Nature and Habitat Conservation and Protection in the United States

Joseph L. Sax*

INTRODUCTION: HISTORY OF NATURE CONSERVATION IN THE UNITED STATES

Nature conservation as a governmental responsibility has a considerably longer history in the United States than does pollution control or other matters of contemporary environmental concern. Nature conservation dates back at least to 1864 when Congress withdrew Yosemite Valley from settlement and granted it to the State of California "for public use, resort, and recreation." The national parks movement was well underway when Congress established Yellowstone National Park in 1872. Twenty years later, Congress enacted the first national forest law, which authorized the President to set aside millions of acres of forest reserves. The purpose of these initial efforts was to slow the pace of destructive resource exploitation—which had already decimated the beaver and buffalo, levelled ancient forests, and wreaked vast harm through erosion—by establishing national forests and national parks. From these beginnings, the United States has invested its vast natural domain with a system of nature reserves that includes parks and forests, wildlife refuges, wilderness, species protection programs, and recreational, cultural, and historic areas.

Unlike many nations, the United States is the proprietor of nearly one-third of the nation's land. Federal ownership is particularly prevalent in Western States, where natural conditions remain relatively...
unimpaired. For example, the United States owns 82% of Nevada, 64% of Utah, and 68% of Alaska.\(^6\) Perhaps more surprisingly, the federal government owns 61% of California.\(^7\) For more than a century, the policy of habitat and nature conservation essentially has been a policy of withdrawing federal lands from the possibility of private ownership and use and reserving them for conservation purposes.\(^8\) It has not been primarily a program of regulation or land acquisition.\(^9\)

Today, the extent of America’s conservation lands is astounding. The nation has set aside close to 90 million acres for 492 wildlife refuges,\(^10\) an area nearly as large as the entire state of California. The national parks comprise an additional 74.2 million acres and the national forests comprise nearly 200 million acres.\(^11\) Thirty-four million acres of the national forests are designated as pristine wilderness.\(^12\)

The traditional methods by which these vast areas of land have been managed do not adequately protect their natural values. With increasing population and mounting demand for resources, the system of reserve lands in the United States faces ever-greater threats of degradation. This paper discusses the traditional methods of land management utilized by the United States and why they do not fully protect the resources within the reserve lands. The paper also describes several new legal and scientific developments which may represent a shift to more effective and comprehensive land management, and proposes that the traditional methods of reserve land management should be supplemented by a more ecologically sound, resource-based management strategy.

I

TRADITIONAL STRATEGIES OF CONSERVATORSHIP

Nature preservation has been predominantly a matter of federal concern, due to the historical happenstance of federal ownership and the general experience that the states have been more attuned to commodity use. The economies of most public land Western States have largely depended on resource exploitation, including mining, timber harvesting, oil and gas production, cattle and sheep pasturage, and irrigated agriculture. These states often view federal ownership and management as “locking up” valuable commodity lands. Nonetheless, state and local govern-

\(^{6}\) Id. (figures do not include lands held in trust).

\(^{7}\) Id. (figures do not include lands held in trust).


\(^{9}\) There are limited exceptions. Some cutover eastern forests and critical coastal areas, particularly along the Great Lakes and Atlantic seaboard, have been repurchased.

\(^{10}\) U.S. Dep’t of the Interior, Annual Report of Lands Under Control of the U.S. Fish and Wildlife Service 3 (1990) (Table 1).

\(^{11}\) Coggins et al., supra note 8, at 144.

\(^{12}\) Id. at 1032.
ments have set aside millions of acres of reserve lands under laws that generally mimic federal statutes.\textsuperscript{13}

How has conservation been implemented in this country? The United States has managed its vast reserve lands essentially through an "enclave strategy." The strategy sets aside a defined tract of land for a specified purpose and then manages that land solely for that purpose.\textsuperscript{14} For example, Congress established the national parks primarily to protect their natural flora and fauna and to permit non-destructive human visitation.\textsuperscript{15} Similarly, the federal government set aside wildlife refuges to provide habitat for designated species.\textsuperscript{16} National forests were devoted to multiple uses, including outdoor recreation, range, timber, watershed protection, and fish and wildlife.\textsuperscript{17} In practice, timber harvesting has long been their dominant use.

