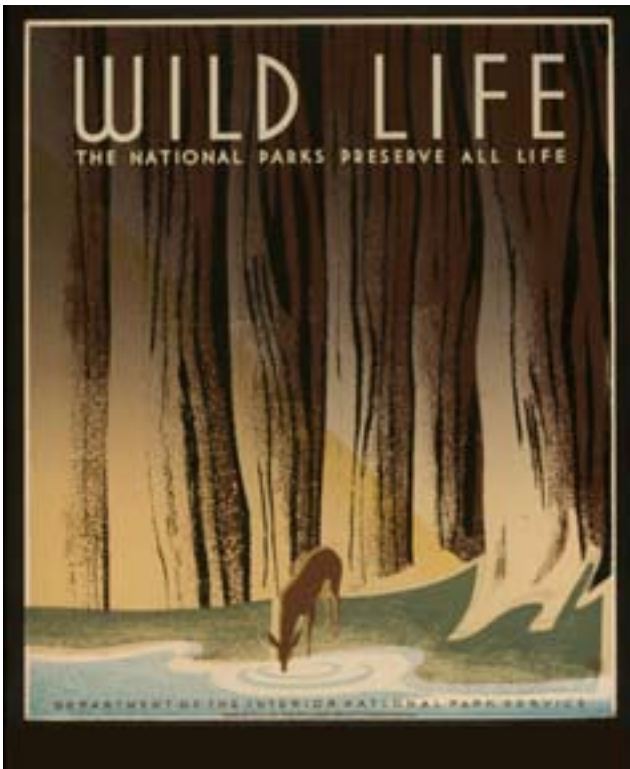


Scenery and Science in U.S. National Parks

Richard West Sellars

The complex science that governs the natural world was poorly understood when the first national parks were created in the United States. As years went by, these vast reserves of public land were managed by a bureaucracy that really did not understand their ecology. Decades passed before those principles earned their rightful place in the minds of the guardians of the nation's most precious resources.

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A National Park Service poster from the late 1930s advocates the preservation of all life, but decades passed before management practices began to fully respect the natural communities within the parks.

I first went to work as a historian with the National Park Service in 1973. As a new employee in this venerable institution, I assumed that the biologists in the Park Service must play a leading role in managing renowned national parks such as Yellowstone, Everglades, and the Great Smoky Mountains, with their magnificent displays of natural history. Surely ecological concerns would be foremost in park decision making. How naïve I was!

Much later, in the 1990s, as I wrote a history of the Park Service's management of nature in the national parks, I realized the true extent to which biologists had struggled to promote ecologically sound management. For decades they had battled the truly dominant professionals in the Park Service, who were concerned primarily with protecting park scenery as a means of attracting tourism.

These differing philosophies on park management reflect what has always been the central dilemma of the U.S. national parks: Exactly what in a park should be preserved for future generations? Is it the scenery itself — the resplendent landscapes of forests and meadows, high mountains, wildflowers, and spectacular animals? Or is it more? Is it each park's total natural system, including not just the biological and scenic superstars, but also the vast array of less dramatic species such as grasses and soil fungi?

In recent decades another consideration has entered the equation: Increasingly, the parks are viewed as ecologically vital to the planet — as globally important in their way as the Amazon rainforest is in its way.

Yet the majestic beauty of the national parks gives rise to the impression that scenery alone is what makes them worthwhile and deserving of protection. Indeed, scenic preservation was the major factor in establishing the first national parks — Yellowstone in 1872, followed by Sequoia and Yosemite in 1890. In addition to spectacular topography, what mattered most to the public were the conspicuous elements of nature — forests and wildflowers, rather than mice and salamanders. Ecological sciences were only dimly understood in the late 19th century. And though many important ecological communities were included within park boundaries, this was thanks largely to chance because these communities occurred in areas set aside to protect scenery, the beautiful “facade” of nature.

