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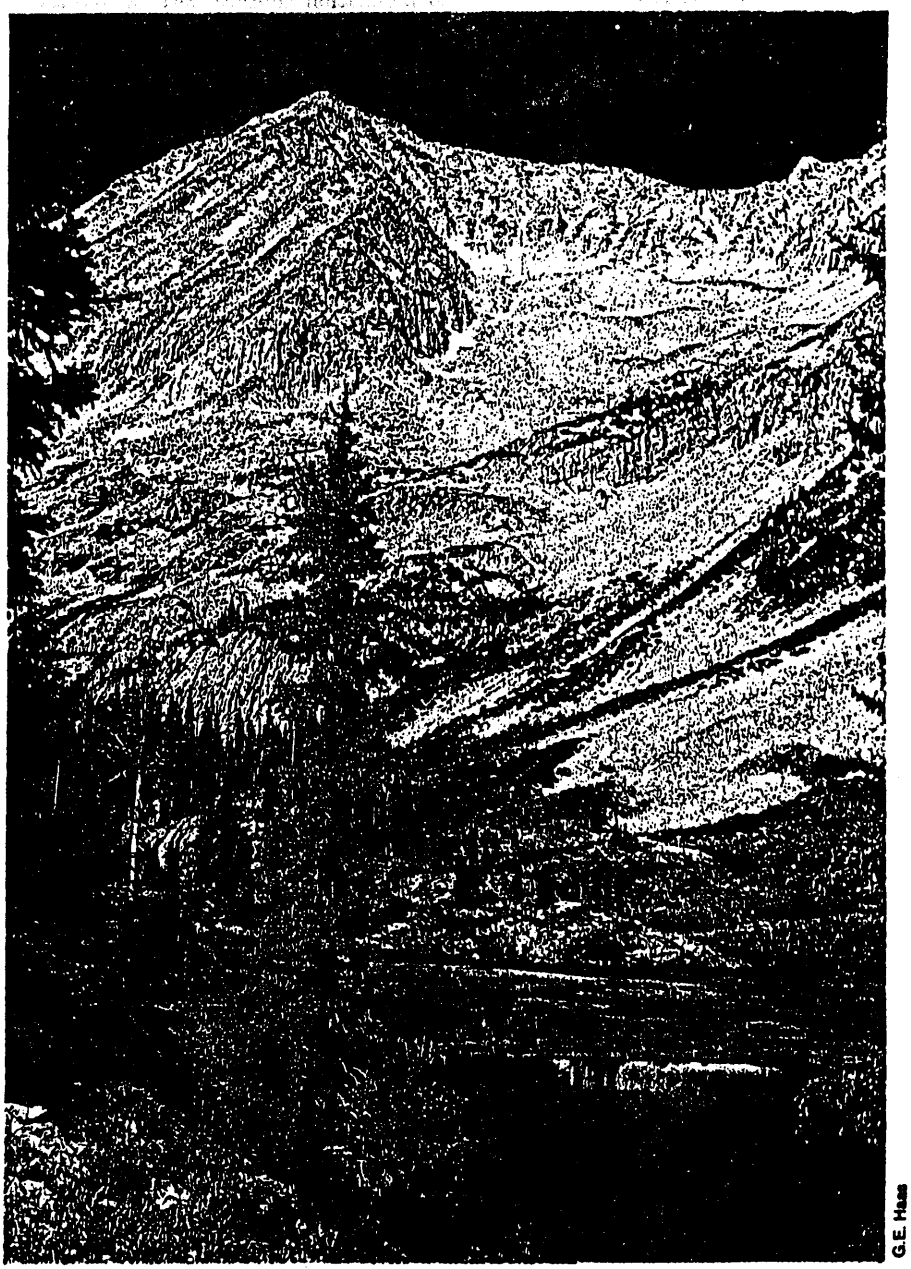
Wilderness Management Zoning

Wilderness managers must have flexibility to administer different areas differently.

By Glenn E. Haas, B.L. Driver, Perry J. Brown, and Robert G. Lucas

From the passage of the Wilderness Act (P.L. 88-557) in 1964 until recently, debate about wilderness in the United States centered on what lands should be included in the National Wilderness Preservation System. By January 1987, that debate had led to designation of about 450 areas constituting 89 million acres, or almost 13 percent of all federal lands. In the 1980s, concern about wilderness began to shift from designation to management.

