diversity of the total of the National Park System.

Only then will we serve the outdoor recreation needs of our growing urban population and at the same time preserve their irreplaceable natural and cultural heritage. If we continue blindly, to seek the same standard of "preservation and use" within the constricted boundaries of each area of the National Park System—managing each like the other—we shall neither fulfill the objective of the Congress nor save the "Crown Jewels" of our nation—our great National Parks!

George B. Hartzog, Jr., Director of the U.S. National Park Service, 1964-1973. McLean, Virginia.

The Role of the National Park Service in American Education

—An Address to The George Wright Society— Tucson, Arizona—November 15, 1988

Alston Chase

Last August, before Yellowstone's wildfires had cooled, the NPS Division of Interpretation announced plans to launch an ambitious campaign to interpret the fires for park visitors. Summer school courses, exhibits, posters, and books for adults and children are planned. Fifty part-time and twelve full-time naturalists, it was reported, will work on the project.

I personally can think of few things better than informing the public about the ecological role of fire in North America. So why does this announcement not make me happy?

Because I am not convinced that what the public will get from this campaign is an education. Those of you who have read my book may know some of the reasons for my lack of optimism, but there are other reasons as well.

While doing research on natural regulation in Yellowstone, I sometimes asked a park naturalist, "What do you think of professor X?"

Often the reply would be, "Professor X is not credible."

Over time I learned many otherwise distinguished scholars were deemed "not credible" by researchers and interpreters in Yellowstone.

Why, I wondered, were these people not credible? The answer, I discovered, is that they had the misfortune once to criticize park policy, or had done research that failed to confirm hypotheses propounded by park biologists.

Later, I observed that papers written by park researchers also carried no bibliographic citations of works by these, apparently incredible, scholars. Some of these omissions were glaring.

While working on *Playing God in Yellowstone*, I was, as many of you know, Chairman of the Board of the Yellowstone Association. I saw no conflict in this. The duty of the Association was to support research

and education in Yellowstone, and that was what I thought I was doing. After the book appeared, however, it was made plain to me that the Association—and its board members—were supposed to support the Park Service, not the park. Only the NPS had the right to decide what was educational and what was not. Feeling uncomfortable with this interpretation, I left the Association.

Since leaving, I have become distressed to see that the Yellowstone Institute—the summer school run by the Association—no longer employs as instructors any critics of park policy. Similarly, the park administration declined (and still declines, so far as I know) to permit the sale of my book in visitor centers in Yellowstone.

How then, I now wonder, can the Division of Interpretation be entrusted to give visitors a balanced view of anything as controversial as last summer's conflagrations?

Fortunately, the Park Service community is a large one, and does not speak with one voice. The fact that I am here now reflects the fact that you, along with many others in the agency, share my belief that knowledge is achieved by dialogue, and that research and education require a commitment to the truth which transcends institutional loyalties. Nevertheless, the Division of Interpretation, as it is staffed and organized, is often required to act, not as an educational institution, but as spokesman for NPS policies.

I would therefore like to talk with you today about the role which interpretation should play in our national parks. This role could be far greater than it has been in the past. Indeed, I shall suggest the Park Service should provide a broad range of scholarly and educational services to the American people that extend well beyond park boundaries, but that doing so requires fundamental reforms.

The job of the Division of Interpretation, according to official guidelines, is "informing visitors about the National Park System, its significance and values, its policies and purposes..." As therefore, interpretation is expected to articulate the purpose of the parks, its mission can be intelligible only so long as the goals of the park system are themselves intelligible. Unfortunately, these goals are not very clear.

The Organic Act, as we know, is at best vague and at worst—in calling for conserving park resources while providing for the public's enjoyment of them—inconsistent. The attempt by the Leopold Committee to restate the purpose of parks in the more palatable language of ecology does not fair much better. In urging that parks represent a reasonable illusion of the primitive scene, the Leopold Report's prescriptions, if taken literally, are both unachievable and undesirable.

We cannot bring the Indians back, make extinct species reappear or hope to eliminate many so-called exotic species. And by urging that parks be vignettes of primitive America, the committee was in fact asking managers (using the phrase of historian Lynn White) to "deep-freeze an ecology, as it was before the first Kleenex was dropped"—thus ignoring the role of evolution in natural systems.

In the absence of a clear statement of purpose for the parks,

therefore, park managers improvise. Often this means following the line of least political resistance—a strategy that inevitably leads to inconsistent and often harmful policies. And in some parks, conscientious park managers, recognizing they can neither restore the primitive scene nor arrest evolutionary forces, simply do nothing by following the stratagem sometimes called natural regulation. This too often causes great harm to the biotic system of the parks, which, being incomplete ecological units, are not self-regulating.

