

ENVIRONMENTAL SCIENCES

ECOSYSTEM HEALTH.

Edited by David Rapport, Robert Costanza, Paul R Epstein, Connie Gaudet, and Richard Levins. Malden (Massachusetts): Blackwell Science. \$45.00. xii + 372 p; ill.; index. ISBN: 0-632-04368-7. 1998.

Many champions of using the metaphor of human health to portray the condition of ecological systems argue that it integrates human activity and well-being, social organization, and natural systems

in ways that will lead to ecological and social sustainability. The editors here are forceful supporters of using the metaphor. Ecosystem health, as delineated in this book, is extraordinarily broad, having biophysical, socioeconomic, human health, spatial/temporal, and stressor dimensions. The purposes of this edited volume are two-fold: to describe and defend the basic rationale for using ecosystem health as a societal goal and to describe how the concept of ecosystem health should be used in practice.

Ecosystem health is much more than a purely biological concept, a fact confirmed by the disciplines represented by the five editors of the book (i.e., biology, economics, public health, medicine, and environmental protection). Many of the chapters are written by one or more of the editors, but other authors are interspersed among the 23 chapters and they too represent a broad cross section of disciplines and perspectives.

Applying the human health metaphor to ecological systems is controversial, and the editors are well aware of the arguments leveled against ecosystem health. They do not shy away from confronting the arguments raised by critics, but confront them openly.

The book is organized around four general themes: (1) the conceptual basis for ecosystem health; (2) approaches to assessing ecosystem health; (3) the relationship between ecosystem health and sustainability; and (4) case studies illustrating the use or potential use of the concept of ecosystem health. Each of the themes is characterized and explained in from 3 to 10 chapters.

Two strengths of the book are its systematic effort to respond directly to arguments against the utility of the human health metaphor for addressing ecological policy questions, and its broad, integrative approach to developing the concept of ecosystem health. The first few chapters offer a particularly well-reasoned response to the critics of the usefulness of using this metaphor. The chapters on coupling ecosystem health and sustainability are also particularly helpful. A weakness of the book is the unevenness of the chapters, particularly the case studies. For example, some case studies, such as the Chesapeake Bay, are well developed, while others unfortunately are not. This weakness is more of a disappointment than a major shortcoming.

Overall, the book is a useful contribution to the field. It presents a coherent, credible argument for applying the human health metaphor to ecological policy issues. Most critics will not likely be convinced by their arguments, but the case for using the human health metaphor is well presented.

ROBERT T LACKEY, *U.S. Environmental Protection Agency, Corvallis, Oregon*