Because of varying conditions, various sections of practically every designated wilderness must be managed differently. We believe that sustained opportunities to realize both wilderness benefits and resource preservation—as well as providing opportunities for wilderness use—are more likely to be achieved if management zoning is planned explicitly rather than informally and implicitly. Although there is resistance, a rationale for zones in wilderness can be made. Zoning in the Maroon Bells-Snowmass Wilderness in Colorado exemplifies this management approach (sidebar, p. 19).



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Geneva Lake in the Maroon Bells-Snowmass Wilderness, CO.

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A single management direction can result in . . . a "homogenizing effect."

Background

Acceptable human uses of wilderness resources can be determined not only by the general guidelines set by the Wilderness Act and agency policies but also by the specific conditions that exist in each area. Such factors as proximity to population centers, ease of access, size of the area, type of landforms and ecosystems, scenic beauty, presence of threatened and endangered species of plants and animals, and existence of historic and archeological sites are important influences.

Because of the typical diversity of resources, uses, and conditions, few single wildernesses can be managed uniformly. How well an ecosystem endures use varies from site to site. Furthermore, wilderness visitors differ in their definitions of a quality wilderness experience. Although some management actions and standards may be prescribed for an entire wilderness, many will apply only to particular zones, areas, or sites (for example, restricting camping near trails, lakes, or streams; limiting grazing of cattle and sheep to specific areas; using prescribed fire in some areas; varying trail maintenance standards; providing more frequent ranger patrols in higher use areas; and protecting cultural sites).

Zoning Issues

Zoning in wilderness is not a new idea. Only three months after passage of the Wilderness Act, the Forest Service considered such a system (USDA Forest Service 1964). Three zones—pristine, median, and portal—were described, but the proposal was not adopted. Pristine zones, however, were established in the Selway-Bitterroot Wilderness in Montana and Idaho in the early 1970s.

The very mention of the term *zone* provokes controversy. Some of the sensitivity may be related to a long-standing tension between the advocates of multiple use and dominant use, and some to notions of zoning as used in urban planning. As used here, zoning refers to differences in management direction for different sections of an established wilderness. In essence, zoning is the kind and intensity of management that is prescribed for different parts of a wilderness. Beyond disputes about the word *zoning* lie many more important aspects about the concept and its application to wilderness management.

Is wilderness management zoning legal?—The Wilderness Act makes no explicit statement about zoning, but the act does recognize that wildernesses may differ in their values and that special provisions apply to certain areas. In 1978, Congress gave implicit consent to zoning as a management tool when it used the word *zone* in reference to cobalt mining in a portion of the Frank Church–River of No Return Wilderness in Idaho (P.L. 96-312).

Different management objectives, standards, and actions in different parts of a wilderness are clearly legal. The relevant question is whether or not a particular management direction implemented in any zone violates the provisions of the Wilderness Act. This question is particularly germane when "transition" zones are established directly adjacent to developed recreation complexes that have extremely high visitor use.

Will some zones provide nonwilderness conditions?—Some wilderness areas have paved roads to their boundaries, developed campgrounds at their edges, or population centers nearby. These and other conditions invite substantial wilderness use and cause subsequent impacts. Under the management system developed for the Maroon Bells–Snowmass Wilderness, the section with such conditions was classified as a "transition" zone.

There are several opinions about the classification and management of those areas that are strongly influenced by outside conditions and are easily accessible. The view that these fringe areas should not have been included within the boundaries of wilderness is moot because Congress accorded them wilderness status. The remaining opinions fall on a continuum. One extreme advocates that management should quickly transform these areas to resemble more remote, lightly impacted areas.

The Maroon Bells–Snowmass Project

A cooperative management-research demonstration project, started in 1978 and completed in 1982, used the Maroon Bells–Snowmass Wilderness (MBSW) in Colorado to develop and test a systematic approach to wilderness management that would (1) be consistent with the Wilderness Act, (2) establish and implement clearly stated management objectives and prescriptions, and (3) provide a range of wilderness use opportunities to meet a diversity of wilderness-related values. The system developed serves as an example of the zoning concept. The MBSW project involved researchers with the USDA Forest Service Rocky Mountain Forest and Range Experiment Station and Intermountain Research Station, Colorado State University, and managers in the Forest Service's Rocky Mountain Regional Office and the White River and Gunnison national forests (Haas and Plisco 1979).

