

Perspectives on Visitor Use Management in the National Parks

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PUBLIC LAND MANAGERS ARE FACED WITH AN INCREASINGLY COMPLEX SET OF CHALLENGES associated with providing opportunities for enjoyment to the growing and diversifying public (McCool, Clark, and Stankey 2007). In response to these challenges, visitor use management (VUM) research emerged. VUM is the process of managing human use to maintain or achieve desired conditions or experiences (IVUMC 2016). This paper is designed to provide perspective and direction regarding VUM for another 100 years of success in national parks and other protected areas.

Where have we been?

Since the beginning of the National Park Service (NPS), the dual mandate of providing public enjoyment while preserving valuable resources has required sustainable VUM practices that balance human use with resource protection (Manning 2007). Challenges associated with sustainable management of parks and protected areas stem from many public lands being common pool resources (CPRs): where the use by one person reduces the amount available to others, yet excluding users is nearly impossible (Newsham and Bhagwat 2016). In terms of visitor use, the difficulties in sustainably managing CPRs result in crowding and overuse of resources, which degrade the integrity of the resource and the quality of the visitor experience. For decades, protected area managers have focused on addressing VUM challenges on public lands (Manning 2011).

Starting with a substantial rise in visitation to public lands in the 1960s, federal legislation began to require that agencies managing public recreation sites provide assessments that

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describe, report, and manage for a level of use that is appropriate for a given site (Manning 2007; McCool, Clark, and Stankey 2007). Borrowing from the concept of carrying capacity in the biological sciences, research related to visitor use on public lands recognized that this capacity is not only a function of natural conditions, but also of social values and visitor perceptions (Wager 1964). Due to this, capacity in protected areas is mostly concerned with the amount and type of use that can be accommodated in a defined area without unacceptable impacts to resources or the quality of the visitor experience (Shelby and Heberlein 1986; Manning and Anderson 2012).

Years of research have been dedicated to answering difficult capacity-related questions, which are essential to the development of sustainable VUM practices (Shelby and Heberlein 1986; Stankey and Manning 1986; Manning 2001, 2007; Manning and Anderson 2012). Over time, it became clear that there is not just one objective capacity for a park unit, but that capacity is driven by the purpose and management objectives of a given recreation site (Figure 1). From this understanding emerged management-by-objectives (MBO) frameworks that continue to guide recreation planning processes to date.

Figure 1. Like many other US national parks, Grand Canyon National Park has seen record-breaking crowds in recent years. Numbers alone, however, cannot tell us everything about what makes for a high-quality visitor experience. Years of research have been devoted to developing sustainable VUM practices. (Inset) Traffic backs up waiting to get into the park. (Below) Solitude is not always a prerequisite for having a memorable and rewarding experience. Both photos courtesy of Michael Quinn/National Park Service.



Management-by-objectives frameworks for parks and protected areas. Based on the realization that protected area capacities cannot be established without a clear designation of the purpose and objectives of a site, MBO frameworks help decisionmakers develop purposes and objectives, guide the process of acquiring the necessary information to make decisions, and help reach desired objectives. Multiple MBO frameworks were developed as agency-specific models or to improve on prior models, and provided a systematic process for making decisions related to VUM (McCool, Clark, and Stankey 2007). MBO frameworks generally have more similarities than distinctions and rely on the same basic model that contains three steps: (1) formulate management objectives and associated indicators and standards, (2) monitor indicators of quality, and (3) implement management practices to maintain standards of quality (Manning 2007; Manning and Anderson 2012). Examples of such frameworks include Limits of Acceptable Change (LAC) and Visitor Experience and Resource Protection (VERP). LAC is primarily used by the US Department of Agriculture–Forest Service while VERP is used more often by the NPS.

