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# Should Wilderness Areas Become Biodiversity Reserves?

The twenty-first century is just around the corner. That calls for reflection and reassessment of the conservation philosophy that has governed the management of public lands in the United States since the late nineteenth century. As jurisdictions, the national forests, range lands, and parks didn't just happen. They were deliberately created. For a reason. But, over a century, new thinking can emerge that challenges the raison d'être of old institutions. I reviewed the thinking of the giants of twentieth-century conservation philosophy—John Muir, Gifford Pinchot, and Aldo Leopold—in an earlier issue of THE GEORGE WRIGHT FORUM (Callicott 1993). Here I would like to supplement that discussion with a sharper focus on the raison d'être of wilderness areas in the public domain.

During the 1980s the "crisis discipline" called conservation biology emerged. The crisis that it aims to address is the precipitous and accelerating loss of species, or, more generally and abstractly, the loss of biological diversity at every level of organization—of genetic diversity within populations, of diverse populations within species, of various species, of diverse assemblages of species populations (biotic communities), landscape-scale diversity, and diverse biomes. Conservation biology has quietly transformed the agenda of conservation *from* either conserving natural resources ("wise use," etc.) or conserving pristine Nature ("wilderness preservation") *to* conserving biological diversity (or "biodiversity" for short).

The utilitarian Pinchot philosophy of conservation—summed up in the maxim, "the greatest good for the greatest number for the longest time," and in the general policy of "maximum sustained yield" of "natural resources"—is easy to criticize, but hard to kill. Though anthropocentric, reductive, and based on a pre-ecological scientific paradigm, extractive resourcism is still very much alive in the USDA Forest Service and most other federal and state land management agencies. After I also criticized the once sacrosanct (in environmentalist circles) Muir philosophy of conservation—wilderness preservation—here and elsewhere, the floodgates have opened and a torrent of criticism has washed over the wilderness idea, finally cresting in a recent *New York Times Sunday Magazine* article, "The Trouble with Wilderness," by environmental historian Bill Cronon (1995).

And just what is wrong with the wilderness idea? In the fourth num-

ber of the tenth volume of the FORUM I wrote:

> Muir's philosophy of wilderness preservation is equally obsolete. First, no less than Pinchot's, it perpetuates the pre-evolutionary strict separation of "man" from "nature." [Pinchot had infamously declared, "There are two things on this material earth, people and natural resources."] It [preservationism] simply puts an opposite spin on the value question, defending bits of innocent, pristine, virgin nature against the depredations of greedy and destructive "man." Second, it ignores the presence and considerable impact of indigenous peoples in their native ecosystems. North and South America had been fully inhabited and radically affected by *Homo sapiens* for 10,000 or more years before European discovery (Denevan 1992). And third, it assumes that, if preserved, an ecosystem will remain in a stable steady-state, while current thinking in ecology stresses the importance of constant, but patchy, perturbation and the inevitability of change (Botkin 1990).

We have to be very careful, here, however, not to throw the baby out with the bath water. The *idea* of wilderness that we have inherited from Muir and his successors—Sigurd Olson, Robert Marshall, David Brower, et al.—may be ill conceived, but there's nothing whatever wrong with the *places* that we call wilderness, except that they are too small, too few and far between, and, as I shall directly explain, mostly mislocated. Those who have long campaigned for wilderness preservation (Noss 1994, Foreman 1994) are concerned lest honest, friendly critics of the wilderness *idea*, such as Cronon and I, give unwitting aid and comfort to the real enemies—the likes of Rush Limbaugh, Ron Arnold and the "Wise Use Movement," the congressional delegation from Alaska, and the rest of the shock troops in the Newt Gingrich-led Republican Revolution—of designated wilderness *areas*. It is incumbent, therefore, on well-intentioned critics of the received wilderness idea to offer something positive with which to replace it.