Proceeding through the Forest Service land- and resource-management planning process, the MBSW study team applied several planning and analysis tools: the recreation opportunity spectrum planning system (USDA Forest Service 1982); year-round (June 1978 to May 1979) research on visitor preferences through on-site interviews and mailed questionnaires; local public-involvement workshops and personal interviews with influential persons; user travel simulation (Shecter and Lucas 1978); inventory of the biophysical and historical resources; campsite inventory and condition-class rating; and limits of acceptable change standards.

From these investigations, it became apparent that some guidelines—air visibility standards, for example—would apply to the entire MBSW, while others would apply to specific sites such as the heavily used Crater Lake area or the unique Conundrum Hot Springs. It also appeared that more effective management might be possible if guidelines were developed at an intermediate level between areawide and site-specific prescriptions. The study team concluded that the varying conditions and uses in the MBSW constituted a spectrum of use opportunities, that diversity was desirable, and that it could be managed through a system of "wilderness management zones."

Zoning was intended to define desired conditions for different parts of the wilderness, not simply to reflect existing conditions. Four zones were established and labeled "transition," "semi-primitive," "primitive," and "pristine." *Transition* and *semi-primitive* may not have been the best choices because they may connote something other than wilderness conditions. Objectives, standards, and management actions varied among the four zones, although some elements were uniform *(table 1)*. We stress that this is only one example; other areas such as the Bob Marshall (MT) have established different standards (Stankey, McCool, and Stokes 1984). In both cases, decisions about objectives, standards, and zones reflected consensus including extensive public participation. No single planning tool, analysis procedure, formula, individual, or group determined the outcome.

Table 1. Examples of standards and management direction across four wilderness management zones in the Maroon Bells–Snowmass Wilderness, CO.[1]

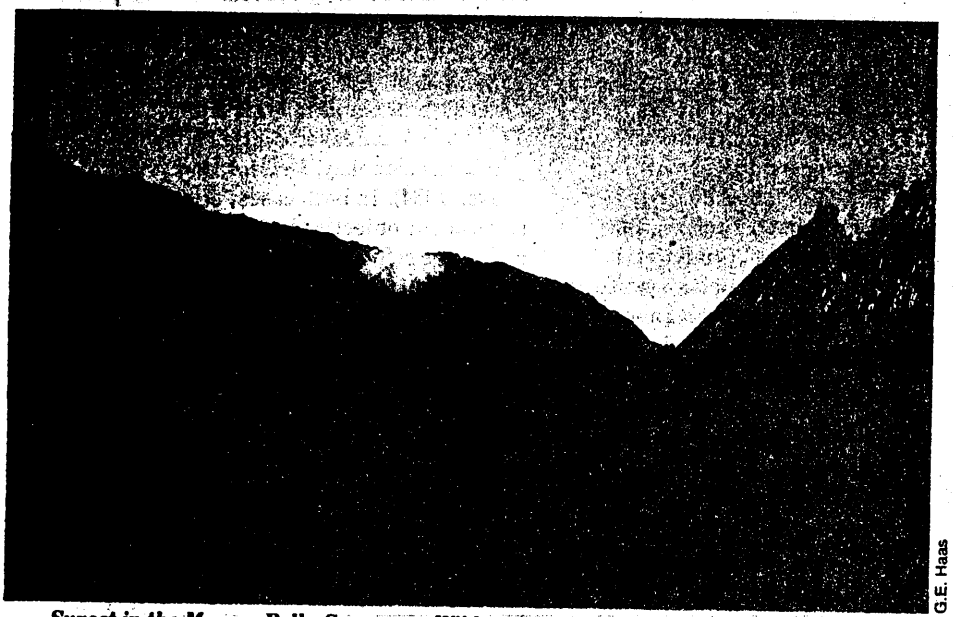
Elements	Transition	Semi-primitive	Primitive	Pristine
Party size limitation (without special permit)	10	10	10	10
No camping within 100 feet of trails, streams, lakes	Yes	Yes	Yes	Yes
Percentage of groups to be contacted by rangers	90	33	25	10 or less
Camping in designated sites only	Yes	No	No	No
Campfires permitted	No	Yes	Yes	Yes
Trail maintenance standard	Level 3	Level 2	Level 1	No trails permitted
Average number of daily contacts with other groups during peak use season	20	5–20	0–5	0–2
Campsite condition class standard	3	3	2	2
Maximum size of campsites (square feet)	225	225	100	49

