

STATE OF SCIENCE

Wilderness visitor experiences: A selective review of 50 years of research

By David N. Cole

WILDERNESS PRESERVATION IS A RECENT PHENOMENON. The first wilderness was designated in the United States in 1924 but wilderness legislation was not passed until 1964. The wilderness idea acknowledged a new relationship between people and land, both in how wilderness lands were to be managed and in the experiences people might have on wilderness visits. The history of research on wilderness experiences is a short one. The first study of wilderness visitors was conducted in 1956 and 1958 (Bultena and Taves 1961) in the Quetico-Superior region (now Boundary Waters Canoe Area Wilderness and Quetico Park in Canada). Visitors to the same area were more comprehensively studied by Lucas (1964) starting in 1960. Also in 1960, visitor surveys were conducted in seven “wildernesses” under the auspices of the Outdoor Recreation Resources Review Commission: Mount Marcy in the Adirondacks (New York), Great Smoky Mountains (Tennessee and North Carolina), Boundary Waters Canoe Area (Minnesota), Yellowstone-Teton (Wyoming), Bob Marshall (Montana), Gila (New Mexico), and High Sierra (California) (Outdoor Recreation Resources Review Commission 1962).

Reviewing these and other pioneering studies reveals motivations for studying wilderness visitors and provides initial glimpses of themes, perspectives, and methods still explored in 2011. Pioneering wilderness researchers believed there was something unique about a wilderness experience and were concerned that this experience was rare and at risk—that management was necessary to maintain high-quality wilderness experiences and that appropriate management required good research (Lucas 1964). Consequently, they and succeeding generations built a body of research to address (1) what visitors experience in wilderness, (2) influences on the nature or quality of these experiences, and (3) how managers can protect and enhance visitor experiences. This article reviews approaches to answering these questions, what has been learned, and what research results suggest regarding the stewardship of wilderness experiences. This selective review emphasizes experiential influences subject to managerial control and recent research of the author and his colleagues.

The nature of wilderness experiences

A wide range of research approaches and paradigms have been employed to gain insight into the nature of wilderness experi-

 (Left). Trails such as this one in the Shenandoah Wilderness, Virginia, provide access to many wilderness destinations and influence visitors' experiences of these places. When photographer Daniel Silva stopped to make this photo in the rain, all he could hear besides his own breathing was the sound of rain hitting the trees overhead. “It was a very serene experience,” he explains. The photo was a runner-up in the recent *Park Science* wilderness photo contest.

Abstract

Two of the foremost conclusions from 50 years of research on wilderness visitors are that experiences are highly idiosyncratic and visitors are highly adaptable. The reasons people visit wilderness, their experiential aspirations, and their experiences in wilderness vary greatly among people and within people from visit to visit. Along with people's adaptability to the conditions they find in wilderness, this diversity challenges managers in their efforts to provide high-quality wilderness experiences. Despite the existence of extensive research literature, managers seeking to steward wilderness experiences still must make difficult decisions about who and what they are managing for.

Key words

solitude, wilderness experience, wilderness visitors

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ences. Researchers have most often treated wilderness experiences as discrete events and conceived of them as the psychological outcomes desired or attained from a wilderness visit (as if people knew exactly what was expected and desired from their visits). Other researchers have attempted to understand experience as a long-term phenomenon (as relationship, for example), have conceived of experience as emergent (as if people had little idea of what was expected or desired) and multiphasic, and have attempted to learn as much about the process of experience as about the outcome (Borrie and Birzell 2001).

Early insights into wilderness experiences arose from attempts to understand why people visited wilderness. In the Boundary Waters Canoe Area Wilderness, Bultena and Taves (1961) reported that the most prevalent motives involved adventure and exploration, struggling with the elements, and experiencing a less artificial setting away from the cares of the workaday world, while Lucas (1964) found that people visited to find solitude, be with members of their group, learn about the area, and commune with nature. Over subsequent decades, motives have been studied more systematically (Roggenbuck and Driver 2000). These stud-

ies suggest that there are common motives for visiting wilderness, such as solitude and experiencing nature, but that not all motives are shared. People vary in the experiences they seek and there is little evidence that the experiences sought depend exclusively on a wilderness to be realized (Stankey and Schreyer 1987).

