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# SCIENTIFIC ISSUES IN THE DEFINITION OF WILDERNESS

George H. Stankey

## ABSTRACT

*This paper examines some of the important scientific issues underlying wilderness protection. Specific scientific criteria to define wilderness are identified, and the extent to which these criteria are incorporated within the process of preserving wilderness in the United States is discussed. Needed actions to highlight and protect scientific values in wilderness are discussed.*

## INTRODUCTION

A dominant theme in wilderness literature concerns the scientific values such areas hold. The purpose of this paper is to explore some of the issues that underlie the scientific values of wilderness, to identify some of the specific scientific criteria that contribute to the definition of wilderness, and to consider how adequately the U.S. Wilderness Act (Public Law 88-577) meets the concerns of scientists. Some concluding remarks discuss how these scientific concerns might be better met.

Wilderness is a term plagued by an enormous range of interpretation. Even in the United States, where it has acquired legal status, there remains considerable confusion; the term is often used to describe any area outside a developed setting. This confusion likely has its roots in the fact that wilderness in our culture is perceived as an antonym of civilization and, consequently, the concept is often used to describe any area not possessing the general qualities of civilization (Nash 1982).

For the purposes of this paper, wilderness describes those areas where management objectives feature protection of the natural processes that have shaped the physical-biological character of the setting. Mechanized access is prohibited or greatly restricted as are resource exploitation activities. Recreation is a legitimate use, yet subordinate to the goal of environmental preservation. Such areas provide a variety of values to society, including scientific values.

Calls for the protection of wilderness have been driven by many different concerns, including the desire to protect areas that provide primitive recreation opportunities; the need for protection of scenic resources; moral/ethical concerns, including protection of future options; concerns with the efficient use of resources; protection of the environment, particularly watershed and wildlife; and concern with the protection of important scientific values. It is these latter values that we are especially concerned with here; in the next section of this paper I want to discuss in some detail those specific characteristics of wilderness settings critical to science.

## WILDERNESS AND SCIENCE

My focus here is on wilderness as a setting for research on the natural environment. Certainly wilderness is an important setting for human activity and many important research issues can address such use (such as how people organize and cope in natural settings, what benefits accrue to society from exposure to the natural environment). Many of these issues, however, could be investigated effectively in areas other than those where the setting is substantially unmodified by human activity. However, research on the roles of the structural components of unmodified ecosystems or the genetic diversity within such ecosystems is dependent on the availability of areas where human activity and impacts are minimal. Thus, research priorities in wilderness areas should focus on ecologically, not socially, oriented issues.

Although it is not my intention to argue the relative merits of basic versus applied research in this paper, it does need to be pointed out that much of the concern for a heightened role for research in wilderness focuses on the need for more basic investigation. This in no way denies the value of applied studies. If our pursuit of scientific understanding in wilderness, however, is limited to the acquisition of knowledge to mitigate or prevent problems, the frontiers of learning will be severely constrained. In fact, they would be effectively limited to those matters judged in need of immediate solution by managers. Development of a basic understanding of long-term processes and dynamics whose implications for management might become apparent only in the very long term would be forgone.

Many specific scientific values can be noted; most fall into one of the following three categories:

First, wilderness is valued as a setting that provides a baseline of the conditions in the natural environment that have evolved outside human influence; Leopold (1941) argued for the preservation of wilderness as a "land laboratory" where a base-datum of normality would be available for comparison with areas modified by human use and occupation. Few areas remain where the landscape is substantially unaltered and uninfluenced, making those areas all the more valuable from a scientific perspective (Cain 1960).

Second, wilderness provides a setting where the nature, role, and function of the various components and processes of the wilderness can be investigated, again away from sources of disturbance. Franklin's 1982 studies of the temperate coniferous forests of northwestern North America provided important insights into

the functioning of the various structural components of these forests. Such insights can lead to improved prescriptions for the management of areas outside wilderness. They also help reveal critical components that may be lost when areas are disturbed. For instance, Darling (1960) cited how the loss of sensitive pill millipede in eastern woodlands during timber harvest disrupts the conversion cycle in which detritus is converted to soil. Even when tree growth recurs, an essential element in the ecosystem has been lost, reducing the site's long-term productivity. Understanding these complex relationships and functions is contingent upon there being places where these processes are undisturbed; wilderness is one area where this is the case.

