Soul of the Wilderness
Biodiversity, Ecological Integrity, and Wilderness

BY REED F. NOSS

FEW YEARS AGO I SPOKE AT A WILDERNESS MANAGEMENT SYMPOSIUM about the relationship between wilderness protection and the conservation of biodiversity. The major theme of the meeting was the nonrecreational values of wilderness, but I was the only one who talked much about biological values and how wilderness provides vital habitat for species that are sensitive to human activities. I also introduced the relatively arcane idea that true wilderness provides for “higher-level” aspects of biodiversity, namely the landscape-scale processes and shifting-habitat mosaics that can be expressed only in wild areas many thousands or millions of acres in size-areas where natural disturbance regimes overrule the actions of humans. I acknowledged that most designated wilderness areas, like other conventional parks and reserves, are too small to encompass these patterns and processes. But I argued that small wilderness areas (approximately 10,000 acres/25,000 ha) aren’t real wilderness. You can’t even get lost in them.

If asked to speak on the same topic today, I would present a similar message. But I’m less confident now that the wilderness preservation and biodiversity conservation movements are converging. Over the last few years I have been forced to rethink some of my assumptions; for example, that large, wild areas are essential components of a conservation strategy, and that wilderness and biodiversity are compatible objectives. I had taken it for granted that these things are true, but increasingly I have encountered skeptics who argue that the battle for biodiversity will be won or lost in the human-dominated landscape—the “matrix”—and that wilderness areas are merely cultural artifacts, trivial remnants of a romanticized past to which we can never hope to return. I am amazed at how few defenders of wilderness there are among the modern conservation crowd. Scientists in particular are uncomfortable with the wilderness idea because it seems so subjective, soft, and nonquantifiable. Biodiversity they sincerely embrace, but these same scientists would just as soon leave wilderness to the backpackers, poets, and tree-huggers. So I have rethought my position. My conclusion, for the time being at least, is that large, wilderness—whether or not we call them wilderness—remain among the most important components of a conservation network. I believe more strongly than ever that wilderness, and natural areas in general, should be evaluated primarily in terms of their contribution to the broad goals of protecting and restoring native biodiversity and ecological integrity to our planet. However, I am less optimistic than I once was on whether scientists, activists, recreationists, managers, and the broader public can ever agree on how biodiversity and wilderness concerns should be reconciled. And I am more adamant about the need for active management, at least of a restorative nature, for wilderness areas too small to manage themselves.

We Need to Save Large Areas

In some ways biodiversity and wilderness (or more generally, wilderness) are perfectly compatible. First, both biodiversity and wilderness values are best fulfilled in large areas. From the wilderness point of view, large areas are all else being
equal, simply wilder. They are more awe inspiring. But “bigger is better” is also the most fundamental, best documented principle of conservation biology. Although biologists have long argued over whether one large reserve is superior to several smaller reserves of equivalent total area (and have generally agreed that the question is a red generally by keeping road density low across large landscapes, n-e contribute to the conservation of these species. Across the world, areas where human activities are excluded or highly restricted have proven to be valuable havens for wildlife. For example, the Korean Demilitarized Zone is the major stronghold for wintering and migrant white-naped and

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biodiversity management areas in such landscapes, but these areas will hardly meet the conventional criteria of wilderness. In the Pacific Northwest region of the United States, designated wilderness areas contain fewer northern spotted owls than managed forests for a simple reason: Most wilderness areas are at high elevations beyond the distribution of the owl. Larry Harris’s landmark book, The Fragmented Forest, contains a graph showing a dramatic decline in the number of species of amphibians, reptiles, and mammals as elevation increases in western Oregon; wilderness areas generally contain the fewest species, private lands the most, and multiple-use lands lie in-between. Moreover, many of our most imperiled species-endemic plants, invertebrates, and small vertebrates-do not require wilderness but could persist quite well in relatively small, isolated reserves if these areas were properly buffered and well managed.

**Traditional Conservation Versus Conservation Biology**

Many traditional conservationists are uncomfortable with the increasing influence of conservation biology in the environmental movement and, occasionally, in land protection decisions. Speaking at the 1995 North American regional meeting of the World Conservation Union Commission on National Parks and Protected Areas, Michael McCloskey, chairman of the Sierra Club, expressed concern that “the preservation of biodiversity is put forth as the raison d’être for protected areas” and that “every other reason for having them is treated as secondary, if not trivial and old-fashioned.” McCloskey noted that the diversity of reasons for having protected areas has expanded the constituency for them. He then chastised me and other conservation biologists for heaping disdain on protected areas, because they are not in the right places or are too small, too far apart, or not managed or buffered well. McCloskey’s central point is that criticizing our protected-areas system is counterproductive because “it will be all too easy for the public to conclude that such systems should be dismembered if this is the message they get from leaders in the environmental community.”

