

## **Some Research Needs of the National Park Service**

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THE HONORABLE MEN WHO PROPOSED the preservation of the Yellowstone area and its geysers and thermal pools, its canyons and mountains, its forests and spectacular wildlife, and the men in Congress who enacted the law creating the world's first national park around the concept of perpetual protection for the pleasure of the people, wrought more than they could have anticipated. Who could have foretold that this idea would ultimately sweep the world and that nation after nation would commence its own national park system based on what was precious in its own territory? And who in the United States expected that our system, after the slow and difficult addition of other national parks, would ultimately expand to consist of nearly 300 separate units distributed over the 50 states, Puerto Rico, and the Virgin Islands?

The great expansion of the System has occurred since the National Park Service Act of 1916, and it has been spectacular during the last decade. Now the units include not only national wilderness parks and national monuments—some of which like Glacier Bay are fully as grand as the earlier parks—but also seashores, lakeshores, linear parkways and trails running for hundreds of miles, wild and scenic rivers, and various kinds of recreation areas. Another cluster of units includes historic and archaeological structures and sites, battle grounds, and great monuments such as the Lincoln Memorial in Washington, D.C. There are battlefields and a system of natural, historic, and environmental education landmarks. Most recent is the recognition of the great and growing need for urban or urban-related units and the seemingly insatiable public demand for opportunities for outdoor recreation. The frontiersmen who gathered around a campfire in Yellowstone and debated an alternative to the private development for practical human uses of the natural resources of the Western frontier—an alternative that would save intact the grand landscape, the magnificent forests, the clear fish-laden streams, and the wildlife of black and grizzly bear, mountain lions and lynx, beaver and badger, moose, elk, and antelope—planted an idea that continues to capture the imagination of the devotion of millions of people around the world.

At this date there is no need to debate the concept of preservation of landscape and its great natural features and human artifacts as a perpetual source of pleasure for the people, but there are problems in

doing this and I would address myself to two of them.

In the early years of Yellowstone the language of the 1872 act could only be read to mean that the enjoyment of the people would be found in their experience with the natural values being preserved. The outdoor recreation explosion as we know it today was not even on the horizon a century ago. Mechanized travel was scarcely dreamed of—the auto, motorcycle, airplane, outboard motors, off-road carts and snow-mobiles—giving most families an almost fantastic mobility. The bedroll and tarpaulin have been replaced by seemingly endless thousands of "campers" and completely modernized mobile homes, each with heavy demands for space and services within the parks.

There are many thousands of people who never question taking their pleasure in the national parks in the full panoply of such private mechanical conveniences. It is not that park visitors fail to find some pleasure in natural wonders. The rub is that the numbers of visitors and their encumberments are threatening the parks by over-use and inappropriate use. Even when the physical destruction is not generally extensive, it is where the people are, for the vast majority never leave their personal means of transportation. The noise and the self-distracting masses of people carry the stresses of the city into the wilderness. As has been so well said, the more than two hundred million park visits a year are by people who are "loving the parks to death."

Here, then, is one important and unresolved problem: how to distinguish between park visitors who

come to take pleasure in the great wildland parks, in archaeological ruins, and historic sites, and that large number of visitors who find their pleasure as a by-product of touring or in the excitement of mechanized sport that should be satisfied elsewhere in ordinary places. This is not in any way to denigrate such kinds of outdoor recreation, it is simply that the National Park Service has yet to learn the differences between a wildland park and a recreation unit. Wildland parks should be used by persons whose objectives are compatible with the values for which Congress established them.

This leads us to a second point. With millions of acres of magnificent public land under its management, worth untold billions of dollars, and servicing hundreds of millions of visitors, the National Park Service knows even less about its public-clients or customers—than it does in scientific detail about the nature it protects. The reason for both areas of vast ignorance is that neither the Service nor Congress has yet fully appreciated the importance of this lack of information and that the voids can only be filled by a large and continuing research program. The failure to have met this research need by such a far-ranging, important, and otherwise successful federal agency is difficult to understand when the U.S. Forest Service and most other units of government that manage property and serve the people have long-established and distinguished research programs.