Finally, science is concerned with the long-term preservation of wilderness because there simply has not been adequate time or effort to discover all the values such areas possess. I am reminded of Leopold's assertion that such areas possess the *answers* to questions we have not yet learned to ask. The widespread loss of species, particularly in the tropical rain forests, carries with it an unknown impact on science. Myers (1979) estimated that, during much of the present century, about one known species per year has become extinct, but that because of the lack of knowledge about how many species even exist, the overall extinction rate among all species, whether known to science or not, could be at least 1,000 and conceivably as high as 40,000 per year. This latter rate would mean the loss of at least 1 million species by the end of the century. I can only speculate as to the benefits being lost to humankind, but it is likely that significant economic and social benefits are involved. Certainly one major concern is with the shrinking genetic base as human activity drives ecosystems to simpler, more spatially concentrated forms. The loss of gene pools in which ancestral diversity exists could mean that our ability to develop, for example, new variants of plant species would be greatly reduced (Cutler 1980; Myers 1979).

Wild lands, places where natural forces and their effects still predominate, thus possess great scientific value. But beyond this general observation, we need to pursue two important issues. First, what are the specific characteristics of wilderness settings that maximize their scientific value? And second, to what extent are these criteria explicitly addressed in the U.S. Wilderness Act? I turn to the first of these questions next.

## SCIENTIFIC CONSIDERATIONS FOR SELECTION OF WILDERNESS

What specific wilderness considerations are important to science? It seems to me that four broad classes of scientific concerns can be defined. First, there are the specific characteristics of the area, including size, shape, boundary location, flora and faunal composition, representativeness, and successional stage. Second, there are concerns with permitted uses within the area, including recreation, exploitative activities, preexisting impacts, and fire exclusion. Third, the long-term security of the area, including its legal status with regard to per-

manent protection, as well as its susceptibility to impacts such as acid deposition from within as well as outside the area is a concern. Finally, there is a concern with the extent to which scientific values are recognized explicitly in the area's management policies, including the development of specific guidelines for scientific investigations.

## Characteristics of the Area

An obvious and primary concern of scientists in the allocation of wilderness is the character of the area. Many specific concerns are involved. The appropriate size for nature reserves, for example, has long been a concern of scientists. It is important that reserves offer adequate protection of the area's environmental assemblage and ecological processes active in the area. Because most reserves are surrounded by areas under varying levels of development and modification, size offers a buffer to outside influences that might alter the natural character and processes within.

In addition to its role in protecting an area's ecological integrity, size is important in the maintenance of species diversity. Studies in island biogeography support the idea that, in general, larger reserves support a greater range of species (Diamond 1975; Simberloff and Abele 1976). Although the results of island studies have been criticized as to their applicability to continental situations (see Slatyer 1975), there remains general agreement that reserves need to possess a size adequate to protect the resources they contain.

What constitutes adequate size remains a complex issue. Research under way in Brazil under the auspices of the World Wildlife Fund and Brazil's National Institute for Amazon Research is designed to provide better understanding of the consequences of alternative reserve size of an area's capacity to preserve the principal characteristics of its ecosystem and to maintain biological integrity (Lewin 1984). Such studies could greatly aid both managers and scientists in determining what size wilderness reserves should be to achieve the purposes underlying their establishment.

Closely related to concerns with size are questions related to an area's shape and the location of its boundaries. Generally, compact shapes are preferred over distended forms, although for some species such as birds, connected lineal forms might be important in providing continuous habitat (Diamond 1975). Boundaries should incorporate all the critical components of the ecosystem; ideally, this should include topographically discrete units. If boundaries do not include all these critical components, the area's value for science is reduced; the effectiveness of the reserve is diminished by the lack of control over those areas outside the boundary (Polunin and Eidsvik 1979).

Perhaps one of the overriding concerns of scientists is the quality of the reserve's natural conditions. As Bourliere (1962) noted, parks and reserves (and we can include wilderness here) are the real laboratory of ecology. The naturalness of the communities, the diversity represented within them, and the representativeness of the system(s) are all major concerns.

Protection of a representative range of diverse ecosystems has been a long-term concern of many scientists. Although it is clear that wilderness classification cannot be expected to preserve the entire range desired, such reserves are an important component of any overall conservation program as it is in such areas that the undisturbed status of these systems can best be studied.