Since there is no general requirement to coordinate management across the enclave boundaries, the boundary and not the resource traditionally has determined management strategy. Consequently, the U.S. has administered adjacent parks, forests, and wilderness areas according to their distinctly different management mandates, even though they are part of the same ecosystem. A hypothetical area of bear habitat illustrates the inconsistencies of such a strategy. The bear habitat that lies within a national park is typically managed for preservation. Yet the park may be surrounded by a national forest, where the land may be devoted to oil and gas development and/or timber harvesting, a military base utilized for weapons testing, and an Indian Reservation, which may lease its land for cattle grazing. Except where an endangered or threatened species is involved, each of these areas would be managed pursuant to its designated mandate,\textsuperscript{18} regardless of the uses in adjacent areas.\textsuperscript{19}


\textsuperscript{14} \textsc{National Park Service, U.S. Dep't of the Interior, Preserving Our Natural Heritage} 15-18 (1975).

\textsuperscript{15} National Park Service Organic Act § 1, 16 U.S.C. § 1 (1988) (the purpose of the national parks "is to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.").

\textsuperscript{16} See, e.g., Wilderness Act §§ 2-7, 16 U.S.C. §§ 1131-1136 (1988). "Except as otherwise provided in this Act, wilderness areas shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use." \textit{Id.} § 1133(b).


\textsuperscript{19} A recent incident further illustrates the incongruities of the enclave strategy. Bison,
It would be difficult to imagine a less ecologically sensitive way to operate a nature conservation program, and yet the enclave strategy is still the primary managerial technique on the federal lands. This approach has been less damaging than it might seem only because much of the land set aside for preservation and wildlife protection was surrounded by lands that, until very recently, were almost untouched. In recent decades, however, we have benefitted less and less from the luxury of nonuse. Consumers today are demanding more natural resources from public lands and are also increasingly developing residential and tourist facilities on lands that previously served as ecologically important buffer zones.

II

REFORMING THE CONSERVATION STRATEGY OF THE UNITED STATES

Why has the transformation to a more ecologically rational system been so difficult to accomplish? One reason is bureaucratic territorialism. The managers of a multiple-use forest do not want to yield their authority to the managers of a national park and vice versa. Similarly, local authorities do not want to yield to federal authority, especially when the concession may diminish the implementation of local goals, such as urban development, mining, and tourism, that are often at odds with nature preservation.

Even more fundamentally, the movement away from an enclave strategy requires policies that prioritize competing uses. Prioritizing uses is far more perplexing and difficult than the traditional enclave approach. For example, how should we resolve the conflict when bears exit a protected area and prey upon sheep on nearby ranches, or when an oil well or campground is proposed for an important wildlife area?

Under the enclave strategy, at least, the rules are clear. Each enclave manager pursues his or her own priorities within designated boundaries and hopes for the best as to neighboring land. Sometimes, of course, managers are able to protect their charge from external developments. For example, the threats to Yellowstone’s geysers from nearby commercial geothermal development became a prominent issue, engendered attention from the press and public, and affected the development. Recent federal legislation recognizes that geothermal aquifers do not stop at park boundaries. The new law requires consideration of the impact on park thermal features in the issuance of development leases on public

which are fully protected while foraging in Yellowstone National Park (where hunting is forbidden), crossed the invisible park boundaries in the winter of 1989 while searching for food and were shot almost immediately by waiting hunters. Timothy Egan, Stray Buffalo Killed in Red Harvest on the Snow, N.Y. TIMES, February 22, 1989, at A12.

20. Sax & Keiter, supra note 18, at 229-30, 259.
land beyond park boundaries. Furthermore, managers sometimes participate in and influence zoning proceedings in nearby communities. But for the most part, the boundary and designation determine the use of the enclave.

III
ALTERNATIVE CONSERVATION STRATEGIES

"Coordinated" or "ecological" management focuses on the resource, rather than on artificial boundary lines and ownerships, and creates generally applicable management criteria to protect the resource. The United States has not yet adopted an ecological management approach or any other comprehensive solution to the problems inherent in the enclave strategy, although it has begun to address some flaws in the current management system. Several new approaches to reserve land administration are described below.

A. Coordinated Management

In a few settings, nature preserve managers may demand behavioral changes beyond their boundaries. Through the Clean Air Act, for example, Congress established air quality standards protecting federal "Class I" preserves from distant polluters and provided for ready enforcement. In general, however, Congress has resolutely refused to grant land managers the authority to regulate extraterritorial land use developments. Congress has also declined to establish buffer zones or peripheral zones that only permit uses that are compatible with the resource needs of the enclave. Because land use regulation is one of the most cherished prerogatives of local governments, Congress' reluctance in this area is more disappointing than surprising.

