
Biodiversity II renews the call for urgent attention to the increasing decline of the biodiversity of our planet. The volume is the product of a symposium held to inaugurate the new Consortium for Systematics and Biodiversity of the Smithsonian Institution, the University of Maryland, the USDA Systematic Laboratories, the University of Maryland Biotechnology Institute, and the American Type Culture Collection. Because the symposium drew its participants largely from those institutions, it reflects the biases of an “eastern US establishment.” It stresses the efforts of the USA to organize its efforts on biodiversity issues, years after many nations established policies—belated despite the fact that US scientists have long been leaders in concern and research on biodiversity questions. A more global approach to the examination of national and international alterations in biodiversity, research in the arena, and policy efforts would have produced a more worthy successor to the landmark Biodiversity, published in 1986. E. O. Wilson, in the Introduction, comments on the “striking contrast” of the present volume to the 1986 one “showing how extraordinarily far we have come” and “how far scientists yet must travel.” That we have much to do is obvious: what we have accomplished requires direct and explicit comparison with the 1986 work in order to be apparent. However, because most of the authors stress more general problems and their potential solutions in their topical chapters, the volume is rich in information and thoughtful contemplation of issues. The chapters in each of the seven sections of the book are highly variable, ranging from assessments of techniques to descriptions of new theoretical, technical, and policy challenges, and organizational structures designed to facilitate understanding and use of biodiversity.

Opening essays by Lovejoy and Patrick on Biodiversity: What is it? and Biodiversity: Why is it important, respectively, set the broad theme of the book. In the second section, “Patterns of the Biosphere,” Stork’s succinct review of means of measuring biodiversity and its decline is particularly useful, and Reaka-Kudla’s comparison of coral reef and rainforest biodiversity and Robbins and Opler’s of butterfly with bird and mammal biodiversity are interesting illuminations of the degree to which general theory regarding biodiversity can, and does, and does not, exist. The third section of the book, “Threats to Biodiversity,” includes Steadman’s thoughtful review of human-caused extinctions of birds and Wing’s discussion of global warming and plant species richness at the Paleocene-Eocene transition. Both provide a longer historical time line than most considerations of biodiversity changes, and the value of the time dimension is immediately apparent. The implication of human causation of recent biodiversity declines threads throughout the book, but it is rarely addressed with Steadman’s directness.

Part IV, “Understanding and Using Biodiversity,” would have benefited from more development and more examples. Muller and Rossman’s discussion of the application of biodiversity and systematics to agricultural development is particularly cogent. The fifth section, “Building Toward a Solution,” presents papers that discuss biotechnology applications to understanding and using biodiversity, and ways that management practices are enhanced by understanding biodiversity implications and how the conservation of biodiversity is concomitantly served. Kanga’s paper on tropical sustainable development is highly informative, albeit brief. Janzen, as always, presents a stirring set of challenges, including that of nurturing potential taxonomists and natural historians.

“Getting the Job Done,” Part VI, discusses resources for specimen and data management, emphasizing the need for maintaining and modernizing research collections and databases of many kinds, and especially means of transporting information to provide increased communication at all levels. The volume concludes with a chapter by the editors that reports the presentation in the book, rather than really defining progress since 1986, the breadth of infrastructure, and cost-effective solutions, as it claims to do. This may be a consequence of the perforce restricted set of contributions, but it prevents the volume from achieving its stated goal of summarizing “important conceptual and technological developments of the last ten years” (only a few are treated) “with a view to whether . . . we can cost-effectively assess, understand, and manage our total global biodiversity.” Though I do not believe the book lives up to its promise, all of its contributions provide thought-provoking examples and discussions. They recommend steps toward the goals of effective management and conservation of biodiversity that demand the participation of all scientists—indeed, all citizens—who believe that a diversity of life must continue to exist.

MARBALE E. WAKE
Department of Integrative Biology
and Museum of Vertebrate Zoology
3060 VLSB
University of California
Berkeley, California 94720-3140