Lying behind both the Organic Act and the Leopold Report, moreover, is a dualism which is fundamentally incoherent: the supposition that society and nature belong to different worlds, and that keeping nature pristine requires protecting it from society. According to this philosophy, the preservation of natural systems requires their isolation from the impact of people and civilization.

This presupposition—that humankind is not part of nature—as I have noted elsewhere, forms the cornerstone of American conservationism and indeed has been copied throughout the world. Nevertheless, it has no rational foundation. Indeed, if we define humans and their activities as unnatural, we must, as philosopher Frederick Turner noted, side with the creationists who say humans are not governed by the laws of nature which apply to other living things.

Nevertheless, from this dualism the basic tenets of park management follow: If the best way to protect nature is to build a wall between it and society, the ranger's job should be principally custodial—to protect the resource from the people—and the wisest management should be a passive one, allowing "nature to take its course." Only when the task is one of eliminating signs of man from the park—as for example, removing "exotic" species or animals "corrupted" by people, such as "garbage bears"—is more active, or interventionist, management required.

By driving a wedge between man and nature, this philosophy places an impossible burden on park managers. They are charged with keeping parks—which have been affected by human activity for thousands of years and which continue to be altered by it—in "pristine" condition. And they are expected to do this by natural means, whenever possible.

At the same time this dualistic approach to management encourages a fortress mentality in park administrators. Expected to protect the resource from the people, rangers are required to erect barriers, not only between visitor and the resource, but also between the park itself and the surrounding communities. This stance in turn often puts the park on a hostile footing with its neighbors, exacerbating the so-called "boundary problem."

Clearly, therefore, we need a new statement of purpose for our parks, one which is less ambiguous, more coherent and more achievable than the present one. What should it be? Answering this, of course, requires making a value-judgement which can only be provided by the American people through their elected representatives. It is *not* a question which we should depend on experts, blue-ribbon panels or social critics such as myself to answer.

It is therefore urgent that Congress speak unambiguously on this matter, to forestall further attempts—by park managers, environmentalists, travel lobbying groups and others—to provide their own *ad hoc* answers.

Nevertheless, while it is up to the American people to say what parks should be, it is critically important, before the public makes up its mind, that thoughtful individuals publicly discuss this question. In this spirit, to carry on a constructive debate, I have already, elsewhere, offered my own prescription, urging that the goal of our parks be to promote biocultural diversity.

Such a program would be based on two principles: first, *holism*, that there is no seam between culture and nature; and second, *localism*, that no park can survive without the enthusiastic support of the surrounding population. Park management, which presently vacillates between two goals—striving on one side to be pleasuring grounds that please the visitor, and on the other to be places of artificial wilderness to please environmentalists—should aim at one thing: to be exemplars of ecologic sustainability.

Rather than dividing society and nature, therefore, we should build bridges between the two. Rather than dedicating some parks to preserving our cultural heritage while others promote biological diversity, we should see that all strive to preserve biocultural diversity. Rather than taking a fortress approach to protecting park borders, we should develop a buffer zone strategy, where land use surrounding parks is planned in cooperation betwen federal officials and local communities. Rather than running parks exclusively from Washington, we should give local communities a role in park governance. Rather than excluding all but some recreational activities within parks, we should permit appropriate economic activities as well, not only within buffer zones, but within some parks as well. And finally, we should replace the present, largely passive management with a more active one, using, where appropriate, techniques of habitat manipulation such as restoration ecology.

Such a program would place, on the National Park Service, a profound responsibility for public instruction. Interpreters would become educators and ecological consultants, working, for example, with local farmers to promote sound agricultural techniques, and offering courses in ecology at the local public schools.

Unfortunately, the Division of Interpretation is not ready to shoulder these responsibilities. As it is presently defined, interpretation is not an educational activity at all, and regulations do not permit it to be practiced outside park boundaries. And even if these regulatory hurdles were overcome, other obstacles remain.

Any educational enterprise presupposes the freedom of instructors to test new ideas and to dissent, if they so desire, from the conventional wisdom, and freedom for students to do likewise. Yet, given the present duties of the Division of Interpretation, defined in part as enhancing public understanding of management policies and programs, naturalists often do not have this kind of liberty.

Additionally, successful teaching, like successful learning,

requires a commitment to research and study. Teachers must know what they are talking about, and they can do so only if they are scholars as well. But interpreters, expected to be merely communicators with neither scholarly credentials nor research experience, cannot be educators in this sense.

Transforming the Division of Interpretation into a true educational institution, therefore, would require taking steps to address these limitations.

First, its name should be changed to the Division of Ecology, reflecting a fundamental shift in its priorities.

Second, rather than explaining policy, the Division of Ecology should be dedicated to understanding the means of achieving biocultural diversity. Its role in public instruction should be to promote *dialogue* on these matters, demonstrating to the public that science is a process of debate, in which there are seldom clear, simple answers.