[1] *From the Interim Management Direction for the Maroon Bells–Snowmass Wilderness (USDA Forest Service 1982). The examples do not necessarily reflect the current direction in the White River National Forest Land and Resource Management Plan.*

Proponents of this position often support uniform management throughout the entire wilderness. They fear that designation and management of zones will lead to conditions that will not meet minimum requirements of the Wilderness Act. Some people view the transition zone in the Maroon Bells–Snowmass Wilderness as a de facto nonwilderness buffer, thus compromising the integrity of the legally designated wilderness. At the other end of the continuum are those who believe that fiscal, social, and political factors make it infeasible to transform these heavily affected areas. This alternate view holds that not all sections of a wilderness can be managed the same way, nor need they be so long as the minimum requirements of the Wilderness Act are met.

The problem of agreeing on the mini-

mum requirements (i.e., standards) for wilderness is not a problem of zoning. In writing the 1964 act, Congress did not quantitatively define such terms as *unimpaired, substantially unnoticeable, natural conditions, primitive recreation,* or *solitude.* In fact, Congress added qualifying phrases, such as "*generally appears* to have been affected *primarily* by the forces of nature" (emphasis added), that suggest a recognition and acceptance of some deviations from ideal wilderness. Congress chose to leave interpretations of these terms to public land managers and interested citizens on a case-by-case basis. The terms that define wilderness must be made operational through a planning process that results in establishing specific management objectives, standards, and actions for each area. This case-by-case approach to decisions will inevitably result in differences in defining wilderness management zones and the recreational opportunities.



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Sunset in the Maroon Bells–Snowmass Wilderness, CO.

A position between the two extremes seems wise. Heavily used, severely affected areas should be managed to standards that will improve conditions to acceptable levels, while areas with high-quality wilderness conditions and experience opportunities should be managed to perpetuate these features.

Federal agencies could set national or regional minimum acceptable standards for some important ecological and social conditions if they believed this was necessary.

Will zoning diminish wilderness resources and values?—Most of the plans in the 1960s and 1970s contained one generic management direction for an entire wilderness. Because they lacked specificity, these plans usually were not effective. Managers must establish clear and quantifiable objectives, develop operational standards consistent with objectives, select actions to achieve standards, and monitor conditions. With zoning, those operations are likely to be even more specific and realistic, and lead to greater accountability.

Developing management directions for several zones results in what might be called a "staircase approach" to wilderness protection. Portions of a wilderness managed under the pristine direction will be maintained in such a way that the quality of the resource and its uses will not drift below defined pristine conditions, the primitive portion will not slide below the conditions under the primitive direction, and so forth. We think this is an effective way to protect wilderness value.

But with a single management direction, it is possible that the wilderness resource and its uses will decline to the minimum conditions established for the entire wilderness as less pristine informal zones expand and replace more pristine zones. A single management direction can result in (1) minimum standards that are based on that portion of the wilderness with lowest quality, and a resultant inability to protect more pristine areas; (2) standards that are exceedingly demanding and difficult to implement; or (3) a "homogenizing effect" on the quality and diversity of the wilderness resources, recreation opportunities, and other human uses.

How many zones are appropriate?—The appropriate number of zones will vary, with the choices influenced by the biophysical resources, human uses, conflicts between biophysical resources and human uses, public issues and management concerns, success of current management programs, use trends, and managerial feasibility. There are some small or very remote wildernesses where one zone may be adequate for the entire area. The Neota Wilderness (CO) has one management direction; the Rawah (CO) and Selway-Bitterroot wildernesses have two; the Maroon Bells–Snowmass, Bob Marshall (MT), and Indian Peaks (CO) wildernesses have four. As a rule, the greater the diversity in the biophysical resources and human uses, and the greater the variety in the condition of the resource and its uses, the more likely and effective a large number of zones.