Within The Wildlands Project, a coalition of scientists and activists interested in restoring native biodiversity and wilderness to every region of North America, it has proved difficult to reconcile the wild and the diverse. When its budget hit an all-time low, The Wildlands Project opted to maintain the portion of its program focused on wilderness and activism and to gut the science program, just as many of the mainstream conservation groups (e.g., the National Audubon Society) have done and as the federal land-managing agencies routinely do (slash science budgets, that is). I found myself and the program I initiated without funding and resigned in January 1996 as The Wildlands Project’s science director.

Wildness is just as meaningful to me as biodiversity. When it comes right down to it, the emotional and aesthetic reasons for protecting wild areas are more important to me than the scientific reasons. But are we not somewhat selfish in our love for wilderness, our craving to be alone in places that humble and excite us, that are beautiful, or that challenge us recreationally or spiritually? Does any other species feel this way about wilderness? Does any organism besides a few fanatic Homo sapiens need wilderness? Let’s face it: Wildness is a more anthropocentric conservation criterion than biodiversity. I cannot think of no conservation goal less biased, more biocentric, more all-encompassing than protecting and restoring native biodiversity and ecological integrity. Wilderness areas, designated and otherwise, contribute to this goal and are essential for some species, at least given the human attitudes and behaviors that currently make nonwilderness unsafe or unlivable for them. But wilderness is not the whole picture. Wildness, however exalted it makes us feel, is incomplete as a conservation objective. Unless wilderness contributes to the higher goals of biodiversity and ecological integrity, in these times of mass extinction and degradation of ecosystems on a global scale it is perhaps frivolous to spend much time trying to protect it. In many cases our efforts would be more fruitfully employed in ecological restoration, in trying to help heal the landscapes we have already damaged. A greater number of species would probably benefit.

So how can we make wilderness designation and management more re-
sponsive to the most pressing needs of the 21st century? First, we need to re-
evaluate the criteria used to select conservation areas, including but not
limited to wilderness, to make sure they are fully consistent with what modern
ecology and conservation biology have to teach us. Wilderness areas and other
reserves should be selected primarily to represent all kinds of ecosystems and
species assemblages (the goal of the U.S. National Biological Service’s Gap
Analysis project), maintain viable populations of all native species in natural
patterns of abundance and distribution, sustain ecological and evolutionary
processes within normal ranges of variation, and be adaptable to a changing
environment. These biocentric objectives must be primary if we are truly seri-
sous about averting the biodiversity crisis. But then, nearly as important,
must come the objective of encouraging human activities that are compat-
ible with the maintenance of ecological integrity and discouraging those
that are not. Within wilderness and other protected areas, some of the most
compatible and necessary activities are scientific research, monitoring, and ac-
tive restoration and management of native biodiversity. These activities have
been nonexistent in many wilderness areas, which seem to be viewed more
as public playgrounds. Hence, we have wilderness areas where overgrazing by
livestock is severe, forests are unnatu-
rally dense and unhealthy due to lack of
fire, lakes are stocked with fish not
native to them, and trails are eroding.

Acknowledging that biodiversity and ecological integrity should be fore-
most objectives for wilderness designation and management-and that active
management usually will be necessary in these areas-does not mean we de-
stroy the wild. It does not mean we
forget about all other values of wilder-
ness and lose the constituencies we have
gained. It certainly does not mean we
stop defending truly wild areas. It is
only a matter of recognizing priorities.

Spending time in wilderness continues to be my greatest inspiration, my
motivation to keep up the good fight. But I suggest that what we fight for be
extended from our own gratification to encompass, as far as we can deter-
mine, the needs of all other species. It is
the least we can do for them. JW

REED Noss is the editor of Conservation Bi-
ology and author of the award-winning book
Saving Nature’s Legacy: Protecting and Restoring
Biodiversity. He has an M.S. in ecology from the
University of Tennessee and a Ph.D. in
wildlife ecology from the University of
Florida. He has worked with the Ohio De-
partment of Natural Resources, the Florida
Natural Areas Inventory, and the U.S. Envi-
ronmental Protection Agency. He lives with
his wife, three children, two dogs, and one
cat in the foothills of the Oregon Coast Range
outside Corvallis. Reed can be contacted at
7310 NW Acorn Ridge, Corvallis, OR
97330, USA. Telephone: (541) 752-7639; e-
mail: nosr@ucs.orst.edu

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