Third, to ensure linkage between teaching and research, and to establish the professionalism of this division, the functions of research and education should be merged and all researchers/teachers should have earned an advanced degree in appropirate academic disciplines.

Fourth, to guarantee their academic freedom, individual researchers/teachers should be graded by a system of peer review, where emphasis should be placed on publication in refereed journals by colleagues not in the National Park Service. In each park the chief of the Division of Ecology should be answerable, not to the superintendent, but to the chief of his division at regional level.

Fifth, researcher/teachers should be eligible for managerial jobs, including superintendencies. It is simply mistaken to believe that academics don't know how to run large organizations. Woodrow Wilson and Henry Kissinger, remember, were scholars. The presidents of major universities (such as Harvard), are scholars.

Sixth, the Park Service should ask Congress for money to establish an autonomous Fund for Biocultural Diversity. This foundation would be the principal funding source for park research, replacing the present system of disbursement through contracts awarded by parks and CPSUs. Rather than awarding contracts, the foundation would be a grant-making agency, where independent peer-review panels would respond to proposals.

Seventh, as a concomitant to the establishment of the Fund for Biocultural Diversity, both "mission oriented research" and support for CPSUs should be revised. Research projects should be defined by the individuals in the proposals which they submit to the Fund. Monetary support for CPSUs also come from the Fund, again through a system of grants awards.

Eighth, multidisciplinary research centers should be established in some of the major national parks. The choice of who works there, and decisions concerning the direction of research, should be made by non-NPS scholarly review boards responding to proposals. Staffing at such centers would be on a rotating basis, with individuals chosen

from within ranks of NPS researcher/teachers and university community, for fixed terms. Financial support for this research should be through the Fund for Biocultural Diversity.

Ninth, NPS researcher/teachers should alternate between tours of duty at these research centers, and periods engaged in public instruction within parks or buffer zones.

This, to be sure, is a bold plan, but, is it impractical? I think not. As Connie Wirth found with Mission 66, Congress gives money for bold plans more readily than it does when asked for more to do the same old thing. Better a new ship than simply plugging leaks.

As bold as these suggestions may be, however, they alone will not allow us to save our wildlands. The greatest impediments to natural preservation do not lie within the Park Service, but elsewhere. In particular, parks can advance their efforts in preservation no faster than progress in the science of ecology will permit. And progress in many branches of this field has been painfully slow.

The principle culprit here, I believe, are the universities. Ecology—the study of "all the conditions of existence," (to use Haekel's definition)—should be multidisciplinary, incorporating contributions of scholars from the social and natural sciences as well as from the life sciences. But the institutional forces within academe are in the other direction—promoting specialization and often penalizing those who seek to widen their disciplinary horizons.

Academic departments constitute the organizational components in our colleges and universities, not only for the disbursement of funds, but also for providing direction for, and evaluation of, scholarly activities. This arrangement strongly discourages interdisciplinary cooperation among scholars. Young scholars quickly learn that the avenue to pay and promotion does not lie in pursuing multidisciplinary directions.

This trend, in turn, encourages scholars to develop disciplinary biases that further inhibit multidisciplinary studies. Having little familiarity with other fields, they have insufficient understanding of the potential contributions other scholars might make to their own research.

The continuing decline of general education in the undergraduate curriculum (an undergraduate curriculum in which students are required to take interdisciplinary courses) also leads to declining breadth of understanding, not only among students, but among faculty as well.

Thanks to these institutional forces which promote specialization at the expense of interdisciplinary perspectives, the academic environment is not entirely hospitable to ecology. Yet universities as they are presently organized are unlikely to break down barriers between disciplines without outside help. This, I think, is an opportunity for the National Park Service. Indeed, there are several steps which the NPS could take to encourage multidisciplinary science and improve the status of the study of ecology within academe and elsewhere.

First, the Fund for Biocultural Diversity should provide grants for

university researchers to do work, not only in national parks, but elsewhere as well.

Second, it should establish a professional journal for multi-disciplinary studies, to give those scholars with a true interest in ecological research that transcend the boundaries of biology the opportunity to publish their work in a reputable scholarly publication.

Third, it should create a series of Distinguished Fellows awards, not unlike the old Woodrow Wilson Fellowships, to promote ecological education, both in secondary and post-secondary schools.

Fourth, to inform Americans about ecological issues, the Fund should establish public education outreach programs in the schools, including a scholarship program for public school ecology teachers.

The Park Service, in short, should be at the cutting edge of ecological research and education in America. In helping Americans come to understand better the requisites of ecologic sustainability, national parks, would, as my friend biologist Daniel Janzen puts it, become instruments for social change.

If we are to address the problem of preservation at its source, we