Since the 1960s, studies have moved beyond motives to more deeply explore visitor experience as the thoughts, emotions, and physical feelings that arise from visitors' activities, their physical and social context, and their focus of attention. This research reveals much about the rich, varied, and fulfilling experiences that almost everyone has in wilderness. Although people's experience is highly varied—involving different activities and types of places—the focus of attention is most commonly on the natural environment as shared with other people in one's group. Focus on self is less prevalent (Hall et al. 2007) but nevertheless, dimensions such as challenge, inspiration, and exploration are important (Dawson et al. 1998). Despite commonalities, experiences are idiosyncratic, “influenced by individuals' unique identities, their current personal projects, recent past experiences, and situational influences” (Patterson et al. 1998, p. 244).

Experiences are emergent to a substantial degree, as well as dynamic, varying across the wilderness visit (Borrie and Roggenbuck 2001). This suggests the limitation of characterizing experience quality in a single discrete rating or as the degree to which preconceived expectations for desired experiences are met.

Some work has explored the long-term benefits that accrue from discrete wilderness visits. This perspective is inherent to the conceptual work of Driver and associates regarding the benefits that accrue from recreational experiences (Roggenbuck and Driver 2000). Others have employed a relationship metaphor to understand experience and found that some visitors value their long-term relationships to places or to wilderness experiences more than they do the attributes of a particular place or wilderness visit in isolation (e.g., Brooks et al. 2006).

Given the centrality of the concept of solitude in the Wilderness Act, much attention has been devoted to it. “Solitude” is the one word, beyond the mandate to provide for primitive and unconfined types of recreation, used to describe the type of experience wilderness should provide. To psychologists solitude means being alone, without intrusions, where others cannot observe you. Since few wilderness visitors choose to be alone, Hammitt (1982) has argued that the broader psychological concept of privacy is more aligned with the intent of the Wilderness Act. If there is a high degree of privacy, wilderness visitors can freely choose how much and what type of interaction with others they want. Cole and Hall (2008b) report results suggesting that solitude is valued

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but is often not viewed as critical to having a “real wilderness experience.” Notably, solitude is not an “all-or-nothing” phenomenon; it can be intermittently experienced even in the most heavily used places in wilderness; it can be experienced in some places if not in others—perhaps at the campsite rather than along the trail (Hall et al. 2007).

Influences on the nature and quality of wilderness experiences

Most of the wilderness research on attributes that influence experience quality has been devoted to the effects of amount of use, as it was assumed that increasing use was the primary threat to quality wilderness experiences. Thus this review focuses on this attribute. However, many other attributes also affect experiences, including visitor behavior and environmental characteristics (Hockett and Hall 1998). For example, Schroeder and Schneider (2010) report that wildland fire promoted interest and exploration without resulting in much change in route choice or overall trip planning. Much remains to be learned about effects of invasive species, climate change, and other environmental influences on wilderness experiences.

Studies conducted both inside and outside wilderness have typically found a weak relationship between amount of use and overall quality of visitor experiences (often referred to as total satisfaction). This lack of relationship has often been dismissed as the result of conceptual and methodological issues that render satisfaction an inappropriate criterion to manage use levels (Manning 2011). However, in a study that overcame many methodological issues by studying the relationship between use density and trip quality within (rather than among) individuals, Stewart and Cole (2001) showed that, for most people, evaluations of trip quality declined consistently—but not much—as use density increased. This suggests that, within reasonable bounds, the number of people encountered simply does not have a profound

effect on the quality of most people's experiences. This does not mean that managers should not manage for low-density settings in wilderness; rather it suggests that doing so may not profoundly improve experience quality for many visitors. Other attributes, such as visitor behavior, might be much more influential.

The number of people encountered in wilderness is seldom considered more than a minor problem, even though people often encounter more people than they prefer or consider acceptable. Instead, litter and evidence of inappropriate behavior—in terms of both physical evidence of use and user behavior—usually top the list of visitor concerns (Stankey and Schreyer 1987). Many of the primary influences on trip quality—both positive and negative—are either outside the control of managers or do not require more than avoiding actions that compromise the undeveloped and apparently natural wilderness setting. In several heavily used wilderness destinations in Oregon and Washington, the positive influences most often mentioned by interviewees were scenery, natural features, and the feeling of escape, peace, and quiet, while weather, bugs, and fatigue were common negative influences (Hall et al. 2007). Crowding and rude or inappropriate visitor behavior, the most commonly mentioned negative influence, was mentioned by only 26% of interviewees, despite heavy use of these destinations.

