

Agency Policy and the Resolution of Wilderness Stewardship Dilemmas

Wilderness preservation is strongly supported by the American people (Cordell et al. 1998) and a substantial portion of the public domain has been allocated to wilderness. The Wilderness Act of 1964 and more than 135 subsequent wilderness bills have created a National Wilderness Preservation System of 661 wilderness areas with a total acreage that exceeds 106 million acres. The proportion of the United States currently designated as wilderness is 4.5%. Designated wilderness constitutes more than 16% of lands owned by the federal government, 57% of National Park Service lands, 22% of Fish and Wildlife Service lands, 18% of Forest Service lands and 2% of Bureau of Land Management (BLM) lands. Moreover, wilderness acreage is likely to increase substantially in the future.

America's investment in wilderness management has never been commensurate with its investment in wilderness allocation, however. Unless adequate attention is given to the quality of conditions within wilderness boundaries, the establishment of a large National Wilderness Preservation System will fail to preserve an enduring resource of wilderness (Lucas 1973; Hendee and Dawson 2002). If wilderness character degrades substantially, wilderness may continue to exist as lines on a map but not as vestiges of the wild American landscape. A recent report by the Pinchot Institute for Conservation (2001), commissioned to assess the quality of wilderness management by the federal agencies, concluded that there is a need for stronger leadership, more consistent policy, and an increase in the financial resources invested in wilderness stewardship.

Wilderness is Unique

When the Wilderness Act was proposed, federal land management agencies were united in their opposition to the bill. They viewed it as a threat to their administrative discretion and as unnecessary (Hession 1967; Sellars 1997). Since passage of the act, official agency opposition has disappeared but subtle opposition continues, particularly in the form of personal beliefs that wilderness is not unique, that wilderness management does not require special skills, and that it can be a collateral duty. The Pinchot Institute for Conservation report questions the adequacy of wilderness leadership in all four wilderness management agencies but notes that "the BLM and Forest Service are best staffed by people with specific responsibilities for wilderness stewardship" (2001:8). The report implies that inadequate recognition of the unique characteris-

tics and challenges of wilderness is most problematic in the National Park Service and Fish and Wildlife Service, where it is not uncommon to hear leaders argue that wilderness is no different from park backcountry or that wilderness designation should not influence refuge management objectives. Sellars (1997:191) notes the prevalence of the belief that wilderness designation is “redundant” within the National Park Service leadership. Such beliefs are barriers to effective wilderness stewardship and reflect a poor appreciation for wilderness values and the support of the American people for those values.

Wilderness Stewardship is Challenging and Requires Financial Resources

Funding for wilderness management is meager in all four management agencies. For example, the Forest Service spends less than 1% of its annual allocation of about \$4 billion on wilderness management, despite the fact that 18% of Forest Service lands are designated wilderness. Investment in wilderness science is even more anemic. The Forest Service provides the vast majority of funding devoted to developing a scientific basis for wilderness management, and yet Forest Service research invests less than 0.5% of its annual budget on wilderness management science. The other agencies invest considerably less.

Inadequate funding might be explained by a perception that wilderness management is a simple business. Nothing could be further from the truth, however. Management of

wilderness requires as diverse an array of information and skills as any land management job (Cole 1990). Wilderness managers must maintain ecological conditions and processes, as well as provide outstanding opportunities for solitude and primitive recreation. They must develop a good understanding of the conditions and processes that make up the wilderness resource—air and water quality, wildlife, recreation, and much more. They need to develop quantifiable objectives for the conditions wilderness is to provide, monitor these conditions to see if objectives are being met, and develop and implement management strategies and action plans for dealing with situations where objectives are not being met. Moreover, management challenges are exacerbated by the remoteness of many wilderness lands, the scale and complexity of the systems involved, provisions for nonconforming uses, conflict between competing goals and, particularly, by the need to manage with a light hand (Pinchot Institute for Conservation 2001).