Public agencies have made some progress in developing cooperative management strategies. Cooperative law enforcement is a successful, long-standing example. The National Park Service and the Forest Service have also attempted to develop joint fire management policies. If the managers of the enclaves involved pursue different goals, however, conflicts may limit the success of cooperative management. For example, fire is not "harmful" to a nature preserve manager. Like a cold spell or a drought, fire is a natural phenomenon. In contrast, an adjacent forest

23. Sax & Keiter, supra note 18, at 210 n.9.
manager who must meet timber production quotas understandably has a different position. The historic Yellowstone fires during the summer of 1988, which burned 1.4 million acres across both national park and national forest land,\textsuperscript{25} sharply revealed the resulting management conflicts. Among other disputes, the two federal agencies disagreed over whether to send heavy fire fighting equipment such as bulldozers into untrammelled natural areas.

One of the more successful examples of true ecological management has been the creation of an interagency grizzly bear management team in the Yellowstone ecosystem.\textsuperscript{26} Managers of the different types of federal enclaves classified their lands in terms of critical importance to grizzly populations. They also established management criteria, such as prohibiting certain human activities on those lands during sensitive seasons of the year. However, when national park and national forest officials, seeking to go a step further, produced a "Yellowstone Vision" document that set a more comprehensive agenda for cooperative ecosystem-wide management, higher officials in Washington, D.C. gave them punitive transfers. The Departments of Interior and Agriculture also mandated the revision of the Yellowstone document to decrease the perceived threat to existing interests.\textsuperscript{27}

\section*{B. Legislative Approaches}

\subsection*{1. The Endangered Species Act}

Several federal laws seek to shift the management of reserve lands from an enclave to a resource-based strategy. Without a doubt, the most far-reaching of these laws has been the Endangered Species Act.\textsuperscript{28} The Act adopts a radically different, often controversial, approach to wildlife conservation. Rather than simply setting aside refuges, it imposes a duty on all federal agencies to refrain from imperiling threatened or endangered species. The Act imposes the duty not only on public land managers, but also on regulators, such as the U.S. Army Corps of Engineers. For example, the 10th Circuit Court of Appeals recently upheld the Corps' decision to deny a construction permit for a dam and reservoir for

\begin{itemize}
\end{itemize}
agricultural irrigation that would destroy critical habitat of an endangered species.  

A "sleeper" provision of the Act forbids private parties from "taking" an endangered or threatened species or destroying habitat that is critical to the survival of the species. Furthermore, the Act requires the Secretary of the Interior to implement recovery programs for threatened species. The Endangered Species Act, in short, implements a policy based on management of resources rather than enclaves.

2. Procedural and Planning Statutes

Procedural laws that require environmental assessments, such as the National Environmental Policy Act (NEPA) and similar state laws, also encourage land managers and agencies to adopt an ecological perspective. Since they were enacted, courts have interpreted these laws to require decision makers to assess the cumulative effects of their proposed activities and not just the immediate impact on the site of the proposed activity. Customarily, land managers have only considered the environmental impacts upon the lands for which they are responsible, thus limiting their analysis to the boundary lines. Assessments that look beyond the enclave promise some change of perspective for both the land managers and the general public. For example, a forest manager who previously focused on commodity production, as well as members of the public who peruse the environmental impact statements, will now realize that a proposed timber harvest area is in the viewshed of an adjacent scenic park, or that a proposed oil well is in a wildlife travel route. Unlike the Endangered Species Act, NEPA's approach also ensures consideration of harms to animal and plant species which are still relatively abundant.

Other federal land planning laws, such as the Federal Land Policy and Management Act (FLPMA) and the National Forest Management Act (NFMA), also have potential to mandate ecologically-based decision making.