And what might that be? In my earlier FORUM article I emphasized one half of a whole answer to that question. Following the lead of the twentieth century's third towering figure in conservation philosophy, Aldo Leopold, I stressed our need to find ways to inhabit and use nature that are at the same time ecologically benign. Examples abound of past human cultures that lived in harmony with their non-human neighbors (Gomez-Pompa and Kaus 1988). On the other hand, some species—most obviously large predators—do not coexist well with *Homo sapiens*. If members of such species are to have a place to live, then sustainable inhabitation and use of *most* places must be complemented by setting aside *some* places in which human inhabitation and use are either prohibited or severely restricted.

Such places are designated wilderness *areas*. In addition, however, to the above-noted conceptual problems with the received wilderness *idea*, the system of wilderness areas that we have inherited from our forebears only accidentally serves the vital habitat needs of endangered species —because wilderness areas were created with purposes other than biological conservation in mind. A review of the preservationist literature from the mid-nineteenth to the mid-twentieth century indicates that most traditional preservationists were not concerned primarily with providing habitat for members of those species that do not coexist well with people, but with such things as the recreational, scenic, and spiritual values of the human *experience* of wilderness. And just such values informed wilderness preservation policy. Hence, designated wilderness areas were selected, not because they were particularly rich or diverse in species, but for their recreational, scenic, and spiritual potential.

One institution, the zoological garden, that we have inherited from our forebears has been quick to adapt to the changed agenda of conservation—as redefined by conservation biology. Capturing and displaying wild animals appears to be as old as civilization itself; "the first known large collections were assembled in Egypt around 2,500 B.C.E." (Dunlap and Kellert, 1995:184) Modern zoos that display exotic animals from faraway places to a curious public became an urban commonplace in the nineteenth century A.D. Gawking at animals, imprisoned like criminals behind bars, was what, until very recently, zoos were all about. When wildlife cinematography began routinely appearing on television, people could see moving images of animals in the wild. By comparison, the incarcerated zoo animals, in their cramped and barren cages, appeared lethargic, forlorn, unhealthy, and incomplete. Simultaneously, animal welfare and environmental ethics came on the scene. Rather suddenly, the very existence of zoos has become morally problematic (Fox 1990). To survive, zoos had to change.

One response was to simulate the natural habitats of the inmates, displaying mixed-species groups of animals in open, landscaped compounds, secured by moats, rather than bars. But conservation biology was the real godsend for the public relations problems of zoos. Zoos contribute to conservation biology in several ways (Luoma 1987). They provide subjects and facilities for biological research. For some highly endangered species whose natural habitats are engulfed by the deluge of human overpopulation, zoos are arks, havens of last resort. More generally, a consortium of American and European zoos participate in a program of Species Survival Plans that features not only maintaining viable populations of threatened species, but also maintaining genetic variability in captive species populations through scientifically sophisticated captive breeding. The ultimate goal

of this program is to reintroduce zoo-bred animals into the wild—if and when enough of their habitat can be reclaimed and restored. Finally, taking advantage of the fact that people still flock to zoos in great numbers for family entertainment, zoos are attempting subtly to educate their patrons about the biodiversity crisis and the dire necessity for biological conservation.

Zoos play an important role in what conservation biologists call "*ex situ*" (off-site) conservation. (Other *ex situ* conservation institutions, such as the International Crane Foundation, also exist—originally created not to exhibit but to help conserve threatened species.) What conservation biologists call "*in situ*" (on-site) conservation is by far the preferred approach, *ex situ* conservation being to an endangered species somewhat as intensive hospital care is to a gravely ill organism. Life in a hospital with no hope of going home is a living death. Similarly, a species' existence solely in zoos, with no hope of a return to the wild, is a living extinction. Here's another analogy. Designated wilderness areas are, I suggest, to *in situ* biodiversity conservation, what zoos are to *ex situ* conservation. But just as zoos had to remake themselves to function as *ex situ* conservation institutions, so wilderness areas also need a make-over to function as *in situ* conservation institutions.