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The Old Faithful Inn, built in 1904 in Yellowstone National Park, brought visitors to the site, but builders of that time gave little consideration to the ecological impact of construction.

FACADE MANAGEMENT: FOCUS ON SCENERY

In 1916, the U.S. Congress created the National Park Service to coordinate management of a steadily growing system of national parks. The legislation called for the conservation of scenery, natural objects, and wildlife, and for public enjoyment of these attractions in such a way that would leave the parks “unimpaired for the enjoyment of future generations.” The intent of this legislation has always been ambiguous, since it blessed both preservation and use. But in actual, on-the-ground practice, leaving parks “unimpaired” applied almost entirely to the parks’ scenery, not to the subtle elements of their ecological communities.

In developing parks to give tourists access to the great scenic attractions, early park managers and their successors sought to achieve visual harmony between new construction and the natural scenery. They developed

campgrounds, built grand hotels, and routed highways through the parks’ scenic backcountry. Engineers and landscape architects located many early hotels, museums, and other facilities almost on top of major features, yet they often built in a rustic architectural style using heavy logs and stone so that the structures appear to be part of the natural scenery. Similarly, they designed roadways and bridges to blend with natural surroundings.

Attuned to these visual factors, park developers of this earlier era showed almost no concern for ecological processes. However, managers did oppose certain major intrusions — railroads, dams, and reservoirs. And they protected the forests and attractive wildlife, particularly large, charismatic mammals. Thus, except for tourist facilities, the parks’ mountains and valleys were kept unscarred, the forests flourishing and the meadows lush with vegetation.

But maintaining scenery required little scientific

input, so ecologically unsound practices crept in as well: the introduction of exotic, non-native species; suppression of forest fires to prevent dark scars on the scenic landscapes; eradication of mountain lions and wolves, which preyed on other mammals; and the use of pesticides to prevent scenic forests from being infested and denuded by native insects.

“Facade management” thus became the accepted practice — managing scenic parks for the public to enjoy, but with little understanding of the ecological consequences. To those in charge, it seemed that as long as development did not seriously affect the scenery, the parks would remain “unimpaired for the enjoyment of future generations,” as Congress had mandated.

ECOLOGICAL CONCERNS

By the mid-1920s, park biologists realized that flora and fauna are parts of vast, interrelated ecological complexes. Yet so low was the National Park Service’s regard for research-based scientific management that when the service’s natural science programs finally got under way in 1929, they did so only with the private funds of a wealthy Park Service biologist, George M. Wright. The Park Service soon began funding his programs, but the growing influence of the biologists led by Wright diminished dramatically following his untimely death in an automobile accident early in 1936.

Nearly three decades passed before the biologists — contending with a tradition-bound Park Service — could truly renew their efforts to influence park management. This time, support came from outside the service. A 1963 National Academy of Sciences report sharply criticized the Park Service, calling for management to begin using intensive scientific research to assure preservation of the parks’ ecological systems. The academy described the parks as a “system of interrelated plants, animals, and habitat” and urged that they be regarded as “biological banks.” The report made clear that management chiefly preoccupied with maintaining scenery was not sufficient.

Also in 1963, a special advisory committee chaired by University of California professor A. Starker Leopold, one of the leading biologists of his time, issued what was the most influential statement on park management since the 1916 act establishing the National Park Service. The Leopold Report emphasized the need for improved ecological management and advocated that each of the large natural parks should present a “vignette of primitive

America.” The natural communities of life within each park, it stated, should be “maintained or, where necessary, re-created as nearly as possible in the condition that prevailed when the area was first visited by the white man.”

This approach reflected an awareness of the great ecological changes wrought by European Americans and their technology. Where feasible in the large natural parks, ecological restoration would seek to reverse the changes. The Leopold Report thus laid the foundations for a merger of facade management with ecological management. The primitive scene to be recaptured would be valued as much for its increased ecological integrity as for its physical beauty. Underlying this effort was the urgent sense that although the parks’ majestic scenery would last, their biological diversity would not survive without a change in approach.