34. See, e.g., City of Tenakee Springs v. Clough, 915 F.2d 1308, 1312 (9th Cir. 1990); Sierra Club v. Penfold, 857 F.2d 1307, 1320-21 (9th Cir. 1988); Portland Audubon Soc'y v. Lujan, 784 F. Supp. 786, 788 (D. Or. 1992).
3. The Wilderness Act

The overlay method of the Wilderness Act\(^{37}\) is a different legislative approach which also signals the advent of a more enlightened system of reserve land management. While maintaining the old boundaries and categories (park, forest, etc.), the overlay method ensures that the managers of each category of land protect the wilderness qualities of designated land under their jurisdiction. The management prescriptions forbid specified uses, such as road building, mechanical vehicles, and permanent structures. The goal is to protect the pristine quality and biodiversity of designated land areas, rather than focus on a particular species or a particular parameter such as air quality. The Wilderness Act’s overlay strategy circumvents the bureaucratic territorialism described above. Forest managers resolutely resist losing “their” lands to park or wildlife refuge managers. The overlay method, however, reclassifies “their” lands to a new status, and all land managers are obliged to follow the rigorous management prescriptions of the Act. When it coincides with the protection of wildlife habitat or biological diversity, the overlay classification approximates the substance of resource-oriented management without abolishing the enclave strategy form.

C. Compensation

There are other techniques that can potentially soften the tension among conflicting land uses without requiring vast land acquisitions. For example, recent proposals to reintroduce the wolf into the Yellowstone ecosystem encountered fierce opposition from nearby ranchers who feared for their grazing stock. A public commitment to compensate for stock losses is likely to mitigate some opposition and respond to the legitimate concerns of private interests in the region. Studies indicate that the actual cost of such a program would not be very high, because wolves do not prey on stock to the extent feared.\(^{38}\)

D. Informational Systems as Planning Tools

A much more elaborate approach, moving far beyond cooperation among managers, has been proposed for wildlife refuges by the United States Fish and Wildlife Service, which manages the refuges. This concept, called “GAP analysis,” is a geographic information system that is designed to inventory biodiversity on a large scale.\(^{39}\) The analysis is pre-

---

mised on the recognition that wildlife refuges serve as useful habitat, but are frequently isolated and do not provide the means to sustain viable wildlife populations. The analysis identifies the necessary means of providing such sustenance, including use of tracts of ecologically significant land that may not be a part of the public wildlife refuge system. To establish a network of conservation lands that will allow wildlife survival, the analysis identifies areas such as wildlife transportation corridors. Federal or other agencies may be able to obtain these areas for wildlife purposes through limited development easements from private owners, which is an alternative to outright acquisition. GAP analysis also focuses on other land uses that affect habitat, such as forestry practices and potential urban development. The Fish and Wildlife Service then attempts to direct the activity to meet at least the minimal requirements of wildlife. For example, GAP analysis would examine the potential activities in existing wetlands, such as water development projects, and consider issues and needs not ordinarily the concern of wildlife experts. The goal of this system is to prevent harm before it occurs, or to intervene and assure that the planned water projects will maintain the water flow necessary for wildlife needs.

CONCLUSION

This paper has addressed the enclave and its limitations because many of the most controversial issues of nature conservation stem from the public and private enclave mentality. Americans are conditioned to think of defined and bounded land areas as the measure of rights and responsibilities. A private land area emphasizes the supremacy of individual goals. Similarly, the boundaries of reserve lands dictate which uses and activities are protected and prohibited.

Whatever the qualifications, the focus on the boundary is deeply implanted in our consciousness. The castle with its moat—keep out and keep in—is one of the most powerful images of land and its boundedness. The popular expressions “one’s home is one’s castle” and “good fences make good neighbors” reinforce the metaphor. For privacy interests, these sentiments are appropriate and desirable. Yet the notion of boundaries and disjointed land and resource management is problematic in a world where the importance of clean waters and abundant wildlife populations is increasingly being acknowledged. Wildlife depends on ecosystems for survival. The planet itself is an interconnected series of ecosystems.

Whether they divide public reserves and private commercial lands, or nations and states, boundary lines are ecological impediments. We clearly need a way of perceiving land that seeks to protect natural sys-

40. Id.
tems rather than self-enclosed enclaves, public or private. Public land management in the United States has begun to implement some provocative new ideas, particularly in the emerging efforts to protect and restore wildlife populations and wild lands.

The work that has begun in remote places like the Yellowstone area is a major experiment well worth the attention of people around the world. Land managers are now perceiving the vast Yellowstone region as an ecosystem that should be managed in terms of its resources rather than its boundary lines. Although the developments in Yellowstone have from time to time been crippled by political considerations, they cannot be long resisted. Ecological management is the necessity and shape of the future.