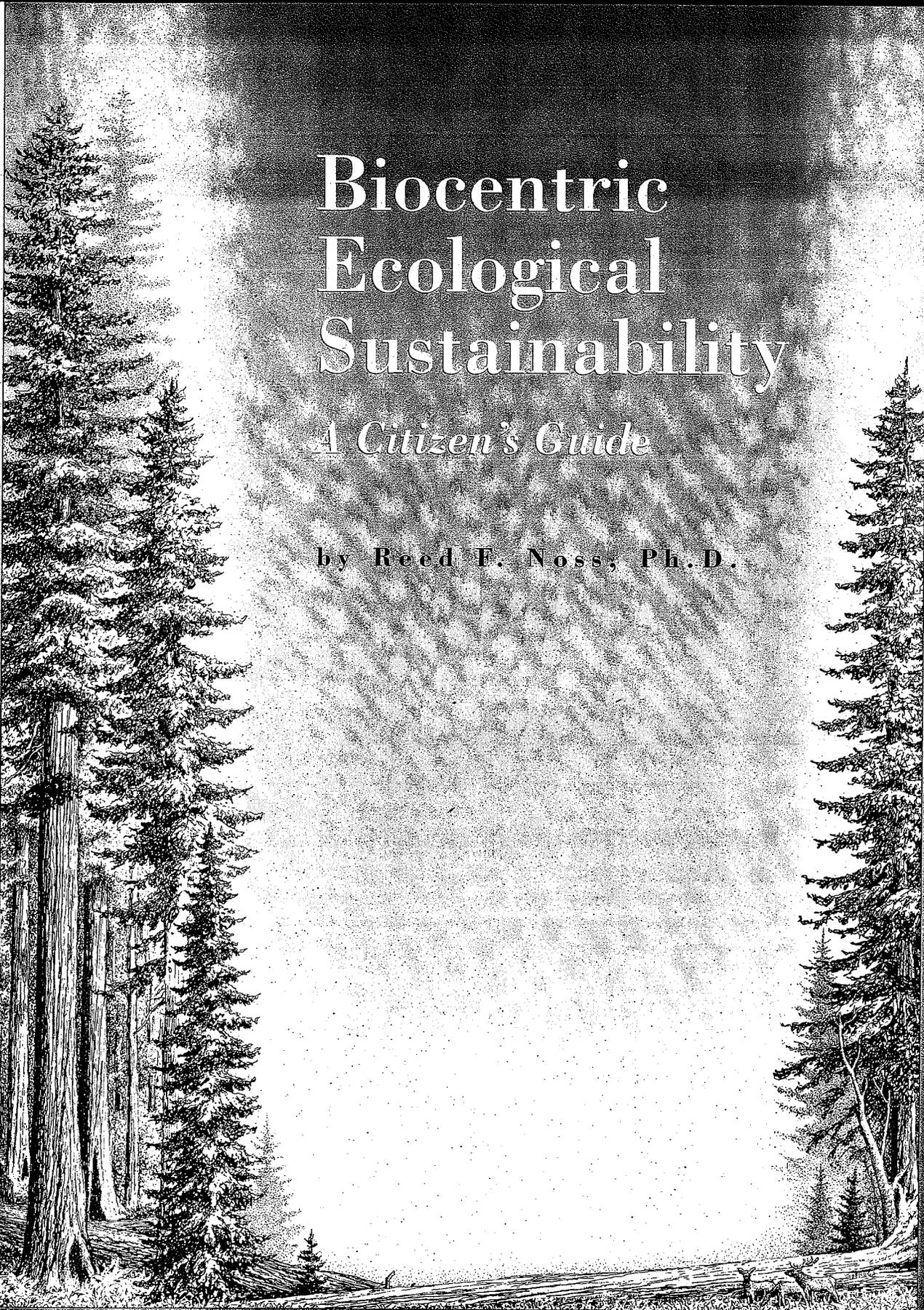


Biocentric Ecological Sustainability

A Citizen's Guide

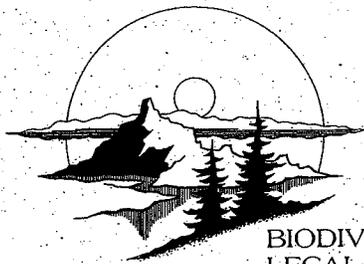
by Reed F. Noss, Ph.D.



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Foreword	1
Introduction	2
Sustain What?	3
Sustaining Ecosystems in an Ever-Changing World	5
The Key Roles of Species	7
Sustaining Interacting Species and Processes	8
Toward a Sustainable Human Carrying Capacity	9

Tables

Table 1	8
Table 2	10
Table 3	11

The Biodiversity Legal Foundation

(BLF) is a nonprofit, science-based conservation organization dedicated to the preservation of all native wild plants and animals, communities of species, and naturally functioning ecosystems. Through visionary educational, administrative, and legal actions, the BLF endeavors to encourage improved attitudes and policies for all living things. The BLF has been directly involved in efforts to protect hundreds of individual threatened and endangered species and their habitats in the United States over the past nine years. This experience has led to the realization that an interdisciplinary, multi-species, ecosystem approach must be applied if there is to be hope for preserving large expanses of biologically intact wildlands in the future.