Few studies have assessed the effect of attributes on what people actually experience. In a study of visitors to an Arctic national park, Watson et al. (2007) found that encounters with others, the extent of developments, and the quality of preplanning information each affected three of five prominent dimensions of visitor experience. In Oregon and Washington wilderness, use density affected the degree to which privacy was experienced but neither the functions of privacy—release or personal growth (Cole and Hall 2008a)—nor the restorative components of wilderness. When comparing the experiences of visitors across wilderness with different levels of use, only 7 of 72 descriptors varied with amount of use (Cole and Hall 2008b). Further, in interviews conducted in three wilderness locations, experiences varied more among locations than with amount of use (Hall et al. 2007), suggesting that environmental attributes, largely outside managerial control, have more effect on experience than those attributes managers can control.

Stewardship of visitor experiences

Studies of the experiences people have in wilderness illustrate how rich and diverse these experiences are in terms of what people seek, perceive, and ultimately attain. In addition to being diverse and idiosyncratic, experience outcomes do not seem to be uniquely dependent on wilderness settings. Perhaps wilderness is

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just a particularly good place to have certain types of experience, and what is unique about the wilderness experience is a “bundle” of separate experiences, an “experience gestalt” that is dependent on a wilderness setting (Roggenbuck and Driver 2000) and can be most intensely attained in wilderness. In response to an open-ended question about what makes wilderness experiences different, visitors to wilderness in Washington and Oregon most frequently mentioned a combination of experiential and setting attributes: solitude, scenery, no impact, quiet, and challenge (Cole and Hall 2009).

Although many attributes can affect experience quality, visitor experiences are typically affected most by attributes largely outside the control of managers. Moreover, managers can create only opportunities for experiences. They can provide opportunities for solitude, for example, but cannot ensure that visitors will find solitude. Many people are not seeking solitude, although many do find it desirable when it occurs. Some researchers have referred to this concept as “situated freedom” whereby managers structure the environment to some degree, setting boundaries on what can be experienced, but “within those boundaries recreationists are free to experience the world in highly individual, unique and variable ways” (Patterson et al. 1998, p. 430). Although crowding is perhaps the most serious threat to experiences subject to managerial control, it is seldom perceived by many people to be a substantial problem, even in the most heavily used places in wilderness. This seems to reflect the adaptability of humans. Most visitors plan, learn, and adjust their expectations; they rationalize and view things in relative terms. They prefer to use coping behaviors and decide for themselves whether or not to visit a crowded wilderness (Cole and Hall 2007). Given the diversity of wilderness visitors and visitor experiences, along with how adaptable visitors are to the conditions they find, managers attempting to protect experience quality cannot succeed without first deciding whom and what they are managing for. Should they manage for a high degree of solitude in wilderness even if solitude is not highly salient to most wilderness visitors, so visitors do not need to cope and rationalize? Should their efforts be focused on threats such as global climate change or invasive species? Answers to such questions go beyond the bounds of science, offering a glimpse of the questions to be resolved over the next 50 years.