Many of the world's wilderness reserves owe their status not to unique biological characteristics, but rather to their scenic values or to the fact that they were available and had limited potential for other uses (Costin and Mosley 1969). Many wildernesses owe their protection not to any scientific criteria, but rather to the presence of strong public and political pressure (a perfectly legitimate rationale, I might add). Although subject to many criticisms, one important aspect of the U.S. Department of Agriculture, Forest Service's RARE II project was the effort to review and recommend, in a systematic fashion, areas for wilderness designation that possess biophysical characteristics currently not represented within the National Wilderness Preservation System (NWPS).

Biophysical representativeness in wilderness or similar reserves, however, is generally considered poor. At the international level, the Biosphere Reserve program is intended to conserve a representative sample of ecosystems and ecological zones (IUCN 1979). Worldwide, however, less than 250 such areas have been set aside (IUCN 1982). Of the 193 biogeographic provinces in the world (Udvardy 1975), 16 have no protection at all, and 33 are protected in fewer than five areas covering an area of less than 100 000 ha (Harrison and others 1984). In the United States, only about 100 of the 233 distinct ecosystems in the country (following the Bailey Kuchler method) are represented in the NWPS (Davis 1980; Kirby in press). Adding wilderness reserves under the management of State governments expands this coverage somewhat, but still leaves significant gaps in ecological coverage (Stankey 1984).

Diversity is also an important quality of wilderness reserves, both within areas as well as across a system of reserves. The loss of wild landscapes, coupled with the tendency toward ecosystem simplification in modified environments, is leading to a steep decline in biological diversity. As Wilson (1984) noted, "In our own brief lifetime ... deep mines of biological diversity will have been dug out and carelessly discarded in the course of environmental exploitation, without our even knowing fully what they contained." The loss of diversity also means a loss of genetic variety, with its associated consequences for scientific and medical research as well as other sectors of our lives (Myers 1979; Prescott-Allen and Prescott-Allen 1982).

### Uses Permitted in the Area

The ideal of wilderness generally implies & absence of modern, technological human activity. In reality, a variety of human activities persist in such areas. This includes activities consistent with the area's classification as wilderness (such as low-density recreational activities) as well as preexisting uses whose continued pursuit is protected through law or other legal agree

ments (such as grazing and mining under the U.S. Wilderness Act or subsistence hunting and gathering in some African reserves).

Such uses and the impacts associated with them represent potential threats to the scientific integrity of wilderness. Two specific problems can arise. First, human use can alter the natural processes within the area through the introduction of exotics, the importation of nutrients, and the elimination of critical components of the ecosystem. Second, human activity, either accidentally or purposefully, can directly impact scientific investigations. We will return to this latter point in the next section.

Integrating scientific uses of wilderness with other permitted uses means compromise. It is important, however, to keep the impacts associated with these other uses in perspective. For example, although recreation is a major use of U.S. wilderness and possesses the capability of conflicting with various scientific pursuits, its highly concentrated nature often means that such conflicts are minimal. Cole (1981) found that in the Eagle Cap Wilderness in northeastern Oregon, only about 1.5 percent of the area had sustained impacts from recreation use, but long-term suppression of fire had resulted in subtle changes throughout the area. As a consequence, the primary impacts on the area, from a scientific perspective, stemmed not from current recreation use, but rather from policies constraining the use of fire. Similarly, the profound biotic impacts introduced along the Colorado River in Grand Canyon as a result of construction of Glen Canyon Dam far outweigh the significance of recreational impacts stemming from river runners, yet much of the concern with controlling impact is focused on the river's recreation use.

Although it would be desirable from the scientist's viewpoint if these other uses were not allowed, it is unlikely that sufficient political support could be garnered for the preservation of substantial tracts of land solely for scientific investigation. Although such strict preservation is possible for small tracts of land (research natural areas and other nature reserves), wilderness reserves offer much larger areas that provide more adequate ecosystem protection. The price paid for in size is the opening of the area to various other uses.

### Long-term Security

A third element of concern to scientists (as well as to many other advocates) is the long-term security of the area's designation. The need for such assurances is recognized in IUCN's discussion of national parks; in such reserves, it is noted, "The highest competent authority of the country has taken steps to prevent or eliminate as soon as possible exploitation or occupation in the whole area and to enforce effectively the respect of ecological, geomorphological or aesthetic features which have led to its establishment" (IUCN 1982).