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This document is a collaborative effort of Biodiversity Legal Foundation and *Wild Earth*, and serves as the fourth in a series of occasional *Wild Earth* special papers:

Special Paper #1, *How to Design an Ecological Reserve System*
by Stephen C. Trombulak

Special Paper #2, *When Mapping Wildlands, Don't Forget the Aliens*
by Faith T. Campbell

Special Paper #3, *A Citizen's Guide to Ecosystem Management*
by Reed F. Noss (also with Biodiversity Legal Foundation)

Please contact us for subscription information or for copies of special papers.

Foreword

THERE'S BEEN A LOT OF TALK IN THE LAST FEW years about "ecological sustainability." It seems clear, though, that many of the talkers are unaware that "ecological sustainability" is *not* the same thing as "economic sustainability" or "sustainable yield."

It is far more complex and far more important than either of these. Ecological sustainability will have a good deal to do with the question of whether or not *Homo sapiens* will have a shorter run on this planet than the dinosaurs did.

In this paper, Dr. Reed Noss, one of America's premier conservation biologists, considers ecological sustainability—what it is, how it can be identified, and how we might achieve it. The Biodiversity Legal Foundation interest in this Guide is essentially practical: to obtain a biocentric framework for the care and restoration of wildlife habitats. The status of wildlife and natural habitat constitute an important starting point for assessing ecological sustainability; wildlife is an indicator of whether an ecosystem is functioning, or whether it's declining—as most ecosystems are in America today. The major objective of this paper is to construct an approach that can be used to demonstrate the sustainability or lack thereof in a given ecosystem under its present and proposed management.

An essential fact about ecological sustainability is that each and every ecosystem has a somewhat different sustainability conformation. Ecosystems are almost as individual as individual humans. That, however, as Dr. Noss explains, does not mean that there cannot be a utilitarian framework for their identification and the examination of their components and the factors that make them, or their proposed uses, sustainable or not. The US can be seen as made up not of counties or states, but of a mosaic of natural ecosystems, and these ecosystems can be assessed for their viability and sustainability, one by one.

Assessing ecological sustainability is not a simple matter. Its myriad and complex factors exist in different proportions in different ecosystems. For real sustainability, the conditions, processes, abundances, and ecological interactions that can sustain all native elements of biological diversity (at safe and historically reasonable densities) would be present.

This planet is not now in a very habitable state. The world's biodiversity is being ground between the upper jaws of the western market economy with its crazy pursuit of perpetual growth and the lower jaws of the Third World's reckless exploitations for mere survival. The Earth is being dangerously stretched. Certain basic facts about systems generally apply here: You can't take more out of a system than is going into it and end up with anything but a dimin-

ishing, ultimately depleted system. Furthermore, you can't remove from it those things you want to take out and hope that the remainder will continue to function. The concept of ecological sustainability can provide a yardstick whereby it can be determined whether we are taking an unsustainable amount out of an ecosystem. Ecological sustainability occurs when each ecosystem is fully functioning with all of its natural parts.

Dr. Noss discusses some of the most far-reaching ecological sustainability questions confronting us today: What is the carrying capacity of watersheds and ecosystems, particularly with respect to how many human beings the land can support—and at what price? At what level should we aim to sustain? A minimal start should be made by demanding that our damaged and limping ecosystems be restored and then sustained at that level—no more draining of ecosystems beyond their natural replacement.

There are many other questions, and beyond them still others; for example, who will judge the ecological sustainability of an ecosystem? Possibly, as one writer suggested, "practicing ecologists, thoroughly familiar with those systems and utilizing all available information (including generally accepted ecological, biogeographic, and genetic theory)." Representatives of economic interests will undoubtedly demand a voice; shall they have one considering that they have been the greatest offenders in the destruction of the American environment? Achieving ecological sustainability will be complex as well as controversial. Yet, we can and must demand that the concept of ecological sustainability be incorporated in our environmental legislation, public education, and all land management decisions so that it becomes a necessary, primary, and central consideration in all questions involving development.

Dr. Noss's analysis and discussion are scientific, but he tells us that science alone is not all that is involved. We can describe and analyze ecosystems as conscientiously, as painstakingly, and as knowledgeably as possible, and still make little or no headway toward arresting and reversing the deterioration of our ecosystems—as has been the case too often in recent decades. There must be major changes in human, and especially American, attitudes and beliefs before we will choose to heal our natural systems.

For example, what is the most universally necessary or most significant component of ecosystems? Water. Water is extremely important in places like Florida, where there's a lot of it, it's even more important in places where it's scarce, such as most of the western United States. This has been long recognized, but despite attempts at legislation and federal regulation, the quality of American waters is overall well below any standard we would want

