strategies and tactics/practices. Four basic management strategies include (1) limiting use, (2) increasing the supply opportunities, (3) reducing the impact of use, and (4) hardening park resources and/or the visitor experience. Six basic categories of management practices (actions designed to help achieve management strategies) include (1) information/education, (2) rationing/allocation of use, (3) rules/regulations, (4) law enforcement, (5) zoning, and (6) facility development/site design/maintenance. These management strategies and practices can be applied in a variety of park and outdoor recreation places/contexts, including attraction sites, trails, campgrounds/campsites, roads and parking lots, and at interpretive facilities and programs. When management strategies and tactics/practices are arrayed in a matrix format against the

**Indicators must be monitored and an adaptive program of management applied to help ensure that standards/thresholds for indicators are maintained.**

six types of park and outdoor recreation places as illustrated in Figure 14-5 [not included here], the number and variety of potential management options becomes apparent.

There are several corollaries to this principle. First, most of the impacts and problems associated with outdoor recreation can be addressed by more than one management strategy and/or practice. Crowding, for example, can be addressed by the strategy of limiting use (e.g., using the practice of raising fees or the practice of conducting a lottery for use permits), increasing the supply of recreation opportunities (e.g., using the practice of informing visitors about substitute recreation opportunities or the practice of developing additional facilities such as trails), and reducing the impact of use (e.g., using the practice of education about the national Leave No Trace (LNT) principles or a regulation against cell phones to limit visitor-caused noise that can contribute to perceived crowding).

Second, each recreation management strategy and practice can address multiple problems. For example, the strategy of reducing the impact of use and the associated practice of information/education can be used to address impacts to a number of park resources, including soils, vegetation, water, wildlife, and air. The LNT program has been designed specifically for this purpose. Information/education can also be used to reduce crowding by dispersing use to other sites/parks, minimizing conflict by suggesting appropriate visitor behavior, and “hardening” the visitor experience by helping to shape realistic expectations of visitors about park conditions.

Third, each of the six categories of management practices can be employed to advance more than one of the four management strategies, and this effectively expands management options exponentially. For example, the management practice of information/education can be used to reduce use at a problem site or park (by informing visitors of the problems being experienced at the site or park and/or by informing

them of the advantages of alternative sites or parks, for instance), or to reduce the impact of use (by educating visitors about LNT behaviors). It's important to design and apply management practices in ways that will advance the strategies that are chosen to solve management problems. It's also important to take advantage of the ways in which one management practice might be used to advance more than one management strategy.

Fourth, outdoor recreation management strategies can be advanced by more than one management practice. For example, the management strategy of limiting use can be implemented by informing visitors of alternative outdoor recreation opportunities, rationing use through a permit system, and implementing a rule that limits group size. The management strategy of reducing the impact of use can be advanced by educating visitors about LNT practices, rationing use through a permit system, implementing a rule against the use of campfires above tree line, and developing tent pads to harden fragile soils and vegetation.

Fifth, researchers and managers should think systematically, comprehensively, and creatively about the range of strategies and tactics/practices that might be used to manage outdoor recreation. Given the range of potential impacts of outdoor recreation and the variety of management strategies and practices that can be used to address them, a concerted effort is needed to think about management in a systematic, comprehensive, and creative manner; managers should resist employing management strategies and practices just because they are familiar or administratively easy. The management matrices illustrated in Figure 14-5 [not included here] offer an approach that can support this thinking. These matrices array the impacts of outdoor recreation against management strategies and practices and challenge managers to think about the ways in which each management alternative might be useful in addressing each impact or management problem. These management matrices can be used or "entered" in several ways: the type of problem encountered, the location or context of the problem, and the type of management strategy and/or practice considered. An associated book (Manning et al. 2017) offers a more thorough description of the management matrix approach and includes 25 case studies that illustrate the ways in which diverse management strategies and tactics/practices are being applied in

**Managers should resist employing management strategies and practices just because they are familiar or administratively easy.**

US national parks to address an array of recreation management problems and issues.

**Principle 5. Outdoor recreation management should focus on the impacts of recreation use, not necessarily on the amount of use.**

It's not necessarily the *amount* of recreation use that's the root of many of the problems and issues described in this book, it's the *impacts* of this use: soil compaction and erosion, disturbance of wildlife, crowding, conflict among recreation activities, and other problems often associated with outdoor recreation. This suggests that management should focus on limiting the impacts of outdoor recreation, not necessarily limiting the amount of recreation use. Moreover, limiting the amount of recreation runs counter to the mandate of most parks to accommodate recreation. Further, in some contexts, limiting the amount of use may not be as effective in reducing the impacts of use as other management practices such as information/education programs designed to encourage low-impact behavior of visitors. There are a number of management practices designed to limit the impacts of outdoor recreation, and this is the most appropriate focus of management efforts. Of course, limiting recreation use can be a valid and effective approach to managing the impacts of outdoor recreation (as noted in Principle 4 above, it's one of the four basic outdoor recreation management strategies and there are a number of management practices that can be used to limit or ration use), but it should be used only in the context of limiting the impact of recreation. Many of the case studies in the US national parks presented in Manning et al. (2017) illustrate ways in which recreation impacts are being reduced without limiting the amount of recreation use. Ridge runners at Acadia educate hikers about the importance of staying on maintained trails. Boaters at Biscayne are taught how to "read" the water and avoid environmentally damaging groundings. Visitors to Mammoth Cave are required to change their clothes if they have been worn in other caves as part of an effort to stop the spread of bat diseases. Signage at Muir Woods asks hikers to reduce the noise they make in Cathedral Grove in an effort to protect natural quiet.