How then does conservation biology change wilderness policy? We can get a start on answering that question by reviewing how zoos have been changed by conservation biology.

The first order of business is a name change. The old Bronx Zoo in New York City has been renamed. It is now the "Wildlife Conservation Park." The director of the National Zoo in Washington D.C., Michael Robinson (1989), has proposed "biological park" as a new generic name for the institutions formerly called zoos. What's in a name?, Shakespeare asked. Rather a lot. Names are fraught with all sorts of associations. Baggage. (That's why some women don't like to be called "ladies.") The name "zoo" conjures images of animals in cages—there to be stared at, fed Crackerjacks and other snacks, teased, and such. "Biological conservation park" puts patrons on notice that the place they are visiting has a higher calling than some site for public amusement on the same scurrilous level as a circus tent or dog track. I suggest we rename wilderness areas "biodiversity reserves." That would put patrons on notice that the back country in the national parks and forests doesn't exist primarily for the enjoyment of trekkers, climbers, canoers, campers, and solitude seekers—as wilderness advocates argued from the mid-nineteenth to the mid-twentieth century—but for the nonhuman inhabitants of such places.

On the other hand, zoos have not closed their gates to the public. Far from it. People still patronize erstwhile zoos—in record numbers—most of them completely oblivious to

the fact that they are visiting not zoos but biological conservation parks. Any thoughtful and tasteful visitor to a remodeled biological conservation park will immediately notice that exhibits have become more spacious, natural-looking, and ecologically informed. But the conservation agenda of biological conservation parks takes priority over the public entertainment agenda, despite the fact that the vast majority of the public is there to do some good old-fashioned gawking at charismatic megafauna, not to be educated about the biodiversity crisis and such things as the genetic niceties of captive breeding. The silverback mountain gorilla that patrons may have come especially to admire just may be on loan to another facility in hopes that he will romance a female of his species located there. Or, at that other facility, the courting couple may not be on display to the public so as to allow them the privacy they require to consummate their union. If so, too bad. Patrons will be informed of the reason for their disappointment and will have to be content with just knowing that their favorite exhibit is temporarily serving a higher purpose. Similarly, in the Yellowstone or Glacier biodiversity reserves (or, as they are now still called, wilderness areas), backpackers might just have to be excluded from grizzly bear or gray wolf habitat altogether if their recreational activities prove to be in conflict with the conservation of these beleaguered species. More controversially—though personally I do not see why it should be—if the needs of bears and wolves in national forest biodiversity reserves (a.k.a. wilderness areas) are in conflict with nearby livestock grazing, biological conservation should take precedence, in my opinion.

It would be hard to argue that the old zoos were not located in the right places. If properly designed and managed, London is as good a place as New York for a biological conservation park, and San Diego is as good as Chicago. Unfortunately, designated wilderness areas are not always located in the best places to perform their newfound and overriding conservation function. In the blunt characterization of one unregenerate wilderness advocate, much of the wilderness system in the United States, for all its stupendous glory, is rock and ice (Foreman, 1991). But it's a start. The Yellowstone Biodiversity Reserve (as it might be renamed) should be expanded to become coextensive with the Greater Yellowstone Ecosystem and connected up with the Selway-Bitterroot, Frank Church River of No Return, and other proximate wild lands. Politically impossible, you may be thinking. That's part of what's wrong with the wilderness label. It pits the politically anemic historic rationale of wilderness preservation (recreation and aesthetics for an elite few) against the politically more robust claims of jobs and profits. Preserving biodiversity is a more universal and higher-minded conservation aim than the provision of outdoor recreation and monumental scen-

ery—which can be made to look like a government-subsidized luxury for social misfits by a congressional demagogue, with a little help from his or her spin doctors. And, unlike traditional wilderness areas—which are partly defined in terms of the absence of "man" and "his works"—all human economic activity need not be ruled out, by definition, in biodiversity reserves. Under certain circumstances, selective logging, regulated hunting, and careful mineral extraction might be made compatible with *in situ* Species Survival Plans.