The issue of security involves two concerns. First, there is a concern with the permanence of the designation. If an area is established as wilderness, can we expect the protective designation to prevail in the future? Although any classification is subject to change, generally legal or statutory protection is preferable to

administrative protection. In the United States, the press for a wilderness law was driven in large part by concerns with the vagaries of the existing administrative system of wilderness protection.

A second concern regarding long-term security involves the extent to which the area is protected from influences that can adversely impact its natural integrity from within as well as outside. Although careful boundary location can avoid or mitigate external threats, we must remember that boundaries are largely the artifacts of administrative convenience and permeable to a host of influences. Although the analogy is perhaps overused, it remains an unfortunate fact that wilderness reserves are islands in a sea of development and modification. Hence, a major concern, along with the natural qualities within an area, is the nature of activity surrounding an area. The presumption that the integrity of an area can be fully protected within its established boundaries is ecological folly. Whether the surrounding lands are managed as a buffer or whether they are managed so as to integrate the objectives of the wilderness reserve with those of the adjacent lands, it is critical that the context within which wilderness exists be taken into account (Machlis and Tichnell 1985).

Even the above precautions are not adequate to protect a wilderness reserve from all threats. Today, growing international concern with acid deposition highlights the interdependent nature of our environment. Such a threat jeopardizes many of the scientific values wilderness contains; inadequate baseline data regarding pH levels in pristine water courses also hampers the ability to fully assess the nature and rate of acid deposition on our environment.

Security is a major concern of scientists because much of the research that needs to be conducted is long range. The value of such projects, and their benefit to society, are dependent on the investigators being able to follow changes in the environment over extended periods with minimal outside influence. Disturbances could result in the loss of potential benefits that such long-term research would otherwise produce.

### **Guidelines for Scientific Research**

A final concern deals with the existence of specific guidelines and criteria that recognize and promote research in wilderness. As noted earlier, protection of scientific values in wilderness areas has been a common concern. Beyond this general concern, however, there remain specific questions with regard to how these scientific values might be best protected.

Several issues seem important here. These include the development of guidelines for appropriate use by scientists. Because much of the research would be long term, careful field marking becomes critical so that sites can be accurately relocated (Franklin 1984). Certain scientific work will require the taking of samples such as wedges or cores for fire history dating. Because wildernesses are generally areas where evidence of human use is minimal, sampling needs to be done as sensitively and unobtrusively as possible. More specific attention needs to be given to the question of the nature of research activity

to be permitted. I suggest that, in most cases, research be limited to observational studies as opposed to experimental work. Experimentation seems to involve activities that are contrary to the general concept of allowing natural processes full sway. Some research activities fall into a gray zone; for example, the reintroduction of fire into fire-dependent ecosystems where long-term suppression has greatly altered the character of the ecosystem, resulting in historically unnatural fuel accumulations.

One excellent example of an effort to develop the kinds of guidelines discussed here can be found in a publication of the Australian Academy of Science, entitled *Scientific Research in National Parks and Nature Reserves* (Australian Academy of Science 1980). This publication provides a discussion of the role of science in such areas, the distinctions and value of applied as well as basic research, and the responsibilities of both managers and scientists with regard to research projects. It also offers some useful suggestions for minimizing conflicts between scientists working on research projects in reserves and area managers and users. These include: being intimately acquainted with the laws and policies governing the area, maintaining careful control of all work, particularly that which might result in undesirable impacts on natural processes, and providing periodic feedback on results to area managers.

### **RESEARCH UNDER THE U.S. WILDERNESS ACT**

It is useful, in this closing section, to review the extent to which the U.S. Wilderness Act satisfies the various criteria discussed above. Of course, in addition to the law, individual organizational policies have evolved and these policies further define the role research has taken. Jerry Franklin has commented on these in his paper (this proceedings).