The Leopold Report’s long-lasting influence stemmed in part from its persuasive presentation of complex ecological issues. Even more subtly, however, its vision of a primitive America touched romantic and patriotic chords, suggesting a kind of “From the New World” fantasy — the parks as virgin land. The Park Service earnestly wanted to believe in this vision and present it to the public. It struck close to the deepest cultural reasons for the very existence of the parks — the romantic nationalism that has always underlain the public’s support of the parks, with the remnant frontier landscapes of high mountains and vast open spaces as powerful geographical symbols of national origins and national destiny.

The Leopold Report bolstered the efforts of Park Service biologists to change certain management practices. Through research-based fire management practices, parks attempted to approximate the effects of natural wildfire. Park managers also terminated insect-spraying programs and gave native predators greater protection. And they sought to reduce populations of especially destructive exotic species, while reintroducing vanished native species.

Natural resource management in the parks also benefited from congressional initiatives, including the Wilderness Act (1964) and the Endangered Species Act (1973). These and other laws, particularly the National Environmental Policy Act (1969), helped improve national park management and opened up the Park Service’s practices to much greater scrutiny, including public involvement in park planning.

Yet the environmental movement of the 1960s and 1970s, including the Leopold and National Academy



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The beargrass plant, seen here at Montana's Glacier National Park, is native to the Rocky Mountain region. Bears eat the plant in the spring, and also use it as nesting material in their dens. Management practices in place for several decades attempt to guard all the elements of a park setting, from delicate plants and insect life to the soaring peaks and mountains.

reports, failed to alter substantially the bureau's traditional priorities of maintaining the scenic facade of nature. Repeated calls for expanded research programs, essential for sound ecological management, received insufficient support from the Park Service, Congress, or the public, beyond the environmental community.

THE NATURAL RESOURCE CHALLENGE

In the late 20th century, with growing threats such as global warming, population expansion, and habitat destruction, the worldwide reduction of biological diversity brought into sharper focus the concept of national parks as ecological laboratories and "gene pools." Scientists and increasingly broad segments of the American public viewed the national parks as important to the ecological health of the planet — as reservoirs of genetic material and islands of naturalness, bulwarks against irreversible change or loss of species.

In 1997, I published *Preserving Nature in the National Parks: A History* — at times a highly critical analysis of the National Park Service's natural resource management over the decades. In response, the Park Service almost immediately began planning a new and ambitious natural resource initiative, known as the Natural Resource Challenge. Announced in August 1999, the initiative quickly gained bipartisan congressional support, which continues today. Cumulatively, the challenge amounts to far and away the greatest increase in scientific natural resource management funding and staffing in Park Service history.

Truly comprehensive in scope, the challenge acquires, applies, and disseminates scientific knowledge to professionals and to the general public in pursuit

of natural resource goals and for the betterment of both parks and society. Among its specific elements are accelerated programs for inventorying of parks' native species, both terrestrial and aquatic; monitoring changes in their condition; and protecting and restoring endangered populations while removing non-native species. The challenge also calls for enhanced air and water monitoring. Building park staffs to achieve these and other goals has been critical, as has improving opportunities for the public to enjoy and learn about park natural resources and their preservation.

The Natural Resource Challenge opened a new era in national park management. An unprecedented degree of understanding and cooperation has grown between facade management and science-based management in the national parks. Significantly, it moves the Park Service toward a better position to confront the gathering environmental threats of this century. Finally, in the congressional and National Park Service realms, and indeed in the collective American perception, the challenge's focus on the integrity of the parks' natural environments has helped secure a broader, more ecologically inclusive interpretation of the original 1916 congressional mandate to leave the national parks "unimpaired for the enjoyment of future generations." ■

The opinions expressed in this article do not necessarily reflect the views or policies of the U.S. government.