The VERP framework was developed to address management challenges and strategies that are specific to NPS. Compared with other MBO frameworks, VERP was designed to be part of the planning process and has largely become more of a way of producing a plan rather than a separate, capacity-specific process (McCool, Clark, and Stankey 2007). While integrating VERP into the planning process was the original intent (Hof and Lime 1997), applying VERP in other settings was a challenge for managers, and recognizable examples are few and far between. Despite challenges associated with VERP specifically, the development and use of MBO frameworks has been guiding protected area management for the last 40 years. Important challenges, opportunities, and lessons learned have emerged from that experience.

Where are we going?

Challenges associated with VUM are only likely to grow in many protected areas around the world. For instance, 51 national parks in the US broke their visitation records in 2015, and the national park system as a whole saw record-breaking levels of visitation, with over 300 million recreation visits (NPS 2016a). In the face of these high use levels, overcoming some of the barriers associated with VUM is essential to ensuring the successful management of protected areas into the next century.

One challenge with VUM is that many protected areas lack basic descriptive social data that act as a baseline of existing conditions. Although programs have been implemented to help protected area managers understand more about visitor demographics, few protected areas have information about what their visitors are doing and experiencing, or where they are going. For instance, protected area managers may want to manage their backcountry to minimize impacts, but do not know the number of people that are hiking in the area. MBO frameworks depend on having both a *descriptive* and a *prescriptive* component. As protected areas tend to be more crisis-oriented in their response to events, there is a tendency to jump to solving a “problem” (prescriptive) without first understanding the greater situation (descriptive).

In the past, public land management agencies in the US developed and applied MBO frameworks independently. The result is a variety of frameworks (e.g., LAC, VERP, etc.) meant to achieve the same goals and a corresponding lack of communication across agencies to disseminate valuable management strategies and lessons learned. Recent efforts to address some of these past trends and challenges resulted in creation of the Interagency Visitor Use Management Council (IVUMC). This effort represents six land management agencies that worked together to establish an MBO framework that can be applied across agencies in a variety of protected area contexts. The Visitor Use Management Framework (VUMF) that came out of the interagency collaboration provides guidelines for the VUM process and applies the same concepts and language to any type of protected area (IVUMC 2016).

While collaboration across agencies is important, the new VUM might still encounter the challenges of prior frameworks. Specifically, insufficient political will and organizational ability to implement MBO frameworks has led to the misapplication of concepts and ideas, in some cases resulting in high-profile litigation cases that could be avoided. One example is the Yosemite Valley Plan (YVP), where the Merced River Comprehensive Management Plan was deemed insufficient for addressing visitor use on the Merced River (Figure 2). Although public criticism and legal action against the plan stemmed from several issues, the most salient was that the indicator variables identified in the plan focused on wilderness values (Bacon et al. 2006). These wilderness-oriented indicators are not appropriate for addressing issues in a frontcountry setting such as the Yosemite Valley. The result was that the park had to start the plan over, spending additional time and resources developing a new program to address

Figure 2. Misapplication of prior VUM frameworks led to protracted lawsuits over how to manage the Merced River flowing through Yosemite Valley. Photo courtesy of Kylir Horton (via Wikimedia Commons).



visitor use (Yosemite National Park 2004). This case study exemplifies how indicators must be matched to clearly identified plan objectives (Manning et al. 2005). As the example illustrates, the success of the VUMF is still contingent on the political will and organizational ability to implement planning efforts informed by MBO frameworks. Without these capacities, any MBO framework will likely be unsuccessful.

Both managers and researchers are also beginning to recognize the dynamic, complex, and rapidly changing context in which protected areas exist. Although most MBO frameworks are designed to respond to change, many have only been applied on fairly small scales, such as a particular trail or feature. Managing by sites instead of systems may bring unintended consequences. For instance, reducing the size of a parking lot to limit the number of people who have access to a trail may result in road congestion, displacement/increased use in other areas, or resource degradation as people park vehicles further away and create social trails to access the trailhead. Implementing a management strategy for a single location without recognizing its context in a larger protected area may simply move the problems to a different location, or even create a new problem. How can VUM concepts be applied on a larger scale, such as an entire protected area or region, to help managers address rapid and dynamic change in a complex world?