Wilderness Management Dilemmas

Inadequate funding and limited recognition of what distinguishes wilderness from other land classifications are two obvious problems resulting from “a lack of official attention to sound wilderness stewardship” (Pinchot Institute for Conservation 2001:4). Lack of attention by agency leadership also has resulted in confusion regarding how to resolve several fundamental dilemmas of wilderness stewardship. This is particularly true

of two dilemmas that face wilderness managers.

The first of these involves the conflict between providing access to wilderness for its “use and enjoyment” and protecting the biophysical conditions and visitor experiences that are unique to wilderness but can be degraded by recreational use. Recreation use of wilderness continues to increase (Cole 1996a) and Congress exacerbates this problem by designating heavily used lands adjacent to metropolitan areas as wilderness. How do we balance the needs of society for periodic escape from hectic lifestyles to places of personal renewal with the mandate to protect wilderness conditions from degradation? In National Park Service wilderness, this is mostly a day-use issue. Overnight visitation is usually limited, while day-use goes unmanaged and usually unmonitored. Hundreds of people per day hike popular wilderness trails in parks such as Yosemite and Shenandoah, seeking respite from the crowded city and reunion with nature. Should this be allowed or should most day visitors be turned away? Such a question is even more difficult to answer for a wilderness such as Pusch Ridge, with boundaries immediately adjacent to suburban backyards in Tucson, Arizona. Should we allow heavy use in some places or in some wilderness areas but not in others?

The second dilemma concerns the appropriateness of manipulative restoration in wilderness. This dilemma is subtle and has only recently come to light (Graber 1995; Cole 1996b). Ideally, wilderness is a place where natural conditions and process-

es are preserved, where conditions are little different from what they would have been in the absence of post-aboriginal humans. Wilderness is also to be “untrammelled,” which means not controlled or intentionally manipulated by modern humans. I have referred to this attribute as “wildness” (Cole 2000, 2001). At one time, hands-off management was sufficient to keep wilderness both natural and wild. As the human imprint on the globe increases and is better understood, however, it is clear that wilderness conditions have been altered by such human agents as global warming, invasions of exotic species, and fire suppression. For example, whitebark pine forests in the Rocky Mountains are being decimated by an exotic pathogen (white pine blister rust). This threatens grizzly bear populations that are dependent on whitebark pine seeds for a significant proportion of their diet (Tomback et al. 2000). Should we breed rust-resistant whitebark pines and plant them in wilderness to protect natural ecosystems and grizzly bears or is manipulation of genes and populations unacceptable in wilderness? To compensate for anthropogenic impact, should we intentionally manipulate wilderness ecosystems in some cases but not in others, or in some wildernesses but not in others?

Reasons These Dilemmas Exist

The proximate reasons why these dilemmas have never been resolved are ambiguity in the language of the Wilderness Act and insufficient policy and direction from agency leadership. Consequently, different wilderness

advocacy groups interpret the Wilderness Act in different ways, advancing those wilderness values they hold most dear. Some groups interpret the Wilderness Act as a mandate for not allowing heavy recreation use anywhere in the National Wilderness Preservation System and for not manipulating wilderness ecosystems even where there are pronounced human impacts. In contrast, other groups believe it is inappropriate to restrict recreational access where recreation use has traditionally been heavy (except perhaps to avoid excessive biophysical impacts). Other groups believe it is appropriate to manipulate wilderness ecosystems, using prescribed fires or herbicides for example, to compensate for human impact and protect native ecosystems and biodiversity.