The U.S. Wilderness Act clearly calls for the protection of an area's natural qualities. Such areas, the Act declares, involve "... undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural condition and which generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable." The Act also addresses the size issue, stating that a wilderness contain at least 5,000 acres of land or be "... of sufficient size as to make practicable its preservation and use in an unimpaired fashion." It is clear from the legislative debate that the elaborative clause here was intended to allow the addition of areas smaller than 5,000 acres (such as islands), not to require that areas encompass complete ecological units. Finally, the Act contains language indicating that such areas may also contain "... other features of scientific... value."

The US. Wilderness Act contains no specific provisions regarding the selection of either representative or unique biophysical areas. Nor does it contain language regarding appropriate boundary locations. And although it recognizes that wildernesses may contain scientific

values, it provides no special language to encourage or facilitate scientific investigations.

Nonetheless, it seems clear that a major role for science was envisioned by the Wilderness Act. It notes that wilderness "shall be protected and managed so as to preserve its natural conditions. . ." and that each agency administering wilderness "shall be responsible for preserving the wilderness character of the area." The capacity to meet these requirements rests substantially on the possession of an information base that allows managers to enact appropriate policies. It is from scientific investigation that much, though not all, of this knowledge derives (Leopold 1969).

Organizational response to the need for acquiring information of a scientific nature has varied. In a paper prepared for this proceedings, Butler and Roberts (1985) reported that research in the Forest Service and National Park Service varied in both extent and nature. In surveying research activity in 53 national forest wildernesses and 22 national park wildernesses, they report nearly 3.5 times as many research projects in the national park areas as in the national forest areas. Moreover, while nearly two-thirds of the research on the national forests was focused on recreation, only 2 percent in the national parks was. One-third of national park research focused on zoology, and nearly 20 percent each on botany and the earth sciences. The authors attribute the differences to a variety of factors, but in particular note the strong Forest Service concern with minimizing even research impacts and encouraging research outside wilderness.

Forest Service wilderness policy regarding research is strongly oriented toward applied studies. For example, policy noted in Forest Service Manual 2324.41 is "to conduct research to meet the needs of the act." A critical issue here is who defines "needs" and by what criteria. It goes on to state that policy with regard to research is to identify needed research in wilderness management plans, ensure that wilderness is essential to the request (that similar opportunities outside wilderness do not exist), and to mitigate conflicts to the extent feasible. Motorized or mechanized equipment is prohibited unless the research cannot be done another way. The recent request of the Environmental Protection Agency for permission to use helicopters during sampling of acid deposition in wilderness lakes in the West is an example of a negotiated arrangement where mechanized access is allowed. (The agreement permits mechanized access only when completion of certain chemical analyses of samples could not be achieved within critical time frames using foot or horse travel.)

The role of science and scientific investigations in wilderness is a controversial one. Science can be seen as one of the many interests clamoring for opportunities to further its aims. At one extreme we find the view that "research is a vested interest . . . although the . . . research worker may be altruistic and high-minded, he is funded and not invisible. Research workers . . . are rarely conscious of their own social, economic and environmental impact" (cited in Australian Academy of Science 1980). On the other hand, Franklin (1984) observed: "[we] do not propose scientific license in the use of

reserves . . . or use of conspicuous markings in recreationally sensitive areas."

What seems to be needed is a clearer understanding of the critical scientific role that wilderness plays. Scientists must take greater initiative to underscore how wilderness reserves benefit society as a source of knowledge. At stake here may be the very success of maintaining and expanding our wilderness system. Over the past several years, for example, recreational use of wilderness has begun to stabilize, and when one examines the demographic structure of our society, it is likely this trend will continue. With it we can expect pressures to retard the growth of the wilderness system and possibly even to declassify some areas on the grounds that demand does not warrant so much area being classified as wilderness (the National Wilderness Preservation System presently contains about 89.5 million acres). Implicit in such a perspective is the view that the supply of wilderness should be tied directly to the recreational demands placed upon it. If this view prevails, however, it would mean the irreversible loss of many key wilderness settings. It seems important in response to such a view that we better define the full range of benefits that accrue to society from a program of wilderness preservation. Key among these are the scientific values such areas possess. In fact, a strong argument can be made that improved scientific utilization of wilderness represents a major way of conveying the benefits of wilderness to a broader sector of society than just recreation users.