All of these case studies are examples of the ways in which the impacts of visitor use can be minimized without limiting the amount of recreation use.

**Principle 6. Minority racial and ethnic groups are substantially underrepresented in many conventional parks and outdoor recreation areas.**

Studies of outdoor recreation participation over several decades have consistently confirmed that minority racial and ethnic groups are substantially underrepresented in many types of park and outdoor recreation areas and activities. Research suggests that this may be explained by at least three hypotheses: (1) historic discrimination may place ethnic and racial minorities at disadvantages, defined by income, education, and related variables, that discourage participation in outdoor recreation, (2) the history and cultural values of minority racial and ethnic groups may not be adequately represented in some contemporary outdoor recreation places and activities, and (3) some contemporary outdoor recreation places and activities may discriminate against minority racial and ethnic groups, either interpersonally or through institutional racism. Research has found support for all of these hypotheses. As active members of society, outdoor recreation researchers and managers should work to help end racial and ethnic discrimination in society, create a system of parks and outdoor recreation areas that celebrate the array of histories and cultural values represented in the nation's increasingly diverse population, and help ensure that racial and ethnic minorities do not experience interpersonal discrimination in parks and outdoor recreation areas from park staff and other visitors, and that outdoor recreation management policies do not reflect institutional discrimination.

**Principle 7. Parks and wilderness are social constructs whose meanings are evolving, and this suggests the need for new models of parks and related areas.**

Parks, wilderness, and related areas can be interpreted as "social constructs," ideas that have been created and widely accepted by society. Conventionally, many parks and wilderness areas have been defined in terms of their contrast to civilization: they are largely natural landscapes that are generally unaffected by humans. But social critics have deconstructed this idea, noting the long-term prehistoric and historic presence of Native Americans in these places and their environmental consequences, the increasing effects of human-caused

Some observers have encouraged a broader role for parks and related areas, one that encompasses a fuller continuum of places, including those where people live, work, and play.

climate change, and the impacts to natural and cultural resources caused by recreation. In a related way, some observers have encouraged a broader role for parks and related areas, one that encompasses a fuller continuum of places, including those where people live, work, and play. In response, the broad system of parks and wilderness is evolving to more fully embrace "cultural landscapes" that recognize and honor the human presence in nature and the diverse forms of sustainability that might be represented.

Following on these observations, the long-standing ideals of preservation of nature and natural processes inherent in parks and wilderness remain valid, and these places are being managed aggressively to maintain their natural properties; examples include reintroduction of native species and strict limits on recreation and associated impacts. But other models of parks are emerging. For example, some national parks are being co-managed with indigenous groups, honoring their long-term presence and use of these lands and waters. Other models of parks include a system of National Heritage Areas established throughout the US; these are large (often very large) cultural landscapes that are mostly private lands and that are managed by partner organizations that include public agencies at all levels, non-profit organizations, and private enterprise. Moreover, the National Park Service has launched an "Urban Initiative" to ensure that parks are well represented in the places where most people live. There is also growing interest in landscape-scale conservation, parks and related areas that encompass watersheds, the full range of habitat for sensitive wildlife species, and other landscape-scale features and processes. These and related ideas about new models of parks, wilderness, and associated outdoor recreation areas are illustrated in Table 13-1 [not included here].

**Principle 8. Human-caused climate change threatens the integrity of parks and related areas and is leading to substantial adaptations in outdoor recreation activities and patterns.**

Parks and outdoor recreation areas are being altered by human-caused climate change, and outdoor recreation activities and patterns are changing as well. Climate-related coping strategies of recreationists are multi-dimensional and include temporal substitution, spatial substitution, activity substitution, strategic substitution, informational coping, and displacement.

**Principle 9. Parks, wilderness, and related areas are increasingly being recognized for their contributions to human health.**

Parks and outdoor recreation areas are increasingly being recognized for their contributions to human health and wellbeing, and this an important form of “ecosystem services”. A growing body of research has documented the contributions of outdoor recreation (both the activities and the places) to physical, social, and psychological well-being, and the importance of parks and outdoor recreation is increasingly being incorporated into the medical profession and health insurance industry. However, the health benefits of parks and outdoor recreation are not distributed equitably among the population, and this issue, sometimes called “play deserts” and “park deserts,” needs research and management attention.

**Principle 10: Intensive outdoor recreation use demands intensive management.**

Outdoor recreation use has increased dramatically at many parks and related areas over the past several decades. For instance, visits to national parks are now often counted in the millions for individual parks, and the hundreds of millions across the National Park System. Moreover, much of this use is concentrated in peak-use periods and at developed facilities, including attraction sites, trails, campsites/campgrounds, roads and parking lots, and interpretive facilities and services. This intensive use can have substantial impacts on park resources and the quality of the visitor experience. This, in turn, suggests that intensive management will also be needed to protect park resources and the quality of the visitor experience. Representative examples in the National Park System include large-scale public transit systems at Denali, Acadia, and Zion, a sophisticated weighted lottery system that allocates permits to non-commercial boaters on the Colorado River through Grand Canyon,

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a backcountry permit system at Glacier that includes reservation and walk-in components, development of a more impact-resistant system of campsites along a popular stretch of the Appalachian Trail, a timed entry system at Rocky Mountain, tightly regulated airspace above Grand Canyon, and closure of some caves at Mammoth Cave due to their especially fragile character. As outdoor recreation continues to increase in popularity, intensive and sophisticated programs of management will be required.

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“Strength,” a Tarot illustration representing a radiation of power coupled with inner understanding and love. | [HENRY CRAWFORD ADAMS](http://henrycrawfordadams.com)