The roots of these dilemmas can be traced to the divergent purposes for which wilderness has been designated. In *Driven Wild*, Sutter (2002) offers new and enriched perspectives on the motivations of some of the earliest and most influential wilderness advocates. He makes a compelling case that the primary motivations for wilderness preservation originally had more to do with keeping automobiles and recreational developments out of wilderness than with protecting wilderness from too many people. They also had more to do with primitiveness and the absence of human control than with a concern for pristine ecological conditions. As Howard Zahniser (1963), the primary author of the Wilderness Act, famously said, stewards of wilderness should be “guardians not gardeners.” This con-

trasts profoundly with the more recent opinion of ecologist Dan Janzen (1998) that the “gardenification” of wilderness is necessary and desirable.

The primacy of these motivations did not result from ecological ignorance or inadequate appreciation of the value of ecological preservation; rather they reflected the fact that the Ecological Society of America was working simultaneously to establish a representative system of areas protected in their natural condition. Sutter quotes a letter written in 1940 by Aldo Leopold, which states that “the [Wilderness] Society ... is mainly interested in wilderness *recreation*. Another group, the Ecological Society, is interested in wilderness *study*” (2002:280).

While the stream of thinking that led directly to the language and passage of the Wilderness Act was focused on primitive recreation in large undeveloped areas that were to be “untrammeled,” these same people recognized the value of other types of land preservation. In 1932, Bob Marshall wrote the recreation sections of a congressionally commissioned report on the nation’s forests (U.S. Congress—Senate 1933). He recommended the preservation of seven types of recreational areas, including both “wilderness areas” (which would emphasize primitive recreation) and “primeval areas” (which would provide representative examples of ecosystems in their natural state). Sutter describes the initial (1935) platform of the Wilderness Society, which identified the need for five “Types of Wilderness” (2002:246–247). Three of these types seem relevant to the

stewardship dilemmas we face today. “Extensive Wilderness Areas” were to be large areas free from mechanization, devoted to primitive recreation and with substantial symbolic value as reflections of human humility and restraint. “Primeval Areas” were to be tracts preserved in their natural state for scientific and aesthetic values, and “Restricted Wild Areas” were to be free from the sights and sounds of mechanization and near concentrated areas of population. The founders of the Wilderness Society recognized the need to preserve wilderness for at least three somewhat divergent purposes: primitive recreation in wild landscapes with symbolic value (their primary interest), preservation of natural ecosystems, and recreational escape from the city. Moreover, they recommended that lands devoted to these purposes be designated as different types of wilderness.

The management dilemmas we face today result primarily from Congress ignoring this recommendation. Regardless of the purpose of designation, areas are simply referred to as “wilderness” and are managed according to the language of the Wilderness Act, language that came largely from the tradition of the extensive wilderness area, where the primary motivations were primitive recreation and freedom from modernization and human manipulation. No similar land-management system has been developed to adequately provide the benefits of a system of natural ecosystems or of scenic, natural-appearing lands accessible to urban populations. The access vs. preservation dilemma results from Congress designating as

wilderness both lands valued because they are large, uncrowded, and primitive and lands valued because they are primitive but provide easy access to city-dwellers. The naturalness vs. wilderness dilemma results from Congress designating as wilderness both lands valued because they are free from human control and lands valued because they are representative of natural ecosystems.

Policy Needs to be Developed

In seeking resolutions to management dilemmas, the traditional approach has been to consider the merits of each situation on a case-by-case basis to arrive at an acceptable compromise between competing goals. Given the decentralized decision-making tradition of land management agencies, such decisions are typically made independently and repeatedly by mid-level officials, buffeted by the polarized arguments of opposing sides. In this environment, most decisions are likely to be made in similar fashions everywhere, causing the wilderness system to gravitate toward homogeneity and mediocrity (Cole 2000, 2001).

At a recent wilderness science conference, Foreman (2000) used “The River Wild” as a metaphor for the conservation movement. The movement grows in power and diversity as individual tributaries join together in the effort to preserve wilderness. Different tributaries include the three purposes for wilderness noted above—the interest in protecting opportunities for extended primitive recreational trips, the interest in preserving natural sanctuaries, and the interest in providing

places for crowded city-dwellers to recreate in a primitive, undeveloped, and largely natural environment. This is an apt metaphor for demonstrating that new streams (purposes and values of wilderness preservation) do not replace old streams. Each stream adds to the overall power of the river, resulting in the large National Wilderness Preservation System we have today.