Will the public be influenced by the names of the zones?—The purpose of labeling zones is to facilitate communication among managers, but the public's reaction to names could have undesirable effects. "Pristine" or "trailless" might attract the excessive use that managers are trying to avoid. As an alternative, zones could be numbered 1, 2, 3, 4, as they are in the Bob Marshall Wilderness Complex (Stankey, McCool, and Stokes 1984) or given other neutral names. Zones as management tools are described in agency documents, but the names of the zones need not be empha-

sized or included on maps distributed to recreational visitors.

How can wilderness opportunity zones deal with change?—Zones with specific objectives and standards provide a framework for monitoring and responding to change. As conditions or uses shift (e.g., cessation of a grazing allotment, increasing recreational use), the political, social, and administrative feasibility of improving conditions is facilitated by dealing with one zone at a time rather than an entire wilderness. Zoning provides managers with a tool for taking advantage of opportunities as they arise to enhance the protection of wilderness.

Will wilderness management directions vary among wildernesses?—Since the issues and values are unique to each wilderness, management directions will vary but remain within the broad parameters of the Wilderness Act. Managers need flexibility to develop directions that are specific to particular situations. Thus, not all wildernesses will have four zones, a transition zone, the same name for zones, or the same management objectives, standards, and actions.

What is the relationship between zoning and monitoring?—Monitoring must be incorporated into any management approach. Zoning with explicit standards can be the basis of monitoring and can also help make monitoring cost-effective. Because agency budgets are austere, priorities are necessary. Any portion of a wilderness in which the quality of the resource or its social uses appears to be threatened should be targeted for increased monitoring. A well-conceived and well-implemented monitoring program will ensure that limited funds are effectively allocated among elements and across zones. Used in this way, zoning is valuable for developing an efficient and effective resource monitoring and rehabilitation program because it focuses attention on the critical issues in each part of the wilderness.

Conclusions

A system that specifies varied management directions within a wilderness seems inevitable for several reasons. First, there is great variation in the biophysical resources and human uses within wilderness. This natural variation creates de facto zoning, whether or not management labels it so. Second, it is rarely politically, socially, or fiscally possible to manage an entire wilderness to a single strict standard. Moreover, managing it to a single lenient minimum standard will permit degradation of high-quality portions of many wildernesses. Third, zoning has been used repeatedly in our society, and its merits are widely recognized as a tool that enables clear, specific, and effective management directions and for communicating these to interested citizens.

Our experience with managers and citizens in developing a wilderness opportunity zoning scheme for the Maroon Bells–Snowmass Wilderness has shown us its usefulness in developing management prescriptions and in communicating with interested citizens. We conclude that zoning is not only effective but inevitable. Zoning can help maintain diversity and enhance protection of wilderness as well as improve the quality of wilderness experiences. ■

Literature Cited

HAAS, G.E., and G.W. PLISCO. 1979. A co-op management-research demonstration project. Proc. 1st Annu. Natl. Conf. on Recreat. Plann. & Dev. II:617-29. Amer. Soc. Engin., Washington, DC.

SHECTER, M., and R.C. LUCAS. 1978. Simulation of recreational use for parks and wilderness management. The Johns Hopkins Univ. Press, Baltimore, MD. 220 p.

STANKEY, G.H., S.F. MCCOOL, and G.L. STOKES. 1984. Limits of acceptable change: a new framework for managing the Bob Marshall Wilderness. West. Wildl. 10(3):33-37.

USDA FOREST SERVICE. 1964. Managing national forest wilderness: a discussion draft of suggested objectives, policies, procedures, and regulations. Div. Recreat. & Land Uses, Washington, DC.

USDA FOREST SERVICE. 1982. Recreation opportunity spectrum. Recreat. Manage. Staff, Washington, DC.

USDA FOREST SERVICE, GUNNISON AND WHITE RIVER NATIONAL FORESTS. 1982. Maroon Bells-Snowmass Wilderness interim mangement direction. Glenwood Springs, CO.

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