There have been sporadic and essentially isolated pieces of valuable natural science research by Service employees that were contributory to understanding the ecol-

ogy of wildland properties and large mammals, and the effort by archaeologists has been sustained. More numerous botanical and zoological studies have been done on park lands by scientists from universities. Basic geological studies have been made by a sister agency, the Geological Survey, but the Service itself has never had a well-funded, intensive, broad, and continuous research program. Since the Robbins Report, made by a committee of the National Academy of Sciences National Research Council less than a decade ago, and with the interest of the present Director, George Hartzog, there has been a considerable increase in research effort, but it still is on an austerity budget incommensurate with the need.

Major research needs include vegetation cover-type maps, which today can be obtained from airborne multispectral remote sensing equipment, refined by ecological and plant sociological ground studies of the plant-animal communities. Other pressing needs include studies on the dynamics of the important ecosystems, on the ecological requirements of rare and endangered species, and the nesting and denning requirements of shy species, as well as fuller knowledge of the systematics of all groups, not just conspicuous birds, pretty flowering herbs, trees, and the like. Such information is indispensable to park management and would enrich visitors' appreciation.

As great as such needs are, there is much less known about the park visitors. Who are they? Where did they come from to a given park? Why did they make the visit? What were their expectations? Their disappointments? Their unex-

pressed satisfactions? What is their understanding or misunderstanding of the purposes for which Congress established the various units of the System? What activities are appropriate and inappropriate in a given unit or sector of a park, and how much of this is understood and accepted? The National Park Service needs to embark on a series of information surveys of its visitors. In the light of the data such studies would provide, it can be anticipated that the Service would need an augmented training program for its personnel.

The Service seems to be embarking on a program that will drastically discriminate among park visitor activities and the intensity of park usage. This would include an effort to limit entrance to the predetermined carrying capacity of each unit. In turn, carrying capacity has three aspects: the physical capacity to stand wear and tear, the biological capacity of communities to resist deterioration, and the psychological capacity as illustrated by the number of users that diminishes a sense of wilderness or produces the discomforts of crowding. If such a program is undertaken seriously, a visitor quota system will lead to some form of prereservation, for a camping opportunity, for example. If the use of private autos is drastically reduced or eliminated in park units, with some form of public transport where needed, it would be a shocking curtailment of the customary freedom of park uses. The Service is currently unprepared to execute such park-saving measures and the public is unprepared to accept them. All these matters and many others call for well-designed and effective research if serious mistakes are to

be avoided and difficult confrontations with the public are not to be disruptive. A small cadre of sociologists is not enough to get such a job done.

The research needed in these two complex areas—the natural history of the parks and the human characteristics of park visitors—must be complemented by even more adequate studies of specific historic and archaeological features of the System. And finally, many studies need to be directed toward personnel and management problems such as the possibilities of moving visitor services outside unit boundaries, and the refinement of planning techniques in the light of research data. The latter would include unit planning in relation to the surroundings in terms of other public lands, private developments, and the political arenas involved.

This essay should not be confined to expostulation. Obviously, the need is for the increased financing for a much wider scope of research. This appears to mean a minimum of two million dollars more a year for research. This would be a small percentage of the present budget and a minute amount in relation to the investment in research of fast-moving agencies and industries, especially in relation to such extremely valuable properties and public services.

The National Park Service in its annual budget preparation must make a much stronger case for research, and the Department of the Interior must support it before Congress. Such agency effort will need to be backed by a strong expression of support by the public. Sometimes the friends of the Park Service have been more character-

ized by their well-intentioned criticism of what they see as failures than they have been in giving the Service strong backing for what it needs. I would recommend to the several citizens' organizations that have a strong interest in the welfare of America's great national park system that they unite the strength of their hundreds of thousands of members in a collaborative effort to aid in the persuasion of Congress to recognize this important need. What about a council of such organizations directed to this end? Our government works to a considerable extent by responding to clear and strong pressure, to an organized expression of the citizens' right of petition.

Such a movement would augur well for the early years of the second century since Yellowstone. What is great can become greater. What should be enduring can be helped to endure in fact. What was a worthy goal a century ago is more vital now.

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