The implication of this metaphor that Foreman does not explore is what happens when tributaries with divergent characteristics are joined, blending waters and diluting the original purity of each tributary. The mixing of divergent purposes within wildernesses muddies the waters, leading to loss of many of the values wilderness designation was meant to preserve.

The primary recommendation of the Pinchot Institute for Conservation (2001) is that wilderness be managed as a system. Most of the authors' emphasis, however, is on integration and collaboration between the four wilderness management agencies. Inadequate interagency collaboration is a problem, but inconsistency between agencies may actually promote diversity and enhance the value of the wilderness system. Inadequate policy and decentralized decision-making may be greater threats to the preservation of quality within the wilderness system. Policy is needed that will maintain the purity of wilderness lands designated for divergent purposes—to avoid the muddied waters and loss of values that occurs when competing wilderness purposes are compromised on a case-by-case basis. A regional and national perspective needs to be developed to help

stewards of individual wildernesses make decisions about access and preservation, about naturalness and wildness. Only from this perspective is it possible for local decisions to optimize rather than dilute the values of the National Wilderness Preservation System (McCool and Cole 2001).

The Policy of Non-degradation

Non-degradation provides an example of how policy options could be assessed and decisions could be made that would have a profound effect on the future benefits of our wilderness system. Some argue that the Wilderness Act mandates non-degradation of wilderness, that actions must be taken to ensure that wilderness conditions (e.g. natural, wild ecosystems and opportunities for solitude) not be allowed to degrade following wilderness designation (Worf 2001). Worf (2001) asserts that, within the Forest Service at least, non-degradation has always been official policy. However, there are numerous examples where research and monitoring have shown increases in biophysical impacts and in crowding in Forest Service wilderness since designation (e.g., Cole 1993, 1996a). This suggests that we in the Forest Service are not currently managing wilderness according to the principle of non-degradation. It also begs the question, should we do so?

This is the question at the core of the access vs. preservation dilemma. It is my opinion that educational programs, such as Leave-No-Trace, and other management actions have already reduced *per capita* impact almost as much as might be expected.

If so, further increases in recreational use will inevitably cause further degradation of wilderness. Therefore, if we pursue a policy of non-degradation, we must immediately limit recreation use everywhere in the wilderness system (in fact, a strict interpretation would require reductions in use across the system). Our choices and their implications are clear. In my opinion, we need to use clarifying concepts such as non-degradation to assess costs and benefits and to debate the merits of alternative policies. These hard but decisive choices carry such profound long-term implications that they should be made at the highest levels of the land-management agencies instead of being delegated to mid-level management.

Conclusion

The stewardship needed to preserve wilderness values in perpetuity depends on increased recognition of the uniqueness of wilderness and increased commitment, attention, leadership, and financial resources. Given the uniqueness of wilderness and the complexity of wilderness stewardship, increased attention needs to be given to wilderness sci-

ence, as well as wilderness management, particularly by agencies other than the Forest Service. Equally important is the clarification of policies regarding the purposes of wilderness designation. Currently, wilderness stewards facing management dilemmas have little option other than to compromise between divergent purposes and values. Compromise is the best way to optimize the value of an individual wilderness. However, compromise does not optimize the value of the National Wilderness Preservation System. Ironically, to preserve divergent values within the system, individual managers should choose between competing values. The need I envision is for a referendum on the legitimate purposes and values of designated wilderness. Then wilderness management agencies must cooperate and develop the institutional capacity to preserve wilderness values in perpetuity. To the degree that legitimate wilderness values conflict, cooperation and institutional capacity has less to do with making consistent decisions and more to do with planning to preserve the purity of varied streams of wilderness purpose.

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