How do we bridge the past and the future?

Previous sections have focused on what we have learned about VUM from past research and outlines current challenges and likely futures. This section offers a series of suggestions that help bridge the gap between the past and the future of VUM by providing a vision of how to move forward for another successful 100 years of national parks.

Build organizational capacity. NPS and other protected area agencies need to invest in their capacities to understand and manage visitor use. This includes staff who are trained in and understand the role of social science in protected area management. There are some positive signs that this is already occurring. For instance, both Grand Teton and Yellowstone national parks have recently hired social scientists. Although a single person is unable to address the multitude of concerns that face many park and protected areas, they can help parks prioritize resources for monitoring, implement plans and frameworks, assess needs, and coordinate research.

Embrace large-scale visitor use management plans. To address VUM issues in national parks, managers should fully embrace the concept of large-scale plans. Although many plans address visitor use on a smaller scale (such as trails, high-use features, etc.), there has been an overall hesitation to fully embrace explicit VUM plans on a park-wide scale due to the complexity of such a task. Many times, planning for visitor use is done within the scope of a different overall plan, such as a transportation plan. This leads to a piecemeal approach to VUM that ignores the interactive, complex, and highly dynamic nature of protected areas. The result of this is that management actions in one location may lead to unintended challenges in others. For instance, a transportation plan that addresses traffic congestion by introducing a shuttle system may result in backcountry problems as more people access these areas in clustered temporal distributions that negatively affect experiences and resources.

Instead of reacting to issue after issue, system-wide VUM plans would enable protected area managers to understand conditions, anticipate challenges, and minimize impacts to resources and/or visitor experiences.

Although large-scale VUM plans are a step in the right direction, they also need to be responsive in an uncertain future (McCool et al. 2015). Visitor use is not static, and assuming that future levels will be consistent with those of the past may be a mistake in a fast-changing world. Climate change, political support, demand for outdoor recreation, demographic structure changes, and economic twists and turns are only a few contributors to uncertain future visitation (Figure 3). Two key techniques that can be used to help managers address this uncertainty are scenario planning and adaptive management (McCool et al. 2015). When coupled, they can help managers realize and proactively respond to potential futures using a multitude of dynamic management techniques.

Leverage relationships. As insufficient funding is likely to remain a challenge for NPS, it is essential that protected area professionals continue to leverage relationships among many partners to help address VUM challenges. These partners include local communities, volunteer groups, nonprofit organizations, other public land agencies, universities, and international organizations. In particular, global partnerships with organizations such as the International Union for Conservation of Nature (IUCN) may be an untapped resource. These organizations have the capacity to understand and bring together protected area management

Figure 3. Skiers at Lassen Volcanic National Park. The possible impacts of climate change on winter recreation are just one of many visitor use imponderables park managers wrestle with today. Photo courtesy of the National Park Service.



strategies from around the world to form a systematic, adaptable approach to VUM on a more global scale (IUCN 2016a). Although there are groups addressing similar protected area challenges in IUCN (IUCN 2016b), the benefit of learning from and collaborating on VUM at an international scale is yet to be seen. Collectively, global partners can provide expertise, research experience, personnel to assist with projects, valuable insight, political will, and other capacities to help fulfill the dual NPS mandate of providing enjoyment while protecting resources.

Conclusion

VUM will continue to be a challenge for NPS and many other protected areas throughout the world. Although managing visitor use will undoubtedly be a difficult task, the past century of learning and research has blazed a trail forward. Young, driven, and inspired professionals around the globe are picking up that trail and continually furthering our understanding of how we can best provide for outstanding, transformational experiences while protecting valuable resources. We hope this essay provides insights and guidance into VUM issues as we moved forward into the second century of national parks.

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