

Ambasht, R.S., Ambasht, N.K. (ed.): **Modern Trends in Applied Terrestrial Ecology**. – Kluwer Academic/Plenum Publishers, New York – Boston – Dordrecht – London – Moscow 2002. ISBN 0-306-47332-1. 367 pp., € 151.00, USD 150.00, GBP 96.00 (hard cover).

An ecological approach has to be employed in all studies and projects dealing with the present environmental problems. Applied ecology, a special and highly important branch of the science of ecology, thus forms the basis of various kinds of environmental management. Papers and reports dealing with different essential problems of applied ecology are widely scattered in the literature, or even unpublished, and hence hardly accessible to their potential users. With these or similar considerations in mind, the editors of the reviewed book made an attempt to collate examples or reviews of the present scientific information concerning a number of applied ecological problems. For this kind of “further reading”, they made a representative selection of subjects to be tackled in the book, and carefully selected the authors of individual book chapters, each dealing with one type of problem. Altogether 27 scientists from 8 countries (Germany, India, Japan, Korea, Poland, Switzerland, UK, and USA) contributed to the book as chapter authors. Some of the chapters are actually brief reviews of the respective subjects, others are rather case studies demonstrating the given problem in a particular setting.

The range of problems dealt with in individual chapters of this book is wide. Apart from the editors' Preface, there are 18 chapters dealing with the following problems (in this order): (1) soil compaction (caused especially by heavy machinery) and its influence on forest vegetation, (2) ecological plant classification systems based on the plants' functional responses, (3) soil-borne pathogens in crop fields, (4) economics of biodiversity, (5) effects of air pollution on crops in developing countries (where air-pollution control is less strict than in the western world), (6) applied ecology of biodiversity (a concise review written by the two book editors), (7) restoration and management of degraded tropical forest landscapes (with an emphasis on forest restoration techniques), (8) nutrient export from tropical rain forests (a useful review), (9) ozone stress impact on plant life, (10) effects of ultraviolet B radiation on crop plants (both last chapters are reviews linking physiological, ecological, and agricultural aspects), (11) vegetation ecology, degradation and regeneration of tropical mountain forests (report on case studies made in the Andes and in East Africa, highlighting the relevant types of plant succession), (12) influences of elevated carbon dioxide levels on plants (a review par-

ticularly interesting to the readers of “Photosynthetica”: it deals with physiological responses at the levels of photosynthesis, respiration, stomatal regulation and water use efficiency, formation of primary and secondary metabolites and, in particular, antioxidants; this review further deals with the effects on plant growth and yields as well as reproduction; interactions of carbon dioxide with other environmental factors and, especially, air pollutants are also mentioned), (13) methodology of assessing the plant cover and its environmental effects, (14) ecology of individuals and its employment in models of population dynamics, (15) application of nonlinear complex systems theory to ecological succession (accentuating the cellular automata models), (16) soil organisms and their role in litter decomposition (a brief review), (17) succession of pine forests in western Japan (looked at from the applied ecological viewpoint), and (18) ethnobotany and biodiversity conservation (trying to find a solution to the problem of exploiting indigenous people's knowledge by pharmaceutical companies).

Most of the chapters are written in an instructive way and are accompanied by extensive lists of references. Some of the chapters would have benefited from the inclusion of a greater number of figures and/or tables, possibly also more photographs. An Index (7 pages) concludes the book. The technical quality of the book is very good. The selection of topics dealt with in the book, however subjective it may be, indicates that from the editors' and a number of authors' viewpoint applied ecology is sometimes hardly distinguishable from what may be considered basic ecology. This probably reflects their correct attitude that applied science must be based on a solid ground. The book definitely does not postulate it should provide a complete overview of what is contemporary applied ecology, but it does fulfill its purpose by providing condensed information on a number of important ecological problems connected with the management of ecosystems and biological resources. Ecophysiological considerations and aspects of the treated problems are well represented wherever they are relevant. The book contains a rich stock of facts and ideas that can be used in university teaching and, especially, discussed at seminars with students of both basic and applied ecology as well as plant ecophysiology.

J. KVĚT (Třeboň)