References

- Borrie, W. T., and R. M. Birzell. 2001. Approaches to measuring quality of the wilderness experience. Pages 29–38 *in* W. A. Freimund and D. N. Cole, compilers. *Visitor use density and wilderness experience: Proceedings*. 1–3 June 2000, Missoula, Montana. Proceedings RMRS-P-20. USDA Forest Service, Rocky Mountain Research Station, Ogden, Utah, USA.
- Borrie, W. T., and J. R. Roggenbuck. 2001. The dynamic, emergent, and multi-phasic nature of on-site wilderness experiences. *Journal of Leisure Research* 33:202–228.
- Brooks, J. J., G. N. Wallace, and D. R. Williams. 2006. Place as relationship partner: An alternative metaphor for understanding the quality of visitor experience in a backcountry setting. *Leisure Sciences* 28:331–349.
- Bultena, G. L., and M. J. Taves. 1961. Changing wilderness images and forestry policy. *Journal of Forestry* 59:167–171.
- Cole, D. N., and T. E. Hall. 2007. The “adaptable human” phenomenon: Implications for recreation management in high-use wilderness. Pages 126–131 *in* D. Harmon, editor. *People, places, and parks: Proceedings of the 2007 George Wright Society Conference on Parks, Protected Areas, and Cultural Sites*. George Wright Society, Hancock, Michigan, USA.
- . 2008a. Visitor experiences in wilderness: How they vary with amount of use and length of stay. Unpublished report. Aldo Leopold Wilderness Research Institute, Missoula, Montana, USA. Available at <http://leopold.wilderness.net/unpublished/UNP124.pdf>.
- . 2008b. Wilderness visitors, experiences, and management preferences: How they vary with use level and length of stay. Research Paper RMRS-RP-71. USDA Forest Service, Rocky Mountain Research Station, Fort Collins, Colorado, USA.
- . 2009. Perceived effects of setting attributes on visitor experiences in wilderness: Variation with situational context and visitor characteristics. *Environmental Management* 44:24–36.
- Dawson, C. P., P. Newman, and A. Watson. 1998. Cognitive dimensions of recreational user experiences in wilderness: An exploratory study in Adirondack Wilderness Areas. Pages 257–260 *in* H. O. Vogelsong, compiler. *Proceedings of the 1997 Northeastern Recreation Research Symposium*. General Technical Report NE-241. USDA Forest Service, Northeastern Forest Experiment Station, Radnor, Pennsylvania, USA. Available at http://nrs.fs.fed.us/pubs/gtr/gtr_ne241/gtr_ne241_257.pdf.
- Hall, T. E., B. J. Johnson, and D. N. Cole. 2007. Dimensions of wilderness experience: A qualitative investigation. Unpublished report. Aldo Leopold Wilderness Research Institute, Missoula, Montana. Available at http://leopold.wilderness.net/research/fprojects/docs7/qual_interview_rept_final.pdf.
- Hammit, W. E. 1982. Cognitive dimensions of wilderness solitude. *Environment and Behavior* 14:478–493.
- Hockett, K., and T. Hall. 1998. Shenandoah National Park 1998 Backcountry and Wilderness Visitor Study. Unpublished report. Shenandoah National Park, Luray, Virginia, USA.
- Lucas, R. C. 1964. The recreational capacity of the Quetico-Superior area. Research Paper LS-15. USDA Forest Service, Lake States Forest Experiment Station, St. Paul, Minnesota, USA.
- Manning, R. E. 2011. *Studies in outdoor recreation: Search and research for satisfaction*. Third edition. Oregon State University Press, Corvallis, Oregon, USA.
- Outdoor Recreation Resources Review Commission (ORRRC). 1962. *Wilderness and recreation—A report on resources, values, and problems*. ORRRC Study Report 3. Washington, D.C., USA.
- Patterson, M. E., A. E. Watson, D. R. Williams, and J. R. Roggenbuck. 1998. An hermeneutic approach to studying the nature of wilderness experiences. *Journal of Leisure Research* 30(4):423–452.
- Roggenbuck, J. R., and B. L. Driver. 2000. Benefits of nonfacilitated uses of wilderness. Pages 33–49 *in* S. F. McCool, D. N. Cole, W. T. Borrie, and J. O’Loughlin, compilers. *Wilderness Science in a Time of Change Conference*. Volume 3: *Wilderness as a place for scientific inquiry*. Proceedings RMRS-P-15-VOL-3. USDA Forest Service, Rocky Mountain Research Station, Fort Collins, Colorado, USA.
- Schroeder, S. L., and I. E. Schneider. 2010. Wildland fire and the wilderness visitor experience. *International Journal of Wilderness* 16(1):20–25.
- Stankey, G. H., and R. Schreyer. 1987. Attitudes toward wilderness and factors affecting visitor behavior. Pages 246–293 *in* R. C. Lucas, compiler. *Proceedings: National Wilderness Research Conference: Issues, State-of-Knowledge, Future Directions*. General Technical Report INT-220. USDA Forest Service, Intermountain Research Station, Ogden, Utah, USA.
- Stewart, W. P., and D. N. Cole. 2001. Number of encounters and experience quality in Grand Canyon backcountry: Consistently negative and weak relationships. *Journal of Leisure Research* 33:106–120.
- Watson, A., B. Glaspell, N. Christensen, P. Lachapelle, V. Sahanatien, and F. Gertsch. 2007. Giving voice to wildlands visitors: Selecting indicators to protect and sustain experiences in the eastern Arctic of Nunavut. *Environmental Management* 40:880–888.

About the author

David N. Cole is a research geographer with the Aldo Leopold Wilderness Research Institute, Rocky Mountain Research Station, U.S. Forest Service, Missoula, Montana. He can be reached at (406) 542-4199 and dcole@fs.fed.us.