

R E Hester and R M Harrison

Biodiversity Under Threat



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Preface

Biodiversity has become quite a buzzword of late. Hardly a day goes by without alarmed reference to it in the popular media. Much of the current comment is linked to climate change, widely believed to be caused by human activities. Other anthropogenic causes of biodiversity loss, such as deforestation, over-fishing, intensification of agriculture, pollution and the spread of invasive species also have received considerable attention. This book brings together an international group of experts on the subject, each with a distinctive focus, giving an overview of its many different aspects and combining academic rigour with a concern to make the topic intelligible to the non-specialist reader.

Biodiversity plays an important role in the sustainability of ecosystems and provides both goods and services that are essential for human survival. However, despite the increased awareness of its benefits, biodiversity is undoubtedly under threat from the many pressures imposed by human-induced changes. The ten chapters of this book provide a broad view of the many threats to global biodiversity and of the policy responses required to combat them. Thus policy is a theme common to several of the chapters, but for the most part this is dealt with in the specific context of the particular topic under discussion, *e.g.* invasive species, threatened habitats, land use change, *etc.*

The book begins with a chapter by Nigel Boatman and his colleagues from the UK government's Central Science Laboratory. This is concerned with the impacts of agricultural change on farmland biodiversity in the UK. Next Jessica Hellmann of the University of Notre Dame and Nathan Sanders of the University of Tennessee, USA, write on the extent and future of global insect biodiversity. Chapter 3 then considers biological invasions in Europe, with an analysis of the relevant pressures, states, impacts and responses by Philip Hulme, now at the National Center for Advanced Bio-Protection Technologies in Lincoln University, NZ. In Chapter 4 Paul Tyler of the UK National Oceanography Centre in Southampton writes on biodiversity in the deep sea, addressing the question "if we do not understand the biodiversity, how can we assess the threat?" The fifth chapter, by Alison Hester and Rob Brooker of the Macaulay Institute in Aberdeen, Scotland, addresses threatened habitats, with a focus on marginal vegetation in upland areas. It is from this chapter that we draw the illustration used on our front cover.

The second half of the book begins with a chapter on trends in biodiversity in Europe and the impact of land use change, written by Allan Watt of the CEH, Banchory, Scotland, together with co-authors from Denmark, France, Ireland, England, Spain, Germany, Sweden, Hungary, Finland, The Netherlands and Portugal. Then in Chapter 7 Jon Lovett and colleagues from the Institute for Tropical Ecosystem Dynamics in York, England, provide an account of tropical forest biodiversity. Chapter 8 deals with both constraints and successes in the implementation of international biodiversity initiatives and is written by Eeva Furman of the Finnish Environment Institute in Helsinki, together with

co-authors who include colleagues from both The Netherlands and Romania. In Chapter 9, written by another international team headed by Michael Bredemeier of the Forest Ecosystems Research Centre at the University of Gottingen, Germany, and including co-authors from Wales, Hungary, Austria and Italy, the subject of biodiversity assessment and change and the challenge of appropriate methods are addressed. Finally, the book closes with a chapter by Stefan Klotz of the UFZ-Centre for Environmental Research in Leipzig-Halle, Germany, on the role of natural and anthropogenic drivers and pressures on biodiversity.

The subject of biodiversity is, of course, huge in scope and significance. Even in 10 chapters, involving some 47 authors, we cannot claim a fully comprehensive treatment. However, we believe the current understanding of the threats to biodiversity is particularly well described here, with a wide range of illustrative examples. Future directions for increasing this understanding and developing appropriate policy initiatives to combat the worst of the threats are suggested and discussed. Thus the book will be of value to policymakers as well as to ecologists and environmental scientists and to all students of the environment.

Ronald E Hester
Roy M Harrison

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