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CURRENT BOOKS

Biological Diversity

By M. A. Huston, 1994, Cambridge University Press, 681 pp., ISBN 0 521 36093 5 (hardback), ISBN 0 5213 6930 4 (paperback).

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Biological diversity is enjoying an everincreasing popularity. Many magazines, and books, as well as societies, are now devoted to the coexistence of species and their natural variation more than ever before. The more industrial and urbanized the world becomes, the more we lose biological diversity as essential component of the quality of human existence.

Unlike to many current textbooks on biodiversity, Huton's book probably will become a fundamental base for many university teachers and students, because the author's approach is not to look for "which explanation for species diversity is correct, since virtually every explanation that has been proposed is important under some circumstances". This pattern of the book´s construction may be seen in every chapter and it surely originates in the endeavour to model natural processes that operated at experimentally tractable scales and then to use them at the larger spatial scales where experimental manipulation was not possible.

The book is structured into four logical parts: Raw Material and Tools, Theories of Species Diversity, Mechanisms that Regulate Diversity at Various Spatial and Temporal Scales, and Case Studies: Patterns and Hypotheses. Chapter 1, which undertakes to introduce first things first, or Chapter 15, which discusses first things last, are good places at which to start reading this book. The four chapters on species diversity in Parts 2 and 3 probably read best sequentially. The second chapter mainly deals with global patterns, and spatial and temporal variation of biological diversity. The conclusions that "biological diversity can be broken down into components that have understandable behaviour" or "diversity of groups that are associated with geographical features, such as mountains, tend to decrease away from those features" are of concern for every ecologist. In Chapter 3, much attention is paid to comparison and criticism of statistical methods for quantifying diversity. Many fruitful ideas may be found in this section of the book, mainly for general ecologists. This chapter provides some quidance about how diversity should be sampled and evaluated. Chapters 4 and 5 deal with equilibrium and non-equilibrium processes and maintenance of species diversity. Several examples include results with structural complexity, heterogeneity, population growth rate, mortality. The structure and content of the sixth - population chapter provide an important flow of information on diversity within populations. Factors that influence size diversity are reviewed.

The next four chapters mainly deal with communities and ecosystems. The section "Consequences of individual physiology for diversity and ecosystem processes" may be recommened to every biologist who studies the synthetic processes in an ecosystem. In these chapters, foresters may find very valuable details on succession, and managers of protected areas on zonation. It would be very useful if the "administrative" zonation of national parks and other protected areas would be based on the knowledge that the "zonation and the spatial distribution of species across landscapes are the result of the same type of interactions among individual organisms and the same physiological and life-history constraints that produce the temporal phenomenon of succession".

The last five chapters, case studies, compose the second half of the book. Factors that influence endemism and the theory of biological invasions are summarized in chapter 11. In the next three chapters (12 to 14), investigations of species diversity in marine, fire-influenced, and tropical rain forest ecosystems are described in detail.

Conservational approach is visible in the last concluding chapter "The Economics of Biological Diversity". The author's arguments suggest that conservation efforts will have to be more carefully targeted and more heavily subsidized in "naturally" productive than in non-productive environments. There are a number of issues arising from this book that may have wider significance for the management of mountain protected areas. The ideas presented in the book are, for example, valuable in interpreting island invasion theory. They are probably appropriate for interpreting mountain biology, in the sense that mountains are often in some way ecologic islands often standing in

the middle of an industrial environment. Although many ecologists will find this book as an invaluable study of biological diversity, perhaps one weakness is a need for recent and especially non-English literature. This could help to the author to exceed the regional limits, and introduce to readers valuable examples, such as those from Chinese or Japanese mountains.

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