Also, it seems clear that if science does not take a more active, even aggressive, role in asserting its interest in wilderness, it might well find its role relegated even further down the list of priorities. As Franklin (1984) has noted, "The scientific community must begin to put up or shut up: if we do not use our scientific reserves we will almost certainly lose them." The situation does not appear to be improving. Over 20 years ago, Cain (1960) remarked, "Many of us are caught, by stating that wilderness must be protected because of its value for scientific research, in an apparently untenable position . . . unable to point to any significant research already performed in the wilderness tract under question."

## SOME NEEDED STEPS

Although America's large wildernesses hold great appeal for scientific inquiry, we must also recognize that such areas are not just large nature reserves or natural areas. They are wildernesses, with a particular meaning and purpose ascribed to them through the legal process. Scientists, along with other interest groups, must abide by these guidelines. Yet there remains the persuasive argument that science and scientific inquiry offer an important way of justifying the significant investment that society has made in the wilderness system. The principal gain is in acquiring a better understanding of how the natural world operates. Whether this translates into specific guidelines on how to manage these areas or simply represents an addition to the store of human knowledge, perhaps but not necessarily of benefit at some future time, does not seem to be a critical concern.

Several steps seem called for to capitalize on the scientific opportunities offered in wilderness. First, scientists must do a better job of conveying to citizens, politicians, and policy makers the significant scientific values contained in wilderness and the critical need to explore these values in depth. Care needs to be taken to develop realistic expectations; not all scientific discoveries will lead to direct benefits to society. The nature of scientific inquiry, however, is such that there must be latitude to pursue avenues of investigation free of the necessity of always being able to demonstrate immediate utility. Yet there seems to be sufficient cause to presume that enough short-run benefits will, in fact, accrue to warrant the commitment of societal resources to underwrite the needed research effort. Scientists face a major selling job in achieving this goal and, although not a new point, it needs to be emphasized that science needs to bring the mystery and excitement that accompanies it to lay audiences. Doing so will likely have major returns; I am convinced there is a latent public interest in the secrets of the natural environment that requires a creative, sensitive approach. The fine, popular television series on BBC produced by David Attenborough confirms how well received science can be.

Second, for science to better highlight the opportunities in wilderness, a more encouraging environment for research activity must be fostered. Although science must ensure that its activities do not jeopardize the processes and qualities that give wilderness its unique value, the potential contributions to society that will result from improved scientific understanding of these areas and the processes that shape them seem to warrant a broader and more flexible role than presently exists.

To address many of the concerns that likely underlie the fairly restrictive approach to research activities in wilderness, it would seem useful to establish a set of guidelines and principles to clarify what constitutes appropriate wilderness research activity. As suggested earlier, such a document should address issues such as sampling, the location of research activity, relationships between managers and researchers, and experimentation. The aforementioned publication *Scientific Research in National Parks and Nature Reserves* by the Australian Academy of Science is an excellent example of such a document. Basically, such a publication would establish a code of conduct for the scientific use of wilderness by codifying an agreed-upon set of norms for the definition, conduct, and dissemination of knowledge. It would provide the public, area managers, and scientists with clearly defined expectations about scientific activity in wilderness and would serve to highlight the importance of such work.

Finally, because it is difficult to accurately gauge either the amount or scope of current scientific work in wilderness, it is correspondingly difficult to build adequately a case for its existing, let alone potential, value. Some well-defined central repository of wilderness-based research is needed, a central clearinghouse that documents the location, nature, and scope of research activity. Such a location would offer those concerned with communicating the scientific values of wilderness

an easily accessed source of information, either with site specific data or with results from which they might be able to extrapolate to their situation (or get in contact with scientists who could assist them in doing so). And it would provide other researchers with an improved ability to identify research needs and opportunities for replicative research. Also, it would serve to better integrate studies from differing disciplinary perspectives. A good example would be the Sierra Club publication *Research Projects in the Sierra Nevada, 1970-1973* (Stanley 1974)<sup>1</sup> that identified all the research undertaken in that area irrespective of disciplinary focus or organizational sponsorship.

In summary, an increased effort to document the critical scientific values contained in wilderness and to build a persuasive argument for ready, responsible, scientific access to these values is called for. Although there might remain some areas of conflict between the interests of science and those of the general public in wilderness, there is a great opportunity for the scientific community to capitalize on the significant public interest in, and support for, wilderness. Only in this way can we more nearly achieve the objective of securing "for the American people of present and future generations the benefits of an enduring resource of wilderness."

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