The next step is to establish biodiversity reserves in the places that are biologically rich but scenically poor, and that thus got overlooked by the historic wilderness preservation movement. Three general categories of places appropriate for biodiversity reserve designation come to mind. First, representative biomes with their characteristic species. The biome most neglected by the waning twentieth century's North American wilderness preservation movement is surely the Great Plains. No monumental scenery, no wilderness designation. The plains are sufficiently vast, sparcely populated, and climatically diverse to warrant the establishment of a whole network of biodiversity reserves from Alberta to Chihuahua. Second, what conservation biologists call "hot spots"—areas of particularly rich biodiversity (which often occur at the intersection of biomes)—are obvious candidates for designation as biodiversity reserves (Lydeard and Mayden 1995). Third, unique ecosystems, such as the Florida Everglades—the most threatened ecosystem in the United States, according to a recent Defenders of Wildlife assessment.

A pipe dream? Maybe; maybe not. The Republican Revolution in Congress may fizzle between the writing and publication of this article. You can't fool all the people all the time. The populism of the anti-environment far right is a sham. Who gets represented and who gets their legislative agenda enacted is who contributes big bucks to the campaign coffers. The cynical bet is that those who merely vote can be manipulated. But tax breaks and government subsidies for the rich and ripoffs for everyone else can't play for too long in Peoria or anywhere else in a healthy democracy. A militant minority—big ranching, big mining, big drilling, big logging, big real estate development—are the instigators and beneficiaries of the current effort in Congress to sell out the environment and literally sell off our public domain. I don't think it will fly much longer. In the meantime, hopefully, the current public and academic debate about the fate of endangered species, the wilderness idea, and the environment in general will mix some new and creative thinking with the venerable American traditions of nature conservation and preservation. And, hopefully, the twenty-first century will be characterized by a more serious and coherent conservation agenda than its predecessors.

## References


Botkin, D. B. 1990. Discordant Harmonies: *A New Ecology for the Twenty-first Century*. New York: Oxford University Press.

Callicott, J. B. 1993. Sustainability in historical-philosophical context. *The George Wright FORUM* 10 (4): 26-33.

Cronon, W. 1995. The trouble with wilderness. *New York Times Sunday Magazine*, August 13: 42-43.

Denevan, W. M. 1992. The pristine myth: the landscape of the Americas in 1492. *Annals of the Association of American Geographers* 82: 369-385.

Dunlap, J., and S. R. Kellert. 1995. Zoos and zoological parks. In: W. R. Reich, ed., *Encyclopedia of Bioethics*, Vol. 1: 184-186.

Foreman, D. 1991. Dreaming big wilderness. *Wild Earth* 1 (spring): 10-13.

———. 1994. Wilderness areas are vital: A response to Callicott. *Wild Earth* 4 (winter): 64-68.

Fox, M. W. 1990. *Inhumane Society: The American Way of Exploiting Animals*. New York: St. Martin's Press.

Gomez-Pompa, A., and A. Kaus. 1988. Conservation by traditional cultures in the tropics. In: V. Martin, ed. *For the Conservation of the Earth*. Golden, Colo.: Fulcrum.

Lydeard, C., and R. L. Mayden. 1995. A diverse and endangered aquatic ecosystem of the southeast United States. *Conservation Biology* 9:800-805.

Luoma, J. R. 1987. *A Crowded Ark: The Role of Zoos in Wildlife Conservation*. Boston: Houghton Mifflin.

Noss, R. F. 1994. Wilderness—now more than ever: A response to Callicott. *Wild Earth* 4 (winter): 60-63.

Robinson, J. G. 1993. The limits to caring: sustainable living and the loss of biodiversity. *Conservation Biology* 7:20-28.

Robinson, M. 1989. Zoos today and tomorrow. *Anthrozoos* 2:10-14.



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